

**Contributions of Culture and Language in Aboriginal Head Start in Urban and Northern Communities to Children's Health Outcomes:
A Review of Theory and Research**

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Executive Summary

This Executive Summary encapsulates the method and key findings of a report entitled ‘*Scoping Paper on Healthy Aboriginal Child Development and Health Promotion/Chronic Disease Prevention*’. The full report provides an overview of the relevant research literature on the role of language and culture as social determinants of health for Indigenous populations, and supports this conceptual framework with extensive data analysis.

Objectives

The purpose of the report is to bring together current conceptualizations and empirical support for the importance of language and culture in Aboriginal children’s wellness, education, and opportunities for quality of life. Using the ‘social determinants of health’ model, the Scoping Paper identifies the potential immediate and long term health benefits derived from the inclusion of Indigenous language and culture in early childhood program experiences of First Nations, Inuit and Métis children participating in the Aboriginal Head Start in Urban and Northern Communities (ASHUNC) operated by the Public Health Agency of Canada (PHAC). Aboriginal children who survive their infancy are more likely to suffer poor health over their lifespan than non-Aboriginal children (Abel, 2005; Canadian Institute for Health Information, 2004). Several key health problems faced by Aboriginal people develop in infancy or early childhood. Extensive research has shown that participation in quality programs during the early years can make a positive difference in short- and long-term health, development, educational achievement, economic success and subsequent parenting of the next generation (Doherty, 2008; Cleveland & Krashinsky, 2003; Heckman, 2006; McCain, Mustard, & Shankar, 2007).

The social determinants of health model identifies culture-based practices and positive cultural identity as contributors to health. A unique and key feature of AHSUNC is the focus on providing opportunities for Aboriginal children and their primary caregivers to be exposed to and learn about their Aboriginal culture and heritage language. Establishing the relevance and effectiveness of these program experiences to children’s health trajectories requires an understanding of health as holistic, multidimensional and mediated by a number of factors. These factors include (but are not limited to): family social support, literacy, school readiness and achievement, culturally-based identity formation, and psycho-social resilience.

Methodology

This report consists of two parts. Part I is comprised of a secondary literature review and analyses of the conceptual and theoretical frameworks postulating a relationship between Indigenous cultural knowledge and health, particularly focusing on research that suggests strong links between cultural and linguistic continuity, community wellness, and suicide. Part I is divided into three sections:

- *Section 1* surveys the historic circumstances and contemporary policies that have contributed to educational and health disparities between Aboriginal and non-Aboriginal populations in Canada. This section introduces calls from both Aboriginal and non-

Aboriginal scholars and policy-makers advocating culturally based approaches commencing in early childhood to reduce health disparities.

- *Section 2* section describes the AHSUNC intervention program with a focus on culture and language experiences of participants.
- *Section 3* considers community wellness, culture, and language within a social determinants of health research model, using the ‘community wellness’ indicator in the First Nations Information Governance Centre’s Regional Health Survey (2005) and the ‘cultural continuity’ factor in the research of Hallett, Chandler & Lalonde (2007).

After outlining the conceptual models that point to the roles of language and culture as mediators between community-level health risks and health outcomes at the level of the individual, the report moves on to Part II. Part II uses data analysis to bring new information to light on the potential for language and culture to contribute to health, thereby suggesting the importance of language and culture in early childhood interventions such as AHSUNC. Indigenous conceptualizations of wellness that position culture and language as critical contributors to wellness have not been linked to an empirical evidence base, with the exception of the work by Chandler & Lalonde. This section reviews findings from several sources, especially the First Nations Regional Health Survey (RHS) and the 2010-2011 Annual Report on the State of Inuit Culture and Society. The goal is to characterize links between culture, language, and AHS participation with other determinants of health and health outcomes. Part II is comprised of three sections:

- *Section 4* provides an epidemiological review of Aboriginal health outcomes, with particular focus on gross disparities between Aboriginal and non-Aboriginal health outcomes in terms of life expectancy, obesity and suicide rates. This analysis of health disparities points towards critical determinants of Aboriginal children’s health trajectories, including the positioning of language and culture. This ecological view highlights the potential for language and culture to be positioned strategically in efforts to address health concerns and disparities.
- *Section 5* examines in some depth the results of the First Nations Regional Health Survey (2008/2010 round of data collection) in order to bring a substantial body of empirical evidence to bear on the question of how language and culture impact key health outcomes of First Nations children and youth. The focus is on a specific set of health outcomes: overall wellness, baby bottle tooth decay, access to dental services, and youth outcomes including depression/suicide. These health outcomes were selected because they meet the following three criteria:
 1. They have significant impact on the welfare of individuals, families and communities over an extended period of time;
 2. These conditions can be situated within health trajectories traced back to the period of early childhood;
 3. These conditions are linked to clusters of determinants that include (but are not limited to) language and culture. This criterion ensures that the models constructed include coverage of a broad range of determinants, and therefore the discussion of language and culture that ensues is positioned within a comprehensive ecological context that holds explanatory potential.

