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CANADA

**A HEALTHY, PRODUCTIVE CANADA:
A DETERMINANT OF HEALTH APPROACH**

**The Standing Senate Committee on Social Affairs,
Science and Technology
Final Report of
Senate Subcommittee on Population Health**

The Honourable Wilbert Joseph Keon, Chair
The Honourable Lucie Pépin, Deputy Chair

June 2009

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**HEALTH IS LARGELY DETERMINED BY FACTORS OUTSIDE THE
HEALTH CARE SYSTEM:**

[L]ack of health care is not the cause of the huge global burden of illness; water-borne diseases are not caused by lack of antibiotics but by dirty water, and by the political, social and economic forces that fail to make clean water available to all; heart disease is not caused by a lack of coronary care units but by the lives people lead, which are shaped by the environments in which they live; obesity is not caused by moral failure on the part of individuals but by the excess availability of high-fat and high-sugar foods. The main action on social determinants of health must therefore come from outside the health sector.

[from the World Health Organization Commission on Social Determinants of Health, *Closing the Gap in a Generation – Health Equity Through Action on the Social Determinants of Health*, 2008, p. 35.]

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LIST OF RECOMMENDATIONS

- 1. That the Prime Minister of Canada take the lead in announcing, developing and implementing a population health policy at the federal level;**

That a Cabinet Committee on Population Health be established to coordinate the development and implementation of the federal population health policy;

That the Prime Minister of Canada chair the Cabinet Committee on Population Health;

That the Cabinet Committee on Population Health comprise the relevant departmental ministers including, but not limited to: Human Resources and Skills Development, Indian and Northern Affairs, Finance, Health, Environment, Justice, Agriculture and Agri-Food, Industry, Public Health Agency, and Status of Women.

- 2. That the Prime Minister of Canada convene a meeting with all First Ministers to establish an intergovernmental mechanism for collaboration on the development and implementation of a pan-Canadian population health strategy;**

That the Premiers announce, develop and implement in their respective jurisdiction a population health policy that is modelled on the federal population health policy;

That, in each province and territory, Premiers establish and chair a Cabinet Committee on Population Health.

- 3. That the Treasury Board of Canada Secretariat pro-actively undertake to enhance the range of models and resources available for the management of horizontal and vertical collaborations.**
- 4. That the Government of Canada increase funding to the Public Health Agency of Canada for the creation of a policy and knowledge node that will act as a resource for the implementation of population health and health disparities reduction policies and initiatives both horizontally (at the federal level) and vertically (through intergovernmental collaboration).**
- 5. That, wherever feasible, local /municipal governments across the country adopt and implement a broad population health**

approach within their boundaries and in collaboration with federal, provincial and territorial governments. boundaries and in collaboration with federal, provincial and territorial governments.

- 6. That the Health Goals for Canada agreed upon in 2005 be revived and guide the development, implementation and monitoring of the pan-Canadian population health policy.**
- 7. That the Population Health Promotion Expert Group accelerate its work to complete within the next 12 months the development of a national set of indicators of health disparities;**

That the indicators of health disparities be appropriately matched with the Health Goals for Canada.

- 8. That the Department of Finance, in collaboration with the Privy Council Office and the Treasury Board Secretariat, conduct an interdepartmental spending review with the aim of allocating resources to programs that contribute to health disparity reduction.**
- 9. That the Government of Canada require Health Impact Assessment (HIA) to be conducted for any policy, plan or program proposal submitted to Cabinet that is likely to have important consequences on health;**

That the Privy Council, in collaboration with Health Canada, develop guidelines for implementing the Cabinet directive on HIA;

That the HIA guidelines be developed using existing material;

That the Government of Canada encourage the use of HIA in all provinces and territories.

- 10. That the Government of Canada support the development and implementation of Community Accounts, modelled on the Newfoundland and Labrador CA, in all provinces and territories.**
- 11. That the Canadian Institute for Health Information (CIHI) be designated as the lead in the development, management and maintenance of the pan-Canadian population health database infrastructure;**

That CIHI immediately begin work to establish the necessary vertical integration of data with key partners.

- 12. That Statistics Canada, in collaboration with Canada Health Infoway Inc., the Canadian Institute for Health Information and other key stakeholders, develop standards to facilitate the linkages between the Community Accounts and Electronic Health Records while ensuring the protection, privacy and security of personal information;**

That work on the development of appropriate standards for the protection, privacy and security of personal information be completed within the next 12 months.

- 13. That the Canadian Institutes of Health Research (CIHR) work in collaboration with relevant federal departments and agencies to assess current investment in population health intervention research and reach consensus on and determine an appropriate level of funding in this field;**

That the Government of Canada increase its investment in population health intervention research to match the level agreed upon by CIHR and other relevant department and agencies;

That future population health intervention research funded by the government of Canada build on the capacity and strengths of existing networks and research centres and foster collaborative partnerships among municipal, provincial and federal research agencies as well as academic partners for a focused research agenda;

That the Government of Canada devise competitive operational funding mechanisms that will best support innovative, leading-edge research on population health intervention;

That the Government of Canada consider joint funding mechanisms for inter-provincial and international comparative research on population health interventions;

That the Government of Canada examine the eligibility criteria for human health research infrastructure funds in Canada and consider how these could be better aligned with population

health intervention research involving implementation mechanisms in health and other sectors;

That population health intervention research on housing, early childhood development and mitigating the effects of poverty among Aboriginal peoples and other vulnerable populations be considered priorities.

- 14. That the Treasury Board of Canada Secretariat review and revise grant and contribution reporting requirements among federal departments and agencies to enhance horizontal and vertical coordination of reporting.**
- 15. That the Treasury Board of Canada Secretariat encourage multi-year funding of projects that have multi-year timelines. The Treasury Board of Canada Secretariat should also encourage multi-year funding among federal granting agencies, where appropriate.**
- 16. That the Government of Canada include support for local analysis and evaluation capacity in the design of programs aimed at improving population health and reducing health disparities.**
- 17. That the Government of Canada work with other levels of government and the non-governmental sector to support the integration or coordination of community-level services within a determinant of health framework.**
- 18. That Aboriginal peoples – First Nations, Inuit and Métis – be involved in the design, development and delivery of federal programs and services that address health determinants in their respective communities.**
- 19. That the Prime Minister of Canada, as a first step toward the development and implementation of a pan-Canadian population health strategy, work with provincial and territorial Premiers, as well as with First Nations, Inuit, Métis and other Aboriginal leaders in closing the gaps in health outcomes for Aboriginal Canadians through comprehensive, holistic, and coordinated programs and services.**
- 20. That the following health determinants be given priority: clean water, food security, parenting and early childhood learning, education, housing, economic development, health care and violence against Aboriginal women, children and elders.**

- 21. That the Government of Canada work with all provincial and territorial governments to implement Jordan's principle for all programs, initiatives and services that address the health determinants of Aboriginal peoples in all age groups**

- 22. That the Government of Canada, in collaboration with its provincial and territorial counterparts, as well as the appropriate First Nations, Inuit and Métis organizations, support and fund appropriate structures and mechanisms across the country that will facilitate the development and implementation of comprehensive, holistic, and coordinated programs and services that address health disparities in Aboriginal communities.**

ORDER OF REFERENCE

Extract from the *Journals of the Senate* of Tuesday, February 24, 2009:

The Honourable Senator Eggleton, P.C., moved, seconded by the Honourable Senator Fraser:

That the Standing Senate Committee on Social Affairs, Science and Technology be authorized to examine and report on the impact of the multiple factors and conditions that contribute to the health of Canada's population — known collectively as the determinants of health — including the effects of these determinants on the disparities and inequities in health outcomes that continue to be experienced by identifiable groups or categories of people within the Canadian population;

That the committee examine government policies, programs and practices that regulate or influence the impact of the determinants of health on health outcomes across the different segments of the Canadian population, and that the committee investigate ways in which governments could better coordinate their activities in order to improve these health outcomes, whether these activities involve the different levels of government or various departments and agencies within a single level of government;

That the committee be authorized to study international examples of population health initiatives undertaken either by individual countries, or by multilateral international bodies such as (but not limited to) the World Health Organization;

That the papers and evidence received and taken and work accomplished by the committee on this subject since the beginning of the First Session of the Thirty-Ninth Parliament be referred to the committee; and

That the committee submit its final report no later than June 30, 2009, and that the committee retain all powers necessary to publicize its findings until 180 days after the tabling of the final report.

The question being put on the motion, it was adopted.

Paul C. Bélisle

Clerk of the Senate

MEMBERSHIP

The Honourable, Wilbert Joseph Keon, Chair of the Committee
The Honourable, Lucie Pépin, Deputy Chair of the Committee

The Honourable Senators:

Catherine S. Callbeck
Andrée Champagne, P.C.
Joan Cook
Nicole Eaton
Joyce Fairbairn, P.C.

Ex-officio members of the Committee:

The Honourable Senators: James Cowan (or Claudette Tardif) and Marjory LeBreton, P.C., (or Gérald J. Comeau).

Other Senator who have contributed substantially to this study: The Honourable Senators Eggleton, C.P.

The Committee would like to thank the following staff for their hard work in the preparation of this report:

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Monique Régimbald, Administrative Assistant, 2nd Session of the 40th Parliament

LIST OF ABBREVIATIONS

BCHC: British Columbia Healthy Communities

CA: Community Accounts

CIHI: Canadian Institute for Health Information

CIHR: Canadian Institutes of Health Research

CLSC: *Centre local de services communautaires*

CMA : Census Metropolitan Area

COAG: Council of Australian Governments

EHR : Electronic Health Record

EIA: Environmental Impact Assessment

F/P/T: Federal/Provincial/Territorial

HIA: Health Impact Assessment

LEF: Learning Enrichment Foundation

LICO: Low income cut-off

NGO: Non-Governmental Organization

NSERC: National Science and Engineering Research Council

OECD: Organisation for Economic Development and Cooperation

PHAC: Public Health Agency of Canada

SSHRC: Social Sciences and Humanities Research Council

UK: United Kingdom

WHO: World Health Organization

FOREWORD

Canada is generally perceived as one of the greatest countries in the world in which to live. It has a vast and diverse geography rich in natural resources, clean air and a vast territory. When it comes to health however, we unfortunately have serious disparities. Some Canadians live their lives in excellent health with one of the highest life expectancies in the world; paradoxically others spend their life in poor health, with a life expectancy similar to some third world countries. The unfortunate Canadians, who suffer poor health throughout their lifetime, are frequently less productive adding to the burden on the health care delivery system and social safety net. We can not correct this inequity through the health care delivery system itself, regardless of the expenditure we devote to it.

We must change our way of thinking and recognize that good health comes from a variety of factors and influences, 75 percent of which are not related to the health care delivery system. Therefore we must become proactive and support communities, cities, provinces, territories and a country in producing citizens in good health, physical and mental well-being and productivity. Passively waiting for illness and disease to occur and then trying to cope with it through the health care delivery system, is simply not an option. Hence, we must address all of the factors that influence health and through a population health approach, overcome inequities and foster well being and productivity.

The knowledge and technology to do so are now available but more research is required. Change will demand the attention of all individuals, NGOs, businesses, communities, all levels of government and all sectors of our Canadian society. Success will require leadership from our prime minister and first ministers, from our mayors, municipal leaders, community leaders and the leaders of our Aboriginal peoples. A whole of Government approach is required with intersectoral action embracing business, volunteers and community organizations. This will not be easy, but it can and must be done. We cannot afford to do otherwise.

A population health information system with longitudinal capacity that can monitor, evaluate and report on well being throughout the human life course is required. Community initiatives that integrate education, health and social services are required so we can reduce disparities, stem the prevalence of disease and increase productivity. We must not be intimidated by this task, which is doable and which will eventually lead to a nation with health equity, well-being and drastically improved productivity. The challenge is for every Canadian, the benefits are to every Canadian.

INTRODUCTION

Achieving health equity within a generation is achievable, it is the right thing to do, and now is the time to do it.¹

With the tabling of this final report, the Subcommittee on Population Health of the Standing Senate Committee on Social Affairs, Science and Technology has come to the end of a long journey that began in February 2007, during the 1st session of the 39th Parliament, when the Subcommittee received a mandate from the Senate “to examine and report on the impact of the multiple factors and conditions that contribute to the health of Canada’s population – referred to collectively as the determinants of health.” This mandate was renewed in October 2007, at the beginning of the 2nd session of the 39th Parliament, and once again in February 2009 during the 2nd session of the 40th Parliament.

This report is therefore the culmination of a two-year study by the Subcommittee. During this period, the Subcommittee sat for 52 hours, held 30 meetings, heard the views of over 117 witnesses and received hundreds of written submissions. Members also visited 6 Canadian communities and completed a fact-finding mission in one country. We wish to express our sincerest thanks to all those who gave us their advice on what needs to be done to improve the health of Canadians, reduce health disparities and foster Canada’s productivity. We have given serious consideration to their comments and suggestions and find them particularly timely in the context of the current economic slowdown.

Our final report was preceded by four interim reports:

- *Population Health Policy: International Perspectives* presents an analysis of government policy to improve population health and reduce health disparities in Australia, England, Finland, New Zealand, Norway and Sweden. In recent years, many of these countries have taken bold steps to implement whole-of-government approaches to close the gap in health outcomes between healthier and more vulnerable population groups.
- *Maternal Health and Early Child Development in Cuba* summarizes the Subcommittee’s findings on the content, structure, cost, management and impact of maternal health programs and early childhood education initiatives in Cuba. A key player in the country’s successful approach to maternal health and early childhood development is what Cubans call “polyclinics.” The role of the polyclinics is far more extensive than that of a health clinic as Canadians would understand that term. These local establishments ensure integration of science, knowledge transfer, parent education and community mobilization, in the premise of a strong multidisciplinary primary health care sector.

¹ World Health Organization Commission on Social Determinants of Health, *Closing the Gap in a Generation – Health Equity Through Action on the Social Determinants of Health*, 2008. http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf

- *Population Health Policy in Canada: Federal and Provincial/Territorial Perspectives* describes previous efforts of the federal, provincial and territorial governments to develop and implement population health policy. Both the federal and provincial/territorial governments have devoted considerable attention to population health over the past 35 years. However, there is still no national plan in Canada to reduce health disparities and improve overall population health status.
- *Population Health Policy: Issues and Options* outlines the major issues facing the development of population health policy in Canada and presents policy options to improve overall health status and reduce health disparities.

These reports served to launch a public debate on the role of governments, more particularly the federal government, in the development and implementation of a determinant of health approach for Canada. They also formed the basis for further hearings and consultations with Canadians from across the country. This final report, which is the result of this consultation process, completes the Subcommittee's journey. It contains recommendations that can be grouped into four categories:

- A new style of governance: leadership from the top to develop and implement a population health policy at the federal, provincial, territorial and local levels with clear goals and targets and a health perspective to all new policies and programs.
- The foundation: a sound population health data infrastructure coordinated by the Canadian Institute of Health Information and based on the Newfoundland and Labrador model of Community Accounts with appropriate linkages to the Electronic Health Records. Statistics Canada and relevant stakeholders will develop standards to ensure the protection, privacy and security of personal information. This database infrastructure will be combined with strong population health intervention research to inform public policy.
- Building healthy communities: because the determinants of health play out at the local level, governments must draw upon and further reinforce the expertise and capacity of citizens to build the strong and inclusive communities that are required for a healthy and productive population. The Cuban polyclinics represent a promising model of intersectoral collaboration at the local level that could be adapted in some Canadian communities.
- A priority focus on First Nations, Inuit and Métis peoples in the development and implementation of a pan-Canadian population health policy and the reduction of health disparities, working with existing leadership to meet current needs, celebrate unique cultures and create new opportunities for the future.

The Subcommittee feels that there is a real window of opportunity for implementing its recommendations. There is a wide range of support from the business sector, rural, urban and Aboriginal communities, non-government organizations, research institutes, universities, professional associations, health authorities, government representatives, etc. Moreover, there is momentum both at the national and international levels with the evidence-based recommendations in the final report of the World Health Organization (WHO) Commission on Social Determinants of Health, the first report of

Canada's Chief Public Health Officer, and the Conference Board of Canada's Roundtable on the Social Determinants of Health, to name a few. Many other countries – such as England, Finland, Norway and Sweden – and a number of provinces – including Newfoundland and Labrador and Quebec – have actively developed actions and programs designed to reduce health disparities and, accordingly, we strongly believe that now is the time for the federal government, in collaboration with other levels of government, to take action on the determinants of health in Canada. In fact, it is not an exaggeration to say that no society can reverse the current downward economic trends and then sustain economic progress if it neglects the health of its people. Not doing so will aggravate the already serious health disparities that exist in this country and compromise future economic prosperity.

PART I: POPULATION HEALTH AND HEALTH DISPARITIES²

1. POPULATION HEALTH

Our study of the determinants of health began with the notions of health and population health. The Subcommittee adopted the well known WHO definition of **health** as “a state of complete physical, mental and social well-being” and “a resource for everyday life”.³ In this perspective, good health is a major source for social, economic and personal development and an important dimension of quality of life. In corollary, the concept of **population health** is based on the understanding that health is determined as much or more by social, economic, environmental and cultural factors than it is by genetic or medical factors. That is, factors such as income, level of education, occupation, social hierarchy and housing, which are all **determinants of health**, have direct and indirect consequences for the health and well-being of the population. Many of these factors play out largely in Canadian communities – the cities, towns, neighbourhoods and regions where people live, learn, work and play. For this reason, the Subcommittee's approach to population health focuses on the **community setting**. Moreover, the impacts of health determinants vary at different stages of people's lives. Accordingly, our population health approach adopts a **lifecourse perspective** – encompassing influences from before birth, through childhood and adolescence, and during adult years. The determinant of health approach envisioned by the Subcommittee is depicted in Chart 1.

(...) I think the issue about population health is not just health; it is population. It is very broad.

*Jean-Marie Berthelot, Vice
President of Programs, Canadian
Institute for Health Information, 27
March 2009 (3:74).*

The combination and interaction of the health determinants result in differences in health status; this in turn gives rise to **health disparities** between individuals and among various segments of the population. There is a wide consensus, both nationally and

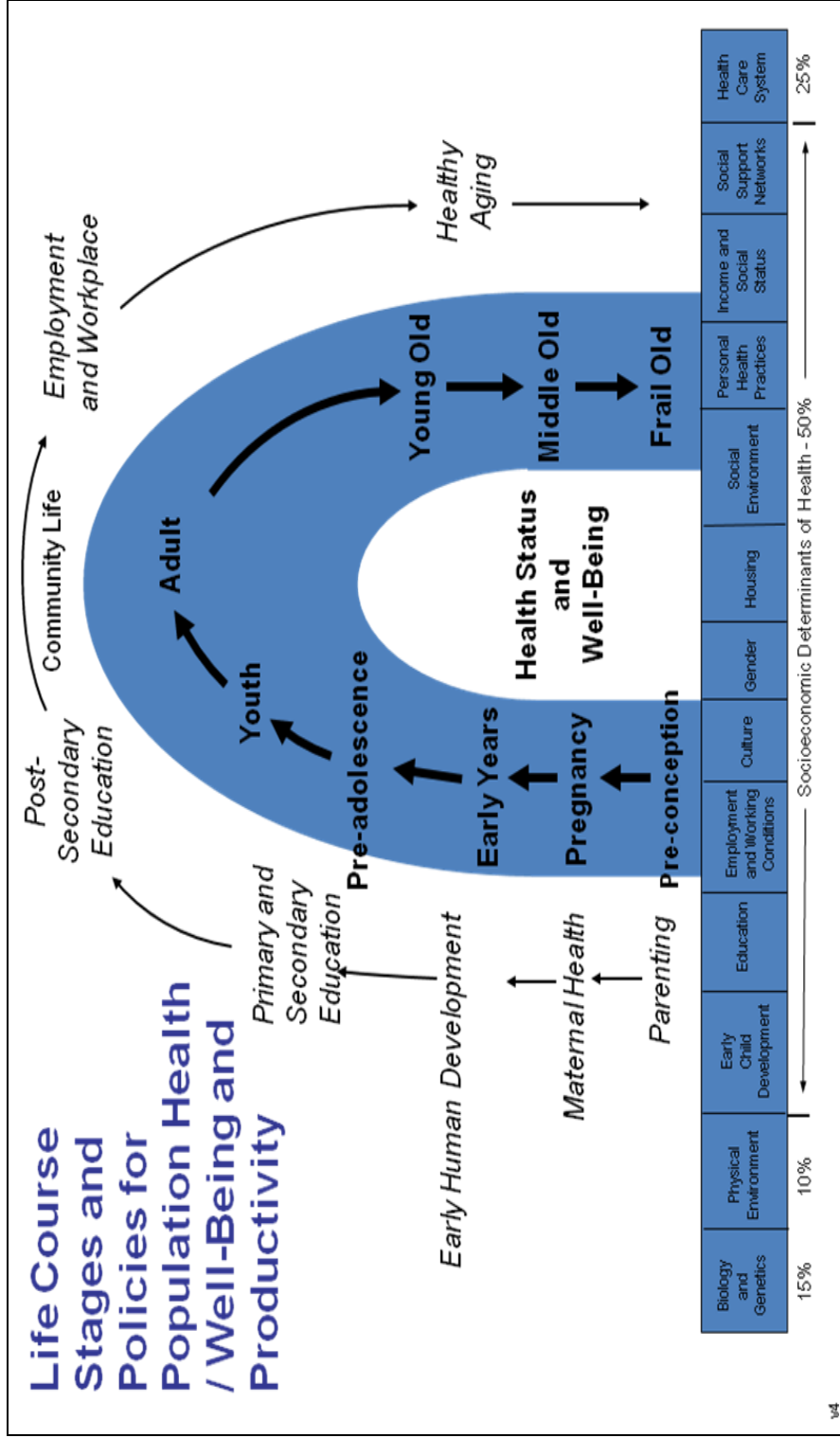
² In this report, the testimony received by witnesses printed in the *Minutes of Proceedings and Evidence of the Subcommittee on Population Health of the Standing Senate Committee on Social Affairs, Science and Technology* will be thereafter referred to only by issue number and page number within the text.

³ World Health Organization, <http://www.who.int/en/>.

internationally, that the vast majority of disparities in health are avoidable, unfair and thus inequitable. These **health inequities** result from the external environment and other social and economic conditions that, while largely outside the control of the individuals affected, are amenable to mitigation by the implementation of well-crafted public policy that we refer to as **population health policy**.

Population health policy is by nature intersectoral – it is designed to address, in a coordinated fashion, the range of determinants that influence health. Such **intersectoral collaboration** has two dimensions: horizontal and vertical. The horizontal dimension links different departments such as education, finance, employment, social services, environment, health, etc. Within a single government, this can be referred to as an interdepartmental or whole-of-government approach. The vertical dimension links sectors at different levels; for example, the federal, provincial/territorial, regional, and local or municipal governments are linked to each other and with groups, institutions, organizations and businesses in the community. Intersectoral action is most successful when it results in a “win-win” situation, whereby the participants at every level gain something.

CHART 1



Source: Parliamentary Information and Research Service, Library of Parliament.

Members of the Subcommittee believe that there is a definitive demand for population health in Canada, but it is not labelled as such. Advocates working against poverty, exclusion, and environmental degradation, like those promoting the status of women, public housing, safe drinking water, and social justice, more broadly all call for action that would reduce disparities and improve health – allowing every Canadian to develop, live and contribute to society to her or his fullest potential.

The demand may exist, but it is fragmented and, in my opinion, unidentifiable for the political order at this point in time.

The Honourable Monique Bégin, 18 April 2008 (4:104).

Unfortunately, there is no simple or single terminology to refer to this. While the Subcommittee, along with public health and health promotion experts, refers to it as *population health*, *well-being* and *health inequities*, economists and business entrepreneurs think about it as *human capital*. For their part, social scientists and biologists see it in terms of *human development* while environmentalists address it under the issue of *environmental sustainability*. And for Aboriginal peoples, it is about *holistic health* and *wellness*. No matter how we phrase it, the ultimate goal of this report is to put people – their physical and mental health, well-being and quality of life – at the centre of public policies. This is what the Subcommittee recommends in its call for a determinant of health approach in Canada.

Fundamentally, all roads lead to population health. Whether it is economic issues, income security issues or environmental issues, they all come back to population health.

Mel Cappe, President, Institute for Research on Public Policy, 26 February 2009 (1:15).

2. FROM HEALTH CARE TO THE DETERMINANTS OF HEALTH

As mentioned above, the determinants of health encompass personal, cultural, social, economic and environmental factors. Chart 1 – and evidence from the Canadian literature – suggests that the **health care** system is one contributor to population health, but it only accounts for 25% of health outcomes regardless of the level of funding it receives. Too often, the health care system reacts after the fact, once diseases and illnesses (many of them preventable) have occurred. Clearly, health is more than health care and, of them all, the socio-economic environment is the most powerful of the determinants of health. This emphasizes the need to take an active instead of a passive approach to health and to act before the individual gets sick.

The basic biology and organic make-up of the human body are a fundamental determinant of health, accounting for 15% of health outcomes. In some instances **genetic endowment** appears to predispose certain individuals to particular diseases or health problems.

Housing or lack of adequate housing (overcrowding, substandard dwellings, homes requiring significant repairs, homelessness, etc.) contributes to increased stress, morbidity, mortality, social exclusion, physical and mental illness. Needless to say, health begins at the household level; therefore, promoting population health begins with

having available, affordable and healthy housing. Other human-made elements of our **physical environment**, such as safe workplaces, and communities, well-designed cities, roadways, etc., are vital to a healthy population, as are clear air, water and soil. Overall, some 10% of health outcomes are attributable to the physical environment.

Fully 50% of the health of the population can be explained by socio-economic factors. The social and economic determinants of health are complex and intertwined and we describe some of them below.

Early childhood development, from pre-conception to pregnancy and parenting through the early years of life, is often considered as a powerful health determinant and is a critical element of the life course approach to population health. Scientific evidence demonstrates that experiences from conception to age six have the most important influence of any time in the life cycle on the connecting and sculpting of the brain's neurons. Positive stimulation early in life affects the person's subsequent health, well-being, coping skills and competence.

Education is closely tied to socio-economic status, and effective education for children and lifelong learning for adults are key contributors to health and prosperity for individuals and for the country. Education contributes to health and prosperity by equipping people with knowledge and skills for problem solving, and helps provide a sense of control and mastery over life circumstances. It increases opportunities for job and income security, and job satisfaction. And it improves people's ability to access and understand information to help keep them healthy. Individual responsibility for health is another important element of a whole-person, whole-government approach to population health.

There is also strong and growing evidence that **income and social status** are positively associated with health. Even more notably, people's health is affected by how wide the difference in income is between the richest and poorest members of the society. So while people with lower income and social status have less control and fewer choices in their lives, this is even more the case when the income gap in the society is very wide.

Evidence shows that **employment and working conditions** have a significant effect on a person's physical and mental health and social well-being. Earned income provides not only money, but also a sense of identity and purpose, social contacts and opportunities for personal growth. When someone loses these benefits, the results can be devastating to both the health of the individual and his or her family.

Finally, the Subcommittee heard evidence of the impact of **culture and gender** on health. Race, ethnicity or cultural background can influence population health by affecting people's vulnerability to the risks to which they are jointly exposed. In addition, society ascribes different roles, personality traits and relative power to males and females, all of which can affect people's health. A gender-based approach to population health recognizes the differences between women and men; this helps identify the ways in which the health risks, experiences, and outcomes are different for women

and men, boys and girls, and to act accordingly. Moreover, a population health approach must be culturally appropriate and flexible enough to take into account the specific needs of the different cultural and ethnic groups that make up our country.

3. THE EXTENT OF HEALTH DISPARITIES

Some Canadians are much healthier than others. Poor health outcomes are more likely among: children and families living in poverty; the working poor; the unemployed/underemployed; those with limited education and/or low literacy; Aboriginal and remote populations; newcomers; persons suffering from social exclusion; the homeless; and those who have difficulty securing affordable housing.⁴

Throughout its study, the Subcommittee received compelling evidence on the extent of health disparities. Wide disparities in health exist among Canadians – between men and women, between regions and neighbourhoods, and between people with varying levels of education and income. Although ill-health is distributed throughout the whole population, it is borne disproportionately by specific groups, notably Aboriginal peoples and individuals and families whose incomes are low.

As shown in Table 1, the difference between health outcomes for Canadians as a whole and for Aboriginal peoples – First Nations, Inuit and Métis – is striking. For example, the average lifespan for Inuit women is 12 years less than the average for Canadian women, while for men the comparable gap is 8 years. Table 1 also shows that the socio-economic status of each Aboriginal group is lower than that of non-Aboriginal Canadians on virtually every measure. Educational attainment is lower, fewer people are employed, and average incomes are lower. Smoking is much more prevalent among Aboriginal peoples than other Canadians. Jeff Reading, Professor and Director, Centre for Aboriginal Health Research, University of Victoria, prepared for the Subcommittee a document which presents the most comprehensive collection of data on the burden of illness and the extent of health disparities among First Nations, Inuit and Métis. His paper acknowledges that the poorer conditions faced by Aboriginal peoples are contributing to their lower health status relative to non-Aboriginal Canadians. These poorer conditions in turn find their origin in the process of dislocation as a result of colonization which rendered Aboriginal peoples and communities as socially excluded from the rest of Canada.⁵

⁴ BC Healthy Living Alliance, *Submission to the Subcommittee*, 8 June 2008, p. 2.

⁵ Jeff Reading, *A Life Course Approach to the Social Determinants of Health for Aboriginal Peoples*, 30 March 2009.

TABLE 1
INEQUALITIES IN HEALTH DETERMINANTS: MUCH REMAINS TO BE DONE TO IMPROVE THE HEALTH STATUS OF ABORIGINAL PEOPLES

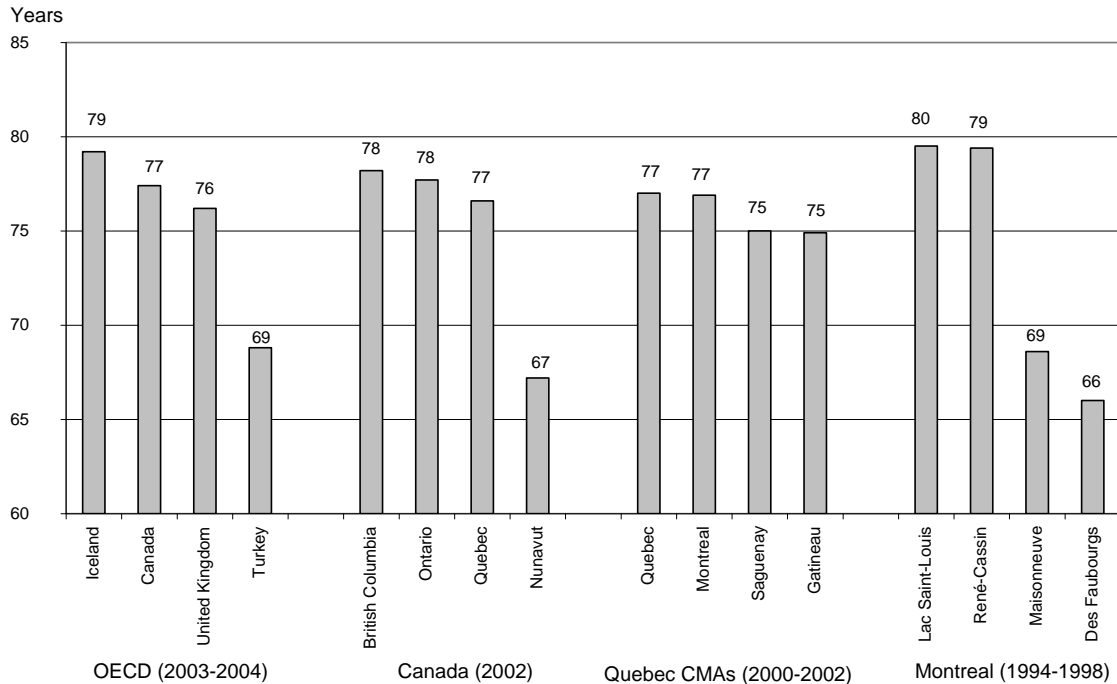
	Non- Aboriginal Canadians	First Nations	Inuit	Métis
Health Status				
Life Expectancy at Birth (Men)	76	69	68	n.a.
Life Expectancy at Birth (Women)	82	77	70	n.a.
Education (% 15 Years and Over)				
No Degree, Certificate or Diploma	33	55	66	46
Bachelor's Degree Graduation	16	4.1	1.9	5.3
Employment (% 15 Years and Over)				
Unemployment Rate	7	22	22	14
Worked Full Year, Full Time	37	23	23	31
Income (% 15 Years and Over)				
Low Income in 2000	16	40	24	28
Lifestyle (% of Population)				
Daily Smoking	22	38	61	37

n.a.: Not available.

Source: Canadian Population Health Initiative, *Improving the Health of Canadians*, 2004.
http://secure.cihi.ca/cihiweb/products/IHC2004rev_e.pdf

The Subcommittee also heard repeatedly about health disparities between and within countries. For example, Chart 2 shows that Canada's life expectancy is one of the highest internationally. However, not all Canadians enjoy a long lifespan. Across the country, there is an 11-year disparity in life expectancy between provinces and territories, from a low 67 years in Nunavut to a high 78 years in British Columbia. Moreover, there are differences within individual provinces. For example, in Quebec, there is disparity in life expectancy between Montreal and Gatineau. Looking even more locally, research by the Montreal public health department estimates a 14-year difference in life expectancy among the areas within the city. These findings highlight the need to adopt a community-level approach to population health.

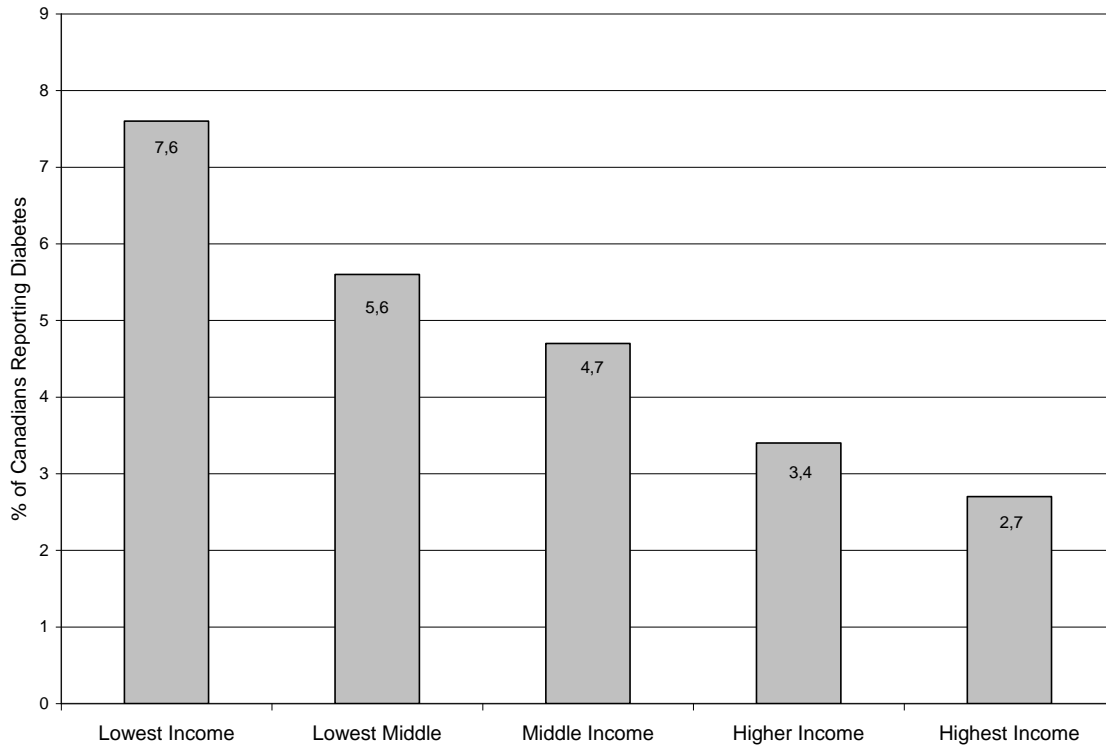
**CHART 2: WHERE YOU LIVE MATTERS TO YOUR HEALTH
DIFFERENCES IN LIFE EXPECTANCY AT BIRTH, MEN**



Source: Reproduced from Glenda Yeates, “Health Disparities in Canada,” *Submission to the Subcommittee*, 18 April 2008.

Chart 3 shows that the prevalence of illness – in this particular case diabetes – steadily decreases as income level increases. Put differently, health status improves in a stepwise manner for each increment in income. The presence of this health gradient is not unique to Canada; it has been empirically demonstrated across jurisdictions, nationally and internationally, and at local, neighbourhood and regional levels. However, the level and degree of the gradient slope is not consistent between jurisdictions. The gradient among industrialized nations is steepest in countries such as the United States, and much less steep in countries like Norway and Sweden.

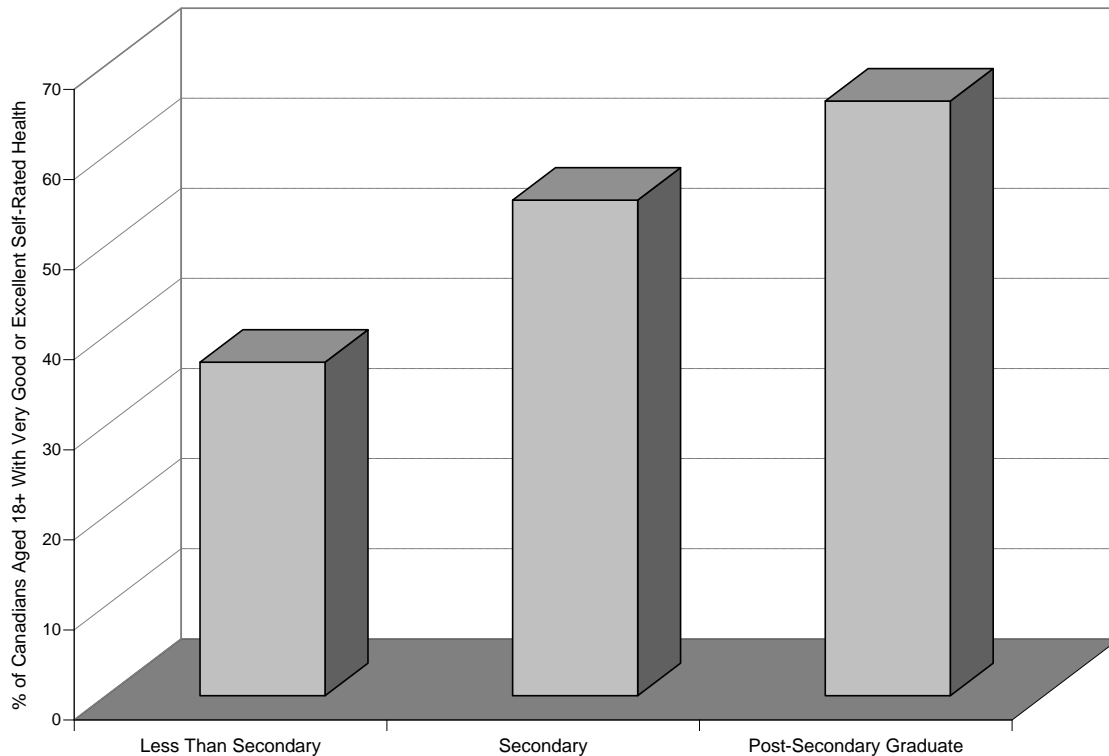
CHART 3: THE SOCIO-ECONOMIC GRADIENT IN HEALTH



Source: Statistics Canada, *Canadian Community Health Survey (Cycle 3.1)*, 2005; Parliamentary Information and Research Service, Library of Parliament.

The 2005 Canadian Community Health Survey reported that Canadians living in households with the lowest levels of education are less likely to report having excellent or very good health. Clearly, Chart 4 shows a health gradient whereby an additional level of education is associated with an increase in the proportion of those reporting excellent or very good health.

CHART 4: EDUCATION IS A STRONG HEALTH DETERMINANT



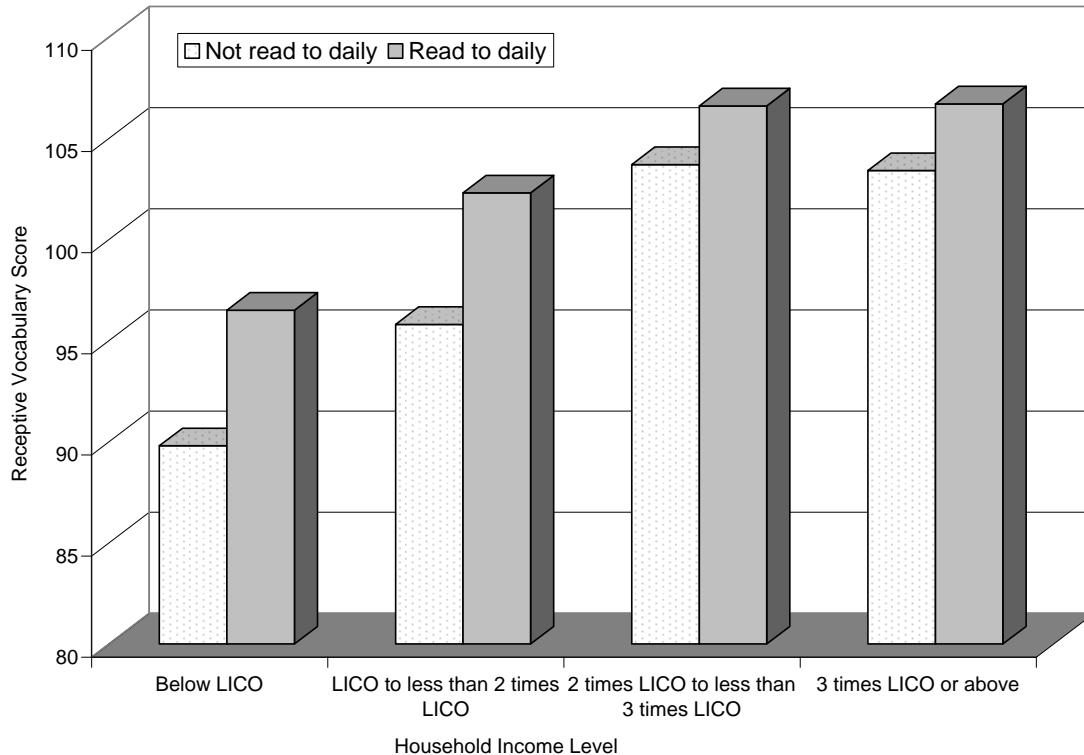
Source: Statistics Canada, *Canadian Community Health Survey (Cycle 3.1)*, 2005; Parliamentary Information and Research Service.

Numerous witnesses stressed the importance of addressing health disparities as early as possible. Chart 5 shows that the health gradient is evident in the earliest years of life. It also indicates that parental involvement in children's early learning is important to success across all incomes. In each household income level, especially among families with the lowest incomes, children who are read to daily have better receptive vocabulary scores than children not read to daily. These are very critical findings, given that human capital in adulthood is to a large extent already determined during childhood. More precisely, measures of child development, such as cognitive and verbal ability, predict measures of human capital in adulthood, such as earnings and employment, as well as involvement in criminal and other risky behaviours. It is not surprising that child development is strongly related to a child's socio-economic background. Many children from disadvantaged families fall

(...) if we do not start to improve the broad determinants of health for our children and youth, it will ultimately have a huge impact on our economy. Children will not be finishing school or going on to post-secondary education and taking on the roles in our economy that we would want for our economy to grow.
*Marie Adèle Davis, Executive Director,
Canadian Paediatric Society, 28 May
2008 (7:21).*

behind early in life and find catching up later very difficult. This underscores the need for a lifecourse approach to population health.

**CHART 5:
THE GRADIENT IN HEALTH IS EVIDENT IN EARLY CHILDHOOD**



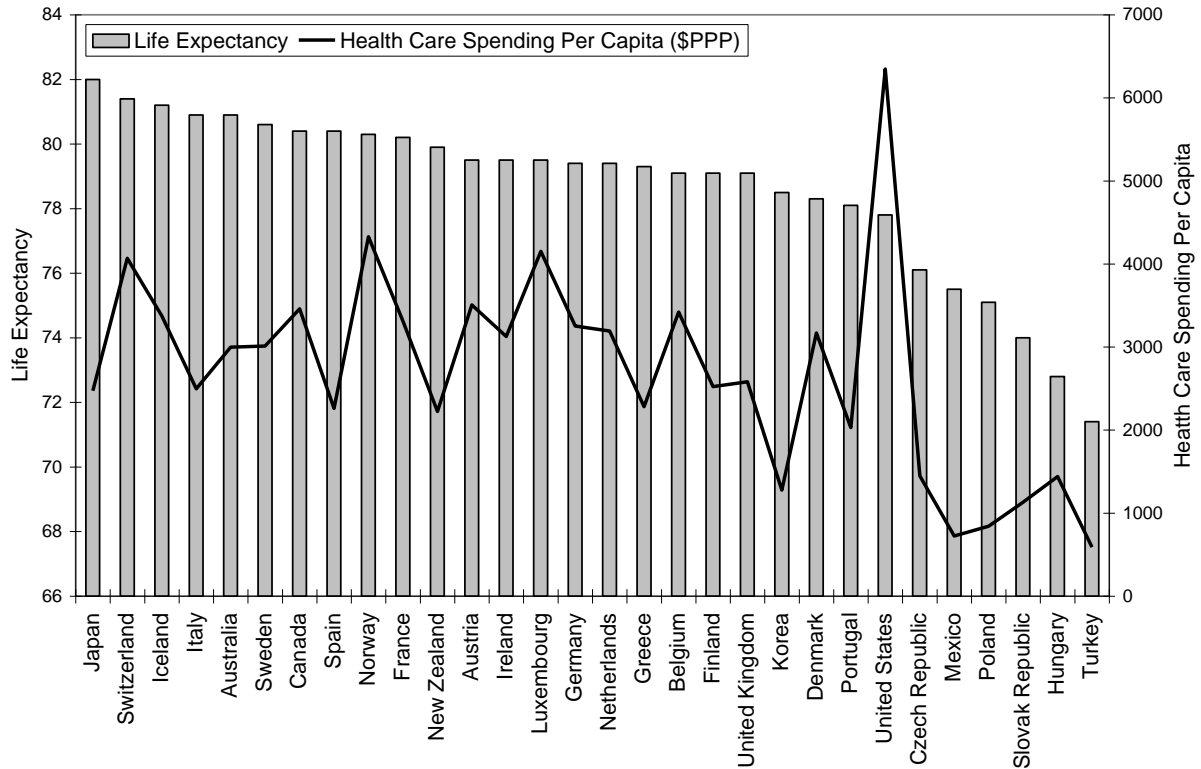
LICO: Low income cut offs.

Source: Reproduced from Eleanor M. Thomas, *Readiness to Learn at School Among Five-Year Old Children in Canada*, Research Paper, Statistics Canada, Catalogue No. 89-599-MIE, 2006, p. 11. <http://www.statcan.ca/english/research/89-599-MIE/89-599-MIE2006004.pdf>

To sum up, the evidence received by the Subcommittee shows that Canadians at the highest levels of education and income are the healthiest and lose fewer years of life to premature death than those with lower education and income levels. It has been estimated that if all Canadians had the same rate of premature death as the most affluent one-fifth of Canadians, there would be a 20% reduction in premature mortality across the population. This would be equivalent to wiping out all premature deaths from either cardiovascular diseases or injuries.⁶

⁶ *The Chief Public Health Officer's Report on the State of Public Health in Canada*, Public Health Agency of Canada, 2008, p. 67. <http://www.phac-aspc.gc.ca/publicat/2008/cpho-aspc/pdf/cpho-report-eng.pdf>

**CHART 6:
INVESTING MORE IN HEALTH CARE –
NO GUARANTEE OF BETTER HEALTH, OECD 2005**



Source: *OECD Health Data, 2008*, and Parliamentary Information and Research Service, Library of Parliament.

Moreover, and we heard this over and over again throughout our study, health is largely determined by factors outside the health care system. Perhaps more importantly, Chart 6 illustrates that spending more on health care is no guarantee for better health. For example, the Euro-Canada Health Consumer Index places Canada 23rd out of 30 in Total Index Score, and 30th out of 30 in Best Value for Money Spent. In other words, this index shows that Canada spends more money on health care to achieve worse results than the other countries surveyed.⁷ Clearly, a determinant of health approach is needed if Canada is to move forward in the economy of the 21st century. In fact, the Subcommittee strongly believes that we cannot afford not to.

⁷ Health Consumer Powerhouse and Frontier Centre for Public Policy, *Euro-Canada Health Consumer Index 2008*, FC Policy Series No. 38. <http://www.fcpp.org/pdf/EHCI2008finalJanuary202008.pdf>

4. THE CASE FOR ACTION, THE COST OF INACTION

(...) all private sector businesses have good reason to take action on the (...) determinants of health as they will inextricably benefit from healthier employees, customers, and communities generally. In fact, the essential business case for business engagement is about competitiveness, productivity and profitability. Governments and communities wishing to harness the capacity of corporate Canada to drive better health outcomes should recognize this fact and use it to align their efforts accordingly.⁸

Taking action on the determinants of health has the potential to improve population health outcomes by addressing the causes of illnesses and injuries before they occur. There are sound economic and social reasons to improve the physical and mental health of the population. The benefits of population health policy extend beyond improved health status and reduced health disparities to foster economic growth, productivity and prosperity. Good health enables children to perform well in school. Good health enables people to be more productive and higher productivity, in turn, reinforces economic growth. Healthy citizens are better engaged in their communities and this contributes to social cohesion and well-being. A healthy population requires less government expenditures on income support, social services, health care, and security. Simply put, Canada's health and wealth depend on the health of all Canadians.

In the current economic context, population health policy – which puts people's health, lives and well-being at its centre – represents a sound approach to economic recovery. With the economy slowing down, unemployment is on the increase and the living conditions of individuals and families are seriously threatened or already affected. There is a general feeling that there could be devastating long-lasting consequences on health and well-being with growing health disparities, income inequalities and housing and food insecurity. In this perspective, investing in population health should be an integral part of the discussions on economic recovery plans.

Good health is not only a key asset for economic development. In our highly civilized country, health for all must surely be a prime social goal – a responsibility of society as a whole. Health is a fundamental human need and, therefore, a basic human right. Good health is essential for individuals, communities and societies to function well. Therefore, health must be supported throughout all stages of life from conception to childhood through adulthood and old age. In addition, the Subcommittee believes that governments have a moral obligation to foster the social, economic, cultural and environmental conditions that empower individuals, communities and societies to create and maintain good health for all citizens. This is a major challenge that can only be tackled through population health policy, a whole-of-government approach that targets health disparities in all policies (education, social and cultural services, economic policy,

⁸ Conference Board of Canada's Roundtable of the Socio-Economic Determinants of Health, *Submission to the Subcommittee*, 29 June 2008, p. 3.

environmental policy, food policy, income support, housing and infrastructure, taxation, etc). Of course, this will require a profound structural change both in public policy and governments' approach to the development and implementation of public policy.

Certainly, adopting and implementing a population health policy is not without its challenges, but a lack of action will produce more challenges and even greater health disparities in Canada. A lack of action will be very costly in terms of direct health care costs, social costs related to welfare and crime, lost productivity and reduced quality of life. These costs are substantial, have a negative impact on the whole economy and must be borne by all levels of governments and individual households. This report invites all governments – from the federal to the local – as well as businesses, voluntary organizations, communities and citizens, to work together to improve health for all Canadians and reduce health disparities among various population groups.

One problem is that we see the cost of acting but we do not see the cost of not acting. Conditioning must be done to explain to the public that not addressing this problem, whether in social housing, income security or any of these elements, will make things worse down the road. The public says: Do I want my tax dollars going to that problem now? The answer is: Yes, otherwise, we will pay a bigger price.

Mel Cappe, President, Institute for Research on Public Policy, 26 February 2009 (1:22).

The Subcommittee strongly believes that spending on population health is an investment, not an expense. And it is a wise investment with short, medium and long term benefits. Obviously, any spending decision has an opportunity cost. Now we need to prioritize investments to address health disparities. This requires efficiency: making the best use of available resources.

PART II: HEALTH PAYS OFF – ACT NOW

1. WHOLE-OF-GOVERNMENT APPROACH

(...) population health in all the dimensions in which the Subcommittee is examining the issue is clearly a matter of great importance to the government and to the people of Canada. The idea of taking a whole-of-government approach to this important set of issues makes good sense, not least because so many different jurisdictions and institutional actors are in play.⁹

1.1 A Question of Governance

A population health approach requires addressing, in a coordinated fashion, the range of determinants that influence health. Within a single government, this requires a whole-of-government or horizontal approach that brings together different departments and agencies (education, finance, employment, health, environment, etc.). Concerted

⁹ Jim Mitchell, Co-Founder, The Sussex Circle, 26 February 2009 (1:14).

action, collaboration and coordination of efforts on population health – difficult as we realize that is to achieve – is imperative, because the Subcommittee believes it is unacceptable for a privileged country like Canada to continue to tolerate health disparities. It is also imperative in the current economic recession which may lead to a widening of disparities. Doing so, of course, will require a profound structural change in the government’s approach to the development and implementation of public policy. Even though the approach we recommend here does not yet exist, many of the essential components are already in place.

Throughout the study, we asked witnesses how the machinery of government must be structured to accommodate a whole-of-government population health approach within the federal government. How to break down the current silos and enhance horizontality were issues often raised. We heard repeatedly that leadership at the highest levels and from the central agencies is essential for a whole-of-government approach to be successful. Witnesses often mentioned the unique, whole-of-government policy adopted in England to reduce health disparities. The policy, whose implementation was led by the Prime Minister, involved 12 central departments and agencies together with a number of regional and local authorities. Through an interdepartmental spending review, the UK Treasury identified how public spending could best be applied to reduce health disparities. Another noteworthy example of interdepartmental cooperation and coordination is Australia’s approach to “Closing the Gap on Indigenous Disadvantage”; a new initiative led by Prime Minister Kevin Rudd. An Indigenous Affairs Committee of Cabinet has been established to set directions and it is chaired by the Prime Minister. The Cabinet Committee ensures coherent direction across government departments and agencies in the areas of community safety, early childhood, housing, education, health and economic participation.

(...) the critical factor is that the Prime Minister makes this issue a government priority and tells Canadians that it is a government priority.

*Jim Mitchell, Co-Founder, The Sussex Circle, 26 February 2009
(1:20).*

The question of who should chair a federal “Cabinet Committee on Population Health” was often raised by witnesses. The Hon. Monique Bégin, P.C., former Commissioner, WHO Commission on Social Determinants of Health, recommended that it be chaired by a powerful minister, preferably the Prime Minister or his/her deputy, or the Minister of Finance, but not by the Minister of Health. Other witnesses shared her views. Similarly, the Subcommittee strongly believes that the matter of who chairs the Cabinet Committee on Population Health is crucial since clear direction must come from the Prime Minister on actions to reduce health disparities.

Ministers of health have the biggest share of the government budget. The natural fear of imperialism, which at times is not only a fear but a reality, and the fact that the minister of health is the voice of the most powerful lobby of any society, in my humble opinion and experience, namely, organized medicine, play against these ministers.

*Monique Bégin 18 April 2008
(4:105).*

Above all, it is clear to the Subcommittee that no one disputes the importance of population health and the need to reduce health disparities. In our view, population health is not a partisan question either. All political parties are committed to reducing health disparities in Canada and, accordingly, this must be top priority on the government agenda. Therefore, the Subcommittee recommends:

That the Prime Minister of Canada take the lead in announcing, developing and implementing a population health policy at the federal level;

That a Cabinet Committee on Population Health be established to coordinate the development and implementation of the federal population health policy;

That the Prime Minister of Canada chair the Cabinet Committee on Population Health;

That the Cabinet Committee on Population Health comprise the relevant departmental ministers including, but not limited to: Human Resources and Skills Development, Indian and Northern Affairs, Finance, Health, Environment, Justice, Agriculture and Agri-Food, Industry, Public Health Agency, and Status of Women.

In a federation where population health policy cuts across federal/provincial/territorial (F/P/T) as well as regional responsibilities, there is a critical need for a coordinating structure to support and enhance consensus and collaboration. It is fair to say that different approaches and priorities across jurisdictions at F/P/T levels have been a constant element of the backdrop to population health policy development and implementation in Canada. The Subcommittee believes that the Prime Minister must, once again, show leadership and engage and support other levels of government in advancing the population health agenda across Canada. We believe that the approach we envision should be applied to all levels of government. Therefore, the Subcommittee recommends:

That the Prime Minister of Canada convene a meeting with all First Ministers to establish an intergovernmental mechanism for collaboration on the development and implementation of a pan-Canadian population health strategy;

That the Premiers announce, develop and implement in their respective jurisdiction a population health policy that is modelled on the federal population health policy;

That, in each province and territory, Premiers establish and chair a Cabinet Committee on Population Health.

In addition to the political leadership and coordinating structures needed to implement federal and provincial population health strategies and policies, many specific models and new mechanisms will be required to advance horizontal (at the federal level) and vertical (intergovernmental) initiatives. Witnesses before the Subcommittee identified many successful models that should be learnt from and, where appropriate, expanded to enhance interdepartmental and intergovernmental collaboration. Federal examples of these include Urban Development Agreements, which bring together federal, provincial and municipal governments to take comprehensive approaches to urban revitalization, Action for Neighbourhood Change, which united a number of federal departments around coordinated action for neighbourhood revitalization, and the Canadian Rural Partnership, which seeks to promote rural considerations across the federal government and in partnership with communities. Provincial examples include Healthy Child Manitoba, and ActNow BC, both of which we profiled in our interim report on F/P/T perspectives.

The lessons from these innovations must be more systematically captured and built upon if we wish to significantly enhance the ability of governments to achieve the degree of horizontal and vertical collaboration needed for population health. Because the Treasury Board of Canada Secretariat is the federal body which establishes the terms and conditions of funding agreements, the Subcommittee recommends:

That the Treasury Board of Canada Secretariat pro-actively undertake to enhance the range of models and resources available for the management of horizontal and vertical collaborations.

The Subcommittee acknowledges that a pan-Canadian effort to reduce health disparities requires both expert knowledge and connectivity. Expert knowledge is needed to support the Cabinet Committee on Population Health and connectivity is required to ensure appropriate links both horizontally and vertically. We believe that the Public Health Agency of Canada (PHAC), which reports to Parliament through the Minister of Health, is well-suited for this undertaking.

PHAC and Health Canada, prior to the Agency's creation, have for many years been at the forefront of research and policy, both domestically and internationally, on population health. Along with the formation of the Agency came the development of the Pan-Canadian Public Health Network which is comprised of federal, provincial and territorial representatives. With this history and these connections, the Agency is well-placed to act as a resource for the transfer of knowledge and effective connectivity that will be required by new collaborative and intersectoral approaches to population health and health disparities reduction. Therefore, the Subcommittee recommends:

That the Government of Canada increase funding to the Public Health Agency of Canada for the creation of a policy and knowledge node that will act as a resource for the implementation of population health and health disparities reduction policies and initiatives both

horizontally (at the federal level) and vertically (through intergovernmental collaboration).

Since most of the determinants of health play out largely at the community level, there is a clear role to be taken by local/municipal governments. Ideally, the same focus and energy on population health by federal and provincial/territorial governments should be applied by local/municipal leaders. We recognize, however, that municipalities have different capacities and resources. Therefore, the Subcommittee recommends:

That, wherever feasible, local /municipal governments across the country adopt and implement a broad population health approach within their boundaries and in collaboration with federal, provincial and territorial governments.

To this point, the Subcommittee has been looking at coordination from the top down. We, however, are convinced that coordination must also be implemented from the bottom up. A top-down commitment and bottom-up input into the delivery system would be a combination that would work. Coordination at the local or community level is discussed in Section 3 below.

1.2 The Need for a Vision

(...) a set of national health goals, provided they are not simply generalities but actually have some substance, would play a major and highly beneficial role in focusing health information development.¹⁰

The ultimate objective of the Subcommittee's recommendations calling for a whole-of-government approach to population health is better health outcomes and the reduction of health disparities. The overarching vision behind our approach, as stated previously, is to allow every Canadian to develop, live and contribute to society to her/his fullest potential. This, in turn, will increase productivity and strengthen prosperity for generations to come. But to have any force, this vision must be grounded in appropriate targets and benchmarks. As can be seen in the following paragraphs, much work has already been done in this area.

The findings of the international and pan-Canadian reviews of population health policy prepared for the Subcommittee suggests that tangible and measurable health goals, objectives and targets are essential components of a whole-of-government approach to population health. They support identification of the areas on which to focus attention, determine the data to collect and indicators to monitor, establish benchmarks, and enable progress to be measured and reported. In the countries profiled, some goals and targets focused on specific health outcomes (e.g., reduced mortality and morbidity), while others focused on the adoption of healthier behaviours; a few countries, like England and Sweden, set targets for the reduction of health disparities.

¹⁰ Michael Wolfson, Assistant Chief Statistician, Statistics Canada, 30 April 2008 (5:9).

In Canada, each province articulated health goals between 1989 and 1998, but by the end of the 1990s they were no longer being applied.¹¹ In 2004, an important step to advance the population health agenda was taken when Canada’s First Ministers agreed to commit to the development of “goals and targets for improving the health status of Canadians through a collaborative process with experts.”¹² A set of health goals was agreed upon by the F/P/T Ministers of Health in 2005. Goals were developed for each of the following four areas: basic needs in the social and physical environment; belonging and engagement; healthy living; and, a system for health (see table below).

HEALTH GOALS FOR CANADA	
<i>Basic Needs (Social and Physical Environments)</i>	<ul style="list-style-type: none"> • Our children reach their full potential, growing up happy, healthy, confident and secure. • The air we breathe, the water we drink, the food we eat, and the places we live, work and play are safe and healthy – now and for generations to come.
<i>Belonging and Engagement</i>	<ul style="list-style-type: none"> • Each and every person has dignity, a sense of belonging, and contributes to supportive families, friendships and diverse communities. • We keep learning throughout our lives through formal and informal education, relationships with others, and the land. • We participate in and influence the decisions that affect our personal and collective health and well-being. • We work to make the world a healthy place for all people, through leadership, collaboration and knowledge.
<i>Healthy Living</i>	<ul style="list-style-type: none"> • Every person receives the support and information they need to make healthy choices.
<i>A System for Health</i>	<ul style="list-style-type: none"> • We work to prevent and are prepared to respond to threats to our health and safety through coordinated efforts across the country and around the world. • A strong system for health and social well-being responds to disparities in health status and offers timely, appropriate care.

Source: *Health Goals for Canada – A Federal, Provincial and Territorial Commitment to Canadians*, October 2005, <http://www.phac-aspc.gc.ca/hgc-osc/home.html>.

¹¹ Deanna L. Williamson et al., “Implementation of Provincial/Territorial Health Goals in Canada,” *Health Policy*, Vol. 64, 2003, pp. 173-191.

¹² First Ministers Meeting, *A 10-Year Plan to Strengthen Health Care*, Ottawa, 14 September 2004, p. 9, http://www.scics.gc.ca/confer04_e.html.

Led by the Public Health Agency of Canada, the Health Goals were developed through a broad consultation and validation process involving provinces, territories, public health experts, stakeholders, and citizens who shared their knowledge and vision for a healthy Canada. Over 300 stakeholders and experts participated in 12 provincial and territorial roundtables, five thematic events, five regional deliberative dialogues and consultations with Parliamentarians. Beyond that, almost 400 individuals, groups, and organizations provided input via an e-survey or by holding their own consultations. This consultation process culminated in the drafting of goal statements, which were validated with government and non-government partners, public health experts, and stakeholders. Although impressive, this thorough consultation process did not evolve into a pan-Canadian strategy nor did it result in any measurable actions.

In light of the international evidence on the implementation of health goals and, despite the lack of progress in this area on the Canadian scene, the Subcommittee concluded in its *Issues and Options* paper “that health goals can aid in mobilizing resources to support population health initiatives, in monitoring and reporting progress, and in stimulating work on the development of health indicators and of health information systems.”¹³ We strongly believe that, if revived, the Health Goals for Canada framework, strengthened by benchmarks and indicators, can potentially serve as a mechanism to guide federal, provincial, territorial and local investments to enhance health. Therefore, the Subcommittee recommends:

I have to say, I do not think Canada needs to go and get new goals. We have goals. We need the indicators, we need the targets and we need the strategies of what, by when, by how. (...) So the overarching goal as a nation is that we aspire to a Canada in which every person is as healthy as they can be, physically, mentally, emotionally and spiritually, is the medicine wheel.

*The Hon. Carolyn Bennett, M.P., 11
June 2008 (7:80).*

That the Health Goals for Canada agreed upon in 2005 be revived and guide the development, implementation and monitoring of the pan-Canadian population health policy.

The Health Goals for Canada must be matched with appropriate indicators/targets on health disparities. Although there is currently no agreed upon national set of indicators of health disparities, work has been undertaken by the Population Health Promotion Expert Group to develop such a set of indicators. The Subcommittee is pleased that this F/P/T Expert Group has been tasked to develop coherent and comprehensive pan-Canadian indicators of health disparities. Therefore, the Subcommittee recommends:

That the Population Health Promotion Expert Group accelerate its work to complete within the next 12 months the development of a national set of indicators of health disparities;

¹³ Subcommittee on Population Health, *op. cit.*, p. 15.

That the indicators of health disparities be appropriately matched with the Health Goals for Canada.

1.3 Interdepartmental Spending Review

In England, the new whole-of-government policy on population health was initiated in response to a 2002 Treasury-led interdepartmental spending review which examined all government programs to identify how public spending could be applied to greatest effect on the reduction of health disparities. The results from this spending review informed departmental spending plans for the 2003-2004 through 2005-2006 fiscal years. Furthermore, the results generated mandatory commitments to actions to reduce health disparities.

At the federal level in Canada, there have been a number of government-wide exercises to review and reallocate expenditures since 2003. The government has explained that, because demands for resources are constantly evolving, programs need to be reviewed on a regular basis. Since there is already a review process in place, the Subcommittee believes that an interdepartmental spending review should be undertaken, similar to the 2002 UK Treasury review, to identify programs that influence health and to reallocate funding to programs that focus on health disparities. Therefore, the Subcommittee recommends:

That the Department of Finance, in collaboration with the Privy Council Office and the Treasury Board Secretariat, conduct an interdepartmental spending review with the aim of allocating resources to programs that contribute to health disparity reduction.

1.4 A Health Lens in all Policies

As noted previously, the most powerful of the determinants of health are not themselves within the purview of the health sector. In fact, policies made in sectors other than health have the greatest potential to improve (or worsen) population health and well-being and reduce health disparities. Accordingly, numerous witnesses stressed that these policies should be assessed for their potential impact on health prior to their implementation. Health impact assessment (HIA) is the formal approach used to predict the potential effects of a policy; particular attention can be also paid to the impact on health disparities. As such, HIA practice is useful in ensuring that health-related issues are considered in government-wide policy making.

In the 1997 Memorandum on Population Health, a recommendation was made to the federal Cabinet that HIA be applied to all federal policies and programs. Although this recommendation was endorsed, subsequent funding cuts impeded its implementation and only Health Canada moved forward to apply a population health lens to its programs and initiatives. Since then, Health Canada has published, in collaboration with the F/P/T Committee on Environmental and Occupational Health, the *Canadian Handbook on*

Health Impact Assessment.¹⁴ Similarly, the use of HIA has been promoted in a number of provinces and several provincial reports have recommended that HIAs be included in all Cabinet submissions. In 1993 in British Columbia, mandatory HIA was integrated in the formal process of policy analysis at the Cabinet level, but the practice was made optional in 1999 following a change in government.

In some countries, like Sweden and New Zealand, as well as in the province of Quebec, public health legislation has been employed to embed HIA as an integral component of governmental policy development. The Quebec legislation empowers the Minister of Health to issue proactive advice to other Ministers with the goal of promoting health and supporting policies that foster the health of the population. To assist other ministries in their use of HIA, the health ministry (*Ministère de la santé et des services sociaux du Québec*) produced its own HIA guide based on models developed in Europe and adapted to interdepartmental needs.¹⁵ To date, HIA in Quebec has been used, for example, to ban cell phone use in cars and to regulate asbestos mining.

During the Subcommittee's hearings, some witnesses referred to the current federal environmental impact assessment (EIA) process as an example of a successful impact assessment tool. A Cabinet directive calls for strategic environmental assessments to be conducted for any policy, plan or program proposal that is submitted to a Minister or to Cabinet for approval and that is likely to have important environmental effects, positive or negative. The directive also establishes criteria to help federal departments and agencies determine when such an assessment is appropriate, and offers guidance on its preparation.¹⁶ The Canadian Environmental Assessment Agency assists departments on improving their EIA capacity. The Minister of Environment is responsible for advising other ministers on potential environmental considerations of proposals before Cabinet decisions are taken, and for advising on environmentally appropriate courses of action. This does not constitute either a veto or an approval role. In performing their duties, all individual ministers adhere to the government's broad environmental objectives and sustainable development goals. Under the *Auditor General Act*, the Commissioner for the Environment and Sustainable Development is tasked with overseeing the government's efforts to protect the environment and promote sustainable development. The Privy Council Office also plays a role, as it must ensure that departments and agencies are compliant with the directive when they review proposals going to cabinet. As well, Environment Canada provides expert advice.

In its *Issues and Options* report, the Subcommittee stated: "The Subcommittee believes that HIA could be considered as one of the first steps towards the development

¹⁴ Health Canada, *Canadian Handbook on Health Impact Assessment*, 2004, http://www.hc-sc.gc.ca/ewh-semt/pubs/eval/handbook-guide/vol_1/index-eng.php.

¹⁵ Ministère de la santé et des services sociaux (Québec), *Guide pratique : Évaluation d'impact sur la santé lors de l'élaboration de projet de loi et de règlement au Québec*, 2006. <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2006/06-245-01.pdf>

¹⁶ Privy Council Office, *Strategic Environmental Assessment – The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*, 2004. http://www.ceaa-acee.gc.ca/016/CEAA-StrategicFinal_e.pdf

of population health policy. Such assessments would lead to a better understanding of how most public policies influence population health in one way or another. In our view, HIA is a practical way to judge the potential health effects on the population of a given policy, program or project and in particular on vulnerable or disadvantaged groups; it could maximize the positive and minimize the negative health effects of proposals coming forward from all sectors of government.”¹⁷

Significantly, on the basis of the testimony received, we believe that Canada already has the assets it needs to use HIA as a strategy for developing and implementing population health policy. In our opinion, legislation may not constitute the most effective means of institutionalizing HIA; it may also be a lengthy process. However, a Cabinet directive, similar to the EIA process, would be needed to impose HIA implementation. Therefore, the Subcommittee recommends:

That the Government of Canada require Health Impact Assessment (HIA) to be conducted for any policy, plan or program proposal submitted to Cabinet that is likely to have important consequences on health;

That the Privy Council, in collaboration with Health Canada, develop guidelines for implementing the Cabinet directive on HIA;

That the HIA guidelines be developed using existing material;

That the Government of Canada encourage the use of HIA in all provinces and territories.

