

# PATHWAYS TO IMPROVING WELL-BEING FOR INDIGENOUS PEOPLES

*How Living Conditions Decide Health*

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FOR ABORIGINAL HEALTH



CENTRE DE COLLABORATION NATIONALE  
DE LA SANTÉ AUTOCHTONE



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# CONTENTS



1. Introduction . . . . .	5
2. The Social Gradient . . . . .	7
2.1 Income Inequalities . . . . .	9
2.2 Unemployment/Working Conditions . . . . .	10
2.3 Education . . . . .	10
3. Social/Community Support and Networks . . . . .	13
4. Housing . . . . .	15
5. Health Care Access . . . . .	19
6. Early Life . . . . .	21
6.1 Prenatal Influences of Tobacco Smoking . . . . .	21
6.2 Prenatal Influences of Drugs and Alcohol . . . . .	23
6.3 Breastfeeding . . . . .	25
7. Healthy Living . . . . .	27
7.1 Obesity . . . . .	28
7.2 The Implications of Childhood and Adolescent Obesity for Public Health in Canada . . . . .	31
7.3 Obesity Intervention Programs for Aboriginal Peoples . . . . .	33
7.4 Availability and Safety of Traditional Food Sources . . . . .	33
8. Substance use and Misuse . . . . .	35
8.1 Tobacco Use . . . . .	35
8.1.1 Tobacco Intervention and Control Programs . . . . .	37
8.2 Alcohol and Drug Misuse . . . . .	39
8.2.1 Alcohol and Drug Abuse Prevention and Intervention . . . . .	42
8.3 Summary . . . . .	44
9. Conclusion . . . . .	45
10. References . . . . .	46

# LIST OF TABLES & FIGURES

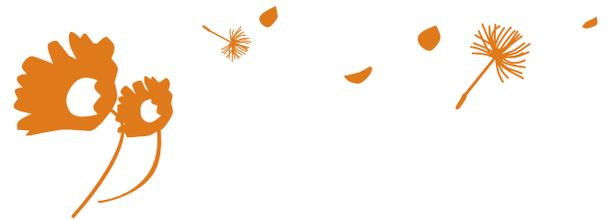


Table 1: Effects of Prenatal Alcohol Exposure on Growth and Development. . . . .	23
Table 2: Possible Effects of Various Drugs on Fetus and Newborns . . . . .	24
Table 3: Distribution of Body Weight Among First Nations and Other Canadian Adults. . . . .	28
Table 4: Percentage of Non-Smoking Population Age 12 and Older Who Are Exposed to Second Hand Smoke . . . . .	36
Table 5: Alcohol-Related Deaths 1993 to 2006, Status Indians and Other BC Residents (Age Standardized per 10,000 Population) . . . . .	40
Table 6: Proportion of First Nation Youth Using Various Substances at Least Once in 2001. . . . .	41
Figure 1: The HDI Gap 1981-2001 . . . . .	8
Figure 2: Population Reporting Aboriginal Identity According to Their Percentage of the Total Population, Canada, Provinces and Territories, 2006. . . . .	20
Figure 3: Maternal Smoking, First Nations Women Compared to General Canadian Population . . . . .	22
Figure 4: Prevalence of Smoking on the Month Before Pregnancy and During Each Trimester of Pregnancy for Non-Aboriginal and Aboriginal Women Giving Birth in Manitoba . . . . .	22
Figure 5: Tobacco Smoking Among First Nation Youth, by Age and Gender (n=2,494) . . . . .	37





# 1. INTRODUCTION



Even in wealthy countries, “people who are less well off have substantially shorter life expectancies and more illnesses than the rich” (Wilkinson & Marmot, 2003: 7). These differences have drawn scientific attention to some of the most powerful determinants of health in modern societies. Wilkinson & Marmot (2003: 7) define social determinants as sensitivity of health to the social environment. Social determinants can include cultural, economic, and political forces which interact in a multitude of ways to contribute to or harm the health of individuals and communities. The impact of these forces during childhood can have long-lasting health implications through the life course since material deprivation can influence child and adult

circumstances and behavior. Thus, the interactions between these various forces are important parts of the health and disease puzzle.

The purpose of this paper is to highlight the interconnectedness between social determinants and Indigenous peoples’ health so as to argue that efforts to reduce current health inequities between Indigenous and non-Indigenous peoples must encompass attention to not only the symptoms of ill health, but also the factors that underlie ill health. This paper will draw on the most recent literature and data to examine the impact of a range of common social determinants on the health of Indigenous<sup>1</sup> peoples. The discussion will include a description of

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<sup>1</sup> The term ‘Indigenous’ will be used here to refer to Aboriginal peoples internationally, with a focus primarily on the developed countries of Canada, Australia, New Zealand, and the United States.

how these determinants can influence health generally, supported by currently available statistics on the health status of Indigenous peoples. While the focus is primarily on Aboriginal<sup>2</sup> peoples in Canada, social determinants impact the health of Indigenous peoples in developed countries elsewhere. Therefore, where appropriate, literature is also included from countries such as Australia, New Zealand and the United States. Literature was identified through a search of government websites, academic literature databases such as PubMed, and Google Scholar using terms that included 'Aboriginal', 'First Nation', 'Inuit', 'Métis', 'Indigenous', together with specific search terms related to the various social determinants of health, such as income, education, employment, housing, social support, health care, health care access, early childhood development, early childhood education, substance use, nutrition, social exclusion, maternal health, infant health, alcohol use/misuse, tobacco, and drug use/misuse.

The paper will begin by providing an overview of socioeconomic determinants of Indigenous peoples' health, such as income, unemployment/working conditions, and education. These determinants are highly interconnected – levels of education affect ability to secure adequate employment, which in turn impacts one's level of income. They also have a major impact on other determinants of health such as housing, early childhood development, and access to health services. This is followed by sections on the importance of social support and networks, housing (including location of residence), and health care access in ensuring a safe and supportive environment for maintaining good health.

Given the importance of good pre- and post-natal care and nutrition in ensuring the optimal health of a newborn, in turn giving the child the best chances in life, several determinants will be discussed within the theme of a child's early life and development. This includes pre- and post-natal influences of tobacco smoke, drugs and alcohol for early development, and the importance of breastfeeding.

The next section will focus on access to and availability of good nutritious food and the implications of inadequate childhood nutrition for health in adulthood. Obesity, diabetes, and cardiovascular diseases are becoming critical healthcare issues for Indigenous peoples. As a result, this section will also include some discussion on current initiatives being undertaken to reduce obesity (and resulting diseases), as well as the role of traditional food sources in fostering healthier eating and the need to ensure the availability and safety of traditional food sources.

The final theme area explored in this background paper is the issue of substance abuse. Substance abuse is both a symptom of poor mental health and well-being, as well as a contributor to poor mental health outcomes such as family violence, depression, criminal behavior, and other risk behaviors. This section focuses on the extent and nature of tobacco, drug and alcohol use among Indigenous peoples. Included is a discussion of current intervention and prevention initiatives underway in Canada to reduce the prevalence of substance abuse and the harms resulting from it.

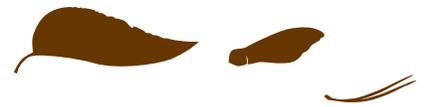
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<sup>2</sup> The term 'Aboriginal' will be used to denote the Indigenous peoples of Canada as defined by the *Constitution Act of Canada 1982*, Section 35, 2 as First Nations (including status/non-status Indians, and on/off reserve Indians), Inuit and Métis peoples.





## 2. THE SOCIAL GRADIENT



*Life expectancy is shorter and most diseases are more common further down the social ladder in each society. ...The longer people live in stressful economic and social circumstances, the greater the physiological wear and tear they suffer, and the less likely they are to enjoy a healthy old age. (Wilkinson & Marmot, 2003: 110)*

The question of how to approach social determinants of health is much debated in modern society. Although smoking, high blood pressure, obesity, poor diet, substance abuse, and other such conditions are well known risk factors for many chronic diseases, they only explain a fraction of mortality from the disease. It is well recognized that a stronger association exists between mortality rates and socioeconomic circumstances, which

Marmot refers to as ‘a social gradient.’ This association suggests that “the higher the socioeconomic level of the household the lower the mortality rate” (Marmot, 2005: 1100). As a result, some authors, including Marmot, suggest that the focus of disease prevention should move away from these types of specific risk factors to community and social forces which affect each individual in society. Researchers consider social and economic status (SES) to be the most important social determinant of health (Marmot et al., 1987; van Rossum et al., 2000; Syme, 2004). According to Marmot (2005): “[if] the major determinants of health are social, so must be the remedies” (p. 1103). Therefore, the relationship between health status and SES should be of concern to all policy makers, not merely those within the health sector.

Childhood socioeconomic status, for example, has been shown to be an important indicator in the development of adult cardiovascular disease (CVD) and diabetes (Everson et al., 2002; Galobardes et al., 2004; Lawlor & Smith, 2005). Childhood circumstances affect developmental health through the activation of stress response systems (Boyce and Keating, 2004). As has been highlighted by McEwen (2006), 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 leading to Type 2 diabetes mellitus and CVD. 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, suggesting a cumulative influence of social circumstances across the life course on mortality risk (Claussen et al., 2003). In the same study, cardiovascular mortality was more strongly associated with childhood than with adulthood social circumstances. The patterning of behaviour and lifestyle habits, which occurs in childhood, highlights the need to focus on childhood circumstances. A life course approach is the most productive and effective technique to use when doing this.

The question of how exactly SES affects health status has been intensively studied in the last three decades. Such prominent researchers as Marmot and Syme suggest that control of destiny, the ability to deal with the forces that affect their lives, is the key component of SES (Syme, 1998, 2004). ‘Control of destiny’ was found to be lower in the lower status groups (Marmot, 2005). In other words, compared to higher SES classes, people from a lower socioeconomic class are

thought to have less opportunities and training to influence the events that impinge on their lives (Syme, 1998). This theory has been supported by neuro-endocrinological studies which have shown that lack of control over life circumstances creates a load of stress on the body, which may eventually result in the development of variety of diseases and conditions, especially insulin dependent diabetes, cardiovascular diseases (McEwen, 2006), alcoholism and suicide (Syme, 1998). This concept of ‘control of destiny’ is particularly relevant in understanding the association between the SES of Indigenous peoples and their current health status.

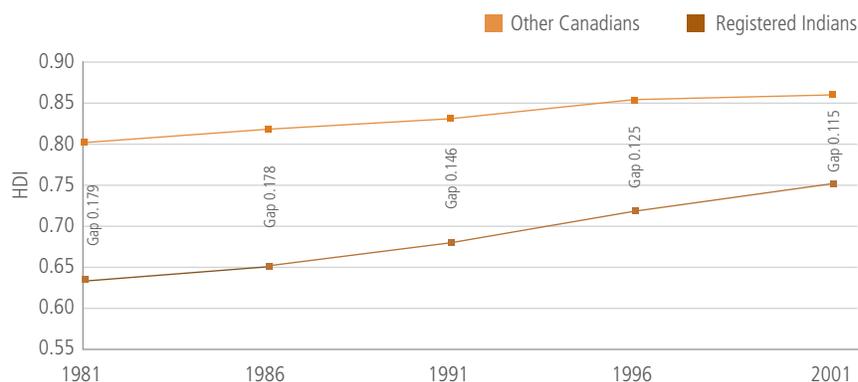
Due to forces of colonization, some Indigenous peoples are thought to have partly lost ‘control of destiny’ as they were forced to adapt rapidly to an unfamiliar and dominant settler culture, which in turn is postulated to have placed a significant stress load on Indigenous communities and individuals. In recent years, the SES of Indigenous peoples has begun to slowly improve, however, there is still a profound gap in SES and the health and well-being of Aboriginal compared to non-Aboriginal people in Canada and indeed, in many other countries.

Indigenous populations in developed countries are still “a socially excluded minority within their countries” (Marmot, 2005: 1100) and “over-represented in lower socioeconomic strata” (Valery et al., 2006: 1847).

To measure and compare the quality of life between different countries or populations, the United Nations developed the Human Development Index (HDI). This index was applied in 2004 by the Department of Indian and Northern Affairs Canada<sup>3</sup> to compare the quality of life between Aboriginal and non-Aboriginal people living in Canada (INAC, 2004). As can be seen in Figure 1, although the HDI gap in quality of life and well-being has been narrowing (from 0.179 in 1981 to 0.115 in 2001), it has remained essentially the same from 1996 to 2001.

When available literature on SES was reviewed, income inequalities, (un)employment and the nature of employment, and education were found to most profoundly impact Indigenous peoples’ health. These determinants are highly interconnected; that is, lower levels of education limit employment opportunities, and thus directly impact on the level of income.

Figure 1: The HDI Gap 1981-2001



Source : INAC, 2004

<sup>3</sup> The Department of Indian and Northern Affairs was renamed in 2011 as Aboriginal Affairs and Northern Development Canada.

## 2.1 Income Inequalities

Numerous studies have found that poverty can account for the tragically foreshortened lives of poorer populations around the world (RHS National Team, 2007; Marmot, 2005). Poverty affects one's living conditions, quality of housing, ability to purchase sufficient healthy foods, and access to educational opportunities and training.

According to the World Health Organization, poverty can be classified according to its severity or extremity. Extreme or absolute poverty refers to a lack of basic material necessities of life (Wilkinson & Marmot, 2003: 16). Particularly at risk are the unemployed, many ethnic minority groups, guest workers, disabled people, refugees and homeless people (Ibid.). Relative poverty, on the other hand, is measured in relation to other people in society and is often defined as living on less than 60% of the national median income. This type of poverty denies people access to decent housing, education or training,

accessing services and other factors vital to full participation in life, and is a form of social exclusion where individuals are excluded from the life of society and treated as less than equal (Ibid.). Poverty and social exclusion are harmful to health psychologically, emotionally and physically, increasing the risk of “divorce and separation, disability, illness, addiction and social isolation and vice versa, forming vicious circles that deepen the predicament people face” (Ibid.: 16).

The impact of poverty can be seen in the life expectancy of Indigenous peoples compared to non-Indigenous. In Canada, the life expectancy at birth for the Registered Indian<sup>4</sup> population has been lower than for the general population. In 2000, this life expectancy was 68.9 years for males and 76.6 years for females, a difference of 7.4 years between Aboriginal and non-Aboriginal males and 5.2 years between Aboriginal and non-Aboriginal females (Health Canada, 2005a). Income levels are considerably lower among the Aboriginal population compared to the Canadian general population. In

2006, the median income for Aboriginal populations was \$18,962 compared with \$27,097 for the rest of Canadians, a difference of \$8,135 (Wilson and Macdonald, 2010). This represents a slight increase from 2001 where the difference in median income between Aboriginal and non-Aboriginal populations was \$9045 (Ibid.). However, the disparity in median incomes is not uniformly experienced by all Aboriginal peoples, with the Métis faring better than Inuit or First Nations (Statistics Canada, 2006a).

Similar correlations between low income and mortality are found among other Indigenous populations. Studies conducted in the United States between 1992-2000 found that American Indians/Alaskan Natives (AI/AN) were the poorest racial ethnic group in the country, with 27.1% of this population having income below the poverty level compared to other ethnic groups (Ward et al., 2004). Since that time, the median household income of this population has improved. Using 3-year average medians from 2003 to 2005, household income for AI/AN populations was estimated to be higher than that for black Americans (\$33,627 compared to 31,140), but still substantially lower than Hispanic (\$35,467), non-Hispanic white (\$50,677), and Asian (\$59,877) populations (DeNavas-Walt, et al. 2006). Nevertheless, American Indians and Alaska Natives still experience similar shorter life expectancies to their Canadian counterparts, living approximately 5 years less than the general American population (US Department of Health and Human Services, 2011).