- *Section 6* summarizes the evidence supporting an ECD-based strategy for promoting health among Indigenous populations by providing Indigenous language and culture experiences in the early years through ASHUNC.

Key Findings

Indigenous views of wellness & early childhood

A number of studies (Statistics Canada, 2008a; Canadian Institute of Health Information, 2004; Abel, 2005) have shown that Aboriginal children suffer worse outcomes on virtually every indicator of health, including infant mortality, rates of hospitalization, acute lung infections and accidental injury. These poor outcomes are predictable given that the well-being of children is dependent on the well-being of their parents, and many Aboriginal parents today experienced first hand or have suffered fallout from historic traumas including colonization and the residential school system (Royal Commission on Aboriginal Peoples, 1996; Ball & Anderson, 2011). Many of today's Aboriginal parents or grandparents were not exposed as children to their language or culture, or to nurturing parenting experiences. Despite the gradual revitalization of family life and positive cultural identity within Indigenous communities, parents of young children continue to struggle, and there remains a high incidence of early school leaving, suicide attempts, substance abuse, and chronic disease.

Indigenous conceptualizations of health are broad: Aboriginal parents often describe the importance of heritage language acquisition to children's spiritual well being (Peltier, 2009). Additionally, many Aboriginal cultural traditions are encoded in the language. By familiarizing themselves with the language – and, in turn, with the cultural traditions – children develop literacy of the land, cultural connectedness and, consequently, cultural identity. A strong sense of cultural identity likely yields cognitive strengths that are not readily recognized in mainstream health promotion, disease prevention, health research or policy decision-making (Battiste & Barman, 1995; Castellano, Davis & Lahache, 2000; Hare, 2011). However, following a review of several relevant studies, Demmert (2001, 9) concluded:

“Aboriginal language and cultural programs, and student identification with such programs, are associated with improved academic performance, decreased dropout rates, improved school attendance rates, decreased clinical symptoms, and improved personal behaviour of children.”

Empirical evidence linking language, culture and health outcomes of Aboriginal children

The full report summarized by this Executive Summary contain original syntheses of data reported in the 2002-2003 and 2007-2010 Regional Health Surveys of First Nations Communities with regards to the impacts of language and culture on health. Selected findings of this data analysis are presented below.

- Impact of language acquisition on suicidality: First Nations adults who claimed to be have intermediate or fluent knowledge of an Indigenous language had a lower rate of suicidal ideation and/or attempts compared to First Nations adults who possessed little to no knowledge of an Indigenous language.

- Mental Health: First Nations adults who were more engaged with culturally-relevant activities in their communities reported more control over their lives, more balance (spiritual, mental, emotional, physical), and less substance use and depression.
- Importance of culture: a large majority of Aboriginal youth (85.7%) in the 2007-2010 survey regarded traditional cultural events as important. This rate represents an increase from the findings of the 2003 survey, in which 54.8% of Aboriginal youth affirmed the importance of traditional cultural events.
- Sexual health: the RHS notes that coming of age ceremonies play an important part in transmitting values and practices linked to safe sexual practices and healthy relationships.
- Early childhood language acquisition: 85% of primary caregivers report that having their First Nations children learn an Indigenous language and participate in cultural activities was highly valued.
 - Parents and grandparents function as one of the principle means for transmitting knowledge of First Nations culture and language, however 69.1% of First Nations children surveyed for the RHS had never participated in traditional cultural activities (e.g., singing, drumming, or dancing) outside of school hours. This highlights the critical role of schools for younger children in the transmission of culture. While parents place a premium on cultural transmission, the RHS suggests that they are heavily dependent on schools to support the process.

To summarize findings on community wellness and health, the RHS authors state: *“From this data and relevant literature, it is evident that strategies aimed at improving community wellness for First Nations youth must be tied to First Nations identity, self-esteem, and cultural continuity and that they must emphasize family and social cohesion within First Nations communities”* (p. 313).

Policy responses to Aboriginal health disparities & the potential of AHS as a point of intervention

The dire situation of Aboriginal Peoples’ health has been recognized within Indigenous communities and also by federal and provincial bodies. The Health Council of Canada has recognized the need for culturally based interventions, programs and services. Indigenous scholars (Greenwood, 2005; Svenson & Lafontaine, 1999) have recommended that prenatal and early childhood is the most logical point of intervention, and PHAC has supported this via AHSUNC.