2. DATABASE INFRASTRUCTURE

The whole-of-government approach to population health envisioned by the Subcommittee must rest on the development of a sound database infrastructure that will ensure the collection, monitoring, analysis and sharing of population health and health disparity indicators and an ambitious program of intervention research. All the countries profiled by the Subcommittee – Australia, England, Finland, New Zealand, Norway and Sweden – have established sound databases to collect and monitor indicators of health. National institutes of public health monitor and report regularly on population health in Norway, Sweden and Finland. The extent of health disparities is particularly well documented in England and New Zealand.

How does Canada compare in terms of collecting, monitoring and reporting on health outcomes and health disparities? The evidence obtained by the Subcommittee suggests that Canada has sound data on population health status by determinant and on health disparities. At the national level, reliable information is provided by Statistics Canada, the Canadian Population Health Initiative, the Public Health Agency of Canada

¹⁷ Subcommittee on Population Health, *op. cit.*, p. 16.

and Human Resources and Skills Development Canada, while several useful provincial sources of health indicators and health disparities are available including, to name a few, the Manitoba Population Health Data Repository, the Community Accounts in Newfoundland and Labrador, and the British Columbia Health and Wellness Survey. In addition, several community-based indicators of health and well-being are provided by government and non-governmental organizations including, for example, the Rural Secretariat (community information database), the Federation of Canadian Municipalities, the Atkinson Charitable Foundation and the Canadian Council on Social Development. Altogether, these sources of information are assets that can facilitate the development of the focused knowledge and evidence needed to move the population health agenda forward.

2.1 A Pan-Canadian System of Community Accounts

(...) Community Accounts is a fantastic resource. I cannot imagine my job without it; nor can I imagine any other province not having it. Community Accounts provides outstanding information that is very user-friendly, and the data can be very easily transferred into knowledge to help us better the health of our communities.¹⁸

The Subcommittee heard repeatedly that, while Canada has excellent national and provincial population health data and information, it lacks strong data at the local level. Since much of the intersection of policy domains that affect population health occurs at the local level, more local information is needed. Numerous witnesses suggested that the Newfoundland and Labrador Community Accounts (CA) could be a model for the national database infrastructure needed for the implementation of a broad population health policy. Nova Scotia has implemented a version of the CA (Community Counts) and Prince Edward Island recently established CA pilot projects (within the Quality of Island Life Cooperative). The CA also offers potential for Aboriginal communities and is in fact being considered as a database model by the First Nations Statistical Institute.

The CA is an Internet-based retrieval and exchange system that provides unrestricted, free access to view and analyze social, economic and environmental data (health, income, education, employment, production, resources, crime, etc.) from a variety of sources (Statistics Canada, government departments, hospital records, etc.) at the local, regional and provincial levels. The basic building block for geography across the various data sources under the CA is the postal code. The CA is administered by the Newfoundland and Labrador Statistical Agency and is maintained within the provincial Department of Finance. It has many users, including government departments, regional authorities, communities, academia and researchers, NGOs and individuals. The CA is a key supplier of the information necessary to monitor and evaluate progress made under various provincial public policy initiatives, including the Reducing Poverty Action Plan, the Provincial Wellness Plan and the Rural Secretariat.

¹⁸ Lisa Brown, Planning Specialist, Eastern Health, Newfoundland and Labrador, 21 May 2008 (6:121).

It is the view of the Subcommittee that the CA has been very successful in linking information about population health, community well-being, and economic development. We are particularly impressed by the progress achieved in Newfoundland and Labrador in the implementation of a sound population health database infrastructure and are pleased to see that Nova Scotia and Prince Edward Island have adopted a similar database infrastructure model. We believe that such a database is a key asset in the development and implementation of a pan-Canadian population health policy. Therefore, the Subcommittee recommends:

That the Government of Canada support the development and implementation of Community Accounts, modelled on the Newfoundland and Labrador CA, in all provinces and territories.

Another infrastructure system that offers tremendous potential for population health in Canada relates to the Electronic Health Records (EHRs) that are currently being implemented by Canada Health Infoway Inc. in collaboration with provincial and territorial governments. The EHRs contain patient health information and link various care providers within and between jurisdictions. Health information is vast and can include clinical reports, immunization data, dispensed prescription drugs, laboratory test results, diagnostic images, and past and current health conditions. As such, EHRs can provide the life course or longitudinal information that is needed for population health purposes – from pregnancy, to early child development, to schooling and adolescence, to the world of work, then retirement through old age. Moreover, like the CA, the EHRs can be aggregated and analyzed by postal code. Accordingly, numerous witnesses told the Subcommittee that there is a huge opportunity to link, for each Canadian, the data generated by emerging EHRs to a broader CA database infrastructure.

The potential exists for electronic health records to contribute to the data and information system components and could help form part of a foundation for a population health information system.

*Mike Sheridan, Chief Operating Officer, Canada Health Infoway Inc.,
27 March 2009 (3:44).*

Given the several existing national, provincial and local sources of information on health disparities, the Subcommittee often asked witnesses who should take the lead in facilitating the establishment, management and maintenance of a national database system built on the CA and EHRs. Numerous witnesses made the plea to not create more organizations but instead to establish a partnership among the key organizations. There was strong consensus that CIHI – the Canadian Institute for Health Information – has been a successful model of partnership in Canada. Though it is a small organization, CIHI has worked to build the bridges across many other groups working at the national level, as well as across the provinces and territories. The Subcommittee concurs with witnesses that CIHI has effectively been, for the last 15 years, the repository of health information, working in partnership with all provinces and territories. Its capacity and reputation are time-proven. The next step, in our view, is for CIHI to extent its partnerships with other key stakeholders in the broad population health field. Therefore, the Subcommittee recommends:

That the Canadian Institute for Health Information (CIHI) be designated as the lead in the development, management and maintenance of the pan-Canadian population health database infrastructure;

That CIHI immediately begin work to establish the necessary vertical integration of data with key partners.

Witnesses stressed that linking EHR data to the CA database, however, is highly sensitive from a privacy perspective. The

Subcommittee is aware that the right to privacy and confidentiality of personal health information is a very important value for Canadians. Now more than ever, Canadians need reassurance that their privacy and confidentiality will be respected in this era of rapidly advancing technology. However, there is a need to find a good balance between protecting the information of individuals and allowing the use of

information on a population group to inform public policies and strategies. The Subcommittee is aware that Statistics Canada has the strongest constitutional and legislative mandate of any organization in the country for these kinds of data linkages, as well as an unblemished record for confidentiality and privacy protection, and a history dating back to the 1960s for technical excellence and leadership in this area. Therefore, the Subcommittee recommends:

We must acknowledge that health information – and I say “information” because it is beyond health, it is social services and unemployment information – is a public good. (...) We must use all the information we collect on citizens in order to learn about the society; where we are, where we are going, how we are going, how we compare across the country and how we compare with other countries. That is critical in terms of effectively facilitating the collection of that information.

Jean-Marie Berthelot, Vice-President of Programs, Canadian Institute for Health Information, 27 March 2009 (3:56).

That Statistics Canada, in collaboration with Canada Health Infoway Inc., the Canadian Institute for Health Information and other key stakeholders, develop standards to facilitate the linkages between the Community Accounts and Electronic Health Records while ensuring the protection, privacy and security of personal information;

That work on the development of appropriate standards for the protection, privacy and security of personal information be completed within the next 12 months.

2.2 Population Health Intervention Research

The Subcommittee heard repeatedly that good public policy requires evidence of effectiveness, both prospectively during the phase of policy design, and on a continuing basis once the policy has been implemented. This evidence in turn depends on skillful and thoughtful analysis, which correspondingly must be grounded in appropriate data and information. Since knowledge about population health is incomplete, and will almost certainly remain so for the foreseeable future, policy development and implementation will inevitably occur in a milieu of incomplete knowledge of what works. For this reason, continuous monitoring and evaluation of policies and programs, with regular feedback to policy design, is essential. Over time, this type of research – often referred to as “population health intervention research” – will help increase our understanding about what policies and programs are effective in improving population health and reducing health disparities.

Now I want to turn to the second issue of investing in more population health research and enhancing the translation of knowledge. Here I want to stress that there are two things we can do, one of which I think would be a mistake. The mistake would be to invest mostly in learning about the general determinants of health outcomes. That is the easy road, but we already know a lot about this. What we need to do is fill the enormous gap in our knowledge of what public policy interventions work. This starts to sound like program evaluation, which it largely is, but it is unbiased program evaluation adhering to high standards of quality. It is also done to consistent standards of methodology so that one can have confidence in relative benefit-cost ratios of different interventions. In Canada we have underinvested by a substantial margin in unbiased, high quality, peer-reviewed, dispassionate effectiveness evaluation, especially in the population health field.

Cliff Halliwell, Director General, Strategic Policy Research Directorate, Human Resources and Social Development Canada, 14 May 2008 (5:12-13).

As the Subcommittee noted in its *Issues and Options* paper, it is not clear how much Canada spends on intervention research.¹⁹ Currently, a number of federal agencies and departments play a role in the direction, funding and design of population health research, including the Canadian Institutes of Health Research, Statistics Canada, the Canadian Institute for Health Information, Health Canada, the Public Health Agency of Canada (and its 6 National Collaborating Centres), other federal departments (such as Indian and Northern Affairs Canada, Human Resources and Skills Development Canada, Environment Canada, etc.) and other research granting agencies such as the Natural Sciences and Engineering Research Council of Canada (NSERC) or the Social Sciences and Humanities Research Council (SSHRC). In addition, there are multiple provincial departments, agencies and institutes involved in intervention research. However, witnesses stressed that current funding does not reflect the burden of health disparities and that more practical, evidence-based knowledge is needed about what improves the health of the population. The Subcommittee believes that intervention research is an essential component of a whole-of-government approach to population health. Therefore, we recommend:

¹⁹ Subcommittee on Population Health, *Population Health Policy: Issues and Options*, April 2008, p. 13.

That the Canadian Institutes of Health Research (CIHR) work in collaboration with relevant federal departments and agencies to assess current investment in population health intervention research and reach consensus on and determine an appropriate level of funding in this field;

That the Government of Canada increase its investment in population health intervention research to match the level agreed upon by CIHR and other relevant department and agencies;

That future population health intervention research funded by the government of Canada build on the capacity and strengths of existing networks and research centres and foster collaborative partnerships among municipal, provincial and federal research agencies as well as academic partners for a focused research agenda;

That the Government of Canada devise competitive operational funding mechanisms that will best support innovative, leading-edge research on population health intervention;

That the Government of Canada consider joint funding mechanisms for inter-provincial and international comparative research on population health interventions;

That the Government of Canada examine the eligibility criteria for human health research infrastructure funds in Canada and consider how these could be better aligned with population health intervention research involving implementation mechanisms in health and other sectors;

That population health intervention research on housing, early childhood development and mitigating the effects of poverty among Aboriginal peoples and other vulnerable populations be considered priorities.

3. ENGAGING COMMUNITIES

The surprising consistency with which health determinants emerged in our consultations with community-based organizations across Canada suggests that there is already an implicit consensus on these issues. It is safe to conclude that community-based organizations represent a rich resource just waiting to be tapped. The federal government can mobilize this resource by supporting communities to engage in intersectoral action (...).²⁰

Over the course of our study, the Subcommittee heard from a wide range of witnesses and received numerous briefs that proposed a variety of approaches to improving population health and reducing health disparities. But one critical factor was never in dispute: governments cannot act alone. The most effective actions to improve health and well-being, enhance productivity, foster social cohesion and reduce crime must be taken at the community level, and led by communities themselves.

We agree with the Chief Public Health Officer of Canada who, in his first report (2008), explicitly called for the strengthening of Canadian communities to address health determinants, noting that people living closest to the problem are often closest to the solution. The report stated that communities must be honoured and supported to develop their own locally-appropriate responses, building on existing knowledge, experience and energy. Interventions at the community level are most successful in reaching vulnerable populations, creating local networks, and leveraging resources. Similarly, a 2008 report published by the Canada West Foundation emphasized that the only long-term solution to street-level social issues is the prevention made possible by building strong and inclusive communities.²¹

The leadership has to come not only from the federal government – and I believe the federal government has a key role – but it has to come from the bottom as well. That is the only way this is going to work.

Debra Lynkowski, Chief Executive Officer, Canadian Public Health Association, 18 April 2008 (4:83).

How best to enable and support communities to take that initiative is a new role that governments are learning. Many of the recommendations in this report are designed to support the shift in this new role, including the way data is gathered and shared, how and what kind of research is undertaken, and why a whole-of-government approach is so vital. But for communities to be successful in their efforts, changes are also required in the way governments partner and support those initiatives.

3.1 Improving Reporting Requirements

A significant measure of success of the whole-of-government approach described in Section 1 will be the extent that communities are able to address complex issues with integrated,

²⁰ Canadian Mental Health Association, *Submission to the Subcommittee*, 2008, p. 5.

²¹ Canada West Foundation, *From the Ground Up: Community's Role in Addressing Street-Level Social Issues* (2008). http://www.cwf.ca/V2/cnt/publication_200810271452.php

intersectoral responses that are supported by a range of departments and agencies from different levels of government.

Because programs supporting the determinants of health span numerous departments, initiatives taking an integrated approach to action on the determinants of health could be eligible for funding from multiple sources. The report of the Independent Blue Ribbon Panel on Grant and Contribution Programs recommended that policies should encourage reporting in ways that meet the accountability requirements of all the federal programs involved, so that a recipient receiving funding from different programs can consolidate reporting.²² This may require legislative amendments to clarify concepts of ministerial accountability, but would permit Treasury Board to take a more holistic, responsive and coordinated approach to community investments.

Similarly, jurisdiction for the determinants of health extends across all three levels of government. For this reason, the Independent Blue Ribbon Panel report also recommended that the Treasury Board and its Secretariat, in cooperation with other orders of government, harmonize federal, provincial and municipal information, reporting and audit requirements for grants and contributions. Basing reporting requirements on existing instruments that strengthen accountability, not only to governments but also to the organization's primary constituency (its members or community), will reduce administrative burden and enhance local leadership. It is fair to say that harmonization of reporting and auditing requirements will clearly be facilitated by the implementation of Community Accounts across the country. Therefore, the Subcommittee recommends:

Current funding regimes and accountability actually work to curtail innovation.

*Katherine Scott, Vice-President,
Research, Canadian Council on
Social Development, 12 March
2009 (2:12).*

That the Treasury Board of Canada Secretariat review and revise grant and contribution reporting requirements among federal departments and agencies to enhance horizontal and vertical coordination of reporting.

3.2 Longer-Term Funding

Action on the determinants of health can often take many years before results are seen in terms of improved health status or reduced health disparities. The Subcommittee heard repeatedly that short-term, project-based funding as a principal source of revenue weakens community organizations by instilling insecurity and preventing long-term planning. Multi-year funding agreements, subject to annual appropriations by Parliament, would provide stability in the sector and reduce transaction costs for the government. Therefore, the Subcommittee recommends:

That the Treasury Board of Canada Secretariat encourage multi-year funding of projects that have multi-year timelines. The Treasury Board of

²² *From Red Tape to Clear Results: The Report of the Independent Blue Ribbon Panel on Grant and Contribution Programs*, December 2006, http://www.brp-gde.ca/pdf/Report_on_Grant_and_Contribution_Programs.pdf.

Canada Secretariat should also encourage multi-year funding among federal granting agencies, where appropriate.

3.3 Community Data and Research

The determinant of health framework presented in Chart 1 illustrates how population health is a complex, long-term and dynamic goal. A specific intervention that works in one community at one time may not work in another community or even in the same community at a later time. Each set of circumstances is unique, so local leadership is required to draw upon the experience of what has worked elsewhere, adapt it to local realities, constantly evaluate and learn what works.

This cycle of taking action, evaluating, learning and adjusting requires that community leaders have access to local data. Local data has to be extremely refined – down to the neighbourhood or postal code level. An analysis of data at the postal code or neighbourhood level can reveal shocking disparities between local areas – the differences in life expectancy between neighbourhoods in Montréal illustrated in Chart 2 above is just one example. Another was provided by Dr. Robert Cushman when he described differences between two Ottawa neighbourhoods – the Glebe and Dalhousie – which, despite their geographic proximity, are respectively among the richest and the poorest neighbourhoods in Ottawa. Since income is such a significant determinant of health, it should not be surprising that heart disease and diabetes are two to four times more common in Dalhousie than in the Glebe.²³ Regrettably, many cities across Canada also likely have similar contrasting neighbourhoods. Because of the large disparities, actions to improve health and reduce health disparities will almost certainly have to be tailored to the different realities of each neighbourhood, but those actions must be informed by easily accessible neighbourhood-level data, down to the level of the postal code.

That is another strength of the Community Accounts model recommended above – it puts data into the hands of local decision-makers. It also brings together data from a range of federal and provincial sources to one location, presenting a comprehensive picture at the local level. The data alone, however, is not sufficient. Local capacity also has to be in place to analyze and interpret that data into meaningful feedback that can guide decision-making about local initiatives on the determinants of health. Furthermore, intervention research that can uncover the essential characteristics of successful (and unsuccessful) initiatives will contribute to our understanding of what works and facilitate the useful transfer and application of those lessons to new settings.

The key to data analysis and research is that it should be done in a way that empowers communities and builds local capacity for action over the long term. This means building in funds for research and evaluation in any program agreement. It is this evidence-based system of learning and action that will be the foundation for improving population health and reducing health disparities. Therefore, the Subcommittee recommends:

That the Government of Canada include support for local analysis and evaluation capacity in the design of programs aimed at improving population health and reducing health disparities.

²³ Dr. Robert Cushman, Chief Executive Officer, Champlain Local Health Integration Network, 1st April 2009 (:).

The federal government plays an important role in direct support to local organizations and firms. More than 50 federal departments and agencies spend nearly \$27 billion each year through more than 800 grant and contribution programs.²⁴ Yet governmental funding structures, which are usually focussed on addressing specific issues, tend to fragment community strategies, isolating target populations and separating sectors of activity.

A number of initiatives have been undertaken in recent years to improve funding and accountability relationships between the federal government and the voluntary / non-profit sector, including the Voluntary Sector Initiative, the Task Force on Community Investments and the Independent Blue Ribbon Panel on Grant and Contribution Programs. These efforts have made some progress, but much more remains to be done. Two of the most fundamental changes that will be required to strengthen community capacity and support community-level action on the determinants of health involve improving reporting requirements and providing longer-term funding.

3.4 Coordinating or Integrating Services: Community Models that Work

Because population health is a complex and dynamic objective, coordinated action on many or all of the determinants of health at the local level is required in order to begin showing overall improvements in health outcomes. Once communities have the information and analysis necessary to properly identify and monitor the challenges they face, they must take a coordinated and strategic approach to act on those determinants locally.

Just as Canada is defined by a richly diverse social fabric, the coordinated or integrated approaches by which communities address health determinants can take many forms. The Subcommittee has been extremely impressed to learn about the wide range of successful initiatives contributing to good health, well-being, low crime and productivity in rural, urban, Aboriginal and other settings. New community-based practices, such as community economic development and the social economy, often address many of the determinants of health in a coordinated manner while empowering citizens. These integrated, locally based approaches consciously blend a range of social, economic and environmental objectives that can improve many of the determinants of health, especially for marginalized and minority groups. They are rooted in communities, depending on volunteer involvement and guided by citizens for the actions they take. It is worth mentioning a few examples here.

While in St. John's, Newfoundland and Labrador, the Subcommittee had the pleasure of visiting Stella Burry Community Services and enjoying a superb lunch at Stella's Circle restaurant. Stella Burry Community Services serves adults with social and emotional problems by: providing support and counselling to individuals who have experienced significant personal troubles such as abuse, addictions, violence and incarceration; developing affordable housing for low income individuals and families, and; offering training and skills development programs. Stella's Circle is a social enterprise started by Stella Burry Community Services in order to provide job creation and skills training opportunities in the food services industry, to offer low-cost meals to members of the Stella Burry community who are challenged to maintain good nutrition on limited incomes, and to act as a source of revenue generation for the organization.

²⁴ Report of the Independent Blue Ribbon Panel on Grant and Contribution Programs, *op. cit.*

Through the combination of these initiatives, Stella Burry is able to address many more of the determinants of health in an integrated manner for the population they serve.

Also while in St. John's, the Subcommittee learned about the Tamarack Institute's Vibrant Communities initiative. Vibrant Communities is a community-driven effort to reduce poverty in 15 cities by supporting collaborative local initiatives aimed at poverty reduction that engage the private sector and can improve numerous determinants of health. In St. John's, one of the Vibrant Communities' projects is the Citizen's Voice Network that meets regularly to share information, to learn, and collectively to impact policy-making and decision-making.

Social planning councils such as the Human Development Council in St. John, New Brunswick also make a valuable contribution in working with citizens and connecting community services to improve overall quality of life. The Human Development Council performs two key functions: an information role linking citizens to human services, and a proactive role developing solutions to meet community challenges.²⁵ The New Brunswick Premier's Community Non-Profit Task Force report insightfully advocates for more horizontal regional structures working through community organizations, with regional autonomy for service delivery, making flexibility easier and encouraging an integrated approach to individual and community issues.²⁶

Québec has a vibrant community sector, with a number of different structures helping facilitate coordinated local action. There are almost 50 Community Development Corporations that bring together community organizations from a range of different sectors to facilitate training, information sharing, and supporting joint responses to local social issues.²⁷ Linking social, economic and environmental determinants of health locally, fourteen Community Economic Development Corporations help communities develop and implement their own solutions to economic problems by mobilizing local residents, businesses and institutions.²⁸ The Québec Network of Healthy Cities and Towns inspired *Vivre St-Michel en santé*, a local action committee made up of residents, community groups, businesses and government agencies committed to revitalizing the Montréal neighbourhood.²⁹ *Vivre St-Michel en santé* led a year-long consultation, planning and research process that involved 400 community members and stakeholders, and resulted in a comprehensive community plan to improve social and economic conditions.

In Ontario, the Learning Enrichment Foundation is one of the oldest and largest community economic development organizations in the country. Located in a major reception area for immigrants arriving in Toronto, LEF has developed a range of programs and services as part of its holistic approach. Its programs include skills training in sectors corresponding to local employment opportunities, language instruction and literacy classes for newcomers to Canada, 18 child care centres, 16 before- and after-school programs, a kitchen which prepares 500 meals a day for agencies serving the homeless, training enterprises in woodworking and food service

²⁵ <http://www.humandevlopmentcouncil.nb.ca/>

²⁶ <http://www.gnb.ca/cnb/promos/nptf/index-e.asp>

²⁷ <http://www.tncdc.qc.ca/openfile.aspx?ID=196>

²⁸ <http://www.lescddec.qc.ca/>

²⁹ <http://www.vsmsante.qc.ca/site/index.asp?sortcode=1.1>

for at risk youth, a recruitment service for employers, a technology help desk, computer access sites, a training loan fund, several social enterprises and self-employment training and support.³⁰

Manitoba's Neighbourhoods Alive! program is a long-term, community-based, social and economic development program that supports and encourages community-driven revitalization efforts focusing on key areas such as housing and physical improvements, employment and training, education and recreation, safety, and crime prevention.³¹ Through citizen-led Neighbourhood Renewal Corporations and a range of other programs, Neighbourhoods Alive! works with the strengths and experience of local residents to build healthy neighbourhoods.

Saskatoon's Quint Development Corporation was founded in 1995 to strengthen the economic and social well-being of Saskatoon's five core neighbourhoods through a community based approach. Community residents form at least three quarters of Quint's Board of Directors, and guide the organization's work to improve the availability of affordable housing, support business renewal and provide employment development opportunities.³² A major new business renewal initiative is Station 20 West, a community enterprise centre that will bring together under one roof a range of businesses, services and organizations – from a library and health and dental care to groceries and household tools. It is hoped that this community hub will serve as a catalyst for the economic and social renewal of Saskatoon's core neighbourhoods.

Another important model is the Healthy Communities movement. Growing out of an international conference on healthy public policy in Toronto in 1984, there are currently provincial Healthy Communities organizations in several provinces, including Ontario, Québec and BC. In British Columbia, the BC Healthy Communities (BCHC) engages governments and community organizations to link initiatives and programs interdepartmentally and intersectorally in order to address the multiple determinants of health. BCHC also uses community facilitation, workshops, tool kits and small seed grants to support communities and community groups taking a holistic and integrated approach to improving health and well-being.

An area of connectivity that merits particular consideration is the local role of the health care system. Witnesses before the Subcommittee and our own international comparative research have confirmed that the most effective health services are those that have a strong primary health care system, connected to a broader range of health and social services. Proactive prevention programs can also have a significant impact of improving health and well-being and enhancing productivity.

Local medical and public health officials can also take a leadership role in building public understanding about the links between health determinants and population health, and support the collaborative relationships needed at a local level to address the determinants of health. An outstanding example of this role can be found in the Saskatoon

The "H" needs to stand for "health care" more than "hospital". My message to you is that we do not have enough resources in the community. We have to shift into the community, away from the institutions.

Dr. Robert Cushman, Chief Executive Officer, Champlain Local Health Integration Network, 1 April 2009 (:).

³⁰ http://lefca.org/index.php?option=com_content&task=view&id=1

³¹ <http://www.gov.mb.ca/ia/programs/neighbourhoods/>

³² <http://www.quintsaskatoon.ca/aboutquint.html>

Health Region's 2008 report on health disparities.³³ The Saskatoon Health Region assembled shocking but solid evidence of health disparities in the city, and then carried out over 200 community consultations with various government representatives, academics and community groups on that evidence. The report proposes a comprehensive and coordinated set of evidence based policy options that gathered substantial support through an extensive international literature review, a second round of over 100 community consultations and a telephone survey of 5,000 Saskatoon residents.

Quebec's network of CLSCs (Centre local de services communautaires) and community health centres that can be found in other provinces demonstrate how neighbourhood centres can bring together a range of services located under one roof. Our examination of the polyclinic model in Cuba left no doubt about what can be accomplished with very limited budgets through a strong primary care presence, rooted in neighbourhoods, addressing many of the determinants of health simultaneously. Cuban polyclinics take a multidisciplinary approach, ensuring the integration of science, knowledge transfer, parent and grand-parent education and community mobilization as part of a strong multidisciplinary primary health system. As part of their prevention mandate, they regularly undertake universal screening initiatives and strongly encourage immunization. They also serve as a site for both medical training and education – students in medicine and nursing receive a great part of their training in polyclinics, often the one to which they will become professionally attached after graduation. As part of an integrated community approach, polyclinics work closely with teachers in early child development, preschool and elementary schools, holding regular meetings (every six months) to discuss the overall mental and physical health of the children in the community. Neighbourhood councils ensure that services such as early childhood education programs are connected to local needs.

The integration or coordination of services at the local level can help streamline and simplify access, increase efficiency, and bridge traditional program boundaries. But ultimately, integration is a process – there is no one model that can be applied in all situations. It is, rather, a goal that must be tailored to each individual community setting. What is important is an emphasis on collaborative responses focused on local needs.

Internationally, Canada is lagging behind other jurisdictions in this regard. We can learn from our own successful examples and those in other countries, notably Sweden and the United Kingdom, to find the optimal mix of top-down and bottom-up policy models, balancing local flexibility with national accountability. Therefore, the Subcommittee recommends:

That the Government of Canada work with other levels of government and the non-governmental sector to support the integration or coordination of community-level services within a determinant of health framework.

³³ http://www.saskatoonhealthregion.ca/your_health/documents/PHO/HealthDisparityRept-complete.pdf

4. ABORIGINAL POPULATION HEALTH

*There is an enormous wealth of unrealized potential in Aboriginal communities whose development can be supported by the Government of Canada.*³⁴

Currently, Aboriginal Canadians – First Nations, Inuit and Métis – all have a health status that is well below the national average. The evidence obtained by the Subcommittee shows that the Aboriginal experience in Canada is unequal. There are striking disparities between Aboriginal and non-Aboriginal Canadians in most health determinants and the gaps are widening. In particular, the socio-economic conditions in which Aboriginal peoples live are often cited as being similar to those in developing countries. This situation is not only deplorable, it is simply unacceptable.

Aboriginal peoples historically and to the present day have really not been full participants in the nation state called Canada. As the political economy of Canada evolved, it became necessary to dislocate Aboriginal peoples from their traditional lands and their way of life in order to make way for settler societies. That is not my opinion; it is a matter of fact. The process of dislocation as a result of colonization meant that many Aboriginal people and communities were socially excluded from Canada. This led to marginalization in education and employment, housing, health care and many other services. This, in turn, effectively created a two-tiered society in Canada – one standard for Canadians as a whole and another standard for Aboriginal peoples.

Jeff Reading, Professor and Director, Centre for Aboriginal Health Research, 26 March 2009 (3:12-13).

The Subcommittee recognizes the unique interests and specific needs of each Aboriginal group – First Nations, Inuit and Métis. We also concur with witnesses that this is inclusive of all Aboriginal peoples, who may reside on reserves or settlements, in rural or urban areas, or northern and arctic regions. The Subcommittee’s approach to population health, with its focus at the community level, provides the flexibility to improve Aboriginal health and well-being while respecting social, cultural and local distinctions. We agree with witnesses who often stated that “One size definitely does not fit all.” We also strongly concur with witnesses that even the most challenged and disadvantaged communities have significant and sometimes astonishing strengths, capacities and assets that can be used to enhance their physical and mental health and well-being. Aboriginal perspectives on health and well-being offer rich, holistic models. While First Nations, Inuit and Métis groups each presented their own vision and diagram of holistic wellness, these share many common elements with the framework we have illustrated in Chart 1 above. Because of the fundamental importance of respecting social, cultural and local distinctions in Aboriginal population health policies and programs, the Subcommittee recommends:

That Aboriginal peoples – First Nations, Inuit and Métis – be involved in the design, development and delivery of federal programs and services that address health determinants in their respective communities.

³⁴ Conference Board of Canada’s Roundtable of the Socio-Economic Determinants of Health, *op. cit.*, p. 14.

The Subcommittee is aware that over 30 federal departments and agencies currently deliver some 360 federal programs and services to Aboriginal peoples and communities. These programs and services encompass health, lifelong learning, safe and sustainable communities, housing, economic opportunities, lands and resources, and governance relationships. The Subcommittee strongly agrees with numerous witnesses that these programs and services could be better coordinated and integrated with the view of addressing health determinants among the Aboriginal population. A whole-of-government approach, whereby the 30 departments and agencies work together in an integrated fashion, would be a first step in the reduction of health disparities between Aboriginal and non-Aboriginal Canadians. The current federal silos hinder Aboriginal communities from developing, at their own pace and according to their specific needs, a comprehensive approach to addressing the determinants of health. Breaking down these silos requires leadership from the top. Moreover, a population health approach is highly supportive of the Aboriginal belief that to be healthy one must achieve balance in all spheres – the spiritual, mental, emotional, physical and social.

In the Inuit world view, health, education and social conditions are all intertwined. It is a real challenge when you have departments that work pretty much in silos. (...) It is a real challenge for Inuit to work with a system that operates in silos.

Rosemary Cooper, Director of Executive Services, Inuit Tapiriit Kanatami, 25 March 2009 (2:41).

Witnesses told the Subcommittee that, following a formal apology to the “Stolen Generations” in 2008, the Australian Prime Minister took the lead in implementing “Closing the Gap on Indigenous Disadvantage.” The new approach rests on both new spending and redirected funding. Closing the Gap combines a whole-of-government approach at the Commonwealth level – the Indigenous Affairs Committee of Cabinet – with an intergovernmental mechanism – working in cooperation with the States and Territories – through the Council of Australian Governments (COAG). All governments together developed and adopted six main targets related to Aboriginal life expectancy, mortality rate, literacy and numeracy, employment, schooling, and early childhood.

It has been a year since the Prime Minister in Australia issued a statement on closing the gap. In Australia, there is a national effort to close the gap between the health status for indigenous Australians versus the mainstream. On the first day of Parliament every working year, the Prime Minister reports to Parliament on the progress the entire government is making on closing the gap.

Jeff Reading, Professor and Director, Centre for Aboriginal Health Research, 26 March 2009 (3:31).

In Canada, the Prime Minister noted in his apology on behalf of all Canadians to residential school survivors that this was a new beginning and an opportunity to move forward together in partnerships. The Subcommittee believes that for the federal government, now is the time to act. Narrowing and ultimately eliminating the troubling disparities between Aboriginal and non-Aboriginal Canadians is essential to improving the health and socio-

In Canada, June 11 will be the first anniversary of our Parliament’s apology to residential school survivors. The apology was not only about acknowledging the past but also about fundamental change. It is time to fundamentally change health systems and achieve real equity. My children and your children deserve nothing less.

Bob Watts, Chief Executive Officer, Assembly of First Nations, 25 March 2009 (2:32).

economic conditions of First Nations, Inuit and Métis. The approach adopted in Australia offers a very good model for Canada. Moreover, a number of pieces are already in place to move the agenda forward. In 2005, a process called the Canada-Aboriginal Peoples Roundtable resulted in a set of agreements between Aboriginal leaders and the Canadian governments, concerning standards of living and basic human rights. It set targets and allocated funding to reduce the disparities between Aboriginal communities and the general Canadian population. The degree of involvement of officials from the federal, provincial, and territorial governments, as well as Aboriginal leaders, communities, and organizations, was unique in Canadian history. The negotiations included: Inuit Tapiriit Kanatami (representing the Inuit); Métis National Council (representing the Métis); Assembly of First Nations (representing First Nations); Congress of Aboriginal People (representing urban and off-reserve Aboriginal peoples); Native Women's Association of Canada (representing Aboriginal women). The Subcommittee believes that Canada must build on this historical achievement and therefore, we recommend:

The Prime Minister noted in his apology on behalf of Canada to residential school survivors that this was a new beginning and an opportunity to move forward together in partnership. We are still waiting for movement. We believe that for the federal government, this is now the time to act.

*Rose Sones, Assistant Director,
Strategic Policy for Health and
Social Affairs, Assembly of First
Nations, 25 March 2009 (2:53).*

That the Prime Minister of Canada, as a first step toward the development and implementation of a pan-Canadian population health strategy, work with provincial and territorial Premiers, as well as with First Nations, Inuit, Métis and other Aboriginal leaders in closing the gaps in health outcomes for Aboriginal Canadians through comprehensive, holistic, and coordinated programs and services.

That the following health determinants be given priority: clean water, food security, parenting and early childhood learning, education, housing, economic development, health care and violence against Aboriginal women, children and elders.

Numerous Aboriginal representatives told the Subcommittee how current jurisdictional disputes over program funding and delivery impede timely access to needed services and supports. In this context, they told us the story of Jordan River Anderson, a First Nation boy who was born with complex health needs. As his family did not have access to the supports needed to care for him at their home on reserve, they made the difficult decision to place him in child welfare care shortly after birth. Jordan remained in hospital for the first two years of his life as his medical condition stabilized. Shortly after Jordan's second birthday, doctors said he could go to a family home. However, federal and provincial governments disagreed on which government and department would pay for Jordan's at home care. The jurisdictional dispute lasted over two years during which time Jordan remained unnecessarily in hospital. Sadly, the boy passed away before the jurisdictional dispute was settled. In honoured memory of the boy, Jordan's principle was enunciated. This "child first" principle aims to ensure that necessary services for a child are not delayed or disrupted by jurisdictional disputes. In December 2007,

the federal government endorsed Jordan's principle when it adopted Private Member Motion 296. Implementing this historic child-first policy, however, requires support from all levels of government. Moreover, the Subcommittee agrees with witnesses that this principle should be extended to Aboriginal Canadians of all ages who "fall between the cracks" in the many areas where federal jurisdiction interacts with provincial and territorial responsibility. Therefore, the Subcommittee recommends:

That the Government of Canada work with all provincial and territorial governments to implement Jordan's principle for all programs, initiatives and services that address the health determinants of Aboriginal peoples in all age groups.

The Committee also heard repeatedly that the Aboriginal vision of physical and mental health and well-being is rooted in the medicine wheel and that it incorporates the importance of self-determination. Some witnesses suggested that the Cuban polyclinic model could be easily adapted in many Aboriginal communities to provide integrated population health services and programs. Others noted that the development of Aboriginal community councils with structures similar in some ways to that of regional health authorities would help support Aboriginal peoples' legitimate desire to achieve self-determination in the field of population health. Still, other witnesses indicated that some Aboriginal communities already have in place structures and mechanisms to facilitate the development and implementation of population health policy. Therefore, the Subcommittee recommends:

That the Government of Canada, in collaboration with its provincial and territorial counterparts, as well as the appropriate First Nations, Inuit and Métis organizations, support and fund appropriate structures and mechanisms across the country that will facilitate the development and implementation of comprehensive, holistic, and coordinated programs and services that address health disparities in Aboriginal communities.

CONCLUSION

Canada has led the world in understanding population health and health disparities. In 1974, the Lalonde report revolutionized thinking about health. This was further amplified in 1986 by the Ottawa Charter for Health Promotion and the Epp report. The Canadian Institute for Advanced Research, through its Population Health Program and such publications as *Why Are Some People Healthy and Others Are Not?*, has been seminal in understanding the determinants of health and health disparities. However, in recent years, as the costs and delivery of health care have dominated the public dialogue, there has been inadequate policy development reflecting what we have learned about population health. In fact, Canada has fallen behind countries such as the United Kingdom and Sweden in applying the population health knowledge base that has been largely developed here.

This lack of action has led to a widening of health disparities in Canada. The Subcommittee believes that it is unacceptable for a wealthy country like ours to continue to

tolerate such disparities in health. We fear that disparities may widen even further with the current economic crisis, which is unprecedented in terms of its global reach and impact. For these reasons, we propose a set of recommendations to foster health for all Canadians, and in particular our most disadvantaged groups – First Nations, Inuit and Métis peoples. Our focus on the life cycle, combined with a community-based approach, can lead to tremendous gains in health, productivity and wealth. This is possible if all governments act strategically and in a coordinated way on the determinants of health, mobilizing communities, the business sector and all Canadians behind a vision of a healthy, just and prosperous future. With the leadership of the Prime Minister of Canada, together we can achieve better health and wealth within a generation.

**A Life Course Approach to the Social Determinants of
Health for Aboriginal Peoples'**

Jeff Reading PhD

for

The Senate Sub-Committee on Population Health

March 2009

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Synthesis

That population level factors which determine the health and well being for any collectivity have their origins is upstream historic, cultural, social, economic and political forces affecting the lives of Aboriginal Peoples' living in Canada, has been articulated for almost two decades.

Many determinants of health for Aboriginal peoples' are beyond the scope of the health care delivery system to provide such as: changing diets from traditional to non-traditional foods, food insecurity, stress due to economic factors, pollution and environmental degradation, global capitalism and others.

It is important to understand that words and their interpretation are very important in the discourse on determinants of health especially if the aim is to better understand the causes. Aboriginal Peoples' historically and to the present day, have not been full participants in the nation state called Canada. As the political economy of Canada evolved it became necessary to dislocate Aboriginal peoples' from their traditional lands in order to make way for settler societies. The process of dislocation as a result of colonization rendered many Aboriginal people and communities as socially excluded from the rest of Canada. The social exclusion led to marginalization in education, employment, housing, health care and many other services which effectively created a two-tiered society in Canada; one standard for Canadians and the other for Aboriginal Peoples'.

As difficult as this is to accept, there exists a plethora of evidence contained in this paper which proves that the Aboriginal experience in Canada is unequal. Aboriginal Peoples' experience greater health risk in almost every category measured which, in turn, leads to profound disparity for Aboriginal peoples especially the most vulnerable; namely, children and the elderly.

The social determinants are often referred to as the "causes of the causes". This means that disease, disability and death are influenced by individual risk factors such as smoking, obesity, substance abuse etc. Such risk factors have been criticized as blaming the victim as it is now understood that risk factors are socially embedded in the collective lives of individuals, families, communities, regions and nation states. Thus, disparities in the social determinants require social remedies.

End Poverty Now

Poverty eradication is the most important determinant of health, because it is through income that other determinants of health are purchased, such as adequate housing, access to health care services and education, potable water and nutritious foods etc.

In a recent report written by Drs. Charlotte Loppie Reading and Fred Wein (2009), commissioned by the Public Health Agency National Collaborating Centre for Aboriginal Health; Aboriginal Peoples experience health disparities that are simply not explained or understood using mainstream templates for what determines Aboriginal health. For example, when Aboriginal peoples' living off reserve were compared to non-Aboriginal peers, both groups

in urban settings and at comparable levels of low income; the Aboriginal group experienced significantly more major depressive episodes 21% versus 13% for their non-Aboriginal counterparts (Loppie Reading & Wien, 2009). There is something more than income and geography at play in this scenario. Interestingly, as income comparisons went from low to high for both groups, so to did the gradient in depressive symptoms which was reduced to statistical insignificance at the highest income level (Loppie Reading & Wien, 2009).

To explore the origins of health for Aboriginal Peoples', the unique context includes the socio-political factors, a holistic perspective of health with health optimization at each stage of the life course, from preconception to death.

Determinants were partitioned into 'proximal' factors including health behaviours, physical environments, employment and income, education and food insecurity. 'Intermediate' determinants were described as upstream to proximal and include systems of health care, education, community infrastructure, resources and capacities, environmental stewardship and cultural continuity. Finally, Loppie Reading and Wein (2009) discuss the most distal determinants including colonialism, racism, social exclusion and the need to *pursue self determination as a step toward population recovery*.

The goal is to optimize the developmental trajectory over the entire life course. The object is to address the complex interaction of health determinants across the dimensions of context and history which has led to modern day circumstances, in particular Aboriginal contexts, over the life course.

The proposal is for a community based population health model that would address the health determinants, facilitate and compliment a whole of government approach to Aboriginal population health at the Federal level. The model would need to *create a strategic alliance to connect the health determinants*.

According to the third report of the committee, over 30 Federal departments and agencies are delivering over 360 programs and services for Aboriginal peoples with more than half (190) available to all groups and the remainder available to particular groups (The Senate Subcommittee on Population Health, 2008). The 6 core areas for the proposed strategic alliance proposed here include education, community prevention and intervention, a special focus on mental health, housing, economic development and capacity investments to build a cadre of health professionals at all levels in development of a comprehensive Aboriginal health workforce.

Given that some 50% of the Aboriginal population is under age 25 years, it is logical to invest heavily in the health of the future generation while not ignoring the needs of the present. During early life from pre-conception health of the mother to the pre-natal and post natal periods; life is almost totally dependent on the mother. Whereas malleability of the infant/child is greatest in the earliest stages of life, spending on health, education and general well-being is inverse with the least amount spent in early life and the greatest investments made at the end of life.

The Regional Health Survey found that the social support and well-being of children is directly affected by the socio-economic status and educational attainment of their parents (First Nations Centre, 2005). Thus, education of children is one of the most obvious solutions. Longitudinal follow-up studies of 'Headstart' early childhood education programs have demonstrated that programs increase educational attainment, lower rates of social assistance, crime and teenage pregnancy.

Actions

Pursue a whole of government approach.

Support Aboriginal Peoples' legitimate desire to achieve self determination. In health services this means the development of Aboriginal led *regional health authorities* funded and supported by Federal and Provincial funds.

Seek commitment among Aboriginal political organizations, Provincial, Territorial and the Federal government; to a multi-year dialogue to explore common issues and agendas for action to improve Aboriginal health and well being.

Facilitate and accelerate the dissemination, transfer and translation of knowledge into potential applications and benefits through policies, interventions, services and products.

Encourage multi-lateral collaborative ventures among communities and institutions concerned with improving the health and well-being of Aboriginal peoples'. Promote multi-disciplinary, multi-institutional and multi-sectored collaborations and to build upon existing networks of policy makers and researchers to further develop capacities on Aboriginal peoples' health in areas of mutually shared priorities.

Finally, I leave the last word to the Senate Subcommittee on Population Health from its fourth report:

"The Subcommittee believes it is unacceptable for a privileged country like Canada to continue to tolerate such disparities in health"

(The Senate Subcommittee on Population Health, 2008).

THE BURDEN OF CHRONIC DISEASES AMONG ABORIGINAL PEOPLES IN CANADA

1. Introduction

According to international indicators of health, Canadians' health status is among the highest in the world. In spite of this, the well-being of Canada's Aboriginal population is comparable to that of many developing nations (Cooke, Beavon, & McHardy, 2004). This is exemplified by the increasing impact of chronic diseases on Aboriginal morbidity and mortality: while the impact of communicable diseases has declined in importance among Aboriginal populations, chronic diseases have emerged and grown into a significant health problem (Smeja & Brassard, 2000). Past and present studies have proven that Aboriginal Peoples in Canada bear a disproportionately higher burden of some chronic illnesses than do non-Aboriginal Canadians; almost one-third of Aboriginal people over the age of 15 report that they have been told by a health practitioner that they have a chronic health condition (MacMillan, MacMillan, Offord, & Dingle, 1996). For example, in 2000/01, 60.1% of the off-reserve Aboriginal population versus 49.6% of the non-Aboriginal population reported having at least one chronic condition (Tjepkema, 2002). Of particular concern are statistics that show a high prevalence of many of the core chronic diseases. The burden of disease and disease trends among Aboriginal populations will be explored for the six core chronic diseases or disease groups: (1) diabetes, (2) cardiovascular disease (CVD), (3) chronic respiratory diseases, (4) musculoskeletal conditions, (5) cancer, and (6) severe mental illness. In addition to this, the impact of chronic diseases on one's mental health, and co-morbidities between the various diseases will be reviewed.

2. The Burden of Diabetes in Aboriginal Populations

2.1 Definition of Diabetes and Impaired Glucose Tolerance

Diabetes is one of the most reported and documented chronic diseases in Aboriginal health because of its recent status as an 'epidemic' among Aboriginal Canadians. The discussion of diabetes, in an Aboriginal health context, largely refers to non-insulin dependent or type 2 diabetes mellitus.

2.2 Burden of Type 2 Diabetes in Aboriginal Populations

Diabetes is considered to be a 'new' disease in the Aboriginal population that has increased rapidly in its magnitude and extent. For instance, it is only in the last 50 years that type 2 diabetes has been detected in Aboriginal populations in Canada (Health Canada, 2000; Young, Reading, Elias, & O'Neil, 2000). A steady increase in the incidence and prevalence of diabetes in Aboriginal communities has caused researchers, policy-makers, and Aboriginal communities themselves to label diabetes as an epidemic among Aboriginal Peoples (Young et al., 2000). In addition to direct concerns about the prevalence of the two diseases, its disease management and the need for adequate prevention programs, there is concern about its severe complications and relation to other chronic diseases (Young et al., 2000). Such complications affect the circulatory system, eyes, kidneys, periodontal and nervous systems, and may result in premature mortality, disability, and compromised quality of life. A study done in Manitoba projected the future

magnitude of this problem and the cause for such concern: it estimated that between 1996 and 2016, due to diabetes alone, there will be a 10-fold increase in the rate of cardiovascular disease; a 5-fold increase in strokes; 10 times as many dialysis starts; 10 times the rate of lower extremity amputations; and 5 times the rate of blindness among Aboriginal people (Greene, Blanchard, & Wajda, 1999).

2.2.1 Prevalence of Diabetes in First Nations, Métis, and Inuit Communities

As the prevalence of diabetes has been found to vary according to ancestry, language group, cultural area, and geographic location (Delisle, Rivard, & Ekoe, 1995), many of the studies conducted on diabetes in Aboriginal populations are specific to a particular community, nation, tribal council, Aboriginal population, or province. As a result, the 1991 Aboriginal Peoples Survey (APS) is the only national data available that reports on the prevalence of diabetes in First Nations, Métis, and Inuit populations (Waldram, Herring, & Young, 2006). According to the APS' self-reported diabetes data, the prevalence of diabetes is lower in Inuit populations than it is in First Nations and Métis populations (Bruce, Kliewer, Young, Mayer, & Wajda, 2003).

As the North comes into greater contact with the South and major urban centres, Inuit communities are thought to be at greater risk for contracting 'Western' diseases, such as diabetes (Bobet, 1997; Bruce, 2000, 2000; Greene et al., 1999; Hegele et al., 1999; McIntyre & Shah, 1986; Montour, Macaulay, & Adelson, 1989; Young et al., 2000). The reality of this risk has been shown in the rapidly rising rates of diabetes among Inuit Peoples in Canada (Anderson, 2004; Young, Moffatt, & O'Neil, 1993): the prevalence of diabetes among the Labrador Inuit has climbed from 1.9% of the population in 1991 to 4% in 1999 (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). These recent changes support the argument that geographic isolation, later contact with European settlers, and a sustained traditional way of life, were protective factors for northern Aboriginal communities.

Although diabetes is a rising problem in the Inuit population, it has been more consistently reported as a chronic health concern for the First Nations population of Canada. However, the actual size and magnitude of the problem is still unclear. For example, the APS reported that the crude prevalence for diabetes in First Nations People was 6.4% and 8.5% for those living on- and off-reserve respectively (Bobet, 1998). In contrast, the 2002/2003 Regional Health Survey reported an age-standardized prevalence of 19.7% for First Nations People. When limited to those 55 years of age or older, the rate increased to 35% (First Nations Centre, 2005). Similarly, one in four on-reserve First Nations People over the age of 45 were reported as living with diabetes (First Nations Centre, 2004). What these later RHS numbers suggest is that the prevalence of diabetes among First Nations People may have increased since 1991. Reports from Manitoba, which are based on information gained from the provincial database on hospitalizations and physician visits, supports this hypothesis: a rising trend in diabetes prevalence can be observed since the 1990s among First Nations People (Green, Blanchard, Young, & Griffith, 2003).

While it has been documented that diabetes is a concern for all First Nations in Canada, it is important to reiterate regional and community variations. Regional or community data can provide more context-specific information and demonstrate the various dimensions of the problem. For instance, a study conducted among the Oji-Cree reported a shockingly high prevalence (40%) of type 2 diabetes and IGT; this represented the highest prevalence rate of any

subpopulation in the world and is five times that of the Canadian average (Harris et al., 1997).

Much less is known about diabetes among Métis Peoples, but rates are comparable to, or lower than, the rate in First Nations for most age-sex groups (Bruce, Kliewer, Young, Mayer, & Wajda, 2003; Health Canada, 2000). The national data, however, suggests that diabetes is generally higher among First Nations and Métis populations than the Inuit and the general Canadian population. While a smaller increase and a lower prevalence rate have been documented in the Métis population, the numbers are still higher than the national average: the crude prevalence of diabetes among Métis people was 5.5% in 1991, compared to 3.1% for the general population. According to the Métis National Council, the rate of diabetes among the Métis population as of 2006 is 5.9% (Métis National Council, 2006).

2.2.2 Gender stratification

In 1997, the rates of self-reported diabetes among First Nations men and women were reported to be, respectively, 3.6 and 5.3 times higher than among their age-sex matched non-aboriginal counterparts (First Nations Centre, 2004). While these differences demonstrate, once again, the divide between diabetes in Aboriginal and non-Aboriginal populations, they also point to the stratification of diabetes according to gender. Because this gender difference adds important information to the burden of diabetes among Aboriginal Peoples in Canada, relevant literature will be reviewed here.

In a study of two Algonquin communities in North-eastern Quebec (Delisle et al., 1995) and the Oji-Cree community of Sandy Lake in North-western Ontario (Harris, Caulfield, Sugamori, Whalen, & Henning, 1997), the prevalence of type 2 diabetes was reported to be as high as 80% among women aged 50 to 64 years. Figures reported on national data show that women represent roughly 2/3 of the First Nations people who are diagnosed with diabetes (Bobet, 1997); in the general Canadian population, the reverse is true, where diabetes prevalence is generally reported to be higher among males than females (Health Canada, 1999). In addition to experiencing an overall higher prevalence of type 2 diabetes, many Aboriginal women have been diagnosed with gestational diabetes mellitus (GDM) (Mohamed & Dooley, 1998).

GDM is defined medically as any degree of glucose intolerance experienced with the onset of pregnancy or that which is first recognized during pregnancy (Matthews, 2003). Some glucose tolerance is known to deteriorate in all pregnant women as a result of the physiological and hormonal changes that accompany pregnancy (Hod, 2003). And, in the Western world, the deterioration of glucose tolerance reaches a sufficient level to fulfill the diagnostic criteria for gestational diabetes in approximately 2-3% of pregnancies (Whitaker, Pepe, Seidel, Wright, & Knopp, 1998). Surveys in northern Quebec and Ontario have suggested that gestational diabetes may affect as many as 13% of pregnancies among Aboriginal women (Godwin, Muirhead, Huynh, Helt, & Grimmer, 1999; Harris et al., 1997; Rodrigues, Robinson, & Gray-Donald, 1999). It has been suggested that difficulties with the documentation of the prevalence rates for gestational diabetes might be contributing to the high rates of GDM observed in many Aboriginal communities: for example, the first-time diagnosis of type 2 diabetes during pregnancy, and not etiologic GDM, is counted within the numbers. However, some research has shown that just under half of all pregnancies in women 35 years and older are associated with either pre-existing type 2 diabetes or gestational diabetes (Harris et al., 1997). This information raises serious concerns about diabetes among Aboriginal women.

The prevalence rates, risk factors and outcomes of GDM between Aboriginal and non-Aboriginal women were directly compared for the first time in a Saskatchewan study (Dyck, Klomp, Tan, Turnell, & Boctor, 2002). This study reported that among residents within the Saskatoon District Health (SDH) region, the one-year prevalence rates for GDM were 3.7% for non-Aboriginal women and 6.4% for Aboriginal women. For residents outside SDH, GDM prevalence rates were 3.1% for non-Aboriginal women and 22.8% for Aboriginal women (Dyck et al., 2002). The greatest concern with GDM and maternal experiences of, or risks for, diabetes is the persistence of the disease beyond the woman's gestational period. For instance, a study in the Sioux Lookout Zone, reported that 70% of women diagnosed with GDM developed overt diabetes within 3 years (Mohamed & Dooley, 1998). This suggests a pressing need to target women's health and diabetes in Aboriginal communities.

2.2.3 The Childhood Burden of Diabetes

An increased prevalence of diabetes among a higher proportion of the younger Aboriginal population and an exaggerated prevalence of the early onset of diabetes in Aboriginal populations is a concern for Aboriginal children and youth. For example, a study documenting diabetes rates among the Haida Gwaii in British Columbia noted that 17% of adults age 35+ have type 2 diabetes (Grams et al., 1996). Comparisons between First Nations communities and the general population show that more than half (53%) of First Nations people living in First Nations communities with diabetes are 40 years or younger and 65% are less than 45 years (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). As evident in the traditional label of adult onset diabetes, type 2 diabetes has typically not been observed in youth (Health Canada, 2000). New cases in First Nations children, such as those detected among children as young as 5 to 8 years of age in the Island Lake region of north-eastern Manitoba (Dean, Mundy, & Moffatt, 1992) and in northern Ontario (Harris, Perkins, & Whalen-Brough, 1996) put this label into question. In addition, screening for diabetes in a remote northern Ojibwa-Cree community using fasting plasma glucose levels, found a high prevalence rate (3.6%) among females aged 10 to 19 years (Dean, 1998; Dean, Young, Flett, & Wood-Steiman, 1998).

In general, Aboriginals are younger than the general population at the time of diagnosis and the onset of complications, and suffer greater disease severity at diagnosis (Goulet et al., 2006; Health Canada, 2000; Ho, Gittelsohn, Harris, & Ford, 2006; Meatherall et al., 2005; Pohar & Johnson, 2007; Simpson, Corabian, Jacobs, & Johnson, 2003). Despite their younger age Aboriginal people also suffer from higher mortality rates, higher complication rates, higher hospitalization rates, and longer hospital stays (Goulet et al., 2006; Health Canada, 2000; Pohar & Johnson, 2007; Simpson et al., 2003). This causes grave concern for the health and well-being of future generations.

2.3 Understanding the Numbers Now and in the Future

The statistics available on diabetes among Aboriginal Peoples in Canada tell us that the distribution of diabetes among Canadian Aboriginals varies markedly according to gender, geographical area, language group, culture area, latitude, longitude, and degree of isolation (Boston et al., 1997; Health Canada, 2000; Jin, Martin, & Sarin, 2002; Macaulay et al., 2003; Travers, 1995; Young, Reading, Elias, & O'Neil, 2000; Young, Szathmary, Evers, & Wheatley,

1990). In general, the prevalence is higher in the south than in the north, higher among women than men, higher among the less educated, and higher among urban and acculturated Aboriginals (Bruce et al., 2003; Daniel, Gamble, Henderson, & Burgess, 1995; Health Canada, 2005; Jin, Martin, & Sarin, 2002; Travers, 1995; Young et al., 1990; Zimmet, Dowse, Finch, Serjeantson, & King, 1990). Despite what can be learnt from these numbers, a reliance on the number of reported diabetes diagnoses to determine prevalence rates can be questioned in terms of its reliability: because the onset of diabetes occurs an average 4-7 years before diagnosis, those currently diagnosed do not represent the total burden of disease (First Nations Centre, 2005; McKinlay & Marceau, 2000; Young et al., 2000). For example, in Manitoba, undiagnosed diabetes constitutes approximately one-third of all cases of diabetes (Bruce et al., 2003), and across Canada, the actual number of diabetics is probably 2 to 3 times greater (Health Canada, 2000).

Further, because diabetes is developing earlier and at higher rates in the Aboriginal population, the impact of this disease on the health of the next generations is worrisome. It has been postulated, for example, that if these trends remain unchanged that the number of Aboriginal people with diabetes in Canada will triple by the year 2016 (Jin et al., 2002).

3. The Burden of Cardiovascular Disease in Aboriginal Populations

3.1 Definition and Description of Cardiovascular Disease

Cardiovascular disease (CVD) has been noted to have the largest economic burden of any illness on Canada's health care (Health Canada, 2003, 2005; Lidgren, 2003). Since the 1960s, CVD has been decreasing in North America (Dorner & Rieder, 2004): much of the reduction in incidence and mortality has been attributed to lifestyle changes and behaviour modification, such as improving one's diet, exercising more frequently, and quitting smoking (Sytkowski, D'Agostino, Belanger, & Kannel, 1996). Despite such changes, CVD remains the leading cause of death in most Western countries (Dorner & Rieder, 2004). The economic, social, and personal health burdens related to CVD in Canada, therefore, make it an important chronic disease to discuss and examine with regards to its impact on Canada's Aboriginal population.

In an attempt to combat the current Canadian health crisis, a steering committee was created to develop the Canadian Heart Health Strategy and Action Plan (CHHS-AP) to set ambitious health targets for 2020 and produce recommendations for reaching those targets. One such target is to "end the CV[D] health crisis among Aboriginal/Indigenous peoples" by reducing the health burden of CVD on the Aboriginal population to parity with all other Canadians. Recommendations for achieving this target include: taking a partnership approach involving Aboriginal communities and government; creating a national Aboriginal Centre for chronic disease prevention and management; and helping Aboriginal peoples lead healthier lives through culturally appropriate means (Committee, 2009).

One must be careful when discussing CVD, as it is not just one disease. In fact, CVD refers to a heterogeneous class of diseases that concern the heart and/or circulatory system (Waldram et al., 2006). The most common type of CVD is coronary heart disease (CHD), also referred to as ischemic heart disease (IHD), or coronary artery disease (CAD). IHD is a condition in which fatty deposits accumulate in the cells lining the walls of the coronary arteries, which serve as the

heart's main blood supply. When fatty deposits gradually build up in the coronary arteries, the arteries become hard and narrow from atherosclerosis. Ischemia, which is a decreased supply of oxygenated blood to the heart muscle, develops from these conditions and can cause permanent damage to the heart. Complete blockage of the coronary arteries will lead to a heart attack (myocardial infarction) (Ontario Program for Optimal, 2001). While populations undergoing the transition from high to low rates of infectious diseases, such as Aboriginal Canadians, tend to experience decreasing rates of diseases such as rheumatic heart disease, which is caused by infection, they also tend to experience increasing rates of IHD, which results from lifestyle and socioeconomic changes (Waldram et al., 2006). Despite the interest in IHD, its causes, and its risk factors, data are often only available on CVD as a whole (Waldram et al., 2006). As such, this section will discuss the general prevalence of CVD and, wherever possible, refer to ischemic heart disease (IHD).

3.2 Burden of Cardiovascular Disease in Aboriginal Populations

While there has been a documented decline in IHD prevalence across the Western world (Dorner & Rieder, 2004), such a decline has not been observed in certain subgroups of the population, such as Canada's Aboriginal Peoples. Traditionally, Aboriginal Peoples have experienced a low prevalence of IHD when compared to their non-Aboriginal counterparts (Anand et al., 2001). However, recent political, social and economic changes experienced by many Aboriginal communities have resulted in significant nutritional and lifestyle changes, such as a more calorie-dense and sedentary lifestyle, (Anand et al., 2001) that have contributed to an increase in IHD prevalence (Anand et al., 2001; Shah, Hux, & Zinman, 2000; Yusuf, Reddy, Ounpuu, & Anand, 2001).

Higher rates of IHD in Aboriginal populations was first documented in national studies of mortality among First Nations communities in the 1970s and 1980s (Waldram et al., 2006). These studies found, however, that the rate of IHD was higher in females, but not in males (Mao, Moloughney, Semenciw, & Morrison, 1992; Mao, Morrison, Semenciw, & Wigle, 1986). In 1999-2000, the age-standardized mortality rate (ASMR) for all cardiovascular diseases was found to be slightly higher, but not a statistically significant difference, among First Nations people than it was among Canada's general population (Health Canada, 2003; Waldram et al., 2006). An increase in IHD prevalence among Aboriginal Peoples in Canada, however, was definitely documented in a study conducted among forty-one First Nations communities in Ontario (Shah et al., 2000). This study demonstrated that provincial hospital admission rates for IHD had more than doubled among the forty-one First Nations communities – from 76 per 10,000 persons in 1984 to 186 per 10,000 in 1995 – while declining for the rest of the province (Harris et al., 2002; Shah et al., 2000). Among Sandy Lake residents, admission to hospital for IHD increased from a rate of 34.8 per 10,000 to 109.1 per 10,000 in 15 years (Harris et al., 2002). A parallel trend was found in the admission rates for acute myocardial infarction (AMI or heart attacks) (Shah et al., 2000). Further, AMI rates among First Nations are about 20% higher than the Canadian rate (First Nations and Inuit Health Branch, 2000/2001).

Data from 1981 to 1997 demonstrated that hospitalizations for illnesses relating to circulatory disease more than doubled for First Nations population in Ontario during this time period (Shah, Hux, & Zinman, 2000), suggesting that circulatory disease has been increasing in importance as a major cause of morbidity. This hypothesis was corroborated when results from the 1997 RHS

found that heart disease is 3 times higher and hypertension 2.5 times higher among First Nations/Inuit than among the general Canadian population (First Nations Centre, 2004). Further still, statistics from the 2002/03 RHS, which documented self-reported heart conditions in First Nations communities, reported a prevalence slightly higher than that of the Canadian population (7.6% vs. 5.6%) (First Nations Centre, 2005). When controlled for specific age groups, First Nations adults were well above the Canadian average: First Nations adults 50 to 59 years of age had a prevalence of self-reported heart disease of 11.5% compared to 5.5% for the general Canadian population (First Nations Centre, 2005). While these statistics show that IHD poses an increasing threat for First Nations communities in Canada, the prevalence of CVD and specifically IHD in other Aboriginal communities is limited (Métis) and inconclusive (Inuit).

The challenge with understanding IHD in Arctic Native groups is that reports are conflicting. It has long been recognized and reported that IHD rates are lower than those of the general population (Bjerregaard & Dyerberg, 1988; Middaugh, 1990; Waldram et al., 2006; Young et al., 1993). The reasoning for these low rates compared to First Nations is often attributed to the typically remote location of Aboriginal communities: their traditional marine diet and way of life are often thought to have acted as protective factors (Dewailly et al., 2001). The reliability of the mortality statistics and other data used for these studies, however, has been questioned (Bjerregaard, Young, & Hegele, 2003). It is more accurate to say, therefore, that evidence documenting rates of CVD in Northern and Inuit communities is inconclusive. Bjerregaard, Young, and Hegele (2003) go on to say that there is a need to reassess the data on CVD in Inuit populations and re-evaluate the potential protective factors that a traditional diet can provide against rapid westernization and its related health risks.

As the concerns with Inuit CVD statistics demonstrate, and as is the case with all Aboriginal health issues, there are important regional and intertribal differences in CVD risk factors and disease rates. While the Inuit and Métis populations are important populations to target for future research, so too is the urban Aboriginal community (Yusuf, Reddy, Ounpuu, & Anand, 2001). This is because most of the current data on CVD come from Aboriginals living on reserves and, therefore, very little is known about the burden of disease among the off-reserve population (Yusuf et al., 2001). Therefore, studies that target all subsets of the Aboriginal population in Canada will be necessary to better understand the burden of cardiovascular disease among the Aboriginal population in Canada.

4. The Burden of Chronic Respiratory Diseases in Aboriginal Populations

4.1 Definition and Description of Chronic Respiratory Diseases

For this review, “chronic respiratory diseases” refers to any recurrent or persistent respiratory ailment related to the upper and/or lower respiratory system (i.e. the airways and other structures of the lung). Commonly cited chronic respiratory diseases are: asthma, chronic obstructive pulmonary disease (COPD), respiratory allergies, occupational lung diseases, chronic respiratory tract infections, tuberculosis, and pulmonary hypertension (World Health Organization, 2008).

In order to engage in a productive discussion of chronic respiratory tract infections in Canada’s Aboriginal population, this section will focus on five key conditions discussed in the literature, which pose a significant current or potential impact on the health and well-being of Aboriginal

Peoples in Canada. They are: (1) tuberculosis, (2) chronic otitis media, (3) chronic/recurring respiratory tract infections, (4) chronic obstructive pulmonary disorder (COPD) and (5) asthma. First, however, a brief overview of chronic respiratory disease in Aboriginal populations is provided below.

4.2 General Burden of Chronic Respiratory Disease in Aboriginal populations

Although chronic respiratory conditions are traditionally uncommon in First Nations communities (Sin, Wells, Svenson, & Man, 2002), Canada's Aboriginal population is adversely (and increasingly) affected by respiratory disease when compared with their non-Aboriginal counterparts (Mao et al., 1984; Mao et al., 1992; Mao et al., 1986; Morrison, Semenciw, Mao, & Wigle, 1986; Young, 1983). For instance, Canada's Aboriginal population is at an increased risk of death from respiratory diseases and experience an excess of morbidity (Fraser-Lee & Hessel, 1994). The risks for and burden of respiratory disease is especially profound for Aboriginal children: 13 out of 20 respondents in a survey of native children's health ranked respiratory illness as the most serious child health concern (Petersen, Singleton, & Leonard, 2003). A prospective study of children born in 1973 in Canada's north reported that respiratory illness accounted for 36% of infant deaths and was the leading cause of infant mortality (Orr, McDonald, Milley, & Brown, 2001). This statistic is compounded by the fact that infant mortality rate among Aboriginal Peoples is double the Canadian average (Sin et al., 2002).

4.3 Tuberculosis

Tuberculosis (TB) is a chronic bacterial infection that is spread through the air and usually infects the lungs (U.S. National Library of Medicine and the National Institutes of Health, 2005). Tuberculosis is classified as a chronic disease because individuals with TB remain infected for life. Since the development of treatment (antibiotics) and prevention (vaccines) for this disease, TB is largely thought to be a concern of the past. Unfortunately, this is far from the truth: about 2 million people die from this treatable (Health Canada, 2002) disease each year (Skeiky & Sadoff, 2006; World Health Organization, 2005). Not surprisingly, TB infection and mortality is most common in developing nations, where poverty, poor (or no) access to health care, and inadequate living conditions persist (World Health Organization, 2005). For similar reasons, Canada's Aboriginal population is still fighting this disease (Public Health Agency of Canada, 2002). As TB is the leading cause of death in HIV/AIDS-infected individuals (Grange, Story, & Zumla, 2001; Skeiky & Sadoff, 2006) and HIV/AIDS is a serious and increasing concern within Canada's Aboriginal population (First Nations and Inuit Regional Health Survey National Steering Committee, 1999; Ring & Brown, 2002; Spittal et al., 2002), the interactions between HIV/AIDS and TB, as well as their independent health risks, should continue to be of focus and interest for future research (Health Canada, 2002).

4.3.1 Adult Burden of Disease

Tuberculosis among Aboriginal Canadians reached epidemic proportions following their contact with European settlers, which began in the 16th century and carried on until the 20th century (Hoepfner & Marciniuk, 2000). The Public Health Agency of Canada (PHAC) has reported that TB incidence continues to follow patterns of colonization, which run on a gradient from south to north: tuberculosis rates are highest in the prairie provinces and the north, where contact with Europeans occurred after Aboriginal communities located in more southern regions (Public

Health Agency of Canada, 2002). Since the Aboriginal population was infected with TB later than the non-Aboriginal population of Canada, it is not entirely surprising that Aboriginal people continue to suffer a higher burden of this disease (Gaudette & Ellis, 1993; Wang, Noertjojo, Elwood, & FitzGerald, 2000). What is surprising is the increased disparity between the prevalence of TB in Aboriginal and non-Aboriginal populations.

Since the beginning of the 20th century, tuberculosis rates have fallen dramatically in Canada, and they continue to decrease today (Public Health Agency of Canada, 2002; Wang et al., 2000). However, rates of TB infection within Canada's Aboriginal population have not seen as significant a decline (Wang et al., 2000) and are now considerably higher than the Canadian average (Young & Casson, 1988). In 1970, the Aboriginal rate was twelve times higher than the non-Aboriginal rate, with 212 cases per 100,000 population compared with 17; by 1995, the Aboriginal rate was thirty-nine times higher, with 70 per 100,000 population cases versus 1.8 (Hoepfner & Marciniuk, 2000). In order to get a more accurate reading of the prevalence of TB in Aboriginal populations, data obtained by Health Canada between 1990 and 2000 was controlled for ethnicity. With such a control, it was demonstrated that Aboriginal incidence rates rise from 8-10 times to 20-30 times the Canadian-born, non-Aboriginal average (Health Canada, 2002).

These and other statistics documenting the high burden of disease in the Aboriginal population in Canada indicates that tuberculosis will be an ongoing concern for the future (Smeja & Brassard, 2000). In 1999, 16% of new active and relapsed TB cases that were reported to the Canadian Tuberculosis Reporting System (CTBRS) were from the Aboriginal population (Public Health Agency of Canada, 2002). This number is disproportionately high considering that Aboriginal people only make up 4.4% of the Canadian population (Statistics Canada., 2003). The fact that 92% of the Aboriginal cases were new active cases causes even more concern for the persistence and presence of the disease (Health Canada, 2002). The significantly younger age of Aboriginal people with TB, as compared with their non-Aboriginal counterparts, is also concerning for the future. The burden of TB experienced by Aboriginal children and youth is further discussed below.

4.3.2 Child and Youth Burden of Disease

In 2002, Health Canada reported that young Aboriginal adults (15-34 years of age) have the highest proportion of infectious tuberculosis cases and are at the greatest risk of contracting the disease (Health Canada, 2002). In addition to high youth rates, paediatric cases of TB in 1999 were observed to be 29 times higher in Aboriginal populations than in the general population (Health Canada, 2002). Although this reflects a decreased rate of infection from previous years (Health Canada, 2002), the critical numbers emphasize the magnitude of its impact on the younger generations.