Although data on lower income correlates with the fact that Indigenous peoples have poorer health status than other populations, it is not clear whether poverty alone can cause the poor health of the population. There are several examples around the world



<sup>4</sup> Registered Indian refers to a person who is registered under the Indian Act of Canada (Statistics Canada, 2010).

where populations with an extremely low income, such as Costa Rica, Cuba, Kerala and China, have good health records (Marmot, 2005). For instance, the life expectancies in Costa Rica and Cuba (77.9 and 76.9 years) are similar to that in the United States (76.9 years) despite huge differences in gross national product (GNP) and income levels between these countries (Ibid.). Thus it can be concluded that low income cannot provide a complete explanation of differences in health status among populations.

## 2.2 Unemployment/ Working Conditions

Closely connected to income is the determinant of unemployment/working conditions. Unemployment causes financial strains, which may lead to anxiety, depression, and food insecurity, contributing to poorer health outcomes. The nature of employment can also play an important role in health. The World Health Organization identifies that: “[s]tress in the workplace increases the

risk of disease. People who have more control over their work have better health” (Wilkinson & Marmot, 2003: 18). Stress at work and having little control over one’s work has been shown to contribute to social status differences in health, increased risk of back pain, cardiovascular disease, and premature death (Wilkinson & Marmot, 2003, Bosma et al., 1998). These types of stresses can lead to an increase in unhealthy behaviours, such as alcohol and tobacco consumption, poor nutrition, physical inactivity, aggression, as well as domestic problems like divorce and child abuse (Dooley et al., 1996).

Indigenous people in Canada, New Zealand and Australia have experienced similar trends with respect to unemployment rates. In Australia, from 2001 to 2006, Indigenous people had higher rates of unemployment compared with non-Indigenous people, but rates of unemployment decreased generally over this period from 20% in 2001 to 16% in 2006 (Aboriginal and Torres Strait Islander Social Justice Commissioner, 2009). Similarly, in New Zealand over the

period 2002-2007, the unemployment rate for Māori had fallen sharply from 11.7% to 7.6%, however this rate was still higher than the overall annual average unemployment rate of 3.7% (Department of Labour, 2007).

Among adults (ages 15+) in Canada, almost 15% of Aboriginal adults were unemployed, with the highest rates of unemployment occurring on reserves (24.8%), compared with only 6.3% of Canadians generally (Statistics Canada, 2006b). The 2006 Census data represents a slight decrease in the unemployment rate since 2001 from 19% to 15% for all Aboriginal adults, and from 27.6% to 24.8% for on-reserve populations (Statistics Canada, 2001). A key factor that influences unemployment rates is level of education.

## 2.3 Education

Access to education plays a significant role in determining the health status of both children and adults. Education provides knowledge about health, as well as social support systems and self-esteem opportunities. Previous reports such as those by BC’s Provincial Health Officer have shown a direct relationship between the health status of communities and their socioeconomic conditions (Office of the Provincial Health Officer, 2001, 2002, 2009). These reports argue that, in general, the better the ranking on indicators such as education, the lower the rate of premature death. Education is both offered and obtained in diverse contexts and through diverse means. From early education passed on through oral traditions to post-secondary institutional education, many educational contexts can promote healthy individuals and communities.

According to the World Health Organization, increasing the general level of education and providing equal opportunity of access to education will improve the health of adults and



children over the long term when the health and well-being of individuals and communities are placed at the centre of interventions (Wilkinson & Marmot, 2003: 15). Educating children from more disadvantaged families about how to approach and solve life problems is seen as one way of addressing the problems of low socioeconomic status (SES) (Syme, 1998). Through education, low SES can be prevented. There have been a number of studies, including 10 and 20 year follow-ups, that have demonstrated the success of this approach. For example, the national “Headstart” program in the United States has shown promising results, with double the high school graduation and college admission rates, half the welfare rate, half the crime rate, and half the teenage pregnancies after the program was implemented (Syme, 1998). In Canada, education has also been recognized as one of the main contributors to First Nations well-being, accounting for 59.5% of improvements in the overall Human Development Index (HDI) between 1991 and 2001 (INAC, 2004). Clearly, developing strategies that

speak to children and youth are crucial, as is targeting parents where lifestyle patterns are mimicked and issues of socioeconomic status are transmitted (Syme, 1989, 2004; Marmot, 2005). In addition, focus must also be extended at the community level since “it takes a community to raise a child” (FAS/FAE Technical Working Group and National Steering Committee, 2001).

The formal school system in Canada has not always been successful in ensuring that Aboriginal students receive a quality education – one that allows them to obtain the qualifications and skills required to participate in the economy while maintaining ties with their culture. The legacy of the residential school system in Canada, which segregated generations of Aboriginal children from their families and cultures for more than a century, continues to have impacts on First Nations, Inuit and Métis students today. Lingering effects from residential school include high levels of suicide, alcoholism, and family violence in some First Nations communities (Brant Castellano et al., 2008; Younging et al., 2009; Kirmayer et

al., 2007; National Collaborating Centre for Aboriginal Health [NCCA], 2009). There also continues to be a mistrust of mainstream educational institutions which will only be overcome with time (Richards & Scott, 2009). In addition, in our current educational system some Aboriginal students face racism, discrimination, and lack of understanding from teachers and other students in relation to their culture and traditions. A 2001 report by British Columbia’s Office of the Provincial Health Officer, for example, notes that First Nations students do more poorly than other students and have more learning and behavioral concerns. The report concludes that First Nations secondary school students are less likely to progress from year to year and are less likely to graduate. For Aboriginal children and youth, there are numerous socioeconomic and cultural barriers to successful completion of high-school (Richards & Scott, 2009).

While there have been improvements in educational attainment levels, Aboriginal peoples continue to lag behind. In 2006, 34% of Aboriginal peoples aged 25-64 had



less than high school education compared to 15% of non-Aboriginal people (INAC, 2006). Educational attainment levels vary considerably across the three identity population groups, across areas of residence, across the provinces and territories, and by gender. High school completion rates are lowest for Inuit compared to First Nations and Métis; for on-reserve Aboriginal peoples compared to off-reserve; in Nunavut compared to other provinces and territories; and for females compared to males (Richards, 2008).

Within the post-secondary educational system in Canada (including universities, university-colleges, and colleges), there also continues to be a large gap in participation rates for Aboriginal peoples compared with non-Aboriginal people. According to Census data, the proportion of Aboriginal peoples aged 25-64 with a university degree has increased since 2001 from 6% to 8% (INAC, 2006). However, this rate is still considerably lower than for non-Aboriginal people at 23%, and the gap between Aboriginal and non-Aboriginal peoples has in fact been widening since 2001 (Ibid.).

Since 1998, a number of initiatives have been undertaken to increase access to elementary, secondary and post-secondary education for Aboriginal students. Recognizing the relationships between education, socioeconomic status and health, governments, institutions and school boards are initiating programs that increase access to education for Aboriginal students while recognizing the importance of cultural connections. There are numerous examples of initiatives across the country that are working to improve access to education for Aboriginal students by fostering stronger relationships and providing greater educational opportunities (see for example Office of the Provincial Health Officer, 2001; Ontario Ministry of Education, 2009). These initiatives appear to be working

in provinces like Ontario and British Columbia where results are better than the national average (Richards & Scott, 2009). In particular, the British Columbia Ministry of Education seems the most advanced in its strategy to improve Aboriginal education by offering courses in Aboriginal history and literature as electives for Aboriginal and non-Aboriginal students, providing each School District \$1000 per Aboriginal student, and requiring that School Districts implement Aboriginal Education Enhancement Agreements which are “intended to engage local Aboriginal communities in the school system and fund Aboriginal-specific education programs” (Richards & Scott, 2009: 40). However, more research is needed in relation to these successes and the interventions that have led to these successes. It is imperative that the long-term effects of these interventions be assessed to determine whether the successes are sustainable.





### 3. SOCIAL/COMMUNITY SUPPORT AND NETWORKS



*Friendship, good social relations and strong supportive networks improve health at home, at work and in the community. (Wilkinson & Marmot, 2003: 22)*

Social support reduces the physiological response to stress, and those who receive little social and emotional support from others are more likely to suffer from poor mental and physical health (Wilkinson & Marmot, 2003). The level of emotional and practical social support people may receive varies by social and economic status, since in areas with high income inequalities there is less social cohesion and more violent crime (Ibid.: 22). Social cohesion is defined by Wilkinson & Marmot (2003) as “the quality of social relationships and the existence of trust, mutual obligations and respect in communities or in the wider society,

which helps to protect people and their health” (p. 22). In communities or neighbourhoods where there is little social cohesion, there are fewer avenues for seeking support in times of stress.

In Aboriginal culture, relationships within family and community are stressed over mainstream notions of individualism, for “[w]ithout relationships, the collective is fragmented and the interdependent ways that have ensured the survival of Aboriginal communities is endangered” (Greenwood, 2009: 61). Across diverse Aboriginal cultures are traditional values and beliefs that can only be understood from an Aboriginal worldview that emphasizes wholeness, connectedness, and balance (Irvine, 2009). Hart (2002) explains that: “[b]alance occurs when a person is at peace and harmony within

their physical, emotional, mental and spiritual humanness; with others in their family, community and nation; with all other living things, including the earth and natural world” (p. 41). This sense of belonging, or ‘connectedness’, is an important component of Aboriginal belief systems that provides a foundation from which individuals are better able to deal with adversity (PHAC, 2008a).

Central to connectedness or belonging is cultural identity (PHAC, 2008a). Culture is the foundation for both individual and collective identity and its erosion can adversely affect mental health and well-being (Kirmayer et al., 2000). It is therefore not surprising that colonial practices which sought to erode Aboriginal culture and identity have had such devastating impacts. While Aboriginal communities differ in their response to the trauma of marginalization and oppression they have experienced over the years, many are plagued with problems associated with alcohol and drug abuse, physical and sexual abuse, family violence, incarceration, suicide and other manifestations of low self-esteem (Reading, 2009a). Mental health suffers when families’ lives and communities are dysfunctional (Mussell, et al., 2004). In order to enhance social support networks in such settings, it is clear that strategies must be embedded in culture and work to strengthen community and family. This is central to fostering individual and community well-being, and thus contributing to the improved health in Aboriginal communities.

In addition, strategies must also be broad-based, focusing not only on targeting adult risk factors but also taking a life course approach from a social determinants of health perspective (Reading, 2009a). For

example, while problems related to chronic disease can be improved through programs that focus on changing the lifestyle habits of adults, “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” (Reading, 2009a: A53). Guided by attention to community health and the interactions that operate throughout an individual’s life and across generations, research that integrates a life course perspective has the potential to align with Indigenous perspectives in a meaningful way and with culturally appropriate methods (Ben-Shlomo & Kuh, 2002; Kuh et al., 2003).





## 4. HOUSING



Housing is an important social determinant of health. There are a number of health conditions that can be attributed to housing quality, affordability, accessibility, or overcrowded living conditions. For example, mould can result in an increased risk of respiratory ailments; rural and remote housing may lack access to safe drinking water, increasing the risk of gastrointestinal ailments, or may lack access to health services; inability to afford adequate housing may result in homelessness with its concomitant poor health outcomes; and overcrowding may result in an increased risk of cancers through exposure to second hand tobacco smoke, or to illnesses such as tuberculosis

and respiratory disease through exposure to other ill family members in close confines. In this section, the focus will be on the health-related impacts of poor housing quality, indoor air quality, and overcrowding.

Aboriginal households face considerable challenges in obtaining adequate housing including low income, unemployment, rural and remote location, and legal impediments to home ownership on reserve (Office of the Auditor General of Canada, 2003; CMHC, 2005). In 2001, approximately 33% of North American Indian,<sup>5</sup> 32.8 % of Inuit, 26.0% of Métis, and 24% of off-reserve Aboriginal

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<sup>5</sup>North American Indian is the term used by Statistics Canada to refer to the First Nations population. It has its roots in the *Indian Act*, 1867.

households were in core housing need, compared to only 15.3% of non-Aboriginal households (CMHC, 2005).<sup>6</sup> This is largely because limited employment opportunities and low incomes, particularly for on-reserve and rural and remote Aboriginal peoples, make it difficult to acquire new homes or to maintain and improve existing ones (Ibid.). In northern and remote regions, high transportation, construction, operating costs (electricity, heating, water and wastewater services), and lack of access to specialized construction expertise make it even more difficult to obtain adequate housing, and as a result, a large proportion of Aboriginal housing in these regions is social housing (CMHC, 2005). In terms of homeownership, in 2001 approximately 28.5% of Aboriginal peoples owned their own homes compared to 67% of the Canadian population as a whole (CREA, 2006). These rates vary considerably by on-reserve/off-reserve, and by First Nation/Métis/Inuit status. Most on-reserve housing is built, managed and owned by the respective band (Canadian Real Estate Association [CREA], 2006). In terms of off-reserve Aboriginal peoples, Métis were more likely to own their own homes (approx. 60%) compared to North American Indian (approx. 45%) and Inuit (approx. 32%) (CMHC, 2005). While these housing statistics represent an improvement since 1996, which is supported again by findings from the 2006 Census, housing conditions for Aboriginal peoples still fall well below the rest of the Canadian population (CMHC, 2005, 2006).

Over the past 15 years, there has been little change in the amount of funding allocated by the federal government for Aboriginal housing programs, and where funding is allocated by capital grant to each band council, housing concerns can often compete for funds with other community

services such as road repairs or water treatment (CREA, 2006). As a result, there has been a well-documented shortage of affordable housing units, resulting in many Aboriginal peoples living in overcrowded conditions. This places additional stress on housing infrastructure and hardware, resulting in more rapid depreciation of the housing stock (CMHC, 2005).

According to the recent 2006 Census, while there have been improvements since 2001 in terms of overcrowding and housing conditions, housing continues to remain a critical health issue for Aboriginal peoples. Overcrowding is particularly acute for First Nations people living on reserve and for Inuit. Approximately 26% of First Nations people living on reserve and 35% of Inuit live in overcrowded living conditions<sup>7</sup> (Statistics Canada, 2008). For First Nations households, the average number of persons per room is 0.6, which is approximately 20 percent higher than for the rest of the Canadian population, and First Nations on-reserve were nearly twice as likely to live in overcrowded housing conditions compared to those off-reserve (INAC, nd, as cited in Canadian Tuberculosis Committee, 2007: 4).

There have also been no marked improvements in the number of Aboriginal peoples living in homes requiring major repairs. According to the 2006 Census, nearly 25% of Aboriginal peoples reported living in such homes, with the problem being most severe for First Nations people living on-reserve (where approximately 44% resided in homes needing major repairs) (Statistic Canada, 2008). Many on-reserve houses were constructed during the 1960s to 1980s as raised bungalows built on a wood frame, and they are prone to mould problems because they were improperly constructed, lack air circulation and ventilation causing excessive humidity,

and are poorly maintained (CREA, 2006). In addition, a number of Aboriginal communities have been under boil water advisories, thereby increasing condensation in the home and contributing to mould (Ibid.). The presence of mould (Bailie et al., 2010) and dust (Harris et al., 1998; Petersen et al., 2003) can contribute to respiratory health problems in many Aboriginal communities. Given that most Aboriginal peoples do not own their own homes, there is reduced incentive for occupants of rental or subsidized housing to maintain and renovate homes, particularly when ownership status on-reserve is unclear (CMHC, 2005).

There is considerable research that highlights the association between overcrowded and poor living conditions and the spread of communicable diseases like tuberculosis (TB) and respiratory ailments (Koch et al., 2003; Kovesi et al., 2007; Orr, 2007; Clark et al., 2002; Berghout, et al., 2005). The TB rate among Aboriginal peoples is nearly six times greater than the Canadian rate, and in Nunavut, is more than 38 times greater than the national rate (at 184.4 cases per 100,000 population) (Canadian Public Health Association [CPHA], 2010). A study by Clark et al. (2002) revealed that an increase of 0.1 person per room in one community was associated with a 40% increased risk of two or more cases of TB occurring. Geographic dispersion, which makes surveillance and early treatment difficult, is an often cited reason for the inadequate development of health care strategies to address TB in Aboriginal communities (Health Canada, 1999).