PHAC launched AHSUNC in 1995 as an ECD community-based early childhood development (ECD) program aimed at strengthening the well being and learning readiness of First Nations, Inuit and Métis children living off reserve. In 1998, Aboriginal Head Start programming was expanded to also serve First Nation communities on reserve (AHSOR). While the two programs are administered separately, they nonetheless work collaboratively on a number of activities such as national training, resource development, program planning and evaluation. There are currently 131 AHSUNC programs across Canada. To the extent that it is possible, AHS programs are staffed by Aboriginal Early Childhood Educators (ECE). These ECE practitioners work with Elders, Indigenous language specialists, traditional teachers and parents to enhance child development, cultural pride and school readiness of young children.

Focusing on the goal of preparing children for successful transition from home to school learning environments, AHSUNC programs emphasize culturally-fitting, community-specific elaborations of six program components: (1) culture and language; (2) education and school readiness; (3) health promotion; (4) nutrition; (5) social support; and (6) parent/family involvement. Aboriginal Head Start programs act as hubs of knowledge and support. A number of Indigenous and non-Indigenous scholars suggest that the inclusion of component 1 (culture and language) in Head Start curricula has positive effects on the long-term mental and physical health trajectories of Indigenous children. Indigenous scholars agree that Aboriginal culture is almost inextricably linked with Aboriginal language (McIvor, Napoleon & Dickie, 2009; c.f. Peltier, 2009); therefore exposure to a mother tongue language propagates cultural awareness and the creation of cultural identity and pride. As Hallett, Chandler & Lalonde (2007) demonstrate, 'cultural continuity' has positive impacts on mental and social health. Their 2007 study found that First Nation communities with higher levels of language knowledge experienced suicide rates that were well below the provincial averages for both Aboriginal and non-Aboriginal youth, while those with lower language knowledge had more than six times the number of suicides. In 2006, barely 10 per cent of Aboriginal children were living in families where an Aboriginal mother tongue was used on a daily basis (Canadian Council on Learning, 2009), and less than 6 per cent of Aboriginal preschool children were gaining some knowledge of their heritage language (Loppie, Reading & Wien, 2009). Given these relatively low rates of domestic exposure to Aboriginal mother tongues and, conversely, the positive impacts on cultural identity, community wellness, and individual mental and physical health associated with exposure to Indigenous language and culture, AHSUNC programs are a logical place to give young children experience with Indigenous language and culture.

As Cree-Métis scholar Anderson (n.d.) notes, many AHS programs have become the community's centre to focus efforts on improving the lives of Aboriginal children, and a base on which to build other child and family related services. While AHS explicitly addresses the health disparities described earlier in this document through its components on nutrition and health promotion, the AHS curricula also indirectly impacts individual, family, and community well being via its mandates of social support, family involvement and the inclusion of heritage language and culture. Most sites in urban and northern communities operate primarily in English, but many also provide opportunities for children to engage with their heritage, Indigenous language.

The AHSUNC program has been the focus of some evaluation effort, including a descriptive evaluation released in 2002, and a three-year "National Impact Evaluation" completed in 2006. The overall impression from the latter evaluation was that AHSUNC was extremely well received and seen by parents as beneficial to their children and themselves in many respects. The Western Arctic Aboriginal Head Start Council undertook an evaluation of AHS sites in the Northwest Territories between 1996-2006 and found that many AHS children entered the AHS program with deficits in language and social skills, and most showed some improvement after one winter in AHS. The most positive findings came from parent and community ratings of the culture and language components of the program. The study concluded that one of the strongest features of the AHS movement in the Northwest Territories is the site-specific identity, focus, and dedication to the promotion of local culture, language and traditions. At the national level,

the RHS (First Nations Centre, 2005; First Nations Information Governance Centre, 2012) indicates that participation in at least one year of AHS reduces the risk that a child will repeat a grade in elementary school.

Language and culture as non-medical proximal and distal determinants of health

As discussed earlier in this document, the data sources employed for the empirical analysis portion of the report use a ‘cultural framework’ of health (i.e., a framework that includes cultural factors including language and tradition as social determinants of health). These sources suggest that language and culture may directly influence health outcomes by conferring cultural identity and resiliency to Indigenous children. However, the social determinants of health framework under consideration is more complex than this; determinants of health may be multiply determined and/or clustered in nature. Given that language and culture are *non-medical* determinants of health, their impact may be indirectly experienced via other proximal determinants. That is, language and culture may indirectly influence health outcomes by conferring protection against or mitigating the impact of other direct health risks, such as poverty. Below is a summary of the interaction between Indigenous language and culture and other health outcomes within the social determinants of health matrix.