A brief plateau in the rate of TB infection occurred during the 1980s; this was an anomaly to a decreasing trend occurring in the 20th century. In response to the sustained prevalence of TB in Canada in the 1980s, newborns were routinely vaccinated with bacilli Calmette-Guerin (BCG). Since this time, the BCG has become the world's most widely used vaccine, despite evidence of variable efficacy (0-80%) (Andersen & Doherty, 2005). Data from animal and human trials indicate that variances are related to pre-existing immune responses to antigens that are common to environmental mycobacterium and mycobacterium TB (Andersen & Doherty, 2005). In Cree

communities, BCG has been administered since 1982¹ (Smeja & Brassard, 2000). The efficacy of BCG in preventing pulmonary TB is still unknown, but meta-analyses suggest that its efficacy in preventing serious forms of TB in children can be up to 80% successful (Colditz et al., 1995). The absence of active TB and TB meningitis diagnoses among Cree infants since 1980 also provides some evidence for the protective effects of the BCG vaccination (Smeja & Brassard, 2000). However, Current thinking on the BCG vaccine is that it should only be administered to newborns with the highest risk, which includes many Aboriginal infants and those with HIV positive mothers (Colditz et al., 1995; Menzies, Tannenbaum, & FitzGerald, 1999).

4.4 Chronic Otitis Media

Otitis media is an inflammation or infection of the middle ear, which occurs when the Eustachian tube (the passage from the throat to the middle ear) is blocked (U.S. National Library of Medicine and the National Institutes of Health, 2005). This condition can be chronic or acute, suppurative or secretory (Med-Help, 2005). This review will focus on chronic otitis media, as its purpose is to study chronic respiratory problems in Canada's Aboriginal population. Since chronic suppurative otitis media (CSOM) is the most common form of infection, this is what chronic otitis media refers to in the rest of the document. While otitis media is not usually included in discussions of chronic respiratory diseases, it is related to the under-recognized area of chronic bacterial respiratory infections (Morris, 1998). It is specifically included here because of its prevalence in the Aboriginal population and because it is important to study it in the context of its respiratory etiology.

Chronic otitis media occurs when the Eustachian tube is repeatedly blocked or remains blocked for long periods of time; this may be the result of a lingering acute ear infection or persistent ear infections (U.S. National Library of Medicine and the National Institutes of Health, 2005). Prolonged or repeated infections can permanently damage the ear and cause partial or complete deafness (Med-Help, 2005; U.S. National Library of Medicine and the National Institutes of Health, 2005). Since ear infections are most common in children, chronic otitis media usually develops at a young age and persists into adulthood (Med-Help, 2005), causing considerable damage to the ear throughout the life cycle.

Chronic suppurative otitis media (CSOM) is uncommon in most developed countries, which is why it is often described as a disease of poverty (Coates, Morris, Leach, & Couzos, 2002). The World Health Organization (WHO) has defined a prevalence of 4% or greater for CSOM as a "massive public health problem" (World Health Organization, 1998). In many Aboriginal communities and populations in circumpolar regions (Martin & Macdonald, 1998), the proportion of children with CSOM is ten times the WHO's cut-off (Coates et al., 2002). In response to a high prevalence of otitis media among Aboriginal Peoples in North America in the 1960s, a mandatory notification program for severe cases of otitis media was introduced (Morris, 1998). A program to ensure continued surveillance of the disease is needed today (Morris, 1998) since otitis media is endemic among Canada's northern Inuit, First Nations, and Métis children: prevalence rates for these communities are sometimes reported to be as much as 40 times those found in non-Aboriginal urban communities (Bowd, 2005).

¹ From 1982 to 1989, BCG was repeated at age one if the child's annual tuberculin skin test (TST) was less than 5 mm; since 1989, BCG has only been given to children at birth.

Much of the research on otitis media in Aboriginal populations has been done in Australia. Although there are obvious geographic and cultural differences between Canada's and Australia's Indigenous populations, strong parallels can be drawn between their health status: Canadian Aboriginals bear a disproportionate burden of this disease comparable to their Australian counterparts (Coates et al., 2002), which is why trends from Australia have relevance for Indigenous peoples in Canada. In order to exemplify the prevalence of this disease in Aboriginal communities, a review of some important Australian studies is provided below. In the future, similar studies should be done in Canada in order to develop accurate and useful Aboriginal statistics.

In Australia, severe otitis media in rural Aboriginal children is part of the spectrum of chronic bacterial infections of the respiratory tract that burdens this population (Leach, 1999; Leach & Morris, 2001; Morris, 1998). The high rates of CSOM demonstrate the absolute burden on Australian Aboriginal health: 95% of Aboriginal children observed had otitis media, versus 30% of non-Aboriginal children (Boswell & Nienhuys, 1996).

The situation is even worse in rural and remote regions, where this chronic disease affects almost every child (Leach, 1999). In one rural Aboriginal community, all infants under three months of age were diagnosed with acute otitis media; a follow-up study indicated that the situation had not resolved itself by early childhood, as 60% of the cases developed into chronic otitis media (Leach, 1999). The long term impacts of this disease is further exemplified by a study in the Northern Rivers Area (a region in New South Wales, Australia), where among 61.08% of the children studied had middle ear problems of some type, 10.8% had unilateral hearing loss and 22.16% had bilateral hearing loss (Thorne, 2003). Since extremely high resultant rates of conductive hearing loss (>50%) were often attributed to this population's poor classroom success (Leach, 1999), this disease presents considerable physiological and sociological problems and challenges for the community.

Furthermore, Australia's National Trachoma and Eye Health Program (NTEHP) highlighted the prevalence co-morbidity of this disease among its Aboriginal population (Moran, Waterford, Hollows, & Jones, 1979): otitis media was the most common bacterial respiratory disease diagnosed by health officials and was associated with extremely high rates of pneumonia, meningitis, and bronchiectasis in the Aboriginal population (Gandevia, 1967; Hanna & Torzillo, 1991; Maxwell, 1972; Torzillo et al., 1995; Torzillo, Waterford, Hollows, & Jones, 1983). A similar association was documented for Indigenous people in Papua New Guinea, where early infections in the nasopharynx and high rates of pneumonia were linked to a high prevalence of otitis media (Gratten et al., 1986; Montgomery et al., 1990).

Despite the lessons that can be learned from Australia's research in this area, it is important to consider the particularities of the burden of chronic otitis media among Canada's Aboriginal population. This means developing targeted, focussed studies to assess the incidence, prevalence, and overall burden of the disease.

4.5 Chronic/Recurring Respiratory Tract Infections

An acute respiratory tract infection (Jacono, Jacono, Cano, Segami, & Rubin, 1996) can affect one or both of the upper and lower respiratory systems and can be a short-lived, persistent, or

recurrent condition. The most common respiratory tract infections are bronchitis, bronchiolitis, pneumonia, pneumonitis, and croup (Kurzius-Spencer, Wind, Van Sickle, Martinez, & Wright, 2005).

For reasons largely unknown, Aboriginal children tend to have an increased risk of developing respiratory tract infections (Evers, Orchard, & McCracken, 1985; Harris, Glazier, Eng, & McMurray, 1998; Orr et al., 2001; Sin et al., 2002): over 90% of native children studied experienced a lower respiratory infection² within their first year of life (Petersen et al., 2003). Although no comparison to a Caucasian population was given in this study (Petersen et al., 2003), other studies demonstrate that Aboriginal children have greater respiratory concerns than their non-Aboriginal counterparts. For example, Evers et al. (Evers et al., 1985; Evers & Rand, 1982, 1983), who extensively examined the impact of acute respiratory infections (ARI) on Aboriginal and non-Aboriginal populations in South-western Ontario, found that despite the affluence of the Aboriginal communities studied³, the incidence of lower respiratory disease among First Nations children was almost three times that of the non-Aboriginal population (Evers et al., 1985). A population-based study of infants and young children in North-western Ontario documented similar findings: respiratory tract infections were reported to be the main cause of illness in this population, and Aboriginals were more likely to report respiratory conditions than the non-Aboriginal children studied (Harris et al., 1998). More specifically, the incidence of pneumonia has been reported to be 17 to 18 times greater for native children under the age of two than for non-native children (Evers & Rand, 1982, 1983). As Inuit populations in Canada demonstrate similar trends for lower respiratory problems, it is reasonable to assume that all of Canada's Aboriginal peoples experience a high risk of upper and lower respiratory tract infections (Fraser-Lee & Hessel, 1994; Koch et al., 2003).

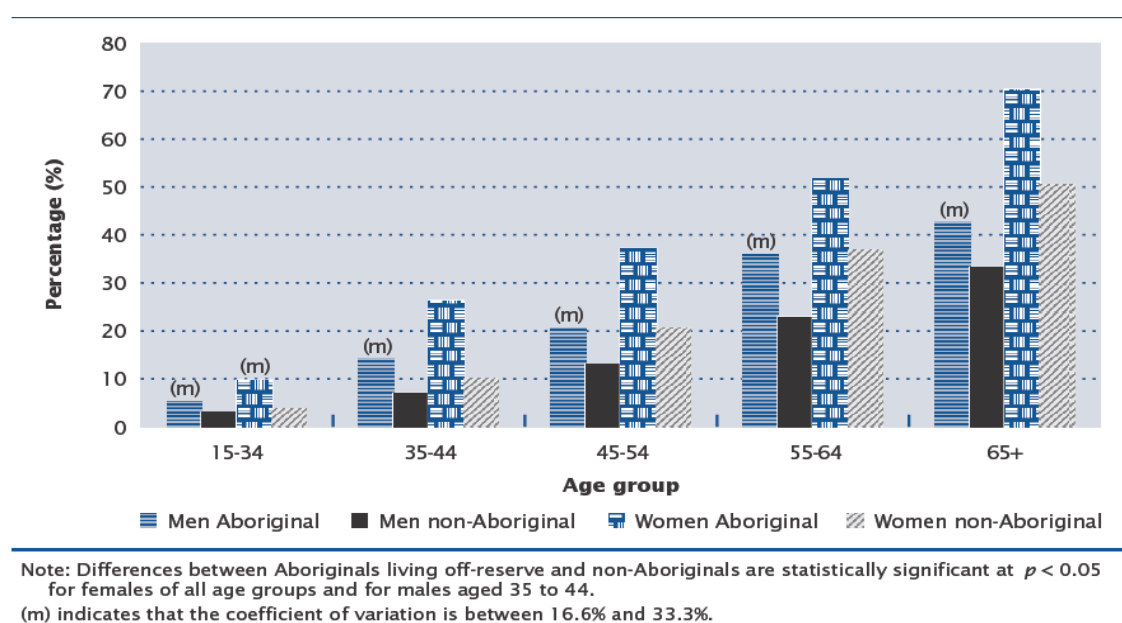
The prevalence of ARIs in Aboriginal children is worrisome because these infections have the potential to develop into chronic conditions: respiratory infections weaken the pulmonary system, which can cause permanent lung damage and lead to the development of chronic conditions (Anto, Vermeire, Vestbo, & Sunyer, 2001). The risk of Aboriginal Peoples developing chronic respiratory conditions from ARIs is evidenced by the tendency for Status Indian children to have multiple episodes of pneumonia and bronchitis (Fraser-Lee & Hessel, 1994). Within the first two years of life, Aboriginal children experience repetitive bouts of pneumonias, bronchiolitis, and are routinely hospitalized for respiratory complications (Petersen et al., 2003). Although these often improve after the age of two, recurrent wheezing and chronic coughing has been shown to continue throughout life (Petersen et al., 2003). Evidence for a link between infections and chronic disease was reported in a recent study of Alaskan natives, when 40% of the children studied showed signs of respiratory infections and chronic respiratory disease (Lewis et al., 2004). A study of young Indigenous children in New Guinea made similar observations: a significant relationship was found between the presence of early respiratory infections and the subsequent onset of asthma (Anderson, 1978).

² "Lower respiratory tract infection" refers to bronchitis, bronchiolitis, or pneumonia.

³ The communities studied were reported as having much higher living standards and greater access to medical care than other aboriginal regions in Canada.

4.6 Chronic Obstructive Pulmonary Disease (COPD) and Asthma

Chronic obstructive pulmonary disease (COPD) is identified by a patient's "shortness of breath, cough, and sputum production" (Cardinal, 2004); its long-lasting course is characterized by an irreversible decline of forced expiratory volume in one second (FEV1), increasing presence of dyspnoea and other respiratory symptoms, and a progressive deterioration of health status (Cardinal, 2004). COPD's broad impact on the respiratory system means that it often overlaps with other respiratory conditions, such as chronic bronchitis, emphysema, and asthma that share common symptoms and have co-morbid interactions (Anto et al., 2001). Nonetheless, this respiratory problem, alone, has been noted as a leading cause of mortality and disability world-wide: approximately 5-15% of adults in industrialized countries have COPD (Anto et al., 2001), and the numbers continue to grow. In 1990, COPD was the twelfth known cause of combined mortality and disability world-wide: by 2020, it is expected to rank fifth (Anto et al., 2001). As such, this disease will require comprehensive hospital and community health services in Canada.



Asthma shares many similar symptoms, risk factors, and treatment methods with COPD (Anto et al., 2001), which is why they are often grouped together. However, it is important to identify them as separate chronic diseases. By definition, "asthma is a chronic health disorder characterized by symptoms of cough, shortness of breath, chest tightness, and wheeze" (Cardinal, 2004). Asthma is the most common chronic disease afflicting children today (Lewis et al., 2004), and the prospects of this disease are not promising: childhood asthma is increasing in prevalence and severity, especially among children 5 years of age and younger (Woolcock & Peat, 1997). Historically, asthma has not affected Aboriginal Peoples, but its increasing prevalence in Aboriginal populations today demonstrates that these communities are becoming very vulnerable to the disease (Downs, Marks, Belosouva, & Peat, 2001; Liu et al., 2000; Sin et al., 2002).

The prevalence of asthma in Canada's Aboriginal population has been progressively explored since Houston et al. (Houston, Weiler, & MacKay, 1979) reported a high prevalence of chronic

cough and bronchial wall thickening among native children, as compared to white children, in northern Saskatchewan (Kurzius-Spencer et al., 2005). Recent studies of American and Canadian Aboriginals have shown that Aboriginal people are considerably burdened by asthma (Lewis et al., 2004; Liu et al., 2000; Sin et al., 2002): Aboriginal children in their first year of life have rates of hospitalization for asthma and bronchiolitis that are two to three times the rate of non-Aboriginal children (Lewis et al., 2004; Liu et al., 2000). In connection with asthma, native children have also reported higher hospitalization rates than non-native children for wheezing and breathing problems (Liu et al., 2000; Sin et al., 2002).

Within Canada, Aboriginal-specific research will be needed to create new policies and programs aimed at reducing the burden of COPD and asthma, since studies on Aboriginal peoples report that this population is 2.1 times (95% CI 2.0, 2.2) and 1.6 times (95% CI: 1.6, 1.6) more likely to have an emergency hospital appointment and office visit for asthma or COPD, respectively, as compared with their age-matched, sex-matched non-Aboriginal counterparts (Sin et al., 2002). The fact that Aboriginal people were also 55% (95% CI: 52, 58) less likely to see a specialist and 66% (95% CI: 63, 70) less likely to undergo spirometry for these conditions than non-Aboriginal people (Sin et al., 2002) raises significant concern about the adequacy of health services and health policies in Canada.

5. The Burden of Musculoskeletal Conditions in Aboriginal Populations

5.1 Definition and Description of Musculoskeletal Disease and Disorders

Musculoskeletal diseases and disorders have been identified as the most common cause of severe pain and disability (Lidgren, 2003). As a result, they place a massive burden on societies and health care systems around the world (Lidgren, 2003). In Canada, musculoskeletal diseases and disorders account for 10.3% of the total economic burden of illness: second only to cardiovascular diseases (Canada, 2003, 2005; Lidgren, 2003). The economic burden of these diseases is only expected to increase as the Canadian population increases (Lidgren, 2003). As such, musculoskeletal conditions are a timely and relevant topic to discuss. The incidence and prevalence of these diseases in Aboriginal populations is important to consider, as the Aboriginal population also ages and as chronic diseases become a more prominent feature of Aboriginal health.

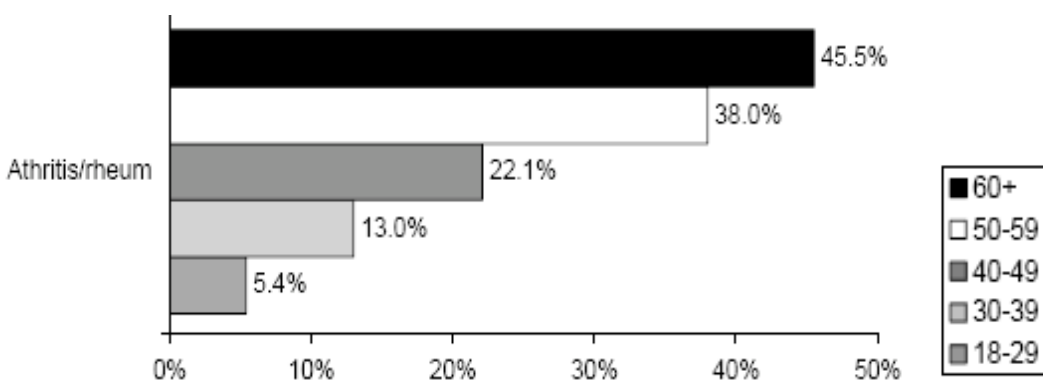
In order to begin to examine and discuss the burden of musculoskeletal diseases and disorders in Aboriginal populations, it is important to be clear as to what this title encompasses. Classification of musculoskeletal diseases and disorders has changed over time, making it difficult to determine the availability and reliability of information and certain diseases and disorders (Jacobson, 1994). For example, according to a 1989 WHO report, there were over 100 diseases and disorders of the musculoskeletal system, which were referred to as ‘rheumatic diseases’ and characterized by inflammation of the connective tissues, especially the muscles, joints, and associated structures (Britannica., 2006; WHO, 1989). However, the modern disease classification (ICD-10) does not include such term as ‘rheumatic diseases;’ instead, musculoskeletal diseases and disorders are classified according to the affected organ (ICD-10, 2006). Alternatively, some researchers use the 1958 ACR (formerly, the American Rheumatism Association) criteria in their studies, while others used 1987 ACR criteria. While still debated it seems that the term “musculoskeletal diseases and disorders” includes nearly 150 different

diseases and disorders (Lidgren, 2003).

Out of these many diseases and disorders, arthritis is the most common and most prevalent. At its most basic level, arthritis means inflammation of the joints: ‘arth’ meaning joint, ‘itis’ meaning inflammation (Canadian Arthritis Society, 2004). It would be overly simplistic, however, to assume that arthritis is one condition when, in fact, there are a number of different types of arthritis (Canadian Arthritis Society, 2004). Two of the most common arthritic conditions are rheumatoid arthritis and osteoarthritis (Canada, 2003; Canadian Arthritis Society, 2004). Other common types of arthritis discussed in the literature include: spondyloarthropathies and arthropathies associated with systemic lupus erythematosus and gout (Canada, 2003). While there are many different types of arthritis, much of the literature reports on the prevalence of musculoskeletal conditions using the general heading “arthritis/rheumatism:” this label is used to refer to the collection of painful joint disorders that range from those related to wear and tear of cartilage (i.e. osteoarthritis) to those associated with inflammation resulting from an immune disorder (i.e. rheumatoid arthritis). Because of this often dual reference, it is often difficult to separate these two conditions. As such, an examination of the burden of arthritis is based on general information about chronic arthritic conditions (including rheumatoid arthritis). The specific burden of rheumatoid arthritis, however, will not be discussed separate from the general discussion of arthritis, as its etiology is largely unknown and because it is likely a result of infection is largely considered to be preventable and not predisposed to risk factors across the life course. More general understandings of arthritis as a preventable condition make this general term more appropriate to discuss, as is the specific burden of osteoarthritis. In addition to the general burden of arthritis and osteoarthritis, osteoporosis will be discussed. Osteoporosis is often discussed in tandem with arthritis because it is also a condition of the bones. Rather than the characteristic inflammation and joint damage of arthritis, osteoporosis is characterized by very low bone mass that leads to an increased risk of atraumatic or low impact fractures (Dictionary, 2002; ICD-10, 2006).

5.2 Burden of Arthritis in Aboriginal Populations

In the general Canadian population, arthritis is one of the most prevalent chronic conditions in Canada and the number one cause of disability and health care utilization (British Columbia, 2001; Canada, 2003; WHO, 1989). Arthritis has also been cited as the most common chronic condition in Canada’s Aboriginal population (British Columbia, 2001; Canada, 2003; Canadian Arthritis Society, 2004; John, 2000; RHS, 2002/2003). For example, a study conducted in British Columbia found that arthritis was more common among Aboriginal people (17%) than in the general population (5%) (Canada, 2001). Likewise, prevalence of self-reported arthritis is also higher in the American Indian, Eskimo and Aleut populations (17.5%), compared with US White population (15.2 %) (Lawrence, Deyo, & Hochberg, 1998). In Manitoba, it was found that twice as many First Nations Manitobans were diagnosed by a physician for rheumatoid arthritis, degenerative arthritis and other non-descript forms of arthritis, compared to non-Aboriginal Manitobans (Barnabe, Elias, Bartlett, Roos, & Peschken, 2008). As arthritis involves damage to the joints of the body, it is not surprising that this condition tends to increase with age. The significant increase in the distribution of arthritis among First Nations adults according to age is exemplified in the figure below (First Nations Centre, 2005).

Figure 1. Prevalence of arthritis among First Nations adults by age group (total age adjusted)

Source: (First Nations Centre, 2005).

Arthritis has also been documented to vary across gender lines, with women being disproportionately represented. Arthritis is particularly high among older Aboriginal women: 70% of Aboriginal women aged 65 and older, compared with 50% of their Canadian counterparts, were diagnosed with arthritis (Canadian Arthritis Society, 2004). While these statistics are based on comparisons between the Canadian population and on-reserve Aboriginal women, similar trends in arthritis prevalence are found within the urban, off-reserve Aboriginal population (Canada, 2003).

While the information and statistics presented above help paint a picture of the burden of arthritis in Aboriginal populations, a brief discussion of osteoarthritis is included here to highlight the specific burden of this type of arthritis in Aboriginal populations and to help lead into a discussion of osteoporosis.

5.2.1 Osteoarthritis

Osteoarthritis (OA), also known as arthrosis, degenerative arthritis, degenerative joint disease, and the “wear and tear” arthritis, is the most common form of arthritis. It is caused by a breakdown in the cartilage, which covers and acts as a cushion inside joints, and destruction or decrease of synovial fluid that lubricates those joints. While osteoarthritis can affect any joint, it usually affects the peripheral joints (i.e. hips, knees, hands and spine) (Dictionary, 2002). While osteoarthritis is thought to be largely hereditary, aging joints, previous injuries, and obesity are thought to exacerbate risk.

As noted above, OA is the most common type of arthritis, affecting 10 % of Canadian adults (Canada, 2003). While the literature on OA is limited in Aboriginal populations, Thommasen (2006) has noted that rural Canadians and rural Aboriginals are the most vulnerable for OA (Thommasen, 2006). Earlier studies (1960-61) of OA in North American Native populations found that 68% of Blackfoot Indians, 65% of Pima Indians, and 24% of Alaska Eskimos had OA of the hands (Peschken & Esdaile, 1999). These rates are particularly high considering that the same study showed that 7-12% of the White populations with OA in 1968 (Peschken & Esdaile, 1999). A 1986 study, however, reported much lower OA prevalence rates Inuit men (1%) and Inuit women (2%) (Peschken & Esdaile, 1999). Gender specific prevalence of hip OA was found

to be similar in Aboriginal and non-Aboriginal populations, being less than 10 % in all age and gender groups (Hirsch, 1998). In Australian Aborigines, OA appears to be particularly common in the temporomandibular joints, right elbow and knees (Roberts & Roberts-Thomson, 1999).

As this data only provides a superficial view of the burden of osteoarthritis in Aboriginal populations, it will be worthwhile to engage with the mainstream arthritis literature and examine the prevalence and risk for arthritis, and particularly osteoarthritis, in Aboriginal populations.

5.3 Osteoporosis

Osteoporosis is defined and diagnosed by the World Health Organization (WHO) in women as a bone mineral density (BMD) 2.5 standard deviations below peak bone mass (20-year-old healthy female average) as measured by Dual energy X-ray absorptiometry (DXA) (Lewiecki, 2006; World Health Organization, 1994);(Leslie, 2006; Skye Nicholas, 2002). While this testing is commonly used, some researchers have voiced doubts about the accuracy of osteoporosis diagnosis among children, men and women of other ethnic groups when based on the WHO criteria (Skye Nicholas, 2002). The term “established osteoporosis” is used to refer to the increased presence of fragility fractures (World Health Organization, 1994).

Overall, the data on osteoporosis in Aboriginal populations is limited. The most available studies of osteoporosis related to and report on fracture rates, without data on or reference to mean BMD values. As such, it is difficult to estimate whether elevated fracture rates in these populations are related to osteoporosis or to other factors, such as high risk activities, falls due to age, qualitative changes in bone structure, and variability in bone geometry (Skye Nicholas, 2002). Keeping these other potential fracture factors in mind, a recent retrospective, population-based, matched cohort study of fracture rates in Manitoba’s Aboriginal and non-Aboriginal populations has reported higher rates of hip, wrist and spine fractures in Aboriginal versus. non-Aboriginal population (Leslie, 2006). This data is provided in the table below.

Table 1. Fracture rates in Aboriginal and non-Aboriginal Manitoba adults (age 20 years and older), 1984-2003

Fracture site	Aboriginals	Non-Aboriginals
Hip	1.1 %	0.6 %
Wrist	1.3 %	0.5 %
Spine	1.6 %	0.9 %

Source: (Leslie, 2006)

As there is not a lot of information on osteoporosis in Aboriginal population, future studies are warranted to unpack the underlying burden of this disease among Aboriginal Peoples in Canada. The potential for higher rates of osteoporosis due to linkages with other chronic diseases and risk factors in Aboriginal populations, such as obesity and diet, make this an important area for future research.

6. The Burden of Cancer in Aboriginal Populations

6.1 Definition and Description of Cancer

Normally, the human body is made up of billions of cells that develop in predictable ways. Cancer is caused when those cells begin to develop unpredictably: it is characterised by uncontrolled growth and spread of abnormal cells in the body (PHAC). Cancer is not one disease, but is a group of more than 100 different and distinctive diseases. Cancer can involve any tissue of the body and have many different forms in each body area. Most cancers are named for the type of cell or organ in which they first develop. Cancerous cells are most often detected when they begin to lump together and form a mass, commonly known as a tumour. As the tumour grows, it may damage and/or takeover nearby tissue and metastasize (spread) into another part of the body (About.com, 2007).

Documentation of cancer mortality and incidence rates largely indicate that cancer is less prevalent among Aboriginal People than it is among Canada's general population (Waldram et al., 2006). Because determining the exact prevalence of cancer in Aboriginal populations is a challenging task, the reliability and accuracy of the current statistical data is limited (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). Taking this into consideration, this section will begin by outlining several of the surveillance methods used to examine cancer in Aboriginal populations. A presentation of the current data on cancer prevalence will follow this discussion.

6.2 Cancer Surveillance in Aboriginal Populations

All Canadian provinces are equipped with population-based cancer registries that report data on the number of cancer cases within their population (Waldram et al., 2006). The challenge with determining the incidence and prevalence of cancer in Aboriginal populations is that most of these provincial registries do not report cancer data by ethnicity (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). Further, Statistics Canada does not compile or report on cancer data by ethnic status (Waldram et al., 2006).

Nevertheless, there are several surveillance methods that are used to study cancer in Aboriginal populations. These methods include: gathering information using residence codes for reserves; using First Nations indicators in health insurance numbers; using the ethnicity recorded on death certificates; or through linking the data with the Status Verification System. The problem with these surveillance methods, however, is that they can include inappropriate individuals or exclude appropriate individuals in the registry, thus, producing biased results (Marrett, Jones, & Wishart, 2004). For example: the use of residence codes may include non-Aboriginal people living on reserve, exclude urban Aboriginals and other off-reserve Aboriginals, and also exclude individuals who may have had to leave their home community to receive treatment (Rosenberg & Martel, 1998). The use of provincial health card numbers is troublesome because not all health card numbers have First Nations indicators. Finally, death certificate ethnicity data is often inaccurately recorded and the Status Verification System is not always up to date (Marrett et al., 2004). Due to these concerns, other methods of studying disease burden in Aboriginal populations would be beneficial, as would creating specific Aboriginal cancer registries regionally and/or nationally.

A specific registry that has been established is a Canadian Inuit cancer registry comprised of cases from the Northwest Territories, Nunavik, and Labrador (Gaudette et al., 1996). This unique registry was developed as part of an international circumpolar review of cancer among Inuit populations (Gaudette et al., 1996). While the Northwest Territories and Nunavut both have current cancer registries, this collaborative Inuit registry does not undergo maintenance or updating (Waldram et al., 2006).

Consequently, data on the burden of cancer in Aboriginal populations is obtained by developing linkages between ethnicity and provincial registries. National data is obtained by linking the provincial data together. While there are problems with this reporting system and data sources, it is important to review the information gained through them. Prior to a discussion of the burden of cancer in Aboriginal populations, it is important to explain that in addition to a faulty registry system, very few Canadian studies that have been published to date are restricted in their generalizability and validity beyond the very source of the information. Such other limitations are summarized well by Marrett & Chaudhry (2003):

The limitations include small numbers of cancers, different methods of identifying cancers in FN [First Nations] people versus the general populations groups, numerators and denominators derived from different sources, lack of currency in terms of the years studied, and restricted populations (for example, only those on reserves). Further, few have had the numbers and length of study period to be able to examine changes in cancer patters over time (p. 259).

Taking these limitations into account and the fact that there are only a handful of studies on cancer incidence and mortality published in Canada (Marrett & Chaudhry, 2003), the following section will try and summarize the general information on the burden of cancer in Aboriginal populations.

6.3 Burden of Cancer in Aboriginal Populations

While there are only a few studies on the burden of cancer in Aboriginal populations, the vast majority of them focus on First Nations People (Marrett & Chaudhry, 2003). Information has also been documented on the Inuit population (Gaudette, Gao, Freitag, & Wideman, 1993; Nielse, 1996) and even less specifically focused on the Métis population (Kliewer, Mayer, & Wajda, 2002). Because of the differences in the amount of literature and the burden of disease among the three different Aboriginal groups in Canada, they will be reviewed separately below.

6.3.1 Burden of Cancer among Canada's First Nations population

Data collected in the 1970's from British Columbia (Gallagher & Elwood, 1979), northwestern Ontario (Young & Frank, 1983), and Manitoba (Young & Choi, 1985) all reported lower incidence rates for First Nations people when all cancer sites were combined (Waldram et al., 2006). However, a study by Rosenberg and Martel (1998) that examined time-trend from 1972-76 and 1987-91 noted that cancer incidence and mortality appear to be increasing on reserves. They found that while cancer incidence has been traditionally lower in First Nations populations, cancer incidence and pattern of survival were found to be similar to that of the general population, except for a higher proportion of cases and mortality caused by cervical and gallbladder cancer in females and kidney cancer in both sexes (Rosenberg & Martel, 1998).

Marrett and Chaudhry (2003) reported similar trends in their study of cancer incidence and mortality among Ontario First Nations people between 1968 and 1991. They reported that cancer incidence was significantly lower in Status Indians, compared to the general population, for some of the most common cancers (i.e. breast, lung, prostate, and colorectal) (Marrett & Chaudhry, 2003). Despite these comparatively lower rates, the incidence rates for all types of cancer increased significantly over the time periods of the study. Other less common cancers, such as cervical, gallbladder, and kidney, were exceptions to this trend: cancer of the gallbladder is twice as common in Status Indian men and women than it is in the general population; cervical cancer is 1.73 times higher in Status Indians than in the general population and is the second most common cancer in Indian women; and, kidney cancer appears to occur more frequently in Status Indian populations, but the rate for both sexes was not statistically significant (Marrett & Chaudhry, 2003). This and other key information gathered in Marret and Chaudhry's (2003) study and its comparison with the other major studies conducted in provinces across the country are summarized in the table below.

Table 2. Cancer incidence, prevalence, and mortality in Ontario, Manitoba, Saskatchewan, and British Columbia

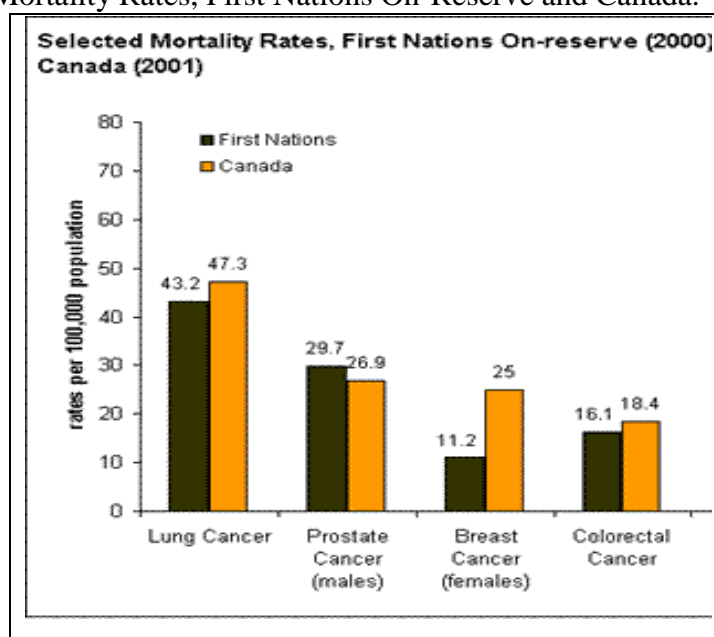
Province	Related Literature	Cancer incidence, prevalence, and mortality
Ontario	(Marrett & Chaudhry, 2003; Young & Frank, 1983)	<ul style="list-style-type: none"> • Incidence of kidney, mouth, throat and stomach cancers is similar in Aboriginal and non-Aboriginal populations for both sexes; • Incidence of colorectal cancer is equivalent in Aboriginal and non-Aboriginal male populations; • Incidence is increasing in Aboriginal populations for the leading cancers, such as breast, prostate, lung and colorectal, and is approaching overall Ontario cancer rates; • Incidence for cervical cancer is declining in female Aboriginal populations, and is approaching the Ontario rate for women; • Survival rates are significantly lower in Aboriginal populations, compared to the non-Aboriginal population, for all cancers combined, for prostate cancer in Aboriginal men, and for breast cancer in Aboriginal women; • Survival rates are similar in Aboriginal and non-Aboriginal populations for other leading cancers (lung, colorectal and cervix).

Manitoba	(Young & Choi, 1985)	<ul style="list-style-type: none"> Aboriginal women have higher incidence of cervical cancer than non-Aboriginal women; The incidence rate of kidney cancer is higher in the Aboriginal population.
Saskatchewan	(Gillis et al., 1991)	1. Survival for breast cancer is poorer in the northern Aboriginal population than in the southern non-Aboriginal
British Columbia	Threlfall et al, 1986	<ul style="list-style-type: none"> Aboriginal women have a higher incidence of cervical cancer than non-Aboriginal women; Pancreas and stomach cancer incidence rates in the Aboriginal population is similar to that of the BC population; Survival rates for all cancers combined is similar in both Aboriginal and non-Aboriginal populations.

Information gathered from (Marrett & Chaudhry, 2003). As this table shows, the amount and type of information available in each province varies greatly.

In an attempt to get a national perspective, the leading cancer mortality rates in on-reserve First Nations and the general Canadian population were compared by Statistics Canada in 2000 and 2001. These analyses found that First Nations cancer mortality rates, except for male prostate cancer, were lower than those for the overall Canadian population (Statistics Canada). This is demonstrated in the figure below.

Figure 3. Selected Mortality Rates, First Nations On-Reserve and Canada.



(Statistics Canada)

While these lower rates are encouraging, the literature reviewed above indicates that cancer rates are increasing in First Nations populations and are quickly approaching cancer rates in the Canadian general population (Marrett, 2003).

6.3.2 Burden of Cancer among Canada's Inuit population

The burden of disease among Canada's Inuit population is quite different from that noted among Canada's First Nations. For example, it has been reported that Inuit people are at a high risk for several rare cancers, including nasopharyngeal, salivary gland, and esophageal cancer (Gaudette et al., 1993; Waldram et al., 2006). Since the 1970's, however, these "traditional Inuit cancers" (Waldram et al., 2006) have declined, while more common cancers among the general population, such as lung, cervical, colon, and breast cancers, have increased (Hildes & Schaefer, 1984; Schaefer, Hildes, Medd, & Cameron, 1975).

Cancer data collected during the time period of 1969-1988 from Greenland, Canada and Alaska provide important insights into the study cancer patterns of Circumpolar Inuit populations (Nielse, 1996). For instance, the results of this international, collaborative study demonstrated that the age-standardized rates increased by 22% for Aboriginal men and 24% for Aboriginal women from 1969 to 1988, which did not deviate significantly from cancer rates observed in the mainstream populations of Canada, Denmark and Connecticut (USA) (Nielse, 1996). However, significant differences between Inuit populations and the comparison populations were found in the site-specific cancer rates. Compared with the populations of Canada, Denmark and Connecticut (USA), the Inuit were found to be at higher risk of lung, nasopharynx, salivary glands, oesophagus, gallbladder and extrahepatic bile ducts cancers. Inuit males had a higher incidence rate for cancer of the liver and stomach, while Inuit females were at higher risk of cervical and renal cancer. The leading cancer sites in Circumpolar Inuit males and females are represented in Table 3 below.

Table 3. The Leading Cancer Sites in Circumpolar Inuit (1969-1988)

Leading Cancer Sites in Circumpolar Inuit (1969-1988)				
Male population			Female population	
1	Lung	28.3%	Cervix	17.6%
2	Colon	8.1%	Lung	13.7%
3	Stomach	7.0%	Breast	11.4%
4	Nasopharynx	6.5%	Colon	9.6%

(Nielse, 1996)

While Circumpolar Inuit populations have reportedly high levels of certain cancers, they are also at lower risk for cancer of the bladder, breast, endometrium, prostate, as well as for lymphomas, Hodgkin's disease, leukemia, multiple myeloma and melanoma (Nielse, 1996). Investigations into the underlying reasons for differences in prevalence among the Inuit will be important to investigate in future research.

6.3.3 *Burden of Cancer among Canada's Métis population*

Very little information is available on the health status of Métis people in Canada, particularly with regards to cancer. In order to find ways to develop a pool of information on the burden of cancer among Manitoba's Métis population, the Manitoba Métis Federation (MMF) approached CancerCare Manitoba to discuss information sharing and develop a dataset (Kliwer et al., 2002). As was discussed in the beginning of this section, databases maintained by provincial organizations do not have specific ethnic or racial indicators (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). A pilot study done to assess the feasibility of linking a sample of the MMF membership list to Manitoba Health (the provincial database) and CancerCare Manitoba databases in order to retrieve more concrete information on the health status of Métis (Kliwer et al., 2002). As the data used to calculate the prevalence of cancer in this study consists of small numbers, it is not possible to report extensively on cancer site. It is possible, however, to discuss some preliminary observations about the burden of cancer among the Métis in Manitoba gained from this study (Kliwer et al., 2002).

Out of the study sample, six (6) males and twenty (20) females were diagnosed with cancer in 1995-1997. Overall, this meant that the average annual age-standardized cancer incidence rate was lower for Métis men as compared to the general male Manitoban population. The incidence for Métis women was slightly higher than the general female Manitoban population. The rate of cervical cancer was found to be substantially higher among Métis women. The crude age-standardized prevalence rates for Métis women were lower for Métis women. When age-specific prevalence rates were taken into account, however, the prevalence was higher for Métis women than it was for all Manitoba women. The prevalence of malignant and other neoplasms were slower for Métis men than for the general population, while malignant neoplasms were higher in Métis women and other neoplasms were comparable to the general female Manitoba population. This overall high prevalence of cancer in Métis women is attributed to the substantially higher rates of cervical cancer as compared to Manitoban women. This is comparable with studies of cervical cancer reported for Manitoba's Treaty Status Indians (Young, Kliwer, Blanchard, & Mayer, 2000).

While this brief discussion of cancer rates among the Métis in Manitoba begins to paint a picture of the burden of cancer among Métis peoples, its limitations as a pilot study and its provincial location highlight that further information and data is needed.

7. Burden of Severe Mental Illness in Aboriginal Populations

7.1 Definition and Description of Chronic Mental Illness

Mental illnesses have been defined as “states of distress that result from complex interactions between person and environment over the course of decades of individual development” (Spaulding, Sullivan, & Poland, 2003). Defining mental illnesses as ‘chronic,’ however, is an issue of much debate. This is largely because of questions about the meaning of the term ‘chronicity.’ For instance, does chronicity refer to the duration of symptoms, the functional disabilities that result from mental illness, or both? (Bachrach, 1988; Soreff, 1996) If both, are duration and disability equally important in determining chronicity? Further, is chronicity established after a specific duration of persistent illness or after a certain number of recurrent

episodes? (Soreff, 1996) There is also a question of whether chronicity can be inferred from the diagnoses of particular mental disorders (Bachrach, 1988). Nevertheless, there is general agreement among researchers that diagnosis is “a necessary but not sufficient condition for defining chronic mental illness” (Bachrach, 1988).

The use of the word ‘chronic’ has also raised the concerns of mental health advocates who believe the term implies and perpetuates a sense of hopelessness with regards to the management and treatment of severe mental illnesses (Bachrach, 1988). Labelling an individual as chronically mentally ill can be perceived to limit that person to a continuous or life-long illness (Bachrach, 1988; Lefley, 1990; Soreff, 1996). To avoid the stigma associated with the word ‘chronic’, the phrase ‘severe and persistent mental illness’ or simply, severe mental illness (SMI) is more commonly used, and will be used here.

Despite the many challenges of defining SMI, some researchers have attempted the task. Stein (1995) defined SMIs as “those illnesses that are longer than one year in duration, cause significant dysfunction, and meet certain diagnostic criteria” and likewise, Rosenberg and colleagues (2005) defined SMI as “a diagnosis of a major mental illness, disability in important life spheres (e.g. school, work or family function), and persistence of illness and disability”. Soreff (1996) provided a broader definition, that is, the “severe and persistent disabilities that result primarily from mental illness” and acknowledged the vast differences that exist in the duration of illness and degree of disability that influence diagnosis. Indeed, “those who might be defined as chronically mentally ill today vary widely in their diagnoses, their treatment histories, their functional levels, and their treatment needs” (Bachrach, 1988). Taking these differences into consideration will be important as we review the burden of severe mental illnesses in Aboriginal populations. This is because the limited literature on mental illness in Aboriginal populations and in limited contexts in which it has been examined can encourage an over-generalization of findings and present a limited perspective.

7.2 Burden of Severe Mental Illnesses in Aboriginal Populations

Although there is some disagreement over which mental disorders qualify as severe and persistent, schizophrenia, bipolar disorder and major depressive disorder are generally categorized as such (Bachrach, 1988; Rosenberg et al., 2005; Stein, 1995). Therefore, these disorders should be included in this discussion of the SMIs that affect Indigenous individuals. Unfortunately, the limited research available on bipolar disorder among Indigenous Peoples hinders our ability to discuss the topic. This shows, without a doubt that research in this area would be of value. Nonetheless, Indigenous experiences of schizophrenia and major depressive disorder, as well as post-traumatic stress disorder and addiction, will be discussed below. While literature related to Canadian contexts is used wherever possible, a lack of specific studies on mental health in Canada’s Aboriginal population means that studies from other Indigenous populations is used to supplement the Canadian material. As important lessons about prevalence, burden and treatment of SMIs can be learned from Canada’s international counterparts, these discussions will be informative for the Canadian context.

7.2.1 Schizophrenia

Early studies of schizophrenia have indicated that there are differences in the incidence and expression of symptoms between Indigenous and non-Indigenous patients. For instance, Bates

and Van Dam (1984) found a much lower incidence of schizophrenia among First Nations of coastal British Columbia than the Caucasian population, though incidence rates were not equal across all First Nations groups. Mowry and colleagues (1994) noted that among persons diagnosed with schizophrenia in Western Australia, Australian patients varied significantly from non-Indigenous patients in the diagnostic symptoms reported in their medical records. The authors suggested a number of possible explanations for the differences, including: misinterpretation of symptoms by mental health professionals; bias in clinical examination and record keeping; unique manifestation of schizophrenia among Indigenous patients; or misdiagnosis of Indigenous patients suffering from alternative mental illnesses (Mowry et al., 1994).

Recent research on schizophrenia in Indigenous populations is limited; however, the studies that do exist both contradict and support earlier research on the topic. Researchers in New Zealand reported Maori to be over-represented among adolescents who self-reported schizotypal symptoms (i.e., magical thinking, hallucinatory tendency, self-referential ideation, and perceptual aberration) (Linscott, Marie, Arnott, & Clark, 2006). Conversely, Robin and colleagues (2007) reported that for two North American Indian tribes, the prevalence of schizophrenia matched that expected for the general population, and among second-degree relatives of individuals with schizophrenia, the prevalence was lower than expected. The authors acknowledged that the prevalence rate of schizophrenia was not higher for these tribes despite the increased risk associated with the high prevalence of alcohol consumption, drug use and poor socioeconomic conditions within the tribal communities. They conclude that psychiatric misdiagnosis, reliance on small sample sizes, and limited cultural awareness have led to over-estimation of the prevalence of schizophrenia among North American Indians (Robin et al., 2007). Therefore, socio-cultural factors must be considered prior to making a diagnosis of schizophrenia (Robin et al., 2007). Overall, it is clear that there is no prevalence rate of schizophrenia consistent across all Indigenous groups. When prevalence rates do differ from those of non-Indigenous populations, these differences may have less to do with biological differences and more to do with the diverse cultural influences of Indigenous Peoples.

As the above discussion demonstrates, more targeted research on schizophrenia in the Canadian context is needed. Further, research into and discussion of treatment, potential interventions, and ways to improve the health and well-being of individuals living with schizophrenia would be beneficial.

7.2.2 Depression

There is some debate as to whether depression is a chronic illness or not (Gask, 2005; Parker, 2005; Van Weel-Baumgarten, 2005). ‘Depression’ and ‘major depression’ are terms that oversimplify and gloss over the multitude of causes, expressions, trajectories, and outcomes of the various depressive disorders that exist (Parker, 2005). Given the effect that a patient’s history, help-seeking behaviour, social environment, and compliance can have on their response to treatment; as well as the influence of a health practitioner’s skills, priorities, biases, and preferred treatment methods; it can be argued with reason that for some individuals the experience of depression is chronic and for others it is not (Van Weel-Baumgarten, 2005).

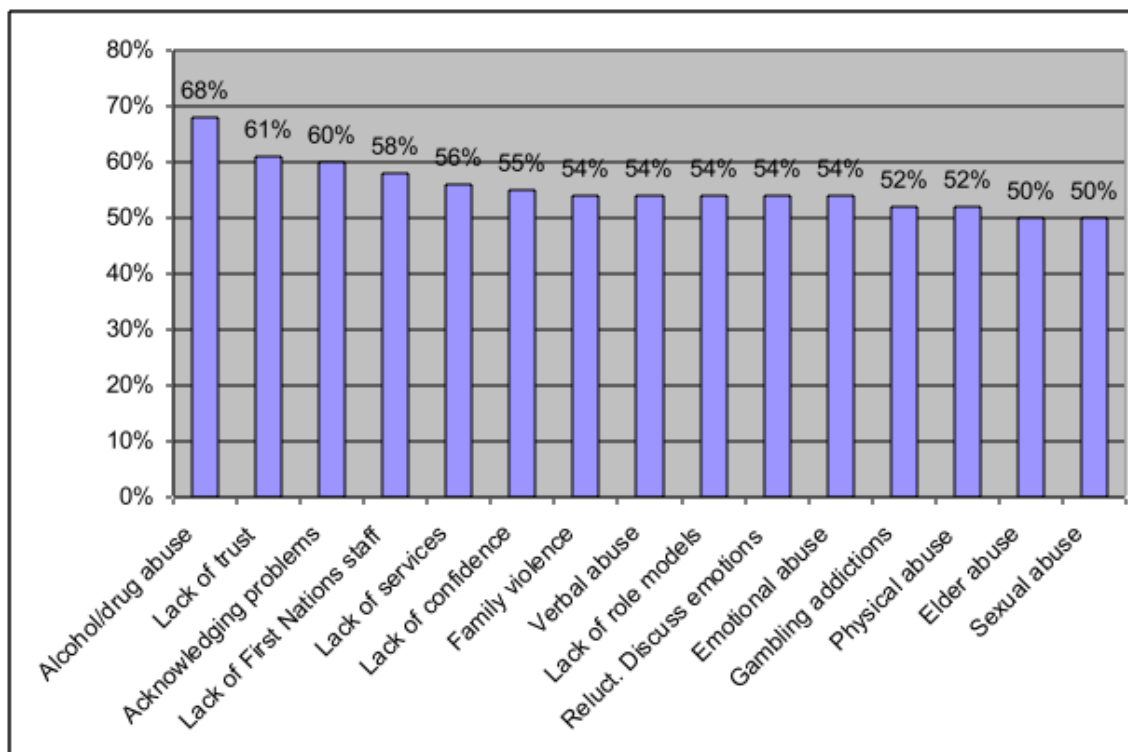
Depression is often assumed to be prevalent among Indigenous Peoples because of high suicide rates in some communities (Thommasen, Baggaley, Thommasen, & Zhang, 2005); however,

reports of depressive episodes among Indigenous Peoples vary considerably. Further, reports of depression among Aboriginal Peoples in Canada are almost exclusively restricted to First Nations, with little information for Métis, Inuit, and non-Status Natives (Health Council of Canada, 2005). Even the information we have on First Nations is largely self-reported in surveys and, therefore, only offers a crude estimate of depression rates with no information regarding specific mental disorders. In an effort to get a better understanding of the depression among Aboriginal Peoples, this section will review the literature available in Canada and internationally. Data from the 2000/2001 Canadian Community Health Survey revealed that 13.2% of the Canadian off-reserve Aboriginal population had experienced a major depressive episode in the past year, a rate 1.8 times that of the non-Indigenous population; however, similar depressive rates were found between Indigenous and non-Indigenous peoples living in the Canadian territories as well as between those with high and low household incomes (Tjepkema, 2002). Another Canadian survey, the 2002/03 Regional Health Survey, found that 30.1% of adult and 27.2% of youth First Nations respondents had felt sad, blue, or depressed for a period of two weeks or more in the year prior to the survey (First Nations Centre, 2005). Those respondents reported suicide ideation and attempts twice as often as respondents who did not feel sad, blue or depressed. Research conducted by the Government of Canada found that approximately 8% of Canadian adults experience major depression at some time in their lives (Health Canada, 2002) compared to 12% reported by First Nations in 2001 (Government of Canada, 2006). A comprehensive study of depression, anxiety and use of antidepressant medication in the Bella Coola Valley of British Columbia revealed that the prevalence rate of depression-anxiety disorders among Indigenous people was slightly lower, though not significantly different, than the prevalence rate among non-Indigenous people (Thommasen et al., 2005). Other studies however have not found a statistically significant difference between Aboriginal and non-Aboriginal people in terms of depression rates (Thommasen, Baggaley, Thommasen, & Zhang, 2005). In contrast, a study conducted in the United States of American Indians of Northern Plains and Southwest tribes were found to be at lower risk for 12-month and lifetime major depressive episodes than individuals sampled from the general population, though significant differences in risk were found between the two tribes and between men and women of the tribes (Beals, Novins, Spicer, Mitchell, & Manson, 2005). Among a sample of Navajo American Indians, 37% had experienced a major depressive episode in their lifetime, 11% reported current depressive disorders, and one-fifth (20%) had experienced depressive, anxiety and substance use disorders in their lifetime (Storck, Csordas, & Strauss, 2000). The variations that exist in the depressive experiences of Indigenous Peoples suggest that, similar to the general population, depression will be chronic for some individuals and not others.

Some Canadian research has examined the manifestation of depression among Aboriginal Peoples. Kirmayer and colleagues (1994) reported symptoms among the Inuit of Nunavik analogous to the ICD 10 diagnostic criteria for depressive episode including: wanting to be alone, refusing to talk with others, not eating, not sleeping, and crying a lot. Söchting, Corrado et al. (2007) suggested that the symptom picture among Aboriginal people seeking mental health services is often quite extreme in terms of impairment in interpersonal relations, poor self-image, inability to regulate and control intense negative emotions, and serious substance abuse (Söchting et al., 2007). Some have suggested that the traditional means of coping with stress and psychological pain have changed in recent times to impulsive behaviour and substance abuse (Kirmayer et al., 1994). Among Aboriginal men, many avoid medical health services and cope

with their depression by drinking alcohol or hunting (Government of Canada, 2006; Kirmayer et al., 1994). The use of alcohol as a means of dealing with trauma among Indigenous peoples is also explored in American research. Brave Heart (2003) identifies alcohol use as a way of avoiding painful feelings through self-medication. The important influence that alcohol and drug abuse has on one's mental health is evident in the figure below, which list the factors considered by First Nations living on reserve in Saskatchewan very important to maintaining mental health (First Nations Centre, 2004).

Figure 4. Factors considered very important in maintaining mental health



Source: 1997 RHS Saskatchewan results (First Nations Centre, 2004)

Indigenous social and cultural factors can influence the chronicity of an Indigenous individual's depressive experience. For example, in Australia where nearly three-quarters (72%) of an Indigenous sample indicated that depression was an inborn characteristic of an individual that could not be resolved through treatment, depressive experiences may be chronic more often than not (Vicary & Westerman, 2004). Yet in the United States, Navajo patients who described cultural causes and interpretations of their depressive experiences were able to reach remission (i.e., a sense of balance and well-being and reduction of depressive symptoms) through individualized, culturally-appropriate healing practices (Storck et al., 2000). Thus, not only is treatment "dependent upon the cultural explanation given to the illness" (Vicary & Westerman, 2004), but the outcome of the treatment is dependent upon culture as well.. For instance, because of the evidence for non-medical means of coping with depression, depression rates estimated from service utilization data for Aboriginals are likely underestimates of the true prevalence of depression (Kirmayer, Brass, & Tait, 2000). Data from the 2002/03 Regional Health Survey state

that 71.7% of individuals feeling sad, blue or depressed ranked family and friends as their top choices of support. Only 9.1% and 8.4% ranked psychiatrist or psychologists as a support (Committee, 2005). More research is required in this area in order to ascertain how detection methods should be altered to make them more appropriate (Jackson-Triche *et al.*, 2000).

7.2.3 Post-Traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is a psychological disorder that arises from an individual's experience of trauma (Chansonneuve, 2007; Corrado & Cohen, 2003; Mitchell & Maracle, 2005). A diagnosis of PTSD requires the following symptoms to be present: re-experiencing the traumatic event (such as flashbacks or nightmares), avoidance of stimuli associated with the traumatic event, and increased physiological arousal (such as rapid breathing and increase heart rate). Affects on the mind, emotions, body, and spirit include: anxiety; intrusive thoughts and memories; sleep disturbances; angry outbursts; exaggerated startle response; and hyper-sensitivity. It is not uncommon for PTSD to exist in concurrence with additional mental and physical health problems such as depression, substance abuse, heart disease, and stomach problems (Corrado & Cohen, 2003; Mitchell & Maracle, 2005).

The availability of prevalence rates of PTSD among Canada's Aboriginal population, and even Indigenous Peoples worldwide, is limited. The majority of research on PTSD in Indigenous populations sampled from adult American Indians of Southwest and Northern Plains tribes. Veterans of these tribes were more likely to qualify for diagnosis of lifetime and current PTSD than Caucasian veterans (Beals *et al.*, 2002). The prevalence of lifetime PTSD for adults of the Southwest tribe was 21.9%, and was higher for women (25.4%) than for men (17.9%) (Robin, Chester, Rasmussen, Jaranson, & Goldman, 1997). In the Northern Plains tribe, 15% of the sample met criteria for lifetime PTSD, and the participants who met PTSD criteria were more likely to be diagnosed with lifetime major depressive disorder and alcohol abuse than those who did not (Sawchuk *et al.*, 2005). The high prevalence rates of PTSD found among adults of these tribes were attributed to high rates of exposure to traumatic events and not to any increased vulnerability of American Indians to PTSD (Robin *et al.*, 1997; Sawchuk *et al.*, 2005). One research group found that among a sample of American Indian adolescents in substance abuse treatment, the proportion of participants that met criteria for PTSD (10.3%) was modest in comparison to the proportion that had traumatic experiences (98%) (Deters, Novins, Fickenscher, & Beals, 2006). The authors suggested that future research should explore the resiliencies that Indigenous youth develop in the face of repetitive traumas.

A minority of Indigenous survivors of the residential school system present diagnostic symptoms similar to those of post-traumatic stress disorder, while many others struggle with commonly associated symptoms, such as relationship difficulties, deficient parenting skills, little knowledge of Indigenous culture, reduced interest and participation in cultural activities, and alcohol or drug abuse associated with violent outbursts (Brasfield, 2001; Corrado & Cohen, 2003; Dion Stout & Kipling, 2003). The term 'residential school syndrome' is sometimes used to describe this group of symptoms, though the term remains controversial because specific diagnostic criteria has not yet been formally established (Brasfield, 2001). Furthermore, Chrisjohn and Young (1995) argue that a regular set of symptoms associated with attendance at residential schools is unlikely to exist due to the wide range of experiences and behaviours of residential school survivors. Research on PTSD among Indigenous groups should be regarded with similar caution, as the present symptoms are likely to vary significantly from individual to individual, as well as

between Indigenous and non-Indigenous populations, as a result of unique histories, experiences and coping strategies.

7.2.4 Addiction

Much like other mental disorders, addiction lacks an established definition and clear diagnostic criteria. Sometimes, addiction is confused or used interchangeably with other terms, such as dependence or compulsion. For the purposes of this discussion, addiction is defined as “a process whereby a behaviour, that can function both to produce pleasure and to provide relief from internal discomfort, is employed in a pattern characterized by: (1) recurrent failure to control the behaviour (powerlessness) and (2) continuation of the behaviour despite significant negative consequences (unmanageability)” (Goodman, 1990). Addiction is not synonymous with dependence (gratification of needs) or compulsion (evasion or avoidance of internal discomfort), but instead involves both dependence and compulsion together (Goodman, 1990). Addictive behaviours may also include gambling, overeating, working, or using psychoactive substances

Although addiction to a psychoactive substance involves abuse of a substance, the abuse of a substance is not always addictive ([NNAPF], 2000). Often, substance abuse occurs infrequently or in an experimental setting; however, this pattern may not hold true for all populations. Research suggests that patterns of substance abuse differ between Indigenous and non-Indigenous populations (Beauchamp et al., 2004; First Nations Centre, 2005; Fournier & Crey, 1997; Health Canada, 2003; Saggars & Gray, 1998; Thommasen, Hanlon, Thommasen, & Zhang, 2006). Most studies of substance use among Indigenous populations have focused primarily on the use of tobacco and alcohol. It can be argued that tobacco abuse poses the greatest long-term consequences to Indigenous health, yet, for many Indigenous communities, the immediate health and social consequences of alcohol abuse are of primary concern (Saggars & Gray, 1998). Because we will focus on tobacco use (and potential abuse) later in the book, as it is a major risk factor across the life course for many other chronic diseases, this discussion of addiction will focus on alcohol addiction.

Alcohol Addiction

The disease model of alcoholism, which defines alcohol addiction as a chronic disease, is supported by many but regarded as limited by others. For example, Alcoholics Anonymous, which has wide-reaching influence on how alcohol addiction is viewed and treated, endorses the disease model of alcoholism (Suissa, 2003). Many people have found comfort and social support through accepting this view of alcohol addiction, and have been successful in attaining and maintaining sobriety. Suissa (2003) has argued that the disease model is also supported by specific groups, including Irish and Indigenous groups, because it fits with their cultural understandings of alcohol and addiction. However, the ‘all-or-nothing’ orientation of the disease model, which when applied to alcohol addiction means an “individual is or is not an alcoholic forever” (Suissa, 2003), is limited by its applicability and treatment options. For instance, ‘all-or-nothing’ demands that alcoholics abstain from alcohol. Unfortunately, such a view can overlook the benefits to be gained from brief intervention and harm reduction strategies. In addition, ‘all-or-nothing’ cannot be applied universally across addictions; an individual addicted to overeating cannot abstain from eating, just as a workaholic cannot abstain from working (Goodman, 1990).

Thus, living with or overcoming addiction can sometimes require more than simply abstaining; addicted individuals may need to learn skills that facilitate healthy moderation instead (Goodman, 1990).

Nonetheless, abstinence has helped many alcohol addicted Indigenous individuals to achieve a healthy and well-balanced lifestyle. Much of the existing research on Indigenous alcohol use has found that abstinence and lower frequency of use are more common among Indigenous Peoples than non-Indigenous people (First Nations Centre, 2005; Fournier & Crey, 1997; Siggers & Gray, 1998; Thommasen et al., 2006). Often, a large portion of Indigenous abstainers are previous alcohol users (Siggers & Gray, 1998). Wardman and Quantz (2005) sampled from Indigenous Peoples of western Canada and found that most previous alcohol users described ‘hitting rock bottom’ before achieving abstinence. Often, binge drinking was used to numb the pain caused by physical and sexual abuse, low self-esteem, loss of culture and identity, and family history of substance abuse (Wardman & Quantz, 2005). Many of the individuals that were currently maintaining sobriety found strength through renewed spirituality and involvement in cultural traditions. In another study, narratives of Navajo men who previously drank but currently abstained from alcohol suggested that it was common for Navajo men to reach a point in life when issues of health, religion, family, and wealth took priority over alcohol use (Quintero, 2000). For these men, alcohol was associated with loss of tradition and an out-of-balance lifestyle. Often formal treatment was not sought, as the desire to return to traditional living was sufficient motivation to abstain.

It is also the case that, although the rate of abstinence is higher and frequency of alcohol use is lower, binge drinking occurs more frequently among Indigenous than among non-Indigenous alcohol users. In other words, “those who do drink tend to drink heavily” (Canada, 2006). It is likely this pattern of alcohol use that contributes to the alcohol-related problems experienced by Indigenous communities. This burden is exemplified by the fact that Alcohol was a factor in 6.4% of injuries incurred by First Nations youth and over one-quarter (27.1%) of assaults against First Nations youth (First Nations Centre, 2005). Rothe (2005) reported that within nine First Nations communities, respondents considered alcohol abuse and drinking and driving to be “normal, community-endorsed behaviours” (Rothe, 2005). The proportion of Status Indian deaths that are alcohol-related is nearly one-quarter (23.5%) while drug-induced deaths account for 6.2% of Status Indian deaths (Officer, 2002). High rates of alcohol-related morbidity and mortality have also been reported in Australia (Siggers & Gray, 1998). Reasons given by Indigenous individuals for their alcohol use include boredom associated with living in a communities of limited recreational and employment opportunities and need to self-medicate to anesthetize the pain of poverty, racism and violence; thus, it is more likely community social and economic structure rather than individual or cultural values that contribute to the high prevalence of alcohol abuse in Indigenous communities (Rothe, 2005).

7.3 Burden of Severe Mental Illnesses on Community Health

Community health is influenced by physical and social environments (Smye & Mussell, 2001) of both the past and present (First Nations Centre, 2005). Dysfunction within family and community life has wide-ranging influence on mental health (Mussell, Cardiff, & White, 2004) and an individual’s experience of mental health can impact their family and community. Conversely, therefore, correcting relationships within the family and facilitating community

healing can promote health and wellness (Canada, 2006; Warry, 1998). As such, the following section will focus on the potential influence of SMIs on communities and the community-wide burden of disease.

When a population is marginalized and culturally suppressed, the mental health of that population, whether Indigenous or not, is affected at the individual, family, and community levels (Canada, 2006). Mental health problems often occur in the form of social burdens such as family violence, substance abuse and suicide (Canada, 2006; Warry, 1998), and although Indigenous communities differ in their response to the trauma of marginalization and oppression, many Indigenous communities have been plagued by problems of family violence, substance abuse, incarceration and suicide (Canada, 2006; Frank, 1992; Kirmayer, Simpson, & Cargo, 2003; Warry, 1998). The social and mental health problems that plague some communities are often interrelated and serve as indicators of larger family and community problems (Bohn, 2003; Frank, 1992). Issues of insufficient housing and infrastructure and poor access to recreational facilities are just a few examples of factors that contribute to the self-perpetuating cycle of collective trauma and destructive coping strategies through which community mental health problems persist (Canada, 2006; Dion Stout & Kipling, 2003). Through intergenerational transmission of social burdens, mental health problems can become problems that are not only severe and persistent across an individual's lifetime, but also chronic across generations within a community. Given this knowledge, it should come as no surprise that healing approaches focused exclusively on individuals have demonstrated limited effectiveness among Aboriginal populations (DeGagné, 2007; Mussell et al., 2004). Healing strategies must consider the burden individual behaviours have had on family and community life (Warry, 1998). Thus, while individual healing is important for overall community healing, the strategies that will be most successful in achieving community wellness will promote both individual and collective healing (First Nations Centre, 2005; Warry, 1998).

8. The Impact of Chronic Diseases on Mental Health

The experiences of people with chronic diseases are an important aspect of the chronic disease research literature. An important sub-set of the experiences of chronic diseases is the impact that having a chronic disease has on one's mental health. Thus, the association between chronic disease and mental illness will be discussed in this section. In doing so, it will address three key questions: (1) how are chronic diseases and mental health related? (2) Why are chronic diseases and mental health related? And, (3) to what extent are chronic diseases and mental health related?

8.1 Defining the parameters of the association between chronic disease and mental health

The association between chronic disease and mental illness is often discussed as the interconnection between chronic disease and depression. As discussed in the "severe mental illness" section, it is often questioned whether depression is actually a chronic illness. "Major depression" is often the term used to refer to chronic depression, as it has been noted that major depression has long-term effects on a patient's history, help-seeking behaviour, social environment, and compliance can have on response to treatment (Van Weel-Baumgarten, 2005). As depressive symptoms below the threshold for major depression have been found to have significant effects on daily function, and health care utilization (Sullivan *et al.*, 1999) and are

frequently precursors of more severe depression (Hammen, 1997). The prevalence of subthreshold depressive symptoms is at least equal to that of major depression and may be as much as two to three times that of major depression (Sullivan et al., 1999). As such, the interactions between chronic disease and all types of depression are important to examine. Following a discussion of depression, another psychological condition – adjustment disorder – that is related to the onset of chronic disease will be discussed.

8.1.1 Depression

The interconnection between chronic disease and depression is complex. Not only have some studies found that chronic diseases cause depression, but depression has been found to be independent risk factors for the development of certain types of chronic diseases. Depression is also associated with poorer outcomes, increased mortality and higher health care costs. The presence of depression influences health behaviours, making people less likely to make healthy lifestyle decisions or adhere to their medical treatment. Depression has been found to affect illness perceptions, making people who are depressed feel they are more ill than objective medical tests would predict. People who are depressed also have lower pain thresholds, making symptoms more painful than for an individual that was not depressed.

Depression can have direct physiological effects on disease such as in the case of diabetes, where depressive episodes have been associated with elevated glycemic levels. Among those with coronary heart disease, changes in lipid levels, physiological responses to stress and platelet function have all been explored for their relationship to depression (Davidson et al., 2006; Glassman & Shapiro, 1998; Hippisley-Cox, Fielding, & Pringle, 1998; Lesperance, Frasure-Smith, & Talajic, 1996; Pratt et al., 1996). In addition, some drugs used to treat chronic diseases have been known to cause depression (Katon & Sullivan, 1990) and some drugs used to treat depression have been shown to affect chronic disease, as in the case of older classes of antidepressants which have coronary effects (Davidson et al., 2006; Pratt et al., 1996). Depression can be a symptom of a chronic disease, as in the case of stroke (Fava & Kendler, 2000) and depressive symptoms can be confused with the signs and symptoms of heart disease.

8.1.2 Adjustment Disorder

Another psychological condition related to the onset of chronic disease is adjustment disorder. Most patients with chronic disease do not have clinical depressions but rather suffer from an ‘adjustment disorder’ which is stress-related, time limited, non-psychotic disturbance that initiates within three months post stressor onset and resolves within six months (Casey, 2001; O’Keeffe & Ranjith, 2007; Rush, Polatin, & Gatchel, 2000). Adjustment disorder is a serious condition that affects up to one quarter of patients of any age without any pre-existing mental disorder (Casey, 2001; Strain *et al.*, 1998) and complicates the course of medical conditions (Casey, 2001).

Adjustment disorders are seen as an understandable but maladaptive response to a stressful event that resolves spontaneously when the stressor is removed or a new level of adaptation is reached (O’Keeffe & Ranjith, 2007). Diagnosis is made when the criteria for more specific diagnosis such as depressive episode or major or minor depression are not met (Casey, 2001; Casey *et al.*, 2006; Takei & Sugihara, 2006). Some clinicians prefer to diagnose adjustment disorder rather than other depressive disorders because of their unwillingness to ‘medicalize’ what they feel is a natural reaction to illness (Casey, 2001; O’Keeffe & Ranjith, 2007); this is despite the fact that

even the term adjustment disorder has been accused of pushing a human response to the realm of biomedicine.

Adjustment disorder encompasses serious mental symptoms and behaviours (Casey, 2001; Strain et al., 1998) that are indistinguishable from other depression disorders on the basis of symptom severity (Casey et al., 2006). Despite the fact that adjustment disorder shows similarly poor morbidity and mortality outcomes to those with other depressive disorders (Jones, Yates, Williams, Zhou, & Hardman, 1999; O’Keeffe & Ranjith, 2007), and that up to 15% of individuals go on to suffer a subsequent course of major depression (Takei & Sugihara, 2006), many clinicians are slow to provide treatment (Strain et al., 1998). Casey (2001) explained this lack of treatment by suggesting that most individuals with adjustment disorder recover quickly and completely making it unlikely that specific interventions are required (Casey, 2001). For example, among those suffering from heart attacks, the risk of death has been associated with recurrent depression rather than a single episode of major depression occurring for the first time after a heart attack (Lesperance et al., 1996). Depression is often more severe immediately following a myocardial infarction (MI) event and may be a transient reaction to the MI itself (Davidson et al., 2006).

However, in the time immediately following the onset of the disease it is not possible to distinguish those who will recover over time and those who will go on to develop a major depressive disorder. Evidence suggests that patients with adjustment disorder can benefit from treatment as much as patients with other depressive disorders (Jones et al., 1999) therefore treatment decisions must be balanced between the high prevalence of adjustment disorders, the significant time and resource required to treat them (Strain et al., 1998) and the potential benefits to the patient. Perhaps because of its inherently short duration and relatively high recovery rates, very little research has been done on this condition (Casey, 2001; Casey et al., 2006; O’Keeffe & Ranjith, 2007).

The distinction between the time-limited and disease-association of this disorder from major depression is critical. The fact that so little research has been done on this disorder and the failure of adjustment disorders to be incorporated into recent studies may have resulted in the prevalence of depressive disorders in many research studies involving medical illness to be misrepresented. Casey et al. (2006) suggested that the number of mild depressive episodes and combined depressive episodes are being conflated in relation to the number of adjustment disorders (Casey et al., 2006).

Some authors have argued that the exact language in diagnosing patients is not relevant to the management of these patients (O’Keeffe & Ranjith, 2007). Rather than focusing on whether a patient has adjustment disorder, major or minor depression, O’Keeffe argues that a better approach would be to ask “what are the patient’s current problems and how can we deal with them?” (O’Keeffe & Ranjith, 2007). In this way, clinicians “would be able to use antidepressants for anhedonia, existential or spiritual approaches for demoralization, psycho-educational or cognitive approaches to deal with maladaptive adjustment and behavioural activation for poor motivation and learned helplessness, where indicated, in the same patient.”