Aboriginal peoples are also more susceptible to contracting and dying from respiratory diseases (Mao et al., 1992 and Morrison et al., 1986 as cited in Estey et al., 2007). Inuit children are particularly

<sup>6</sup> Core housing need is defined as falling below one or more of the adequacy, suitability or affordability standards and unable to find local rental housing to meet all three of these standards (CHMC, 2005: 39).

<sup>7</sup> Overcrowding has been defined here as more than one person per room.

vulnerable, having the highest admission rates for serious respiratory infections in the world (Banerji et al., 2009). For example, between 1999 and 2002, Inuit infants were hospitalized for bronchiolitis at an admission rate of 197 per 1000 infants (Orr, 2007).

Poor air quality, outdoor and indoor, has been associated with respiratory problems and reduced lung function and growth (Antó et al., 2001; Cardinal, 2004).<sup>8</sup> Sources of outdoor air pollution are most commonly associated with the combustion of fossil fuels, while indoor air pollution results from the infiltration of external air, tobacco smoke, biological material (mould, bacteria, pets), and combustion products such as wood smoke and poorly ventilated heaters (Canadian Institute for Health Information [CIHI] et al., 2001). As sources of indoor air pollution have been well documented in many Aboriginal communities (see for example, Lawrence & Martin, 2001; Cardinal, 2004; Berghout et al., 2005), this issue is particularly relevant for Aboriginal health.

An important indoor environmental risk factor to which Aboriginal peoples have been historically exposed is smoky coal and wood emissions. Due to the fact that in many Aboriginal communities wood or coal burning stoves are still used in homes, Aboriginal peoples may be at a higher risk of developing cancers linked to such pollutants as polycyclic aromatic hydrocarbon (PAH-DNA). For example, in China, epidemiological studies have shown that PAH-DNA was detected in a higher percentage of women living in houses exposed to smoky coal or wood emissions compared to those not exposed (Mumford et al., 1993). It would be useful to determine the level of smoky coal and wood use in Aboriginal households and correlate it to the peripheral concentration of PAH-DNA biomarkers.

The use of wood-burning stoves and steam baths are considered cultural practices and both contribute to the development of respiratory diseases. In many Aboriginal communities, wood-burning stoves are used extensively for heating and cooking

and they contribute to poor indoor air quality. Since wood-burning stoves have been historically linked to a prevalence of lower respiratory tract infections in Navajo children (Morris et al., 1990; Daigler et al., 1991), their use by northern Aboriginal groups in Canada is worrisome. Like wood-burning stoves, steam baths are also thought to contribute to the development of chronic respiratory diseases, as concentrated and enclosed steam and smoke can place strain on the respiratory system and aggravate respiratory ailments (Petersen et al., 2003). In many Aboriginal communities (i.e. native groups in the Yukon), steam baths are part of a daily routine, while wood-burning stoves are the prime source of energy in the house. In addressing concerns about the impacts of these practices on respiratory health, it is imperative that research has a cultural component: the spiritual nature and traditional aspects of these practices must be acknowledged.

Exposure to environmental tobacco smoke, particularly in an overcrowded and poorly ventilated setting, is also a major contributor to respiratory illnesses. While the topic of tobacco smoking will be addressed in more detail later in this report, it is important to note here that tobacco smoking has been found to be considerably more prevalent among Canada's Aboriginal populations compared to the non-Aboriginal population. Smoking rates for First Nations on reserve are triple that of the national rate (PHAC, 2007a), while smoking rates among Inuit aged 18-45 have been found to be considerably higher at approximately 70% (based on 2004 data) (Health Canada, 2007). A meta-analysis on the effect of environmental tobacco smoke on lower respiratory tract infection among young children showed that the presence of smokers in the home significantly increased the risk of lower tract infection, resulting in increased hospital admissions (Li et al.,



<sup>8</sup> Evidence of premature deaths and high hospitalization rates has been used to support this statement.

1999). Housing ventilation can be very poor in northern climates where doors and windows must be kept shut for much of the year and when lower respiratory tract infection is at its peak (Kovesi et al., 2007). This can expose even non-smokers to considerable secondary smoke.

Not only does overcrowding, housing quality and indoor air pollution contribute to respiratory disorders, but these are also thought to be major contributors to otitis media (more commonly referred to as middle ear infection). In addition to the traditional indoor air pollutants (i.e. smoke, pets, and mould), a study by Daigler et al. (1991) reported a relationship between wood-burning stoves and the occurrence of otitis media. Since many northern Indigenous populations rely on wood-burning stoves for heating and cooking, this is an important risk factor to investigate in the etiology of Aboriginal otitis media. Indoor tobacco smoke is also seen as being a significant risk factor for otitis media (Bowd, 2005; Reading, 2009b). Prevalence rates for otitis media vary widely by community. In Canada it is generally acknowledged that otitis media is endemic among northern Inuit, First Nations and Métis children with recorded rates as much as 40 times that found in non-Aboriginal urban communities (Bowd, 2005). Similarly high rates have also been found among Australian Indigenous children (Morris et al., 2005; Commonwealth of Australia, 2001). A study by Langen et al. (2007) also found that while otitis media generally tends to be more common in infancy and early childhood, Aboriginal children in Canada seem to remain at risk for developing otitis media beyond early childhood and have a greater potential to develop chronic otitis media, which can result in hearing loss and impair a child's ability to learn.

It is well known that otitis media is perpetuated by a vicious cycle of infection and bacterial exposure (Leach, 1999), but the role that overcrowding, poverty, and poor socioeconomic status also play in the promotion of this cycle requires further research. In doing this, it will be important to address the economic, social, and environmental inequalities faced by the Aboriginal population implicated in the persistence of otitis media in disadvantaged societies (Coates et al., 2002; Coates, 2003).

There is a very strong relationship between poverty and the adequacy, accessibility, and quality of housing. Unemployment and poverty mean that individuals may be unable to access affordable and adequate housing. It can also mean homelessness for many, particularly for those who move to the cities in search of greater opportunities. Being homeless comes with a unique set of challenges for maintaining good health (Hwang, 2001), and the Aboriginal population is over-represented in Canada's homeless population (CMHC, 2005; CREA, 2006; Hwang, 2001). However, a study by Bailie et al. (2010) highlights that not only must building programs be a priority for improving housing, but there must also be a focus on social and behavioral interventions "in order for the health gains of improved housing to be more fully realized" (p. 157). This study found that in addition to the increased risk of coming down with certain illnesses, housing infrastructure that was in a poor functional state also resulted in less healthy living practices which are conducive to poorer health outcomes.





## 5. HEALTH CARE ACCESS

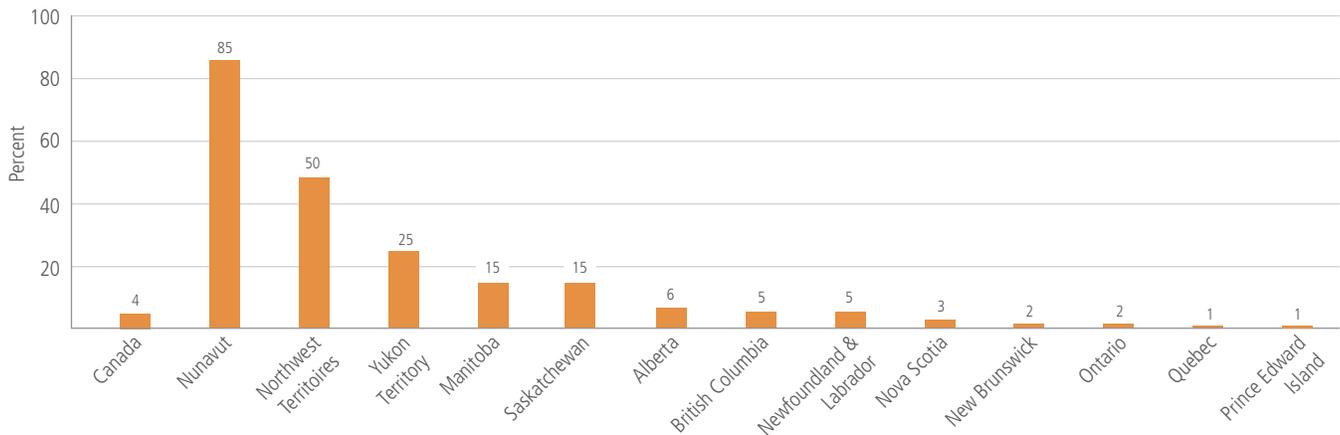


Access to health care is widely regarded as an important determinant of health. In Canada, under the Health Care Act, access to health care is considered ‘universal’ to all citizens. However, not all Canadians have equal access to health services, particularly for residents living in rural and remote locales. Lack of access to health services is particularly problematic in Canada’s northern region, where a significant proportion of the population is Aboriginal. Nearly half of Canada’s Aboriginal population lives in rural and remote locations (Statistics Canada, 2006d), with Aboriginal peoples comprising significant proportions of the total population in each of the territories, as can be seen in Figure 2 (Statistics Canada, 2006c).

The impacts of geography on Aboriginal peoples’ access to health care has

been confirmed in national surveys. For example, the Aboriginal Peoples Survey 2006 found that Inuit were much less likely than people in the general population (56% compared to 79% respectively) to have had contact with a medical doctor in the past 12 months (Tait, 2008: 11). Many Inuit communities are extremely remote and only a few have hospitals, with most access to health services coming through health centres that are staffed by nurses. This means that for treatment requiring physicians, appointments for specialists, and diagnostic testing, Inuit must leave their communities (ibid.). The 2002/2003 First Nations Regional and Longitudinal Health Survey (FNRLHS) identified similar barriers to accessing services for First Nations peoples, with 18.5% of respondents reporting a lack of doctor or nurse available in their area, 10.8%

Figure 2: Population Reporting Aboriginal Identity According to Their Percentage of the Total Population, Canada, Provinces and Territories, 2006



Source: Statistics Canada, 2006c.

reporting lack of a health facility, and over 33% reporting wait lists that were too lengthy (RHS National Team, 2007).

According to a 2006 study by the Canadian Institute for Health Information, rural or remote residence imposes several health risk factors, including less-healthy diet, lower levels of leisure time physical activity, and higher smoking rates than their urban counterparts (CIHI, 2006). Especially vulnerable are First Nations peoples living on reserves (about 26% of the Aboriginal population), as these are often located in rural or isolated northern areas where health information and services are often lacking (Statistics Canada, 2006d). It has been established that mortality and morbidity rates are higher on reserve, and reserve residents are at higher risk of some chronic diseases and conditions, such as diabetes, respiratory and infectious diseases, mental health problems, and drug and alcohol abuse (CIHI, 2006).

In addition, research has shown that Aboriginal peoples are more likely to be diagnosed at a later stage of a disease than non-Aboriginal people, which contributes to a higher mortality rate. These rates can be attributed to limited access to screening and treatment services,

as well as an awareness of early detection and prevention (Morrisseau, 2009). Early detection can be assisted by the presence of a regular physician within the community. A study of five First Nation communities in New Brunswick, Canada demonstrated the advantage of having even a part-time family physician available within the community. This study found that in First Nation communities which had a physician or part-time visiting physician, the rate of mammography compliance was 4.5 times higher, and the rate of mammography (65%) was higher than in communities without a family physician (Tatemichi et al., 2002). The findings of these studies suggest that the presence of a physician in these communities enhances the utilization of such diagnostic services. Early detection is an important facet of the health care system and is central to treatment and prognosis.

In Canada, the complexity of the health care system also hampers access to health care services and results in unequal access among communities and provinces/territories. This complexity is even more pronounced with respect to the provision of health care and services for Aboriginal people. The federal government assumes responsibility for providing limited primary health services for Inuit living

within traditional territories and to registered/status Indians living on reserve, while the provincial government provides medical care to Métis urban and off-reserve Aboriginal peoples (First Nations and Inuit Health Branch, nd). Within this context, registered/status Indians and Inuit under federal jurisdiction are entitled to a range of benefits, such as those offered under the Non-Insured Health Benefits (NIHB) program (including, drug, dental, vision, medical supplies and equipment, etc.) that other Aboriginal peoples under provincial jurisdiction do not receive. As well, since the Health Transfer Policy of 1988, responsibility for health care provision has been devolving to communities or to health boards and other authorities (Health Canada, 2008a). This has resulted in uneven distribution between communities and very limited opportunity for increased funding (Lavoie et al., 2005).



## 6. EARLY LIFE



Conditions during fetal development and a child's early years can influence health outcomes in later life. During pregnancy, "deficiencies in nutrition, ... maternal stress, a greater likelihood of maternal smoking and misuse of drugs and alcohol, insufficient exercise and inadequate prenatal care" can lead to less than optimal fetal development (Wilkinson & Marmot, 2003: 14). In turn, poor fetal development can result in social, emotional, and physical risks for health in later life; for example, "cognitive, emotional and sensory inputs programme the brain's responses, insecure emotional attachment and poor stimulation can lead to reduced readiness for school, low educational attainment, and problem behavior, and the risk of social marginalization in adulthood" (ibid: 14). Further, slow

physical growth in infancy is "associated with reduced cardiovascular, respiratory, pancreatic and kidney development and function, which increase the risk of illness in adulthood" (Ibid, p. 14).

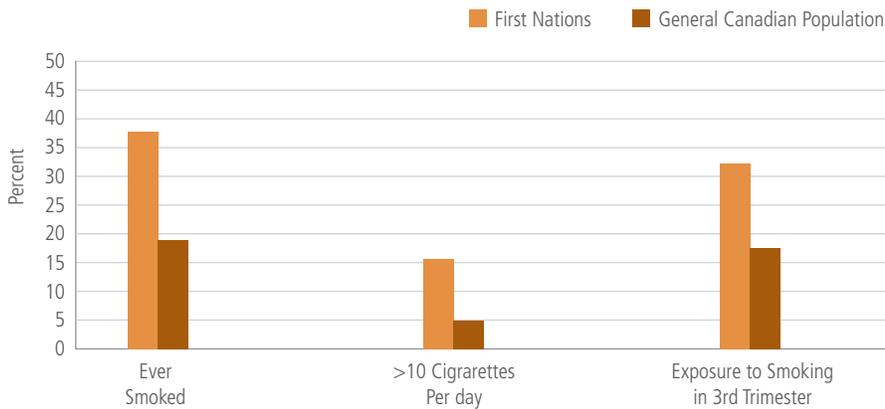
### 6.1 Prenatal Influences of Tobacco Smoking

Negative effects of maternal smoking on fetal growth have been well-documented. Numerous studies have shown that smoking tobacco during pregnancy can cause fetal growth retardation (FGR) (Cliver et al., 1995), result in low birth weight (Humphrey & Holzheimer, 2000; Mohsin et al., 2006), or sometimes result in preterm births,<sup>9</sup> stillbirths and neonatal deaths (Chan et al., 2001; Mohsin et al.,

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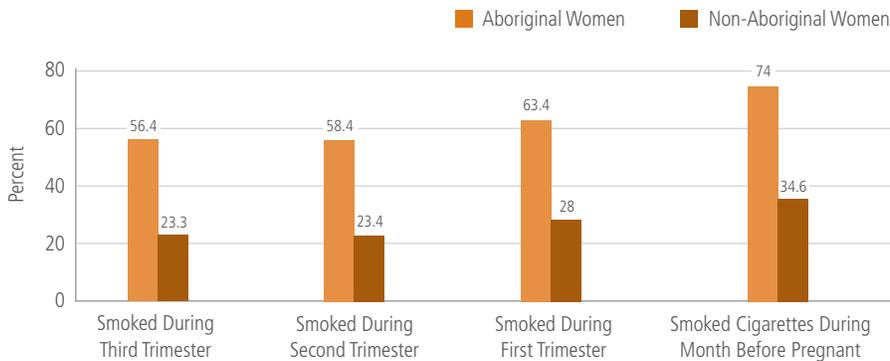
<sup>9</sup> Preterm birth is birth at < 37 weeks' gestation.