1. Overall Wellness

A model of the RHS findings regarding overall child wellness found that:

- Families where parents/caregivers ascribe high levels of well-being to their child also ascribe a positive sense of self-identity to the child and report that the child has access to traditional healing ceremonies.
- Participation in AHS programs is correlated with ability to speak or understand a traditional language – and that is associated with parents/caregivers who read to the child, and to educational attainment by the caregivers.
- Caregivers of children who attend an AHS program are less likely to report emotional or behaviour problems.
- Poverty is distally related to the presence of emotional or behaviour problems.

This data analysis suggests that engagement in various culturally-relevant activities is related proximally and positively to child wellness and positive relationships with family members. However, poverty acts as a distal determinant, diminishing the probability in any given family that these positive circumstances and associated child outcomes will emerge. In other words, language and culture emerge clearly as factors promoting healthy development in children, but they are not the only factors in the mix. Language and culture appear to be moderating or mitigating factors. From this, we can conclude that even in circumstances where poverty cannot be addressed directly, its impact may be mitigated through activities that strengthen the child’s engagement in culturally relevant activities and by strengthening the child’s connection to the culture and the community via exposure to a heritage language.

2. Oral Health – Dental Care & Baby Bottle Tooth Decay

Access to dental care and baby bottle tooth decay are significant health outcomes because they are related to clusters of determinants and emerge as part of a constellation of outcomes that are ‘linked’ by their common origins:

- Lack of maternal education;
- Poverty – resulting in food insecurity and malnutrition;
- Emotional and behavioural problems, associated in the long-run with more serious health outcomes including Type II Diabetes and suicide.

Language and culture do not serve as direct moderators of specific medical outcomes such as tooth decay; rather the determinants of specified health issues are typically more direct (in this case, sweetened drinks in baby bottles). However, while language and culture may not be positioned as a moderating variable, an Early Childhood Education program that promotes language and culture may be optimally positioned to target those factors that are more directly related to baby bottle tooth decay and obesity. In particular, given the scope of activities in Aboriginal Head Start, these programs would be well positioned to provide education regarding healthy dietary practices and the serious adverse consequences (short and longer-term) associated with use of sweetened drinks in baby bottles, since mothers of a first child attending an Aboriginal Head Start program are likely to have at least one more child who would benefit from this education, in addition to the child in the program.

3. High Risk Sexual Behaviour

The data from the RHS depicts a complex network of factors that contribute to high risk sexual behaviour among First Nations youth, and this network of factors includes lack of identification with native spiritual traditions. This in turn is associated with low self-esteem; low self-esteem is associated with failure to use contraception.

As with so many other health outcomes and proximal determinants, poverty sits in the middle of a network of factors as a distal determinant that is associated with a host of negative outcomes. Educational attainment and cultural resiliency mitigates against the negative impacts of poverty, including high risk sexual behaviour.

4. Suicide, Depression & Mental Health in First Nations Communities

The RHS (p. 328) reports that rates of suicidal thoughts in First Nations youth are much higher than the rates in the general population (20.5% compared to 7.1%). The problem of suicide in Aboriginal communities challenges efforts to provide a relatively ‘full’ explanation. The authors of the RHS draw upon a combination of their own data and other sources that they treat as authoritative in attempting to understand the nature and determinants of suicide. These determinants include:

- Family history with the residential school system.
- Self-esteem and a sense of mastery: this was inversely related to depression and positively related to a range of other positive outcomes such as educational aspiration.
- Engagement in extracurricular activities and community cultural events is associated with increased self-esteem, mastery, a feeling of being socially supported, and perception of balance in one’s life. Conversely, boredom is associated with depression and distress.
- Cultural identity can act as a protective factor against depression, as can social support and the perception of being loved.

The RHS examines suicide, depression and mental health in early adolescence (aged 12-14) and later adolescence (aged 15-17). Comparing results of the earlier and later RHS surveys, changes

in the rates of suicidal ideation did not parallel changes in depressed mood or suicide attempts. Together with findings that there are significant numbers of First Nations youth who do *not* report depression but *do* report suicidal ideation, there appears to be a decoupling of depression and suicidal ideation in First Nations youth.

5. Suicide in Inuit Communities

The suicide rates in some Inuit communities eclipses the rates both in the Canadian population at large, and in other Aboriginal communities. The 2010-2011 Annual Report on the State of Inuit Culture and Society notes that between 1999 and 2004, the suicide rates for Inuit men between the age of 19-24 was 50 times greater than the rate among all men in Canada, and they state that there is no evidence that young Inuit men suffer from mental illness at 50 times the rate in the general population in Canada. Again, the implication is that factors other than depression/mental illness are contributing in key ways to the problem. The 2010-2011 Annual Report lists a collection of factors and determinants as well as deteriorating cycles that may contribute to the high rates of suicide among Inuit populations. These cycles include global warming, which causes the ice flows to melt more rapidly thereby reducing opportunity for hunting. Reduced opportunity to hunt simultaneously erodes cultural tradition and creates food insecurity and poverty. As poverty rates go up, smoking goes up, use of alcohol/drugs increases, there are increasing numbers of assaults, and diminished capacity to address economic challenges. Language and culture may not directly address any of these determinants or deteriorating cycles, but they may mitigate the negative outcomes by combating the sense of hopelessness that some Inuit communities experience.