8.2 Unpacking the Association between Chronic Disease and Mental Health

The challenge with defining and describing the association between chronic diseases in mental health is that there are many possible mechanisms for interactions between the two health conditions. The table below, which is an abbreviated version of one presented in Prince, Patel et al. (2007), exemplifies this.

Table 4. Possible mechanisms for interactions between mental disorders and other health conditions

Mental disorders affect the rate of other conditions

- Mental disorders are associated with risk factors for chronic disease such as smoking, reduced activity, poor diet, obesity, and hypertension; however, these lifestyle factors have not yet been shown to mediate associations with morbidity and mortality
- Depression has various biological effects: on serotonin metabolism (alteration of cardiac function, platelet aggregation, and vasoconstriction); on cortisol metabolism (increased cortisol, leading to inflammation, excessive clotting, and the metabolic syndrome); on inflammatory processes (raised inflammatory markers, which also predict the development of cardiovascular disease); and on cell-mediated immunity (impairments in T-cell mediated functions, reduced natural-killer cell counts and cytotoxicity, with relevance to cancer, HIV progression and other infectious disease)
- Mental disorders and other health conditions could have common genetic or environmental risk factors

Some health conditions affect the risk of mental disorders

- Many chronic diseases create a psychological burden, which arises from factors such as the acute trauma of the diagnosis; the difficulty of living with the illness; the long-term threat of decline and shortened life expectancy; necessary lifestyle changes; complicated therapeutic regimens; aversive symptoms such as pain; and stigma, which can lead to guilt, loss of social support, or breakdown of key relationships
- Disability associated with chronic health conditions might mediate risk for depression and other common mental disorders

Some co-morbid mental disorders affect treatment and outcome for other health conditions

- Mental disorders can delay help-seeking, reduce the likelihood of detection and diagnosis, or do both
- The extent and the quality of general medical health care received by people with mental disorders might be poor. This evidence for this inequity is especially strong for those with psychoses, dementia, and substance-use disorders
- Mental disorders, cognitive impairment, and substance use and alcohol-use disorders adversely affect adherence to medication, to recommendations for behavioural modification, and to activities to prevent disease or promote health.

(Prince et al., 2007)

The list of potential interactions is long, and recurring interactions between chronic physical disease and mental ill health are common, with each feeding into and exacerbating the other (Dowrick, 2006). Nevertheless, there is variability in prevalence of depression rates across different chronic diseases (Penninx et al., 1996). Findings from this large body of research have been somewhat contradictory.

8.2.1 Variability in prevalence among chronic diseases

Some studies have found that there is little variability among chronic diseases in terms of psychological distress (Cassileth *et al.*, 1984). Others have shown that certain chronic diseases have elevated levels of psychological disturbance, including arthritis/rheumatism (Penninx et al., 1996; Wells, Golding, & Burnam, 1988), cancer (Wells et al., 1988), lung disease, neurological disorders (Ormel et al., 1997; Wells et al., 1988), heart disease (Ormel et al., 1997; Wells et al., 1988), lower back pain (Carroll, Cassidy, & Coté, 2000; Rush et al., 2000), stroke (Penninx et al., 1996), hearing impairment, vision impairment (Ormel et al., 1997), headache, and gastrointestinal problems (Carroll et al., 2000) and physical handicap. Finally, other studies have found that certain disorders are not associated with increased risk for psychological disturbance compared to other chronic conditions including hypertension (Patten, 1999; Wells et al., 1988), arthritis (Patten, 1999), heart disease (Patten, 1999; Penninx et al., 1996) and diabetes (Patten, 1999; Penninx et al., 1996; Wells et al., 1988). The fact that many of these conditions have been found to be both associated and not associated with increased psychological disturbance suggests that there is still much to learn about the relationship between depression and chronic disease.

Various reasons for the variation in psychological effect among different chronic diseases have been offered. It has been suggested that it is not the type of disease, but rather various other social and psychological factors that affects depression rates (Arpin, Fitch, Browne, & Corey, 1990). Some have suggested that the level of depression is directly associated to the severity of disability associated with the individual case of chronic disease (Ormel et al., 1997). Others have suggested that the degree of manageability of the disease is most important. For example, unlike cancer or arthritis, diabetes and cardiac diseases are relatively manageable by individual or medical efforts, and modifying behaviour by changing diet, medication and physical exercise may improve their health. (Penninx et al., 1996). Others have found that the meaning given to the illness is the most important factor influencing adjustment (Arpin et al., 1990). Arpin, Fitch et al. found that the meaning given to illness, followed by family function, and disability variables accounted for 57% in the variance in adjustment outcomes (Arpin et al., 1990).

8.2.2 Demographic variance

Among the general population, major depression is most common among younger individuals and among women (Hammen, 1997). Depression is also more common among women in the Aboriginal population (Thommasen et al., 2005; Wardman & Khan, 2004). Considering the young age of the Aboriginal population compared to the general population, and the relatively young age at onset of chronic disease among the Aboriginal population, the relationship between age, depression and chronic illness is of significance.

Cumulative epidemiological and clinically-based studies in the general literature have shown that children who have a chronic illness or disability are at a heightened risk for mental health problems (Cadman, Boyle, Szatmari, & Offord, 1987; Chernoff, Ireys, DeVet, & Kim, 2002; Haggerty, Roghmann, & Pless, 1975; Lavigne & Faier-Routman, 1992; Stein, Westbrook, &

Silver, 1998; Suris, Michaud, & Viner, 2004; Wolman, Resnick, Harris, & Blum, 1994; Yeo & Sawyer, 2005). In addition, adolescents with chronic illness report higher emotional distress and suicidal tendencies than their counterparts and that they rank below their peers on a number of psychological outcomes including emotional well-being, worries and concerns, and body image (Miauton, Narring, & Michaud, 2003; Rosina, Crisp, & Steinbeck, 2003; Suris et al., 2004; Wolman et al., 1994).

Results from a population-based study revealed that the estimated prevalence of a psychiatric diagnosis among children with reported chronic illness was 10%, almost twice the rate found in children without chronic illness (Hysing, Elgen, Gillberg, Lie, & Lundervold, 2007). This is consistent with previous studies, the Isle of Wight study being the classic example, which found psychiatric disorders rates of between 11.6% among children with chronic physical disorders not involving the brain to 34.4% among children with neuro-epileptic conditions, compared to 7% of healthy children (Rutter, Graham, & Yule, 1970). A population-based study in Ontario in the 1980s found that children with both chronic illness and associated disability were at greater than threefold risk for psychiatric disorders and considerable risk for social adjustment problems. Children with chronic medical conditions, but no disability were at considerable less risk: about a twofold increase in psychiatric disorders but little increased risk for social adjustment problems was observed (Cadman et al., 1987).

Among First Nations adolescents, youth with disabilities seem more prone to depression, which is defined as feeling sad, blue or depressed for more than two weeks in a row in the reference year (35.6% compared to 26.5% of youth without disabilities). Adolescents with disabilities are also more likely to have contemplated committing suicide at some point in their lives (32.4% compared with 20.1%) (First Nations Centre, 2005).

8.2.3 Chronic diseases and mental health – the relationship within specific chronic conditions

In order to add to the discussion of the general variance in the relationship between chronic disease and mental health, literature documenting the particular relationship between three of the chronic diseases discussed earlier in this section: (1) diabetes, (2) cardiovascular disease and (3) musculoskeletal conditions. Information will be drawn from the general literature, with specific reference to the Aboriginal research when it is available.

Diabetes

In the Canadian Aboriginal population, diabetes research may arguably be the most prolific area of chronic disease research. Despite this, little research has addressed the mental health aspect of this disease. Perhaps this is because diabetes is also considered to be one of the most challenging chronic conditions from a psychosocial perspective (Gonder-Frederisk, Cox, & Clarke, 2002). This is because the diagnosis, treatment, and prevention is multifaceted and has a complex disease management structure:

There is no cure, diagnosis can occur at any stage of life, and, after diagnosis, daily treatment is required for the remainder of the lifespan, which may or may not successfully prevent the development of serious long-term complications, such as cardiovascular and kidney disease. The management regimen can be enormously

complex and relies almost solely on the intensive, daily efforts of patient and their families (Gonder-Frederisk et al., 2002).

As a result, the interrelation between diabetes and mental health needs to be carefully unpacked. Research has begun to do this over the last thirty years, the outcomes of this work will be reviewed to describe the obviously complex relationships between diabetes and depression.

The relationship between diabetes and depression can be thought to go both ways: depression may play a role in the development and worsening of diabetes (Sacco *et al.*, 2007) or depression may be the result of living with a chronic condition and the ensuing decrease in quality of life (Anderson, Freedland, Clouse, & Lustman, 2001; Gonder-Frederisk *et al.*, 2002; Knol *et al.*, 2006; Peyrot & Rubin, 1997). Prospective studies have shown that people who have depression have up to double the risk of getting type 2 diabetes independent of other associated risk factors (Eaton, Pratt, Armenian, Ford, & Gallo, 1996; Kawakami, Takatsuka, Shimizu, & Ishibashi, 1999; Knol *et al.*, 2006). Retrospective studies have also found a greater propensity for a history of depression among diabetics than non-diabetics (Gonder-Frederisk *et al.*, 2002; Lustman, Griffith, Freedland, Kissel, & Clouse, 1998; Nichols & Brown, 2000; Peyrot & Rubin, 1997). Exact estimates range (Anderson, Lustman, Clouse, De Groot, & Freedland, 2000; Bell *et al.*, 2005; de Groot & Lustman, 2001; Gavard, Lustman, & Clouse, 1993; Goldney, Phillips, Fisher, & Wilson, 2004; Nichols & Brown, 2000), but generally individuals with diabetes suffer depression at rates of two to three times that of the general population – affecting as many as one-third of individuals with type 1 or type 2 diabetes (Anderson *et al.*, 2001; Anderson *et al.*, 2000; Egede, 2005; Gonder-Frederisk *et al.*, 2002).

Depression in diabetes is associated with higher blood glucose levels, poor glycemic control, poorer lifestyle and medication adherence, decreased quality of life, substantially higher health care costs, increased risk for complications and increased mortality (Anderson *et al.*, 2001; Egede, 2005; Gavard *et al.*, 1993; Goldney *et al.*, 2004; Gonder-Frederisk *et al.*, 2002; Kawakami *et al.*, 1999; Keawe'aimoku Kaholokula, Haynes, Grandinetti, & Chang, 2006; Lustman *et al.*, 2000; McGill *et al.*, 1992; Peyrot & Rubin, 1997; Sacco *et al.*, 2007; Winokur, Maislin, Phillips, & Amsterdam, 1988). Depressed diabetic patients have been shown to have elevated blood sugar levels during a depressive episode and longer recovery times than non-depressed subjects (Winokur *et al.*, 1988). Often depression can be a stronger predictor of disease outcomes than physiological variables (Knol *et al.*, 2006; Rubin & Peyrot, 1999). Chronic anxiety has been shown to be related to glycosylated haemoglobin HbA_{1c}, a measure of diabetic control (Okada *et al.*, 1995). The same study found that improvements in anxiety might be useful in controlling glucose metabolism (Okada *et al.*, 1995).

In Canada, only one study was found that provided insight into the relationship between quality of life, diabetes and depression among Aboriginal Peoples. This study found that Aboriginals have lower quality of life than non-Aboriginals and that the average number of unhealthy days for mental health was higher among Aboriginal than for non-Aboriginal people (Thommasen, Berkowitz, Thommasen, & Michalos, 2005). Only a few studies conducted in the United States of America have examined the prevalence of depressive symptoms among Indigenous Peoples with diabetes (Bell *et al.*, 2005; Sahnoun, Markland, & Helgersson, 2007; Singh *et al.*, 2004; Tann, Yabiku, Okamoto, & Yanow, 2007). These studies have found inconsistent results. Some

studies showed rates of depressive symptoms several times more prevalent among Native Americans with diabetes than among other ethnicities (Tann et al., 2007), other Native American non-diabetics (Sahmoun et al., 2007; Singh et al., 2004), and greater, but not significantly so, than other ethnic minorities (Bell et al., 2005). Other studies found no association between race and measures of depression when other demographic and disease factors were controlled (Peyrot & Rubin, 1997). The dearth of studies on ethnic minorities, and Canadian Aboriginals in particular, means that little is known about the prevalence of depression among the Aboriginal diabetic population, regional variations, demographic and medical characteristics associated with higher depression, medical outcomes associated with depression, health care utilization, or effective and culturally-appropriate treatments (Bell et al., 2005; Rock, 2003).

The literature has documented a relationship between depression and diabetic complications (de Groot, Anderson, Freedland, Clouse, & Lustman, 2001): although the direction of the relationship is not clear. Diabetics who are depressed are at increased risk for diabetes-related complications and the greater the number or severity of diabetic complications the higher the level of depression (de Groot, Anderson, Freedland, Clouse, & Lustman, 2000; de Groot et al., 2001; Peyrot & Rubin, 1997). Depression may play a part in some complications (e.g. macrovascular disease) but not on other complications (e.g. nephropathy) (de Groot et al., 2001). Since certain types of complications are more prevalent among Aboriginals (e.g. renal complications (Hanley *et al.*, 2005) and that Aboriginal Peoples in Canada have higher rates of diabetes complications than among the general population (Hanley et al., 2005; Health Canada, 2000; Meatherall et al., 2005; Simpson et al., 2003), a better understanding of the relationship between depression and the complications most common for Aboriginal people, nephropathy for example, is needed.

Cardiovascular Disease

As noted earlier, cardiovascular disease (CVD) is a heterogeneous group of diseases of the heart and blood vessels, of which coronary heart disease or ischemic heart disease is the most common. While CVD has been found to be slightly higher in the First Nations population, rates among other Aboriginal groups are limited. When discussing CVD it is important to note its interrelation with diabetes and diabetes risk factors (Bruce et al., 2003; Simpson et al., 2003). This is important in the Aboriginal context, as diabetes and CVD have both been found to have high prevalence rates. Further, diabetics who suffer from depression are at an increased risk for cardiovascular disease: depression has been found to be an independent risk factor for the development of coronary heart disease among those with diabetes (Anderson et al., 2001). Egede (2005) found that those with for diabetes and depression were at significantly greater risk for death from all causes beyond that due to having either diabetes or depression alone, although diabetes remained a stronger predictor of coronary heart disease mortality than depression (Egede, 2005). The research on the interrelation between CVD and depression will be reviewed in greater detail below.

Cross-sectional and case-control studies have shown that rates of depression are higher among patients with coronary-artery disease than among the general population (Pratt et al., 1996). Up to 20% of patients with heart disease meet the criteria for major depression (Davidson et al., 2006), three times the community-based prevalence (Rozanski, Blumenthal, & Kaplan, 1999).

Between 15-45% of patients admitted to hospital following myocardial infarction (MI) are depressed and 40-50% report moderate to severe levels of anxiety (Bennett & Carroll, 1997; Glassman & Shapiro, 1998; Hippisley-Cox et al., 1998).

Depression has been deemed to be an independent risk factor on par with other known medical prognostic factors as a risk factor for the development and the worsening of cardiovascular disease (Broadley, Korszun, Jones, & Frenneaux, 2002; Davidson et al., 2006; Frasure-Smith & Lesperance, 2005; Glassman & Shapiro, 1998; Hippisley-Cox et al., 1998; Smith & Ruiz, 2002; Sullivan et al., 1999). A number of studies support the notion of a gradient between the magnitude of depression and future cardiac events, suggesting that risk for coronary artery disease associated with depression exists along a continuum, with the relative risk depending on the magnitude of depressive symptoms (Glassman & Shapiro, 1998; Rozanski et al., 1999).

Among patients with pre-existing cardiovascular disease, depression has consistently been associated with a worse outcome (Carver, 2007; Glassman & Shapiro, 1998). Estimates of the effects of depression on heart disease vary from study to study but range from a one-and-a-half- to seven-fold risk of fatal cardiac events (Broadley et al., 2002; Davidson et al., 2006; Frasure-Smith & Lesperance, 2000; Pratt et al., 1996). Depression is also associated with adverse medical outcomes such as poor compliance, increased health care utilization (Gilmer *et al.*, 2005), increased morbidity and mortality, and decreased quality of life (Davidson et al., 2006; Hippisley-Cox et al., 1998; Lustman, Clouse, Griffith, Carney, & Freedland, 1997), even at low levels (Davidson et al., 2006). One study found an increased risk for cardiac mortality or MI among 72% of its participants reporting only two symptoms of depression, a level of depression insufficient to diagnose major or even minor depression (Horsten, Mittleman, Wamala, Schenck-Gustafsson, & Orth-Gomér, 2000). Among those who have suffered a heart attack higher levels of depression or anxiety is associated with increased mortality and morbidity, poor emotional recovery, lack of short term improvement, and longer latency to normal levels of activity (Bennett & Carroll, 1997; Gorkin, Follick, Wilkin, & Niaura, 1994; Pratt et al., 1996; Smith & Ruiz, 2002).

A study among Australia Aborigines found that stress and worry relating to the changing social situation within the community were frequently identified as a perceived cause of heart disease and as a complicating factor in managing it (Ong & Weeramanthri, 2002). The community saw heart disease as a symbol of contemporary social problems and of uncertain community direction (Ong & Weeramanthri, 2002). Citing Humphrey et al. 1998, Ong and Weeramanthri (2002) state that the stress and worry experienced by Indigenous people was often not recognized as such by non-Indigenous people, who see stress as being solely related to a modern lifestyle and overwork. As Skinner and Silverman-Peach (1989) describes, non-Indian health care providers often misperceive the stoic demeanour of Indian people (in the presence of non-Indians) as indicating the absence of stress (Skinner & Silverman-Peach, 1989).

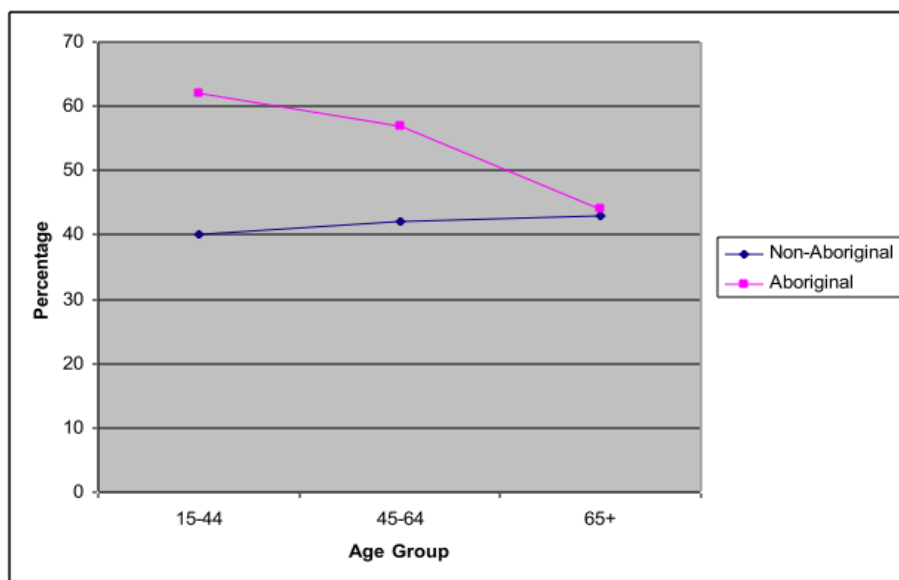
Musculoskeletal Diseases

As noted in the musculoskeletal burden section, arthritis is one of the most prevalent chronic health conditions in Canada and a major cause of morbidity, disability and health care utilization (Lagacé, Perruccio, DesMeules, & Badley, 2003). Much of the literature reports on the

prevalence of musculoskeletal conditions using the heading ‘arthritis/rheumatism’ to refer to this collection of painful joint disorders that range from those related to wear and tear of cartilage (osteoarthritis) to those associated with inflammation resulting from an immune disorder (rheumatoid arthritis). As such, it is often too difficult to separate these two conditions. While the relation between arthritis and osteoarthritis, and mental health will be referred to wherever possible information, statistics related to arthritis/rheumatism will also be used.

Rates of arthritis/rheumatism are 1.5 times higher among First Nations/Inuit than among the general Canadian population (Committee, 2004). As such, among Aboriginal adults, arthritis/rheumatism is the most commonly reported chronic condition (Statistics Canada, 2003) with an age standardized prevalence of 27% compared to 16% among the non-Aboriginal population (Committee, 2005; Lagacé et al., 2003). Since the prevalence of arthritis/rheumatism increases with age (Lagacé et al., 2003) the impact of arthritis/rheumatism on the Aboriginal population is expected to increase as the population continues to age (Burke, Zautra, Schultz, Reich, & Davis, 2002).

Figure 5. Proportion of individuals with arthritis who reported an HUI score indicative of disability, by age, Aboriginal people living off reserve and non-Aboriginal people, household population aged 15 years and over, Canada, 2000



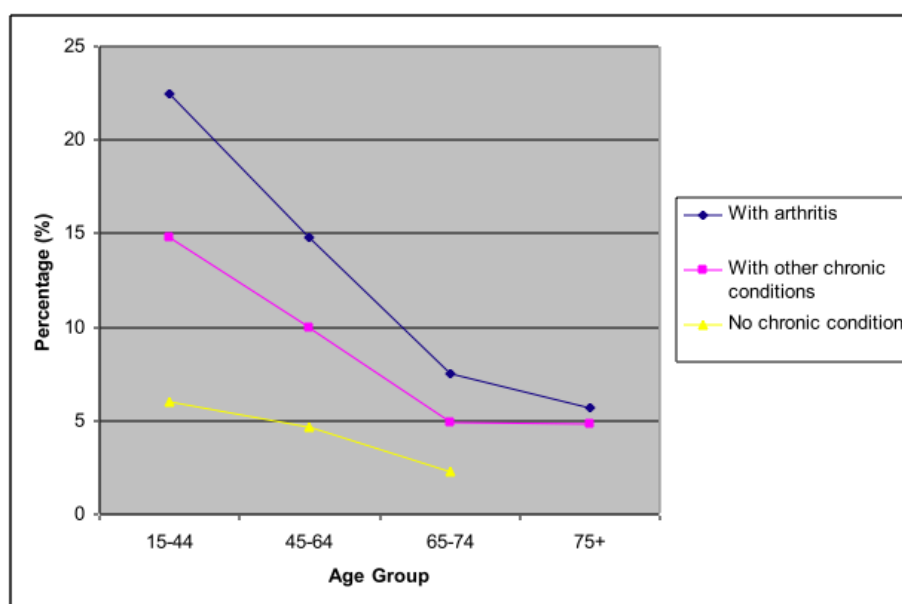
Source: (Lagacé et al., 2003)

Individuals with arthritis are more likely than people with other chronic conditions and no chronic conditions to suffer from activity limitations, increased disability, and moderate to severe pain (Lagacé et al., 2003; Verbrugge, Lepkowski, & Konkol, 1991). Verbrugge, Lepowski et al. (1991) found that comparing arthritic and non-arthritic people with the same total number of conditions, arthritis people had more physical limitations of all kinds (Verbrugge et al., 1991). They also found that when arthritis co-occurs with other chronic conditions, disability levels are augmented considerably. For example, for walking, Verbrugge, Lepowski et al. (1991) found that there was an over one hundred-fold increase in disability risk for people with both arthritis and other chronic conditions (odds ratio 113.3) compared to an odds ratio of 46.5 for the

people with other (non arthritis) chronic conditions (Verbrugge et al., 1991). Aboriginal people with arthritis also have been found to have higher rates of disability than non-Aboriginals with arthritis, as exemplified in Figure 2 (Lagacé et al., 2003).

As disability and pain are all associated with increased risk of depression, those with arthritis/rheumatism are at particular risk of depression (Barlow, Cullen, & Rowe, 1999). Individuals with arthritis/rheumatism experience more depression than the general population (Barlow, Cullen, & Rowe, 1999; Dickens, McGowan, Clark-Carter, & Creed, 2002; Hawley & Wolfe, 1993; Lagacé et al., 2003; Lin et al., 2003; Nagyoca, Stewart, Macejova, van Dijk, & van de Heuval, 2005; Nicassio, 2008; Treharne, Kitas, Lyons, & Booth, 2005) with depression rates between 17% and 42% being reported (Ang, Choi, Kroenke, & Wolfe, 2005; Evers, Kraaimaat, Geenen, & Bijlsma, 1997; Frank et al., 1988; Hawley & Wolfe, 1993; Rosemann et al., 2007) though not higher than those with other chronic conditions (Newman, 1997). Out of patients with moderately severe to severe symptoms of depression, only 19% discussed depression during their medical visits, and patients had to initiate the discussion with their provider each time (Sleath *et al.*, 2008).

Figure 6. Proportion of individuals with case depression, by age, Canada, 2000



Source: (Lagacé et al., 2003)

The relationship between rheumatoid arthritis and depression has received more attention in the literature than the relationship between osteoarthritis and depression (Wolfe, 1999). Some studies have found that those with rheumatoid arthritis are more depressed than those with osteoarthritis (Dickens et al., 2002). Other studies however have not found depressive scores to be higher or more common among patients with rheumatoid arthritis (Hawley & Wolfe, 1993). Given that most First Nations individuals with arthritis suffer from osteoarthritis⁴ (First Nations

⁴ Surveys such as the FNIRHS do ask about “arthritis and rheumatism” but cannot distinguish the various diagnostic varieties. Most respondents who report having arthritis most likely suffer from osteoarthritis (Committee, 1999; First Nations and Inuit Regional Health Survey National Steering Committee, 1999)

and Inuit Regional Health Survey National Steering Committee, 1999) the majority of the research available is not on the condition most prevalent among Aboriginal Peoples. While rheumatoid arthritis is not the focus of our interest in chronic musculoskeletal conditions, the research that has been done in this area may be beneficial to better understanding the association between arthritis, osteoarthritis, and depression in Aboriginal communities.

Some authors, for example, have found that the time since onset of illness is important. Treharne et al. (2005) found that those with established rheumatoid arthritis were significantly less depressed than those recently diagnosed (Treharne et al., 2005). Others have found no difference in depression between recently diagnosed and chronic patients in terms of the distress they experience (Barlow et al., 1999; Barlow, Cullen, & Rowe, 2002; Evers et al., 1997). One study found that the strongest predictors of depression severity were perceived pain, few social contacts, physical limitation of the lower body and upper body, age, and body mass index (Rosemann et al., 2007). Another found that sex, pain and functional status, disease-related impact on daily life, and perceived social support were related to psychological distress among those recently diagnosed (Evers et al., 1997). Another study, on the other hand, did not find that pain was a significant predictor of depressive symptoms. Rather, beliefs about accepting one's illness and fatigue were more influential (Barlow et al., 1999).

Unlike other chronic illnesses there does not appear to be any suggestion of depression playing an etiological role in the onset of arthritis/rheumatism (Rosemann et al., 2007). Rather depression is seen as an additional burden that affects adjustment to the condition and ultimately the disease outcome (Burke et al., 2002). Co-morbid depression in individuals with arthritis has been shown to be an independent predictor of all-cause mortality with patients with persistent or recurrent depression twice as likely to die than patients with no depression (Ang et al., 2005).

A direct relationship between the physical markers of the extent or activity of the disease and depression have not been found (Newman, 1997). Research has shown that objective physiological measures of disease are not as robust a predictor of disability as psychological factors such as depression and pain (Botha-Scheepers *et al.*, 2006; Kee, 2003; Lin et al., 2003).

8.3 Common themes

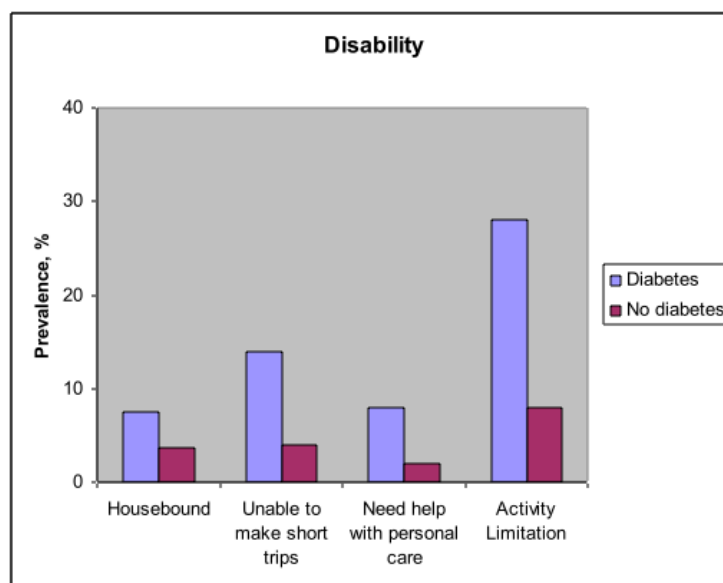
As is certainly evident from the above discussion, there are some themes common to chronic diseases that have a potential impact on one's mental health and can predispose individuals with chronic diseases to depression. The common themes of disability, quality of life, illness perception, self-perceptions, and self-control will be discussed briefly below.

8.3.1 Level of Disability

The relationship between level of disability and depression extends across many chronic conditions and has been explored within the context of the different conditions. The prevalence of chronic conditions has been associated with activity limitation among First Nations and Inuit populations in Canada, with 24% of people with hypertension, 28% of those with diabetes, 33% of those with arthritis, 36% of those with heart disease, and 38% of those with cancer reporting some degree of activity limitation (First Nations Centre, 2004). It has been found that those with increased disability suffer from poorer mental health (Barlow et al., 1999; Cadman et al., 1987;

Cassileth et al., 1984; Covington, 1991) and those with poor mental health have increased disability (Patten, 1999; Penninx, Leveille, Ferrucci, van Eijk, & Guralnik, 1999; Scott et al., 2008; Sullivan et al., 1999).

Figure 7. Prevalence of disability among First Nations people with diabetes, percentage rates



Source: First Nations and Inuit Regional Health Survey National Report 1999

A population-based study in Ontario in the 1980s found that children with both chronic illness and associated disability were at a greater than threefold risk for psychiatric disorders while children with only chronic medical conditions but no disability had only a twofold increase (Cadman et al., 1987). Penninx, Beekman et al. (1996) found that diseases involving more functional impairments such as stroke and arthritis had relatively stronger associations with psychological distress than other chronic diseases that had less functional limitations such as diabetes, cardiac disease and cancer. In contrast, some studies have found that among individuals living with chronic illness, decreases in physical functioning and advancement of chronic conditions were not associated with equal decreases in mental health, perhaps due to a process of psychological adaptation (Singer, Hopman, & MacKenzie, 1999). Overall, the research has shown that Aboriginals suffer greater disability than the general Canadian population (First Nations Centre, 2005). Among First Nations adults with diabetes, roughly one-quarter experience activity limitations due to the disease (First Nations Centre, 2005). Figure 4 presents data on the activity limitations of First Nations living with diabetes as reported in the 1997 FNIHRS.

Mental health disorders have also been shown to have negative effects on disability, at a rate equal to that of common chronic physical conditions. (Schonfeld *et al.*, 1997; Scott et al., 2008). One study found that depression in initially non-disabled older adults with chronic conditions significantly increased the risk for disability, especially for arthritis and angina (Penninx et al., 1999). In a study by Scott, Von Korff et al. (2008), individuals with mental disorder were more likely to be severely disabled than those with the physical conditions they investigated (diabetes, respiratory disease, headache, heart disease, arthritis, back or neck pain). They also found a synergistic effect between mental health and physical conditions: those with both mental and physical conditions were more likely to be severely disabled than those with either condition alone and had a greater likelihood than the sum of the odds of each condition individually (Scott et al., 2008). Directly related to disability is the impact of the association between chronic

disease and mental health and quality of life. This is discussed below.

8.3.2 Impact on Quality of Life

Health-related quality of life refers to the ways in which health, illness, and medical treatment influence an individual's perception of functioning and well-being. (Jacobson, de Groot, & Samson, 1997). Depression, chronic diseases, and quality of life are closely related although the direction of the relationship is not clear (Jacobson et al., 1997). Studies done with regards to people with diabetes found that diabetics with a diagnosis of depression have significantly lower quality of life compared with diabetics who are not depressed (Goldney et al., 2004; Gonder-Frederisk et al., 2002; Jacobson, De Groot, & Samson, 1994; Thommasen et al., 2005). The effect of depression on quality of life was found to be greater than the effect of diabetes on quality of life (Goldney et al., 2004). When just considering the impact of diabetes on quality of life, it was found that individuals with diabetes have considerably worse quality of life compared to the general population (Gonder-Frederisk et al., 2002; Jacobson et al., 1997; Mayou, Bryant, & Turner, 1990; Rubin & Peyrot, 1999; Steed, Cooke, & Newman, 2003).

Table 5. Self-determination indicators by feelings of depression or sadness

% Strongly agreeing that...	Depressed	
	Yes	No
I can solve the problems I have	32.4%	38.5%
No one pushes me around in life	33.8%	41.0%
I have control over things that happen to me	28.0%	31.1% (NS)
I can do just about anything I set my mind to	35.2%	43.2%
I often feel helpless in dealing with the problems of life	7.4%	4.1%
What happens to me in the future mostly depends on me	37.0%	37.6% (NS)
There's little I can do to change many of the important things in my life	10.6%	5.9%

Source: First Nations Regional Longitudinal Healthy Survey (RHS) 2002/03: Results for adults, youth and children living in First Nations Communities

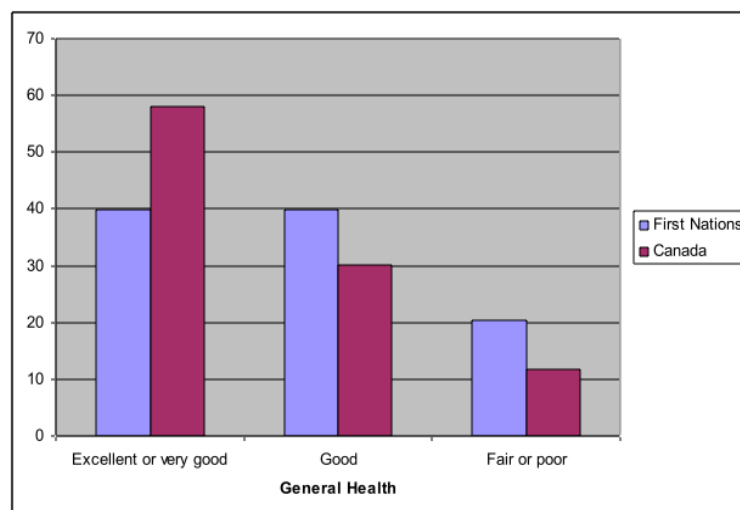
The reason for this is likely multifactorial. Diabetics tend to be overweight, engage in less physical activity and are more likely to have medical co-morbidities (Gonder-Frederisk et al., 2002; Jacobson et al., 1997; Rubin & Peyrot, 1999; Thommasen et al., 2005). Better quality of life is associated with low blood glucose levels and tight metabolic control (Jacobson et al., 1997; Rubin & Peyrot, 1999). In Canada, only one study was found that provided insight into the relationship between quality of life, diabetes and depression among Aboriginal Peoples. This study found that Aboriginals have lower quality of life than non-Aboriginals and that the average number of unhealthy days for mental health was higher among Aboriginal than for non-Aboriginal people (Thommasen et al., 2005). As the majority of information in this area has focused on diabetes, research on the impact of other chronic diseases and their association with mental health on quality of life will be important to engage with in the future.

8.3.3 *Illness perceptions and self-perceived health status*

Illness perceptions and illness acceptance influence depression in individuals living with chronic diseases (Stanton & Revenson, 2007). Illness perceptions are the beliefs that patients hold about their illness, its effects, why it has happened, how long it will last and whether it can be cured or controlled (Botha-Scheepers et al., 2006). Among those with arthritis/rheumatism, illness perceptions have been shown to have a strong impact on outcomes (Botha-Scheepers et al., 2006). For example, a patient who sees the illness as negative, uncontrollable, and chronic are more likely to adjust poorly to the illness, report greater disability, have lower life satisfaction and suffer from greater depression, anxiety, pain, and fatigue (Botha-Scheepers et al., 2006; Kee, 2003; Nagyoca et al., 2005; Treharne et al., 2005). Alternatively, a person who accepts their chronic disease is able to set up new reasonable frames or goals and be able to fulfill them (Nagyoca et al., 2005). Arpin, Fitch et al. (1990) found that the meaning given to illness was the largest contributor to the variance in adjustment outcomes observed among individuals with chronic illnesses, regardless of the type of illness or its severity (Arpin et al., 1990). They then suggested that since there is no relationship between the severity of disease and the meaning given to the illness, unfavourable attitudes towards illness should be used to identify subjects in need of psychosocial services (Arpin et al., 1990).

Research among American Indians with rheumatoid and osteoarthritis found that individuals expected to have decreased functional abilities and increasing pain and suffering (Kramer, Harker, & Wong, 2002). The same research found that negative thoughts, which have been associated with poor psychological outcomes and greater physical disability were generally absent (Kramer et al., 2002). McCubbin, Thompson et al (1993) found that Native American Indians defined the meaning of disability as part of a more general pattern of harmony disharmony, and viewed individuals with chronic conditions as a valued, functioning member of society rather than as some one that is different or stigmatized.

Self-perceived health status has also been found to be an important factor affecting depression among those with chronic disease. Among First Nations, self-perceived health has been related to suicide, the most dramatic indicators of distress. Suicidal thoughts were found to be more common among those with fair or poor rated health (38.4%) than among those with excellent self-reported health (28.9%) (First Nations Centre, 2005).

Figure 8. General health of First Nations and other adults in Canada

Source: First Nations Regional Longitudinal Healthy Survey (RHS) 2002/03: Results for adults, youth and children living in First Nations Communities

Optimism is associated with less anxiety, depression and more life satisfaction among individuals suffering from rheumatoid arthritis. There is also evidence that people with a sense of high self-esteem, control and optimism adjust more successfully to chronic illness (Helgeson & Reynolds, 2002). Optimism has been associated with lower pain at initial onset of arthritis and interestingly higher pain for those with established disease, reflecting possibly unmet expectations of improvement or betterment of their condition (Treharne et al., 2005).

8.3.4 Body Image and Self-esteem

In a similar way to one's perception of disease, self-esteem has been found to be associated with both physical and psychological health. While no research directly examines the relationship between self-esteem, depression and chronic disease among Aboriginals, studies in other populations and with regards to one or more of these areas can be used to begin to unpack the relationship. For example, low self-esteem has been found to double the risk for later depression (Nagyoca et al., 2005). Among individuals with rheumatoid arthritis, higher levels of self-esteem, along with better adjustment to the illness were associated with less psychological distress (Nagyoca et al., 2005). Body image and self-esteem have been particularly linked to the psychological health among those with chronic illnesses among adolescents. A study by Wolman et al. (1994) found that body image was the most important predictor of emotional well-being for students with chronic conditions, suggesting that a strong sense of self (i.e. body image) as well as family cohesion and support were more important than having a disability on positive emotional development. Adolescents in British Columbia with chronic illnesses or disabilities are more likely than those without to have low self-esteem (17% vs. 5% respectively) (The McCreary Centre Society, 1994). Among First Nations youth with disabilities, 78.2% are somewhat less likely to agree or strongly agree with the statement "I like the way I am" compared to 85.6% among youth without disabilities. The difference is most pronounced among males, among whom 79.6% with disabilities agree or strongly agree with the statement compared

to 90.4% of their counterparts without disabilities (First Nations Centre, 2005). In addition to a sense of comfort and pride in one's body and personal ability, sense of control over one's lives is also interconnected with chronic diseases and mental health.

8.3.5 *Mastery*

A sense of mastery refers to the extent to which people see themselves as in control of their lives (De Marco, 2000). Low perceived mastery includes feelings of helplessness and is associated with worse health and psychological outcomes (Daniel, O'Dea, Rowley, McDermott, & Kelly, 1999; Gonder-Frederick et al., 2002; Sunday, Eyles, & Upshur, 2001). Lower feelings of mastery may be more frequent among those with chronic illnesses because of the progressive physical deterioration and unpredictable symptom flare-ups common in many chronic diseases (Helgeson & Reynolds, 2002), and the greater likelihood of individuals with chronic illness or physical disability to be confronted with problems that are not amenable to problem solving (Penninx et al., 1996). A high sense of mastery has been linked to improved physical and psychological health status among individuals with arthritis (Barlow et al., 2002; Burke et al., 2002) and among Aboriginal Canadians, good mastery skills have been associated with healthy blood lipid levels (Daniel, Rowley, Herbert, O'Dea, & Green, 2001) and low fasting glucose levels (Daniel *et al.*, 1995). Similarly, American research has found an inverse relationship between arthritis pain among American Indians and a sense of mastery (Kramer et al., 2002). Another study found that individuals with arthritis and very high self-efficacy had higher pain thresholds and higher pain tolerance, while those with low self-efficacy had greater physical impairment, more pain, more fatigue, more depression and anxiety and less acceptance of their condition (Barlow et al., 2002). One study among women with physical disabilities found that women equipped with high levels of personal resources (sense of mastery, self-esteem, or hardiness) had significantly better long-term psychosocial adaptation: perhaps due to their ability to better cope with the daily hardships and familial role difficulties of their illness and to use their limited concrete resources more efficiently (Dangoor & Florian, 1994).

The 2002/03 Regional Health Survey (RHS) asked questions closely relating to mastery, and the results (see Table 3 below) differ among those who were and were not depressed (First Nations Centre, 2005). Among Canadian adult First Nations who were depressed, only 28% strongly believed that they had control over things that happened to them, 7.4% felt helpless in dealing with problems of life and 10.6% strongly believed that there was little they could do to change many of the important things in their lives (First Nations Centre, 2005). The RHS found a similar pattern among youth with disability (First Nations Centre, 2005).

Unfortunately, feelings of powerlessness and a low degree of controllability over the elements that affect their lives are common in many Aboriginal communities, largely as a result of the ongoing impacts of colonization (Boston et al., 1997; Grams et al., 1996). This powerlessness has long been recognized as a major factor shaping Aboriginal health (Tsey & Every, 2000).

8.4 Co-morbidity

8.4.1 *Cancer and Diabetes*

Diabetes appears to increase the risk of developing cancer in general due to the fact that changes in the body cells affected by diabetes may facilitate the growth of cancer cells. In particular,

cancers of the liver, esophagus, colon, pancreas and other cancers related to obesity (Marrett, 2003). Factors that are associated with increased rates of diabetes include being overweight or obese, abdominal obesity, physical inactivity, family history of diabetes, previous diagnosis of gestational diabetes, high saturated fat intake, high blood pressure, high cholesterol, impaired glucose tolerance, and being of Aboriginal, African, Hispanic or Asian ancestry (Health Canada, 2000). As can be seen from the list of risk factors for diabetes, many of them are common risk factors for cancer as well, such as a fat diet, inactivity and obesity. The prevalence rate of diabetes in the First Nations population in Canada is very high: 19.7% of First Nations vs. only about 4.9-5.8% of the average Canadian population. According to Regional Health Survey 2002-03, most First Nations (78.2%) have been diagnosed with type 2 diabetes, 9.9% with type 1 diabetes and 9.8% have been told they are in a pre-diabetes state (2002/2003). Diabetes and glucose intolerance are the most common risk factors for CVD in the Aboriginal population (Harris et al., 2002), which is why the connection between these two chronic conditions and their risk factor interactions are so important to understand. Therefore, any risk factor for diabetes is an indirect risk factor for CVD.

8.4.2 Diabetes and CVD

Diabetes is a risk factor for the development of cardiovascular disease. Approximately 70% of deaths in adults with diabetes is from cardiovascular disease (Daniel *et al.*, 2001; Gilmer *et al.*, 2005). The Strong Heart Study conducted among Indian communities in Arizona, Oklahoma, and South and North Dakota found that diabetes was very strongly associated with coronary heart disease in American Indians (Howard *et al.*, 1995). Hypertension is a risk factor for the development of cardiovascular disease (Johnston, 1997) and is somewhat more prevalent among First Nations adults overall when comparing with the general population (20.4% compared with 16.4%) (First Nations Centre, 2005). Other reports have estimated the prevalence of hypertension and heart problems among First Nations on reserve to be approximately three times the rate among the general Canadian population (Health Canada, 2000). Blood lipid levels are also associated with the risk of developing heart disease, and interestingly, healthy blood lipid levels have been associated with good mastery skills and low depression among Aboriginal Canadians (Daniel et al., 2001). Among First Nations, 50% of the respondents with diabetes reported having hypertension, and 26% reported having heart disease, prevalence rates that were 3.3 and 3.9 times those among the respondents without diabetes, respectively (Young et al., 2000). Other studies have found that 43% of First Nations with diabetes had hypertension, compared to just 10% of those without diabetes (Health Canada, 2000).

8.4.3 Osteoporosis and Chronic Diseases

A recent Manitoba study has found the following associations between osteoporotic fractures and chronic diseases (Leslie, 2006):

Diabetes diagnosis was found to be weakly associated with osteoporotic fractures after controlling for all variables;

Ethnicity was estimated to be strongly associated with higher rates of osteoporotic fractures;

Greater number of ambulatory diseases;

A substance abuse problem correlated with higher fracture risk at all sites.

8.4.4 Health Imbalance and Co-morbidity

The affect that mental illness can have on other dimensions of an individual's health will be discussed at the end of this section.

Given the debilitating effects that SMI can have, it should come as no surprise that individuals living with SMI can and often do experience additional health problems. For Indigenous Peoples who understand health as a balance between physical, mental, emotional, and spiritual health ([FNIGC], 2005; Canada, 2006; Smye & Mussell, 2001), imbalance in one dimension of health can cause imbalance in another. For instance, mental illness may impair the ability of an individual to engage in health-promoting behaviors that reduce the risk of physical illness (Lando, Williams, Williams, & Sturgis, 2006). Furthermore, poor mental health may impair the treatment of and recovery from existing chronic illnesses (Lando et al., 2006). Conversely, living with chronic physical illnesses, such as diabetes or cancer, can negatively influence the mental health of the individual (Lando et al., 2006). Emotional health may also be impaired by SMI; identifying one's self as mentally ill can lead to feelings of alienation and despair (Lefley, 1990). The link between mental and spiritual health may be less clear, however, at least some Indigenous individuals have recovered from mental illness by embracing and promoting spiritual health (Storck et al., 2000).

There is some evidence of the relationship between mental and physical health in the research addressing mental health of Indigenous Peoples. A recent study found cardiovascular disease (CVD) to be twice as prevalent among American Indian participants with a lifetime diagnosis of major depression than those without (Sawchuk et al., 2005). In the same study, CVD was more than twice as prevalent among participants with PTSD than those without, and established risk factors for CVD also occurred more frequently among participants with PTSD (Sawchuk et al., 2005). Other studies have linked substance abuse disorders (particularly injection drug use) to escalating rates of communicable diseases, such as HIV and hepatitis C, in Indigenous populations (Callaghan, Cull, Vettese, & Taylor, 2006; Spittal et al., 2007).

Substance use disorders have also been linked to other mental illnesses. Individuals suffering from SMIs are at heightened risk of substance abuse, possibly because of the individual's desire to 'self-medicate' undesirable psychological symptoms or to 'numb' painful feelings (Phoenix Kasten, 1999). As mentioned in the previous section on addiction, some Indigenous individuals have identified their substance abuse as an attempt to numb the pain caused by physical and sexual abuse, low self-esteem, loss of culture and identity, and family history of substance abuse (Wardman & Quantz, 2005). Thus, social burdens of families and communities can influence the mental well-being of an individual. In turn, behaviours of mentally ill individuals affect families and communities (Warry, 1998). The following section will discuss how family caregivers are affected by SMI and how social burdens of violence, substance abuse, incarceration and suicide affect the mental health of entire communities.

The large burden of chronic disease in Aboriginal populations, demonstrated by the previous "burden of disease" sections, highlights the need to understand risk factors for chronic diseases in Aboriginal populations. For, it is with such understanding of common risk factors that strategies to improve Aboriginal health and well-being can be developed.

A LIFE COURSE APPROACH: CHRONIC DISEASE RISK FACTORS IN ABORIGINAL POPULATIONS IN CANADA

1. Introduction: Taking a Life course Approach

In order to stem the rise of chronic diseases in developed countries throughout the twentieth century, and particularly in the post-war period, epidemiologists, health care professionals, and policy makers targeted adult risk factors (Kuh & Ben-Shlomo, 2004). Thus, targeting adult behaviour and lifestyle factors, such as obesity, smoking, and high cholesterol became the prevailing model for the prevention and intervention of chronic disease (Kuh & Ben-Shlomo, 2004). In the developed world, this approach and its programs have been very successful in alleviating problems associated with chronic diseases: results from the 40-year Framingham heart study indicate that in the United States, more than one-half of the decline in coronary heart disease mortality observed in women and one-third to one-half of the decline observed in men can be attributed to changes in adult risk factors (Sytkowski et al., 1996). Unfortunately, the overall improvement in adult risk factors and chronic disease is limited to certain populations: while rates of some chronic disease have declined in Western populations, chronic diseases are a growing cause of mortality and morbidity among vulnerable populations, like Canada's Aboriginal people (Smeja & Brassard, 2000).

Another problem with the adult risk factor approach is that, while adults are being targeted to change their lifestyle habits, the next generation will grow up in the same conditions that have fostered the development and onset of chronic disease in their parents. When these conditions are grounded in poor socioeconomic status, the disease risk is increased and the applications of an adult lifestyle approach to chronic disease is ineffective. Social disparities and inequities in health documented in Aboriginal communities across the country suggest that an adult risk factors approach alone is not enough. Results from recent Aboriginal studies reinforce a "determinants of health framework," which indicates that broader social-welfare provisions must be considered in the fight to reduce disparities in health (Newbold, 1998).

In the last 20 years, life course epidemiology has emerged as an alternative approach to the prevailing adult risk model described above (Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003). Life course epidemiology has been defined as the study of long-term effects of physical or social exposures during gestation, childhood, adolescence, young adulthood, and adult life on one's developmental health and later disease risk (Kuh et al., 2003). Life course epidemiology offers a way to conceptualize how underlying biological and socio-environmental determinants of health, experienced at different life course stages, can differentially influence the development of chronic diseases (Moore & Davies, 2005). The benefit of this perspective is that it expands the conventional adult lifestyle models of disease risk by recognizing that psychosocial, as well as physiological factors occurring throughout an individual's life can affect a diverse range of outcomes, from general well-being to physical functioning and the development of chronic disease (Ben-Shlomo & Kuh, 2002, 1996; Darnton-Hill, Nishida, & James, 2004). A major strength of this approach is that it also shows how risks occurring throughout life can be identified, corrected, and/or modified over the long time frame it takes for chronic diseases to develop (Lynch & Smith, 2005). In a parallel manner, "a life course perspective allows one to see health differences among populations, social classes, etc. as resulting from an accumulation

of material disadvantages [and] that reflect widely differing economic and social life circumstances” (Darnton-Hill et al., 2004). Only after thinking of disease as an aspect of an individual’s life course can “the prevention and control of chronic diseases...be intimately integrated into normal daily life” (Darnton-Hill et al., 2004), and sustained to benefit the health of communities. Thus, strategies that address risk factors must continually account for “the underlying economic, gender, political, behavioural and environmental factors that foster these disease risks” (Darnton-Hill et al., 2004) within all age groups and across generations.

What the life course approach also adds to the adult risk factor model is an understanding of and attention to timing and the duration of exposures to risks (Ben-Shlomo & Kuh, 2002). There are a number of models that have been used to account for the importance of timing in disease development and used as a basis for underlying theoretical frameworks for life course studies. The critical period model assumes that exposure at a certain period, usually early in life, has a permanent effect that remains relatively stable throughout an individual’s life. This model can be extended by considering the interaction of these early exposures with exposures later in life. Another possible model is the accumulation of risks model that posits the development of disease as a result of cumulative exposure and damage over the life course to some threshold. Finally, there is a pathway model that suggests that exposure increases the likelihood of further exposure, which can eventually result in the development of a disease. While the exposure time, magnitude, and impact is different for each of these models, they all speak to the importance of engaging with the interconnection between time and disease risk in order to chart a better understanding of the etiology of chronic diseases. In addition to the benefit of life course for the organization and investigation methods of research, a life course approach provides an effective tool for policy makers. This is because, as the World Health Organization (WHO) notes, a life course approach can help identify the most effective and potentially successful policies and prevention methods for chronic diseases (WHO, 2005).

1.1 The Life Course Perspective and Aboriginal Health

The burden of chronic diseases in Aboriginal populations, is a serious public health concern. And as the morbidity and mortality rates related to chronic diseases continue to show signs of growth in this population (Smeja & Brassard, 2000), a new approach to studying disease trends and facilitating positive interventions is needed. As described above, the life course perspective provides an appropriate theoretical model to do this. Further still, the life course approach is complementary to Aboriginal perspectives on health. For one, a life course perspective provides researchers with the tools to integrate scientific, cultural, and sociological knowledge in a meaningful way; this fusion is necessary to satisfy both the scientific and cultural requirements of Aboriginal health research.

Secondly, life course research understands health in an holistic way (Lynch & Smith, 2005), which complements Aboriginal conceptions of health and well-being that encompass the physical, mental, emotional, and spiritual domains (Bartlett, 1998). This is exemplified by a quote from the 2002/03 First Nations and Inuit Regional Health Survey: “The medicine wheel life cycle connects the experiences and wellness of infants to the experiences and wellness of children, youth, young adults, parents, grandparents, and elders, again from an individual, family, community, and First Nations perspective” (First Nations Centre, 2005).

The crisis in Aboriginal Peoples' health today is complicated by issues that are deeply rooted in social disparities (Adelson, 2005), which is why there is concern that no amount of risk assessment or health recommendations will reduce the burden of disease without a parallel understanding of the importance of social change. Life course epidemiology offers a conceptual framework to integrate social and biological risk factors (Kuh et al., 2003): it allows the researcher and the community to map out the dominant risk patterns in their region and target their eradication before an accumulation of those risks becomes a problem. Since research that is "by and for" Aboriginal peoples and reflects Aboriginal perspectives is the most likely to improve the health of Aboriginal Canadians (O'Neil, Reading, Bartlett, TK, & J, 1999), life course's recognition of social and cultural values is also promising. As different Aboriginal populations gradually acquire the resources necessary for their empowerment, the applications of life course epidemiology could have the potential to be used in novel prevention-based policy recommendations.

1.2 Applying the life course approach

By studying an individual's development and exposures to risks throughout the life course, in terms of biological conditions and socioeconomic factors, chronic disease patterns can be better understood. Thus, the risk factors noted in the literature will be discussed in the particular life stage that they have a profound impact or at which they place an individual at the greatest risk for developing chronic diseases. This section will begin, however, with a discussion of the community-level or broad reaching risk factors that influence health and well-being across the life course. These cross-cutting risk factors are discussed first to help set the stage and highlight the underlining factors influencing the health and well-being of the Aboriginal population. Following this, this section will begin to look at the specific life stages. Naturally, this will begin with a discussion of prenatal risk factors. It will follow with in-depth discussions of natal, early childhood, childhood and adolescent, and adulthood risk factors. This is a natural and logical ordering that follows the life trajectory and temporal course of risk exposure and disease development. While this separation of the different life stages is important, it is also important to remember that many risk factors are present at multiple life stages. To avoid duplication, the importance of the timing of the exposure and the impact of risk factors on long-term health and development will be given attention.

A broad "determinants of health" perspective will also ground the discussion of the risk factors. That is, biological, social, economic, environmental, and political factors that affect one's health, and the health of communities, populations, and generations will all be included. This will enable a broad discussion of the complex risk factor environment for Aboriginal populations in Canada and around the world.

2. Community Risk Factors

"Community" risk factors are defined and discussed here as those that have impact health at multiple life stages, beyond an individual's life span, across a generation, and between generations. These multi-level factors are an important addition to the traditional risk factor model: thinking of risk factors as they act across and within generations is important because it encourages the consideration of collective health issues and the interconnections that exist between health and society. This will build on the discussions of the previous chapter, the

Aboriginal health research environment, which demonstrated how the efforts of the Canadian government to oppress the cultures, traditions, and community structures of Aboriginal populations has caused collective trauma and grief and has culminated in health problems in many Aboriginal communities ([FNIGC], 2005; Kirmayer, Brass, & Tait, 2000). In addition to the social, political, cultural, and academic history of Aboriginal health, this section will examine the community risk factors associated with socioeconomic status and geography. This focus is important because it will enable a rich discussion of the social determinants of health that act on communities and collectives and impact the health and well-being of such communities. This is particularly important to do with regards to the prevalence of chronic diseases, where social, economic, and environmental issues have been shown to have a profound effect on disease risk and mortality (NSW Health, 2006).

2.1 Socioeconomic Risk Factors

The ill health of Aboriginal Peoples has been linked to “the corrosive effects of poverty and economic marginalization” (Kirmayer et al., 2000), but these social determinants of health have themselves been described as both direct and indirect consequences of historic policies of colonization ([FNIGC], 2005; King, 2006). As such, the risks associated with colonization are interrelated and connected to the risks posed by socio-economic disadvantage (Beauchamp et al., 2004; Canada, 2003; Carson, Dunbar, Chenhall, & Bailie, 2007; Reading, Kmetc, & Gideon, 2007). Unfortunately, Indigenous Peoples worldwide are disproportionately burdened with disease risk from such social determinants as poverty, low household incomes, and lack of adequate (or no) housing ([FNIGC], 2005; Adelson, 2005; Beauchamp et al., 2004; Canada, 2006; Canada, 2003). Since “social inequality, whether measured at the population or individual level, is the single leading condition for poor health” (Geyorfi-Dyke, 2008), such social disadvantages highlight the risks placed on the health and well-being of Aboriginal Peoples in Canada. The potential impact of socioeconomic factors is even more obvious when one considers the burden placed on the biological development of individuals as these disadvantages accumulate across the life-course and across generations (Adelson, 2005; Beauchamp et al., 2004; Carson et al., 2007; Marmot & Wilkinson, 1999; Warry, 1998). It is from this perspective that the specific influence of poverty and socioeconomic status, as well as housing, on chronic disease development is discussed below.

2.1.1 Low Socioeconomic Status and Poverty

While child poverty is briefly discussed in the “early childhood risk factors” section, the impacts of poverty and poor socioeconomic status on chronic diseases are included here to emphasize the intergenerational and cyclical nature of poverty: child poverty is family poverty, is community poverty, is generational poverty. That is, poverty never affects just one individual, at one time, but is an issue that transcends age, time, and space.

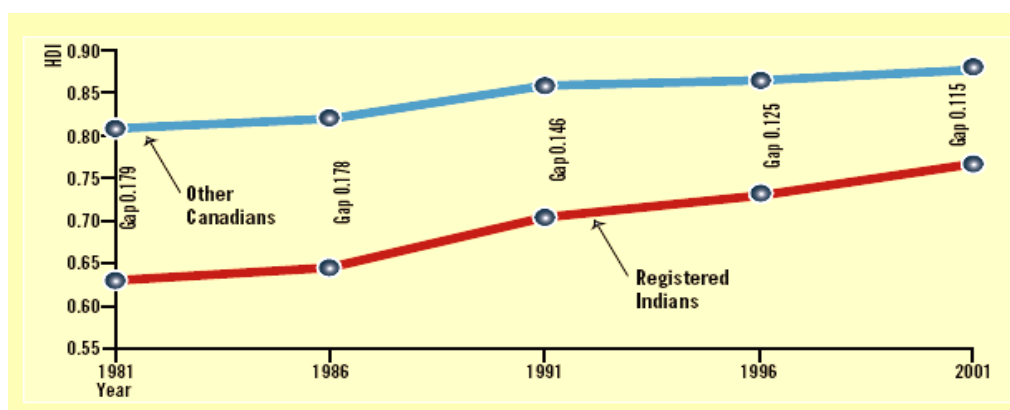
Defining and Describing Poverty for Aboriginal Peoples in Canada

While poverty can (and has) been described and defined in a number of different ways, it is often classified according to its extremity. As such, it is often labelled as: extreme, moderate, and relative poverty. Extreme poverty is when households (or individuals) cannot meet their basic needs for survival. Moderate poverty is when basic needs are barely met. And, finally, relative poverty is when the household income is less than the national average income (World Health

Organization, 2008). Thus, relative poverty is often equated with the terms “low income” and “poor/low socioeconomic status.” In Canada, relative poverty, or low income, is measured using the low-income cut-off (LICO) level developed by Statistics Canada (Ross, Shillington, & Lochhead, 1994; Statistics Canada, 1999). Despite the presence of varied experiences, measures, and approaches, it is clear that all types of poverty adversely affect one’s health. As such, this section will discuss the general connection between poverty and chronic diseases. First, however, the prevalence of poverty among Canada’s Aboriginal population will be reviewed.

To measure and compare the quality of life between different countries or populations, the United Nations developed the Human Development Index (HDI). This index has been applied in Canada in an effort to compare the quality of life and well-being of Aboriginal and non-Aboriginal people in Canada (INAC, 2004). Canada has been consistently ranked according to the HDI as one of the top five countries in the world. When the HDI rank is controlled for Aboriginal ancestry, however, Canada’s Aboriginal population ranks at a shockingly low 78th place (Blackstock, 2005). This highlights the often-sighted analogy that Aboriginal Peoples in Canada are living in Third World conditions within a First World country (O’Neill, 2007). This is demonstrated by the gap between the red and blue lines in figure 1 below. The figure also demonstrates that: (1) the HDI score for both Registered Indians and other Canadians has increased from 1981 to 2001; (2) the gap in HDI scores has reduced (from 0.179 in 1981 to 0.115 in 2001), and (3) a large discrepancy between the health of Registered Indians and other Canadians clearly and profoundly remains.

Figure 1. The Human Development Index for Registered Indians and Other Canadians, 1981-2001 (INAC, 2004).



Source (INAC, 2004)

In addition to the HDI, income statistics and poverty rates exemplify the poor socioeconomic status of many Aboriginal Peoples in Canada. For example, “47.2% of the Ontario Aboriginal population receives less than \$10,000 per year” (Ontario Federation of Indian Friendship Centres, 2004). Canada-wide statistics also show that Aboriginal people are economically disadvantaged: 73.4% of Aboriginals earn < \$20,000 per year, and the average income is \$ 15,699 versus \$25,414 in the rest of Canada (Sin et al., 2002). Information collected in urban settings demonstrates that this subset of the Aboriginal population is significantly disadvantaged compared to their non-Aboriginal counterparts. For example, a study done in 2000 reported that

Aboriginal Peoples living in urban settings are twice as likely to live in poverty than non-Aboriginal people (Lee, 2000). Further, while accounting for only 1.5% of the urban population, Aboriginal Peoples account for 3.4% of the poor population (Lee, 2000).

Poverty and Health

As has been demonstrated elsewhere and will be discussed in the life stage discussions, traditional adult risk factors, such as smoking, high blood pressure, obesity, and poor diet, are common and concerning risk factors for the development of chronic diseases. However, such risk factors only explain a fraction of the incidence and prevalence of chronic disease and the mortality from such diseases in Aboriginal populations. For instance, research has continually shown that socioeconomic status (SES) can have a profound impact on the prevalence and mortality of disease (Marmot, 1987; Smith, Hart, Blane, Gillis, & Hawthorne, 1997; Smye & Browne, 2002; Syme, 2004; van Rossum, 2000): there exists “abundant data showing a link between poverty and ill health” (Marmot & Wilkinson, 1999). For instance, it has been noted that “the higher the socio-economic level of the household the lower the mortality rate” (Marmot, 2005). Research has found that traditional adult risk factors can only account for approximately 25-35% of the mortality associated with this “social gradient” (Marmot, 2005; Syme, 1989). While all aspects of this association have yet to be determined, research documenting the relationship between poverty and chronic disease prevalence and mortality will be discussed below.

Poverty increases an individual’s, a family’s, and a community’s risk of developing chronic diseases, developing complications, and dying (World Health Organization, 2008). This is because material deprivation, unhealthy living conditions (e.g. poor housing, inadequate food supply), and poor access to health care services predispose people with low socioeconomic status to the development of chronic diseases and the uptake of risk behaviours throughout the life course (NSW Health, 2006). For instance, the World Health Organization (WHO) notes that “the poor and people with less education are more likely to use tobacco products and to consume energy-dense and high-fat food, be physically inactive, and be overweight or obese” (World Health Organization, 2008). Psychosocial stress is also considered to be a major contributor to the ill health of those living in poverty. Notable researchers, such as Marmot and Syme, discuss such stress as the loss of one’s control over their destiny and, therefore, their ability to deal with the forces that affect their day-to-day lives is a key component of the link between socioeconomic status and health (Marmot, 2005; Marmot, 1998; Syme, 1998; Syme, 1989; Syme, 2004). This theory has been supported by research that has found that “control of destiny” is lower in the lower status groups (Marmot, 2005). Neuroendocrinological studies have also shown that lack of control over life circumstances creates a load of stress on the body, which may eventually result in the development of a variety of diseases and conditions, especially insulin dependent diabetes, cardiovascular diseases (Mc Ewan, 1998; McEwen, 2006), alcoholism, and suicide (Syme, 1998). In addition to the imposition of stress and loss of control over one’s future, stress related to finances, lack of access to healthy food (or food at all), lack of access to basic health care, poor living conditions, and inability to provide basic needs demonstrate the correlation between poor socioeconomic status and health (Behrman, 1995). While there is reason to be encouraged by the fact that the socioeconomic status of many Aboriginal Peoples has increased in recent years, the gap between Aboriginal and non-

Aboriginal people in Canada remains (see figure 1 above). The same is true for other Indigenous populations around the world: Indigenous populations in developed countries are “a socially excluded minority within their countries”(Marmot, 2005) and “over-represented in lower SES [socioeconomic status] strata” (Valery, 2006). The direct impact of the overrepresentation of Aboriginal Peoples in the lower SES levels on mental health, cancer, and respiratory disease, as examples of specific chronic disease impacts, is presented below.

Socioeconomic disparities and, particularly, their relationship to a loss of control of destiny are a major risk factor for mental health problems (Canada, 2006; Warry, 1998). As Warry (1998) explains, problems of alcohol abuse and family violence among Aboriginal Peoples are deeply rooted in a perceived lack of control over life. Syme (2004) suggested that a lack of “control of destiny” contributes to community-level health problems and interferes with the desire among Aboriginal Peoples to assume responsibility for their health and well-being (Warry, 1998). For instance, some severely mentally ill individuals have identified poverty to have a debilitating impact on their self-esteem, social networking, leisure activities, and abilities to meet their basic needs, visit their family members, and form intimate relationships (Wilton, 2004). The debilitation from poverty is often thought to be more difficult to deal with than the diagnosis or ongoing treatment of the disease itself. And, issues related to poverty tend to exacerbate the intensity, persistence, and effects of the disease (Lee, 2000).

The relationship between socio-economic status and cancer risk is very complex. This is because current research reports that having a higher socioeconomic status can predispose people to some types of cancer (i.e. lung, breast, colorectal), while having a lower socioeconomic status can place people at risk for other types of cancer (i.e. stomach, liver, and cervical) (Brown & Lipscomb, 2006). Comparisons between developed and developing countries, which has led to these conclusions, are translatable to the study of Aboriginal cancer risk in Canada, as Aboriginal people have been likened to developing societies that live within a developed country (Epstein, 1982). And, as the prevalence of cancer in Aboriginal populations in Canada shows, the “third world cancers” are generally more common in Aboriginal Peoples than are the “Western cancers.” This suggests that targeting the socioeconomic status, as a risk factor will help alleviate cancer risk among Aboriginal Peoples. Attention to the role that income has on the burden of cancer in Aboriginal populations is also important in terms of cancer survival rates: low socioeconomic status has been shown to lead to decreased cancer survival rates as well as increased cancer fatality rates (Marrett, 2003).

Socioeconomic status has also been shown to impact the prevalence of diabetes. A 2003 study found substantial clustering of diabetes in areas of Winnipeg with low socioeconomic status, poor environmental quality, poor lifestyles and a high concentration Aboriginal people (Green, Hoppa, Young, & Blanchard, 2003). The study found that education and income were stronger predictors of diabetes than Aboriginal status, suggesting that socioeconomic status, rather than genetic factors were responsible for the high prevalence of diabetes (Green et al., 2003). Despite studies that demonstrate potential correlations between poverty and health, it is important to remember that poverty alone does not determine the health of an individual or population. Thus, the complete nature of the relationship between poverty and illness, and in particular chronic diseases, in Aboriginal populations has yet to be determined and should be the focus of further research. This should include an examination of poverty as a risk factor for chronic disease

development, as well as chronic diseases as a risk factor for poverty. This is because (WHO – chronic diseases and poverty):

Chronic diseases inflict an enormous direct and indirect economic burden on the poor, and push many people and their families into poverty. Further, the death or illness of parents or caring adults can lead to the impoverishment of their children and/or their community. Existing knowledge underestimates the implications of chronic diseases for poverty and the potential that chronic disease prevention and health promotion have for alleviating poverty (World Health Organization, 2008).

As this quote highlights, the prevention of chronic diseases and interventions targeting underlying social determinants of health have the potential to greatly improve poverty rates and the general well-being of Aboriginal Peoples.

2.1.2 Shelter and Housing

In addition to and interrelated with issues of income are issues related to shelter. Like income, housing disadvantages have been acknowledged as having potentially negative health impacts (Carson et al., 2007). Housing disadvantages can be measured and are expressed in different ways. For example, homelessness is often noted as being an extreme housing disadvantage, whereas substandard housing and the quality of a house are more moderate concerns. The gradient of housing disadvantages suffered by Aboriginal Peoples in Canada will be discussed in this section.

Homelessness among Aboriginal Peoples in Canada

Using the poverty terminology, homelessness has been characterized according to its extremity: absolute, relative, or at-risk homelessness. Within these parameters, absolute homelessness refers to:

“People without shelter who may or may not live on the streets; some may rely on emergency shelters, transitional housing, friends and families. It also includes “couch surfers. These are people without shelter that sleep in different homes whenever they can (Helin, 2002).”

“Relative Homelessness” refers to the circumstances where people have a physical shelter, but the shelter does not meet basic health and safety measures (Hwang, 2001). Those at risk of homelessness are those who are socio-economically disadvantaged and are struggling to pay rent (Helin, 2002). The working poor is a prime example of such a group, as they continually “live on a precipice that can tumble them into homelessness at any time” (Plumb, 2000). The labelling of homelessness as “situational (or temporary) homelessness; episodic homelessness; and chronic (long-term)” (Beavis, Klos, Carter, & Douchant, 1997) has also been used. While different from the lingo used in the poverty literature, this categorization is more intuitive than the absolute and relative terms.

The literature demonstrates that homelessness is experienced by Indigenous populations around the world, although it does not occur equally across all Indigenous populations. Indigenous populations that disproportionately suffer from homelessness include: Native American veterans, Indigenous Peoples living in the Northern Territory of Australia, and Aboriginal Peoples in large

cities across Canada (Carson et al., 2007; Hwang, 2001; Kasprow & Rosenheck, 1998). While it has been documented in the literature that patterns of migration have led to an increase in the number of urban Aboriginals and Aboriginal homeless. Consider the following quote:

“Increasing patterns of migration among Aboriginal people from the reserve to urban centres has led to a dramatic increase in the number of Aboriginal people now permanently residing in urban areas. Anecdotal and statistical evidence indicates that Aboriginal people are consistently and disproportionately represented among the homeless in most major Canadian cities and have unique cultural needs. No one can say with certainty the scope of the problem nor, can any accurate figure be quoted regarding the Aboriginal homeless population (Helin, 2002).”