Figure 3: Maternal Smoking, First Nations Women Compared to General Canadian Population



Source: RHS National Team, 2007: 248. Data for First Nations population was derived from the FNRLHS survey, while data for the general Canadian population was derived from the NLSCY, 1998-1999 survey.

Figure 4: Prevalence of Smoking on the Month Before Pregnancy and During Each Trimester of Pregnancy for Non-Aboriginal and Aboriginal Women Giving Birth in Manitoba



Source: Adapted from Heaman & Chalmers, 2005: 301-302.

2006; Kallen, 2001). In addition, infants born to women who smoke are at higher risk of respiratory infections and asthma compared with infants of non-smoking mothers (Gilliland et al., 2000; Heaman & Chalmers, 2005).

The proportions of pregnant women who smoke vary substantially among different ethnic groups. According to the 2002/2003 FNRLHS, smoking rates among pregnant First Nation women

(58.8%) matched those of the general First Nations population (RHS National Team, 2007). A greater proportion of pregnant First Nations women smoked more than 10 cigarettes a day compared to their non-Aboriginal counterparts (15% compared to 5.3% respectively), and a greater proportion of First Nations women smoked in their third trimester (Ibid: 248) (Figure 3). In Nunavut where approximately 84% of the population identified as Inuit (Nunavut Bureau of

Statistics, 2008), 60-80% of pregnant women reported smoking during pregnancy (Mehaffey, et al., 2010).

A study 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 (Heaman & Chalmers, 2005). This same study found that the mean number of cigarettes smoked decreased for both Aboriginal and non-Aboriginal women as pregnancy progressed. After controlling for race/ethnicity, significant correlates of smoking during pregnancy for both non-Aboriginal and Aboriginal women included low-income, alcohol use during pregnancy, low support from others, and inadequate prenatal care; while having a paid job reduced the odds of smoking during pregnancy (Ibid). The study also found that prevalence of smoking varied with respect to trimester of pregnancy (see Figure 4).

Similar trends have been observed in the United States and in Australia. In 2000, the highest rates of smoking during pregnancy in the United States were reported among American Indian women (20.5%), followed by non-Hispanic white women (15.6%) (Ventura et al., 2003). In Australia, comparative studies of Aboriginal and non-Indigenous pregnant women revealed that Indigenous pregnant women were three times more likely to smoke during pregnancy compared with non-Indigenous women (Australian Institute of Health and Welfare [AIHW], 2008a). Studies have also found corresponding high rates of pregnancy complications, such as preterm births (20% vs. 11% respectively), small for gestational age births (SGA)<sup>10</sup> (48% vs. 21%), and low birth weight<sup>11</sup> (35% vs. 23%) (Chan et al., 2001; Westenberg et al., 2002). Similarly, the rates of stillbirths

<sup>10</sup> SGA is a newborn with birth weight < 10th percentile for gestational age.

<sup>11</sup> Low birth weight is under 2500 g.

were 10.7 per 1000 births in Indigenous Australians, compared with 6.3 per 1000 births in non-Indigenous Australians, and the rates of neonatal deaths were 4.6 per 1000 live births in Indigenous Australians compared with 2.7 in non-Aboriginal Australians (Mohsin et al., 2006). While these higher rates of pregnancy complications were associated with a number of socio-demographic factors including maternal smoking, it is clear that tobacco prevention strategies must be a central feature of health promotion initiatives targeted at pregnant Indigenous women.

## 6.2 Prenatal Influences of Drugs and Alcohol

Prenatal exposure to drugs and alcohol can have harmful impacts on fetal and early child development. This section will focus primarily on Fetal Alcohol Syndrome Disorder, which is considered one of the

most harmful impacts of alcohol exposure on early child development, as well as on the health impacts associated with drug use during pregnancy.

Fetal Alcohol Syndrome Disorder (FASD) is an umbrella term used to describe a range of disabilities caused by prenatal exposure to alcohol. It can result in birth defects and mental deficiencies by affecting the growth and proper formation of the fetus' body and brain (First Nations and Inuit Health Committee & CPS, 2002). The most severe FASD disability is Fetal Alcohol Syndrome (FAS) (Fetus and Newborn Committee, 1997). The effects of prenatal exposure to alcohol are wide-ranging, from severe manifestations (such as death and FAS) to relative normality (see Table 1). Because of its effect on intelligence, activity and attention, learning and memory, language and motor abilities, and behavior, FAS can be severely disabling over the life course, placing a "heavy social and economic burden on

those with FASD, their families, their communities and our society as a whole" (Health Canada, 2005b: 2).

Alcohol can cause damage to the fetus at any stage of a pregnancy since "alcohol can rapidly cross the barrier of the placenta, producing equivalent concentrations in fetal circulation" (Fetus and Newborn Committee, 1997, Definitions, para. 4). There is no definitive information on how much alcohol a pregnant woman can consume before damage is caused to her unborn child. While studies have shown that FAS is more likely to occur following continuous or heavy drinking (Barr & Streissguth, 2001; Streissguth et al., 1989), what is less certain is whether there are additional thresholds for low and more moderate alcohol consumption that can also result in disabilities (Sampson et al., 2000).

While the exact prevalence of FASD is unknown, it can be found in all socioeconomic groups and among all ethnic groups. Among the general Canadian population, it has been estimated that overall FAS incidence is between 2.8 and 4.8 per 1000 of live births (First Nations and Inuit Health Committee & CPS, 2002). In Aboriginal communities, there is a growing awareness of the extent and impact of FAS. However, as there are few studies that have examined the prevalence of FAS/FAE among Aboriginal peoples, we must be cautious not to make generalizations about the extent of this problem in Aboriginal communities. Several isolated studies have been undertaken in select Aboriginal communities – most of which are quite dated – that estimate prevalence at rates considerably higher than among the general Canadian population. Examples of these studies include an estimate of 16% of children having FAS/FAE in a BC Aboriginal community (Robinson et al., 1987); 7.2 per 1000 live births having FAS in a Manitoba First Nation community (Ibid.); 46 per 1000

Table 1: Effects of Prenatal Alcohol Exposure on Growth and Development

Abnormal facial features	<ul style="list-style-type: none"> <li>• Short palpebral fissures,</li> <li>• Increased intercanthal distance</li> <li>• Flattened face with short nose</li> <li>• Absent or hypoplasticiltrum,</li> <li>• Bow-shaped mouth with thin upper lip</li> </ul>
Pre- and postnatal growth deficiency	<ul style="list-style-type: none"> <li>• Smaller head circumference</li> <li>• Hearing disorders</li> <li>• Eye abnormalities</li> <li>• Can cause physical disabilities such as kidney and internal organ problems</li> <li>• Congenital abnormalities</li> <li>• Low birth weight</li> <li>• Slow growth rate</li> </ul>
Central nervous system dysfunction and behavioural manifestations	<ul style="list-style-type: none"> <li>• Delayed motor and speech development</li> <li>• Decreased cognitive abilities</li> <li>• Difficulties with interpersonal relationship skills</li> <li>• Attention deficits, hyperactivity and impulsive behaviours</li> <li>• Learning impairments in language and number processing</li> <li>• Difficulties in understanding consequences of actions</li> <li>• Impulsive behaviour</li> <li>• Can lead to secondary disabilities such as mental health problems (depression/obsessive-compulsive disorder), trouble with the law, and alcohol and drug abuse</li> </ul>

Source: Adapted from First Nations and Inuit Health Committee & CPS, 2002; and Health Canada, 2006a.

Table 2: Possible Effects of Various Drugs on Fetus and Newborns

Substance	Effects on the Newborn
Marijuana	Risks unknown but some studies have shown low birth weight and learning disabilities
Cocaine	Premature labour and delivery; malformation of limbs and kidneys; infants addiction to cocaine and withdrawal syndrome; possible increased risk of sudden infant death syndrome (SIDS); developmental delays and deficits in attention and learning
Opiates/Heroin, Methadone	Risk for spontaneous abortion or premature labour; low birth weight; sudden infant death syndrome (SIDS); infants' addiction to the drug and withdrawal syndrome; long term developmental delays; brain damage
PCP Phenacyclidine	Serious neurological and behavioral defects, developmental delays and possible learning problems

Source: Adapted from University of Nevada (nd) and Chiang & Lee (1985).

births having FASD among Aboriginal children from the Yukon (Asante and Nelms-Matzke 1985, as cited in Bray and Anderson, 1989); and 100 cases per 1000 births having FAS/FAE in another Manitoba First Nation (Square, 1997).

High rates of incidence have also been found among Native American Indians. One study in a Northwest Indian community in the United States found FAS rates of 9.2 per 1000 births (Rhoades, 2000). Another study of Native communities in the southwestern United States in the early 1980s highlighted variations in rates of FAS/FAE over time, between tribes, and between cultural groups (May et al., 1983). While rates were as low as 2.5 and 2.7 per 1000 births for Navajo and Pueblo cultures respectively, rates for Southwest Plains Indians were as high as 19.5 per 1000 births. Since many studies have shown that often FAS and FAE remain undiagnosed until the affected child goes to school, true incidence of FAS must be considered as higher than the reported rates (First Nations and Inuit Health Committee & CPS, 2002). However, the variations in rates found among different groups of Indigenous peoples highlights the need

to avoid blanket assessments of greater prevalence (Pacey, 2009).

Like alcohol abuse, drug abuse can have harmful consequences for a fetus' cognitive, social and physical development. Because of ethical considerations, studies on the effects of drugs due to prenatal exposure are generally limited to "clinical observations of pregnancy outcomes or the determination of drug concentrations in maternal and fetal biological fluid samples collected at time of delivery"<sup>12</sup> (Chiang & Lee, 1985: 1). Generally, findings show that maternal drug use can cause "premature birth, spontaneous abortions, low birth weight, as well as abnormalities in many organ systems, most prominently the brain as evidenced by numerous neurological, emotional, and cognitive impairments" (Nestler, 2009: 6). While it is known that "long-term effects of fetal drug exposure depend on a number of factors including the dose, duration and diversity of the drugs involved" (Bhide & Kosofsky, 2009: 5), assessing these effects is very challenging since disruptions in brain development sometimes do not emerge until later in life (Frederick & Stanwood, 2009).

The possible effects of various drugs on the fetus and newborn are summarized in Table 2. It is important to remember, however, that these are not effects of combined use of several substances with tobacco and alcohol.

In Canada, substance abuse, including illicit drug use, is well recognized as having a substantial impact on many Aboriginal communities. While information on drug use among the Aboriginal population is limited, what there is points to rates of drug usage that are nearly double that of the general population (Health Canada, 2000a; RHS National Team, 2007). There is even less information about drug use among pregnant Aboriginal women. This may stem from the fact that, generally, less attention has been brought to women's substance abuse than to men's, "in part because women's substance use has not been as high as men's" (British Columbia Centre of Excellence for Women's Health, 2005: 1). One example of prevalence of maternal drug use, drawn from British Columbia's Vital Statistics Agency and the Perinatal Database Registry 2008 data, compared pregnant on-reserve Status Indian women with pregnant off-reserve and non-Aboriginal women in British Columbia. The data revealed that drug use was highest among pregnant off-reserve Status Indians (6.9%), followed by pregnant on-reserve Status Indians (4.4%). Respectively, these rates are more than triple and double the rate of pregnant women in BC generally (Office of the Provincial Health Officer, 2009: 80).

Research highlights a strong association between substance abuse and victimization (National Institute on Drug Abuse, 1999), and between substance abuse and mental health (Cormier & Poole, 2003). In a study by Cormier (2000), 86% of substance-abusing women in her sample had been the victim of either adult or childhood physical and/

<sup>12</sup> Such studies are often methodologically flawed in that they fail to take into account the use of more than one drug.

or sexual abuse. Another study revealed that approximately two-thirds of women with substance abuse problems also had concurrent mental health problems “such as depression, post-traumatic stress disorder, panic disorder and/or an eating disorder” (Zilberman, 2003 as cited in Cormier & Poole, 2003: 14).

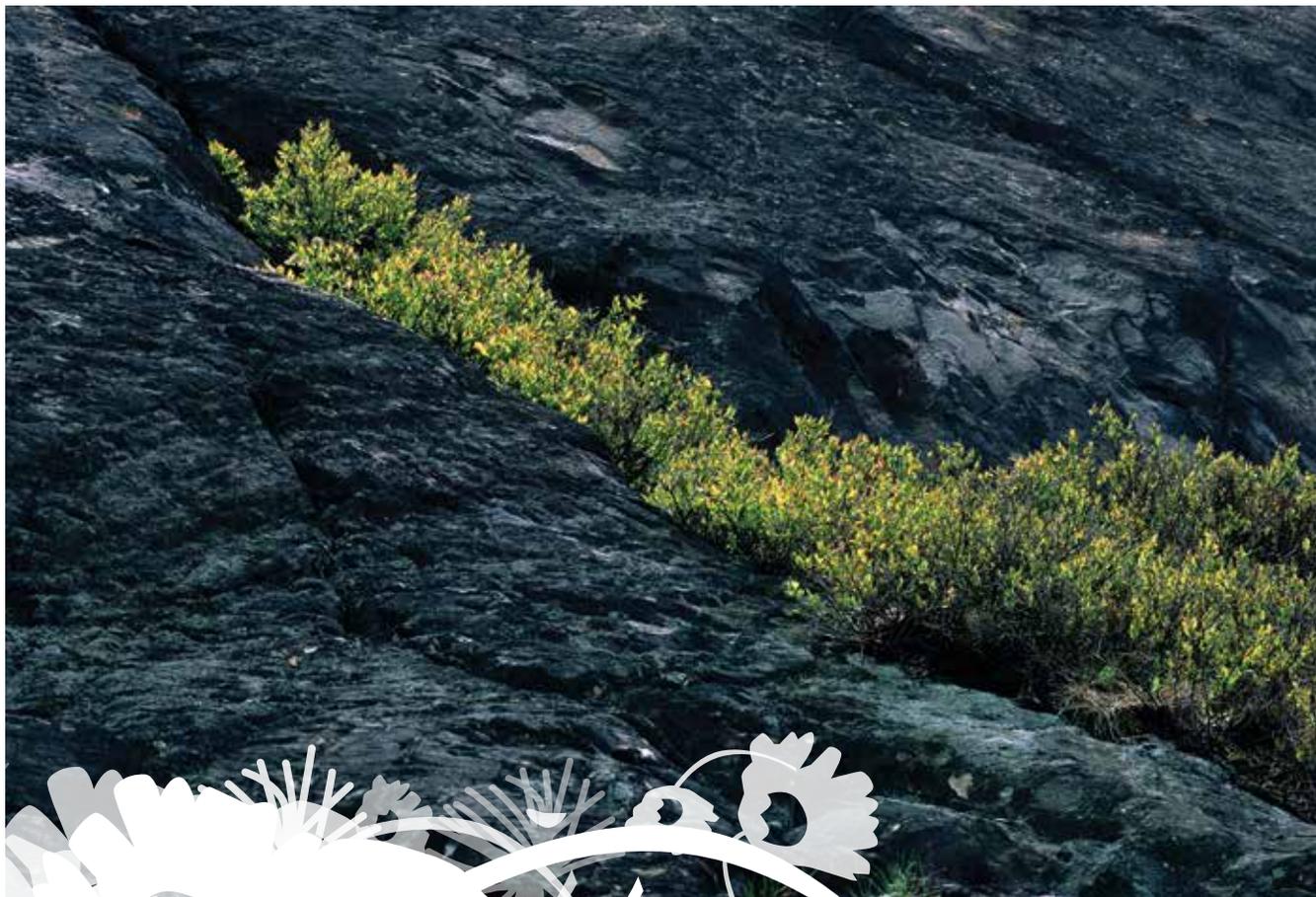
Interventions targeted at maternal drug use must be understood within the context of colonization and the residential school experience which have contributed to violence against women, substance abuse and addiction. They must also be understood within the context of continuing inequities in determinants of health that are also associated with substance abuse, which despite improvements, still show “clear differences between the Aboriginal and non-Aboriginal

population in educational attainment, income and employment opportunities” (Adelson, 2003 as cited in RHS National Team, 2007: 114). The societal costs of maternal drug use are enormous and include medical complications, disability, and special schooling (Nestler, 2009).