Conclusions

There is abundant epidemiological evidence highlighting the range of poor health outcomes in Aboriginal populations. Health can be conceptualized in terms of four components: physical, mental, emotional and spiritual. These components can be traced back to a health trajectory that is established in the period of infancy and early childhood:

- Physical health: a host of health risks emerge in the period of early childhood. Some problems, such as obesity, are notoriously difficult to reverse once they have taken hold. Other problems, such as oral health issues, can be resolved, but at great expense to the person and the health care system.
- Mental, emotional, spiritual health: these components emerge from a host of factors, ranging from individual relationship with the environment, to mood, to interpersonal behaviour, to patterns of social interaction and engagement with key social institutes such as educational systems and the world of work.
 - Identity figures centrally in the work related to psychological health determinants/protective factors. Identity forms through processes of identification with external role models and internalization of externally-derived standards of conduct. Construction of healthy Aboriginal identity on the part of young children is threatened by ongoing assimilative pressures.
 - Many Aboriginal health concerns (including diet, physical activity, substance use) share a common determinant of ‘behaviour’. Consequently, many Aboriginal individuals are exposed to ‘blaming the victim’ scenarios, which damage self-concept and inculcate negative self identity.

Wellness is a multi-faceted health determinant that encompasses individuals' self-perception as well as individuals' relationships (and perceptions of these relationships) to family and community. Therefore, issues of wellness cannot be addressed effectively through programs that focus solely on the individual. A targeted intervention to address a specific health-related behaviour or concern (e.g., school-based education on healthy food choices) can easily be undone by a family that does not support healthy eating or lacks access to healthy foods. Efforts on the part of a family to promote healthy practices can be undone by a community that does not take an active and proactive approach to managing its internal affairs (e.g., Chandler & Lalonde, 1998), or by a country that does not invest in infrastructure to ensure access to a healthy food environment.

Consequently, this report concludes that:

- The prenatal and early childhood period is optimal for addressing issues related to health-risk behaviour and to identity.
- Efforts to address issues related to identity and health risk cannot focus strictly on the child. They must focus on the family, community, and broader ecological infrastructure.

Given all of the above, there are several reasons why AHS programs are a promising health-promoting intervention.

- AHS programs include a major focus on health-related behaviours (for example, diet and nutrition).
- AHS programs are organized around engagement with family members. Given the fact that Aboriginal mothers are likely to have more than one child, and given the relatively young age of children targeted by AHS programs, such programs provide an opportunity to impact prenatal factors for later born children, as well as maternal behaviour in relationship to the child in the program. Several published works that highlight the functional effectiveness of AHS programs as family and community program hubs and as coordinating points for multiple services and provider organizations (e.g., Ball, 2005; 2012).
- As highlighted in the RHS, while family members (particularly Elders) are in a position to provide cultural teachings including exposure to a heritage language, it appears that parents are at least partially dependent on formal programs including preschools and schools to provide culture and language experiences for Aboriginal children.

This report reflects the complexity of demonstrating empirically that AHS program activities are causally related to health and wellness outcomes, in large measure because these outcomes are often not realized until far later in the course of development, when numerous other factors come to bear on the health risk behaviour and health outcomes of children and youth.

This report demonstrates that while language and culture are not cure-alls for the many health disparities experienced by Aboriginal children, these experiences contribute in meaningful ways within the matrix of interacting determinants of wellness as children grow and develop. AHS programs provide opportunities for Aboriginal children to learn cultural knowledge and traditions, experience Indigenous cultural activities, and be exposed to an Indigenous language.

In this way, the language and culture component of AHS programs contributes meaningfully to the mental, physical and spiritual health outcomes of Aboriginal children and families.

Areas for Further Research

There is an outstanding need for improved data upon which to base programming decisions and especially for information about AHS program experiences and health trajectories of Aboriginal children who participate in these programs. The methods employed in this paper work with data from multiple sources in order to provide evidence of links between early childhood experiences that focus on heritage language and engagement in culturally relevant practices. This method is inherently more limited than longitudinal research designs that look directly at longer-term impacts of early childhood educational experiences.

The creation of new information gathering strategies to monitor conditions and measure program effectiveness is recommended in order to create a case for long-term investments in programs that produce lasting opportunities for Aboriginal children to enjoy quality of life and achieve their developmental potential. A crucial question that needs to be asked in a cross-sectional comparison-control study is: what is the health and quality of life among graduates from AHS? Are there characteristic patterns or predictors? A study with this driving question could evaluate the impact of participation in a year or more of AHS upon the incidence of injury, healthy weight, and mental health/substance use patterns of children whose health outcomes remain largely unknown.