In Toronto, however, the media has reported that twenty-five percent of Toronto’s homeless population are people of Aboriginal ancestry (Wente, 2000). With the knowledge that Aboriginal people make up only about 2% of Toronto’s total population, the disproportionate representation of Aboriginal People in Toronto’s homeless is evermore clear (Wente, 2000). Other numbers that suggest that Aboriginal people make up 15% of the homeless population still highlight the disproportionate number of Aboriginal homeless people in the city (Mayor’s Homelessness Action Task Force, 1999). Since these numbers do not include the projected or at-risk populations, it is thought that the numbers could escalate by about 8000 people (Mayor’s Homelessness Action Task Force, 1999).

In order to get a better picture of the Aboriginal homeless population in, Street Health has conducted a number of surveys of the homeless population and has developed strong links to this community. The 2007 Street Health Survey (the most recent survey) found that Aboriginal people accounted for 15% of the homeless population; a huge number based on their citation of the 2001 Census, which suggested that Aboriginal people represent only 0.5% of the general population (Street Health, in press). Information gained from the survey of this population is summarized below. It is also recommended that those interested consult the Street Health Report 2007 Research Bulletin #3: Aboriginal People & Homelessness (Street Health, in press). The demographics and composition of the Aboriginal population surveyed by Street Health are demonstrated by the following figures: (1) the average age was 38 years, with a range of 25-49; (2) 31% were born in Toronto; (3) 20% identified as lesbian, gay, bisexual, or trans-gendered; (4) 39% had completed high school and of those 15% had a college or university degree; (5) 33% live on \$2,400 or less per year; (6) 20% are employed – 4% work part-time and 16% reported doing casual or piece work, while none reported full time work; (7) survey participants had been homeless an average of 4.7 years; (8) 15% reported an Aboriginal language as their mother tongue; and (9) 27% reported having a status card. While the report produced by Street Health demonstrates that Aboriginal Peoples are disproportionately represented amongst the homeless population, the literature also shows that Aboriginal Peoples are at an increased risk of becoming homeless (Helin, 2002). As defined in the Greater Vancouver Regional District (GVRD) Aboriginal Homelessness Study 2003 (Dappleton Research Team, 2003), an urban Aboriginal person is at-risk of becoming homeless if they: pay more than 25% of their income on housing; suffer from an acute life crisis; are at risk of losing accommodations; have a household income that is below Statistics Canada’s Low Income Cut-Off; have low education levels; have been denied opportunity to access social housing; suffer from mental health issues; are hard to

house; use food banks frequently; and, are engaged in the sex trade (Dappleton Research Team, 2003).

Homelessness and Health

As the above section has shown, Aboriginal Peoples are disproportionately represented in the overall homeless population, and are at a greater risk of becoming homeless. The implications of this for the health of Aboriginal Peoples in Canada is important to consider, as the literature has shown that homeless people have higher than average levels of morbidity and mortality and often experience greater barriers to accessing safe and effective health care and health services. In fact, it has been noted that the homeless are at an unacceptably high risk for many preventable diseases, unnecessary health complications, and premature deaths (Plumb, 2000). The relationship between homelessness and health is reviewed in greater detail below.

Risks related with homelessness, such as exposure to the elements, poor nutrition, lack of support, poor access to health services, stigmatization, etc. can negatively impact the health and well-being of individuals and families living on the streets. In fact, homeless people are more likely to have chronic and severe medical conditions than the general population (Hwang & Bugeja, 2000). Health conditions among the homeless are often chronic because treatment and access to treatment is limited, sporadic, or inaccessible. Disease severity is also enhanced by the living conditions and circumstances related to homelessness (Hwang, 2001). Some of the most commonly cited health problems among the homeless are: seizures, chronic obstructive pulmonary diseases, and musculoskeletal conditions (Hwang, 2001). Statistics from the 2007 Street Health Research Bulletin #3: Aboriginal People and Homelessness comparing the prevalence of several chronic diseases to the general population demonstrates the high risks that Aboriginal homeless people face for developing chronic conditions.

Table 1. Chronic Disease Prevalence in the Aboriginal population versus the General population
Source: (Street Health, in press)

Disease	Homeless Aboriginal people	General Population*
Arthritis or Rheumatism	43%	14%
Heart disease	35%	4%
Chronic Obstructive Pulmonary Disease (COPD)	24%	1%
Asthma	22%	6%
Diabetes	22%	4%

Note: Data for the general population was drawn from the Canadian Community Health Survey (CCHS) Cycle 3.1 (2005). This analysis is based on Statistics Canada's Canadian Community Health Survey, Cycle 3.1 (2005), Public Use Microdata File, which contains anonymized data. Street Health prepared all computations on these microdata and the responsibility for the use and interpretation of these data is entirely that of the author.

In addition to these more common chronic diseases, homelessness is often thought to be related to the development and persistence of mental health conditions. While not always discussed or measured in terms of their chronic or long-term nature, mental health issues among the homeless is important to mention here. Research done in non-Indigenous populations, demonstrate that

individuals with chronic mental illnesses are at greater risk for homelessness than individuals without (Folsom *et al.*, 2005). The table below demonstrates the high prevalence of some common mental health conditions among Aboriginal homeless people.

Table 2. Most common mental health diagnoses reported by Aboriginal people who are homeless

<i>Mental Health Diagnosis</i>	%
Depression	16%
Anxiety	11%
Addiction to drugs/alcohol	11%
Bipolar (manic depressive)	7%
Post traumatic stress disorder	6%
Panic disorder	6%
Schizophrenia	0%

Source: (Street Health, in press)

Despite the truth of this and the correlation between Aboriginal and non-Aboriginal people's mental health concerns, some differences between the two groups suggests that more research is needed in this area. For example, Native American homeless veterans experienced fewer psychiatric problems and significantly more alcohol-related problems than non-Native homeless veterans (Kasproff & Rosenheck, 1998). Overall, unfortunately, Aboriginal people who are homeless report alarmingly high levels of social isolation and extremely low levels of social support. Drugs and alcohol are often used to help people cope with illness, trauma, or pain, and to relieve isolation. Given the harsh daily realities of homelessness and the legacy of historical violence and exclusion that too many Aboriginal people in Canada live with, the high levels substance use and self-medication reported by Aboriginal people who are homeless are sadly not surprising. As reported by Street Health (in press), Aboriginal people who are homeless have high levels of substance abuse. For example, the 2007 survey reported that: 92% smoke cigarettes and, of those, 89% smoke daily; 77% used an illicit drug other than marijuana regularly in the past year; 26% had injected drugs in the past year; 29% had at five or more drinks on one more occasion at least once a week in the past year; and, 15% had consumed non-beverage alcohol in the past year.⁵

In addition to the high prevalence of chronic diseases, both physical and mental, among Aboriginal homeless people, chronic diseases are often left undetected for years and are poorly controlled. Both of these situations can lead to premature mortality and excess morbidity (Hwang, 2001; Hwang & Bugeja, 2000). For instance, diabetics noted great difficulties with managing their diet and dealing with scheduling and logistics associated with personal care (Hwang & Bugeja, 2000; Plumb, 2000). Further, the Aboriginal homeless population in British Columbia has a death rate that is 2.1 times higher than the rest of BC (Helin, 2002). Concerns with the health of homeless people are also evident in their use of the health care system. Homeless people are admitted to hospitals five times more than the general population, often through emergency rooms, and stay in hospital more often than other lower-income patients

⁵ Non-beverage alcohol is alcohol in a form that is not meant to be consumed and includes things like mouthwash, hand sanitizer, cooking wine, and rubbing alcohol.

(Hwang, 2001). Not only do these frequent and prolonged stays in hospitals result in high health care costs, but they also make for short-term patchwork health care that does not facilitate preventative and comprehensive health care treatment

Substandard Housing

Poor housing conditions, overcrowding, inadequate housing supply, and lack of property ownership are prevalent in many Aboriginal communities. For these reasons and others, housing in Aboriginal communities are often substandard. A review of these housing issues and their impact on health is provided below to better understand the connection between housing and Aboriginal health in Canada.

The type of housing in First Nations communities varies, but a large proportion of on-reserve housing is old and/or in need of upgrading and better maintenance. According to the 2002/03 Regional Health Survey, one-third (33.6%) of First Nation homes are in need of major repairs. Another third (31.7%) need minor repairs. While the presence of household incomes below the \$20,000 cut-off were more likely to require repair and more regular maintenance, rates varied with income brackets and were still considerable high (26.4%) in more moderate income brackets (\$50,000-79,999) (First Nations Centre, 2005). These figures suggest systemic and underlying concerns with housing across all sectors of Aboriginal society. The fact that statistics documenting the number of houses in need of repairs have significantly increased since those reported by the 1985 Neilson Task Force (First Nations Centre, 2005) is concerning for the future; so is slow progress of housing improvements noted by the 2002/03 RHS survey participants (First Nations Centre, 2005). In addition to concerns with housing construction and maintenance are concerns about the supply of housing. In 2001, Indian and Northern Affairs Canada (INAC) reported a shortage of 8,500 units on reserves (Government of Canada, 2003). The Assembly of First Nations estimates, however, that there are 80,000 backlog units (First Nations Centre, 2005). The potential impact that this housing profile may have on health is exemplified by their potential to create the conditions for mould growth, poor indoor air quality, and poor ventilation. Not surprisingly, these health concerns tend to aggravate the respiratory system, reduce lung function and growth, and lead to chronic respiratory problems (Anto et al., 2001; Cardinal, 2004).

Mould can exist and grow on and within the structure of the home. It has been found that moulds can produce allergies, asthma, eye and throat irritation, otitis media, and other upper and lower respiratory tract conditions (Daigler, Markello, & Cummings, 1991; First Nations Centre, 2005; O'Neil, 2000), but it is not clear how these interactions actually occur and whether there is a direct relationship between mould and specific respiratory conditions (First Nations Centre, 2005). Research has concluded, however, that a focus on mould problems does have the potential to help improve acute and chronic health conditions in communities where mould is found to be prevalent (O'Neil, 2001). As mould requires moisture to grow and thrive and about ½ of First Nations homes are in need of repair, the potential for a large prevalence of mould in Aboriginal homes is very real. Further, the less ventilation, the greater the potential for mould growth. While there are measures to ensue evacuation of homes with overactive mould growth or with contamination levels that exceed the standard levels, these measures and controls are not present on reserves. This is largely due to the fact that there are few health authorities in First Nations communities with the skills to do this and the lack of alternative accommodations available to

accommodate people presently living in unfit homes to (First Nations Centre, 2005).

Issues related mould and ventilation affect the overall air quality of homes. While outdoor air quality has received a lot of media attention in the past two decades (see section 2.2.4), the potentially harmful effects of indoor air pollution is often overlooked. Such pollution is common in Aboriginal communities, where wood and coal burning stoves are still used, where tobacco is used for ceremonies and meetings, and where mould and poor ventilation are prevalent. The presence of these factors cause concern for the health and well-being of Aboriginal Peoples in their homes. Through evidence of home and workplace exposures to tobacco smoke, Greer (Greer, Abbey, & Burchette, 1993) demonstrated that indoor environments have a stronger effect on the development of respiratory problems than do outdoor air pollutants. In addition to tobacco smoke, research has shown that indoor air quality may increase the prevalence of allergies and asthma (Canadian Institute for Health Information, Canadian Lung Association, Health Canada, & Statistics Canada, 2001). The prevalence and incidence of tuberculosis and other respiratory conditions has been equated with indoor air quality (cite?). Since tobacco smoke and mould are the only consistent indoor factors associated with chronic conditions, more research into the influence of indoor air pollution and its various components deserve greater attention from the research community.

The potential influence of indoor air pollution on health in the future is evidenced by studies that show that Aboriginal people are spending more of their time indoors (First Nations Centre, 2005). The particular impact that indoor air pollution has on some of the most vulnerable subsets of the Aboriginal population, such as the elderly, young children and the chronically ill (who also tend to spend even more time indoors than the average individual) will also be important to consider.

In order to conclude this discussion about air quality, it is important to note that indoor and outdoor air quality (see section 2.2.4 below) are often discussed separately. While such a distinction is important to consider, it is also important to acknowledge the connection between the two: “the average house offers little protection against aerosol, particulate, and gas contamination in the general air” (First Nations Centre, 2005); poor housing offers even less. While some Aboriginal communities have reported concerns with outdoor air quality as a result of location near industrial sites, the fact that many reserves are located in rural and remote areas means that concerns related to smog are potentially less prominent. This means, however, that home contamination may be a greater concern for Aboriginal communities, families, and individuals (First Nations Centre, 2005).

In addition to the impact that air quality issues resulting from poor housing structure, ventilation, indoor air pollutants, and outdoor particulates have on health, crowding has also been found to aggravate the respiratory system, encourage respiratory disease transmission, and facilitate the development of chronic conditions. Unfortunately, issues of occupant density (i.e. overcrowding) have been reported in Aboriginal communities (First Nations Centre, 2005). In general, a house is considered to be overcrowded if the density exceeds one person per room. The overall room density in Canada, as reported by the 2001 Census is 0.4 persons per room (Health Canada, 2002), whereas the RHS reported an average density rate of 0.76 (First Nations Centre, 2005). This translates to an average of about 2.6 people per house in the general population and 4.8

people per house in First Nations homes (First Nations Centre, 2005). In some cases, occupancy in First Nations communities was extremely high; the highest number of people per house reported by the RHS was 18 (First Nations Centre, 2005). While statistics vary in the proportion of Aboriginal homes that are overcrowded (from 12% to 17.2%) (First Nations Centre, 2005; Indian and Northern Affairs, 2005), it is certain that homes in Aboriginal communities, on average, have more people per room than the Canadian population (First Nations Centre, 2005; Health Canada, 2002). Because research has also shown that this high proportion of overcrowding impacts an individual and community's health and well-being, household crowding is a significant concern. For instance, it has been documented and recognized that night-time crowding is a significant risk factor for both upper and lower respiratory tract infections within an Inuit population in Greenland (Koch *et al.*, 2003); other studies in Aboriginal communities have also shown that overcrowding and respiratory distress are related (Fraser-Lee & Hessel, 1994). Statistics from the 2002/03 RHS report that 1 in 3 of all respondents once diagnosed with tuberculosis (TB) live in an overcrowded house. Concern for the long-term impacts of crowding on health is evidenced by the fact that 24.6% of homes with children surveyed for the 2002/03 RHS were overcrowded (First Nations Centre, 2005).

Home ownership and renting patterns are also important factors to consider when examining housing conditions among Aboriginal Peoples in Canada. Differences between Aboriginal and non-Aboriginal housing is clear when comparing ownership, renting, and social housing. It has been reported that in the general population, 65% of families own their homes; the majority of the remainder rents, while few rely on social housing (Statistics Canada, 2001). In the First Nations population the situation is reversed: "61.9% of on-reserve families live in band-owned housing which is analogous to social housing" (First Nations Centre, 2005). Comparatively, 74.1% of First Nations people living in the provinces with an income below \$10,000 and 64.4% with incomes below \$30,000 live in social housing. Households with incomes from \$30,000-80,000 also report living in band-owned homes (First Nations Centre, 2005). The high rate of occupancy of band-owned housing is a result of poverty, banks not extending mortgages to on-reserve residents, and some geographic concerns that hinder construction access and cost. A health concern with band-owned housing for First Nations communities is the high percentage of mould and mildew reported (48.7%). Reports of 36.9% in other types of First Nations is also a concern (First Nations Centre, 2005). Because the urban population tends to rent more than the general population, similar issues surface regarding mould and potential concerns with air quality and outstanding structural issues (Beavis *et al.*, 1997). As such, concerns with poor air quality and mould are equally true in these circumstances.

The close connection between one's environment and their socioeconomic situation reasserts the need to involve broader socio-cultural issues and to account for changes in air quality over time. As aboriginal communities continue to report evidence of poor air quality, poor housing conditions, indoor air pollution, crowding, and poverty, targeted research is urgently needed to investigate the impact that these factors have on Aboriginal health and their relationship to chronic respiratory disease.

2.2 Geographic Risk Factors

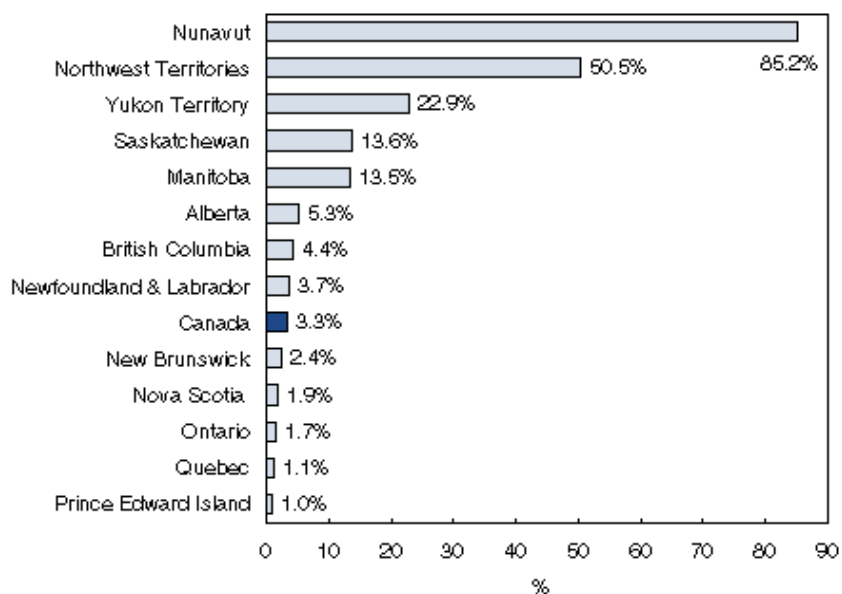
In addition to the economic status and housing conditions of Aboriginal Peoples, geographic

location can exacerbate overall health and well-being by reducing access to facilities, supplies, and support services. The quality and nature of the land can also determine the health of a population. These aspects are discussed below.

2.2.1 Community Location

Geographic location can be a key indicator of the health and well-being of a community. In order to investigate the relationship between location and health, regions are often classified according to their population density, proximity to an urban centre, amenities, and/or other communities, and the accessibility of the community. Community location and accessibility can be classified as inner city, urban, suburban, rural, remote, and isolated. While these terms have no standardized definition, most definitions are based upon accessibility issues such as distance from large urban centers, road or plane accessibility and telephone or internet access. Directional terms are also used: mainly north and south in terms of density and accessibility differences, and can be combined (e.g. northern-isolated). As demonstrated by the figure below the Aboriginal population of Canada is situated in every province and territory, and makes up the majority of the population in Nunavut and the Northwest Territories, and is a large portion of the population in the Prairie Provinces.

Figure 3. Population reporting Aboriginal identity according to their percentage of the total population, Canada, provinces and territories, 2001



Source: (Canada, 2001)

While this figure is somewhat misleading – it does not provide the population numbers – it does demonstrate the significance of the North for many Aboriginal Peoples and the higher proportion of Aboriginal People in the more traditional/rural prairie provinces of Saskatchewan, Manitoba, and Alberta. The term “rural” is often used to refer a community or personal residence that is far from a large urban centre, amenities, and/or other communities. While term “remote” is often used to refer to communities and locales that are only accessible in certain seasons (i.e. ice road communities), by air, or by gravel or unkempt roads. Since this is a reality for many Aboriginal

Peoples in Canada, the health impacts of this situation are important to review.

Regardless of ethnicity, rural location has been found to be associated with poor nutrition, inactivity, and high smoking rates (CIHI, 2006). These risk factors are generally higher among the average rural population than they are among their urban counterparts (CIHI, 2006). Rural residence, particularly if it is coupled with socioeconomic risk factors, can also decrease health care access (see section 2.2.2 below for more details). Despite these negative statistics, conflicting views persist as rural and remote residency has been shown to be beneficial to the health and well-being of Aboriginal Peoples in Canada. This is particularly true when rural living is equated with Northern living. This is because studies have shown that Aboriginal northerners report lower levels of chronic diseases than other territorial residents (Tjepkema, 2002). Further, the off-reserve Aboriginal population living in the territories was found to have a lower prevalence of chronic diseases than their provincial counterparts (Tjepkema, 2002). This pattern seems to indicate that Aboriginal Peoples living in the north may not have been exposed to the same lifestyle changes, or have experienced them to the same degree, as southern Aboriginal communities (Tjepkema, 2002). Contradiction in the evidence can be explained by the fact that trade-offs exist between the accessibility of a community and the isolation of the community; namely, the potential negative impacts of colonization versus accessibility to amenities, and opportunities for employment. Competing influences could include the positive benefits of more isolated and self-sufficient communities versus the isolation of the community from outside influences.

In addition to the different environments experienced by Aboriginal Peoples living in rural and northern communities versus urban or suburban, is the difference between on-reserve and off-reserve living. Because of increasing migration of Aboriginal Peoples to the cities, approximately 30% of Canada's Aboriginal population lives on reserve (CBC, 2003). Reserve settings have been shown to have a particular impact on health. Despite the great benefits of community and social development that a reserve may have to offer, they remain largely governed and controlled by the Canadian government. A relationship has been shown to exist between governance and health, where self-government support healthy environments and lack of control over governance issues have been equated with unhealthy behaviours and an unhealthy environment (Chandler & Lalonde, 1998).

As this brief discussion demonstrates, Aboriginal peoples living on reserve, in the Northern territories, or in other remote regions of the country are exposed to the complex of risk factors associated with their geographic location. In both reserve living and rural or northern living, access to services is a key concern. Literature examining the impact of access issues is discussed in detail below.

2.2.2 Access to Quality Health Care

As noted in the above two sub-sections, a community's access to health care and other health services is an important dimension of its health profile. In this case, access to quality health care refers to the availability of "western" primary health care provisions. While access to the western bio-medical system is important, it is also important to remember that some Aboriginal people may utilize these services in tandem with traditional health practices, only in certain context, or only for particular reasons (First Nations Centre, 2005). Issues of access are important when examining the health of populations because it has been reported in the literature that countries

with better primary health care access are less likely to report health inequities (Mackinko, Starfield, & Shi, 2003). It is also important because the research shows that insufficient health care access and performance services can contribute to lower survival rates and higher mortality rates in certain populations. Seeing as the Aboriginal population in Canada has experienced severe health inequities compared to the non-Aboriginal population, access to services and care is an important determinant of health to investigate within this population.

The 2002/03 Regional Health Survey provides some information of health care access. For instance, participants in the survey were asked to rate their health and health care access. The relationship between these two factors is reviewed below.

“First Nations respondents who rate their health as being very good or excellent estimate their access to health services as being better (24.6%) or the same (45.5%) as Canadians. Those reporting fair or poor health were less like to report having the same level of access than those in good, very good, or excellent health. (First Nations Centre, 2005).”

Differences were not found to be significant between the genders and across different age groups. Respondents with higher education, however, were more likely to rate their access to services lower than that of the general Canadian population (First Nations Centre, 2005).

Data from the Canadian Community Health Survey (CCHS) and the Aboriginal Peoples Survey also provide some interesting figures on the health care access of the off-reserve and on-reserve populations of Canada. For instance, data from the 2000/01 survey reported rates of contact with general practitioners among the off-reserve Aboriginal population. The survey stated that:

“78.8% of the off-reserve Aboriginal population reported seeing a general practitioner at least once in the previous 12 months, a proportion significantly different from that of the non-Aboriginal population. However, the Aboriginal population living in the territories was much less likely to have contact with a general practitioner than other northern residents (58.8% versus 75.9%)”

(Tjepkema, 2002).

The low rates of northern Aboriginal peoples' contact with a regular doctor were more evident when compared with non-Aboriginal northerners: 31.1% of off-reserve Aboriginals had a regular doctor versus 67.0% of non-Aboriginal northern residents. While less provincially based Aboriginal people also reported having a regular doctor as well, the difference between the Aboriginal and non-Aboriginal population in the provinces was less (Tjepkema, 2002). Interestingly, “[c]ontact with nurses were somewhat higher for Aboriginal people living in the provinces and much higher for those living in the territories” (Tjepkema, 2002). This is likely the result of the smaller community model, where community health centres are largely run and staffed by nurses. Taking into account these differences and discrepancies, it is not surprising that Tjepkema (2002) found that the off-reserve Aboriginal population cited more unmet health needs than the non-Aboriginal population. Similar results were found for the on-reserve population. The Aboriginal Peoples' Health Survey 2001 revealed that Aboriginals residing on reserves were “less likely to have seen a physician” or other health professional (68%) in the past

year (61%) compared with the urban population (73% and 77% respectively). In addition, the proportion of Inuit who have seen a physician” (47%) or other health professional (57%) in the past year was found to be the lowest among all of Canada (Newbold, 1998).

A number of barriers have been cited with regards to the accessibility of health services to Canada’s Aboriginal population. While some of the concerns vary depending on an individual or community’s location, others are broader reaching. In on-reserve, northern and rural areas the lack of local services, lack of access to a physician or other health provider, the need to travel to get to a health facility and receive medical treatment are often cited as major barriers to adequate health care (First Nations Centre, 2005). Similarly, but more broad-reaching, are economic concerns related to issues of transportation, child care, and the direct costs of some health services. Cultural barriers, such as the lack of culturally appropriate or relevant care and issues with accessing traditional care, are also commonly cited. Finally, systemic issues include, being denied approval of service under the Non-Insured Health Benefits (NIHB) system or not having NIHB coverage, and long waiting lists continue to plague many Aboriginal people, families, and communities (First Nations Centre, 2005). Seeing that the purpose of the NIHB is to help First Nations reach an overall health status similar to the general population of Canada, data such as this suggests that the NIHB program acts as a barrier to accessing care.

The need for local and culturally appropriate services are important in the discussion of barriers to access for Aboriginal Peoples in Canada. Evidentiary support for this is available in the reports calling for better health access for communities with a health transfer agreement⁶ (First Nations Centre, 2005). The health transfer policy enables more community control and, therefore, more culturally appropriate, culturally relevant health, and locally available services. Interestingly, “respondents from communities that transferred as part of a multi-community transfer are more likely to rate their access to health services as generally less than Canadians” (First Nations Centre, 2005). This finding calls into question the effectiveness of the health transfer system, suggesting that further research is required to assess this policy and the implications that it has on health access, health status, and general well-being.

Diagnostic, Screening, and Prevention Services

The availability of diagnostic, screening, and prevention services are often seen as indicators of health care access and performance. As such, the availability of these services in Aboriginal communities will be discussed below.

In the area of cancer; diagnostic services, screening, and preventative interventions are thought to have a great influence on incidence, mortality and survival rates. Participation of the Aboriginal population in cancer screening programs remains lower than that of general population is concerning (Kue Young, Kliewer, Blansharg, & Mayer, 2000). Screening for cervical cancer in First Nations women through a pap smear test has traditionally been reported as being low (Clarke *et al.*, 1998). Data from the 2002/03 RHS, however, shows that the level of coverage of Pap smear testing is relatively similar between the Aboriginal and non-Aboriginal populations. While this is a great improvement, the RHS stats that: “*given the disproportionate mortality rate*

⁶ The health transfer policy was officially adopted by Health Canada in 1989 and continues today. It enables First Nations communities to control the allocation of resources for particular programs and services, thus, providing opportunity for greater autonomy and community control over health care.

of First Nations women experiences as a result of cervical cancer, it would be advisable to strive for more systematic First Nations-specific screening programs” (First Nations Centre, 2005). Other research has found that in addition to issues related to access to cancer screening programs, lack of awareness of available programs and services contributes to issues related to cancer screening (Condon, Barnes T., Armstrong B.K., Selva-Nayagam S., & J.M., 2005). Thus, education and awareness should be considered an integral part of strategies to improve screening programs. Other issues related with the low uptake of certain cancer screening tests, such as the digital rectal exam (DRE) require further examination (First Nations Centre, 2005).

In addition to cancer, a lack of or delayed blood sugar testing among Aboriginal Peoples is thought to be connected to the rise in diabetes mellitus in this population. The 2002/03 RHS noted that less than 50% of at risk age groups had been screened for diabetes in the last 12 months (First Nations Centre, 2005). Given the epidemic proportions of diabetes in the Aboriginal population today, these numbers are far too low. Testing for cardiovascular diseases, such as cholesterol tests and blood pressure exams are also lower than is desired: cholesterol testing is low across all age groups, while blood pressure tests are being accessed at higher, but not ideal, rates (First Nations Centre, 2005).

2.2.3 Climate Change, Outdoor Air Quality, and Environmental Contaminants

The importance of the environment on health has received increased attention in recent years as a result of greater public awareness and debate about the issues surrounding climate change. Because Indigenous societies are traditionally very connected to the land, issues related to climate change are amplified in Aboriginal contexts (Paci, Dickson, Nickels, Furgal, &, 2004)). The location of many Aboriginal communities in northern and remote regions make the impacts more obvious. Global warming and environmental changes such as melting ice are much more visible than observed in southern regions of Canada.

Outdoor air quality concerns have been central to discussions about climate change and the connection between the environment and human health. In response to a rising public concern for “new pollutants”⁷ in the 1980’s, research related to environmental conditions has focused on the presumed association between an increase in hazardous particles in the air and incidences of respiratory problems (Strachan, 2000). This hypothesis has been corroborated by studies of non-smoking cohorts (Abbey *et al.*, 1995; Greer *et al.*, 1993), which have found significantly higher incidences of asthma and chronic respiratory symptoms among people with high cumulative exposures to particulates and ozone. The considerable influence of outdoor pollutants on human health and its potential as a risk factor for chronic respiratory disease, however, should not overshadow the potential role that indoor air pollution plays in an individual’s respiratory health (Anto *et al.*, 2001).

Environmental concern with contaminants and the impact of industrial bi-products, chemicals, and other particulates on human health are connected to discussions of the impact of air pollution. A key concern for many First Nations and Inuit communities is exposure to polychlorinated biphenyl (PCB). The PCBs are suspect as being responsible for increased cancer incidence rates and other health issues. PCBs accumulate in tissues along the food chain, and

⁷ The term, “new pollutants” is used to refer to hazardous particles and gasses (i.e. greenhouse gases) from vehicle emissions, industrial processes, and commercial practices.

Aboriginals who consume fish as part of their traditional diet have been found to have a very high concentration of PCBs in their body fat. Nursing Inuit women living in northern Quebec been observed to have seven times the PCB concentration in their breast milk than that of Canadian women (MacMillan et al., 1996). Moreover, the breast milk of these Aboriginal women was found to have the highest PCB concentration in the world. At the same time, the Government of Canada has reported that the PCB concentration required to cause cancer is far greater than any possible environmental exposure (Health Canada, 1994; Murray, 1994). Mercury accumulated in fish tissues is a concern for many Aboriginal communities, especially those that rely on fish as a primary food source (Van Oostdam *et al.*, 2005). Inorganic and methyl mercury have been designated probable carcinogens, which present at high concentrations are thought to increase cancer risk. According to a study involving Inuit living in a Baffin Island community, their daily intake of mercury averaged 65 mg for women and 97 mg for men, which is much higher than the mean daily intake of 16 mg for mainstream Canadians (MacMillan et al., 1996). Since mercury has been linked to other health conditions, such as central nervous system problems and learning disabilities, this is a key concern for the future health and well-being of Aboriginal Peoples.

The challenge with environmental contaminants is that they are often found in “traditional” or “country” foods; the general category used to describe all of organic plant and animal nutrients that ensure and maintain the health of Aboriginal Peoples (Paci et al., 2004) . In Canada, common counter/traditional foods are fish, wild game, berries, and other gathered vegetables, fruits, and grains. The importance of discussing the past, present, and future gathering and consumption of traditional/country foods among Aboriginal Peoples in Canada is that they can be protective factors for many chronic diseases. The correlation between the consumption of country foods and better health is also a result of the higher nutrient value of these foods and the exercised associated with the hunting and gathering required to obtain them. The consumption of country foods is also beneficial for warding of the increased presence of “modern foods” (i.e. convenience and fast foods, simple sugars, etc.) in Indigenous diets. While these modern or western foods have been assimilated into Indigenous communities at different times, speeds, and intensities (Paci et al., 2004)), their presence is now common and widespread. In addition to encouraging the reduction of traditional foods in Indigenous diets, these cheap and easy foods are unhealthy in and of themselves: pop, chips, and other “empty-calorie” foods do not provide children, parents, and/or grandparents with the nutrients, vitamins, and minerals that they need to survive and thrive.

The problem is the risk of tradition food needs to be balanced by the risk of store bough food. Clearly, food security is a very important issue as good food is key to optimal development, especially in infants and young children. Greenhouse gas emissions and society’s carbon footprint on the health of the land and concerns with the fuel cost and logistics for the transportation of food to rural and remote communities, such as many First Nations reserves, Metis and Inuit communities, are reasons to encourage the consumption of country foods. It is imperative that we find more innovative ways to ensure a balance between food availability, diversity, and quality for all Aboriginal and non-Aboriginal people in Canada.

Finally, as this is just a brief overview, more information about the increasing role of environmental risk factors and their relation to an increase of chronic diseases in many

Aboriginal communities deserves greater research attention (Lawrence & Martin, 2001).

3. Prenatal Risk Factors

The term “prenatal risk factors” is used here to denote those that occur, exist, or act on the individual prior to birth. As such, prenatal risk factors are associated with the health of the mother and unborn child. Included in this section, therefore, is a discussion of maternal diabetes, maternal obesity, maternal smoking, and maternal alcohol use. While birth weight is often an indicator of intrauterine effects, birth weight will be explicitly discussed in the natal risk factor section, which follows this section. It was placed in the natal section, as it is measured at the time of birth and impacts the infant’s health and its chronic disease risk.

3.1 Maternal Diabetes

First Nations women represent roughly two-thirds of the First Nations people who are diagnosed with diabetes (Bobet, 1997), while the reverse is true in the general Canadian population (Health Canada, 1999). In addition to experiencing an overall higher prevalence of type 2 diabetes (First Nations Centre, 2005), many First Nations women are also diagnosed with gestational diabetes mellitus (GDM) (Mohamed & Dooley, 1998), which is defined as any degree of glucose intolerance for which the onset or first recognition occurred during pregnancy (Matthews, 2003). The purpose of this section is to review the impact that high rates of GDM in Aboriginal mothers has on the fetus and, therefore, the future generations.

Research shows that maternal diabetes is a strong predictor of high birth weight in newborns (Dyck, Klomp, & Tan, 2001; Godwin et al., 1999; Harris et al., 1997; Rodrigues et al., 1999). Since the direct impacts of high birth weight are reviewed in the following section (section 3 – natal risk factors), this section will review the connection between GDM and the long-term health of the developing fetus. Looking to the research once again, one finds that in addition to increased rates of macrosomia (high birth weight; >4000g), offspring of women with GDM may also experience increased IGT, increased rates of childhood obesity, and an increased risk of Type 2 diabetes (Pettitt & Knowler, 1998; Silverman, Rizzo, Cho, & Metzger, 1998). A study of Pima Indians indicated a significant association of maternal glucose intolerance with elevated risk of diabetes in offspring (Franks *et al.*, 2006). Since maternal diabetes and high birth weight are also linked, the question is whether it is the high birth weight or the mother’s diabetes that increases the risk to the health of Aboriginal children. However, a study among Pima Indians, which examined families where siblings were born both before and after their mother was diagnosed with diabetes, demonstrated that children exposed to diabetes *in utero* had a higher body mass index (BMI) than their unexposed siblings and that their risk of diabetes was almost four times higher (Dabelea *et al.*, 2000). In a different study, it was suggested that about 40% of Type 2 diabetes among 5-to 19-year-old Pima children can be attributed to maternal diabetes during pregnancy (Dabelea & Pettitt, 2001). This discussion of maternal diabetes highlights the potentially strong impact that the fetal environment plays an individual’s health later in life.

3.2 Maternal Obesity

Some studies suggest that maternal obesity, which is often associated with GDM, may be the

overriding factor in mediating offspring obesity (Boney, Verma, Tucker, & Vohr, 2005; Whitaker et al., 1998). An American study that followed children from birth to 6-12 years found that GDM was not independently significant in increasing metabolic syndrome⁸ risk in children, but offspring of obese mothers incurred a two-fold increased risk profile. (Boney et al., 2005). If these results could be extended to Canada's Aboriginal population, pre-pregnancy and pregnancy could be seen as an extremely effective point in the life course to target obesity and thus reduce the burden of Type 2 diabetes throughout the early years and adulthood. In general, these results also demonstrate the strong relationship between maternal health and the health of a child at birth and throughout their life. The literature on the impact of another maternal lifestyle behaviour, smoking, on fetal development and chronic disease risk is discussed below.

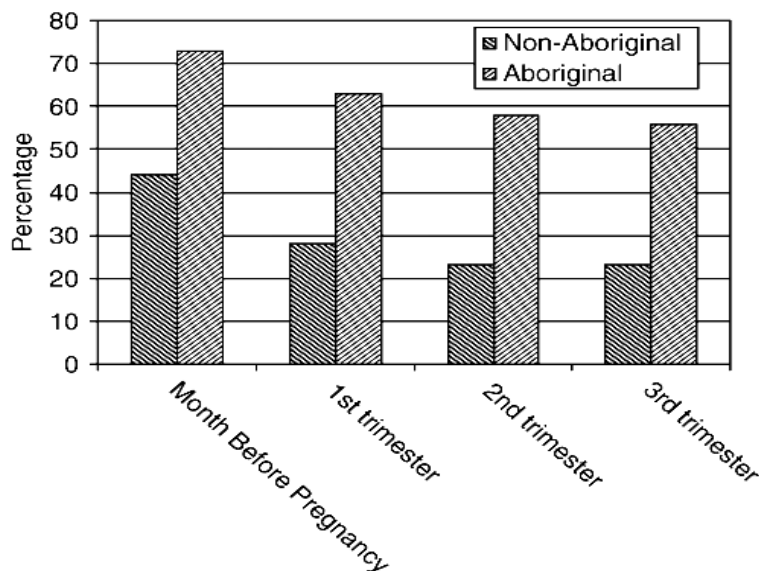
3.3 Maternal Smoking

A clear association has been shown between maternal smoking and intrauterine growth restriction in both Aboriginal and non-Aboriginal populations (Horta, Victora, Menezes, Halpern, & Barros, 1997; Power & Jefferis, 2002; Wenman, Joffres, & Tataryn, 2004). Proportions of pregnant women who smoke varies substantially among different ethnic groups. According to First Nations Regional Health Survey 2002-2003, smoking rates among pregnant First Nation women (58.8%) matched those in the general First Nations population (RHS, 2002/2003). A study conducted in Manitoba found that among 684 interviewed women a significantly higher proportion of Aboriginal women (61.2%) than non-Aboriginal women (26.2%) smoked during pregnancy; however, a smaller proportion of Aboriginal women than non-Aboriginal reported smoking more than 1 pack per day (Heaman, 2005). These findings are contrary to the results of the 2002/03 RHS, which found that Aboriginal mothers smoking more than 10 cigarettes per day was three times higher than mothers in the general Canadian (5.3% vs. 15.0%). Perhaps this means that consistent, moderate smoking is more common among Aboriginal mothers, whereas small but more extreme smoking habits are more commonly observed in the non-Aboriginal population.

In both Aboriginal and non-Aboriginal populations, the mean number of cigarettes smoked by pregnant women in both populations decreased as pregnancy progressed. This and the consistently higher rates of maternal smoking in Aboriginal populations are represented in the figure below.

⁸ Metabolic syndrome is not a disease in and of itself, but is a cluster of disorders of an individual's metabolism — including high blood pressure, high insulin levels, excess body weight and abnormal cholesterol levels — that make them more or less likely to develop diabetes, heart disease and/or a stroke.

Figure 4. Prevalence of smoking across the stages of pregnancy for non-Aboriginal and Aboriginal pregnant women in Manitoba.



Source: Adapted from (Heaman, 2005)

As explained by Heaman (2005), a number of factors influence maternal smoking habits. For example, Heaman (2005) found that there was a significant relationship between smoking during pregnancy for Aboriginal mothers with low-income, alcohol use during, low support from others, inadequate prenatal care, a family history of residential school attendance, low education levels, and location in a remote and isolated community. Conversely, having a paid job and living in communities with multi-community health services reduced the odds of smoking during pregnancy (Heaman, 2005). In addition to active smoking by mothers in Aboriginal communities, maternal exposure to tobacco smoke is important to consider. Since statistics demonstrate that the presence of smoking in the home of First Nations mothers was about one in every two families (48.2%), passive maternal smoking can be considered an important issue. The generally high prevalence of active and passive maternal smoking in Aboriginal populations is why it is important to examine the potential impact that maternal smoking has on disease later in life (Grove et al., 2001; Reilly et al., 2005; von Kries, Toschke, Koletzko, & Slikker, 2002); this is reviewed below.

Negative effects of maternal smoking on fetal growth has been well-documented as numerous studies have shown that smoking tobacco during pregnancy causes fetal growth retardation (FGR) (Cliver, 1995), which may result in low birth weight (Humphrey, 2000; Mohsin, 2005) or sometimes in preterm births (<37 weeks), stillbirths, and neonatal deaths (Chan, 2001; Kallen, 2001; Mohsin, 2005; Shah, 2000). The 2002/03 RHS found that low birth weight is linked to heavy prenatal maternal smoking (when mothers smoked ≥ 20 cigarettes per day). Smoking has also been directly associated with central metabolic syndrome and has been documented as a concern for the development of chronic respiratory diseases, such as asthma in children (Daigler et al., 1991). This is because fetal exposure to smoke can impair the proper development of the pulmonary system *in utero* (Gilliland et al., 2000; Hanrahan et al., 1992). This is why infants born to women who smoke are at the higher risk of respiratory infections and asthma compared

with infants of non-smoking mothers (Gilliland et al., 2000; Hanrahan et al., 1992; Heaman, 2005). The long-term impacts of smoking among Aboriginal mothers has also been reported. According to the 2002/03 RHS:

“children exposed to smoking during pregnancy were less often in ‘excellent’ or ‘very good’ health, were more likely to have chronic bronchitis or ear infections and slightly more likely to have asthma or allergies, compared to children who were not exposed to smoking during pregnancy. The distribution in school performance indicated a trend towards overall worse performance for infants whose mothers smoked during pregnancy (First Nations Centre, 2005).”

These long-term trends are a particular concern for the future health and well-being of Aboriginal Peoples.

3.4 Maternal Alcohol Use

The toxic effects of alcohol on the fetus may result in fetal alcohol effects (FAE) or fetal alcohol syndrome (FAS), depending on the amount of alcohol consumed during pregnancy. While debated, Health Canada suggests that regular consumption of 2 drinks a day or more is toxic to fetus and may lead to FAE/FAS (Canada, 2005).

The physical, mental, emotional and behavioural effects of fetal exposure to alcohol vary widely among affected individuals. Fetal alcohol syndrome (FAS) is generally characterized by distinct facial characteristics, growth retardation, and dysfunction of the central nervous system (Anderson et al., 2002; Society, 1998; Tait, 2003; Van Bibber, 1997; Wemigwans, 2005). Fetal alcohol effects (FAE) are the behavioural and cognitive effects observed in the absence of the physical malformations of FAS. This can cause complications for determining prevalence and incidence rates because many people affected by prenatal alcohol exposure do not display obvious physical symptoms, but instead will suffer from more cognitive and behavioural symptoms. Because these symptoms are more difficult to diagnose, they often remain undetected until the affected child goes to school. This means that the true incidence of FAE is likely much higher than the reported rates of FAS/FAE in newborns (Canadian Pediatric Society, 2002; Square, 1997). In addition to the terms FAS and FAE, the term fetal alcohol spectrum disorder (FASD) is used to encompass “the full range of outcomes observed among individuals with prenatal alcohol exposure” (Rasmussen, Horne, & Witol, 2006). This term will be generally used throughout this section to refer to prenatal alcohol exposure, unless a direct reference to FAS or FAE is provided.

Occurrence and severity of FASD symptoms are known to vary between affected individuals, but recent evidence suggests the presence of differences at the population level, between affected Aboriginal and non-Aboriginal children. The FASD literature does document some noticeable differences between the Aboriginal and non-Aboriginal population in Canada. For instance, it has been estimated that overall FAS incidence in the general Canadian population is between 2.8 and 4.8 per 1000 of live birth (Canadian Pediatric Society, 2002). Comparably, the rate of FAS in the northern Manitoba Aboriginal population was 7.2 per 1000 of live births (Canadian Pediatric Society, 2002). The 2002/03 RHS found that on a national level, the prevalence rate of

FASD among First Nations is 1.8% ([FNIGC], 2005).

Comparisons made between FASD prevalence rates between Aboriginal and non-Aboriginal Canadians, however, should be regarded with caution. This is because studies of FASD among Aboriginal Peoples have typically focused on small communities believed to be at risk of fetal alcohol exposure due to high rates of binge drinking (Tait, 2003). As such, these communities tend to demonstrate extraordinarily high prevalence rates; sometimes as high as one in five births (Van Bibber, 1997). For example, a study of alcohol use by pregnant women on Vancouver Island has found that 54% (Canadian Pediatric Society, 2002) of Aboriginal and 16% (Square, 1997) of non-Aboriginal pregnant women were found to be at risk of having a newborn with some fetal alcohol effects. In addition to research being conducted in high-risk communities, it is often thought that a number of other factors may be influencing the high rates of FASD reported in Aboriginal communities. For example, researcher expectations of documenting such high rates; more Aboriginal than non-Aboriginal women providing accurate descriptions of alcohol use during pregnancy; a greater likelihood of health professionals diagnosing FASD in Aboriginal patients; and small groups of women consuming alcohol during multiple pregnancies (Tait, 2003).

In addition to these issues, research on FASD is skewed due to the fact that the alarmingly high FASD prevalence rates among some Aboriginal communities (or clusters of individuals) are often generalized to all Canadian Aboriginal Peoples, without evidence to do so and without regard for the diversity that exists among Aboriginal Peoples (Tait, 2003; Van Bibber, 1997). As more research begins to develop across the country, in both high and low risk areas, it will be possible to get a better picture of the scope of FASD. Evidence from the States documenting that prevalence rates of FASD differ between American Indian tribes based on control and structure of government (Tait, 2003) will be important to take into account, as these differences may also influence the stratification of FASD in Canada. Since FASD is widely recognized as the leading cause of preventable birth defects in their children (Canada, 2005; Society, 1998), this issue will be important to consider with regards to the long-term health of the Aboriginal population of Canada.

4. Natal Risk Factors

“From an Indigenous perspective, each new life might be considered as an opportunity from the creator for hope and healing, for individuals, families, communities, and nations. On the medicine wheel...infants sit beside the elders. Like elders, they may be considered teachers. Elders and infants are both close to the spirit world; the infants arriving from it, and the elders traveling to it. This closeness to the spirit world may bring a spiritual strength, but it may also bring a physical vulnerability and sensitivity to environmental disturbance” (First Nations Centre, 2005).

The term “natal is generally used to refer to things relating to, associated with, or present at one’s birth. Natal health is so important because a child’s risk of dying is highest in the first month of life, when safe childbirth and effective neonatal care are essential (World Health Organization, 2007). Further, children are exposed to important risk factors for the development of chronic diseases at this stage; abnormal birth weights and breastfeeding are two that will be specifically

discussed here. As will be demonstrated by these factors below, the health of Aboriginal infants is interrelated with maternal, family, and community health.

4.1 Abnormal birth weights

In the world of Western medicine, birth weight is considered one of the most important measures of infant health. This is because birth weight can be used to measure fetal growth, to assess conditions in the womb, and to link these early life factors to health in adulthood (First Nations Centre, 2005). Several studies have illustrated the association between suboptimal patterns of fetal and infant growth and adult chronic disease. These studies lay the foundation for what is known as the “fetal origins hypothesis,” which suggests that physiologic or metabolic “programming” during gestation and infancy determines, to a large extent, the occurrence of various chronic diseases in later life (Barker, 1995, 1995, 1995; Hales & Barker, 1992). For instance, a number of studies have reported a strong link between low birth weight and the occurrence of heart disease and hypertension later in life (Barker, 1995, 1995, 1995; Barker, Osmond, & Law, 1989; Fall, Vijayakumar, Barker, Osmond, & Duggleby, 1995; Kajantie, Barker, Osmond, Forsen, & Eriksson, 2008). Historical cohort studies in England have found that impaired fetal growth, low birth weight, and lower respiratory tract infections in early childhood are associated with lower levels of lung function in late adult life (Barker *et al.*, 1991; Shaheen *et al.*, 1994). Although a 1985-86 follow-up study was unable to confirm this finding (Shaheen, Sterne, Tucker, & Florey, 1998), Barker and colleagues (1991) added to this theory in 1991 when he found an association between lower birth weights and poorer adult lung function. The biological explanation of this association is that the intrauterine influences that slow fetal weight gain also constrain the growth of the airways and permanently effect their development and function (Barker, 2004). One problem with these studies, however, is that they often assume that a higher birth weight is healthier: this assumption does not account for maternal conditions, such as obesity and diabetes, that might cause changes in the uterine environment that will produce heavier, but not necessarily healthier, babies (Chan, Wong, & Silverman, 1990; Coory, 2000).

For instance, both high (>4000 grams) and low (<2500 grams) birth weights have been shown to be associated with increased risk for diabetes in later life (Harder, Rodekamp, Schellong, Dudenhausen, & Plagemann, 2007; Pettitt, Forman, Hanson, Knowler, & Bennett, 1997; Pettitt & Knowler, 1998). Despite increased smoking during pregnancy among Aboriginal women, which has been shown to decrease birth weights (Pirogowicz *et al.*, 2004; Wenman *et al.*, 2004), Aboriginals and Canadian populations have similar proportions of births with low birth weight (Gilchrist *et al.*, 2004). Despite high rates of maternal smoking in Aboriginal communities, First Nations babies are almost twice as likely to be classified with a high birth weight than non-Aboriginal Canadians (Rodrigues, Robinson, Kramer, & Gray-Donald, 2000). The mean birth weight for First Nations children reported by the 2002/03 RHS was 3.55 kg and the mean weight for males (3.60 kg) was higher than it was for girls (3.49 kg) (First Nations Centre, 2005). While the mean birth weight is on the higher end of the “normal birth weight” range (2.5-4.0 kg), the gender difference is not considered to be a significant finding: higher birth weight among males has been reported in non-Aboriginal populations (First Nations Centre, 2005). A major concern with high birth weight is its association with the rising epidemic of diabetes among Aboriginal Peoples (Caulfield, Harris, Whalen, & Sugamori, 1998). A recent study of First Nations births in

Saskatchewan from 1950 to 1984 showed a significant association between high birth weight (but not low birth weight) and diabetes for Saskatchewan registered Indians (OR 1.63 [95% CI 1.20, 2.24]). This trend was also found to be stronger for females than males (Dyck *et al.*, 2001). The researchers in this study suggested that excess fetal nutrition is the overriding intrauterine factor in the pathogenesis of type 2 diabetes in the Canadian Aboriginal population. As discussed earlier, the prevalence of maternal diabetes is also thought to affect birth weight. A study conducted in Saskatchewan among First Nations women found that infants from gestational diabetes mellitus (GDM) pregnancies were 2.4 times more likely to be macrosomic⁹ (95% CI: 1.1, 5.6) than their non-GDM counterparts (Dyck *et al.*, 2001). High birth weight was also found to be a factor in the development of childhood asthma. Sin *et al.* (2004) concluded that “because obesity promotes inflammations and imposes mechanical constraints to the airways, a high birth weight may be a risk factor for asthma in childhood” (Sin *et al.*, 2004). Since Aboriginal children have been documented to have higher birth weights than non-Aboriginal children (Sin *et al.*, 2004; Thomson, 1990), they may be at a greater risk of developing chronic respiratory illness early in life.

Nevertheless, it is important to not over-generalize about the prevalence of high birth weight among Aboriginal children. This is because, on the one hand, studies, such as those involving the Cree of James Bay have reported among the highest mean birth weight statistics and a high prevalence of infant macrosomia (Rodrigues *et al.*, 2000). Similarly, other studies have suggested that Aboriginal children are genetically predisposed to high birth weights (Sin *et al.*, 2004). However, poor fetal development and low birth weight has been documented in many disadvantaged and/or marginalized Indigenous communities (Blair, 1996; Chan, Keane, & Robinson, 2001), where access to basic necessities and medical care puts mothers and their infants at risk. Poor living conditions, socioeconomic problems, and inadequate maternal health care in many of Canada’s Aboriginal communities places these infants at a high risk for low birth weight (Blair, 1996; Chan *et al.*, 2001). Thus, before conclusions can be drawn about this risk factor, more research and understanding is needed (Kuh & Ben-Shlomo, 2004).

A final point must be made about the classification of birth weights. Currently, Aboriginal birth weights are classified as high, normal or low in comparison to non-Aboriginal standards. Because of potential differences between Aboriginal and non-Aboriginal populations in terms of maternal and child health, birth weight correlations should be considered rudimentary and preliminary at best. More appropriate and culturally specific measures of Aboriginal birth weights are needed in the future so that more accurate statistics can be used to assess this risk factor in the Aboriginal context.

4.2 Breastfeeding

Breastfeeding is a common topic in natal health. While the popularity of breastfeeding among mothers has varied with the times and continues to vary according to cultural contexts and perspectives, there is a growing body of literature discussing its impact on infant health and development.

⁹ To have a high birth weight (>4000g).

Health Canada encourages mothers to breastfeed because it provides infants with nutritional and emotional nurturing, as well as immunological benefits that enhance an infant's growth and development (Public Health Agency of Canada, November 1998). Breastfeeding is considered to be an important aspect of disease prevention, because infants who are breastfed have an increased protection against respiratory, ear, and intestinal infections. This is because the unique components of human milk helps protect infants from outside infection (Public Health Agency of Canada, November 1998). Reports of children who are breastfed being less likely to be overweight, more likely to be of an acceptable weight, and more likely to be in "very good" or "excellent" health. These results support literature on the perceived benefits of breastfeeding. In addition to the health benefits, breastfeeding is socially and economically advantageous, since it is an ecologically sound, efficient, economical, and self-reliant food source (Breastfeeding Committee for Canada, 2002; Public Health Agency of Canada, November 1998).

Like all babies born prior to the advent of formula, native infants were nursed until they were able to digest other food sources (Banks, 2003). Traditional breastfeeding practices, however, shifted to bottle-feeding in the 1950s when formula was introduced to the population (MacMillan *et al.*, 1996). For example, a study of Native children in Manitoba identified prolonged breastfeeding as a strong protective factor against Type 2 diabetes: a child who was breastfed for more than 12 months was shown to have only 24% of the risk of diabetes compared with the bottle-fed child (Young, Chateau, & Zhang, 2002). The protective effects of breastfeeding have also been observed in Pima Indian studies (Pettitt *et al.*, 1997; Pettitt & Knowler, 1998). Despite these studies and the fact that initiation rates for breastfeeding has increased in recent years (Langner & Steckle, 1991; Macaulay, Hanusaik, & Beauvais, 1991), the limited statistics documenting Aboriginal breastfeeding rates report lower breastfeeding rates than those of women in the general population (Dodgson, Duckett, Garwick, & Graham, 2002).

For instance, a 1988 survey conducted for the National Database on Breastfeeding among Indian and Inuit Women revealed that 60.7% of infants were breastfed at birth, but the rate dropped dramatically to 31.1% by the time the infants were 6 months old. (Langner & Steckle, 1991). A more recent study of James Bay Cree found a breastfeeding initiation rate of 51.9% among Aboriginal mothers (Black, Godwin, & Ponka, 2008). The average proportion of children reported by the RHS 2002/03 who are breastfed was 62.5% (First Nations Centre, 2005). As noted in the RHS: "This rate is higher than the previous rate (50%) reported for First Nations and Inuit (First Nations and Inuit Regional Health Survey National Steering Committee., 1999). However, it is lower than the rate (79.9%) that was reported for the general Canadian population (Statistics Canada, 1998-1999). The RHS also reported on the duration of breastfeeding: "Of the children who were breastfed, 21.6% were breastfed for 12 weeks or less, and 35% were breastfed for three to six months and 43.3% were breastfed for more than six months" (First Nations Centre, 2005). These rates were found to be higher than the rates reported from the 1997 RHS (only 22.5% reported breastfeeding for more than seven months) (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). In comparison with the Canadian population, 32.5% reported breastfeeding for 12 weeks or less, 33.4% for three to six months, and 34.0% for more than six months (Statistics Canada, 1998-1999).

The socio-cultural, political, and economic forces connected to breastfeeding are complex (Banks, 2003). For instance, the success or failure of breastfeeding among many Aboriginal

women is connected to many intergenerational and community factors. Among Mohawk women, breastfeeding is strongly influenced by the baby's grandmother, who plays a key role in the child's rearing. Thus, breastfeeding rates are often low because it is an impractical form of feeding if grandmothers and extended family are to also be involved. Since bottle feeding makes the involvement of the extended family more possible and pump technology and storage is not always available, feeding practices tend to be different than among the general population (Banks, 2003). Other cultural influences, such as the availability of government-subsidized baby formula (Banks, 2003), can encourage low breastfeeding rates. Furthermore, mothers with low income, a family history of residential school attendance, and/or living in a community that had a multi-community health services agreement were lower and shorter in duration (First Nations Centre, 2005). While this information from the 2002/03 RHS is helpful, the relationship between breastfeeding and these and other factors, such as education, need to be investigated further (Breastfeeding Committee for Canada, 2002). The association reported by the RHS between high birth weight, breastfeeding, and non-smoking mothers also deserves attention (First Nations Centre, 2005).

5. Early Childhood Risk Factors

The stage known as "early childhood" refers to children aged 1 to 5 years old. This age-range is often separated out because it is during this time that children experience a phase of accelerated growth. This time period is particularly important for health because it is this growth period that has the potential to influence one's long-term health and development: "A good foundation in the early years makes a difference through adulthood, thus, giving a better start to the next generation" (World Health Organization, 2008).

While the care of children during this time is often placed on the shoulders of the parents, it is increasingly recognized that it is extremely important for service providers, planners and policymakers to thoroughly understand the significance of early childhood and to play a role in ensuring the social, economic, and biological needs of all children are met (Centres of Excellence for Children's Well-being, 2008). The need to focus on this area is so important because it is sadly the first time in history that parents can confidently say that their children are likely have a lower life expectancy than themselves (Chronic Disease Prevention Alliance of Canada, 2006). In an effort to provide increased awareness about the impacts of early childhood on chronic diseases later in life, this section will review the key risk factors for chronic diseases present for Aboriginal children. First, however, a description of the population will be provided.

5.1 Population Influences

A defining feature of the Aboriginal population in Canada is its young age and high birth rate. As a result, the Aboriginal population is the fastest growing population group in Canada (its birth rate is 70% higher than the non-Aboriginal population) (Statistics Canada, 1996) and Aboriginal children account for a large portion of the total Aboriginal population. According to a report by the Canadian Council on Social Development (CCSD) in 2002, children under the age of 14 represent one-third of the Aboriginal population, which is considerably higher than the 19% of the population that non-Aboriginal children represent (Anderson, 2003). Further, statistics from 2002 show that Aboriginal children account for 5.6% of the total number of children in Canada,

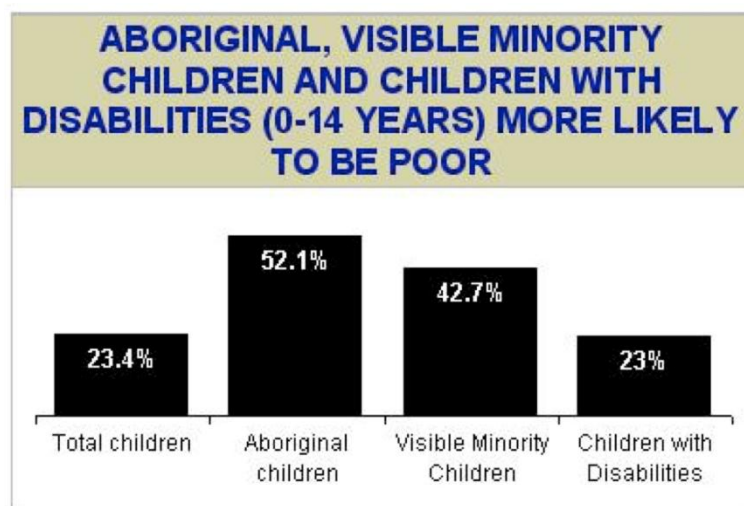
while the total Aboriginal population accounts for 3.3% of the total population of Canada (Anderson, 2003). Because of the large percentage that Aboriginal children make up of the total population and because they represent the future, their health and well-being must be considered an important area of focus. The risk factors for chronic diseases with greatest exposure and impact in childhood will be discussed here, so as to better understand the present and future health and well-being of Aboriginal children in Canada.

5.2 Child Poverty and Hunger

About 20 million children under five worldwide are severely malnourished and live in impoverished conditions. As a result, these children are more vulnerable to illness and early death (World Health Organization, 2008). While the terms poverty and hunger are often equated with developing countries, the reality of child poverty in Canada is very real: one in six children in Canada is poor. This makes for a child poverty rate of 15%; three times the rates of Sweden, Norway, and Finland (ending child poverty –MPH). Poverty among Aboriginal children is even more appalling. While some of the statistics are conflicting, approximately one in four First Nations children live in poverty (Campaign 2000, 2006). However, a report from 2001 documented that more than half (52.1%) of Aboriginal children were poor (Lee, 2000).

When statistics were broken down for on and off reserve children, the large number of Aboriginal children in poverty is evermore clear. This is because 40% of off-reserve Aboriginal children live in poverty (Campaign 2000, 2006). And, since 219,570 of the 286,500 Aboriginal children live off reserve, this means that “77% of all Aboriginal children between the ages of zero and nine” (Lee, 2000) could be considered as living in poverty. This shockingly high statistic represents the highest rate of the three “equity groups” noted in and pictured by the figure below (Lee, 2000).

Figure 5. Prevalence of Child Poverty in Aboriginal Children, Visible Minority Children, and Children with Disabilities



Source: (Canadian Council on Social Development, 2003); original source from Statistics Canada Census 1996 with custom tabulation for Canadian Council on Social Development.

Note: In this table, Aboriginal refers to those persons who identified themselves with being North American Indian, Métis or Inuit. Visible minority persons are defined under the Employment Equity Act (1986) as those (other than Aboriginal persons)

who are non-Caucasian in race or non-white in colour. Persons with disabilities are identified based on their responses to questions regarding their activity limitations or disabilities.

While the statistics on poverty among Aboriginal children are shocking, the real concern behind the numbers is the impact of this state of being on the health of Aboriginal Peoples now and in the future. This is because, “[p]overty rates are indicators of the health of citizens and the state of institutes. As well, poverty rates are predictors of long-term health issues in children” (Ontario Federation of Indian Friendship Centres, 2004). No matter how you look at the numbers, then, one can conclude that the current and future health of Aboriginal children is at serious risk.

5.2.1 The impact of child poverty on adult health

It is logical to assume that an adult’s socioeconomic status is associated with their socioeconomic status as a child. But since not all adults with low socioeconomic status grow up in poor socioeconomic conditions (and vice versa), understanding the patterns of socioeconomic status throughout the life course is needed to elucidate its association with an individual’s health status.

It is now well accepted that childhood origins can shape adult health through material deprivation and their influence on adult circumstances and behaviour, there is increasing evidence that childhood circumstances also affect developmental health, particularly through the activation of stress response systems (Boyce & Keating, 2004). As has been highlighted by McEwen and colleagues, recurrent stress responses triggered in early life by adverse social environments can initiate enduring physiological changes, such as alterations in lipid metabolism and the accumulation of body fat, the development of hypertension, and the development of insulin resistance that leads to Type 2 diabetes mellitus and CVD (McEwen, 2006). Several other studies have demonstrated the link between poverty in childhood and chronic diseases later in life (Cohen & Reutter, 2007; Everson, Maty, Lynch, & Kaplan, 2002; Galobardes, Lynch, & Davey Smith, 2004; Lawlor & Smith, 2005; Poulton et al., 2002; Power et al., 2007). In a Norwegian study, the highest risk of mortality among men and women was observed in the group that was poor both in childhood and in adulthood; this demonstrates a clear cumulative influence of social circumstances across the life course on mortality risk (Claussen, Davey Smith, & Thelle, 2003). In the same study, cardiovascular mortality was more strongly associated with childhood than with adulthood social circumstances. Thus, the latent effects of poverty on adult health show that the gradient of health begins to emerge in childhood (Graham & Power, 2004; Moody-Ayers, Lindquist, Sen, & Covinsky, 2007; Poulton et al., 2002). This is largely considered to be due to a number of intersecting factors including, but not limited to, poor nutrition and access to health care (Graham & Power, 2004). Further, the patterning of behaviour and lifestyle habits, which occurs in childhood, is thought to have a profound effect on future health and development.

5.2.2 Hunger and food security

Deeply connected with poverty is deprivation of nutrients and/or one’s inability to access, buy, and consume an adequate amount of food with sufficient nutrients. It is not surprising, then, that the most pressing concern of Aboriginal children living in poverty is a lack of food. In fact, the Canadian Council on Social Development has found that Aboriginal children are four times more likely to be hungry than any other ethnic minority in Canada (Anderson, 2003; McIntyre, 2003). Understanding what this means for the health of children living in poverty requires that review

the meaning of malnutrition and its impact on health.

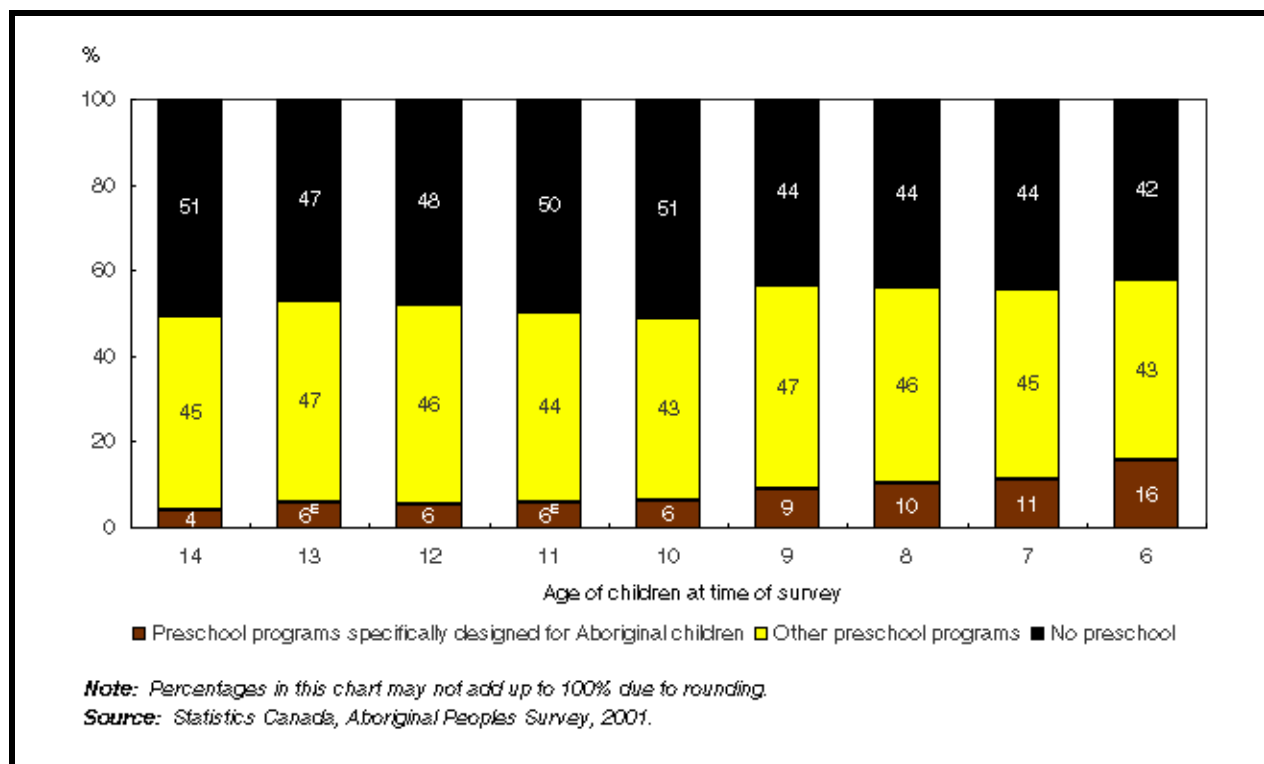
According to McIntyre (2003), “[m]alnutrition is defined as failure to achieve nutrient requirements, which can impair physical or mental health” (McIntyre, 2003). Thus, some common effects of poverty-induced malnutrition on health are mental, while others are physical (Ontario Federation of Indian Friendship Centres, 2004). For instance, a child’s ability to concentrate in school has been linked to food consumption; particularly kids’ access to breakfast. Stunted growth or low height for age, arguably the most accurate measures of malnutrition, demonstrate the more physical aspects of inadequate food consumption (McIntyre-food security, policy options). An additional concern with malnutrition is the consumption and absorption of important micronutrients, such as iron, iodine, and vitamin A (McIntyre, 2003). While the term malnutrition is a useful and effective word for describing hunger in developing countries, it has been argued that food insecurity is a better term to use when describing hunger in developed societies, such as Canada. Food security is defined by McIntyre (2003) as: “the inability to acquire or consume an adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so”. Whether described as food insecurity or malnutrition, the ability for one to meet adequate nutritional levels consistently and completely is a key determinant of health (Ontario Federation of Indian Friendship Centres, 2004).

While the particular impacts of child hunger on long term health and development are complex and interact with the experiences of low socio-economic status that often predispose children to hunger, it is important to keep in mind that “child hunger is the extreme manifestation of household food insecurity” (McIntyre, 2003). Thus, a community perspective is useful.

Early child learning and development

In addition to physical growth and development, a lot of intellectual and social development occurs in the early years. This cognitive and social growth is often facilitated through family and community activities as well as participation and attendance in high quality early childhood development or preschool programs (Palacio-Quintin, 2000; Statistics Canada, 2001). According to the 2001 Aboriginal Peoples Survey (APS), just over half (53%) of Aboriginal children aged 6 to 14 living in non-reserve areas had attended an early childhood development program when they were younger (Statistics Canada, 2001). Inuit children were less likely to have attended a preschool program (35%) compared to First Nations (54%) and Métis (57%) children. Programs specifically designed to meet the needs of Aboriginal children, however, are increasing and these seem to have greatly increased enrollment and retention rates in early child development programs: “among the 14-year-olds, only 4% had attended preschool programs specifically designed for Aboriginal children when they were preschoolers. At the time of survey in 2001, 16% of six-year-old Aboriginal children in non-reserve areas had attended preschool programs specifically designed for them” (Statistics Canada, 2001). As these statistics show, Aboriginal children’s attendance at preschool is greatly distributed – both in terms of year they were born and Aboriginal ancestry. This is demonstrated in the figure below.