### 6.3 Breastfeeding

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 (Canadian Perinatal Surveillance System Steering Committee et al., 1998). Breastfeeding is important in terms of disease prevention because infants who are breastfed have increased protection against respiratory, ear,

and intestinal infections; the unique components of human milk help protect infants from outside infection (Ibid.). In addition to the health benefits, “breastfeeding is socially and economically advantageous since it is an ecologically sound, efficient, and self-reliant food source” (Ibid.: 23). However, in many developed countries, women with lower socioeconomic status tend to have lower breastfeeding rates (Amir & Donath, 2008; Millar & MacLean, 2005; Flacking et al., 2007). There are many explanations for this, including the fact that women from low income families may have “less family support for breastfeeding, less ability to seek help with breastfeeding problems, less flexibility with working arrangements, and concerns about breastfeeding in public” (Amir & Donath, 2008: 256).



Like all babies born prior to the advent of formula, Aboriginal 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). Apart from a few studies documenting relatively low breastfeeding rates (Gilchrist et al. 2004; Banks, 2003), breastfeeding practices in Aboriginal communities in Canada have not been well reported. A study by Turcotte and Zhao (2004), using 2001 Aboriginal Peoples Survey data, found that off-reserve Aboriginal children aged three and under were less likely to have been breastfed compared to other children in Canada (73% compared to 82%). Another study found that while breastfeeding rates among Aboriginal women on reserve were considerably lower than the general population, there has been an increase in breastfeeding from 1997 to 2002 from 50% to 60% (National Aboriginal Health Organization [NAHO], 2005). While no major differences were found between Inuit, Métis and First Nations children with respect to initiating breastfeeding, Inuit children are breastfed for longer durations (RHS National Team, 2007). These lower rates of breastfeeding are a public health concern because of the association between low breastfeeding rates and the prevalence of childhood respiratory tract infections among Aboriginal children in Canada (Jenkins et al., 2004).

In addition to socioeconomic factors that impact rates of breastfeeding, cultural forces may also affect breastfeeding among Aboriginal populations (Banks, 2003). For example, unlike most Canadian women, the success or failure of breastfeeding among Mohawk women (and perhaps other Aboriginal groups) is strongly influenced by the baby's grandmother who plays a key role in the child's rearing (Ibid.). Breastfeeding may also appear impractical for mothers,

as most grandmothers and extended family members also want to participate in feeding the infant and bottle feeding makes this possible. Other cultural influences, such as government-subsidized baby formula, which encourage low breastfeeding rates (Ibid.), need to be investigated further. While further research is needed on this topic, education about the benefits of breastfeeding, however, can only be advantageous for infant health (Halken, 2004) and is a good place to begin to increase Aboriginal rates. In the future, interventions must aim to empower, educate, and encourage women (and the larger community) to breastfeed infants (Banks, 2003).





## 7. HEALTHY LIVING



The availability of affordable and nutritious food, and living an active lifestyle have been shown to have positive and direct health impacts over the life course. In many Aboriginal communities, inadequate diet and a more sedentary lifestyle have resulted in increased rates of obesity, diabetes, and cardiovascular diseases to the point where these illnesses have become a public health concern. This section will focus on the impacts of inadequate diet and physical activity on Aboriginal populations in Canada.

A good diet and adequate food supply are dependent first and foremost on the availability and cost of healthy nutritious food, which can vary considerably across geographic regions. In northern and more remote communities, because of the long distance that food must be transported, food costs are more expensive and the

variety of fresh produce is much more limited (Skinner & Hanning, 2005). When coupled in these regions with the socioeconomic circumstances of generally lower incomes and employment levels, these higher food costs can make the cost of purchasing healthy food choices exorbitant. In the context of Canada's Aboriginal populations, good nutrition is also dependent on the availability and safety of traditional sources of food on which many Aboriginal people still rely.

Food insecurity is a matter of great concern for many Indigenous people, resulting in periods of hunger as well as contributing to poorer dietary choices. Wilkinson and Marmot (2003) highlight that "a good diet and adequate food supply are central for promoting health and well-being" (p. 26). When there is a shortage of food (or lack of variety), malnutrition and deficiency



diseases can occur. When there is excessive intake or a reliance on fatty, nutritionally poor, sources of food, other poor health outcomes such as “cardiovascular diseases, diabetes, cancer, degenerative eye diseases, obesity and dental caries” can occur (Ibid.). The impacts of inadequate diet are felt acutely in the health care system since “poorly nourished people are usually less resistant to infections, and they tend to heal more slowly, have more diseases and longer hospital stays, and incur higher health care costs” (Che & Chen, 2001: 11).

Over time, there has been considerable change to traditional Aboriginal diets resulting from a disruption of traditional food supplies, low income, the high cost of healthy food items in comparison to processed pre-packaged foods, and the lack of knowledge about what constitutes

good nutrition (Boult, 2004; Skinner et al., 2006). Traditional Aboriginal diets that included game meat, fish, berries and plant foods were “high in animal protein and low in fat and carbohydrates, and provided adequate amounts of energy and micronutrients for health” (Willows, 2005: S32). These foods came from hunting and gathering activities that were physically demanding and expended a great deal of

energy to obtain (Samson & Pretty, 2006). This traditional diet has been largely substituted with a “western” one based on market foods, many of which are of low nutritional quality (Willows, 2005) and high in fat and simple sugars (Skinner & Hanning, 2005), accompanied by a more sedentary lifestyle (Compher, 2006). These dietary and lifestyle changes have occurred over a relatively short period of time, less than a generation, and are reflected in rising rates of cancer, as well as obesity and diabetes rates among the Aboriginal population (Hegele et al., 1997; Hegele et al., 2001; Daneman, 1993).

### 7.1 Obesity

Clinical obesity is diagnosed when a body mass index (BMI) is 30 kg/m<sup>2</sup> or higher (Dictionary, 2002). Obesity has been linked to major chronic diseases, such as arthritis, diabetes (Grundy, 2004; Ziegler 2005), cardiovascular diseases (Liu et al., 2006), and cancer (Mokdad et al., 2003). For example, individuals with a body mass index of 35.0 or more were found to be 20 times more likely to develop diabetes than their same sex peers with BMI between 18.5 and 24.9 (Field et al., 2001). It has also been recognized that obesity of the abdominal area causes the most risk for chronic diseases (Field et al., 2001) and is more common in Aboriginal populations (Delisle et al., 1995; Harris, Caulfield, et al., 1997). A strong association between abdominal fat distribution and glucose intolerance and diabetes has been proven in a number of studies, including the

Table 3: Distribution of Body Weight Among First Nations and Other Canadian Adults

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

Source: RHS National Team: 99-100.

Dogribs in the Northwest Territories (Szarthmary & Holt., 1983), Cree and Ojibwa in Manitoba and Ontario (Young, Sevenhuysen, et al., 1990), and the Interior Salishan in British Columbia, among others (Daniel et al., 1999).

As a result of the shift from a traditional to a 'western' diet, and from an active to a more sedentary lifestyle, obesity rates among Aboriginal peoples are much higher than for other Canadians and are a major public health concern. There is no single data source that can be used to compare obesity among First Nations, Inuit and Métis peoples in Canada. The 2002/2003 FNRLHS found prevalence of obesity among First Nations on-reserve adults at 31.2%, a rate more than double that of the general Canadian population (see Table 3)(RHS National Team, 2007). The Aboriginal Peoples Survey 2006 provides estimates of obesity for First Nations off-reserve, Inuit and Métis adults at rates of 26.1%, 26.4% and 23.9% respectively, while

the 2007 Canadian Community Health Survey reports an obesity rate of 16.6% for non-Aboriginal adults (PHAC, 2009).

Obesity rates were found to be similarly higher among Indigenous populations in the United States, Australia and New Zealand compared with their non-Indigenous counterparts. In the United States, prevalence of overweight and obesity among American Indian and Alaskan Native peoples was found to be higher than the respective US rates for all races combined (Zephier et al., 2006; Denny et al., 2005; Halpern, 2007). In Australia, the 2004-05 National Aboriginal and Torres Strait Islander Health Survey found that 28% of Indigenous Australians were obese compared with 16% of non-Indigenous Australians (AIHW, 2008a); while in New Zealand, in 2006/2007, 43% of Māori over age 15 were considered to be obese compared with only 23% of New Zealander's with European/

other ethnic origins (Ministry of Social Development, 2010).

Obesity rates vary among different age and gender groups. Among First Nations adults, men were found to be over-represented in the group of over-weight individuals, while women were over-represented in the group of obese and morbidly obese individuals (RHS National Team, 2007). The 2006 APS Survey reported prevalence of obesity among Aboriginal children and youth aged 6-14 (excluding on-reserve First Nations) at 20.4% for males compared with 17.2% for females, and among adults at 27% for males compared with 25.1% for females (PHAC, 2011). Among children and youth, prevalence of obesity was highest among Inuit (25.6%), followed by First Nations off-reserve (20%), and Métis children and youth (16.9%) (Ibid.). It is critical to note here, however, that for Aboriginal children living in the Arctic, Body Mass Index (BMI) should be interpreted with caution because these children display a



different pattern of growth with a high weight-for-height anthropometric pattern, which should not be considered as obese (MacMillan et al., 1996).

Not only is obesity related to diet and nutrition, but it is also related to a number of other risk factors. In an English longitudinal study, researchers examined early life risk factors for childhood obesity and found that children who watched television for more than eight hours a week were at an increased risk of being obese (Reilly et al., 2005). In this same study, 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 seven than children in the highest quarter (> 12 hours;  $\chi^2$  test for linear trend 17.8). 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 (Ibid.). Similar studies have been undertaken among Aboriginal children and youth in Canada. A study by Hanley et al. (2000) examined the correlation between obesity and television viewing in the Sandy Lake First Nations community and 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 two hours of television per day.

Being physically inactive is a key predictor of obesity (Katzmarzyk, 2008). Nevertheless, the evidence regarding Aboriginal peoples' participation in physical activity is mixed. A study by Findlay and Kohen (2007) among Aboriginal children and youth, utilizing 2001 Aboriginal Peoples Survey data, found that while Aboriginal children were

equally as likely to participate in sports as are other children, some Aboriginal children and youth were less likely to participate. The results of their study showed a correlation between participation in sport with a number of variables including gender (boys had higher rates of participation than girls), age (children had higher rates than youth), family factors (higher levels of parental income/education and smaller number of siblings were associated with higher participation rates), First Nation identity (Métis and Inuit had higher rates than First Nations; First Nations children off-reserve had higher rates than those on-reserve), and participation in other activities (increases in time spent watching TV or playing video games were associated with lower rates of participation). Among adults, the results of Findlay's (2011) analysis of 2005 Canadian Community Health Survey Data showed that off-reserve First Nations and Métis people were more likely, while Inuit were equally as likely, to be physically active compared to non-Aboriginal people.

A key issue related to obesity in Aboriginal communities across Canada relates to

the availability (or lack of) sporting and recreational facilities and activities. When asked about the availability of sports and cultural facilities in their community, fewer than half of Ontario Aboriginal youth reported having sports facilities (First Nations Centre [FNC], 2004). The most commonly cited needs were for a community swimming pool, followed by playground equipment, arena and drop-in centres (Ibid.). In the context of rural and remote Aboriginal communities, there are a number of barriers to increasing physical activity levels among Aboriginal children and adolescents. A study by Skinner et al. (2006) identified lack of organized sports, lack of trained personnel, facility limitations, insufficient equipment, lack of financial resources, lack of access to play spaces and equipment and competing indoor and technology-based activities as significant barriers to physical activity among Aboriginal children and youth in Fort Albany, Ontario. When coupled with living in a climate that precludes outdoor activities for much of the year, these barriers may impose considerable challenges in promoting an active lifestyle.



## 7.2 The Implications of Childhood and Adolescent Obesity for Public Health in Canada

Diabetes has been emerging as a public health issue among Indigenous populations in North America since the 1950's (Cohen, 1954 as cited in RHS National Team, 2007: 70). Since that time, studies conducted among Indigenous people in the United States, Canada, New Zealand, and Australia have shown consistently higher prevalence of diabetes among Indigenous compared with non-Indigenous populations (McNamara et al., 2011; Dyck et al., 2010; Bruce et al., 2003; Janz et al., 2009; Garner et al., 2010; New Zealand Ministry of Health, 2000; Ghodes, et al., 2004; RHS National Team, 2007; Knowler et al, 1981, 1990; AIHW, 2008b). Longitudinal studies have shown that being overweight or obese during childhood and adolescence can predict adult obesity (Serdula et al., 1993; Guo et al., 1994), which is associated with Type 2 diabetes (Barrett-Connor, 1989; Skinner & Hanning, 2005) and coronary heart disease (Hubert et al., 1983). Type

2 diabetes, also referred to as non-insulin-dependent or adult-onset diabetes, is by far the most common type of diabetes and is generally treated through diet and exercise (Garner et al., 2010).

While rates of Type 2 diabetes have been found to be generally higher among Canada's Aboriginal population compared to the general population, these rates do vary by Aboriginal identity (First Nation, Métis or Inuit), by living on-reserve or off-reserve, by age (Skinner & Hanning, 2005), by gender (Dyck et al., 2010), and by geographic location and isolation (Young, Reading, et al., 2000; Young, Szathmary, et al., 1990). The 2002/03 FNRLHS reported a diabetes prevalence rate of 19.7% for First Nations (on-reserve) compared with only 5.2% of Canadians in general (RHS National Team, 2007). Garner et al.'s (2010) study found higher prevalence of diabetes among off-reserve First Nations (9.3%) and Métis (7.5%) adults, compared with non-Aboriginal adults (6.5%), but lower prevalence among Inuit adults (4.9%). In addition, a study by Dyck et al. (2010) which utilized administrative

databases to study diabetes frequency in Saskatchewan over the period 1980-2005, found that First Nations women were disproportionately affected by diabetes, particularly during their reproductive years, with rates of prevalence that were four times greater compared with non-First Nations women.

Most alarming is the age at which diabetes is being diagnosed and the rapid increase in prevalence among Indigenous populations. More Aboriginal children and adolescents in Canada are being diagnosed with diabetes (Young, Dean et al., 2000). First Nations children, particularly those living in northwestern Ontario and northern Manitoba, have been identified as one group that is at high risk for developing Type 2 diabetes (Harris et al., 1996; Dean, 1998). Among adults, Dyck et al.'s (2010) Saskatchewan population-based study found that the number of incident cases of diabetes was highest among First Nations people aged 40-49, while for non-First Nations people, it was highest for those aged 70 or more. Similar results have been found among Indigenous children, youth, and adults in Australia (O'Dea et al., 2007; Craig et al., 2007) and the United States (McLaughlin, 2010).