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Jessica Ball & Ken Moselle

DOCUMENT OVERVIEW

Studies indicate that Aboriginal children who survive their infancy are more likely to suffer poor health over their lifespan than are non-Aboriginal children, and several key health problems have their foundations in early childhood (Abel, 2005; Canadian Institute for Health Information, 2004). This paper examines the extent to which theory and research supports the importance of culture and language experiences in the Aboriginal Head Start in Urban and Northern Communities program (AHSUNC) as contributors to participating children's health trajectories. The paper brings together current conceptualizations, especially by Indigenous organizations, leaders and scholars, underscoring the importance of language and culture in Aboriginal children's wellness, education, and life chances. The paper then examines how language and culture fit into the Public Health Agency of Canada's (PHAC's) health priorities with specific attention to the integral development, holistic health and well-being of the Aboriginal children who are being served by the Aboriginal Head Start Program in Urban and Northern Communities (AHS). The paper explores how language and culture are brought into the program, and views on how these program experiences impact children and their families.

The social determinants of health model widely espoused in Canada identifies cultural knowledge and positive cultural identity as contributors to health (see, for example *What makes Canadians Health or Unhealthy*, Public Health Agency of Canada, 2013). A unique and key feature of AHS is the focus on providing opportunities for Aboriginal children and their primary caregivers to be exposed to and learn their particular Aboriginal culture and heritage language. Establishing the relevance and effectiveness of these program components to children's health and wellness requires an understanding of health as holistic, multidimensional and mediated by a number of factors, including but not limited to the impacts of children's program participation on family social support, literacy, school readiness and achievement, and culturally-based identity formation and psycho-social resilience. Extensive research has shown that participation in quality programs during the early years can make a difference in short- and long-term health, development, educational achievement, economic success and subsequent parenting of the next generation of offspring (Doherty, 2008; Cleveland & Krashinsky, 2003; Heckman, 2006; McCain, Mustard, & Shankar, 2007).

With the goal of going beyond anecdotal reports of AHS experiences and conceptual frameworks identifying positive cultural identity and connections as determinants of wellness, this paper presents findings based on close examination of the few available data sources that enable examination of links between health outcomes and determinants of health. Data sources primarily supporting the examination presented in this paper are the First Nations Regional

Health Survey (RHS), the 2007 Canadian Community Health Survey (CCHS), the 2006 Aboriginal Peoples Survey (APS), the 2007 Aboriginal Children's Survey (ACS), and the 2010-2011 Annual Report on the State of Inuit Culture and Society. Modelling based on these data sources enabled identification of health concerns that can be traced back to early childhood, with the potential for altering health trajectories by intervening during the early years. The health data exploited for the current analysis enabled confirmation of the hypothesized contributions that language and culture can make within various matrices of proximal and distal determinants of health outcomes that are of critical concern for Aboriginal children and youth, especially mental health and suicide, obesity and oral health.

This review paper provides an applied - rather than a purely conceptual – framework, based on analysis and synthetic modelling of the relevant data sources noted above. The findings presented in this paper support the notion that language and culture experiences may be positioned critically within a social determinants model of health promotion/disease prevention with Aboriginal and Northern communities. Specifically, the paper:

- Emphasizes the pivotal role of culture and language in wellness models advanced by Aboriginal scholars, leaders, and organizations in Canada – and it should be noted that some of these models or conceptual frameworks are anchored very explicitly in social determinants of health models, advocate clearly for health promotion programs built on a foundation of cultural knowledge and worldviews, and are very fully developed and supported by input from various communities, e.g., *A Framework for Indigenous School Health: Foundations in Cultural Principles* (Tagalik, 2010).
- Underscores a view of Aboriginal children's health trajectories as a clustered set of outcomes that are multiply- and often over-determined by clustered arrays of proximal and distal determinants. These include potent non-medical determinants which many authors suggest include language and culture factors;
- Provides a detailed analysis of Aboriginal health research findings concerned with the ecological embeddedness of focal health problems facing Aboriginal children, in order to illustrate the position of language and culture as determinants within such an ecological model.
- Enables available data to be related in a coherent manner to strategies for promoting long-term health outcomes by setting health trajectories in the period of early childhood.
- Provides an evidence-based rationale for including language and culture as key components of an ECD strategy for setting developmental trajectories in a healthy direction.

The paper is organized in two parts, each with three sections, described below.

PART I. CONCEPTUALIZING THE ROLES OF CULTURE AND LANGUAGE IN HEALTH AND IN AHSUNC

The discussion in Part I is based on a secondary review of literature that underscores the roles of culture and language in health, the importance of culture and language learning in early childhood, the importance of the early years as setting the stage for lifelong health trajectories, and research suggesting strong links between cultural and linguistic continuity, community wellness, and suicide.