Figure 6. Aboriginal children in non-reserve areas who ever attended preschool programs, Canada, 2001



Source: (Statistics Canada, 2001)

The figure above, which is posted on Statistics Canada’s website (Statistics Canada, 2001) shows that there has been a four-fold increase over eight years in the proportion of Aboriginal children in non-reserve areas attending preschool programs designed for them. Despite these gains, the absolute numbers remain low: “while one in two Aboriginal children in non-reserve areas attended preschool programs, only one in six attended programs specifically designed for them” (Statistics Canada, 2001). Since there was no statistically significant change over the number of Aboriginal children attending general preschool programs (i.e. not Aboriginal-specific programs), there is reason to believe that the potential for growth and development in this area comes through tailored programming. The hope is that such programs will encourage greater participation in early childhood education and allow children to gain important social and intellectual skills – both of which are integral for ensuring their long-term well-being and functioning in the world. It is also believed that such programs will prepare children for school later readiness and reduce drop out rates among Aboriginal high school students. In fact, many authors (Cairns, Cairns, & Neckerman, 1989) have shown that dropout rates are linked to a child’s first five years at school. This further highlights that education and learning, especially in an individual’s early years, are crucial to individual success and community prosperity (Cardinal, 2004).

5.4 Parental Smoking and Household Smoke

As has been discussed earlier, environmental factors can influence one's risk for chronic diseases at all life stages. It is important to note, however, that certain groups are more vulnerable to household environments. Children are one such group: children both spend more time indoors and are exposed to the household during their development, which in turn magnifies the impact of household environmental exposures. This is because long-term exposures to environmental risk factors can have harmful effects on growth, development, and function later in life (Sin, Sharpe, Cowie, & Man, 2004). This section will review, the impact of traditional and non-traditional tobacco use, as well as coal and wood-burning stoves.

Tobacco use is often discussed in terms of individual habits and practices. As such, it is often forgotten that the habits and practices of parents and other caregivers can impact their child health and development after infancy. While the prevalence and impact of smoking on the actual individual is discussed in the adulthood and adolescent sections, the focus here, is the impact of second-hand smoke on children. It is well documented that habitual smoking and passive smoking are significant problems in many Aboriginal communities. As a result, studies have found that many Aboriginal children live in homes where one or both of the parents smoke. This is particularly common for children with respiratory and other chronic ailments. For example, a study of First Nations children, 73% of those reporting airway obstruction lived in a home where one or both of the parents smoked (Orr et al., 2001). High parental smoking rates were also documented in a 1995-96 study of bronchiolitis among Inuit children: parental smoking occurred in 42 households (48.8%) of the 86 children studied and parents reported smoking within the vicinity of the house in another 31 households; parents in only three households claimed to be non-smokers (Mann, Wadsworth, & Colley, 1992). It is not surprising, therefore, that the literature also demonstrates that smoking exacerbates early life risks for chronic respiratory diseases (Millar, 1992; Sin et al., 2002). The physiological reasoning behind this is that smoke causes damage to the respiratory system that encourages or progresses the development of chronic respiratory problems (Alwyn, 2004). As the effects of smoking accumulates over the life course, exposure to smoke at a young age causes great risk for the development of chronic diseases associated with smoking, such as diabetes, cardiovascular diseases, and respiratory conditions, later in life. As such, the living environment and conditions that children are exposed to, through their parents' lifestyle choices and their home environments are important to consider. The influence of household smoke is briefly discussed below.

Another potential contribution to household smoke, other than direct parental or household members' smoking is enhanced by the continued use of coal and/or wood-burning stoves for heating, hot water, and cooking combined with the poor structure of many Aboriginal homes, outdoor smoke to enter the home (Cardinal, 2004; Petersen et al., 2003). Like passive smoke, household smoke can greatly aggravate the pulmonary system and interrupt normal breathing patterns or the growth, development, and function of the lungs and other organs of the pulmonary system (Harris et al., 1998). Further the association between poor air quality, the use of wood-burning stoves, poor housing conditions, and poor child respiratory health in many Aboriginal communities cause reason for concern (Chronic Disease Prevention Alliance of Canada, 2006).

6. Childhood and Adolescent Risk Factors

While the early stages of development in childhood are important to consider with regards to one's health and well-being throughout life, so too is the health of an individual throughout their childhood and into adolescence. And just like early childhood represents an important stage of development and growth, so do the physical developments (sexual and body changes) that occur during adolescence. Furthermore, the important psychological and social changes that occur alongside the physical changes mark this period as a critical stage towards becoming an adult. As some key risk factors, such as obesity, smoking and physical inactivity continue to be far higher among Aboriginal children and youth than the Canadian national average (Guo, Roche, Chumlea, Gardner, & Siervogel, 1994; Serdula et al., 1993), the health of this cohort is integral to consider from a life course perspective.

6.1 Childhood Obesity

Longitudinal studies among non-Aboriginal people have shown that being overweight or obese during childhood and adolescence is linked with childhood diabetes and predicts adult obesity (Barrett-Connor, 1989), which is associated with Type 2 diabetes (Hubert, Feinleib, McNamara, & Castelli, 1983) and coronary heart disease (Kumanyika, 1993). While high rates of pediatric obesity have been reported in studies of several racial groups (Bernard, Lavalley, Gray-Donald, & Delisle, 1995), Aboriginal children have been found to have a particularly high rates (Tjepkema, 2002): several studies have shown that Aboriginal children weigh (on average) more than other Canadians (Young, Dean, Flett, & Wood-Steiman, 2000). In a study of First Nations children aged 4 to 19, alarming obesity prevalence rates were documented: 64% of female children and 60% of male children were reported as being obese. In this study, obese children were shown to have an increased risk for diabetes (MacMillan et al., 1996). It is crucial to note here, however, that in Aboriginal arctic children, BMI should be interpreted with caution, because these children display a different pattern of growth with a high-weight-for-height pattern needed to survive in the climate they live in (MacMillan *et al.*, 1996). This different pattern of growth should not be confused with obesity (Reilly et al., 2005).

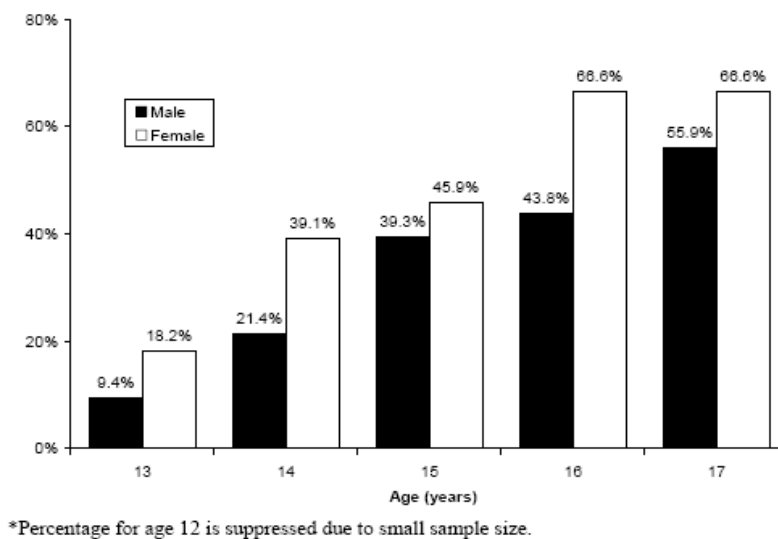
In order to understand the etiology of Aboriginal childhood obesity it is important to examine what are the root causes discussed in the Aboriginal and non-Aboriginal literature. An English longitudinal study conducted by Reilly et al (2005) carefully examined early life risk factors for childhood obesity. In addition to the already mentioned associations of childhood obesity with high birth weight and parental obesity (see prenatal section), researchers found that children who watched television for more than 8 hours a week were at an increased risk of being obese (Reilly *et al.*, 2005). Sleep duration was also independently associated with childhood obesity: children in the lowest two quarters of sleep duration (10.5 hours and 10.5-10.9 hours) at 30 months were more likely to be obese at age 7 than children in the highest quarter (> 12 hours). The reasoning behind this correlation is that while television viewing reduces energy expenditure, sleep duration alters growth hormone secretion, changes a child's exposure to obesity-promoting factors, such as evening food intake, and acts as a marker for adequate physical activity levels (Hanley *et al.*, 2000).

A study undertaken in the Sandy Lake First Nations community also examined the correlation between obesity and television viewing (Hanley *et al.*, 2000). This study found that children who watched more than five hours of television per day were associated with a 2.5-fold increase in the risk of becoming (or being) overweight, when compared to children who watched less than 2 hours of television per day (Hanley *et al.*, 2000). In the same study, children with higher fitness levels and greater fiber intake were found to be less likely to be overweight (First Nations Information Governance Committee., First Nations and Inuit Regional Health Survey National Steering Committee., First Nations Centre., & National Aboriginal Health Organization., 2004). According to the 1997 First Nations and Inuit Regional Health Survey, 98 per cent of children watched television each week for an average of 2.9 hours each day (Bernard *et al.*, 1995; Ng, Marshall, & Willows, 2006). Other Aboriginal studies have found that overweight Cree schoolchildren and adolescents participated in significantly less physical activity and consumed significantly fewer servings of fruits and vegetables than did their normal weight peers (First Nations Information Governance Committee. *et al.*, 2004). When asked by the RHS about the availability of sports and cultural facilities in their community, fewer than half of Ontario Aboriginal youth reported having sports facilities. The most commonly cited needs were for a community swimming pool, followed by playground equipment, arena and drop-in centres (Ritchie & Reading, 2004). As issues of obesity in Aboriginal communities across the nation relate to an increasingly sedentary lifestyle, a lack of exercise, and poor nutrition, these underlying predictors of obesity should be better understood and targeted for prevention. Such intervention is important because it is likely that reductions in pediatric obesity will enable substantial positive health changes later in life.

6.2 Smoking

Even though smoking rates have declined among Aboriginal Peoples in recent years, Aboriginal smoking rates are still higher than those in Canada's general population (Chronic Disease Prevention Alliance of Canada, 2006); (Ritchie & Reading, 2004). A significant concern, however, are the high rates of smoking among Aboriginal children and youth (Canada, 2003).

A major concern with Aboriginal youth smoking is that they are smoking at much higher rates than their Canadian counterparts. For Canadian youth, the prevalence of smoking, was found to be 18% for 15-19 years olds and 30 % for young adults aged 20-24, with higher rates for female smokers (2002/2003). Comparatively, the prevalence of tobacco smoking among Aboriginal youth, reported by the Aboriginal Peoples Survey (2002/03), was 54% among 15–19 year olds and 65% among 20–24 year olds. Inuit youth were more likely to smoke (73% in the 15–24 age group) compared to the Métis or First Nations youth (56% and 59% respectively in the 15–24 age group). The distribution of smoking patterns among different age groups and genders is illustrated in Figure 3.1 below.

Figure 7. The Distribution of Smoking Patterns Among Different Ages (n=2,494)

Source: Adapted from RHS 2002/2003 (First Nations Information Governance Committee. et al., 2004)

High rates of smoking among Aboriginal teenagers are of particular concern for the future health of the Aboriginal population because they represent the largest demographic group within the Aboriginal population and because they represent the future of this population. Particularly high rates of smoking among females suggest the need to target this group and understand the particular causes associated with this gender difference.

In addition to high prevalence rates, Aboriginal smokers have been found to initiate smoking at an earlier age. According to reports by parents in Manitoba, 19% of all Aboriginal children under the age of 18 smoke (Ritchie & Reading, 2004) and the peak age for starting smoking was 16, with many Aboriginals beginning as young as 11. A survey conducted at the 2002 North American Indigenous Games found that Aboriginal youth reported an average age of 12.2 years for smoking initiation, with the youngest reported age being 4 years old (Ritchie & Reading, 2004). By the age of 6, about 2% of Aboriginal children had initiated smoking, which doubled by the age of 8, and then doubled again by the age of 12, peaking at the age of 13 (Mann et al., 1992). Overall, the research shows that Aboriginal children today start smoking at a very young age.

Beginning smoking at such a young age means that these children have virtually an entire lifetime to accumulate risks for chronic diseases associated with smoke-related environments and activities. It is well-documented that smoking exacerbates early life risks for respiratory diseases by damaging the respiratory system and encouraging or progressing the development of chronic respiratory problems (Cunningham, Dockery, Gold, & Speizer, 1995). Throughout childhood and later in life, exposure to smoke can continue to reduce lung function and increase the risk of respiratory problems (Retnakaran, Hanley, Connelly, Harris, & Zinman, 2005). The consistently high rates of smoking among Aboriginal youth also raise concerns about the long-term risks of developing chronic conditions. A study of the Sandy Lake First Nation, which reported that 82% of participants between the ages of 15 and 19 currently smoked (Ellickson, 2001), found a strong association between current smoking exposure and cardiovascular risk factors. This means that

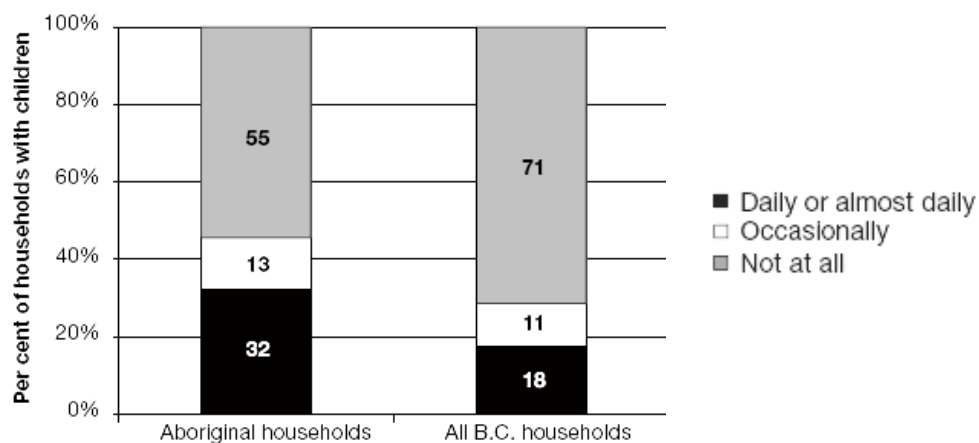
both immediate and long-term implications are an issue for this population.

Research shows, however, that smoking also affects one's mental health. A longitudinal, five-year follow-up study has found a statistically significant ($p < 0.05$) association between early smoking and high-risk behaviours in grade-seven adolescents (Ellickson, 2001): compared with non-smokers, early smokers were 82 times more likely to engage in weekly marijuana use and 36 times more likely to engage in hard drug use; 11 times more likely to engage in weekly drinking and 8 times more likely to engage in binge drinking; 7 times more likely to steal. These adolescents were also at higher risk for low academic achievement and behavioural problems at school and use of predatory and relational violence (First Nations Centre, 2005).

Despite the overwhelmingly negative statistics reported in the literature on Aboriginal youth smoking, there are also positive statistics regarding the smoking practices of this population. For example, the 2002/03 RHS reported that Aboriginal youth smoke significantly less cigarettes a day than Canadian youth in the fifth to nine grades age group (5.9 vs. 8.1 cigarettes a day) (First Nations Centre, 2005). A cross-sectional, opportunistic study conducted at the Winnipeg 2002 North American Indigenous Games in Canada, found the prevalence of tobacco smoking in the studied cohort of 570 Aboriginal youth between ages 12 to 22 years old was 32% (Ritchie & Reading, 2004). A follow-up study conducted at the Cowichan 2008 North American Indigenous Games, measured an even lower rate of smoking in Aboriginal youth: only 6.3% of youth were currently smokers (Kelly, Link, & Reading, 2009). This lower prevalence rate suggests that because the participants were attending or competing at a sports event they may be more health conscious than other Aboriginal youth and, therefore, may be less likely to develop unhealthy lifestyle behaviours (British Columbia, 2001). As such, more participation in sport or other health activities may be an effective way to improve smoking rates in Aboriginal communities. Finally, a 3% reduction in smoking rates among First Nations adults living in Canada from 1997-2001 (First Nations and Inuit Regional Health Survey National Steering Committee, 1999; First Nations Centre, 2005) is encouraging for the future. The hope is that declines in smoking rates among adults will continue and will also influence lower smoking rates among children and youth through positive role modelling. At the very least, however, Aboriginal children and youth will be exposed to less passive smoke.

Issues related to passive smoking are important to consider for this age group, just as they are for infants and throughout early childhood (see natal and early childhood sections for "parental smoking"). According to the Tobacco Use in British Columbia 1997 survey, 32% of Aboriginal children were daily or nearly daily exposed to cigarette smoking in their homes (British Columbia, 2001). This compares to 18% of all BC households with children exposed to smoking (British Columbia, 2001). The data from this survey is summarized in the Figure 7 below.

Figure 8. Exposure to Second-Hand Smoke Households with Children Age 11 and Under, BC, 1997



Source: (Orr et al., 2001)

As noted earlier, extremely high parental smoking rates have been documented in studies of Inuit children: parental smoking occurred in 48.8% of the homes and parents reported smoking within the vicinity of 36% of the households; parents in only 3.4% of the households claimed to be non-smokers (Koch et al., 2003). Although the correlation between passive smoking and chronic disease development is not as clear as personal smoking behaviours, it has been found that passive smoking can complicate respiratory and other health problems and foster the development of chronic conditions (Weitzman *et al.*, 2005). The varied influence of exposure to tobacco smoke on chronic disease is demonstrated by a study of 2273 American adolescents (Weitzman *et al.*, 2005). This study specifically examined the connection between smoking and metabolic syndrome. Out of the study population, 5.6% of the adolescents met the criteria for metabolic syndrome. However, the prevalence for metabolic syndrome was 1.2% for those not exposed to tobacco smoke, 5.4% for those exposed to environmental tobacco smoke, and 8.7% for active smokers (First Nations Centre, 2005).

6.3 Sexual Health

According to Regional Health Survey 2002-03, First Nations youth are more sexually active than their Canadian counterparts (First Nations Centre, 2005). Considering that “the levels of alcohol and drug abuse among First Nations youth are [also] higher than those in mainstream society”, it can be posited that First Nations youth could be at an increased risk of unprotected sexual activity and, therefore, sexually transmitted infections (Gray, 2005). The sexual health of Aboriginal youth is also related to the trends of cancer development. This is because it has been documented that women who have multiple sexual partners or who become sexually active at an early age are more likely to develop cervical cancer (Gray, 2005). The reason early sexual activity is linked to cancer risk is because during puberty cervical tissue undergoes many changes that might make the area more vulnerable to damage (Gray, 2005). There is also a suspected connection between STD’s and cervical cancer: “[i]nfection with human papillomavirus (HPV) increases your risk 20 to 100 times” (Gray, 2005). While HPV is a quite common sexually transmitted virus, there are over 100 types of HPV and only a few that are the

high-risk types that will influence the risk of cervical cancer (Gray, 2005; NAHO, 2004; PapScreen Victoria, 2006). Nonetheless, sexual activity increases the risk of getting HPV and, in particular, high-risk types of HPV and, therefore, must be treated with caution and concern. While pap tests have been shown to dramatically reduce the number of women who die from cervical cancer, traditionally low rates of pap smear testing among Aboriginal women remains a concern for early detection and cancer survival in this population (Ontario Federation of Indian Friendship Centres, 2004).

Because of particular vulnerabilities among Aboriginal youth, such as low socioeconomic status, disempowerment as a result of historical and cultural conditions, and lack of education, sexual exploitation is also a concern for this population's sexual health and well-being. Save the Children Canada's National Aboriginal Project recently released a report on the nature and depth of commercial sexual exploitation of Aboriginal children and youth across Canada. The study found that:

“the rate of commercial exploitation of Aboriginal children and youth has reached levels of more than 90% in some communities where the Aboriginal population is less than 10%;

the serious over-representation of Aboriginal youth in the sex trade is directly linked to the unacceptably high level of risk factors which Aboriginal children and youth face, including alarmingly high poverty rates”
(Ontario Federation of Indian Friendship Centres, 2004).

As described by the report, the reality of the disproportionately high rate of Aboriginal children and youth living in the sex trade is perpetuated by pressures related to poverty and low socioeconomic status common within this group (Chansonneuve, 2005; Indian Residential Schools Resolution Canada [IRSRC], n.d.). In addition to economic reasons, cultural and historical factors are essential to understanding the experiences of children and youth. In particular, the experiences of parents that are inherited by their children have been shown to have a lasting impact on the sexual health practices of Aboriginal children and youth. The particular impacts of the historic and current education system on the learned and experienced history of Aboriginal children and youth are discussed in greater detail below.

6.4 Education

The education system, past and present, is an integral aspect of the lives of Aboriginal children and youth. Looking to the past first, this section will discuss the legacy of the residential school and its ongoing impacts on health. Next, the experiences of Aboriginal Peoples in the current school system and their impacts on health will be discussed.

6.4.1 Residential Schools

Education of Indians became a responsibility of the federal government in 1867 under the British North America Act (Chansonneuve, 2005; Fournier & Crey, 1997). By this time, Indian day schools had been established, but the government was urged by the Davin report of 1879 to establish residential schools instead: Davin believed residential schools to be the most effective means of assimilating Indian children. In 1892, the Canadian government established

partnerships with Roman Catholic, Anglican, Presbyterian and Methodist churches to run the operation of Indian residential schools. Except in the provinces of Newfoundland, Prince Edward Island, and New Brunswick, residential schools were established across the country (Fournier & Crey, 1997; Indian Residential Schools Resolution Canada [IRSRC], n.d.). Attendance increased after 1920, when an amendment to the Indian Act made education of Indian children between the ages of 7 and 15 years old mandatory for ten months of the year (Fournier & Crey, 1997). Nearly three-quarters of Indian children across Canada attended residential school by 1930. The number of schools peaked in 1931 when over eighty schools were operating (Indian Residential Schools Resolution Canada [IRSRC], n.d.). Some Aboriginal children began attending provincially-run public day schools in the 1950s, and by 1969, when the federal government took full control over residential schools, 60% of Aboriginal students attended public day schools (Fournier & Crey, 1997). From the inception of residential schools in the 1800s to the closure of most of the schools in the 1970s, almost one-third of Aboriginal children spent a large portion of their childhood in attendance at residential school (Beauchamp et al., 2004; Chansonneuve, 2005; Indian Residential Schools Resolution Canada [IRSRC], n.d.). The last federally run residential school closed in 1996 (Dion Stout & Harp, 2007). There are an estimated 86,000 residential school survivors alive today (Dion Stout & Kipling, 2003; King, 2006).

The residential school system was not exclusive to Indian children. The boarding, missionary, hostel and residential schools attended by Inuit children are also defined as part of the residential school system;¹⁰ further, Inuit children who lived away from home while attending federal day schools are considered residential school survivors (King, 2006). In some areas of the North, churches ran federally funded missionary schools until the federal government accepted responsibility of Inuit education (King, 2006). Education in the Arctic was controlled by the federal government between 1955 and 1970. Inuit student enrolment rose from a total of 549 in 1956 to 2,390 in 1963 (Chansonneuve, 2005). Less than 15% of Inuit children aged 6 to 15 years were enrolled in school in 1955, but by 1964, three-quarters (75%) were enrolled.

Métis children were also students of the residential school system. Exact enrolment numbers are difficult to determine because records of Métis students were not always kept (Chartrand, 2006). Although Métis education was not recognized as a federal responsibility, Métis children were occasionally allowed to enrol or enrolled in residential schools for a particular purpose (Chansonneuve, 2005; Chartrand, 2006; Logan, 2001), such as assimilation or to boost attendance records in order to receive more funding (Chansonneuve, 2005; Logan, 2001). Factors that influenced the likelihood of Métis admission to residential schools included proximity of schools to Métis communities, school denomination (as Métis had a stronger connection to the Roman Catholic Church), family history, and social standing (Logan, 2001). Métis children were more often admitted to residential school if their family had money to pay for schooling, if their physical features were characteristic of Indian attributes, or if their lifestyle was most associated with that of Indians and, therefore, seen to be in greater need of assimilation (Fournier & Crey, 1997; Kirmayer et al., 2003; Reading, 1999).

¹⁰ The residential school system in Canada has been defined to include “industrial schools, boarding school, homes for students, hostels, billets, residential schools, residential schools with a majority of day students or a combination of any of the above” .

Punishments and abuse were widespread and often severe in the residential school system. Children who expressed Aboriginal language and culture or sought contact with family were commonly administered harsh disciplines, which some scholars have even labelled as torture (Chrisjohn & Young, 1995). Such punishments exceeded the standard forms of discipline in Canadian public schools at the time and “the infractions which “warranted” this treatment were not infractions for any children in Canada save Aboriginal ones” (Chansonneuve, 2005). The abuse that occurred at residential schools included physical, sexual, emotional and spiritual abuse and has been described as ritualized, or “repeated, systematic, sadistic and humiliating trauma”(Chansonneuve, 2005; Chrisjohn & Young, 1995; Fournier & Crey, 1997; Kirmayer et al., 2003; Reading, 1999). Children were: under constant surveillance, continually underfed and malnourished, humiliated in front of peers, degraded for their Aboriginal culture and heritage, deprived of gifts and letters from family, denied emotional comfort, forced to perform hard labour, and forced to witness the abuse of other children (1997). Fournier and Crey (1997) stated that student deaths due to abuse and neglect were concealed, but had the schools been held accountable, they would be guilty of “criminal negligence, manslaughter and even murder” ([IRSRC], n.d.; Beauchamp et al., 2004). In the 1990s, apologies were issued from the Catholic, Anglican, United and Presbyterian churches as well as the Canadian government for the physical and sexual abuses that occurred in residential schools (Corrado & Cohen, 2003; Waldram, Herring, & Young, 2006). In June 2008, an apology was finally issued by the Canadian Government (Harper, 2008).

In addition to the multitude of abuses experienced in residential schools, children endured atrocious living conditions. Low government funding contributed to the poor nutritional value of food and lack of medical services available to students (Fournier & Crey, 1997). Dormitories of the schools were often overcrowded and unventilated (Corrado & Cohen, 2003; Fournier & Crey, 1997; Waldram et al., 2006). As a result of the poor living conditions, illness and diseases such as tuberculosis raged through residential schools (Chrisjohn & Young, 1995; Fournier & Crey, 1997).

The goal of the residential school system to assimilate, rather than educate, Indian children is demonstrated by the poor quality of education provided. Only half of the day at school was devoted to academic instruction, while the rest of the day was spent in teaching children religious ideology or forcing children to contribute to school maintenance and other labour-intensive projects (Fournier & Crey, 1997). In 1930, at the height of residential school operations, three-quarters (75%) of Indian students were below third grade level (compared to less than half of the children in provincial public schools), and only 3% of Indian students achieved higher than a sixth grade education (compared to one-third of children in provincial public schools) (Reading, 1999). The inadequate education provided by residential schools left former students with few skills to function in mainstream society and may have adversely affected their future quality of life (Chartrand, 2006; King, 2006; Logan, 2001).

Experiences of Métis and Inuit children who attended residential schools were often similar to those of Indian children. Stories of neglect, poor living conditions, fierce punishments, cultural suppression and physical and sexual abuse have been told by Métis and Inuit residential school survivors (Logan, 2001). Some Métis students adjusted more easily to residential school life because of their greater familiarity with Catholicism and the English or French languages

(Chartrand, 2006; Logan, 2001). Other Métis children felt they were treated as “second class” students because the federal government did not provide funding to churches for education of the Métis and they were considered neither full-blooded Indians with recognized rights, nor full-blooded Caucasians of dominant society (Anderson, 2003).

The residential school system is a dark chapter in the history of Canada’s treatment of Aboriginal Peoples and their educational history. What it does so effectively highlight, however, is the great impact that educational settings can have on children, parents, grandparents, and, indeed, generations. As we look to the current educational system, it will be important to remember the history of the residential school system, as well as the close connection that education has on the economic and social success of all Canadians.

6.4.2 *The Current Education System*

In general, data shows that the attendance of Aboriginal youth in schools is lower than non-Aboriginal youth. For instance, data from 1996 shows that “68% of Aboriginal youth were in school compared to 83% of non-Aboriginal youth” (Statistics Canada, 2001). School completion has also been shown to be lower: in 1996 as well, just over half (52%) of the Aboriginal population aged 20 to 24 living in non-reserve areas had not completed secondary school. By 2001, this proportion had dropped to 48% (Statistics Canada, 2001). Nevertheless, there was still a huge gap between the Aboriginal population and the general Canadian population: in 2001, only 26% of the general population aged 20 to 24 had not completed secondary school (Statistics Canada, 2001).

The proportion of secondary school graduates is an important predictor of future education and employment rates. Some important information on Aboriginal post-secondary enrolment and completion rates is included in a report completed by the Millennium Scholarship Foundation in 2004, titled “Aboriginal Peoples and Post-Secondary Education: What Educators have learned.” Some of its key points are reviewed in the following paragraph.

As noted by the Millennium Scholarship Foundation, post-secondary enrolment and completion rates for Aboriginal people have been steadily increasing over the past two decades. Despite these increases, however, the rates for Aboriginal Peoples remain significantly lower than those of non-Aboriginal Canadians (Malatest, 2004). For instance, the 1996 Census found that:

“Three per cent of registered Indians and four per cent of other Aboriginal identity groups had obtained university degrees, compared with 14 per cent of all other Canadians. The percentage of registered Indians with some post-secondary education was 37 per cent—for all other Aboriginal identity groups it was 47 per cent, significantly lower than the rate for all other Canadians at 51 per cent” (Malatest, 2004).

While the increasing number of Aboriginal graduates is encouraging, it is important to remember that there are still many limitations and barriers to Aboriginal youth’s educational achievements. The following quote outlines some of these limitations and barriers:

“While socio-economic factors such as poverty and unemployment put them at an obvious disadvantage, Aboriginal students also face more subtle barriers such as discrimination, low self-concept and institutional insensitivity to Aboriginal cultures.

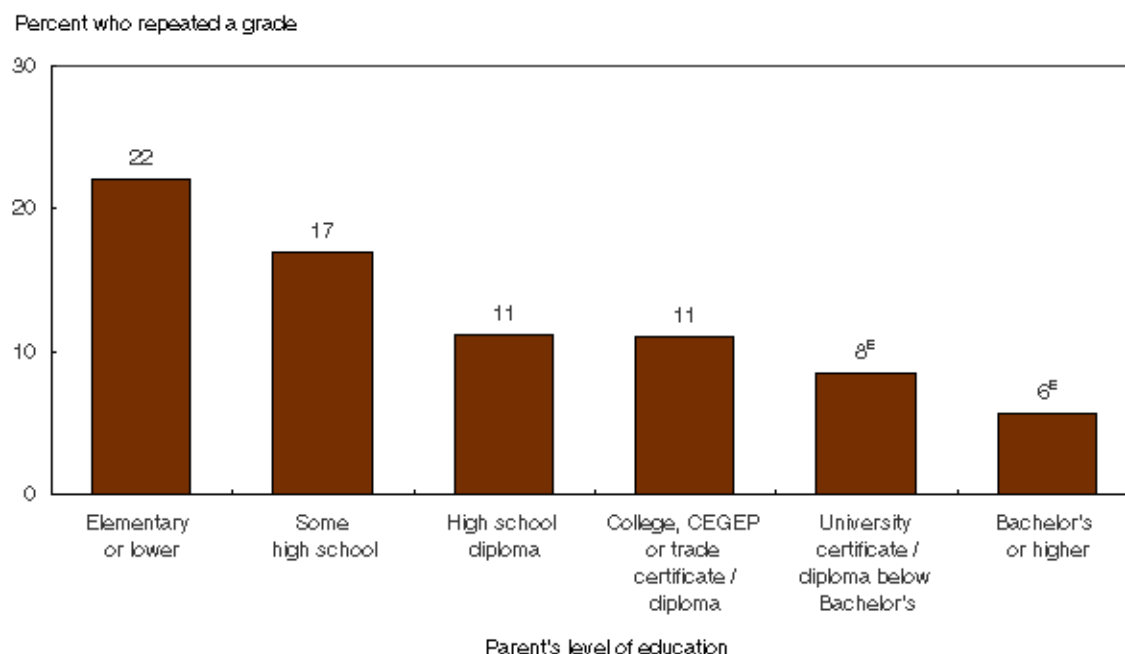
Many Aboriginal students arrive in post-secondary institutions without adequate high school preparation; others struggle to balance education with family responsibilities. Combined with a history of forced assimilation through educational institutions, the barriers to Aboriginal participation in post-secondary education are formidable” (Malatest, 2004).

Thus, post-secondary education must take into account the social, cultural or economic needs of Aboriginal peoples (Malatest, 2004).

These challenges and barriers, as well as the raw numbers on Aboriginal education, are important to take into account, as the importance and value of a formal secondary and post-secondary education is only increasing with time: “With the advent of the knowledge-based economy, jobs are becoming increasingly scarce for individuals without a diploma or a degree from a high school, college or university” (Statistics Canada, 2001). Statistics Canada (2001) found that differences in unemployment rates among Aboriginal Peoples could be partially attributed to educational backgrounds. This means that education can predict the employability of a person and, therefore, also their future socioeconomic status.

Research has also found that education rates among Aboriginal children and youth is closely related to their parents’ education levels (Statistics Canada, 2001). For instance, De Broucker and Lavallée (1998) have reported that the higher parental education levels, the higher the education levels of their children. This association is demonstrated in the figure below, which shows that parental education is a factor in Aboriginal children’s likelihood of repeating a grade.

Figure 9. Percentage of non-reserve Aboriginal children repeating a grade



Source: Statistics Canada, Aboriginal Peoples Survey, 2001.

The figure shows that as the parent's education level increases, the proportion of children having ever repeated a grade decreases. That is, for parents who had not gone beyond elementary school, 1/5 of their children had repeated a grade, whereas only 6% of children of parents with a bachelor's degree or higher had repeated a grade at some point in their life. Some reasons given for the correlation between child and parent education include: (1) parents with higher levels of educational attainment will take greater interest in their child's education and, therefore, encourage learning activities and homework (Stevenson & Baker, 1987) and (2) highly educated parents tend to have higher academic expectations for their children, which has shown to greatly influence the success of a child in school (Astone & McClanahan, 1991; Hull, Research, Analysis, & Indian and Northern Affairs, 2000; Teachman, 1987; Teachman & Paasch, 1998). In addition to parental influences, the extended family, Elders and the community play key roles in childhood education and learning in Aboriginal populations. This is because learning in Aboriginal communities includes both cognitive development and learning how to behave in society (Smith et al., 1997). This suggests that the educational levels and supports provided by the community and the extended family are all important for childhood growth and development.

In addition to parental and family educational levels and support, the success of children in school has also been linked to their family's household income. That is, many studies have shown that children from economically disadvantaged families experience greater difficulties learning and have more problems in school (Chao & Willms, 2002; Duncan & Brooks-Gunn, 1997; Petterson & Albers, 2001; Ross & Roberts, 2000; Smith & Klebanov, 1997; Statistics Canada, 2001). Statistics showing education levels in Aboriginal children living in non-reserve areas verifies this understanding: "About 16% of children in families with income below the low income cut-off had repeated a school year at some point, compared with only 10% of children in families at or above the low income cut-off" (Bennett, Blackstock, & De La Ronde, 2005; Canada, 2006; Fournier & Crey, 1997; Gough, Trochmé, Brown, Knoke, & Blackstock, 2005; Kirmayer et al., 2003; Sinclair, 2007).

6.5 Aboriginal Child Welfare

In the 1960s, when an increasing number of Aboriginal children were being enrolled in provincial public schools rather than federally funded residential schools, a new assault on Aboriginal families emerged. Termed as the 'Sixties Scoop', this assault was propagated through a disproportionately high number of Aboriginal children being taken from their families and communities to be placed in out-of-home care (Fournier & Crey, 1997). Aboriginal children, who made up less than 4% of the Canadian population and who represented only 1% of children in care in 1959, suddenly represented 30-40% of children in care at the end of the 1960s (Fournier & Crey, 1997; Sinclair, 2007). More often than not, Aboriginal children taken from their families were placed in non-Aboriginal homes (1996): the Royal Commission on Aboriginal Peoples (Fournier & Crey, 1997; Gough et al., 2005) reported that except in Quebec, the proportion of Aboriginal children in care placed in non-Aboriginal homes was 70 to 90% across provinces. Much like children who attended residential schools, Aboriginal children who became legal wards were separated from their parents, siblings, communities and cultural identity, often without the knowledge of where they came from and sometimes without their birth names (Bennett et al., 2005). Siblings were often placed in separate homes, partially due to the difficulty of finding homes to accommodate large Aboriginal families, but also with the goal

of better assimilating the children. Few children were ever returned to their home (Fournier & Crey, 1997).

Driven by the same paternalistic attitude that created the residential school system, the ‘Sixties Scoop’ was propelled forward with the belief that Aboriginal parents were unfit to raise their children (Canada, 2006). The poor parenting skills that stemmed from generations of Aboriginal children attending residential schools likely contributed to this belief (Bennett et al., 2005; Fournier & Crey, 1997). However, many children were taken from their homes for reasons Aboriginal parents had little control over; that is, poor socioeconomic status and simply being Aboriginal (Morris, 2007). Social workers, who were trained to uphold Eurocentric standards in child welfare, believed it in the best interest of the children to remove them from reserves stricken with poverty rather than provide support services to families and communities in need (Fournier & Crey, 1997; Kirmayer et al., 2003).

Although this process of removing Aboriginal children from their homes has been termed the ‘Sixties Scoop’, child welfare agencies have continued to remove Aboriginal children from their homes long after the 1960s (Fournier & Crey, 1997). By the end of the 1970s, at least one in three Aboriginal children had been involved in government care (Bennett et al., 2005). In 1983, Aboriginal children represented roughly 50% of children in care in Alberta, 60% in Manitoba, and 70% in Saskatchewan (Blackstock, Trochmé, & Bennett, 2004; Kirmayer et al., 2003). Today, Aboriginal children are still disproportionately represented among children in out-of-home care (Sinclair, 2007), and one university professor has suggested that the ‘Sixties Scoops’ has evolved into the “Millennium Scoop” (2004). Blackstock and colleagues (1997) estimate that when compared to the number of Aboriginal children in residential schools during years of peak enrolment, there are three times as many Aboriginal children in out-of-home care today. Fournier and Crey (1997) reported that in British Columbia, over half (52%) of children placed in care by court order each year are Aboriginal. Over three-quarters (78%) of Aboriginal children in permanent care in British Columbia are cared for in non-Aboriginal homes (Sinclair, 2007).

The outcomes for Aboriginal children raised in non-Aboriginal homes are not always negative, as some of those children have grown to find success and happiness in their careers, families and communities (Bennett et al., 2005; Carriere, 2007; Sinclair, 2007). However, many Aboriginal survivors of the child welfare system have shared stories of their struggle to establish a sense of identity among foster and adoptive families, birth families, Aboriginal communities and mainstream society (Bennett et al., 2005; Morris, 2007; Sinclair, 2007). These struggles have presented difficulties throughout their childhood and adolescence and sometimes into adulthood. The negative impacts on the mental health of Aboriginal children cared for in non-Aboriginal homes may include issues of identity formation, low self-esteem, feelings of shame, suicidal ideations and attempts, substance abuse, homelessness, and incarceration (Anderson, 2003). Not only have these mental health issues emerged as problems for the cohort of grown Aboriginal ‘Sixties Scoop’ survivors, but for the disproportionate number of Aboriginal children still a part of the child welfare system, they represent the potential for health problems of the near future.

An analysis of the child in care data from three sample provinces in May 2005 found that approximately one in 10 of all status First Nations children were in child welfare care, compared to one in 200 non-Aboriginal children (Blackstock, Prakash, Loxley, & Wien, 2005.) Year-end

data collected by the Department of Indian and Northern Affairs Canada indicates that the number of status First Nations children living on-reserve entering child welfare care increased a staggering 71.5 percent from 1995 to 2001 (McKenzie, 2002). The Canadian Incidence Study on Reported Child Abuse and Neglect (Trocmé, MacLaurin, Fallon, Daciuk, Billingsley, et al., 2001) found that neglect was the primary reason that First Nations children were coming into care at disproportionate rates. Controlling for poverty, substance use, and poor housing substantially accounted for the overrepresentation (Trocmé, Knoke, & Blackstock, 2004; Trocmé, MacLaurin, Fallon, Knoke et al., 2006).

The overrepresentation of First Nations children occurs at every phase of child welfare intervention from reports, investigation, substantiation, entry into care and placement in permanent child welfare care (Trocmé, MacLaurin, Fallon, Knoke et al., 2006; Blackstock, 2007). Preliminary analysis of child in care data from three provinces^[1] and 27 First Nations child and family service agencies indicates that First Nations children also make up a disproportionate number of permanent wards in Canada (First Nations Child and Family Caring Society of Canada [FNCFCS], 2006). For example, Aboriginal children represent 7.3 percent of the child population in the Province of British Columbia (Statistics Canada, 2001) but 47.8 percent of all children in care as of May 2005 (British Columbia Ministry for Children and Family Development [BCMCFD], 2005). In Nova Scotia, First Nations children are 3 to 6 times more likely to be in child welfare care than non-Aboriginal children (Nova Scotia Department of Community Services, 2008). Moreover, Aboriginal children represent 53.5 percent of all children in permanent care in BC and 47.6 percent of all children in temporary custody (BCMFD, 2005). In 2005, a survey of 27 First Nations child and family service agencies across Canada (excluding Ontario) found that 47 percent of the children served were in permanent care (FNCFCS, 2006).

Poverty is a cross-cutting risk factor affecting spiritual, emotional, cognitive, and physical well-being of children, families, and communities (Loppie-Reading & Wien, 2009). For example, research has consistently pointed to children living in poverty as having poorer physical and mental health outcomes and less success in school (Gabrarino, 1995; Blackstock, Bruyere, & Moreau, 2007; Barth, 2006; Loppie-Reading & Wien, 2009) and being particularly related to the substantiation of neglect cases (Sealand, 2003; Lindsey, 2004; Trocmé et al., 2006). While it would be unreasonable to expect that child welfare can eradicate poverty on its own, child welfare has a minimal expectation of centering it in the child welfare discourse given the pervasive evidence of its impacts on child safety and wellbeing.

In child welfare, poverty can manifest as physical neglect or failure to supervise and be an aggravating factor for other forms of maltreatment (Lindsey, 2004; Trocmé et al., 2006). Provincial child welfare legislation, including the *Child and Family Services Act* in Nova Scotia, do not delineate between neglect resulting from poverty and neglect caused by parental negligence. This is a critical issue in First Nations communities where poverty is more widespread, and at deeper levels, than among non- Aboriginal Canadians.

7. Adulthood and the Elderly Risk Factors

As discussed in the previous sections, Canada's Aboriginal population is younger than the general population: "The median age of Canada's Aboriginal population was 24.7 years in 2001, compared to 37.7 years for Canada's non-Aboriginal population" (Canada, 2003). But, while adulthood does not command the population as much as the baby boomers do in Canada's non-Aboriginal population, their health needs and concerns are of equal importance. Further, as the life expectancy of Aboriginal Peoples continues to increase and as chronic health conditions begin to take precedence over communicable diseases, the health and well being of adults and elders will begin to take an even more important role in the profile of Aboriginal health. With this in mind, the particular risk factors associated with chronic diseases among Aboriginal adults, such as smoking, alcohol abuse, obesity, and employment and education, are discussed below. Finally, the unique aspects of elder health are discussed at the end of this section.

7.1 Smoking

As noted in the sections on maternal smoking, parental smoking, and smoking among Aboriginal children and youth, the Aboriginal population has higher rates of smoking than the non-Aboriginal population. In fact, the Aboriginal population in Canada has a much higher proportion of current cigarette smokers (58% vs. 31%), and fewer former (17% vs. 23%) or never smokers (24% vs. 45%) than the general population. According to Health Canada's 2005 Tobacco Report, almost 60 % of on-reserve First Nations adults aged 18-34 smoke. This can be compared with data from the Canadian Tobacco Use Monitoring Survey (CTUMS) which reported 21% of Canadian general population were smokers in 2003 (Canada, 2005). The smoking rates are even higher among Inuit in the north of Canada, where almost 70 % of adult population smoke tobacco (Canada, 2005). The 2002/03 Regional Health Survey documented similar smoking rates (58.8%) among First Nations adults (First Nations Centre, 2005).

What is important to add to these statistics is a discussion of the risks of chronic disease development associated with smoking. For instance, it has been estimated that smoking tobacco is responsible for about one third of all fatal cancers (Greenhalgh, 1981; Haustein, 2003; Swales & De Bono, 1993). The relationship between smoking rates and cancer rates has been established by the research community and found to be proportionally related: in other words, the higher the smoking rate, the higher the rate of cancer. This is of concern for Aboriginal cancer rates, as statistics have already begun to show rising rates of previously non-existent cancers in Aboriginal populations. Smoking has also been linked to an increased risk of cardiovascular disease and diabetes (Sin et al., 2002), and a higher incidence and prevalence rates of COPD and asthma (Ghadirian, 2005)

The good news is that changes to smoking habits at any life stage can greatly reduce the risks associated with smoking. As Ghadirian (2005) explains, quitting smoking can greatly reduce the risks of cardiovascular disease: within a year of quitting, a former smoker's risk of heart disease is reduced by nearly 50%, compared to someone who continues to smoke (Ghadirian, 2005). A study conducted in men younger than age 55 revealed that while those who had quit smoking within the past year had a risk not significantly different from current smokers, the risk declined after 2 years to nearly that of non-smokers (Ghadirian, 2005). The residual risk for

cardiovascular disease following cessation is strongly dependent on total previous exposure to cigarette smoke, length of time without cigarettes, and the health status of the individual at the time of stopping. However, after 10 to 15 years without cigarettes, the health status of most former smokers is not significantly different from that of a lifelong non-smoker (Stephens & Canada. Health, 1999). This means that targeted smoking cessation strategies have the potential to improve disease risk rates and encourage better health in the future (Tjepkema, 2002).

7.2 Alcohol Abuse

According to National Cancer Institute, heavy alcohol use is defined as consumption of five or more drinks on a single occasion. The prevalence of heavy drinking on a weekly basis has been found to be higher in First Nations communities (16%) than in the general Canadian population (6.2%). The off-reserve Aboriginal population is less likely than the general population of Canada to be frequent drinkers (i.e. weekly), but is more likely to report higher levels of heavy drinking (National Cancer Institute, 2002). Consequently, the risks of heavy drinking on health are a serious concern for Canada's Aboriginal population.

Heavy drinking has been reported to increase the risks of developing cancers. In particular, high levels of consumption have been found to markedly increase the risk of liver and colorectal cancers. Consumption of just one drink per day for women, or two drinks per day for men, has been associated with an increased risk of developing cancers of the mouth, larynx, pharynx, oesophagus, and liver. Furthermore, women who have two drinks per day are at 25% higher risk of developing breast cancer than women who don't drink alcohol (National Cancer Institute, 2002). Finally, the combination of alcohol consumption and smoking greatly increases the risk of lung cancer.

As discussed earlier, alcohol abuse can be a chronic condition in and of itself. Its association, often, with depression, historical experiences, trauma, and other unpleasant memories or current situations, demonstrates that alcoholism has a profound effect on one's health and ability to function in the world around them. Thus, not only can alcohol influence and place people at risk for chronic conditions, but also its potential status as a chronic condition can create ongoing difficulties and additional problems for the user. Physical and psychosocial risks associated with alcoholism, therefore, need to be taken very seriously both in Aboriginal and non-Aboriginal communities.

7.3 Obesity and Inactivity

Obesity is an important risk factor for many chronic diseases. Obesity is often measured through body weight measures and/or the body mass index (BMI), which produces a measure based on one's height and weight. The percent of individuals with normal, higher or lower body mass index in Aboriginal and Canadian populations, reported in the 2002/03 Regional Health Survey (RHS) Report, is summarized in the table below.

	First Nations Adults	Canadian Adults
Normal	25.9%	49%
Overweight	37.0%	33%
Obese	31.2%	15%

Source: (First Nations Centre, 2005)

As also described in the 2002/03 RHS report, the distribution of obesity within the Aboriginal population is influenced by gender (First Nations Centre, 2005). For instance, men were found to be overrepresented in the group of overweight individuals, while Aboriginal women were more likely to be obese or morbidly obese individuals (MacMillan et al., 1996). It is important to note here that there have been concerns with the measurement of obesity for some Aboriginal groups, such as the Inuit. As has been shown among young arctic children, different patterns of growth and different height-to-weight gradients, which remain throughout adulthood, can cause an individual to be measured as obese when they are not (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). The 1999 First Nations and Inuit Regional Health Survey (First Nations and Inuit Regional Health Survey National Steering Committee, 1999) found that 36% of Labrador Inuit women and 26% of Labrador Inuit men are overweight (McIntyre & Shah, 1986). The prevalence of obesity in Aboriginal population of Northern Ontario ranges from 50% to 70% in Aboriginal women and 30% to 50% among Aboriginal men (Young & Sevenhuysen, 1989). A study within an Ojibwa-Cree population found that in some age and sex groups, almost 90% of those studied were overweight and obese (Tjepkema, 2002). Further, there appears to be very little difference between the physical activity levels of the off-reserve Aboriginal population and the non-Aboriginal population in Canada located in the provinces. In the territories, however, Aboriginal people were less likely to be active than other northerners (Denny, 2005).

A key contributing factor to obesity in Aboriginal and non-Aboriginal populations is inactivity. Unfortunately rates of inactivity have been shown to be high in many Aboriginal communities. A study conducted in the U.S.A. in 2001 and 2002, which surveyed American Inuit and American Native (AI/AN) people's chronic disease risk factors, found that 37.2% of AI/AN reported no physical activity during their leisure time. The survey also found that 29.3% of the people surveyed were obese (OR=1.41)(First Nations Centre, 2005). Such inactivity has also been reported among the First Nations population. Because of the loss of First Nations traditional lands and practices, such as hunting, trapping and fishing, a higher proportion of Aboriginal people have begun to lead more sedentary lifestyle. In addition, there was an adoption of a non-traditional (or so-called "western"¹¹) diet by First Nations people after colonization. As a result of these and other socio-economic changes, the percentage of inactive and obese individuals in First Nations communities has increased (Canada, 2001). Despite the fact that the proportion of inactive and obese individuals is growing, they can be prevented by education about the importance of exercise and the promotion of active living. Thus, focussing on positive intervention strategies and treatments has the potential to improve future health.

¹¹ A Westernized diet is typically high in fat and protein and low in fiber.

7.4 Employment and Education

Because the average age of the Aboriginal population is 10 years younger than the general population, there will be large increases in the Aboriginal working-age population (25-44 years) over the next decade (Malatest, 2004). And, while the level of education for this age group has improved by 14 per cent over the decade – a greater increase than the 10% seen among the non-Aboriginal population – the gap between the two groups remains great (Malatest, 2004). For example, the proportion of Aboriginal people in their twenties with a post-secondary degree or diploma rose from 19% to 23% between 1981 and 1996, but the proportion of those with a university degree or certificate did not increase significantly (3% to 4%). Further still, education levels for Aboriginal Canadians remain below the national average: in 1996, 54% of the Aboriginal population aged 15 and over did not have a high-school diploma, compared to 35% of the non-Aboriginal population (Anderson, 2003). Education levels and employment rates are closely associated with one another (Tjepkema, 2002):

In 2000/01, the off-reserve Aboriginal population, as a whole and in various geographic regions, had lower levels of education attainment and household income and was less likely to have worked the entire year than the non-Aboriginal population (Statistics Canada, 2001).

According to the 2001 Census, the unemployment rate for Aboriginal adults aged 25 to 34 with university degrees was 8%, while that for those who had completed grade 9 but not high school was 28%. For those who had not completed grade 9 the unemployment rate was 40% (Statistics Canada, 2001). Researchers have also found that post-secondary educational attainment has some major positive influences on employment and earnings for Aboriginal peoples (Hull et al., 2000; Maxim, White, Whitehead, & Beavon, 2000).

Statistics on Aboriginal unemployment highlight the magnitude of this significant problem: in 1998, the average unemployment rate on Aboriginal reserves was 29%, which is also almost triple the national rate (Canada, 2001); (Canada. Parliament. House of Commons. Standing Committee on Health, 1995). The situation was even worse in some communities, where unemployment rates were reported to be as high as 90% (MacMillan et al., 1996). While some of the highest rates of unemployment can be found on reserves, an average of 25% of Aboriginal adults (ages 15+) in 1996 were thought to be unemployed, as compared with just under 10% of the mainstream population (Canada, 2001). The disparity in employment and its links to poverty is exemplified by the fact that in 1995, the average employment income of Aboriginal people was \$17,382, which is about 1.5 times lower than the national average of \$26,474 (MacMillan et al., 1996). In 1990, more than half (54%) of adult Aboriginal people reported annual incomes below \$10,000, while only 35 % of Canadians reported the same level of income (First Nations Centre, 2005; Oberle & INAC, 1993). More recent data has shown some improvements in employment rates of First Nations living in Canada: the 2002/03 RHS showed that 33.2% of First Nations adults who reported their income below \$10,000 and the overall employment rate of First Nations people was registered at 8 % lower than that of Canadian population in 2001 (First Nations Centre, 2005; Mendelson, 2004). More recent data have shown 5 to 7% improvement in employment rates from 1991 to 2000, and an equalization of employment rates

among Aboriginal people living on and off-reserve (Green et al., 2003).

While these statistics paint a picture of vulnerability in the socioeconomic landscape of Aboriginal Peoples in Canada, it is important to highlight here that while education and employment directly impact one's socioeconomic status, they also have a particular impact on one's health and well-being. In fact, it has been found that education and employment can be key predictors of chronic disease development and survival. For example, lower cancer survival rates have been linked to low income levels and high unemployment rates (Ward et al., 2004). A 2003 study found substantial clustering of diabetes in areas of Winnipeg with low socioeconomic status, poor environmental quality, poor lifestyles and a high concentration Aboriginal Peoples (Green *et al.*, 2003). The study also found that education and income were stronger predictors of diabetes than Aboriginal status, suggesting that socioeconomic status, rather than genetic factors were responsible for the high prevalence of diabetes (Health Canada, 2005).

7.5 Elder Health

In Canada, life expectancy at birth for the “registered Indian” population remains lower than that of the general Canadian population: 68.9 years for males and 76.6 years for females in 2000, difference of 7.4 years between Aboriginal and non-Aboriginal males and 5.2 years between Aboriginal and non-Aboriginal females (Durie, 2004). Not only is there a smaller population of elderly people, but Elders are generally younger in Aboriginal communities than non-Aboriginal communities. Of course, a distinction must be made between those who are elderly by nature and those who are considered “Elders” in their communities because of the strength and wisdom that they hold. While age often runs parallel to the classification of being an Elder, the experience, knowledge, and wisdom that the person has is far superior. In this section the health of the elderly and elders in Aboriginal populations will be discussed in terms of being defined as the older subset of the population.

Not surprisingly, the risks attributed to elders' health are largely a result of increased age. Yet, because of a generally lower life expectancy and younger population, the particularities of the health of the older Aboriginal population and the risks associated with later life and chronic diseases has not been robustly explored in the literature. What has been noted in the Canadian literature is that 1 in 3 older Native Americans lived below the poverty level (Cueller, 1990). This means that many elderly Aboriginal people continue to struggle with their socioeconomic status and, therefore, likely do not have the monetary power to help manage and control the inevitable increase in health conditions that come with age. This raises concern not only for the health and well-being of the elderly in Canadian Aboriginal populations, but also their basic subsistence and ability to survive without further monetary support. It also raises concerns for the community: because elders traditionally play such an important role in Aboriginal communities, the loss of their strength and ability to engage in cultural activities because of monetary or health conditions is concerning.

In a 1997 New Zealand study (Durie, Allan, & Cunningham, 1997), the connection between cultural and community engagement and health was assessed. The assessment of health and well-being among the elder population was based on Maori health perspectives and also took into account the importance of elders in Maori society (a role and function that is similar to that of the

elders in Canadian Aboriginal populations). In total, 400 Maori participants over the age of 60 years participated. The research found that: “in addition to economic and social considerations, well-being for older Maori was therefore conceptualized as an interaction between personal health perspectives and participation in certain key elements of Maori society e.g. land, language, marae (tribal gathering places)” (Durie et al., 1997). Taking this information further, the study reported that Maori elders that ranked lowest on the “cultural index scale” (i.e. those less involved or less able to fulfill their cultural role) were also the most likely to have poor health; this was the case even for individuals that had similar basic standards of health and environmental circumstances. As such, the researchers concluded that: “a Maori view of well-being is closely linked to an ability to fulfill a cultural role. Measures of well-being that do not capture cultural identity will not be able to convey the nature of wellbeing, as it applies to Maori” (Dion Stout & Kipling, 2003; Durie et al., 1997). This connects to and builds on the understanding of health developed throughout this book; that health is more than one’s ability to avoid disease and reach specific measures, but that it also depends on broader socio-economic factors that influence one’s emotional, spiritual, mental, and economical well-being.

As this section shows, the risks associated with chronic disease development increase with age, due to the accumulation of risks across the life stages. Therefore, adulthood becomes an arena where chronic disease management becomes paramount and issues related to support systems and cultural practices become evermore important; this is especially true in vulnerable populations, such as the Aboriginal population in Canada. In preparing for this, it is important that the public health system design support services and education programs for the elderly so that diseases can be managed and accumulated risks can be held off. The health experiences of the eldest population viewed through a life course perspective helps us to understand the necessity of focusing on prevention and health promotion at the earliest stages of life and continuing this vigilance throughout life.

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**Act Locally:
Community-based population health promotion**

**A report by
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**for
The Senate Sub-Committee on Population Health**

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Executive Summary

The health of individuals cannot be discussed, understood or acted upon without recognizing that human beings are social animals that have evolved to live in families, social groups and communities. “Community,” therefore, is the crucible for many of the most important determinants of health as the place where we live, learn, work and play – our homes, schools, workplaces and neighbourhoods.

In fact, the Senate Subcommittee on Population Health has identified 12 chief factors or conditions - health determinants – that contribute to or undermine the health of Canadians. Of these 12, a full 10 play out largely at the community level.

This report argues that since so many of these determinants act at the local level, it is here that action must be taken. So what can we do to address some or all of the determinants of health at the community level? What is being done currently in Canadian communities? And how can the federal, provincial and territorial governments support or advance community action for health and human development?

The promotion of healthy human development is a key concept underlying health promotion at the community level. The task of promoting optimal human development - so that everyone develops as fully as possible and achieves their maximum potential as a human being - is, or should be, the central purpose of all levels of government. The same focus and energy given to the development of a country’s economy should be applied to the development of a country’s people. This report begins by developing the conceptual basis that underlies healthy human development, particularly the notion of building the five forms of capital – natural, economic, social, built, and human – that together form ‘community capital’. These concepts of what our societal purpose should be need to become the key markers of our progress. For this to be realized, new measures are required that better capture and integrate these various dimensions of personal, community and societal wellbeing.

Finding an appropriate balance between these often competing forms of capital in a way that engages people from all sectors of the community, and ideally maximizing all these forms of capital simultaneously, is at the heart of the art of local governance for health and human development. The process of engaging the whole community in finding the right balance is the process of governance – “the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city” (UN Habitat, 2002). Among the key elements of governance for health at the community level are four identified more than 15 years ago by the WHO Europe Healthy Cities Project: community involvement, intersectoral action, political commitment and healthy public policy.

Achieving improved governance for health and human development requires investing in building resilience - the “ability to not only cope but also to thrive in the face of tough problems and continual change” (Torjman, 2007) – in both people and communities, and in the process and structures needed for community governance.

This report examines a host of ways that Canada is creating healthier communities and enhancing human and community development. A key point that emerges from the report is that there is no universal model that can or should be applied to all communities. What

is needed is a model process that enables, supports and empowers communities to engage with their citizens – and the various public, non-profit, community and private-sector organizations in the community – to develop a shared vision and unique, tailored actions to achieve that vision.

A second – and related – key point to emerge is that this approach must be based on the community's strengths and assets, not its weaknesses and dysfunctions. There is a growing number of initiatives in Canada that use this approach, including:

- **The Healthy Communities Movement** – Arising in part out of the 1986 Ottawa Charter, Canada's healthy communities movement has existed for more than 20 years. Although the national initiative disappeared in the budget cuts of 1991/92, Quebec's Villes et Villages en Santé and Ontario's Health Communities Coalition are both highly active. BC's Healthy Communities initiative reemerged in 2005, with new provincial funding. All three provincial networks take a broad approach that links environmental, social and economic factors together and they all facilitate and support collaborative action within communities. The Quebec initiative has a particularly strong focus on and link to municipal governments, while the Ontario initiative has a strong focus on community-based organizations and networks; the BC initiative, learning from the experience of its two senior partners, does both, being located organizationally at the Union of BC Municipalities, but having a strong focus on community capacity building.
- **Community engagement and capacity building** – Five essential strategies build on a community's existing capacity to improve population health and human development;
 - **Community involvement** that moves from people being passive recipients of services to empowered participants and leaders;
 - **Intersectoral partnerships** that cross boundaries whether between government department or ministries (whole of government); across multiple sectors such as through the creation of broad coalitions' or through vertical integration such as linking local, provincial and federal governments;
 - **Political commitment**, ideally that lasts longer than a single term and that fosters community engagement and capacity building;
 - **Healthy Public Policy** where government action in non-health sectors, such as transportation or housing policy, is designed to have as one benefit the improvement of the health of the population; and
 - **Asset-based community development**, an approach that empowers both individuals and communities by focusing on community strengths and on individuals' with assets and skills. This approach is empowering rather than disempowering and treats individuals and communities as having intrinsic merit and ability rather than simply being bundles of problems that need to be solved or as helpless clients with needs to be met.

- **New models of community governance for health and human development:** Exciting work in community engagement is taking place across Canada through such community initiatives as *Vibrant Communities* and *Inclusive Cities Canada*, which are both tapping into community strengths to address health and human development. These efforts span the full dimension of ‘community’ in Canada, from the Vancouver Agreement (a new urban development agreement that links the federal, provincial and municipal governments as well as bringing in multiple other partners to address complex issues in Vancouver’s Downtown Eastside) to the small but inspiring Cree community of Oujé-Bougoumou. Yet despite very positive developments, barriers impede progress, including outdated municipal constitutional arrangements; lack of a comprehensive national vision for healthy community development; lack of a complete basket of universal programs to address determinants which community action can then enhance; constant lack of funding and narrow approaches to funding; lack of a community infrastructure of governance for health and human development; the limitations of federal charities law, under which most community action falls; burnout of volunteers; and lack of effective information sharing on successful programs, particularly between French and English Canada.
- **Integrated community-based human services** - An important subset of community-based human development is integrated human services that coordinates the actions of individuals and services. The concept is to provide services to the public that streamlines and simplifies client access, increases efficiency, provides superior care and bridges traditional organizational or program boundaries. Longstanding models of integrated human services include Quebec’s CLSCs and community health centres in English Canada, but despite a great deal of evidence of their success, typical barriers to further expansion include funding models, turf wars and ideological battles. Saskatchewan has some of the greatest success with integrating services and a new integrated service initiative, Healthy Child Manitoba, is capturing attention. A vision of integrated human services developed from the household level up is presented to conclude this section.

Finally, the report proposes a vision for a national approach to supporting asset-based community action for population health and human development.

1. Many of the determinants of health have their effects at the community level, in the settings – homes, schools, workplaces, neighbourhoods – where people live, learn, work and play.
2. Communities – even the most challenged and disadvantaged communities such as the Cree community of Ouje-Bougoumou described in this report – have significant and sometimes astonishing strengths, capacities and assets that can be used by the community to address their problems and to enhance their health, wellbeing and level of human development.
3. Provincial and federal governments, philanthropic organizations and the private sector would be wise to recognize the strengths inherent in communities, and to

-
- build upon and enhance community capacity by adopting the strategy of investing in asset-based community development.
4. Such a strategy requires, among other things:
 - a. Recognizing the vital role played by municipal governments in creating the conditions for health and human development, making them key partners, and strengthening their powers (including their taxing powers).
 - b. Adopting a holistic ‘whole-of-government’ approach to issues of population health and human development at all levels of government, from the federal to the local.
 - c. Encouraging and supporting the creation of community governance processes and structures that enable the many stakeholders in the community – public, non-profit, private and community sectors, as well as individual citizens – to identify and define local community issues and solutions and to develop long-term, asset-based strategies to address them.
 5. This in turn requires a commitment by governments and philanthropic organizations to long-term funding of this community governance infrastructure. Specifically this means a commitment to provide less narrowly targeted and short-term funding and more long-term general funding that communities can use in ways that they see fit to address the challenges they have defined and to build the community capacity they require.
 6. At both the national and provincial levels, there is a need to establish (or where they already exist, to greatly strengthen) national and/or provincial organizations that can support the creation of healthy schools, healthy workplaces and healthy communities. These organizations would facilitate and support the creation of community governance infrastructures, undertake research, share knowledge and experience, develop tools and ‘train the trainers’.
 7. Any national effort to improve population health and human development health through community-based action to create healthier communities needs to include a national effort to develop new measures of progress, so that our progress towards these broad societal goals can be tracked. These new measures need to be applicable at all levels from the national to the local, and their development needs to be done in partnership with communities, as part of the development of the community’s capacity to understand itself and its situation, a necessary prerequisite for taking action
 8. As one part of building (on) community capacity, governments should develop more integrated systems of human development services. Particularly in disadvantaged communities, these services should be co-located close to the people who use or need them; they should be easy to use and navigate (‘one-stop shopping’) and where possible they should be housed in a single facility that maximizes the use of the shared space throughout the day.

1. Introduction

In evolutionary terms, humans are social animals. We evolved in families and larger social groups, and social interaction is an essential part of our wellbeing. Epidemiological research has consistently shown that isolation and loneliness are bad for health. So contrary to the wishes of some ideologues, there is such a thing as community and society, and the health of individuals cannot be discussed, understood or acted upon without recognizing this fact.

This report is based on the recognition that ‘community’ is the crucible for many of the most important determinants of health. As the place where we live, learn, work and play – our homes, schools, workplaces and neighbourhoods – it is our most immediate physical environment;¹ as a network of social relationships based in but extending beyond these places into ‘non-spatial’ and virtual communities, it is a fundamental source of our identity and social wellbeing, second only to our family.

This is not to suggest that ‘community’ is a panacea, or to romanticize community. Communities, both as places and as networks of social relationships, can harm health as well as help it; in fact, part of what makes a community ‘healthy’ is that it protects its members – especially its most vulnerable members - against harm arising from its physical, social, economic and other environments.

Nor is it to suggest that health (or disease) stems only from community. In fact, we know that health also comes from our genes, on the one hand, and from the health of the regional and global ecosystems that constitute our ‘life support systems’, on the other. But just as famed US congressman ‘Tip’ O’Neill once famously remarked that “all politics is local”, so might we suggest that all health is local.

This idea is strengthened by examining the set of determinants of health identified by the Senate Subcommittee on Population Health. Over the past year, the Subcommittee has published four in depth reports examining various aspects of Population Health Policy. These reports have clearly established that multiple factors and conditions – or “determinants” – contribute to or undermine the health of Canadians. The Subcommittee reports have identified the following twelve health determinants:² Those that are starred with asterisks are the ones that play out largely in Canadian communities – the cities, towns, neighborhoods, and regions where Canadians live, learn, work and play.

¹ It is worth recalling that in Canada we are 80% urbanized and we spend 90% of our time indoors (and a further 5% in vehicles), so the built environment is by far our most immediate and important environment. This is not to ignore the fact that we are also part of regional and global ecosystems, whose life support systems profoundly affect our ultimate wellbeing.

² This document uses the list provided by the Senate Subcommittee, but this list of determinants differs slightly from some other recent Canadian sources. The Public Health Agency of Canada uses seven broad categories: socio-economic environment; physical environments; early childhood development; personal health practices; individual capacity and coping skills; biology and genetic endowment; and health services. The F/P/T Working Group on Population Health uses the following: income, education, employment, housing and the built environment, the natural environment, early childhood experiences, literacy, social support, health choices, access to preventive health services, and the general empowerment people have to control decisions in their own lives.

- early childhood development; *
- education;*
- employment and working conditions;*
- income and social status;*
- social environments;*
- physical environments;*
- social support networks;*
- lifestyle, personal health practices and coping skills;*
- biology and genetic endowment
- gender
- culture (* - can have strong community element)
- health care*

As the Sub-committee noted in its Fourth Report in April 2008, it has been suggested that 15 % of the population's health is attributable to biology or genetic factors, 10 % to the physical environment and 25 % to the reparative work of the health care system. Fully 50 % of population health is attributable to the social and economic environment. That means that, since the community also represents the built physical environment where Canadians spend almost all of their time, as well as the local delivery of health care services, more than 75 % of the health determinants exert their influences on the Canadian population in the community setting – homes, schools, neighborhoods, workplaces, towns, and cities.

Moreover, the creation of the conditions needed for health is often local in nature, through the work of municipal governments, Band councils, local NGO or private sector organizations, or in some cases through the regional offices of provincial or federal governments.

This report argues that since so many of these determinants act at the local level, it is here that action must be taken. So what can we do to address some or all of the determinants of health at the community level? What is being done currently in Canadian communities? And how can the federal, provincial and territorial governments support or advance community action for health and human development?

It is important to note that the 2008 Report on the State of Public Health in Canada, the first Annual Report of the Chief Public Health Officer of Canada, explicitly called for the strengthening of communities in Canada to address health determinants, noting people living closest to the problem are often closest to the solution. His report said communities must be honored and supported to develop their own responses, to build on existing knowledge, experience and energy at the ground level. This recommendation was echoed in the 2008 WHO Report on the Social Determinants of Health, which noted as one of its key recommendations that health and health equity must be at the heart of urban governance and planning, particularly where poverty or poor living conditions are

impacting populations' health. In addition, a background document to the WHO fact-finding process, *Our Cities, Our Health, Our Future: Acting on social determinants for health equity in urban settings*, noted that, "Urban development and town planning are key to creating supportive social and physical environments for health and health equity." It noted the health sector needs to establish partnerships with other sectors and civil society to carry out a broad spectrum of interventions.

2. Overview of healthy human development

"Salus populi suprema lex"

(The welfare of the people is the supreme law)

Cicero - *De Legibus* (approx 45 BC)

It is an old but sometimes overlooked truth that the ultimate purpose of the governance of a society is the welfare of its people. Some key propositions that should form the foundation of population health promotion and healthy human development at the local level are listed in Text Box #1.

The first is that population health is a key element in a broader concept, namely human development, and that improving the health of the population is subsumed in a wider task; seeking to ensure that everyone develops as fully as possible and achieves their maximum potential as a human being.

Second, this task is - or should be – the central purpose of government. The UN itself has declared that "the human person is the central focus of development" (UN Declaration on the Right to Development, 1986) and has made this the focus of its Human Development Index.

Yet curiously, human development is seldom explicitly the focus of the work of governments; more often the focus seems to be on economic development - perhaps most famously encapsulated in Bill Clinton's reminder to himself when running for President that "it's the economy, stupid!" This report argues that the economy is a means to the end, which is human rather than economic development ("it's the people, stupid!") or, as more eloquently put in a report on human and ecosystem health from the Canadian Public Health Association in 1992:

"Human development and the achievement of human potential requires a form of economic activity that is environmentally and socially sustainable in this and future generations."

Third, human development is a function not only of economic development but of social development and of sustainable development of both the built and natural environments.

The fourth key point that it is in the settings where people lead their lives – their homes, schools, workplaces, recreational places, neighbourhoods and communities - that health is created and human beings are developed. It is there that people can be meaningfully engaged, and where the promise of health promotion – "the process of enabling people to increase control over and improve their health" (WHO, 1986) – can be most readily realized.

A fifth key point is that human development should be the focus not only of governments (at all levels) but of governance. The UN's Habitat agency defines governance (in the context of urban governance) as

“the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city.”