The increasing prevalence of diabetes over time is a particularly concerning trend, with costly implications for public health care in Canada. Diabetes can be manifested in long-term complications affecting the cardiovascular system, eyes, kidneys and nerves, including heart disease and stroke, kidney disease, blindness, limb amputations, and increased susceptibility to infections and other illnesses (PHAC, 2008b; Health Council of Canada, 2007). Diabetes is becoming much more common and is growing at a rapid rate, particularly among First Nations men. The Health Council of Canada (2007), using multiple data sources, tracked increases in prevalence of diabetes and found the most



rapid rate of growth over a 5-year period (1997-2002/03) was among First Nations men aged 45-64. Dyck et al. (2010) noted a similar trend, with prevalence of diabetes increasing among First Nations men from 9.5% to 20.3% over the 1980-2005 period (compared with 2.0% to 6.2% among non-First Nations men), and among First Nations women from 9.5% to 20.3% (compared with 2.0% to 5.5% among non-First Nations women).

Some innovative and effective diabetes prevention and treatment programs have been initiated in some First Nations communities. For example, the Kahnawake Schools Diabetes Prevention Program has been effective in putting “the brakes on the persistent increase in new cases of diabetes in the Mohawk First Nation community near Montreal” (Health Council of Canada, 2007: 7), and the Island Lake Regional Renal Health Program was established in response to high rates of kidney failure in a northern remote First Nations community in Manitoba and provides services in the prevention, screening and treatment of kidney disease (Ibid.). The increasing prevalence rates

underscore the need for more effective diabetes prevention and treatment programs such as these.

Rates of cardiovascular disease have also been rising over the past 40 years (Reading, 2009b). Data from the 1997 First Nations and Inuit Regional Health Survey showed rates of self-reported heart problems that were three times higher for First Nations and Inuit peoples compared to the general population (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). More recent data continues to demonstrate a disproportionate burden of cardiovascular disease among Aboriginal Canadians. A study from the Six Nations Reserve in southern Ontario found 17% of its residents had cardiovascular disease compared to only 7% of non-Aboriginal individuals (Myers, 2002), while British Columbia’s Provincial Health Officer reported 2006/2007 rates for stroke that were 70% higher, ischemic heart disease that was 25% higher, and congestive heart failure that was 75% higher for Status Indians compared to other provincial residents (Office of the Provincial Health Officer, 2009). For the

Inuit, rates of cardiovascular disease have in the past been generally lower than for the general Canadian population. However, by 2000/2001, rates for specific risk factors have been rising, including a proportion of Inuit with Body Mass Index of 25 or greater that exceeded that of the general population,<sup>13</sup> suggesting that cardiovascular disease related health issues will become more of a concern for this population as well (Young, 2003).

Aboriginal peoples in Canada are also more likely to die from cardiovascular diseases compared to the general population. For example, in 2000/2001 the mortality rate for acute myocardial infarction among First Nations people living on reserve was 72.7/100,000 compared to 52.1/100,000 for other Canadians, and the mortality rate for stroke was 71.5/100,000 compared to 34.2/100,000 for other Canadians (Health Canada, 2005a).

As a result of dietary and lifestyle changes, the incidence of cancer has also been on the rise among Aboriginal populations. Numerous cancer studies have shown that



<sup>13</sup> Data was derived from the Community Health Survey 2000/2001 and reported in Young, 2003.

high intake of animal proteins, fats and carbohydrates, as well as low consumption of dietary fiber and plant foods, increases the risk of developing breast, colon and prostate cancer (Slattery, 2005; Key et al., 2002). Aboriginal health researchers have discovered a sharp increase in the prevalence of cancer, with colon, breast and prostate cancer rising in Aboriginal populations to levels matching non-Aboriginal rates (Marrett & Chaudhry, 2003). Similar trends were found in the American Indian and Alaska Native populations when compared with the general American population (Byers, 1996).

### 7.3 Obesity Intervention Programs for Aboriginal Peoples

Obesity intervention programs are usually included into general health promotion and education programs or into intervention programs specific to some diseases (Young, 1994; Young and Harris, 1994). For example, the Physical Activity Unit was established to help Canadians improve their health through regular physical activity, and it is positioned within the Healthy Living Strategy, an intersectoral initiative designed to improve health outcomes and reduce disparities in health status in Canada (PHAC, 2010a).

The Government of Canada offers two programs as part of an early intervention strategy targeted at young Aboriginal children. The Public Health Agency of Canada offers the Aboriginal Head Start Urban and Northern Initiative (AHS) which addresses the needs of young Aboriginal children 0-6 years of age living in urban centres and large northern communities (PHAC, 2010b). It is designed to meet the spiritual, emotional, intellectual and physical needs of the child.



Health Canada offers a similar program, Aboriginal Head Start On Reserve, to address the needs of young Aboriginal children living on-reserve (Health Canada, 2009a).

Other programs are targeted at other age groups. “ACTIVE 2010” is a physical activity promotion program that helps Aboriginal organizations (and other ethnic minorities) by providing opportunities for physical activity, community sport and recreation in Ontario (Ontario Ministry of Health Promotion, 2005). There are also obesity intervention programs that are incorporated into intervention initiatives for chronic diseases, such as the Canadian Diabetes Strategy, Cardiovascular Diseases Prevention Program, Health Promotion Program and Risk Factors Project.<sup>14</sup>

### 7.4 Availability and Safety of Traditional Food Sources

Food insecurity in the context of Aboriginal peoples in Canada is connected not only to the availability of affordable nutritious food, but also to the availability and safety of traditional food sources. Traditional food,<sup>15</sup> derived through hunting, trapping and fishing activities, “is the anchor to cultural and personal well-being in the North. It is essential to the nutritional and social health of Aboriginal individuals” (Furgal et al., 2005: 104). Food – its collection, consumption, and trade – is considered to be an “integral part of the community, with social, cultural, economic and spiritual ramifications” (Wheatly, 1996 as cited in El-Hayek, 2007: 69).

<sup>14</sup> Details of these programs can be found on the Public Health Agency of Canada’s homepage under Chronic Diseases (Diabetes/Risk Factors), Health Promotion, and Cardiovascular Disease at <http://www.phac-aspc.gc.ca/index-eng.php>.

<sup>15</sup> Also referred to as ‘country food.’

Traditional food still constitutes a significant proportion of dietary energy for many Aboriginal peoples, particularly for those living most distant from urban areas or accessible roads, those living in northern latitudes (Kuhnlein et al., 2004), and for those who lack available and accessible healthy alternatives (Furgal et al., 2005). However, where once traditional foods constituted 100% of dietary energy, it now constitutes only between 10 and 36% (Kuhnlein et al., 2004). One reason attributed to this transition away from traditional food sources has been a concern over environmental contamination of these food sources, which has contributed to the popularity of commercially produced market food (Furgal et al., 2005).

Concerns about the contamination of the food supply and its impacts on the health of Aboriginal peoples seem supported by a number of studies. The presence of heavy metals and persistent organic pollutants in traditional food sources has been linked by some researchers to neurological defects and certain cancers (Canuel et al., 2009; El-Hayek, 2007). For example, data from dietary surveys indicate that Inuit have the highest intakes of mercury, with levels that may be exceeding acceptable established guidelines (El-Hayek, 2007). Mercury contamination is primarily found in seals, polar bears, narwhal, and caribou, where metals such as mercury will accumulate mostly in the internal organs of these mammals. Researchers have also found that members of the Pacific Northwest Tribal Nations on average consume ten times more fish and seafood than the average American consumer, and are significantly exposed to persistent pollutants and biotoxins found in this food source (Wiseman and Gobas, 2002; Judd, et al. 2004).

An example of the health impacts of a dramatic shift away from traditional foods resulting from environmental contamination can be found among the Cree communities in northern Quebec. Hydroelectric development projects of

the Hudson/James Bay basin brought significant danger of methyl mercury poisoning downstream and warnings to curtail consumption of fresh-water fish (O'Brien, 2002). By the 1980s, many Cree diets had shifted away from traditional foods, leading to an increase in obesity, non-insulin-dependent diabetes, and high blood pressure (Belinsky & Kuhnlein, 2000). Most notably, a high prevalence of diabetes has been observed since that time. Prevalence rates have increased at an alarming rate in the First Nations communities of northern Quebec (Eeyou Istchee) from 4.1% in 1989 to more than triple this by 2005 (Dannenbaum et al., 2008).

While some researchers have linked environmental contamination to a host of diseases and ailments, the evidence is inconclusive and there is still a perception among many researchers that the health benefits of consuming traditional foods outweigh the risks (El-Hayek, 2007; Kuhnlein et al., 2000). Traditional foods have been found to be of superior nutritional benefit compared to market foods. In a study by Kuhnlein et al. (2004), protein and most micronutrients were found to be superior on days that individuals reported consuming traditional foods, and consumption of these foods was found to be associated with lower levels of saturated fat and carbohydrates. Alternatively, the consumption of traditional foods replaces low-cost, less nutritious market foods, thereby playing an important role in the maintenance of a healthy body weight and optimal health. Given the nutritional superiority of traditional foods, however, it is important that a healthy balance be maintained between a traditional diet and market-based food (El-Hayek, 2007; O'Brien, 2002).





## 8. SUBSTANCE USE AND MISUSE



*Drug use is both a response to social breakdown and an important factor in worsening the resulting inequalities in health.... Alcohol dependence, illicit drug use and cigarette smoking are all closely associated with markers of social and economic disadvantage (Wilkinson & Marmot, 2003: 24).*

The social costs of substance use are considerable. In 2002, for example, the costs of alcohol, tobacco and drug use, including health care services, law enforcement services, and the loss of productivity in the workplace or at home, were calculated at \$39.8 billion, where legal substances (tobacco and alcohol) accounted for 79.3% of that total estimate and illegal drugs accounted for the remaining 20.7% (Rehm et al., 2006). This section will explore the interconnection between social determinants, substance

use, and health among Aboriginal peoples. Specifically, it will examine the prevalence of tobacco use, alcohol, solvent and drug use among Aboriginal peoples; the impacts of substance abuse on Aboriginal peoples' health generally; and the need for control and prevention strategies to be adapted to the unique context of Aboriginal peoples.

### 8.1 Tobacco Use

Tobacco use is the leading cause of preventable death and every year, an estimated 37,000 people die (16% of all deaths) in Canada as a result of smoking (Canadian Council for Tobacco Control, 2009). Tobacco use is a major risk factor in many diseases, such as cardiovascular disease (Ellison et al., 1999), chronic respiratory disease (Sin et al., 2002), cancer (RHS National Team, 2007), and arthritis (Albano, 2001; Hutchinson et al.,

2001). In addition, chewing tobacco has been linked to cancer of the mouth (Key et al., 2002). Since the topic of tobacco use has already been touched upon in this report within the context of prenatal exposure to tobacco smoke, this section will focus primarily on tobacco use among Aboriginal children, youth, and adults.

Among many First Nations and Métis people, tobacco is considered a sacred plant that is used for a variety of medicinal, spiritual, and ceremonial purposes. However, despite decreases in the prevalence of smoking among all Canadians over the past three decades (Chassonneuve, 2007), Aboriginal peoples have alarmingly high rates of non-traditional tobacco consumption, particularly among First Nations and Inuit. Compared to 17% of the general population in Canada that smokes,<sup>16</sup> 31% of Métis (Janz et al., 2009), 58% of Inuit (Tait, 2008), and 58.8% of First Nations adults smoke (RHS National Team, 2007).<sup>17</sup>

Despite the lack of surveillance data, that which exists reveals that Aboriginal peoples have higher rates of tobacco-related illness and death. Incidence rates for lung cancer are rising and approaching the Canadian average (Aboriginal Cancer Care Unit, 2002), while lung cancer rates in Nunavut are four times higher than the national average (Non-Smokers' Rights Association/Smoking and Health Action Foundation, 2009). First Nations people have higher rates of asthma compared with the general Canadian population (9.7% compared with 7.8%) and more than double the prevalence for heart disease (11.5% compared to 5.5%) (RHS National Team, 2007: 59). In addition, Aboriginal peoples have higher rates of diabetes, for which tobacco smoking is a risk factor,

compared with non-Aboriginal people (RHS National Team, 2007).

A high prevalence of smoking is not unique to Aboriginal peoples in Canada. In Australia, in 2004/2005, 52% of Aboriginal and Torres Strait Islanders also identified as current smokers, a rate which is more than twice the prevalence among the Australian population generally (Scollo & Winstanley, 2008). In New Zealand, 45% of the Māori population smoked in 2006 compared to 21% non-Māori (Ministry of Health, 2006 as cited in Scollo & Winstanley, 2008), while in the United States, 32% of American Indians and Alaska Natives smoked in 2005 compared to 21% of the overall population (Mariolis et al., 2005 as cited in Scollo & Winstanley, 2008).

Given the prevalence of tobacco smoking among Canada's Aboriginal populations, the exposure of Aboriginal children to tobacco smoke is clearly a health concern. It is well-documented that tobacco smoke exacerbates early life risks for respiratory diseases by damaging the respiratory system and encouraging or progressing the development of chronic respiratory problems (Mann et al., 1992). Exposure to second-hand smoke has also been

associated with sudden infant death syndrome (SIDS), increased rates of lower respiratory infections, decreased lung growth, increased otitis media, and increased risk of asthma and type 2 diabetes (Adgent, 2006; First Nations and Inuit Health Committee & CPS, 2005; Gaffney, 2000; Jenkins et al., 2003; Wang & Pinkerton, 2008). In addition to physical health impacts, exposure to tobacco smoke can also affect the mental health and development of a child. A longitudinal, five-year follow-up study found statistically significant (p,0.05) association between early smoking and high-risk behaviors in grade-seven adolescents (Ellickson et al., 2001). For example, compared with nonsmokers, 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; and 7 times more likely to steal (Ibid.). These adolescents were also at higher risk for low academic achievement and behavioral problems at school, and use of predatory and relational violence.

There is a paucity of research related to Aboriginal children's exposure to second-hand smoke. High parental smoking

**Table 4: Percentage of Non-Smoking Population Age 12 and Older Who Are Exposed to Second Hand Smoke**

Location	Aboriginal	Non-Aboriginal
Home	16	4.6
Private vehicle	14	5.6
Public space	14.9	10/4
Private vehicle and/or public space	24.2	13.8

Source: Statistics Canada Community Health Survey, Share File Scyle 3.1, 2005 as cited in Office of the Provincial Health Officer, p.162.

<sup>16</sup> Based on Canadian Community Health Survey 2005 as cited in Tait, 2008.

<sup>17</sup> Métis and Inuit data is based on the 2006 Aboriginal Peoples Survey, while the data for First Nations has been derived from the First Nations and Inuit Regional Longitudinal Health Survey 2002/2003.

rates were documented in one study of Inuit children. Parents reported being non-smokers in only three of the sample's households, while parental smoking occurred in 42 households (48.8%) and within the vicinity of the house in an additional 31 households (Orr et al., 2001). Statistics Canada Canadian Community Health Survey data from 2005 revealed significantly higher rates of exposure to second hand smoke among non-smoking Aboriginal peoples aged 12 and older compared with non-Aboriginal people (see Table 4). Similarly, the Tobacco Use in British Columbia 1997 survey highlighted that 32% of Aboriginal children were daily or nearly daily exposed to cigarette smoking in their homes compared to 18% of all BC children (Office of the Provincial Health Officer, 2001).

Like adults, smoking is also more prevalent among Aboriginal children and youth, and is initiated at a very young age. The 2002/2003 FNRLHS revealed that the average age of smoking initiation among First Nations children on-reserve was 12.2 years old (RHS National Team, 2007). Throughout the teen years, smoking rates increased with age and were higher among females (Figure 5). Similarly high rates were found in a study by Elton-

Marshall et al. (2011) which utilized self-reported cross-sectional data from the 2008/09 Youth Smoking Survey to examine the prevalence of smoking among off-reserve Aboriginal youth in grades 9 to 12. They found that 24.9% of Aboriginal respondents reported being current smokers compared with 10.4% of non-Aboriginal respondents, and that prevalence of smoking was higher among female compared with male Aboriginal youth (27.1% compared with 22.9%).