Section 1. Aboriginal children in Canada: A growing population in a distinctive ecology

This section briefly highlights the distinctive health status and historically conditioned ecologies of Aboriginal children. The section summarized consistent themes in the literature by Aboriginal as well as non-Aboriginal scholars and organizations identifying cultural knowledge and identity as a critical determinant of health and calling for culturally-based approaches to reducing health disparities of Aboriginal people, starting in early childhood.

Section 2. Culture, Language and Wellness in AHSUNC Programs

This section describes the AHSUNC intervention program with a focus on culture and language experiences of participants.

Section 3. Considering community wellness, culture and language within a social determinants of health perspective

This section considers community wellness, culture, and language within a social determinants of health perspective. The provocative research conducted by Canadian investigators Hallett, Chandler and Lalonde is briefly reviewed, as well as conceptual models that point to the roles of language and culture as mediators between community-level health risks and health outcomes at the level of the individual.

PART II. PROXIMAL AND DISTAL DETERMINANTS OF HEALTH DISPARITIES – THE POSITIONING OF CULTURE AND LANGUAGE

Whereas Part I presents highlights of literature pertaining to the role of culture and language in children's health trajectories, Part II brings new information to bear on the potential for language and culture to contribute to health, and therefore the importance of language and culture in early childhood interventions such as AHSUNC. Indigenous conceptualizations of wellness that position culture and language as critical contributors to wellness have not been linked to an empirical evidence base, with the exception of the work of Chandler and colleagues. This section reviews findings from several sources, especially the First Nations Regional Health Survey and the 2010-2011 Annual Report on the State of Inuit Culture and Society, with the goal of characterizing links between culture, language, and AHS participation with other determinants of health and with health outcomes. This part begins with an examination of Aboriginal health disparities because the distribution and inter-relationships among health disparities point to aspects of the ecologies in which Aboriginal children grow and develop that are important to health, including culture and language.

Section 4. Health disparities.

Language and culture may be important determinants of identity formation in children, and identity formation may be an important determinant of health trajectories in children, youth and adults. However, these are not the only non-social determinants of health in Aboriginal communities in Canada. This section provides an analysis of health disparities across the different Aboriginal populations in Canada, and between Aboriginal and non-Aboriginal. This analysis fulfills two purposes:

1. To provide information on the epidemiology of health concerns in Aboriginal communities in order to profile the health burdens of Aboriginal communities in Canada; and
2. To highlight several of the non-social health determinants that are related to health disparities among Aboriginal communities and between Aboriginal and non-Aboriginal communities in Canada. This analysis of health disparities points towards critical determinants of Aboriginal children's health trajectories, including the positioning of language and culture. This ecological view highlights the potential for language and culture to be positioned strategically in efforts to address health concerns and disparities.

Section 5. Determinants/Correlates of Health and Wellness in First Nations Children – Regional Health Survey.

This section examines in some depth the results of the First Nations Regional Health Survey (2008/2010 round of data collection)¹ in order to bring a substantial body of empirical evidence to bear on the question of how language and culture determinants impact key health outcomes of First Nations children and youth. In this section, the focus is on a specific set of health outcomes or conditions of First Nations children. These include overall wellness, baby bottle tooth decay, access to dental services, obesity, and depression/suicide.

Among the many health concerns within the First Nations communities (e.g., lung cancer in the Inuit communities), the health concerns focused upon in this paper have been selected on the basis of the following three criteria:

1. The conditions have a significant impact on the welfare of individuals, families and communities over the course of an extended period of time; as such, an emphasis is placed on antecedents of chronic conditions (e.g., obesity) or outcomes that are linked to chronic conditions (e.g., suicide);
2. The conditions or health antecedents can be placed meaningfully on health trajectories that can be traced back to the period of early childhood (including the post-natal period of development, e.g., baby bottle tooth decay)
3. The conditions are linked to clusters of determinants that include, but are not limited to language and culture factors.

This third selection criterion is included to ensure that the models that are constructed include good coverage of a broad range of determinants of health for Aboriginal people. This ensures that any discussion of language and culture is positioned within an appropriately comprehensive ecological context that holds good predictive/explanatory power for Aboriginal groups. This criterion is entirely consistent with a clear direction given by Statistics Canada, in their analysis of the relationship between socioeconomic determinants and health disparities in Aboriginal populations in Canada:

¹ The first full round of data collection took place in 2002/2003 and is reported in First Nations Centre (2005) *First Nations Regional Longitudinal Health Survey 2002/03: Results for Adults, Youth and Children Living In First Nations Communities*. The second round of data collection took place between 2008/2010 and is reported in First Nations Information Governance Centre, (2012), *First Nations Regional Health Survey (RHS) 2008/10: National report on adults, youth and children living in First Nations communities*.