This approach, of course, should be applied to all levels of government. What is important in this definition, no matter to what level it is applied, is that governance involves individuals as well as institutions, and the private realm as well as the public realm. Together they are engaged in the planning and management of the city's common affairs, presumably for a common purpose. What higher common purpose can there be than ensuring that all the members of the society and community achieve the maximum level of health, wellbeing and human development of which they are capable? Who can doubt that not only individuals but communities and enterprises would thrive in such a situation?

Sixth, communities – or in a political sense, municipalities – are particularly important because they are the level of government closest to people, and they contain the other settings. Thus governance for health and human development must have a strong local dimension, while recognizing the importance of supportive provincial and federal policies and programs.

Seventh, an important aspect of local human-centred development is an integrated system of community-based human services. Such a system would be built from the household level up, by examining how human development can be supported at every level and from every dimension, as seen from the perspective of the individual citizen, be they infant, child, youth, adult or senior citizen.

Finally, such a system must be based on and respectful of the capacity of individuals and communities, and must empower – not dis-empower – and enable – not disable them; it must build on capacity.

Throughout the report, examples are given and stories told that make it clear that these ideas are not just a pipe dream, but that they are feasible. Even if the entire system described here does not yet exist, many if not all of the component parts already exist somewhere in Canada or elsewhere in the world.

Text Box #1: Some key propositions for population health promotion and healthy human development at the local level

Some key concepts underlie the foundation of population health promotion at the community level. This foundation concerns the promotion of healthy human development:

1. Population health is a key element in a broader concept, namely healthy human development so that everyone develops as fully as possible and achieves their maximum potential as a human being.
2. The task of promoting optimal human development is - or should be – the central purpose of all levels of government. The same focus and energy given to the development of country's economy should be applied to the development of a country's people.
3. Human development is a result not only of stable and effective economic development but also of social development and of sustainable development of both the built and natural environments.
4. It is in the settings where people lead their lives – their homes, schools, workplaces, recreational places, neighbourhoods and communities - that health is created and human beings are developed.
5. While governments play an important role, the creation of the conditions for healthy human development calls for a broader and more inclusive system of governance at all levels.
6. Communities therefore – or in a political sense, municipalities – are particularly important because they are the level of government closest to people, and they contain the other settings. Thus governance for health and human development must have a strong local dimension, while recognizing the importance of supportive provincial and federal policies and programs.
7. An important aspect of local human-centred development is an integrated system of community-based human services. An ideal system of local, community-based human development would be built from the household level up and supported at every level and from every dimension, as seen from the perspective of the individual citizen and his or her needs, be they infant, child, youth, adult or senior citizen.
8. At the same time, such an ideal community-based system must have as its foundation respect for the capacity and autonomy of individuals and communities, and must empower – not disempower – and enable. It must build on their capacity to recognize and meet their own needs.

2.1 Population health and human development

Health, the World Health Organization famously declared 60 years ago, is a state of complete physical, mental and social wellbeing. The inclusion of social wellbeing signals that the social context of the individual is of great importance, that health depends at least in part on social relations. Over the years, the list of items upon which health depends - the determinants of health – has grown considerably. In the famed Lalonde Report of 1974, it was suggested that there were four 'health fields' – lifestyle, environment (physical, social and economic), health care services and human biology - and that future improvements in the health of Canadians would depend primarily upon the first two of

these. More recently, the list was expanded by the Population Health Research Program of the Canadian Institute of Advanced Research and then by the (Canadian) Advisory Committee on Population Health to the set of 12 determinants recognized by the Senate Sub-Committee on Population Health.

It was the WHO's 1986 Ottawa Charter on Health Promotion, however, that noted that health is not the ultimate goal in life but rather that it is "a resource for everyday life, not the objective of living", that "good health is a major resource for social, economic and personal development and an important dimension of quality of life". Health, then, is but one part of a full or good life, but one part of what we aspire to.

This begs the question as to what we should aspire to for human beings. One answer is that they each develop to the fullest possible realization of their potential, recognizing that every individual has differing potential, and that their potential includes, but goes beyond, a life lived in complete physical, mental and social wellbeing. The Centre for Human Potential and Public Policy at the University of Chicago defines human potential as:

"motivation, human intelligence, social and emotional development, ethics and morality, and a sense of civic responsibility"
(www.harrisschool.uchicago.edu/research/chppp/)

Others might add to this list creativity and a capacity for innovativeness, a sense of empathy and caring for others (including the non-human species, and nature as a whole). The development of such human potential for all is an ambitious but worthy goal – recognizing that a goal is, as the US Public Health Service put it 30 years ago "a timeless statement of aspiration".

One of the most far-reaching and globally recognized efforts to understand and promote human development over the past 20 years has been the development by the UN Development Program (UNDP) of the Human Development Index (see Box #2). It is notable the extent to which this work reflects both a 'determinants of health' approach and the concept of human potential.

Text Box #2: Human development – basic concepts and definition

Human Development is a development paradigm that is about much more than the rise or fall of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value. And it is thus about much more than economic growth, which is only a means —if a very important one —of enlarging people’s choices.

Fundamental to enlarging these choices is building human capabilities —the range of things that people can do or be in life. The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community. Without these, many choices are simply not available, and many opportunities in life remain inaccessible.

"The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives."

Mahbub ul Haq, Founder of the Human Development Report

This way of looking at development, often forgotten in the immediate concern with accumulating commodities and financial wealth, is not new. Philosophers, economists and political leaders have long emphasized human wellbeing as the purpose, the end, of development. As Aristotle said in ancient Greece, “Wealth is evidently not the good we are seeking, for it is merely useful for the sake of something else.”

“Human development is a process of enlarging people’s choices. Enlarging people’s choices is achieved by expanding human capabilities and functionings. At all levels of development the three essential capabilities for human development are for people to lead long and healthy lives, to be knowledgeable and to have a decent standard of living. If these basic capabilities are not achieved, many choices are simply not available and many opportunities remain inaccessible. But the realm of human development goes further: essential areas of choice, highly valued by people, range from political, economic and social opportunities for being creative and productive to enjoying self-respect, empowerment and a sense of belonging to a community. The concept of human development is a holistic one putting people at the centre of all aspects of the development process.”

UNDP Human Development Reports Glossary

Source: Human Development Reports, UN Development Program;
<http://hdr.undp.org/en/humandev/>

2.2 The “right” to human development

"The concept of human development is a holistic one putting people at the centre of all aspects of the development process."

UNDP Human Development Reports Glossary

In recognition of the centrality of the human dimension to development, the UN General Assembly in 1986 adopted a "Declaration on the Right to Development" stating that “the human person is the central subject of development”, and called upon member states "to ensure access to the basic resources, education, health services, food, housing, employment and the fair distribution of income.” (Sustainable Human Development. United Nations Economic Commission for Africa, 1995)

A year later, the World Commission on Environment and Development defined sustainable development with a strong reference to meeting the needs of people:

"development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987)

This focus on human development emerged more strongly at the UN Conference on Environment and Development in Rio de Janeiro in 1992. The first principle of the Rio Declaration is:

"Human beings are the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

While initially focused on environmentally sustainable economic development, the concept became broadened to include social sustainability (e.g. BC Roundtable on Environment and Economy, 1993). Thus it has become common to consider sustainability in terms of three "pillars" or "spheres" or forms of “capital”, namely environmental, social and economic components. It is the interaction of these three components that determines the level of human development, which is a fourth form of “capital” (Ekins, Mayer and Hutchinson, 1992; World Bank, 1995). Thus health, quality of life and human development should be considered as outcome measures of successful environmentally and socially sustainable economic activity.

These concepts are integrated in a 1992 Canadian Public Health Association Taskforce report on Human and Ecosystem Health which suggested that:

"Human development and the achievement of human potential requires a form of economic activity that is environmentally and socially sustainable in this and future generations".

while the World Summit for Social Development, also in 1995, noted that

". . . economic development, social development, and environmental protection are interdependent and mutually reinforcing components of sustainable development, which is the framework of our efforts to achieve a higher quality of life for all people" (Cited in Health Canada, 2000)

2.3 Building Community Capital – The ‘five capitals’ framework

While people should be the central focus for all forms of development, the central focus for human development - as noted in the introductory section - should be the community where they live and lead their lives; the better the community, the better the health, wellbeing and level of human development of the people who live in it. Putting people at the heart of community development, and putting human and community development at the heart of public policy and societal governance, needs to become a priority.

One way to understand this is shown in Figure 1, which is a recently expanded version of a conceptual model initially developed with respect to the concept of a healthy city or community (Hancock, 1993), and which has been quite widely used. The model uses the concept of ‘community capital’, which is the combination of the total ‘wealth’ of the community, using the ‘four capitals’ concept noted above and adding a fifth form of capital, the ‘built capital’ that is the dominant environment of Canadians today.³ The model shows:

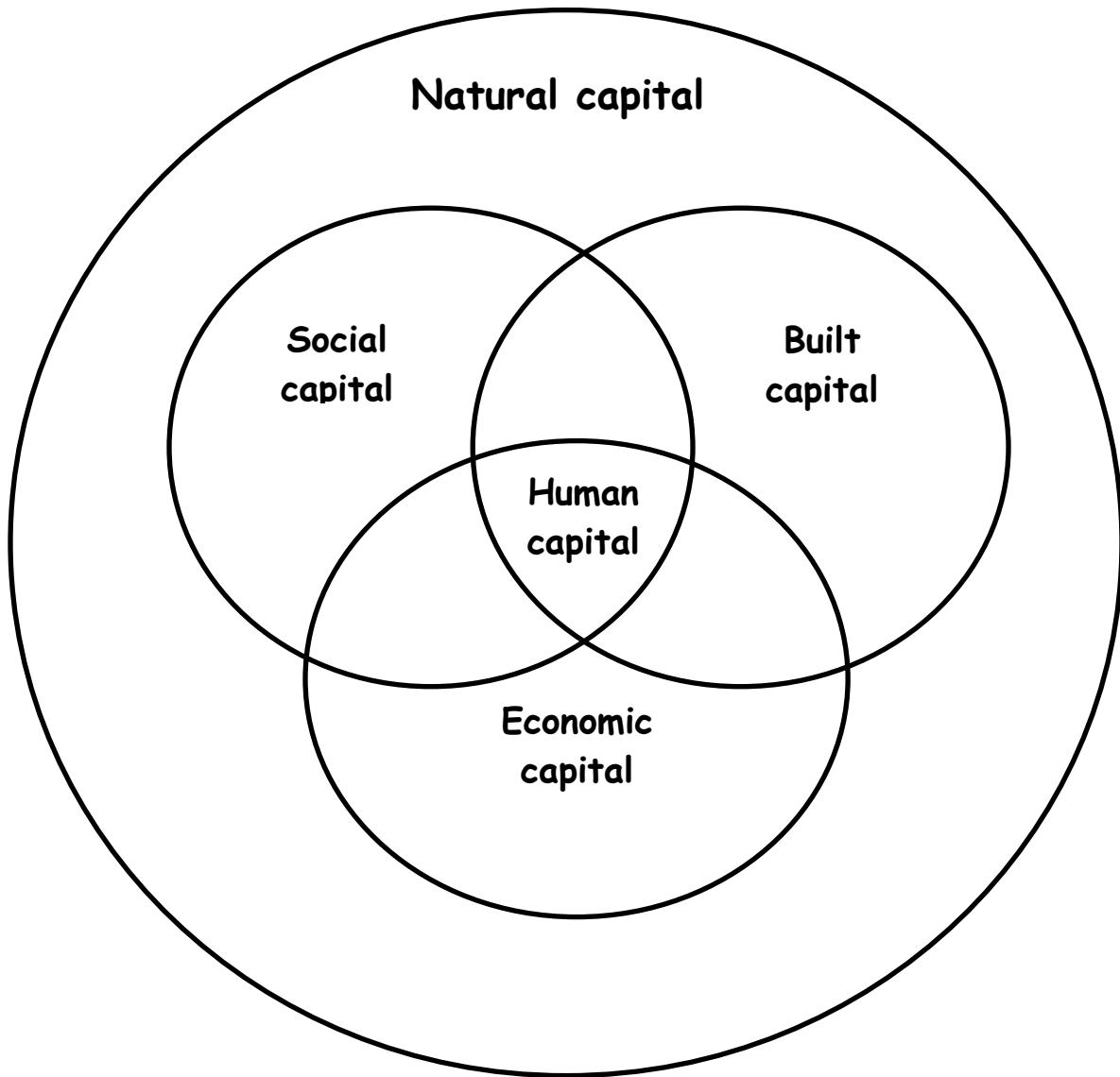
- Human development is the product of the interaction of social, economic and built capital, within the context of natural capital.
- Conceptually, the more there is integration (overlap) in the development of social, economic and built capital, the greater the level of human capital.
- There needs to be some balance between all these forms of capital; in particular, building one form of capital by depleting other forms of capital is not a viable strategy.
- The combination of these forms of capital cannot exceed the natural capital (ecosystem health and integrity, resource sustainability, life support systems, carrying capacity).

It is important to note that social capital is distinct from human capital. Human capital is the sum of the capacities or realised potential of each individual in a community or a city; it is vested in the individual, whereas

“Social capital does not exist within any single individual but instead is concerned with the structure of relationships between and among individuals.” (Coleman, 1988)

³ “The built environment is part of the overall ecosystem of our earth. It encompasses all of the buildings, spaces and products that are created, or at least significantly modified, by people. It includes our homes, schools and workplaces, parks, business areas and roads. It extends overhead in the form of electric transmission lines, underground in the form of waste disposal sites and subway trains and across the country in the form of highways.” Health Canada, Health and Environment (1997)

Figure 1: Community capital and human-centred development



The concept of ‘social capital’ has come to be dominated by Putnam’s concept of informal social networks and connections (Putnam, 1993), and related ideas. However, the structure of our relationships with each other needs to be understood in at least two other dimensions:

- the ‘formal’ social capital represented by the system of social programs we have created – pensions, employment insurance, health care, social assistance, social services, public education etc
- The ‘invisible’ social capital of constitutional, legal and political systems we have built over many hundreds of years, and that govern our interactions in a

democratic society and within the rule of law, in ways that we may not always be conscious of.

Thus human development is dependent upon human-centred social and economic development and human-centred development of the built environment, and within the constraints imposed by natural systems. The governance of the various interactions between these different dimensions, the finding of an appropriate balance between these often competing dimensions in a way that engages people from all sectors of the community, the maximization – ideally – of all these forms of capital simultaneously - is at the heart of the art of local governance for health and human development.

Other organizations have also used the five capitals concept, but with slight variations. The UK Department for International Development, which spearheads the UK government’s action against world poverty, widely promotes what it calls a “livelihoods approach” which uses a five capitals framework.

As they note, people and their access to assets are at the heart of livelihoods approaches. In the original DFID framework, 5 categories of assets or capitals are identified, although subsequent adaptations have added others, such as political capital (power and capacity to influence decisions). The original 5 categories are:

- human capital: skills, knowledge, health and ability to work
- social capital: social resources, including informal networks, membership of formalised groups and relationships of trust that facilitate co-operation
- natural capital: natural resources such as land, soil, water, forests and fisheries
- physical capital: basic infrastructure, such as roads, water & sanitation, schools, ICT; and produced goods, including tools and equipment
- financial capital: financial resources including savings, credit, and income from employment, trade and remittances

The DFID notes assets can be destroyed or created as a result of the trends (economic, political) shocks (war, conflict, natural disasters) and seasonal changes that make individuals vulnerable in their daily lives. Policies, institutions and processes can have a great influence on access to assets - creating them, determining access, and influencing rates of asset accumulation. Those with more assets are more likely to have greater livelihood options with which to pursue their goals and reduce poverty.⁴

2.4 New measures of progress

If the central purpose of government – and indeed of societal and community governance – is the enhancement of health, well being and human development and the creation of community capital, then it follows that our progress as a nation, province, territory, municipality or community should be measured in those terms. There has been a growing awareness of the limitations of our current system of measuring progress - too often it seems that all that counts is GDP, which is a very imperfect measure of the wellbeing of a

⁴ More information about the DFID can be found at www.dfid.gov.uk. Other information about livelihoods approach is available from the International development clearinghouse Eldis Organization, www.eldis.org.

society. Yet it is a truism in the world of indicators that “we get what we measure” – so if we use imperfect measures, we should not be surprised if we get imperfect results.

A great deal of work has been done over the past few decades to develop new measures of progress. In one way or another, they all try to incorporate most if not all of the five forms of capital and the concept of human development noted above. Some key initiatives of particular relevance to Canada are noted here.

- **Human Development Index (HDI):** Developed by the UNDP, this indicator has been in use for some 20 years. The first Human Development Report (1990) introduced a new way of measuring development by combining indicators of life expectancy, educational attainment and income into a composite human development index, the HDI. The breakthrough for the HDI was the creation of a single statistic which was to serve as a frame of reference for both social and economic development. Over time, the Index has become more complex and sophisticated, with the addition of the Gender-related Development Index (GDI, which adjusts the HDI for gender inequality); the Gender Empowerment Measure (GEM, a measure of agency that evaluates progress in advancing women's standing in political and economic forums) and the Human Poverty Index (HPI), which uses indicators of the most basic dimensions of deprivation: a short life, lack of basic education and lack of access to public and private resources (see <http://hdr.undp.org/en/humandev/hdi/>)

For many years, Canada has ranked at or near the top of the international ‘league table’ for HDI; in the 2008 report (based on 2006 data) it ranked third. However, it ranked 83rd out of 157 nations for the GDI (although the spread is very narrow across all nations), and 11th on the GEM.⁵ However, within Canada, there are some stark differences between Aboriginal and non-Aboriginal people. A study comparing the HDI for Registered Indians and the rest of the Canadian population (Cooke, Beavon and McHardy, 2004) found that the Canadian HDI in 1981 was 0.806 and rose to 0.880 in 2001,⁶ while the HDI for the Registered Indian population was 0.626 in 1981, rising to 0.765 in 2001. While the gap between the two populations narrowed from 0.23 in 1981 to 0.11 by 2001, a score of 0.765 put registered Indians at the same level as Kazakhstan, which ranked 76th out of 175 nations in 2001 (UNDP, 2003).

- **Genuine Progress Indicator (GPI):** Based on the work of Herman Daly and John Cobb (1989) who developed the Index of Sustainable Economic Wellbeing, the GPI was created by Redefining Progress, a San-Francisco-based organization, in 1995. “*The GPI starts with the same personal consumption data that the GDP is based on, but then makes some crucial distinctions. It adjusts for factors such as income distribution, adds factors such as the value of household and volunteer work, and subtracts factors such*

⁵ http://hdrstats.undp.org/2008/countries/country_fact_sheets/cty_fs_CAN.html

⁶ Curiously, the UNDP gave Canada a score of 0.937 in 2001, which ranked Canada 8th; a score of 0.880 would have ranked Canada with Slovenia in 29th place. Clearly, there are some methodological differences between the UNDP’s estimation of HDI and that of the Canadian authors.

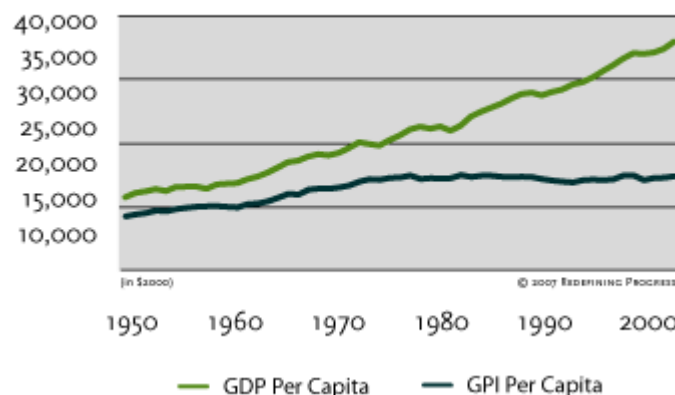
as the costs of crime and pollution.”⁷ It can be used at national, provincial or local levels.

The measurements that make up the GPI include income distribution; housework, volunteering, and higher education; crime; resource depletion; pollution; long-term environmental damage; changes in leisure time; defensive expenditures; lifespan of consumer durables & public infrastructure, and dependence on foreign assets.

The difference between GDP and GPI is very revealing; the annual accounts of GDP and GPI for the USA from 1950 to 2004 (the most recent update done by Redefining Progress) reveals the truth behind the phrase “doing better but feeling worse”. While GDP has risen steadily, the GPI has been stagnant since the 1970s (see Figure 2).

Figure 2: GDP and GPI, USA, 1950 - 2004

GROSS PRODUCTION VS. GENUINE PROGRESS, 1950-2004



In Canada, GPI Atlantic has worked to develop the GPI at the provincial level for Nova Scotia, and has piloted its development at the community level in three communities in Nova Scotia - Kings County, Glace Bay and Halifax,⁸ while the Pembina Institute developed the GPI for Alberta in 2000 and updated it in 2005.⁹

- **Gross National Happiness (GNH):** First proposed by the King of Bhutan in the 1970s, the GNH expresses the Buddhist notion that the ultimate purpose of life is inner happiness. The GNH Index is a single number that is intended “to reflect the happiness and general well-being of the Bhutanese population” and is calculated from three broad sets of indicators; GNH status indicators, GNH

⁷ www.rprogress.org/sustainability_indicators/genuine_progress_indicator.htm

⁸ www.gpiatlantic.org/community.htm

⁹ www.greeneconomics.ca/AlbertaGPI

demographic indicators and GNH causal and correlation indicators. The GNH indicators include nine core dimensions:

- Psychological well-being
- time use
- community vitality
- culture
- health
- education
- environmental diversity
- living standard, and
- governance.¹⁰

The GNH has come to international attention in recent years, and the Second International Conference on the GNH was held in Nova Scotia in 2005, with funding support from both IDRC and CIDA and support from many partners, including GPI Atlantic.¹¹ Researchers affiliated with GPI Atlantic have worked with researchers in Bhutan and have recently (Spring 2009) undertaken a pilot GNH survey in Victoria BC as part of a series of such pilot surveys in several countries (Mike Pennock, personal communication).

- Canadian Index of Wellbeing (CIW): The Atkinson Charitable Foundation has been working with a number of national organizations and with communities across Canada since 1999 to develop the CIW. In particular it is creating partnerships with the Community Foundations of Canada on their Vital Signs initiative and the United Way's Action for Neighbourhood Change initiative, and also has links to FCM's Quality of Life reporting initiative¹² and to Vibrant Communities. The Index has 8 domains – quite similar to those in the GNH - that will be blended into a composite index:
 - Healthy populations
 - community vitality
 - time use
 - educated populace
 - ecosystem health

¹⁰ www.grossnationalhappiness.com/gnhIndex/introductionGNH.aspx

¹¹ www.gpiatlantic.org/conference/

¹² Led by the Federation of Canadian Municipalities (FCM), the Quality of Life Reporting System (QOLRS) measures, monitors and reports on social, economic and environmental trends in Canada's largest cities and communities. The QOLRS is a member-based initiative. Starting with 16 municipalities in 1996, the QOLRS has grown to 23 communities in seven provinces. (Source: www.fcm.ca/english/view.asp?x=477)

- arts and culture
- civic engagement, and
- living standards.

“Most importantly, the CIW will shine a spotlight on how these important areas are interconnected”. Like the GPI it will “will treat beneficial activities as assets and harmful ones as deficits”, and also like the GPI it will be calculated at the national, provincial, regional and community levels.¹³

Clearly, there is a growing interest at all levels from the international to the local, to develop alternative measures of progress; moreover, many of these efforts share many common elements. There has been a particularly strong interest over the past couple of decades to develop broader sets of indicators at the community level, including indicator sets for healthy communities, sustainable communities, liveable communities and safe communities, as well as indicators of the quality of life.¹⁴ What they all have in common is an attempt to look at communities in a holistic manner, often using categories of environmental, social, economic and human wellbeing or development.

Moreover, and importantly, they almost always include a community engagement strategy, since the development and use of indicators by the community is seen as an important part of the process of community capacity building.

Any national effort to improve population health and human development health through community-based action to create healthier communities needs to include a national effort to develop new measures of progress such as those noted above, so that our progress towards these broad societal goals can be tracked. These new measures need to be applicable at all levels from the national to the local, and their development needs to be done in partnership with communities, as part of the development of the community’s capacity to understand itself and its situation, a necessary prerequisite for taking action.

2.5 Building resilience in people and communities

An important concept related to community capital is resilience – in some ways, this is the summation at a personal and community level of the creation of all forms of community capital. In her recent book “Shared Space: The Communities Agenda” Sherri Torjman, Vice-president of the Caledon Institute of Social Policy, suggests that the goal of what Paul Born of the Tamarack Institute calls the ‘communities agenda’ is to “promote resilience in order to build strong, vibrant communities” (p3).

Drawing from two very different but surprisingly complementary fields of research and practice – ecology and mental health – she suggests that resilience – the “ability to not only cope but also to thrive in the face of tough problems and continual change” (p5) - is a desirable property of both people and communities (and of course, ecosystems).

There is in fact a reciprocal relationship between resilient people and resilient communities. Not surprisingly, then, Torjman argues that building resilience requires

¹³ www.atkinsonfoundation.ca/ciw

¹⁴ See for example the Community Indicators Consortium, a learning network and community of practice for people engaged or interested in the field of community indicators and their application. Their seventh international conference will take place in Seattle in Fall 2009. (www.communityindicators.net/)

investing in both personal capacity (‘the skills, abilities and assets of individuals and households’) and community infrastructure (“the supply of amenities and resources that contribute to wellbeing” – p 18). Specifically, this means investing in:

- The provision of basic needs (decent affordable housing, adequate income, health protection)
- The development of basic coping skills and capacities (early child development, literacy, empathy, problem-solving, as well as systems of social support and social capital)
- active participation in society and a sense of agency, arising from public discourse, engagement in decision-making, voluntarism, participation in recreation – and the creation of the public spaces needed for these activities
- creating opportunity through training and skills development, community economic development, and building public and private, personal and collective assets.

3. Creating healthier communities

"The greatest contribution to the health of the nation over the past 150 years was made not by doctors or hospitals but by local government."

--Dr. Jessie Parfitt, in *The Health of a City: Oxford, 1770-1974*

History teaches us why it makes sense to address population health at the community level. As Dr. Thomas McKeown noted in his famous writings in the 1970s (McKeown, 1978), the great gains of life expectancy and human health over the last 200 years came from clean water, improved sanitation and sewage control, better nutrition and increased standards of living – all occurring at the community level, and none of them the result of improved health care per se.

There is in fact a very long history linking health and cities, and the modern-day public health movement has its origins in concerns about the health of towns in England in the mid-19th century (see Appendix 1).

The modern-day healthy cities and communities movement has its origins in the concept of health promotion as it was developed in Canada and in Europe in the mid-1980s, and more specifically in a 1984 conference on healthy public policy in Toronto, which led to the creation of the WHO Europe Healthy Cities Project in 1986 (see Appendix 2). As such, it is rooted in and is an important expression of the key elements of the Ottawa Charter for Health Promotion and of the ‘settings-based approach’¹⁵ recommended in the Charter (WHO, 1986). Thus just as health promotion is seen as “the process of enabling people to increase control over and improve their health”, so too is the creation of a healthier city (or community, the preferred term in Canada) seen as a process, one that

¹⁵ ‘Settings’ are the physical places and social spaces where we lead our lives. Because they are central ‘nodes’ in our lives, and because they combine the physical and social environments, they can be powerful foci for health promotion programs. Settings-based approaches that are widely adopted in health promotion in Canada and internationally include healthy schools, healthy workplaces, healthy hospitals, healthy prisons, healthy markets, healthy communities and healthy cities. Conceptually, and often in practice, a healthy community or healthy city project can encompass many of the other settings-based programs.

mirrors many of the strategic approaches identified in the Ottawa Charter (building healthy public policy, creating supportive environments, strengthening communities, developing personal skills). This is clearly seen in the definition of a healthy city developed in the original background document prepared for the WHO Europe Healthy Cities Project:

“A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources that enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential.” (Hancock and Duhl, 1986)

Text Box 3: The Healthy City: Definition and Parameters

"A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources that enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential."

Parameters

1. A clean, safe, high quality physical environment (including housing quality).
2. An ecosystem which is stable now and sustainable in the long term.
3. A strong, mutually-supportive and non-exploitative community.
4. A high degree of public participation in and control over the decisions affecting one's life, health and well-being.
5. The meeting of basic needs (food, water, shelter, income, safety, work) for all the City's people.
6. Access to a wide variety of experiences and resources, with the possibility of multiple contacts, interaction and communication.
7. A diverse, vital and innovative city economy.
8. Encouragement of connectedness with the past, with the cultural and biological heritage and with other groups and individuals.
9. A city form that is compatible with and enhances the above parameters and behaviours.
10. An optimum level of appropriate public health and sick care services accessible to all.
11. High health status (both high positive health status and low disease status).

(Source: Hancock, Trevor and Duhl, Leonard (1986) Healthy Cities: Promoting Health in the Urban Context. Copenhagen, WHO Europe (Also published as WHO Healthy Cities Paper #1 by FADL, Copenhagen, 1988)

The range of issues that might need to be addressed by a healthy city or community initiative is well illustrated by the ‘parameters’ of a healthy city defined in the original WHO Europe background paper; they are at least as broad as the ‘determinants of health’ identified more than a decade later by the Advisory Committee on Population Health (see Box #3).

It is also important to note that the end-point is not health per se, but the broader concept of people developing to their maximum potential – human development, in other words. Also, and consistent with its location within the overall health promotion approach, the central purpose is one of empowerment of people – individually and collectively (through their community organizations and political structures) – to improve their health and level of human development. This calls for a long-term approach, where the process of community and local political engagement and empowerment is more important than short-term projects (although they can be important as part of the long-term engagement process). This concept, as with health promotion itself, has always presented a challenge to those whose focus is on narrow and short-term outcomes defined externally to the community (which is often the situation for many government programs, as will be discussed later). In many ways, the healthy cities and communities approach is best seen as an attempt to create a community-based social movement for health, one in which communities are supported in defining for themselves what is important for their health - whatever that may be - and how to go about improving health.

As will also be discussed later, this approach is consistent with a number of other leading-edge initiatives in Canada that employ a similar approach to improving the condition of Canada's communities. They all pose similar challenges to the 'business-as-usual' government approach to community-based action, and all suffer from a similar neglect that needs to be addressed because, together, they point the way forward for community-based action on population health and human development.

3.1 Healthy communities in Canada

Canada has maintained a healthy community movement for more than 20 years. (The term 'community' - or town and village in Quebec - was preferred to 'city' in Canada to reflect both the inclusion of smaller communities that do not consider themselves 'cities', and the inclusion of self-defined communities or neighbourhoods within cities.) There are three largely or entirely provincially-funded initiatives, as described below. There is no national initiative; the Canadian Healthy Communities initiative that was established in 1989 had its funding cut in the recession of 1991/2.

- In Quebec, the Réseau Québécois de Villes et Village en santé (RQVVS) was established in 1990, and is closely affiliated both with the Institute National de Santé Publique du Québec (INSPQ) where it is based, and with Quebec's municipalities, who comprise its members and the majority of its board. Its mission is :

“promoting and supporting, through all Quebec, the sustainable development of the environment for healthy life. It focuses, with this intention, on exchanges and partnerships between municipalities, on the engagement of municipal decision makers in favour of quality of life, and on their capacity to mobilize their partners and their citizens for concrete action.” (www.rqvvs.qc.ca/reseau/mission.asp)

It includes among its members 179 local or regional municipalities, (with one being a First Nation community) representing more than 50 percent of the population of Quebec. In addition to these formal members, it is possible for a regional public health service to work with a municipality, using a healthy

community strategy, without having the municipality joining the RQVVS, so the reach is broader than the formal membership; in fact, it is estimated that RQVVS has worked with 350 – 400 communities in the past 5 years (personal communication, Louis Poirier, Director, March 2009).

The 2008/09 budget for RQVVS is almost \$500,000 and comes mainly from the government of Quebec, via the INSPQ.

- The Ontario Healthy Communities Coalition (OHCC) is an incorporated registered charity, whose mission is *"to work with the diverse communities of Ontario to strengthen their social, environmental and economic well-being."* Established in 1992 and largely funded by government, it works to support local and regional groups, coalitions and networks that are working on Healthy Community initiatives in Ontario, but compared to RQVVS, is less focused on municipal governments. The OHCC supports multi-sectoral collaborations to strengthen local economies, deal with social issues and improve the environment, all with the ultimate objective of improving the health of the community and its members. (www.ohcc-ccso.ca/en)

As of September 2008 the OHCC had 376 members in 143 locations, including 80 'community members' from across Ontario (a community member is "a coalition of organizations that involves at least three community sectors, has adopted a Healthy Community approach and is working towards improving the social, economic and environmental well-being of their community"), 15 provincial organizations spanning the social, environmental, economic, and political spectrum, and 281 network members, including 4 organizations from other provinces. It is estimated that the OHCC has provided services to approximately 350 groups over the past 5 years (Personal communication, Lorna Heidenheim, Executive Director, March 2009)

OHCC's 2008/09 budget is approximately \$720,000, with about half coming from the Ontario Ministry of Health Promotion, and a quarter each from the Public Health Agency of Canada and the Trillium Foundation.

- The BC Healthy Communities initiative (BCHC) was established in the early 1990s but its funding was cut soon after. It re-emerged in 2005 with funding from the BC Ministry of Health through ActNow BC. Its vision is that *"All BC communities continually create and improve the social, environmental and economic assets that support health, well-being and the capacity to realize their fullest potential"* while its mission is *"to promote the Healthy Communities Approach, offering a shared platform for dialogue, collaboration, learning and action."*

BCHC supports communities and community groups that are taking a holistic and integrated approach to increasing health, well-being and healthy development in their communities through community facilitation, workshops, tool kits and small seed grants. Most of its current activities are on community engagement and capacity building processes, such as forums and

workshops, or small interventions to promote physical activity or healthy eating or landscape beautification. See www.bchealthycommunities.ca

It is estimated that BCHC has worked with more than 400 different organizations in some 300 communities across BC since it was re-established. Its budget in 2008/09 was just over \$550,000 from the BC Ministry of Healthy Living and Sport, with another \$50,000 in estimated in-kind contributions from the Union of BC Municipalities (UBCM), where it is located.

As can be seen, all three provincial networks take a broad approach that links environmental, social and economic factors together and they all facilitate and support collaborative action within communities. The Quebec initiative has a particularly strong focus on and link to municipal governments, while the Ontario initiative has a strong focus on community-based organizations and networks; the BC initiative, learning from the experience of its two senior partners, does both, being located, at UBCM but having a strong focus on community capacity building. All three have somewhat similar budgets and manage to reach, work with and support a large number of communities with what are really quite modest budgets.

4. Community engagement and capacity building

An early review of the WHO Europe healthy Cities Project (WHO, 1992) suggested the key building blocks for creating a healthy community are:

- community involvement
- intersectoral partnerships
- political commitment, and
- healthy public policy.

The strategic linking of these four key approaches constitute what could be described as a local strategy for improving population health and human development. Together, they strengthen and build – or to be more precise, build on – existing community capacity, or the assets that already exist in each community. Over the last decade asset-based community development has increasingly replaced the traditional needs-based, problem oriented approach to addressing specific health determinants. Each of these is discussed here.

4.1 Community involvement

The Tamarack Institute suggests that the process of civic engagement involves a five step process involving the following – and escalating – levels of involvement:

1. **Passive** – local residents and organizations are informed of issues by external organizations.
2. **Reactive** – Local residents and organizations provide input into the priorities and resource use of external organizations
3. **Participative-** Local residents and organizations influence the priorities and resources of external organizations

4. **Empowerment** - Local residents and organizations work in shared planning and action with external organizations
5. **Leadership** – Local residents and organizations initiate and lead, with external support, on issues.

Reminiscent of Sherry Arnstein’s famed ladder of participation,¹⁶ this process becomes increasingly challenging to existing power structures as one moves up the ladder; but while this may be uncomfortable and challenging for some, it is empowering and liberating for the community and its members. Moreover, there is evidence to suggest that empowerment of individuals, which usually has a reciprocal and reinforcing relationship to empowerment of communities,¹⁷ is in and of itself good for the health of those who are empowered.

Such a process of empowerment is in fact the very essence of health promotion – “the process of enabling people to increase control over and improve their health”. And it is absolutely fundamental to the process of creating healthier communities. Of course, this tells us what needs to be done, but not how; that will be addressed later, in discussing the work of the Tamarack Institute and its Vital Communities program, and similar initiatives.

Suffice it to say that this process of community involvement is a long, slow process that requires and builds on small steps and growing trust and experience. As in so much else with respect to healthier, better communities, it takes time, and the development of local solutions to local conditions, not the imposition of a standard model. (Which is not to say there are not lessons to be learned from elsewhere, and principles to be applied, because there are. But the model is the process, not the specific details of a program.)

4.2 Intersectoral partnerships

This is an area where there has been, and continues to be, some confusion in our terminology. It is helpful to consider three different aspects of intersectoral action (Hancock, 2008):

- Inter-department/Inter-Ministry/ Inter-agency action (Figure 3a)

Action within an organization operating at any level from the local to the global (public, private, NGO etc) to link and coordinate action. Examples might include a Healthy City Office (as in Toronto) or an inter-departmental committee in a municipal government, a Cabinet Committee and program such as Healthy Child Manitoba, or a Healthy Workplace Steering Committee in a corporation. In government, this approach is often called a ‘whole of government’ approach.

¹⁶ Manipulation, Therapy, Informing, Consultation, Placation, Partnership, Delegated power, Citizen control

¹⁷ Always bearing in mind that in unhealthy communities, where the community uses its empowerment to exploit its weaker or more disadvantaged members, or other communities near by or remote from it, such community empowerment can be detrimental to the health of at least some, if not many others.

- Cross-sectoral action (Figure 3b)

Action with partners across multiple sectors (public private, non-profit, faith, academic, professional etc), operating at any level from the local to the global. Examples might include a broad-based healthy Community coalition, or BC's Healthy Living Alliance, which includes health NGOs, health professional associations, the Union of BC Municipalities, the BC Recreation and Parks Association, BC's health authorities and (ex officio) the Ministry of Health and the regional office of the PHAC, among others; however, it does not yet include the private sector.

- Vertical integration (Figure 3c)

Action across multiple levels. On occasion this may extend from the local to the global; more commonly it crosses some but not all levels. Examples include the Vancouver Agreement between the federal, provincial and municipal governments, or international coalitions of NGO focused on issues such as breast-feeding or tobacco control.

Figure 3a: Inter-department/Inter-Ministry/ Inter-agency action

	Government	NGO and Community	Academics	Private sector
Local	↓	↓	↓	↓
Regional	↓	↓	↓	↓
State	↓	↓	↓	↓
National	↓	↓	↓	↓
International	↓	↓	↓	↓

Figure 3b: Cross-sectoral action



	Government	NGO and Community	Academics	Private sector
Local				
Regional				
State				
National				
International				

Figure 3c: Vertical integration

	<u>Government</u>	<u>NGO and Community</u>	<u>Academics</u>	<u>Private sector</u>
<u>Local</u>				
<u>Regional</u>				
<u>State</u>				
<u>National</u>				
<u>International</u>				

All three of these forms of intersectoral action need to be operating if a healthy community/ community capacity-building approach is to be effective. First, there needs to be a commitment by municipal government to bringing key departments together so common approaches to cross-cutting issues can be developed. This in turn needs to be supported (as is seldom the case) by comparable structures or processes at the provincial and federal levels, so that such an integrated approach at the local level is supported by the actions of these higher levels of government.

Second, the work of creating a healthier (or better) community has to extend well beyond government, a ‘whole of society’ approach is needed. This also clearly needs to involve not just organizations but individual citizens, and is clearly linked to the community involvement strategies noted above. Many communities have found different ways to bring their many stakeholders together; the creation of a shared vision has been one powerful way in which common purpose can be found and common action taken, often over a period of many years. For example, the town of Rouyn-Noranda in Quebec, the first community in North America to formally declare itself a healthy community (in 1987) developed together with many of its young people a shared vision that continued to be a guiding light for many years. Similarly the healthy community initiative in the Township of Woolwich in Waterloo Region has been guided for some 20 years by a community vision developed in the late 1980s.

Third, there is a need not only for provincial and federal governments to support local action, but for a formal mechanism to be created that makes the three levels of government partners – but partners in meeting local needs, not partners in implementing national or provincial priorities directed at local issues.

4.3 Political commitment

While creating a healthier community is a larger task than local government alone can undertake, the role of local government is central to the whole process. High-level political commitment (from Mayors and Councils) has been a centerpiece of the WHO Healthy Cities Project, and in Quebec’s Villes et Villages en santé initiative.

At the same time, a different sort of political commitment is needed from provincial and federal political leaders: a recognition of the vital role played by local government in the creation of the conditions for health and human development, and a commitment to strengthen municipal governments in terms of their powers and resources, as will be discussed later.

4.4 Healthy public policy

Healthy public policy refers to the development of public policy in non-health sectors that is explicitly intended to improve the health of the population. The concept developed simultaneously with the concept of a healthy city or community (both emerged from the 1984 “Beyond Health Care” conference in Toronto). Thus one might ask at any level of government what would constitute a ‘healthier’ policy, be it for transportation or housing, urban development or parks, waste management or energy supply, agriculture or education, the economy or any other ‘non-health’ policy.

It was noted early in the development of the healthy city movement that it was at the local level that:

“ . . . the practice of healthy public policy is developing most rapidly and where its effects are most visible. There are clear reasons for this: many of the problems that have environmental or service dimensions are most obvious at the local level. So are the changes needed. Politicians at this level are more closely in touch with their electors and respond more clearly to their concerns. Governmental structures, even in large cities, interact more easily with each other

and find ways to coordinate their planning and action more readily than at the national level." (Kickbusch, Draper and O'Neill, 1990)

There are a number of characteristics that can make healthy public policy both more easy and more difficult to undertake at the local level. Local level characteristics that make healthy public policy more easy include:

- a degree of local intimacy among key actors in the smaller social networks and more human scale of the community
- policy makers (politicians and staff) live close to where they work and their decisions affect themselves, their friends, neighbours and family
- smaller bureaucracies may make response times faster and feedback easier
- closer links between the community and policy makers
- the possibility of linking community advocacy and community action directly to policy change and to policy makers.

On the other hand, some of the issues that make healthy public policy more difficult at the local level include:

- a number of "mega-issues", especially economic issues, may be nationally or even internationally determined
- local government may lack the jurisdiction or power to alter policy
- central government may be opposed to local initiatives and autonomy
- central government may dump on local governments, decentralizing the burden or responsibility for policy but not the power and resources to implement it
- local politicians may claim they are powerless to act, thus shifting blame upwards
- local jurisdictions (especially the smaller ones) may lack adequate resources and expertise. (Hancock, 1990)

To this list, one might add the challenge posed by the need to take a holistic approach to health determinants and not target single issues. But unfortunately our governments – at all levels - are not structured for a holistic approach and we lack people skilled in taking a holistic approach.

This last point needs to be elaborated on. Essentially in Canada, we have a system of local government that is based in the 19th Century; both literally and metaphorically. The origins of departments of public health, of public works, of parks, of planning and other municipal departments are found in the 19th century. They are set up on the 19th century models of separate sectors, of what we call today “silos”. The problem is that most if not all the issues we face in the 21st century cut across these 19th century structures. The first response, because the old mechanisms no longer work for us, has been to create a lot of special purpose bodies, committees, task forces and work groups.

This proliferation is a symbol of the fact that the current mechanism doesn't work, the current structures don't work and so we have to create all these special purpose bodies. But this can only be a temporary response. Eventually, since the current structure is no longer capable of responding adequately to the challenges we will face in the 21st century, we will have to create new structures and processes of governance.

4.5 Asset-based community development

Starting in the mid-1970s John McKnight, a leading US community development practitioner and researcher, began to promote the notion of tapping into the positive facets of a community to leverage change, rather than focusing solely on a community's problems – to focus on the half-full rather than the half-empty glass, as he often put it, to recognize the strengths and capacities of a community's people, organizations and institutions and its physical assets.

McKnight's pivotal work, later summarized in the book "Building Communities from the Inside Out" (Kretzmann & McKnight, 1995) led to the development of the concept of "asset-based community development". Kretzmann and McKnight note that the traditional approach to finding solutions to issues such as homelessness, poverty, unemployment, crime and violence were always expressed in the negative as "needy, problematic, and deficient neighborhoods populated by needy, problematic and deficient people." This created a needs-based system in which outside experts and providers – government services, non-profit organizations, university researchers and other human service providers – came in to address the needs with specific programs and services. Kretzmann and McKnight noted that this approach was ultimately disempowering to the people of the community who become passive clients of services. This approach creates a victim mentality, promoting learned helplessness and hopelessness among the residents who began to see themselves as incapable of taking charge of their own lives or altering their community for the better.

This problem-oriented or needs-based approach, the authors noted, also creates other negative consequences:

- Fragmentation of services, each aimed at addressing a specific problem, rather than a holistic approach.
- Funding is directed to service providers, not to residents
- Weakening of community leadership and of community relationships. The most important relationships become that between the outside expert (social worker, health provider, funder) and the client, rather than between community residents.
- A deepening of the cycle of dependency – for funding to be renewed, for example, problems must continue and be worse than other neighborhoods. There is no real incentive to eliminate the problems.

Instead of focusing on needs and problems, John McKnight promoted an alternative path towards the development of policies and activities based on the capacities, skills and assets of lower income people and their neighbourhoods. By shifting to a capacity-oriented emphasis, communities take ownership of the issues. Kretzmann and McKnight noted that community development takes place only when local people are committed to

investing themselves and their resources into efforts of improvement. Communities are never built from the outside in or the top down, but from the inside out, or the ground up. Outside assistance is often required but this should be aimed at helping developing the communities assets. “Even the poorest neighbourhood is a place where individuals and organizations represent resources upon which to build,” the authors noted.

McKnight and Kretzmann have since founded the Asset-Based Community Development Institute at Northwestern University in Chicago. The institute is very active in research and publications on community development, produces practical resources and tools for community builders, and holds workshops on developing neighbourhood and community assets and networks extensively across North America. (See www.sesp.northwestern.edu/abcd/)

Over the last decade, asset-based community development has become an increasingly dominant model. Indeed, Inclusive Cities Canada and Vibrant Communities, described in the next section, both use this model to leverage change and engagement. The social planning councils, some of which have been in existence for nine decades and often functioned on the needs-based orientation, in teaming up with Inclusive Cities initiative are moving into this more positive orientation.

Text Box #4: Matching funds have changed Seattle’s face

Two decades ago, Seattle launched an innovative program to promote neighbourhood innovation and community engagement.

Started by Jim Diers in 1988, the Neighborhood Matching Fund has since supported more than 3,000 community projects and award \$42 million in community grants. Neighborhoods have matched that contribution with \$65 million in cash donations, in-kind services and volunteer hours. In 1991, the Ford Foundation and Harvard’s Kennedy School of Government named the matching fund one of the 10 most innovative local government initiatives in the US.

Over the last two decades, the program awarded as little as \$100 and as much as \$300,000 for neighborhood projects that included everything from beautification of streets and parks, community gardens, renovations to buildings, even oral history projects. The city now awards about \$2.5 million a year. Some of the most notable projects include:

- The Fremont Troll – The space underneath Seattle’s Aurora bridge was a haven for drug dealers, the homeless and other undesirable activity. With money from the fund, artists from the surrounding community of Fremont built in 1991 a huge troll that clutches a real VW bug. The sculpture became a tourist attraction and is even used performance space for events like “Shakespeare on the Troll.”
- A popular mountain bike course was build underneath a freeway.
- A corridor of murals more than 2 km long was painted along Fifth Avenue, a busy commuter route
- A salmon-themed children’s playground was built in a park and features an enormous salmon slide.

The matching fund projects typically bring together hundreds of people in the community, from construction workers, scout troupes, senior citizens, to artists and activists. The program has since been adopted by hundreds of communities worldwide.

Source: Harell (2009) ; Bhatt, (2008)

Jim Diers, a community developer in Seattle for more than 3 decades is another leading proponent of asset-based development and the author of *Neighbor Power: Building Community the Seattle Way* (Diers, 2004). On the faculty of the Asset-Based Community Development Institute as well as the University of Washington, Diers is now a leading authority on community building whose success with participatory democracy in Seattle is now being replicated in other centres. Diers recently authored a paper for the Canada West Foundation, *From the Ground Up: Community's Role in Addressing Street Level Social Issues* (2008).¹⁸ A summary of his larger book, he notes the only long-term solution to issues such as drug addiction, prostitution, homelessness and poverty is prevention through the building of strong and inclusive communities. This requires, however, that local citizens become engaged. Diers notes “ People will get involved to the extent the effort is fun, shows results, utilizes the gifts everyone has to offer and starts where people are – their network, their passion, their block.”

The role for government and other agencies is to help build community capacity “in ways that fund and support community initiatives that are community-driven and builds on strengths. Two examples from Dier’s time in Seattle, as director of neighbourhoods are:

- A Neighborhood Matching Fund, which doubled the City’s \$45 million investment while involving tens of thousands of volunteers in completing more than 3,000 community-initiated projects since 1989 (see Text Box # 4)
- A Neighborhood Planning Program enabled neighborhoods to hire their own consultants and involved 30,000 people in developing 37 neighborhood plans between 1996 and 1999. Citizens subsequently voted for \$470 million in new taxes to help implement those plans.

Dier’s 2008 paper documented numerous creative ways that neighborhoods around North America have reduced, removed or prevented some of the leading social issues that undermine individual health and community wellbeing, by building networks and relationships, making inclusive neighborhoods, bringing in “labeled” individuals (drug addicts, prostitutes, the homeless) to be part of the solution – essentially having people work together for the common good.

However, one of the significant barriers to asset based development is that various levels of government and community agencies still tend to fund on a needs-based, problem specific model. Indeed, during key informant interviews this problem of the funding models for community development was continually raised.

Asset-based development is perhaps the key mechanism by which communities can build all five forms of capital, enhance personal

Key informants’ comments

“The way things are currently funded prevents an asset-based approach. It prevents taking time for reflection and building the relationships and understanding the dialogue necessary to move forward. Funders want to fund direct services into the community... Community building is not a direct service, therefore they don’t want to fund it. We have economic development corporations, why don’t we have a social development corporation”

¹⁸ www.cwf.ca/V2/files/CCI%20Diers.pdf

and community resilience, and improve the level of population health and human development. It has been an important aspect of the healthy communities approach in Canada from the outset, and is central to several other creative initiatives in Canada to maximise human and community development and wellbeing. As such, it needs to become central to federal and provincial government efforts to work in and with communities.

But as the next section also makes clear, a comprehensive and long-term process of asset-based community development does not just happen. It requires a long-term commitment to funding and in other ways supporting both the process and the community-based and community-driven supportive infrastructure needed at the community level.

5. New models of community governance for health and human development

Across Canada a variety of organizations, in addition to the three provincial healthy community initiatives, are attempting to address some of the determinants of health and human development through community capacity building and community engagement processes, largely to address issues like poverty, inclusion and active communities. Several of the leading national initiatives are profiled here, ranging from those in the nation's largest cities to an example from a small Aboriginal community. This is followed by a discussion of the emerging concept of 'healthy urban governance' and of the infrastructure needed for community governance.

Text Box # 5: Calgary Pursues Living Wage Goal Through Vibrant Communities

Over the last decade in the US, more than 130 communities have adopted living wage policies. A living wage is the amount of income an individual or family requires to meet their basic needs, to maintain a safe, decent standard of living in their communities and to save for future needs and goals. As part of its Vibrant Communities initiative, an action team with more than 20 partners is implementing a living wage campaign in Calgary.

The minimum wage in Alberta is \$8.40 per hour. Working a standard work week of 35 hours per week, 52 weeks a year, an individual without dependents employed at minimum wage would have a net annual income of only \$14,287 (including holiday pay). This income would be \$7,379 below Statistics Canada's 2007 (LICO) for an individual in a large city (\$21,666). Vibrant Communities Calgary's Living Wage Action Team has determined that an individual working full time (35 hours per week, 52 weeks a year) needs to make a minimum of \$12 per hour plus benefits (or \$13.25 an hour in lieu of benefits) to earn a Living Wage. Research shows 65,000 (10.8%) of employed Calgarians over the age of 15 earn less than \$12 an hour and women are disproportionately represented among these low wage earners, with 42,500 earning less than \$12.00 an hour.

Calgary's Living Wage Leader Program recognizes and rewards employers that pay their employees a Living Wage. In February 2009, the first business to receive the award was Calgary's Chamber of Commerce. In addition, Calgary City Council directed City Administration to develop Living Wage policy options to be applied to City staff and City service and to present an implementation plan for 2009.

Sources

Vibrant Communities Calgary Living Wage Fact Sheet
<http://www.vibrantcalgary.com/media/VCC%20Living%20Wage%20Fact%20Sheet%20May%202008.pdf>

Vibrant Calgary Living Wage program
 Website: www.vibrantcalgary.com/livingwage/

5.1 The Tamarack Institute and Vibrant Communities

The Tamarack Institute calls itself an institute for community engagement. Founded in 2002 by Paul Born and Alan Broadbent of the Maytree Foundation, the institute's mission is to assist citizens from different sectors of the community to come together and learn together to take leadership on issues that affect the whole community. Likening the effort to an old fashioned Amish barn-raising, Tamarack asserts that by working together communities can address and solve their local issues. A sense of well being arises from the levels of familiarity and trust that are built through contact, shared responsibility and support.

The Institute notes high levels of civic participation are linked to a community's higher overall quality of life. Communities whose citizens collaborate closely experience better educational achievement, better child development, safer neighborhoods, greater economic prosperity, and citizens with increased physical and mental health. But there first must be a community will – a clear sense that a community wants to take ownership of issues like poverty or health.

Tamarack notes that citizens can have a powerful influence and effect on the life of their communities. As such Tamarack has positioned itself to facilitate community engagement through a series of programs and services. One of Tamarack's key programs is Vibrant Communities, established in 2002. Vibrant Communities is a community-driven effort to reduce poverty in Canada by creating partnerships between people, organizations, businesses and governments. The program, supported by the Caledon Institute of Social Policy and the J.W. McConnell Family Foundation, now consists of 15 communities across Canada¹⁹. Vibrant Communities deliberately tests ideas about community building, poverty reduction, collaboration and engagement, and generates knowledge based on what works best in practice.

The work concentrates on five key approaches:

- Shifting the focus from efforts that alleviate symptoms of poverty to those that reduce the causes of poverty.
- Comprehensive local initiatives aimed at poverty reduction.
- Grassroots collaboration involving all sectors of the community in these initiatives.
- Identifying community assets and putting them to good use in poverty-reduction efforts.
- A commitment to learning, change and shared learnings – whether they are the product of successes or failures.

Although result of the Vibrant Communities are still preliminary, in an interview with founder Paul Born he noted that they are finding communities with creative local government and with citizens who become engaged and empowered can have a huge

¹⁹ Abbotsford, Calgary, Cape Breton, Edmonton, Hamilton, Montreal, Niagara, Saint John, St. John's, Saskatoon, Surrey, Trois-Rivières, Victoria, Waterloo Region, Winnipeg

ability to make meaningful social change. As one example, working in the Vibrant Communities process, citizens and government in Calgary were able to put in place a transit pass for low income citizens that cost 50% less than the regular fare. “This sounds small, but it is actually very big, because it is a philosophical idea that we haven’t been able to break in other cities in this country --the importance of transportation as a public good and that it is fundamental to the economy and to the employment infrastructure. That if people can’t afford transit, they can’t get to jobs at McDonalds.”

Other Vibrant Community actions have targeted child poverty in Hamilton, single parents in Saint John New Brunswick and affordable housing in Victoria.

5.2 Social Planning Councils and Inclusive Cities Canada

Across the country, municipal social planning councils, many of which date back 80 or 90 years, exist in many cities as community-based organizations that work on solutions to pressing social issues like homelessness, child poverty, food security, affordable housing, and immigrant support. Many of these organizations receive funding from groups like the United Way. As the Ottawa Social Planning Council website notes, its role is to address social issues and improve quality of life in Ottawa as “a unique one-stop resource for independent social research, community based planning, and community development support for individuals, organizations and networks creating positive change.”

A source linking all of the social planning councils in Canada is the Canadian Council on Social Development, a non-profit social policy and research organization, existing for 90 years, that focuses on issues such as poverty, social inclusion, disability, cultural diversity, child well-being, employment and housing. (www.ccsd.ca)

In 2003, a collaborative venture of five social planning councils²⁰ and the Federation of Canadian Municipalities formed Inclusive Cities Canada (ICC). They noted that social inclusion is recognized as a key determinant of health. Low income, poor housing, food insecurity all create feelings of social exclusion and, combined with a lack of participation in civic decision-making, creates ill health, higher rates of chronic disease and premature morbidity. Each city created a civic panel to document the inclusiveness of its city based on five dimensions of social inclusion:

- Institutional recognition of diversity
- Opportunities for human development
- Quality of civic engagement
- Cohesiveness of living conditions
- Adequacy of living conditions.

Inclusive Cities conducts research and engages local leadership and community participation in order to shape public policy and institutional practices. The goal is to create “a horizontal civic alliance” on social inclusion across urban communities in Canada. Social inclusion includes addressing isolating issues like poverty, homelessness, lack social support, immigration issues and more.

²⁰ Burlington (Halton County,) Edmonton, Saint John, Toronto, Vancouver/North Vancouver

5.3 The Vancouver Agreement

During the last decade new models of multi-level government cooperation have been emerging in the form of urban development agreements, the most famous of which is the Vancouver Agreement. The nature of some community issues are so complex that they call for new governance structures and new multi-networked partnerships.

Such was the case with Vancouver's Downtown Eastside (DTES) in the late 1990s. A public health crisis hit the low income, historic community in the form of an epidemic of drug overdose deaths and a spike in sexually transmitted diseases, particularly HIV/AIDS, syphilis and hepatitis C. High rates of drug addiction, mental health problems, crime, unemployment, poverty, and homelessness also plague the region. As home to some 16,000 residents, the DTES had disease rates that rivalled third world countries.

In March 2000, to respond to the economic, social, public health and safety challenges, representatives from three levels of government – the federal, provincial and city – signed a landmark agreement with a first phase lasting until 2005. It was renewed for a second phase in 2005, lasting until 2010. Each level was to contribute resources in terms of money, staff, and in kind services. In the first phase, the federal and provincial governments contributed \$10 million each as well as staffing resources and coordination from existing ministries and departments. The City of Vancouver contributed staffing costs, space in city buildings, zoning and building cost compensation, heritage preservation incentives and funding for capital projects such as renovation of old buildings.

Prior to the agreement, the three levels each were responsible for different pieces and acted on the issues separately and disjointedly, and people fell through the cracks. They did not collaborate nor coordinate services. The agreement recognized that coordinating services and expertise, and collaborating together on solutions with residents, community groups and business was the only way to address the complex intertwined problems of the DTES.

The agreement brought in a wide range of other community partners such as Vancouver Coastal Health Authority, local business and community agencies, as well as non-profit groups working in the DTES. Meetings are now held at a number of different levels with a variety of representatives from elected public officials to working groups of senior and mid-level public servants, to community representatives. The collective work of all the partners has the following overarching goals, as noted on the agreement's website:

- **Coordination** - increasing the coordinated efforts of the three governments and related public agencies towards desired outcomes in community change and action.
- **Innovation** - increasing innovation and creativity to achieve changes in how public agencies carry out their work together and in partnership with the private and non-profit sectors.
- **Policy change** -- identifying government and public agency policy barriers to effective community change and action, and removing or reducing these barriers.

- **Investment** -- increasing public and private investments (financial and human resources) towards desired outcomes in community change and action.
- **Monitoring and evaluation** - identifying key indicators as benchmarks to monitor progress and concrete accomplishments.

In pursuing these goals, the Vancouver Agreement focuses on five strategies:

- Facilitate forums and intergovernmental task groups.
- Initiate joint public agency planning processes.
- Support learning through information sharing, research, evaluation and progress monitoring.
- Conduct research into effective approaches and evaluation of joint public agency projects and make recommendations to enhance effectiveness.
- Invest funds in specific public agency projects and lever additional financial and human resources through partnerships with the private sector.

The agreement had four major desired outcomes from all these coordinated activities and increased commitments in time, money and expertise. These desired outcomes were:

- Improved health outcomes for local residents, reflecting increased choices and ability to meet basic needs.
- Improved safety and security and addressing the negative impacts of crime.
- Growth in the numbers, size and diversity of local businesses, and diversified employment opportunities for local residents.
- Improved and increased housing options, including affordable rental, supported and transitional housing.

During the first five years a number of significant changes were accomplished, including:

- **Improved health outcomes:**
 - a significant reduction in death rates due to drugs, alcohol, suicide and HIV/AIDS infections.
 - better access to primary care services with the opening of new health clinics.
 - the opening in 2003 of the first supervised injection site in North America – a highly controversial project that in research studies has been shown to reduce the harm of injection drug use and increase uptake of treatment.
 - the creation of more detox beds, youth detox and drug treatment resources, including an onsite treatment program at the supervised injection site and the expansion of methadone treatment.
 - centralized telephone referral services for access to detox facilities for youth and adults.
- **Crime reduction:** Property crime decreased by 14 % between 2000 and 2005.

- **Growth in business and employment opportunities:**

- Job training programs and employment support increased for the unemployed in the area, including those with drug addiction and mental health issues.

- **Improved housing options:**

- The completion of 53 development projects between 2000 and 2005 including 9 subsidized housing buildings, 12 market housing developments, three mixed use developments with daycares, commercial space and housing, and a number of health related facilities. One showcase development is the Woodward Building. (See Text Box #6)
- The renovation and upgrading of single room occupancy hotels, starting with the Silver and Avalon Hotel in 2005.
- The creation of 911 more subsidized housing units in 5 years and 259 more beds or living units for those who are seniors or who have mental health issues or disabilities.

In March 2005, the three levels of government renewed the agreement for another 5 years. In June of 2005 the Vancouver Agreement was one of eight recipients of the United Nations Public Service Award, taking top prize for transparency, accountability and responsiveness in the public service.

Text Box 6: Woodward Building brings mixed-use innovation to DTES

From 1903 Vancouver's famed Woodward Building, with its huge neon W, has been a dominant structure in the downtown eastside. The department store's closure in 1993 greatly contributed to the exodus of business from the DTES. Over the next decade, many plans for redevelopment failed and the empty, decaying structure, home to squatters, was symbolic of the complex problems of the DTES.

The building was bought by the provincial government in 2001 for \$22 million, and then sold in 2003 to the city for \$5 million. Then a unique community consultation process took place. The result of the extensive process is Canada's (and perhaps the world's) first highly diverse array of mixed use on one site and is key to the revitalization of the DTES.

Of the 546 units, 125 are single, non-market affordable housing with design features like wall mounts to hang bicycles. The remaining suites are market units, that vie with any of Vancouver's downtown condos and which sold out in eight hours. Also on the site are popular retailers (London Drugs, Nesters Food Store) the western offices of the National Film Board, and Simon Fraser Universities new Centre for Contemporary Arts, including five performance venues. The building, which includes the restoration of the oldest heritage structure, will also house office space for community non-profits.

"Its diversity is unparalleled," said architect Gregory Henriques, who calls it a "huge, exciting social experiment."

The first tenants are expected to move in by June 2009. And when the entire project is completed, the crowning touch will be the replacement of the huge neon W – refurbished and safely stored for the past years – so it can once again dominant the skyline and celebrate a landmark structure.

More information.

<http://vancouver.ca/bps/realestate/woodwards/>

Based on the success of the Vancouver Agreement, other municipalities with significant social issues like drug use, homelessness and poverty, such as Victoria BC, began talks to model an urban development agreement for their region among the three levels of government.

However, following the January 2006 election which changed the federal government from Liberal to minority Conservative, sources say the Vancouver agreement for all intents and purposes lost effectiveness. The agreement still exists on paper and is still touted as a model of unique multi-level collaboration. However, since 2006 there has been no updating of what used to be a very dynamic website. There has been no press release issued since spring 2006 nor any updating of outcomes, nor any updating of the financial commitments. While no one will go on the record about new investments, it seems that while the provincial government has given a further \$8.5 million, no further money has come from the federal government. In addition, in 2006 a number of key staff left the Vancouver Agreement for new jobs, including the first executive director and the head of media relations. Important revitalization work continues in the DTES with the provincial and municipal government and local agencies and non-profits, but the federal involvement under the agreement has apparently dwindled.

At the same time in Victoria, late in 2006, the negotiations for a Victoria Agreement gradually fell apart and the initiative stalled. While officially it is being stated that the agreement is being postponed, many key officials, such as the project manager have left for other jobs.

The initial success and the subsequent apparent (but not publicly official) stalling of the Vancouver Agreement illustrates a key barrier to these complex, multi-level agreements: they are intensely vulnerable to changing political winds. With three levels of government there are three times as many political agendas, three times as many potential changes of government, and three times as many ways the work can be sidetracked or halted.

The issues of the determinants of health are long-term, societal issues that need to transcend politics and outlast four year political terms. Results often will not be seen for years, so there has to be some consistent, stable way to keep the focus and efforts on promising initiatives. As the next section details, barriers to this type of work abound.

5.4 Oujé-Bougoumou – An inspirational Aboriginal community

Ouje-Bougoumou is a Cree community of about 650 people in northern Quebec. The astonishing story of their journey from a dispossessed and marginalised community in the 1970's to an empowered community that is today a model of sustainable human development is inspirational! The community personifies Margaret Mead's famous remark - "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has." The people of Ouje-Bougoumou have not only immeasurably changed their world, they have inspired others to see what is possible in their own communities, and have thus changed the wider world.

A summary of their accomplishments is shown in Text Box #7; a more detailed description can be found at the community's excellent website - www.ouje.ca/

Text Box # 7: The story of Oujé-Bougoumou

Selected excerpts taken from the community's website at www.ouje.ca/

“ . . . we undertook a dramatic and remarkable journey from the squalor and marginalization most usually associated with the Third World to an optimistic and forward-looking model aboriginal village.” – Chief Sam Bosum

Our People

The Oujé-Bougoumou people are the community's greatest resource. Every person here has a wealth of life experiences and an amazing story to tell.

Our elders had a vision: a community for their children and grandchildren. This vision sustained them in their struggle to see their dream become reality.

The elders of the Oujé-Bougoumou Nation have given us so much: they have given us the benefit of their wise counsel; they have preserved our sense of community in the face of tremendous odds; they have given us the courage to continue our struggle; and they have given us a sense of perspective and direction whenever we needed it. It is perhaps the younger generation that will be the builders of the village, but it is the older generation who have been the protectors and defenders of our community.

Our Youth

When we talk about developing the skills and obtaining the education required to build our community, to make it viable, to achieve our goal of self-sufficiency, we are really talking about our youth.

It is the youth who will have the real opportunities to acquire advanced educations and very specialized training in those areas which will contribute to the well-being of our communities. In a very real sense the future of our community belongs to our youth.

Our Vision

When we began to seriously plan our new village, we started with a vision. The essential thrust of that vision was to re-create the well-being of our traditional way of life to the fullest extent in the context of modern facilities and contemporary institutions.

Major Objectives

In planning the new village, we defined three major objectives:

- Our village had to be constructed in harmony with our environment and with the traditional Cree philosophy of conservation.
- Our village had to provide for the long-term financial requirements of our people.
- Our village had to reflect Cree culture in its physical appearance and in its functions

We realized quite early on that if we were successful in realizing our vision, then our entire village would become a kind of healing center in which healing is viewed as much more than simply the remedying of physical ailments. If we could structure our new village and our new environment in such a way as to meet all of the varied needs of our people then the result would be a place which produced healthy, secure, confident and optimistic people who felt good about themselves and able to take on any challenges which may confront us.

Text Box # 7 – Cont.**Innovation in the Design of a New Community**

The following are some of the key elements in the physical and social design developed by the people of Oujé-Bougoumou.

Design and Architecture

If the people of Oujé-Bougoumou feel empowered by their new home, it is because they played an intimate part in its inception, creation, and construction, and because the village is a living reflection of their culture and lifestyle. Canadian Geographic (July/August 1994) labeled the new community "an achievement never before seen in Canada - a native settlement with architectural coherence and integrity".

- Housing Program
- Alternative Energy Program
 - District Heating System – Heating Plant

On the Road to Self-Reliance

- Economic Development
- Harmony with the Environment
- Forest Resources
- Cultural Tourism
- Development of Community Crafts and Other Small Industries

Community Services for Social Development

- The Healing Center
- Alternative Justice

Preserving Our Cultural Identity

The communities of the Cree Nation of Eeyou Astchee, guided by their elders, have decided that there will be a building to be located in Oujé-Bougoumou which will house all the existing agencies which currently provide programming in the areas of culture and language preservation. There will additionally be facilities for exhibiting historical artifacts and art reflecting Cree culture. In Cree, the new Institute is called Anischaaugamikw which means "the handing down from one generation to the next".

5.5 **Healthy urban governance**

The WHO Commission on the Social Determinants of Health established a number of 'Knowledge Networks' – groups of experts from around the world, one of which was on Urban Settlements. Although focused largely on the plight of the 1 billion people worldwide living in slums and informal settlements, the Knowledge Network's discussion on

how urban governance should be organized so as to improve the health of the population is also applicable to cities in more developed nations such as Canada.

Key extracts from the Report of the Knowledge Network on Urban Settlements are shown in Text Box #8.

Text Box #8: Our cities, our health, our future: Acting on social determinants for health equity in urban settings

Report to the WHO Commission on Social Determinants of Health from the Knowledge Network on Urban Settings - Prepared by the WHO Centre for Health Development, Kobe, Japan - *Chair and Lead Writer*: Tord Kjellstrom

http://www.who.int/social_determinants/resources/knus_report_16jul07.pdf

Healthy urban governance

The WHO Knowledge Network on Urban Settlements, established by the WHO Commission on the Social Determinants of Health, refers to “healthy urban governance”, as the systems, institutions and processes that promote a higher level and fairer distribution of health in urban settings, and as a critical pathway for improving population health in cities. Key features of healthy urban governance are:

- Putting health equity and human development at the centre of government policies and actions in relation to urbanization.
- Recognizing the critical and pivotal role of local governments in ensuring adequate basic services, housing and access to health care as well as healthier and safer urban environments and settings where people live, work, learn and play.
- Building on and supporting community grassroots efforts of the urban poor to gain control over their circumstances and the resources they need to develop better living environments and primary health care services.
- Developing mechanisms for bringing together private, public and civil society sectors, and defining roles and mechanisms for international and national actors to support local governance capacity.
- Winning and using resources – aid, investment, loans – from upstream actors to ensure a balance between economic, social, political and cultural development and establishing governance support mechanisms that enable communities and local governments to partner in building healthier and safer human settlements in cities.
- Appropriate feedback mechanisms for communities to report their satisfaction or dissatisfaction with the interventions are needed to promote community empowerment and ownership and ensure each community’s priorities and unique needs are considered. (p 18)

Two other key elements identified later are:

- Higher levels of government providing local governments with both the mandate and the means to improve health;
- Participatory budgeting and other civic engagement processes as important means to engage the local community. (p 50)

Text Box #8 – Cont

The WHO Knowledge Network on Urban Settlements suggests the following elements for building good governance:

1. *Assessing the urban context*, as in evaluating the current equity issues in urban health and health impacts, the prominence of urban health equity in the government's policy agenda, and the timing and urgency of implementation of the underlying urban health policies or strategies.
2. *Identifying stakeholders*, as in clarifying the people, groups, and organizations that have interest and control of urban health impacts.
3. *Developing the capacity of stakeholders to take action and build social capital and cohesion*, because action on policy change requires that sufficient knowledge, skills and resources are in place.
4. *Assessing institutions and creating opportunities to build alliances and ensure intersectoral collaboration*, since it is institutions that determine the frameworks in which policy reforms take place.
5. *Mobilizing resources* necessary for social change. This may require better redistribution of resources.
6. *Implementation including strengthening the demand side of governance*: assessing and ensuring people's participation from the organizational and legal perspective, taking into account the issue of access to information and data that can ensure social accountability.
7. *Advocate for up-scaling and change* of policy and advocacy to relevant stakeholders at different levels
8. *Monitoring and evaluating of process and impacts* including opportunities for setting up systems for monitoring at an early stage. (p 39 – 40)

5.6 Creating an infrastructure for urban governance

Sherri Torjman (2007) argues that the core task of the 'communities agenda' is to improve links among key players, across key sectors, and between communities and governments. In a chapter entitled "Organizing for complexity" she argues that the key task is to establish a multi-sectoral local decision-making process that develops a comprehensive and long-term plan that addresses the community's problems by building upon existing strengths and capacities (p33).