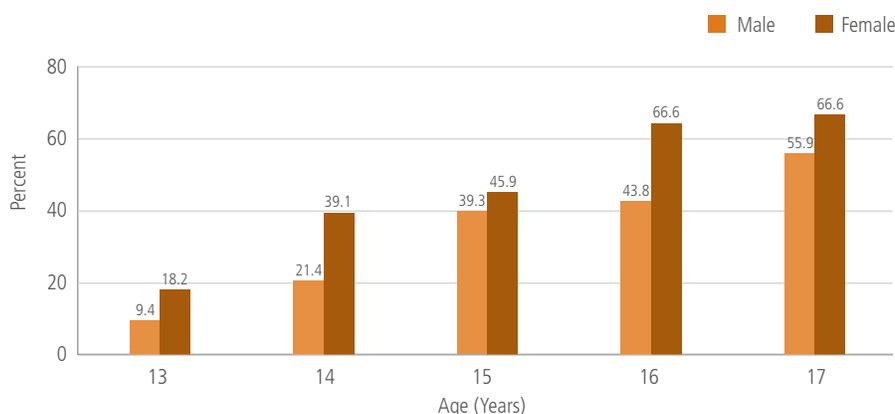
The high rates of smoking among Aboriginal teenagers is particularly a concern because youth represent a large and growing demographic group within the Aboriginal population and smoking will have long term health implications for this group. The especially high prevalence of smoking among young females causes additional concern given the influence of this risk factor on future generations. It also exemplifies the need to address this risk factor not only with age-specific but also gender-specific intervention programs.

Many researchers correlate smoking with socioeconomic disadvantage (Scollo & Winstanley; RHS National Team, 2007; Sin et al., 2002; Laaksonen et al., 2005). According to a 1999 report on smoking among Aboriginal peoples in Canada,

there is a strong inverse relationship between smoking and education; the more education Aboriginal people receive, the less likely they are to smoke (Stephens & Health Canada, 1999). Among Aboriginal young adults aged 15 to 24, 75% of university graduates had never smoked daily, compared with 24% of those who had not finished grade nine (Ibid.). As well, Aboriginal university graduates across all age groups were more likely to have quit smoking. This same report also highlighted an inverse relationship between income and smoking. Aboriginal peoples with incomes of \$50,000 or more were almost twice as likely to have never been daily smokers as those with incomes of \$5,000 to \$9,999 (Ibid.). According to these statistics, focusing on improving socioeconomic concerns in Aboriginal populations has the potential to have beneficial health outcomes.

Given research findings, it is clear that tobacco prevention and control strategies must be multifaceted and wide-ranging to target the unique characteristics of tobacco use among Aboriginal populations. They must address the role culture plays in tobacco use among First Nations and Métis populations. They must consider the age and gender of the target population. There should also be a focus on improving socioeconomic conditions within Aboriginal communities.

Figure 5: Tobacco Smoking Among First Nation Youth, by Age and Gender (n=2,494)



Source: RHS National Team, 2007: 203.

### 8.1.1 Tobacco Intervention and Control Programs

Government policies and programs targeted at tobacco intervention and control have the potential to reduce some of the existing health inequities between Aboriginal and non-Aboriginal Canadians. Given the wide-ranging impacts of tobacco consumption on health, it is not surprising that tobacco control programs have been on the Canadian government's priority list for some time. In 2001, the Government of Canada implemented the First Nations and Inuit Tobacco Control

Strategy (FNITCS), a five year program targeted specifically for First Nations and Inuit. The program received \$6 million funding in the first year, \$10 million for the next two years, and \$12 million for the last two years (Physicians for a Smoke-Free Canada, 2007). While the program did raise awareness of the issue, it was, however, suspended by the government in 2006 due to perceptions of ineffectiveness related to measuring progress in meeting objectives (Ibid.).

Since that time, there have been several tobacco intervention and control programs targeted at the Canadian population generally, with specific streams targeted for Aboriginal peoples. In October of 2007, a new Federal Tobacco Control Strategy was announced with an aim of reducing the number of smokers from 19%-12% by 2011 (Mosazai, 2007). The federal government allocated \$480 million over a five-year period, with a further \$50 million targeted to reducing high rates of tobacco use among First Nations and Inuit peoples (Health Canada, 2008b).

In 2009, a call was put out for tobacco control proposals that aligned with the objectives of the Federal Tobacco Control Strategy and the government's strategic priorities, with funding available in two streams: a general and an Aboriginal (Health Canada, 2009b). The Aboriginal stream considered funding for proposals that related to cessation, prevention and protection; knowledge development and transfer activities, such as innovative ways of helping smokers quit; holistic approaches that integrate tobacco reduction and prevention with broader initiatives; research in the area of smoking cessation; development and/or provision of training for practitioners; activities focused on protecting children from second-hand smoke or from initiating smoking; increasing capacity for addressing policy issues; and sharing best practices of effective policies and approaches among Aboriginal communities (Ibid.). Funding

for projects under the Federal Tobacco Control Strategy has been extended to March 2012 (Strizzi, 2011).

In addition to national tobacco control initiatives, tobacco initiatives have also been implemented at the provincial level over the past 15 years. In Ontario, for example, the Aboriginal Tobacco Strategy (ATS) was created in 2004 as part of its Aboriginal Cancer Strategy to provide pilot funding for a number of community-based projects for building 'tobacco-wise communities' that "know the difference between traditional and commercial tobacco and have the knowledge, commitment, resources and skills to promote and protect the well being of its members" (Cancer Care Ontario, 2009: 23). During the period from 2004-2009, a total of 49 projects were funded for a total of \$503,000 (Ibid.). In British Columbia, the "Honoring Our Health" Aboriginal tobacco strategy was unveiled in 2001 as a community-based tobacco control framework (British Columbia Ministry of Health and Ministry Responsible for Seniors, 2001). Another example is Alberta's Aboriginal Tobacco Use strategy, which was initiated in 2002 as part of its provincial Tobacco Reduction Strategy. In both 2004/2005 and 2005/2006, 19 off-reserve Aboriginal communities and organizations received funding for "developing and delivering prevention, education, cessation and protection programs, with an emphasis on the difference between sacred and recreational tobacco use" (Alberta Alcohol and Drug Abuse Commission, 2005; 2006).

According to the Canadian Cancer Society, cheap cigarettes available to First Nations people are partially accountable for extremely high smoking rates on-reserve and this issue needs to be addressed in order to improve their health (CBC News, 2007). In Saskatchewan for example, First Nations smokers can buy up to three cartons of cigarettes a week each for around \$5 a pack without paying

provincial tobacco tax — around half the price it would be if the provincial tax of \$4.50 was added (Ibid.). The Canadian Cancer Society claims, "the most effective way to reduce smoking is to increase taxes, with the excess tax revenue being used to encourage people to butt out" (Ibid.: para. 14).

There is much evidence available to support the adoption of a tobacco reduction strategy that focuses on increasing taxation on cigarettes, though the nature of this evidence differs among studies. The Canadian Tobacco Use Monitoring Survey, in their 2000 annual report (Health Canada, 2000b), highlighted a slight increase in tobacco use in provinces where tax rates were relatively low. Their survey showed that in provinces with 'high' tax rates (B.C., Alta, Sask., Man., Nfld), the prevalence rates of smoking were lower than they were for provinces with 'low tax' rates, as were the self-reported number of cigarettes smoked daily (Ibid: p. 1). A number of other studies suggest that increased cigarette costs could directly lead to reduced prevalence of tobacco use for individuals with less disposable income. Townsend et al. (1994) showed that men and women in lower socioeconomic groups were more likely to be responsive to higher cigarette costs than those in higher socioeconomic groups, while Levit et al. (1981) highlighted that smoking by young adults aged 20 to 24 (who likely have less disposable income than older adults) was more responsive to price than older adults. Another study by Hamilton et al. (1997) showed that while smoking prevalence decreased in all provinces regardless of whether or not cigarette taxes had been cut, cutting tobacco taxes appeared to result in higher rates of starting cigarette smoking and lower rates of smoking quit rates. Given this type of evidence and the socio-demographic characteristics of Canada's Aboriginal population (relatively young with fairly high rates of poverty), it is likely that a tobacco reduction

strategy that involves increased taxes on cigarettes would be effective in preventing and reducing cigarette consumption for this vulnerable population. However, others caution that the rates of increased taxation must be balanced against resulting increases in the consumption of contraband cigarettes (Luk et al., 2007; Ontario Tobacco Research Unit, 2009).

## 8.2 Alcohol and Drug Misuse

Substance abuse has been described as a manifestation of the ‘alienation’ of Aboriginal peoples stemming from colonization (First Nations, Inuit and Aboriginal Health [FNIAH], nd). An alcohol and drug abuse study conducted by the Federation of Saskatchewan Indian Nations in 1984 identified eight main factors that contributed to substance abuse, including: loss of cultural identity, poverty and unemployment, lack of social opportunities, low education levels, availability of the intoxicant, lack of recreational opportunities, peer pressure, and family pressure. The impacts of substance misuse have manifested in many Aboriginal communities as higher levels of unemployment, family violence, criminal behavior, suicide, and a cyclical pattern of not being able to succeed (RCAP, 1996).

Alcohol, in particular, has been identified as a major problem in Aboriginal communities (FNIAH, nd). However, research has highlighted that the impacts of alcohol use in Aboriginal communities are more directly “associated with problem drinking, rather than with overall usage” (RHS National Team, 2007: 116). Currently there is lack of agreement on what constitutes moderate compared to problem or heavy drinking because the effects of alcohol may vary considerably across groups or individuals within a population (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2003). Heavy alcohol use, however, is typically defined as the consumption of more than two drinks a day for men and one

for women, while binge drinking (which according to the National Institute on Alcohol Abuse and Alcoholism will bring blood alcohol concentration to a level of 0.08% or above), generally corresponds with five or more drinks on a single occasion by men and four for women within a two hour span (Department of Health and Human Services CDC, 2008).

Data from previous studies indicates that Aboriginal peoples are generally more likely to abstain from consuming alcohol compared to non-Aboriginal people; however, among those that do drink, they are more likely to binge drink compared to non-Aboriginal people (RHS National Team, 2007; NWT Bureau of Statistics, 2006; Korhonen, 2004). For example, the 2002-2003 FNRLHS revealed that 16% of First Nations people engaged in heavy drinking compared to only 6.2% of the general Canadian population (6.2%) (RHS National Team, 2007). The 2006 Northwest Territories Alcohol and Drug Survey found that 52.1% of Aboriginal people consumed five or more drinks per sitting when they drank compared with 24.4%

of non-Aboriginal people (NWT Bureau of Statistics, 2006). In British Columbia, a 1998 study found similar trends among a cohort of youth in Grades 7 to 12, with 51% of Aboriginal students who drank reporting they engaged in binge drinking in the past month compared with 43% of their non-Aboriginal counterparts (Office of the Provincial Health Officer, 2001). It is important to remember, however, that these findings cannot be generalized across all Aboriginal communities. For example, a survey among First Nations youth in three schools in the Kenora/Rainy River district revealed that alcohol use among First Nations students was lower compared with other northern Ontario students (53% compared with 69%), and that there were no significant differences between the two groups in terms of heavy drinking (Addictions Services Kenora, et al., 2005).

The finding of lower reported drinking rates but higher prevalence of heavy drinking is not unique to Canada. The Indigenous peoples of Australia and New Zealand showed similar tendencies with respect to alcohol consumption.



Table 5: Alcohol-Related Deaths 1993 to 2006, Status Indians and Other BC Residents (Age Standardized per 10,000 Population)



Year	Status Indian	Other Residents
1993	21.0	3.1
1994	20.7	3.5
1995	19.0	3.7
1996	22.7	4.0
1997	19.8	3.9
1998	20.8	3.8
1999	19.1	3.6
2000	17.8	3.6
2001	19.7	3.8
2002	18.7	3.7
2003	16.5	3.6
2004	16.7	3.6
2005	18.5	3.5
2006	15.1	3.4

Source: Adapted from BC Vital Statistics Agency, 2008 as documented in Office in the Provincial Health Officer, 2009: 144.

A study by Condon et al. (2003) found that a smaller proportion of Indigenous Australians reported being consumers of alcohol than did other Australians, yet Indigenous Australians were more likely to consume alcohol at harmful levels (79% compared to non-Indigenous at 12%). In New Zealand, a study by Bramley et al. (2003) that included data from five surveys, encompassing nearly 45,000 people, revealed that non-Māori drank more frequently but on average, consumed less alcohol per drinking occasion than did Māori.

While moderate drinking can incur potential health benefits (particularly in reducing cardiovascular disease), heavier drinking is associated with a host of chronic diseases, cognitive effects, increased injuries/fatalities, and a range of impacts on newborns resulting from prenatal exposure (already noted earlier in

this report)(NIAAA, 2003). High levels of alcohol consumption markedly increase the risk of cancers of the mouth, larynx, pharynx, esophagus, liver, colon, rectum and breast (Ibid.).

Alcohol is responsible for a considerable portion of injuries and deaths. In Canada, studies have shown that alcohol-related mortality is higher among Aboriginal compared with non-Aboriginal Canadians. One study found that the rate of death due to alcohol for Aboriginal peoples was nearly twice that of the general Canadian population at 43.7 per 100,000 cases compared to 23.6 per 100,000 (Single et al., 1997, as cited in Dell & Lyons, 2007). A second study involving analysis of Canadian census mortality data from 1991-2001 revealed rates of alcohol-related deaths to be considerably higher for urban Aboriginal men and women compared with their non-Aboriginal counterparts

(Tjepkema et al., 2010). In British Columbia, while the rate of alcohol-related deaths among non-Aboriginal residents has remained fairly constant since 1993, among Status Indians there has been a fairly steady decline in the rate, though it remains approximately 5 times greater than for other residents (Table 5) (Office of the Provincial Health Officer, 2009). Although alcohol-related deaths can be an important reflection of alcohol consumption, they do not necessarily represent true prevalence of alcohol abuse; therefore, the data in Table 5 should be interpreted with caution.

Drug use is also a persistent problem among many Aboriginal youth and adults living in Canada as in other countries. The economic and social impacts of drug misuse on families are substantial (Catto & Thomson, 2010; Collin, 2006b). Economic costs can include increased health care utilization resulting from the negative mental and physical health outcomes of drug use (such as drug overdose, drug induced psychosis, Hepatitis C and HIV); increased need for law enforcement to protect the safety of individuals and communities; and loss of productivity (Collin, 2006b). Social costs can include increased crime, violence, family breakdowns, and mental health disorders. Drug use is associated with a number of potentially harmful health outcomes. For example, while the harmful health effects of cannabis are often disputed, its use has been associated with an increased risk of lung cancer, chronic bronchitis and other lung diseases (Collins 2006b). Cocaine can result in “hallucinations, paranoid thoughts, convulsions and seizures, stroke, cerebral hemorrhage, and heart failure” (ibid:7). Hallucinogens can cause anxiety, depression, and psychotic behavior, while chronic heroin users “face serious health, social and economic problems including heart, liver and lung diseases, infectious diseases, mental health disorders, homelessness, unemployment, poverty and criminality” (ibid: 9-10).

Table 6: Proportion of First Nation Youth Using Various Substances at Least Once in 2001

Substance	Proportion Using (%)
Cannabis	32.7
Amphetamines	1.5
Inhalants	1.5
Cocaine, Crack, Freebase	1.8
Codeine, Morphine, Opiates	3.5
Heroin	0.2

Source: Adapted from the FNRLHS 2002-2003 (RHS National Team, 2007: 203).