However she notes (as do others, see key informants comments) that

"There is a serious governance gap - a mis-match between the complexity of local challenges and the corresponding problem-solving capacity." (p 40)

Moreover she notes that community governance is broader-based, more diverse and tends to have a longer-term vision in place than does municipal government, which is both a strength and a challenge.

Such community governance processes and structures, in taking a long-term and comprehensive approach, seek to counter the short-term, fragmented approach that is all

too common in programs and funding provided by governments at all levels and by many philanthropic funders. Torjman argues that such “fragmented responses cannot possibly work well in a world in which all the components are intrinsically linked”, that they are too seldom holistic or preventive, and “because they often assume that governments alone can solve problems” (p’s 43-4).

An important point with respect to the new community governance structure, Torjman argues, is that they call for a new style of leadership, with leaders who focus on building relationships, networks and trust, developing shared vision and understanding, and sharing credit with others. Such leadership skill can be and need to be taught.

Torjman also notes that these community governance structures require significant commitments of time, energy and resources, which means they need to be well supported over the long term. Yet at the same time they have to demonstrate short-term action and success, within the context of their larger plans, if they are to attain and build credibility with the community and the funders.

These are all lessons learned long ago by social planning councils, healthy community projects and many others working on what Neil Bradford calls the ‘wicked problems’ of long-term, complex challenges to community resilience and human wellbeing. The creation of new community governance processes and structures calls for a very different approach on the part of both government and philanthropic funders

6. Barriers to community governance and action for health and human development

So if it has been clear to many working on the ‘communities agenda’ for many years that new processes, new structures and new funding arrangements are needed, why have these changes not occurred in a large scale across Canada? The loss of political commitment, as apparently occurred in the Vancouver Agreement, is just one of the potential pitfalls of community-based action on health and human development. Research as well as interviews with several key informants²¹ familiar with these and other national efforts to develop a broad-based communities agenda within Canada identified a number of barriers to taking a stronger, more community-based approach to improving the level of health and human development.

6.1 A fragmented approach to community issues – and the need for a more comprehensive approach

One of the most common themes that emerged both from the literature (see for example section 5.6) and from the key informant interviews is that the present fragmented, silo-based approach to community issues is not working. As one key informant put it:

“We say that ‘everything is everything’. It is all interrelated. You can’t create a vibrant community by focusing on one thing. Everything is done by projects, but the reality is that we need to be thinking in the context of a whole system”

while another noted that

²¹ A list of the key informants interviewed is in Appendix 3

“It really is a piece of work in itself, the decision making, the planning and making sure that everything is kept on track. When you are trying to put together a complex initiative that is bringing in pieces, and an integrated initiatives where you want to ensure that the pieces are working together. There is a lack of support for that integration of decision making, in itself.”

6.2 Absence of a comprehensive national vision

As noted in section 5, a number of new initiatives are using collaborative or asset-based approaches to deal with health determinant issues. While individually, all these organizations are doing good work in their respective communities, the weakness is that there can be a duplication of effort. Of more concern, it appears that there is a lack of a single comprehensive vision of the role and function of the community, on the part of either the provincial or federal governments. This means that only too often there is a lack of support at the national or provincial levels for a comprehensive and empowering approach that would support the community to identify its own problems and develop its own solutions. One example of the lack of infrastructure support at the national level, for example, is the nature of regulations limiting the activities of charities, as described in the next section.

One of the related themes that arose is that the Canadian focus on the acute care health system is actually to the detriment of community based initiatives to improve the health of the populations, not only in terms of government focus, but by the sector that works in the health field. As one key informant noted:

Key Informants’ comments on a shared (national) vision

“We have a federal government that has not truly embraced politics and policies towards the social sector or the civil society.”

“Our conclusion is that we need to organize ourselves differently. . . . We need to keep doing what we are doing, but we have to have a common vision for what we want to be and then we have to find a better way of working together to achieve that vision and see ourselves as serving that vision instead of a 100 different visions.”

- “People in health have not adequately thrown their weight behind those in the social sector. They may clean up the mess of what society has done to individuals but they don’t seem to walk the preventative talk with us, and to powerfully support decent housing, poverty reduction strategies, etc. What I see right now happening in our communities - the real work on health is often occurring outside of health, in civil society, in social agencies for example. The two aren’t talking. I think that is a tragedy. Those of us in health and the social sector, have to look at the issues as comprehensive, as dynamic. We have to look at the interrelationships between the social, the economic and health. Anything less isn’t good enough anymore.”

6.3 Outmoded municipal arrangements

A number of writers, academics and organizations have noted in recent years that constitutional and fiscal arrangements with municipalities need to change in order to address the increasingly complex issues of urban society.

Judith Maxwell, president of the Canadian Policy Research Networks wrote in 2006:

“Local governments face all the complex challenges and opportunities of the 21st Century but are forced to operate with the legislative and fiscal powers of a 19th Century constitution. In these conditions, their only hope is visionary leadership, a fully engaged citizenry and responsive senior governments. They need the kind of leaders who can make change happen – not just in local government but across the community – in business, education, non-profits and in citizen and community groups.”²²

Neil Bradford, a professor of political science at the University of Western Ontario and a research associate at the Canadian Policy Research Network has frequently written on the new deal that is needed for municipalities (Bradford 2002, 2004, 2007). He notes that Canadian governments must overcome constitutional hang-ups, political rivalries and outmoded fiscal arrangements to collaborate on a new urban agenda. Bradford states it is the only way the Canadian economy can compete with other global cities that deliver a high quality of life to their citizens (Bradford, 2002).

Bradford argues that the increasingly complex challenges that govern the quality of life in our cities cannot be solved by one or two players acting on their own. Instead, traditional, segmented and silo approaches must be set aside in favour of “place-based public policy” rooted in “collaborative, multilevel governance.” This requires a new urban policy framework that recognizes the complexity of policy problems, that taps into *local knowledge and resources*, and is characterized by *horizontal collaboration* within cities and communities, and *vertical collaboration* across all levels of government – like the Vancouver Agreement, but one that is able to exist over the long term. (Bradford 2007)

The Federation of Canadian Municipalities (FCM) also has a number of policy statements urging a new arrangement with the provincial and federal levels of government. In its policy statement on municipal finance and intergovernmental arrangements (FCM 2008) the FCM notes there is a growing gap between the services Canada’s municipalities must deliver and what they can afford. Compared with other orders of government, Canadian municipal governments have far fewer tools with which to raise revenue. Municipal governments in the United States and other OECD countries have more diverse, generous and flexible ways to raise funds than those available to Canadian municipalities.

The FCM policy statement notes that a 2002 report on Canada by the OECD concludes that Canadian municipal governments’ heavy reliance on property taxes lies at the root of their growing fiscal difficulties. The report also states that Canadian cities have “relatively weak powers and resources” and should be given “some limited access to other types of taxes” to meet their increasing responsibilities. Out of every tax dollar collected in Canada, municipal governments get just eight cents (principally from property taxes), while the other 92 cents goes to the federal and provincial governments.

It also notes that over the last 10 years, provincial and territorial governments off-loaded responsibilities to municipal governments without transferring adequate financial resources. Municipal governments now deliver programs that support immigration, the environment, Aboriginal peoples, affordable housing, public health and emergency

²² As quoted in *Toward the Tipping Point: Aligning the Canadian Communities Agenda*, pg 11. Available at <http://www.ccl-cca.ca/NR/rdonlyres/301F7CD2-2EF6-4914-9CB0-40E3AD42C100/0/2007091920TippingPoint.pdf>

preparedness and public security with no increase in funding. In addition, over the last decade transfer funds have not kept up with the cost of living or these increased responsibilities. The FCM notes from 1999 to 2003, federal government revenues increased 12 per cent, provincial and territorial revenues 13 per cent, and municipal government revenues only eight per cent. In 1993, transfers accounted for 25 cents of every dollar of municipal revenue; by 2004, they accounted for only 16 cents, a 37 per cent decrease.

The solution, the policy statement notes, is a different constitutional arrangement and more leeway to raise funds, such as through a portion of the sales tax, a portion of the income tax, gas taxes and user fees.

6.4 Lack of a community infrastructure for governance

This is the inverse of the need for a process and structure for community governance that was discussed in section 5.6. As one key informant noted:

“Funders don’t want to fund process [because they feel] you don’t get anything out of that. But it is saying that we can have policy without having any debate in the House of Commons. That they would just go and produce policy and that there would be no committees, there would be no deliberation, just go and produce a policy. It is the same in communities. It would be saying, go and do your programs, and we don’t have time for you to come together to do your planning or to do any assessment.”

6.5 Funding limitations

Since so much of the current activity in community based health promotion and community development is being executed by registered charities, the issue of access to stable funding is a constant problem. The recent economic downturn has placed even more pressure on chasing limited funds. Most granting family and community foundations in Canada have lost up to 30 % of the value of their endowments, which greatly limits their ability to provide grants. Private donors are also experiencing a shrinkage in the value of their assets that they can donate to worthy causes. Government grants are also shrinking and often require a project-specific focus and do not support the asset based model for planning, for processes such as meetings and community engagement, as these are not specific services or programs. There is funding for pilot projects, but if the pilot proves successful there is no funding for wider implementation. The need to constantly be applying to grant programs or foundations can eat up a huge amount of time and activity that does not ultimately address the community issues at hand. Funding pressures can prevent cooperation and collaboration in community development taking place because organizations are competing for the same funds.

But beyond the problems with levels of funding, there was a larger concern with the current approach to funding among our key informants. They were concerned that funding too often was fragmented, short-term and bottom down, and this is reflected in their many comments about these concerns.

Selected key informant comments on funding

“Funding pits people against one another. It actually destroys certain social relations. People are after the money.”

“The federal role’ then it needs to be able to give flexible funding formulas, so that “if this is the money that we are giving toward health, how can we allow communities to be more creative with this money?”

“There are not the funds available to typically support a decision making body or governance structure, or a local table, whatever you call it, that comes together and makes decisions around the comprehensive approach that they want to develop. So often times the community is left to support that process itself. Unless they can find some financing for it, or somebody to give a staff person to devote some time to it, it typically flounders without that ongoing assistance.”

“The money that tends to be available goes towards shorter term, individual projects, that are rooted in single departments, single ministries. If you have an integrated approach that crosses over and involves a number of departments, it is often difficult to get any funding for that. You get each department funding its own piece. I know, having been involved in a number of projects that have tried to move beyond that single, government approach, we have always been pulled back into that very traditional vertical model.”

“All is not rosy in the world of multi-network partnerships. The public decision maker still wants a lot of control over the money he/she devolves. It is still passing the money to fulfill a mandate that is a public mandate. There is still a lot of control. The evaluation of those programs that are based on public funding devolution to community organizations, the issues around the evaluations around those programs are huge, and most of them are conflicting....If you tag the money to specific projects, from the regional to the local, then you are handcuffing the people and you are in for an interesting political fight.”

“Five different federal departments came together to work on this neighbourhood renewal approach. They basically said, “we want it to be citizen oriented and community driven.” At the same though, each of the branches was basically saying, “but we want you to do something in the area that we are interested in. How many drug abusers have you dealt with? And Literacy wants to know what we had done for literacy.” So there was a contradiction in terms. “Yes, let the community define what it is that they want to do,” but at the same time the government is saying, “however they have to work on XYZ, that is just of interest to us.”

“There are tremendous problems in terms of the funding, the accountability, the long term time frame that is required. They typically have short term kinds of initiatives in place.”

“Philanthropic funding, undermines social development. Philanthropic funding does not accept a framework of say, Healthy Communities or social determinants of health, or inclusion. That is not a direct service. They are not interested in preventing, why people are there, or understanding. They are just interested in providing a service. . . . Intermediary organizations they don’t wish to fund. Or processes. Or research and development.”

6.6 Lack of consensus on support for more universal programs

A number of key informants noted that community-based population health promotion and human development would be much more effective if there was a baseline of universal programs to deal with key health determinants across the country. Then community –based health promotion activities could be built on top of that solid foundation. The World Health Organization, in its 2008 report on the social determinants of health, noted the Nordic countries provide much greater support for universal programs and as result have less social inequity and fewer health problems caused by inequalities in access to the determinants of health.

In particular there is widespread agreement in a number of recent reports on population health and its determinants that early child development is a fundamental building block for health and human development and that there is a need for high quality universal child care programs that support early childhood development and education for all Canadian children regardless of their family’s income.

But Torjman (2007) cautions that

“The communities agenda in no way minimizes the need for a solid core of public goods and services. Community-based actions both supplement and complement – but do not replace – public policies focused upon economic and social wellbeing.” (Torjman, 2007, p3)

Selected key informants’ comments on universal programs

“That is the risk in community based programs, that we lose sight of the importance of having universal programs.”

“There is a basic conundrum of those issues in Canada. It amounts to ‘How can we promote answering local needs, while at the same time, promoting a Canadian basket of services?’ How to be fair and treat all Canadians the same, whereas attending to local needs? I don’t think we have totally succeeded in finding an appropriate answer to that in Canada.”

6.7 Limitations of federal charity regulations and social investment

Most, if not all the non-governmental organizations doing work at the community level on health determinants are registered Canadian charities. They receive a large portion of their funding – often more than 80 % -- from family or community foundations and private donors. The Canadian Revenue Agency (CRA) regulates registered charities through the *Income Tax Act* and all registered charities must operate in compliance with the law. Yet an outdated Income Act now hampers innovative work by the charitable sector on social issues and community enhancement. Interviews with key informants also raised the issue of the rigid and outdated charity regulations as

Key Informants’ comments on charity regulations

One key informant noted that the laws surrounding registered charities restricts the range of activities of one important national program, which has 85 % of its funding from philanthropic foundations. She/he said they had to work with Revenue Canada to allow exceptions to some of these rules in their community work, particularly to allow them to create benefit to individuals by reducing poverty.

hampering innovation and service delivery.

In a lecture entitled “Unleashing the Power of Social Enterprise”, former Prime Minister and Finance Minister Paul Martin called for an overhaul of the Income Tax Act in particular to encourage social innovation, social enterprises and entrepreneurship, and community investment: “ There is now a problem with the historic boundaries [the Income Tax Act] sets out in that they have not kept pace with the evolution of the social domain they seek to serve” (Martin, 2007).

Martin is particularly interested in promotion of economic independence among Aboriginal Canadians by supporting and mentoring Aboriginal entrepreneurs with investments that may have a below market financial return but a high social return. “The fundamental problem is that in Canada there is a very clear division between charitable giving on the one hand and private sector investment on the other.” Martin noted the rigid line between charitable giving and social enterprise operates to the detriment of Canada’s social goals.

A recent paper, *Canadian Registered Charities: Business Activities and Social Enterprise – Thinking Outside the Box* (Carter & Man, 2008) notes that the CRA does allow some social enterprise under its guideline RC413(E) - Community Economic Development Programs - but what is permitted is “extremely restrictive and falls short of the broad social enterprise activities that are being conducted across the global landscape.”

Some examples from the global community include:

- The US now allows foundations to make investments in social enterprises out of endowment funds without affecting charitable status. These Program Related Investments (PRIs) are allowed if the primary goal is social return. Vermont and North Carolina allow the regular investors, not just foundations, to invest in social enterprise endeavors through charities.
- The US introduced New Market Tax Credits as part of the Community Renewal Tax Relief Act of 2000. The New Markets Tax Credit Program will spur approximately \$15 billion in investments into privately managed investment institutions called Community Development Entities (CDEs) that make loans and capital investments in businesses and individual enterprise in underserved areas. By making an investment in a CDE, an individual or corporate investor can receive a tax credit worth 39 percent (30 percent net present value) of the initial investment, distributed over 7 years, along with any anticipated return on their investment in the CDE.
- In 2005, the UK created a new form of corporation, called a Community Interest Corporation (CIC), which is an organization that conducts a business with the purpose of benefiting a community rather than purely for private gain. CIC’s must meet a "community interest test" and "asset lock", which ensure that the CIC is established for community purposes and the assets and profits are dedicated to these purposes. Registration of a company as a CIC has to be approved by the Regulator who also has a continuing monitoring and enforcement role In March

2009, there were 2578 registered CICs in the UK²³ and the numbers increase by at least 100 a month.

Imagine Canada²⁴, a charity that speaks on behalf of the Canadian charitable sector notes that Canada has 161,000 registered charities and nonprofits, which marshal more than 12 million volunteers and 2 billion hours of volunteer time. They employ a workforce of 2 million full-time equivalent workers --11% of the economically active population – which accounts for 8.5% of Canada’s GDP. Many of these charities are working towards social equity, community enhancement or other activities that increase social capital. This is fertile ground for the Canadian government to explore new legislative mechanisms and tax incentives to support and tap the passion and commitment of this sizeable workforce to address the determinants of health.

6.8 Burn out of volunteer sector

Much of the community-based activity is driven by charitable organizations that depend on the passion and commitment of volunteers. But the work is not easy. It often deals with helping people and communities that have severe social problems. The stress level is high and social interactions can be challenging. The economic downturn puts even more stress on the volunteer sector as more Canadians find themselves without work or facing financial crises. Burn out and high turn over is common.

Key informant comment on burn out

One key informant noted that the current economic downturn is making burnout even more likely: “Those of us that work in the sector know that we can’t cope with the needs that people will have. So there is a desperation to that. You know that you don’t have resources both financial and human. As people bleed from the sector, we are going to be left without the people that can best do the work. I think it is really quite a moment of despair...You are kind of overwhelmed by the stories.”

6.9 Problems sharing Canadian successes

Key informant comment on sharing

“As Canadians we have not supported, much to our detriment a pan-Canadian movement. It is costly to share across this land. And we haven’t supported it. Most of all, we have not been able, in English Canada, to access easily some of the marvelous things that happen in Quebec.”

Another barrier to effective community development and engagement on social determinants is the nature of Canada itself. The geographic size, the language issues and the various provincial silos mean that often promising developments and initiatives in one province are not shared in other regions. In particular, both in the research of this paper and in the key informant interviews it was noted that finding out what is happening in Quebec, if you are not bilingual, is very difficult. Likewise a

francophone organization would have a hard time accessing information about successful community programs in English Canada.

²³ For more information on CICs visit www.cicregulator.gov.uk

²⁴ See newsrelease at

http://www.imaginecanada.ca/files/en/publicaffairs/budget_2009_response_release_20090127.pdf

7. Integrated community-based human services

An important subset of community-based human development is community-based approaches to integrated human services. Community-based human development is the overarching umbrella of actions at the community level that makes people's lives better, and that improve health determinants. Integrated human services are one way of addressing human development and influencing health determinants by coordinating the actions of individuals and services., The concept is to provide services to the public that streamlines and simplifies client access, increases efficiency, provides superior care and bridges traditional organizational or program boundaries.

Integrated human services are often described as 'one stop shopping', seamless service so that individuals only need to tell their story once. It is a process of breaking down traditional silos, working across boundaries and coordinating efforts in service to the client. While this model is a "problem-oriented" approach and not an asset-based approach, as described earlier in the document, the goal is always to work in partnership with the client and to empower them by removing barriers and creating straighter pathways out of poverty, ill health and other dysfunctions.

Of course, human services alone, even if well integrated, do not make a community healthy. But many people with health and social problems and human service needs find the current system complex, disjointed, uncoordinated and frustrating, and this is made worse when one considers that many of those with the greatest needs, and with needs for multiple services, are from disadvantaged groups.

So one part of an overall, community-based approach to health and human development should be the integration of human services, wherever possible, and where it makes sense for the users.

Examples of integrated human services include Quebec's CLSC's (centre local de services communautaires) and English Canada's community health centres, which are described below. In addition, Saskatchewan's experience with wide scale integration of services is also described.

As Thompson notes in a comprehensive survey of experience in Canada, US and Great Britain with integrated human services (Thompson, 2007), integration is a process and not a single model. There is no one approach that can be applied in all situations. Rather it is a goal that must be tailored to each individual situation.

Selected key informant comments about integrated services

One key informant noted this seamless approach is particularly helpful for the complex client base that represents the population most negatively impacted by health determinants:

"Many of the people who are seeking services are people who have problems and issues of many sorts and they are not capable of running around town to different services. Some of these people have low educational levels, and they may have drug/alcohol issues, or they may be a single parent encumbered by small children. So it may be difficult for them to access services for a whole bunch of reasons."

Give that process, however, there are some common elements that contribute to the success of service integration and some predictable pitfalls that can undermine their effectiveness.

7.1 Critical success factors and barriers to integrated human services

Thompson notes that barriers to integration are mentioned more often than success factors and the integration of services is not easy to do. The following success factors and barriers have been identified (Thompson, 2007):

1. Factors that contribute to an environment in which the development of successful integrated services is more likely to occur include:

- **Strong leadership** - Leaders who are champions of integration, and are passionate about and committed to this approach make a real difference. Leaders are needed in all disciplines and at both the senior management level and at the community level.
- **Governance structures** - Clearly articulated and understood governance and accountability mechanisms are critical to the success of any partnership, and they must be agreed upon at the senior level from the outset of the relationship.
- **Accountability measures** - Accountability mechanisms that are clearly articulated help measure progress and determine whether goals are being met.
- **Management skills/experienced managers** - Program managers and members of the local human service community who have many years of experience and know their communities well are important for success.
- **A clearly defined, shared mission**- A clear mission statement that is developed by representatives of the partner organizations and community members help create a sense of connection among diverse individuals and organizations.
- **A willingness to take chances, experiment and change** - Service integration means new approaches and new ways of doing things. There needs to be a willingness to take risks, and the flexibility to implement innovative strategies and to change direction if an approach is unsuccessful. Thompson notes this attitude is quite the opposite of the risk-averse culture that is typical of many government agencies.
- **A community focus** - Communities have to be actively involved in providing the resources necessary for integration, which means that communities also need to be involved in planning and implementing integrated projects (Ragan, 2003). A strong local coalition can be a powerful force for change
- **Client/citizen-centred services** - A client/citizen-centred approach to integration has two dimensions:
 - **Client consultation** – consumers and other stakeholders should be consulted on a regular basis to find out what their needs and expectations are. Community members and stakeholders need a certain level of comfort and trust in order to participate in consultations, so consultations may be preceded by opportunities to participate in non-threatening community

projects and events. At a case management level, focusing on the client means involving clients when goals for them are set and when their case is discussed by cross program teams.

- **A strength-based or asset-based approach** – Assessment and case management processes are based on an individual’s or family’s strengths rather than their deficits, and families are supported in recognizing and building on their strengths.

2. Factors that are barriers to an environment in which the development of successful integrated services is more likely to occur include:

- **Confidentiality of Information** -- Real or perceived issues around sharing of client information is one of the barriers most frequently raised. Managers who have addressed this issue, however, say that it may be something of a diversion. Staff who claim that the rules of their programs prevent information sharing, may be using confidentiality as an excuse for resisting efforts to integrate services. Ragan (2003) notes that information sharing is particularly problematic when different levels of government are responsible for program administration. In this situation, substantial time and effort may be needed to reach agreement among the various levels of government and to set up security systems that ensure only staff with the necessary clearances have access to information.
- **Resistance to Change and Change Fatigue** – Individuals, professionals and agencies may be risk adverse. All change requires a certain amount of risk; integrated service delivery requires a transformation of the way ministries, agencies, professionals and individuals traditionally do business. Integration means each player no longer has complete control over a process, service channel, etc., and that control is now shared between partners. There may be turf protection and an unwillingness to share control. Even when individuals and organizations are initially supportive of change, significant ongoing change can induce change fatigue. This is particularly true when there are decreases in budget or staff. Sometimes, people simply do not have the resources, time and emotional energy to invest in further change when the outcome is uncertain. (New Zealand State Services Commission, 2003; Rutman et al., 1998)
- **Differences in Organizational Culture** – Different organizations, and particularly different government departments, have different cultures and different ways of doing things. These cultures may have developed over decades, may be deeply entrenched, and may affect virtually all aspects of operations. Organizational culture influences matters such as organizational goals, the degree of client focus, the language used to describe functions and services, approaches to case work, procedures for communicating within the organization and with external groups, and processes and procedures used for planning. Overcoming these differences in organizational culture can be challenging. Practitioners first need to understand each others’ perspective and then to find common ground so work can proceed. Some experts say that the easiest way to do this is to set aside the goals and mandates of existing agencies, agree on a common direction and

- purpose at the beginning of an integration initiative, and establish common goals and common assumptions that will guide future work.
- **Resources Issues** – Several issues around resources can present barriers to integration.
 - **Differences in partner capacity and resources** – Larger partners with more money may feel they have the right to control the agenda. A true collaboration requires that larger partners subordinate their goals to those of the partnership (Ragan, 2003).
 - **Agreeing on the contribution from each partner** – There may be differences of opinion about the amount that each partner should contribute.
 - **Difficulty obtaining funding** – There may be problems securing funding horizontally in a silo system. Government ministries may be reluctant to contribute funds to projects if they can not see tangible benefits that link directly to their ministry.
 - **No new funding** – Sometimes governments require that an integration initiative be implemented through re-alignment of existing funding. New funding is not provided. This may force creative solutions such as breaking a development strategy down into smaller more achievable segments, where results can be demonstrated each year.

But in spite of these challenges, there are good working models in Canada of integrated health and/or human services. Perhaps the best developed and longest duration models are the CLSCs in Quebec.

7.2 Quebec's CLSCs

Over the last three decades, particularly in Quebec, some of the major efforts to improve the health of local populations have come through the use of community health centres that integrate primary and preventive health services with social services. In Quebec these are called CLSCs (centre local de services communautaires). These are community clinics which are run and maintained by the provincial government. The network offers a wide variety of services including primary health care, preventive health services, psychological counseling, supportive services such as housing resources and subsidies, and community development. The CLSC's mission is to use a global, multidisciplinary and community approach to improve the state of health and well-being of individuals in the community. Furthermore, one of its goals is to make individuals and those close to them more responsible for taking charge of their health and well-being and health services. There are 147 CLSCs spread throughout the province.

In recent years, the CLSCs are no longer independent organizations but have been merged with CSSS (Centre de santé et de services sociaux) which are the local overarching health and social services organizations that also oversee all of the health related and social services-related services in a community, including nursing homes and hospitals. In Montreal and in the Outaouais, the health services are provided by the (CSSS) which are like CLSCs but with the addition of the integration of acute care

hospitals, longterm care and rehabilitation services into the model. All services can be first accessed by a single call in the Montreal region to 8-1-1 and this will direct the individual to the right resource.

The Montreal CSSS website (www.santemontreal.qc.ca) notes CSSSs were created to meet the challenges of the population approach, which involves more proactive health care management, and helps to maintain and improve citizens' health. They have been given the responsibility to define the clinical and organizational project.

According to the Montreal CSSS, in order to create a true local network focused on population responsibility, CSSSs must rally network and community actors to progress through a series of steps that can be defined in the following manner:

- Establish a picture of the health of the territory's population, taking into account the sociodemographic profile of clientele and of the population, the health profile, i.e. determinants of health and sociodemographic and environmental trends, and the service use profile.
- Define the priorities that reflect the local vision of needs. In order to identify expected results clearly, it is necessary to secure the participation of health-network actors and of other resources within the region. It is of foremost importance for the population to be a stakeholder in the project.
- Identify effective interventions, both at the clinical and organizational levels. They must have proven effectiveness in improving the population's health and well-being.

7.3 Community health centres in English Canada

Community health centres in English Canada are non-profit, community-governed organizations that integrate primary health care, health promotion and community development services, using multi-disciplinary teams of health providers. These teams often include physicians, nurse practitioners, dietitians, health promoters, counsellors and others who are paid by salary, rather than through a fee-for-service system. Community Health Centres are sponsored and managed by incorporated non-profit community boards made up of members of the community and others who provide health and social services.

Services are designed to meet the specific needs of a defined community. In addition, CHCs provide a variety of health promotion and illness prevention services which focus on addressing and raising awareness of the broader determinants of health such as employment, education, environment, isolation and poverty. CHCs have been in existence in Canada since the 1920s; today, there are more than 300 CHCs across Canada, including some 55 CHCs in Ontario.

The approach to community health encompasses the broad factors that determine health such as education, employment, income, social support, environment and housing. Some of the typical services found in CHCs are the following:

- **Primary Care-** Health Assessment, Illness prevention; Interventions for acute and episodic illness or injury; Primary reproductive care; Early detection of initial and ongoing treatment of chronic illness; Education and support for self-care;

Support for care in hospital, home and long-term care facilities; Arrangements for 24-hour/7-day a week response; Service co-ordination and referral; active recall and maintenance of a comprehensive medical record (often electronic) for each client in the centre; Primary mental health care including psycho-social counseling; Coordination and access to rehabilitation; Support for people with a terminal illness.

- **Health Promotion and Community Capacity Building** - Smoking cessation; Asthma health promotion; Nutrition workshops; Diabetes education; Housing security and homelessness; Food security; Access to employment; Supports to immigrants and refugees such as ESL preparation; Parenting support groups; Farm safety; Breast feeding support;; Childbirth preparation; Seniors drop-in and senior recreations; Stress or Anger management; Self-esteem counselling; Violence prevention; Community justice conflict resolution; Community kitchen, gardens; Multilingual programming on a variety of topics; Youth programs; Women’s support group; and School snack programs (Association of Community Health Centres, 2009).

A recent study in Ontario found that care for people with chronic illness, particularly diabetes, was more effective through CHC’s than through traditional doctor’s offices, largely because of the network of multidisciplinary teams. The Ontario Health Quality Council’s 2008 QMonitor Report found CHCs perform significantly better than individual physicians and other health organizations in managing chronic illnesses, particularly diabetes, but they also do so with population groups that typically face greater barriers to health and health care due to poverty, inadequate housing, language, geographic isolation and other factors: “... the focus isn’t limited to health care. Its work is based on the understanding that a range of factors, including housing, employment, social connections, income and biology and gender and race, which we call the determinants of health, all affect whether people are healthy” (OHQC Annual Report, 2008).

CHC’s are very promising models but in their 30 years of existence in Canada, they have not experienced widespread support. This is a function primarily of some of the barriers noted earlier. In addition, funding models, particularly having physicians on salary, have been opposed by physician groups, as has been the sharing of control between various health professions, rather than the traditional hierarchy. New generations of physicians are showing less resistance to the community health model and to salaried positions, and many provincial governments are encouraging the creation of CHCs and/or family practice networks (a sort of virtual CHC) as part of primary care reform.

7.4 Human services integration in Saskatchewan

Other than CLSCs and Community Health Centres, there appears to have been surprisingly few systematic attempts to integrate other human services in Canada. Where there are models, they are either partial (e.g. health and social services are integrated in Quebec, Manitoba has a multi-ministry focus on children) or primarily local (e.g. some multi-service centres in Ontario). Only one province appears to have made a systematic attempt to more closely integrate a broad cross-section of human services at a provincial and regional level – Saskatchewan.

Saskatchewan has had an integrated approach to the delivery of human services since 1989 and was one of the first jurisdictions to adopt this approach. Service integration is coordinated through two organizational structures: the Human Service Integration Forum (HSIF) and the ten Regional Intersectoral Committees (RICs).

- The Human Services Integration Forum is comprised of Associate/Assistant Deputy Ministers of provincial government departments that provide human services including the departments of Education; Justice and Attorney General; Health; Social Services; First Nations and Métis Relations; Tourism, Parks, Culture, and Sport; and Corrections, Public Safety and Policing. The Human Services Integration Forum provides coordination of human services initiatives at the senior government level. An Executive Director supports the Human Services Integration Forum and the Regional Intersectoral Committees and coordinates strategic planning for service integration in Saskatchewan.
- Each of the ten RICs covers a specific area of the province. Each RIC has unique membership including representatives from provincial and federal government departments, schools, police, First Nations and Métis organizations, and other local human service organizations including community-based organizations. The RICs are responsible for coordinating human services at a regional level and for building community capacity. Each RIC is supported by a coordinator who is funded by the provincial government.²⁵

Recently, there has been an emphasis on renewing, revitalizing and re-energizing integrated services in Saskatchewan. This renewal of human service integration is the beginning of the second generation of integration in this province. In contrast, most integration initiatives underway in other jurisdictions are at the first generation stage

One example of services integration is in Regina where a community services village is centred at a foodbank bringing together 20 agencies who serve people who experience poverty. It required significant infrastructure cost to have a facility with that much space. But it is very convenient for clients and much easier for agencies to work together

7.5 Healthy Child Manitoba

In 1999, the Manitoba government committed to making early childhood development a government-wide priority. The following year, the government created Healthy Child Manitoba (HCM) and established the Healthy Child Committee of Cabinet, Canada's first and only long-standing cross-ministry cabinet committee dedicated to children and youth. The cabinet committee features the ministers of eight ministries (Healthy Living; Health; Aboriginal and Northern Affairs; Justice; Culture, Heritage and Tourism; Labour and Immigration; Education, Citizenship and Youth; Family Services and Housing.) These eight government partners share responsibility for developing, coordinating and implementing Manitoba's child-centred public policy, sharing a common goal to give all Manitoba children the best possible outcomes.

²⁵ Based largely on Thompson, 2007

The cabinet committee is supported by a deputy ministers committee as well as the Healthy Child Manitoba Office, which not only does policy development, community development and program evaluation, but acts as staff and secretariat to the two government committees.

While the unique cabinet committee sustains the political commitment and vision, the program also relies on strong community leadership and engagement. Across the province, 26 Parent-Child Centred Coalitions collectively decide what services and supports will best meet the needs of families in that specific area. This community development-centred approach brings together parents, school divisions, early childhood educators, health professionals and other community organizations through regional and community coalitions to support positive parenting, improve children's nutrition and physical health, promote literacy and learning, and build community capacity.

The objectives of HCM are to:

- research, develop, fund and evaluate innovative initiatives and long-term strategies to improve outcomes for Manitoba's children;
- coordinate and integrate policy, programs and services across government for children, youth and families using early intervention and population health models;
- increase the involvement of families, neighbourhoods and communities in prevention and early childhood development services (ECD) through community development; and
- facilitate child-centred public policy development, knowledge exchange and investment across departments and sectors through evaluation and research on key determinants and outcomes of children's well-being.

According to a positive summary in a 2006 article (Health Council of Canada, 2006), the result has been a strong web of public services that support children and families, including:

- prenatal benefit to help low-income women buy healthy food during pregnancy;
- a Stop FAS (fetal alcohol syndrome) program that matches mentors with women who are at risk of having a baby affected by alcohol;
- a universal screening program that reaches 90 per cent of newborns and their parents and offers family supports, such as home visits from the Family First program and links to local parenting programs;
- the Triple P Positive Parenting Program, internationally recognized for its capacity to build parenting skills and reduce behavioural issues; and
- early childhood development programming, such as a popular program called Alphabet Soup, which combines healthy eating with parent and child reading and language activities, building family literacy skills while helping parents learn about affordable nutrition. Alphabet soup uses local parents as volunteers and facilitators as part of community capacity building.

Other HCM activities in recent years include:

- improving primary health care services for teens through the expansion of teen clinics in the province.
- working collaboratively with partner departments on developing a FASD strategy.
- enhancing relationships with federal departments at the regional level, including Public Health Agency of Canada (PHAC) and First Nations Inuit Health Branch (FNIHB); and
- advancing the Healthy Child Manitoba Provincial Research and Evaluation Strategy. Evaluation of the project includes working with all 38 school divisions in the province to assess children's school readiness in kindergarten, examining the emotional, social and developmental maturity and their physical health during each child's kindergarten year. Other long-term evaluation strategies are being developed such using the National Longitudinal Survey of Children and Youth (NLSCY) and the development of a Manitoba- specific longitudinal study modeled after the NLSCY.

While the results of this long-term, integrated commitment are still in their infancy, it appears the political commitment is being maintained, making the Healthy Child Manitoba program one to watch in Canada for its impact on the health status of Manitoba's children.²⁶

7.6 A vision for integrated health and human development services

While there are a number of potentially useful models of health and/or human services integration, there seems to be a lack of vision of what such a system might be in the future. One attempt to develop such a vision came from the work of a team that was creating the design of a new community – Seaton – that was being planned by the Ontario government in the 1990's. In the end the community was not built, but as part of its comprehensive design (which placed third in the design competition), the CEED²⁷ Consortium's Community group developed a comprehensive human development strategy.²⁸

The strategy was based on three key principles, which were in order of priority:

- **build community**: build a strong, supportive, tolerant community committed to the welfare of its members - present and future - and the protection and enhancement of its environment;

²⁶ Sources: Sale (2003), Government of Manitoba (2007) and Healthy Child Manitoba Government website, www.gov.mb.ca/healthychild/

²⁷ Community, Environment, Economy, Design

²⁸ Human wellbeing/development was just one of seven elements considered in the CEED Consortium's design for Seaton; the others were governance, ecosystem health, economic vitality, sustainable development, environmental quality and social equity.

- promote wellbeing and prevent problems: emphasize the promotion of wellbeing, the prevention of problems and the mobilisation of the self-help and mutual aid and support capacity of the community;
- meet needs and provide services: provide a comprehensive range of human services in an integrated system that is developed from the household level on up as an integral part of the community and the Pickering and Durham communities of which Seaton is a part.

The strategy had two main thrusts, which were complementary:

- emphasizing the creation of a strong community culture, the promotion of wellbeing and the prevention of problems ahead of the provision of services; and,
- building from the household level on up.

The key elements of the promotion/prevention component of the overall human, social and cultural strategy were:

1. Meet basic needs for all
2. Raise healthy children
3. Make work a source of wellbeing
4. Ensure healthy aging
5. Stimulate creativity and innovation
6. Create a sense of community
7. Ensure security
8. Enable people to become empowered
9. Provide promotive and preventive human services

The concept of building from the household level up applied not only to the human services system, but was in fact applied to the overall design of the whole community. It was recognised that in designing human services at the household, block and neighbourhood level, attention would have to be paid to the human service needs of individuals and the need for spaces and facilities to meet those needs. As a matter both of efficiency and of creating a greater sense of community, multi-use facilities managed by the block, the neighbourhood and the village were proposed. An example of the design implications is shown in Table 1, which explores what facilities might be needed at each level for two aspects of human development – learning and community services. A detailed description of health services based on this model can be found in Hancock, 1999.

Table 1: Some implications for selected human services by design levels, CEED proposal for Seaton design competition, 1994

<u>Design level</u>	<u>Learning Centre</u>	<u>Community Services Centre</u>
Household	<ul style="list-style-type: none"> • Interactive video terminal linked to the Seaton Electronic Learning Network and Community Information and Resource Centre 	<ul style="list-style-type: none"> • On-line access to the neighbourhood, village and town CSCs for advice and support. • On-line access to the Self-Help Clearing House and its self-help and self-care software. • Hard-wired house alarms (fire/smoke, seniors help, burglar)
Block	<ul style="list-style-type: none"> • On -line learning and resource rooms in large population blocks (i.e. multi-units). • Common spaces for play, recreation, crafts and other uses. 	<ul style="list-style-type: none"> • Community service rooms in large blocks for visiting human service workers.
Neighbourhood	<ul style="list-style-type: none"> • Elementary community school as centre for lifelong learning, with community recreational and cultural facilities, including community information and resource centre. 	<ul style="list-style-type: none"> • Housing for people with special needs
Village	<ul style="list-style-type: none"> • Community high school with community facilities for lifelong learning and recreation, including craft and hobby spaces, pool, gym, art and cultural spaces, library etc 	
Town	<ul style="list-style-type: none"> • Eco-Community College, home base for Seaton Electronic Learning Network, main cultural facilities including performance space, museum/gallery etc 	

8. Towards a national approach to supporting local action for population health and human development.

While there is undoubtedly a role for the federal governments in supporting the new community governance processes and structures needed to develop personal and community resilience and to build (on) community and individual capacity, it is important to recognize the vital role that must also be played by provincial governments. There are two important reasons for this: First, because municipal governments are established by provincial governments, and second because as Torjman (2007) notes:

“Many of the substantive areas with which this [communities] agenda is concerned – decent affordable housing, literacy and training and employment [and, one might add, education and health services] fall primarily within provincial domain.”

And of course, municipal governments also play a key role in areas that affect health and human development such as land use planning, transportation, waste management, parks and recreation, social services, social housing and other areas.

In a chapter entitled “Creating an enabling environment” Torjman (2007) examines the emerging role of federal and provincial governments and other (philanthropic) funders in strengthening community governance and enabling and supporting communities in developing personal and community resilience, beyond their role in investing directly in services, programs and facilities in communities.

She describes the new role as that of “enablers of complex community processes” and suggests that this requires these funders to enable “knowing, doing and reviewing – building the evidence base, developing collaborative relationships and reviewing progress” (p 244). She provides a number of ideas for how this might be done:

- Enabling knowing involves sharing with the community information held by governments (e.g. the Community Accounts Project begun in Newfoundland and Labrador, and now being copied in other provinces); supporting community-based and community-driven research and the collection and analysis of information; supporting links between communities and researchers (e.g. the Community-University Research Alliances program of SSHRC); and sharing knowledge and experience between communities. (Here it is useful to recall John McKnight’s oft-repeated adage that “institutions learn from studies, but communities learn from stories”.)
- Enabling doing by supporting community governance processes that work collaboratively to address complex problems; investing “patient capital” in this process over the long term; participating “as active partners” and sharing information on good practice from across the country; and by modelling coordination and collaboration in their own work by working horizontally and adopting a ‘whole of government approach.
- Enabling reviewing by supporting learning within and between communities, including reflective practice, behavioural assistance and skills development.

It is vitally important to recognize that in seeking to build (on) community capacity to improve health and human development, there is no single model that can be applied to all communities. Every community is different in terms of its history, the problems it faces, the resources it can bring to bear and the relationships that already exist within the community, and between the community and other, higher levels of government.

Selected key informant comments about single models

“I don’t think you can take a model from one place and transpose it to another area. . . . I would definitely say that one size definitely does not fit all.”

“I think that one of the things that we now recognize is that rather than talking about models, we talk more about principles.”

Nonetheless, based on the research we have conducted for this report, the views of the key informants, and my own experience over the past 25 years of work in healthy cities and communities, the following observations can be made.

1. Many of the determinants of health have their effects at the community level, in the settings – homes, schools, workplaces, neighbourhoods – where people live, learn, work and play.
2. Communities – even the most challenged and disadvantaged communities such as the Cree community of Ouje-Bougomou described earlier in this report – have significant and sometimes astonishing strengths, capacities and assets that can be used by the community to address their problems and to enhance their health, wellbeing and level of human development.
3. Provincial and federal governments, philanthropic organizations and the private sector would be wise to recognize the strengths inherent in communities, and to build upon and enhance community capacity by adopting the strategy of investing in asset-based community development.
4. Such a strategy requires, among other things:
 - a. Recognizing the vital role played by municipal governments in creating the conditions for health and human development, making them key partners, and strengthening their powers (including their taxing powers).
 - b. Adopting a holistic ‘whole-of-government’ approach to issues of population health and human development at all levels of government, from the federal to the local.
 - c. Encouraging and supporting the creation of community governance processes and structures that enable the many stakeholders in the community – public, non-profit, private and community sectors, as well as individual citizens – to identify and define local community issues and solutions and to develop long-term, asset-based strategies to address them.
5. This in turn requires a commitment by governments and philanthropic organizations to long-term funding of this community governance infrastructure. Specifically this means a commitment to provide less narrowly targeted and short-term funding and more long-term general funding that communities can use in

- ways that they see fit to address the challenges they have defined and to build the community capacity they require.
6. At both the national and provincial levels, there is a need to establish (or where they already exist, to greatly strengthen) national and/or provincial organizations that can support the creation of healthy schools, healthy workplaces and healthy communities. These organizations would facilitate and support the creation of community governance infrastructures, undertake research, share knowledge and experience, develop tools and ‘train that trainers’.
 7. Any national effort to improve population health and human development health through community-based action to create healthier communities needs to include a national effort to develop new measures of progress, so that our progress towards these broad societal goals can be tracked. These new measures need to be applicable at all levels from the national to the local, and their development needs to be done in partnership with communities, as part of the development of the community’s capacity to understand itself and its situation, a necessary prerequisite for taking action
 8. As one part of building (on) community capacity, governments should develop more integrated systems of human development services. Particularly in disadvantaged communities, these services should be co-located close to the people who use or need them; they should be easy to use and navigate (‘one-stop shopping’) and where possible they should be housed in a single facility that maximizes the use of the shared space throughout the day.

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Appendix 1: Healthy cities and communities - then²⁹

"The greatest contribution to the health of the nation over the past 150 years was made not by doctors or hospitals but by local government."

--Dr. Jessie Parfitt, in *The Health of a City: Oxford, 1770-1974*

History shows us why it makes sense to address population health at the community level. As Dr. Thomas McKeown noted in his famous writings in the 1970s (McKeown, 1979), the great gains of life expectancy and human health over the last 200 years came from clean water, improved sanitation and sewage control, better nutrition and increased standards of living – all occurring at the community level, and none of them the result of improved health care per se.

Indeed, attempts to improve the health of cities and their citizens date back at least to the time of Hippocrates, the Greek "father of medicine" who was the first to observe that disease was often related to factors like diet, physical fitness, and living environment (Hippocrates, 400 BC). Renaissance Italy, in its fight against successive waves of plague, recognized the link between ill health and place. They set up city health boards, called Special Magistracies, that combined legislative, judicial, and executive powers in the city or region. These boards exercised authority over all matters pertaining to health of the population, including include everything from the food system to public works like sewage, water and refuse, the provision of services and the regulation of economic activities like hostelry and prostitution.(Cipolla, 1976).

In the 19th Century, European, British and North American cities witnessed serious health problems spurred by the industrial revolution, particularly overcrowding, malnutrition, poor or unsafe housing, and inadequate provision for water, sanitation, waste removal, and pollution control. This led to the emergence of the sanitary ideal and the public health movement, initially in Victorian England and then throughout the industrialising countries of Europe and North America. Cities became a prime focus for the work of public health, from the establishment of the Health in Towns Commission in Britain in 1843, through the description by Sir Benjamin Ward Richardson in 1875 of "Hygeia," as a comprehensive and detailed vision of a "City of health" in an idealized future.

In Canada, the Commission on Conservation, created by the Canadian government in 1909, included a Public Health Committee which addressed the issue of town planning because it noted it encompassed both the physical (conservation of natural resources) and the vital (protection of people's health.) Their work led to a national conference in 1913, and they secured the services of Thomas Adams, a renowned advocate and practitioner of town planning from the UK. As the commission's town planning adviser, from 1914 to 1919, he revised the commission's model town planning bill and had a hand in preparing town planning bills in most of the provinces, prepared a pioneer document on rural planning and development, consulted with nearly forty local councils, wrote for a quarterly bulletin called Conservation of Life put out by the Commission, helped to organize the Civic Improvement League, and in 1919 was elected as the first president of the Town Planning Institute of Canada. At the same time, in Toronto, and inspired by similar ideals, Dr Charles Hastings, the Medical Officer of Health from 1910 – 1929, led

²⁹ Based on Hancock, 1990

the city to becoming the “Healthiest of Large Cities” in the world (MacLean's Magazine, July 1919) and the Department of Public Health to become internationally recognized.

In the United States, a similar focus on healthy cities was taking shape. The Inter-Chamber Health Conservation Contest was established in 1929 by the U.S. Chamber of Commerce in partnership with the American Public Health Association, the National Association of Life Underwriters, and the U.S. Public Health Service. The contest ranked cities on the basis of sanitary measures, disease prevention, health promotion, financial support for health work, and death rates. The purpose was two-fold: to acquaint citizens, particularly businessmen, with the local health agency and the community's local health problems “with the aim to bring about improvements and economic gain;” and second, to reduce preventable illness and untimely death (Gold, 1930). For six consecutive years between 1929 and 1935, the city of Milwaukee, Wisconsin - which in Maclean's Magazine had been ranked second to Toronto - came in first or second in the contest for the large city category (500,000+ population).

Thus we can see that the health of towns and cities was a matter of international and national concern for the best part of a century. What this history lesson teaches us, as Jessie Parfitt noted, is indeed that “The greatest contribution to the health of the nation over the past 150 years was made not by doctors or hospitals but by local government.”

Sadly, with the advent of modern medicine in the 1930s, when the first antibiotics became available, and the explosion of effective medical and surgical care that followed the Second World War, the importance of public health was diminished, and the hard won lessons, if not lost, became neglected. It was not until the Lalonde Report in 1974 stated that there were four ‘health fields’ – of which health care was but one - and that future improvements in the health of Canadians would largely result from improvements in lifestyle and environments – that the balance began to shift again, and with it we saw the re-emergence of a modern-day healthy cities and communities movement.

Appendix 2: Healthy cities and communities - now

The world-wide healthy cities and communities movement had its modern origins in Canada, at a 1984 conference held to celebrate the centennial of the Local Board of Health and the sesquicentennial of the City of Toronto. The conference, which was entitled “Beyond Health Care” (Hancock, 1985) was the first conference to explore the concept of ‘healthy public policy’ and was linked to a one-day workshop – “Healthy Toronto 2000.” The idea was to envision a future city in the context of the Department of Public Health’s goal of making Toronto once again “the healthiest city in North America.” The keynote presentation was by Len Duhl, a pioneer of the healthy community concept in the 1960s and a professor of public health at Berkeley, CA.

The idea of a ‘healthy city’ was picked up by attendee Ilona Kickbusch, then Health Promotion Officer for WHO in Europe. She saw in the healthy city concept the potential to take health promotion then under development at WHO Europe onto the streets of the cities of Europe, to take global concepts and apply them locally and concretely.

In January 1986, a small group of health promoters, convened by Kickbusch, gathered at the WHO Regional Office for Europe in Copenhagen to plan a WHO Europe healthy cities project. The WHO planning group anticipated that their project might attract the interest of six to eight cities. But the WHO Europe Healthy Cities Project began with a Healthy Cities symposium in Lisbon in April 1986, attended by fifty-six participants from twenty-one cities and seventeen countries. Eleven cities were selected for the WHO project in 1986, but the popularity of the project translated to the selection of another fourteen cities in 1988, growing to thirty-five cities by 1991.

Today, there are Healthy Cities networks established in all six WHO regions, including more than 1200 cities and towns from over 30 countries in the WHO European Region; these cities are linked through national, regional, metropolitan and thematic networks. In the Pan-American Region it is known as ‘healthy municipalities’ and involves hundreds of municipalities in many countries, particularly Mexico and Brasil. There is also a very strong Healthy Cities network in the South East Asia Region, a ‘healthy villages’ network in the Eastern Mediterranean Region, a small healthy cities network in the African Region and a ‘healthy islands’ network in the Western Pacific Region.

The WHO Europe Healthy Cities program engages local governments in health development through a process of political commitment, institutional change, capacity building, partnership-based planning and innovative projects. It promotes comprehensive and systematic policy and planning with a special emphasis on health inequalities and urban poverty, the needs of vulnerable groups, participatory governance and the social, economic and environmental determinants of health. It also strives to include health considerations in economic, regeneration and urban development efforts.

The WHO Europe Healthy Cities program has just finished its fourth phase (2003–2008). Cities currently involved in the Phase IV Network worked on three core themes: healthy ageing, healthy urban planning and health impact assessment. In addition, all participating cities focused on the topic of physical activity/active living. Now Phase V has begun (2009–2013).

The overarching theme for Phase V is health and health equity in all local policies. “Health in all policies” is based on a recognition that population health is not merely a product of health sector activities but largely determined by policies and actions beyond the health sector. As part of the launch of Phase V European mayors and civic leaders who are members of the healthy cities network have pledged to promote health, prevent disease and disability, and take systematic action on inequality at the civic level. City leaders will be advocates and custodians of their citizens’ health.³⁰

³⁰ This section on the global movement is based largely on information found at www.euro.who.int/healthy-cities

Appendix 3: Key informants

- Paul Born, President, Coach and Strategic Consultant, Tamarack - An Institute for Community Engagement, Waterloo, Ontario
- Joey Edwardh, Executive Director, Community Development Halton, Burlington Ontario
- Ron Labonté, Canada Research Chair in Globalization and Health Equity, Institute of Population Health, University of Ottawa
- Louise Potvin, CHSRF Chair in Community Approaches to Inequalities in Healthcare, Department of Social and Preventive Medicine, Université de Montréal
- Lorraine Thompson, Lorraine Thompson Information Services Limited, Regina, Saskatchewan
- Sherri Torjman, Vice president, Caledon Institute of Social Policy, Ottawa, Ontario

LIST OF WITNESSES

39th Parliament 1st Session		
ORGANIZATION	NAME, TITLE	DATE OF APPEARANCE
World Health Organization Commission on the Social Determinants of Health	The Honourable Monique Bégin, P.C., Commissioner	22-02-2007
Institute of Population Health	Ronald Labonté, Canada Research Chair in Globalization and Health Equity	28-02-2007
Provincial Health Services Authority, B.C.	Dr. John Millar, Executive Director, Population Health Surveillance and Disease Control	28-02-2007
School of Health Policy and Management - York University	Dennis Raphael, Professor	28-02-2007
Public Health Agency of Canada	Jim Ball, Director, Development and Partnerships Division, Strategic Policy Directorate, Strategic Policy, Communications and Corporate Services Branch Maura Ricketts, Acting Director General, Office of the Public Health Practice, Public Health Practice and Regional Operations Branch Dr. Syvlie Stachenko, Deputy Chief Public Officer, Disease Prevention	21-03-2007
Kunin-Lunenfield Applied Research Centre	Sholom Glouberman, Associate Scientist	21-03-2007
Statistics Canada	Michael Wolfson, Assistant Chief Statistician, Analysis and Development	21-03-2007
Institute of Population and Public Health	Dr. John Frank, Scientific Director of the Canadian Institutes of Health Research	28-03-2007
Global Health and Social Policy	Dr. Jody Heymann, Canada Research Chair in Global Health and Social Policy	28-03-2007
McGill University	Dr. John Lynch, Canada Research Chair in Population Health	28-03-2007

Public Health Agency of Canada	Jim Ball, Director, Development and Partnership Division, Strategic Policy Directorate	25-04-2007
Indian and Northern Affairs Canada	Marc Brooks, Director General, Community Development Branch, Socio-economic Policy and Regional Operations sector	25-04-2007
Centre for Aboriginal Health Research, University of Manitoba	John O'Neil, Professor and Director	25-04-2007
Health Canada	Ian Potter, Assistant Deputy Minister, First Nations and Inuit Health Branch	25-04-2007
Institute of Aboriginal People's Health (IAPH) for the Canadian Institutes of Health Research (CIHR)	Dr Jeff Reading, Scientific Director	25-04-2007
Research Faculty/Saskatchewan Population Health and Evaluation Research Unit	Sylvia Abonyi, Canada Research Chair in Aboriginal Health	02-05-2007
National Aboriginal Health Organization (NAHO)	Mark Buell, Manager, Policy and Communication Unit	02-05-2007
University of British Columbia - Department of Psychology	Dr. Michael J. Chandler, University of British Columbia Professor and Distinguished Canadian Institutes for Health Research (CIHR) and Michael Smith Foundation for Health Research (MSFHR) Investigator	02-05-2007
National Aboriginal Health Organization (NAHO)	Carole L. Lafontaine, Acting Chief Executive Officer	02-05-2007
Toronto University	Dr. Kue Young, Professor, Department of Public Health Services	02-05-2007
Observatory on Ageing and Society (OAS)	Dr. André Davignon, Founder	16-05-2007
Nova Scotia Department of Health	Valerie J. White, Executive Director, Seniors Secretariat	16-05-2007
Public Health Agency of Canada - Division of Ageing and Seniors	Margaret Gillis, Director	16-05-2007
Canadian Association on Gerontology	Mark Rosenberg, Professor Queen's University	16-05-2007

The CHILD Project	Dr. Hillel Goelman, Director, Senior Scholar, Human Early Learning Partnership (HELP)	30-05-2007
Canadian Institutes of Health Research	Dr. Michael Kramer, Scientific Director, Institute of Human Development, Child and Youth Health	30-05-2007
Council of Early Child Development	Stuart Shankar, Professor, President	30-05-2007
Manitoba Métis Foundation	Dr. Judy Bartlett, Director of Health and Wellness Department and Associate Professor, Department of Community Health Science, Faculty of Medicine, University of Manitoba	31-05-2007
Métis National Council	David Chartrand, Minister of Health Marc LeClair, National Advisor to the Minister of Health Rosemarie McPherson, National Spokesperson for Women of the Métis Nation	31-05-2007
BC Ministry of Health	Dr. Evan Adams Aboriginal Health Physician Advisor, Office of the Provincial Health Officer	01-06-2007
Manitoba Métis Foundation	Dr. Judy Bartlett, Director of Health and Wellness Department and Associate Professor, Department of Community Health Science, Faculty of Medicine, University of Manitoba	01-06-2007
Institute of Aboriginal Peoples' Health	Laura Commanda, Assistant Director, Partnerships, Knowledge Translation and International Relations	01-06-2007
Pauktuutit Inuit Women of Canada	Jennifer Dickson, Executive Director	01-06-2007
Native Women's Association of Canada	Claudette Dumont-Smith, Senior Health Advisor	01-06-2007
Indigenous People's Health Research Centre	Willie Ermine, Professor, Writer - Ethicist	01-06-2007
Inuit Tapiriit Kanatami	Anna Fowler, Project Coordinator, Department of Health	01-06-2007
National Association of Friendship Centres	Alfred J. Gay, Policy Analyst	01-06-2007

Assembly of First Nations	Valerie Gideon, Director of Health and Social Development	01-06-2007
University of Alberta	Malcom King, Professor, Department of Medicine	01-06-2007
Aboriginal Nurses Association of Canada	Julie Lys, directrice, Région des Territoires du Nord-Ouest	01-06-2007
Toronto University	Chandrakant P. Shah, professeur émérite	01-06-2007
Congress of Aboriginal Peoples	Erin Wolski, coordonnatrice des programmes de politique sanitaire	01-06-2007

39th Parliament 2nd Session		
Ministry of Health and Social Affairs	Irene Nilsson-Carlsson, Deputy Director General, Public Health Division	22-11-2007
Swedish National Institute of Public Health	Dr. Gunnar Agren, Director General Bernt Lungren, Public Health Policy Expert	22-11-2007
Karolinska Institute, Department of Public Health Sciences	Dr. Pirooska Ostlin, Senior Researcher	22-11-2007
The Quaich Inc.	Patsy Beattie-Huggan, President	28-11-2007
McMaster University	John Eyles, Professor, School of Geography and Earth Sciences	28-11-2007
PEI Department of Health	Teresa Hennebery, Assistant Deputy Minister, Health Operations	28-11-2007
Group d'étude sur les politiques et la santé	France Gagnon, PhD, Professor and Co-Chair	05-12-2007
University of Montreal	Nicole Bernier, PhD, Assistant Professor	05-12-2007
U.K. Department of Health	Dr. Fiona Adshead, Director General of Health Improvement	11-12-2007
B.C. Interior Health Authority	Lex Baas, Director of Population Health	12-12-2007
University of British Columbia	Jim Frankish, Professor and Program Director	12-12-2007
Ontario Ministry of Health Promotion	Pegeen Walsh, Director Chronic Disease Prevention	06-02-2008
Toronto Central Local Health Integration Network	Laura Pisko-Bezruchko, Senior Director, Planning	06-02-2008
University of Ottawa Heart Institute	Dr. Andrew Pipe, Medical Director, Prevention and Rehabilitation Centre	06-02-2008
Canadian Institute for Health Information	Glenda Yates, President and Chief Executive Officer Keith Denny, Acting Manager	13-02-2008

University of Manitoba	Noralou Roos, Professor, Faculty of Medicine	13-02-2008
Public Health Agency of Canada	Jim Ball, Director General, Strategic Initiatives and Innovations	27-02-2008
Treasury Board of Canada	Sally Thornton, Indian Affairs and Health	27-02-2008
Finance Canada	Yves Giroux, Acting Director, Social Policy	27-02-2008
McMaster University	Dr. Salim Yusuf, Professor, Department of Medicine	02-04-2008
McMaster University	Dr. Sonia Anand, Associate Professor, Department of Medicine	09-04-2008
Queen's University	Karen Hitchcock, Principal and Vice-Chancellor Kristan Aronson, Professor of Epidemiology	09-04-2008
World Health Organization Commission on the Social Determinants of Health	The Honourable Monique Bégin, P.C., Commissioner	18-04-2008
McMaster University	Gina Brown, Professor of Nursing and Clinical Epidemiology	18-04-2008
Public Health Agency of Canada	Dr. David Butler-Jones, Chief Public Health Officer	18-04-2008
Institute for Research on Public Policy	Mel Cappe, President	18-04-2008
As individuals	Laura Corbett, Consultant David Dodge, Former Governor of the Bank of Canada Beverly Nickoloff, Consultant John Wright, Former Deputy Minister of Finance and Health, Saskatchewan	18-04-2008
Access Consulting	Steven Lewis, Consultant	18-04-2008
Canadian Public Health Association	Debra Lynkowski, Chief Executive Officer	18-04-2008
Conference Board of Canada	Diana MacKay, Associate Director, Education and Learning	18-04-2009
Canadian Policy Research Network	Sharon Manson Singer, President	18-04-2008

Dalhousie University	Lars Osberg, Department of Economics	18-04-2008
University of Montreal	Louise Potvin, Professor, Department of Social and Preventative Medicine	18-04-2008
Institute of Aboriginal People's Health for the Canadian Institutes of Health Research	Dr. Jeff Reading, Scientific Director	18-04-2008
Canadian Medical Association	William Tholl, Secretary General	18-04-2008
Canadian Centre for Policy Alternatives	Armine Yalnizyan, Senior Economist	18-04-2008
Canadian Institute for Health Information	Glenda Yeates, President and Chief Executive Officer	18-04-2008
Statistics Canada	Michael Wolfson, Assistant Chief Statistician, Analysis and Development	30-04-2008
Institute of Population and Public Health	Dr. John Frank, Scientific Director of CIHR	30-04-2008
Human Resources and Social Development Canada	Cliff Halliwell, Director General, Strategic Policy Research Directorate	30-04-2008
Indian and Northern Affairs Canada	Marc Brooks, Director General, Community Development Branch, Socio-economic, Policy and Regional Operations	30-04-2008
National Collaborating Centre for Determinants of Health	Hope Beanlands, Scientific Director	07-05-2008
National collaborating Centre for Healthy Public Policy	François Benoit, Scientific Director	07-05-2008
National Collaborating Centre for Environmental Health	Dr. Ray Copes, Scientific Director	07-05-2008
National Collaborating Centre for Aboriginal Health	Margo Greenwood, Scientific Director	07-05-2008
Federation of Canadian Municipalities	Michel Frojmovic, Director, Acacia Consulting & Research	14-05-2008
Canadian Council on Social Development	Pat Steenberg, Project Coordinator, Community Social Data Strategy	14-05-2008
Atkinson Foundation	Lynne Slotek, National Project Director, Canadian Index of Wellbeing	14-05-2008

Provincial Health Services Authority, B.C.	Dr. John Millar, Executive Director, Population Health Surveillance and Disease Control	14-05-2008
Newfoundland and Labrador, Department of Finance	Alton Hollett, Assistant Deputy Minister, Economics & Statistics Branch Robert Reid, Senior Manager, Community Accounts, Economics & Statistics Branch	30-05-2008
Memorial University of Newfoundland	Roy West, Professor Emeritus of Epidemiology	20-05-2008
	Shawn Skinner, Minister of Human Resources, Labour and Employment, Government of Newfoundland and Labrador	20-05-2008
Newfoundland and Labrador, Department of Human Resources, Labour and Employment	Lynn Vivian-Book, Assistant Deputy Minister, Income Employment and Youth Services Aisling Gogan, Director, Poverty Reduction Strategy	20-05-2008
Newfoundland and Labrador, Department of Health and Community Services	Eleanor Swanson, Director, Wellness Team	20-05-2008
Community Services Council, Newfoundland and Labrador	Darlene Scott, Senior Program Associate Peggy Matchim, Coordinator, Vibrant Communities	20-05-2008
Newfoundland and Labrador, Department of Health and Community Services	Joy Maddigan, Assistant Deputy Minister	21-05-2008
Newfoundland and Labrador, Department of Human Resources, Labour and Employment	Aisling Gogan, Director, Poverty Reduction Strategy	21-05-2008
Rural Secretariat, Executive Council	Gerald Crane, Director of Partnership Research and Analysis	21-05-2008
RCMP Corporate Planning and Client Services, Newfoundland and Labrador	Sergeant Doug Ross, Non-Commissioned Officer in Charge	21-05-2008
Eastern Health	Lisa Browne, Planning Specialist	21-05-2008
Kids Eat Smart Foundation	Susan Green, Consultant	21-05-2008

Capital Coast Development Alliance	Christine Snow, Executive Director	21-05-2008
Newfoundland and Labrador, Department of Finance	Alton Hollett, Assistant Deputy Minister, Economics & Statistics Branch	21-05-2008
United Nations Association in Canada	Kathryn White, Executive Director	28-05-2008
The Society of Obstetricians and Gynecologists of Canada	Dr. André Lalonde, Executive Vice-President	28-05-2008
Canadian Pediatric Society	Marie Adèle Davis, Executive Director	28-05-2008
Canadian Medical Association	Dr. Kathryn Bigsby, Chair, Child Health Working Group	28-05-2008
University of Victoria	Marcia Hills, Director, Centre for Community Health Promotion	05-06-2008
Laval University	Maria De Koninck, Professor, Department of Social and Prevention Medicine	05-06-2008
University of Regina	Shanthi Johnson, Saskatchewan Population Health and Evaluation Research Unit	05-06-2008
Ontario Ministry of Health and Long-Term Care	Richard Prial, Director, Strategic Alignment Branch	05-06-2008
As an individual	The Honourable Carolyn Bennett, P.C., M.P., Former Minister of State (Public Health)	11-06-2008
University of Alberta	Deanna Williamson, Associate Professor, Department of Human Ecology	11-06-2008
Saskatoon Health Region	Dr. Cordell Neudorf, Chief Medical Health Officer, Public Health Services	11-06-2008
Canadian Environmental Assessment Agency	John Smith, Director, Legislative and Regulatory Affairs Tim Smith, Senior Policy Advisor	18-06-2008
Centre de collaboration nationale – Politiques publiques et santé	Louise Saint-Pierre, Project Manager	18-06-2008

40th Parliament 2nd Session		
Institute for Research on Public Policy	Mel Cappe, President	26-02-2009
The Sussex Circle	Jim Mitchell, Founding Partner	26-02-2009
As an individual	Dr. Trevor Hancock, Health Promotion Consultant	05-03-2009
Information Partnership	David Hay, Principal	05-03-2009
University of Western Ontario	Neil Bradford, Associate Professor, Political Science, Huron University College	05-03-2009
Vancouver Agreement	Christine Lattey, Executive Coordinator	05-03-2009
Western Economic Diversification Canada	Michelle Neilly, Director General, BC Operations	05-03-2009
Canadian Council on Social Development	Katherine Scott, Vice-President, Research	12-03-2009
Health Nexus	Connie Clement, Executive Director	12-03-2009
Wellesley Institute	Bob Gardner, Director, Policy and Research	12-03-2009
Assembly of First Nations	Bob Watts, Chief Executive Officer	25-03-2009
Inuit Tapiriit Kanatami	Rosemary Cooper, Director of Executive Services	25-03-2009
Métis Nation - Saskatchewan	Robert Doucette, President	25-03-2009
Assembly of First Nations	Rose Sones, Assistant Director, Strategic Policy for Health and Social Gina Doxtator, Health Policy Analyst	25-03-2009
Inuit Tapiriit Kanatami	Elizabeth Ford, Director of Health and Environment	25-03-2009
Métis National Council	Barbara Van Haute, Director, Programs Development	25-03-2009
National Aboriginal Health Organization	Paulette Tremblay, Chief Executive Officer	25-03-2009
Native Women's Association of Canada	Erin Wolski, Health Director	25-03-2009

Aboriginal Nurses Association of Canada	Rosella Kinoshameg, President	26-03-2009
Health Canada	Kathy Langlois, Director General, Community Programs Directorate, First Nations and Inuit Health Branch Catherine Lyons, Director General, First Nations and Inuit Health Branch Shelagh Jane Woods, Director General, Primary and Public Health, First Nations and Inuit Health Branch	26-03-2009
Indian and Northern Affairs Canada	Mary Quinn, Director General, Social Policy and Programs Branch	26-03-2009
National Association of Friendship Centres	Peter Dinsdale, Executive Director	26-03-2009
National Indian & Inuit Community Health Representatives Organization	Debbie Dedam-Montour, Executive Director	26-03-2009
University of Regina	Dr. Jeff Reading, Professor and Director, Centre for Aboriginal Health Research	26-03-2009
Seabird Island First Nation	Carlene Brown, Daycare Supervisor Cheryl Suave, Staff Fallon Ludman, Parent Bonnie Nickel, Parent Carolyne Neufeld, Health Director Steven McKinnon, Technician	27-03-2009
Acacia Consulting and Research	Michel Frojmovic, Director	27-03-2009
Agriculture and Agri-Food Canada	Christine Burton, Director, Rural Policy and Strategic Development	27-03-2009
Canada Health Infoway Inc.	Mike Sheridan, Chief Operating Officer	27-03-2009
Canadian Institute for Health Information	Jean Harvey, Director, Canadian Population Health Initiative Jean-Marie Berthelot, Vice President of Programs	27-03-2009
Health Canada	Karen Dodds, Assistant Deputy Minister	27-03-2009

Newfoundland and Labrador Department of Finance	Alton Hollett, Assistant Deputy Minister, Economics and Statistics Branch	27-03-2009
Ontario Agency for Health Protection and Promotion	Dr. Vivek Goel, President and Chief Executive Officer	27-03-2009
Public Health Agency of Canada	Dr. Gregory Taylor, Director General, Office of the Public Health Practice	27-03-2009
Saskatoon Health Region	Dr. Cordell Neudorf, Chief Medical Health Officer	27-03-2009
Statistics Canada	Michael Wolfson, Assistant Chief Statistician	27-03-2009
University of Manitoba	Mark Smith, Associate Director, Repository at Manitoba Centre for Health Policy	27-03-2009
As an individual	Dr. Kellie Leitch	01-04-2009
BC Health Communities	Jodi Mucha, Director	01-04-2009
Champlain Local Health Integration Network	Dr. Robert Cushman, Chief Executive Officer	01-04-2009