Cannabis is considered the most widely consumed illicit psychoactive substance worldwide (World Drug Report, 2005, as cited in Collin, 2006b: 4). In fact, cannabis use has been rising over the past 10 years (NWT Bureau of Statistics, 2006; Health Canada, 2005c; Catto & Thomson, 2010). It is more popular among males compared to females, young compared to old, less educated compared to more educated, and among Aboriginal compared to non-Aboriginal populations (Ibid.). Studies among Indigenous populations in Australia (2004-2005) and the Government of the Northwest Territories reveal that Aboriginal people 15 years and older were approximately twice as likely to have used cannabis compared to the general population (Catto & Thomson, 2010; NWT Bureau of Statistics, 2006). The 2002/2003 FNRLHS revealed that 27% of First Nations adults and 32.7% of First Nation youth reported to have used cannabis at least once a year (RHS National Team, 2007). Table 6 illustrates drug use by First Nations youth.

Other types of drug use have been identified as having a considerable impact among certain Aboriginal communities

or segments of the Aboriginal population. Crystal methamphetamine has been emerging as a health issue in some First Nations communities (FNC, 2006). It can be made using over the counter items and can be purchased at relatively low cost, making it appealing for First Nation youth who do not have a lot of money (Ibid.). At present there is little data available that differentiates between Aboriginal and non-Aboriginal populations with respect to its prevalence. For example, in Yorkton, Saskatchewan, a community which has a high concentration of First Nations people, user rates are staggeringly high at 33% of the population, however there is no differentiation in the data between First Nations and non-First Nations users (Saskatchewan Indian Institute of People Technology, 2204a as cited in FNC, 2006). Nevertheless, the Assembly of First Nations in Canada considers the use of this drug a significant enough problem that they have passed a resolution specifically directed at this emerging issue, highlighting the need for a First Nations National Task Force on Crystal Methamphetamine to develop a Strategic Action Plan (FNC, 2006).

There are also indications that Aboriginal peoples may be overrepresented among injection drug users (cocaine, heroin, and speedballs<sup>18</sup>). Injection drug use is a key mode of transmission for HIV among Aboriginal peoples, particularly among women (Dell & Lyons, 2007). A study by Spittal et al. (2006) revealed that the mortality rate for female injection drug users (primarily from drug overdose, homicide, and HIV/AIDS) was nearly 50 times that of the women in the Province of British Columbia generally. Though this study did not distinguish between Aboriginal and non-Aboriginal females, it drew on data from females participating in the Vancouver Injection Drug User Study, which had a disproportionate representation of Aboriginal peoples (27%).<sup>19</sup> In another study of injection drug users in Vancouver's Downtown Eastside by Craib et al. (2003), Aboriginal peoples accounted for 25% of the sample of drug users, yet comprised only 4-5% of the total provincial population. While this study was exploratory and further research is required on this topic, it did highlight some findings which will have important implications for the Aboriginal population. These findings showed that the incidence of HIV infection among both male and female Aboriginal injection drug users was nearly twice that of non-Aboriginal injection drug users. Given that key determinants of injection drug use include poverty, homelessness, childhood abuse, and cultural dislocation (Canadian HIV/AIDS Legal Network, 2002), Aboriginal peoples are particularly vulnerable with respect to injection drug use.

Inappropriate prescription use has also been identified by some researchers and community leaders as being a significant concern in some Aboriginal communities (Wardman et al., 2002; Sioux Lookout

<sup>18</sup> Speedballs are a potent combination of both heroin and cocaine (Craib et al., 2003).

<sup>19</sup> Spittal et al. (2006) indicate that the data for their study came from the Vancouver Injection Drug User Study and that a description of the demographics of this cohort can be found in Strathdee et al. (1997). The percentage of Aboriginal participants is therefore derived from Strathdee et al. and represents total Aboriginal male and female participants in the study.

First Nations Health Authority, 2009; Ministerial Council on Drug Strategy, 2006). Among the First Nations communities of the Sioux Lookout Zone, prescription drug use is considered a 'serious issue of community crisis' (Sioux Lookout First Nations Health Authority, 2009: 5). Given the general absence of data on prescription drug use in Canada generally, and particularly among Aboriginal peoples (Dell & Lyons, 2007), there is a need for greater understanding in this area.

In some particular Aboriginal communities, in Canada and in Australia, solvent abuse has been identified as a major problem among Aboriginal youth (Collin, 2006b; WA Solvents Abuse Working Party, 2001). Solvent use is "associated with significant morbidity and mortality including damage to the central nervous system, lung damage, hearing loss, aspiration and sudden sniffing death syndrome" (Collin, 2006b: 12). While solvent abuse is considered epidemic in some remote Aboriginal communities, in others it is practically

non-existent (Ibid.). Among Aboriginal communities that have identified solvent abuse as a major problem, rates have been exceptionally high. For example, a 2003 report from Pauingassi First Nation in Manitoba indicated that 50% of reserve youth under 18 abused solvents while other studies have found rates as high as 60% (Ibid.). However, at present no national data on prevalence is available.

Despite the lack of data regarding drug use among Aboriginal populations, what emerges is a sense that drug use is a major health concern in some communities and among certain segments of the Aboriginal population. There are clearly some unique underlying factors that make these communities and segments of the population particularly vulnerable. This highlights the need for targeted intervention and prevention strategies that address the underlying factors that contribute to the high prevalence of drug use within these particular communities. There is much to be learned from Aboriginal communities that have had

success in addressing the underlying factors that can lead to increased drug use.

### 8.2.1 Alcohol and Drug Abuse Prevention and Intervention

Again, government programs and policies directed at alcohol and drug abuse prevention and intervention have the potential to improve the health of Aboriginal peoples considerably. Canada's approach to alcohol and drug use over the past 20 years has focused on strategies to reduce the harmful effects of substance abuse on individuals, families and communities by targeting reductions in the supply and demand of licit and illicit substances (Collin, 2006a). These strategies have been premised on the recognition of the need for a balanced approach to drug policy, an approach which is receiving widespread acknowledgement both nationally and internationally as being essential (DeBeck et al., 2009). Elements of this 'balanced' approach include "acceptance of harm reduction approaches and policies that balance enforcement with more health-



focused interventions” (ibid: 188). The federal government has developed national drug and alcohol strategies to help improve the situation among Canadians generally, and Aboriginal peoples specifically.

### National Drug and Alcohol Initiatives

The Government of Canada launched a five-year, \$210 million national Drug Strategy in 1987, renewing its commitment for a second phase in 1992 and a third in 1998 (although with reduced funding)(Collin, 2006a). In May of 2003, the federal government announced another investment of \$245 over five years for Canada’s Drug Strategy, with four pillars that reflect the Strategy’s principle of a balanced approach:

- education and prevention
- treatment and rehabilitation
- harm reduction
- enforcement and control (Collin, 2006a).

In October of 2007, a new \$64 million ‘National Anti-Drug Strategy’ was launched. This strategy has three pillars – prevention, treatment and enforcement – with two-thirds of federal funding committed towards drug prevention and treatment initiatives (Canadian Centre on Substance Abuse [CCSA], 2007). By 2011, annual investments in the Strategy had increased to \$100 million for treatment, \$30 million for prevention, and \$102 million for enforcement for a five-year period (Government of Canada, 2011a, 2011b, 2011c). While this Strategy is not specifically targeted at Aboriginal populations, they have been identified as target populations in both the prevention and treatment streams (Government of Canada, 2010).

Despite this effort to make prevention and treatment a priority nationally, there have been criticisms about the Strategy. The Centre for Addiction and Mental Health (CAMH)(2008) has expressed concerns that the Strategy is not comprehensive enough because it does not provide a

broad enough definition of drugs (which, they state, should also include alcohol); it includes only illicit drugs (not the problematic use of prescription drugs); and excludes policies and programs related to harm reduction, something which had been included in earlier iterations of Canada’s Drug Strategy (CAMH, 2008). The CAMH feels that the exclusion of a focus on harm reduction reflects a shift in federal policy towards an emphasis on “abstinence and deterrence through the criminal justice system,” and argue that evidence from the United States has shown this approach can actually increase health related harm (Ibid.: 3). This shift in policy appears to be supported by findings from an informal audit undertaken by DeBeck et al. (2009) which highlights that despite the Prime Minister’s assertion that the Drug Strategy will focus on prevention and treatment, there continues to be an “overemphasis on drug law enforcement interventions, which have been repeatedly identified as ineffective in reducing drug-related harm” (DeBeck et al., 2009: 188). It is also reflected in the discriminatory nature of Bill C-10, the Safe Streets and Communities Act, which was recently passed and imposes mandatory sentences for minor non-violent offences regardless of the circumstances (including poverty, family breakdown, unemployment and poor social and economic structures) which contributed to committing the offence. The Assembly of First Nations [AFN](2011) and the Canadian Bar Association (2011) are in agreement that this bill will “add to the growing institutionalized discrimination of First Nations people in the criminal justice system” (AFN, 2011: 4).

Within the scope of Canada’s Drug Strategy, a number of culturally specific education programs were created to educate Aboriginal youth about substance abuse issues. For example, the Aboriginal Shield Program is a substance abuse prevention initiative designed specifically for Aboriginal youth. The Program is built on a holistic conception of health that

includes spiritual, emotional, physical and mental elements, and stresses strong and healthy relationships within the traditional Aboriginal community (RCMP, 2007). The Program enables youth to “gain a cultural connection and pride, while learning to make informed healthy lifestyle choices about drug use and related activities (RCMP, 2010: para. 2). Program curriculum was originally developed by RCMP in partnership with the Nechi Institute on Alcohol and Drug Education, and is oriented to supplement existing substance abuse education programs (RCMP, 2007).

Efforts have also been underway to implement the 2007 recommendations from the National Alcohol Strategy Working Group (NASWG) on a National Alcohol Strategy. These recommendations advocate sensible use of alcohol through 41 recommendations in four broad areas of action: health promotion, prevention and education; health impacts and treatment; availability of alcohol; and safer communities (National Alcohol Strategy Working Group [NASWG], 2007). A National Alcohol Strategy Advisory Committee, which includes participants with expertise in alcohol-related issues from all levels of government, non-governmental organizations, First Nations, Inuit and Métis service providers, and the alcohol industry, was formed in 2008 to oversee the implementation, monitoring and evaluation of the National Alcohol Strategy (CCSA, 2008). While it is recognized that this strategy may not completely address the needs of First Nations, Inuit or Métis (NASWG, 2007), nevertheless, significant progress has been made on 34 of the 41 recommendations (CCSA, 2008).

For Aboriginal peoples specifically, Health Canada established the National Native Alcohol and Drug Abuse Program (NNADAP) in the mid 1970s to help First Nations and Inuit communities set up and operate alcohol and drug

prevention and intervention programs. The program became permanent in 1982 and is now largely controlled by First Nations communities and organizations (Health Canada, 2006b). The NNADAP supports a network of 52 residential treatment centres located in First Nations and Inuit communities, and provides 550 prevention programs with over 700, mostly Aboriginal, employees (Ibid.). Prevention activities include education programs and awareness campaigns, as well as cultural and spiritual events, while intervention activities embody recreational, discussion groups, and spiritual and cultural components. In addition, these programs offer aftercare activities aimed at preventing a recurrence of alcohol and drug abuse problems.

#### Other Intervention and Prevention Programs

There are also a host of intervention programs, both provincial and federal, targeted at pregnant Aboriginal women who use drugs or alcohol. At the provincial level, examples include the Newborn Follow-up Program implemented in Winnipeg, Manitoba in the early 1980s to enlighten the public about the effects of alcohol on the fetus and child's development (Square, 1997); and the Best Start program in Prince Edward Island, an on-reserve program which identifies and addresses prenatal risk factors. Two national initiatives are partially involved in the prevention and intervention of FAS/FAE: the Community Action Program for Children (CAPC) and the Canada Prenatal Nutrition Program (CPNP). Among the objectives of these programs are to establish and deliver or enhance services for at-risk for poor nutrition and/or alcohol abuse pregnant women in order to improve birth outcomes (PHAC, 2007b).

There are also a number of harm reduction programs. Harm reduction is defined by the Canadian Centre on Substance Abuse as "a health-centred approach that seeks

to reduce the health and social harms associated with alcohol and drug use, without necessarily requiring that users abstain" (Dell & Lyons, 2007: 2). Though controversial, harm reduction initiatives have become more prevalent in the alcohol and drug abuse fields (Ibid.). Dell and Lyon (2007) identify four key features of harm reduction: 1) pragmatism – the acceptance that some level of substance abuse is inevitable; 2) human values – respect for the dignity and rights of substance users; 3) focus on harms – the harms resulting from substance use are more important than the extent of a person's use of that substance; and 4) hierarchy of goals – pressing needs are addressed first, with more comprehensive goals later. In some ways, the principles of harm reduction fit well with a holistic Aboriginal approach to substance abuse treatment, "including the importance of links between the community and the individual" (Peele, 2003 as cited in Dell & Lyons, 2007: 2). However, harm reduction initiatives are often resisted by Aboriginal treatment programs and many First Nations, Inuit and Métis individuals and communities which adhere to abstinence and prohibition models that typically do not allow for moderate or reduced substance use, a feature implicit in harm reduction policies and programs (Dell & Lyons, 2007).

Nevertheless, Dell and Lyon (2007) argue that abstinence and harm reduction are not completely incompatible, and provide numerous Canadian and Australian examples of harm reduction policies and programs used by Aboriginal peoples that have had success in reducing harm and levels of substance abuse. They state that not all harm reduction measures are applicable to Aboriginal peoples and communities, but the foundations of effective ones are built on the principle of 'respect' and a recognition that the development of harm reduction policies and programs must be directed by communities and their members. They

provide eight types of harm reduction programs used by Aboriginal peoples, drawn from Canada and Australia. These types of harm reduction programs include: supply management, regulated consumption, managed alcohol consumption, safer spaces, injection drug-use related services, services that address the specific needs of Aboriginal women, education and prevention programs, and product alteration to reduce harm (Ibid, pp. 8-11).

### 8.3 Summary

There is a growing body of evidence that social and individual risk factors, such as childhood neglect, depression, attendance at residential/boarding schools, and being a victim of violence are associated with substance use in Aboriginal populations (RHS National Team, 2007). It seems clear that that in order to decrease alcohol and drug abuse, the underlying social and individual risk factors will need to be addressed. Examples like the British Columbia's tri-partite Transformative Change Accord are steps in the right direction. The Transformative Change Accord commits the Government of BC to improving the mental health and addictions problems of Aboriginal peoples through the establishment of mental health programs, as well as through concerted efforts to equalize the socioeconomic differences (that underlie many of the mental health and addiction problems facing Aboriginal peoples) between Aboriginal and non-Aboriginal people in BC (Government of British Columbia et al., 2005).



## 9. CONCLUSION



This paper has explored the interplay of socioeconomic factors on the health and well-being of Indigenous people. These factors influence the circumstances in which infants are born, children develop and grow, youth learn to make healthy life choices, and adults develop physical and mental health conditions. The literature available on social determinants and Indigenous peoples' health clearly establishes not only the impacts of poor socioeconomic circumstances on Indigenous health status, but also the impacts of socioeconomic circumstances in childhood on the health of adults later in life. The current socioeconomic and health inequities experienced by Indigenous peoples have much to do with the imposition of colonial policies, in the past as well as in the present, that have marginalized and discriminated against Indigenous peoples. This experience is shared by Indigenous populations in other developed countries like Australia, New Zealand, and the United States.

There have been considerable improvements in Indigenous health status and socioeconomic conditions over the past several decades. In part, this can be attributed to government and community-based initiatives targeted at specific health and social issues. However, there is still much that must and can be done to ensure that Aboriginal peoples in Canada attain health status that is on par with other Canadians. It is clear that a life course approach is needed; one that focuses on promoting healthy choices during pregnancy, in early life, from childhood to adulthood so that an environment for fostering good health can be established. It is also clear that government policies must address social determinants on a broad scale, not just focus on the risk factors for illness, in order to redress some of the imbalances created through colonial government policies. Finally, the evidence shows that Indigenous peoples are not uniformly affected by ill health. Just as there is tremendous cultural and linguistic diversity among Indigenous peoples, so too is there tremendous diversity in the way Indigenous peoples experience physical and mental health conditions.

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