“Results of this study showed that, while income and educational levels partially explained differences in health between Aboriginal and non-Aboriginal Canadians, disparities often persisted. Such findings point to the existence of other factors contributing to the greater burden of morbidity among First Nations, Métis and Inuit people. Furthermore, the factors often associated with health in the general population do not act in the same way among specific Aboriginal populations. Future research may wish to examine broader, more culturally relevant predictors of health among Aboriginal people. (Garner, Carriere, Sanmartin, 2010).²

Section 5 also examines evidence specifically related to suicide in Inuit communities, in order to spell out more completely the determinants of health matrix of which language and culture constitute an important element – among several potent factors.

Section 6. Conclusion

The concluding section returns to the question of whether the data support an ECD-based strategy for promoting health by focusing on language and culture (as well as other directly health-relevant activities) in order to set health trajectories during the early childhood period.

² See also Guralnik & Leveille (1997) for further discussion of the issue of SES and health disparities in their article published in the American Journal of Public Health, entitled “Annotation: Race, Ethnicity, and Health Outcomes – Unraveling the Mediating Role of Socioeconomic Status”.

PART I. CONCEPTUALIZING THE ROLES OF CULTURE AND LANGUAGE IN HEALTH AND IN AHSUNC

Section 1. Aboriginal children in Canada: A growing population in a distinctive ecology

1.1 Aboriginal concepts of the role of culture in wellness.

The healing power of cultural identity is a central tenet of many Indigenous belief systems. These systems hold that if children grow up with a sense of belonging to their cultural community, they can keep their cultures vital and restore their communities, and that strong cultures and communities are protective factors for health and wellness.

1.2 Aboriginal children's health disparities.

There are commonalities in the biological unfolding of capacities for growth and development among all children. However, the cultural nature of development, the pervasive influences of government policies (notably the Indian Act), and variations in access to supports and services result in very different life experiences and developmental outcomes for First Nations, Métis and Inuit children compared to non-Aboriginal children in Canada. Some differences may be seen in a positive light. For example, according to Statistics Canada (2008a), more Aboriginal (7%) than non-Aboriginal (1%) young children share a home with their grandparents, learn skills for living on the land, are exposed to an Indigenous language in their homes, and have opportunities to participate in the sacred ceremonies unique to their particular Indigenous spiritual and cultural heritage. However, many unique characteristics of Aboriginal young children's experiences of life are cause for alarm, including a 1.5 times greater probability of dying before their first birthday, higher rates of hospitalization for acute lung infections and accidental injury (Canadian Institute of Health Information, 2004), and worse outcomes on virtually every health indicator (Abel, 2005). These are illustrated in *Table 1*, subsequently in this report.

1.3 Historic trauma.

The quality of life of children everywhere pivots on the well-being of their primary caregivers. Many Aboriginal leaders and scholars have asserted that deterioration in the quality of life of Aboriginal children is a direct consequence of the extent to which their parents were negatively affected by colonization, including residential schooling either as children forced to attend or as children of residential school survivors (Royal Commission on Aboriginal Peoples, 1996; Ball & Anderson, 2011). Most children in residential schools were required to stop speaking their language, repudiate their cultures and spiritual beliefs, stop communicating with their siblings, and relinquish their Indian names and any belongings they may have brought with them (Fournier & Crey, 1997; Miller, 1996). The placement of children in residential schools disrupted cultural connectedness, and the resulting intergenerational trauma has negatively impacted the physical and mental health of Aboriginal people. As a result of the residential school experience, many of today's Aboriginal parents and grandparents did not learn parenting

skills by being nurtured by their own parents (Dion Stout & Kipling, 2003; Mussell, 2005). Many lost confidence in their capacity to engage in the kinds of nurturing social interactions with young children that promote attachment and intimate social interaction (Smolewski & Wesley-Esquimaux, 2003). These are the primary vehicles for promoting self-esteem, positive cultural identity, empathy, language development, and curiosity about the world during infancy and early childhood. Today, despite a positive, culturally-based appreciation of children, many Aboriginal parents of young children are struggling, as shown by the persisting high rates of acute health problems in childhood, early school leaving, suicide attempts, substance abuse, and chronic disease.

1.4 Ongoing assimilative policies and the call for culture-based early childhood programs to improve health.

In 2005, the Health Council of Canada (p. 29) concluded that the present health status of Aboriginal Peoples is “*unacceptable and must be urgently and critically addressed by all levels of government*” on a partnership basis with such peoples. The Health Council noted that Aboriginal Peoples’ “*overall poor health status is compounded by the lack of culturally-appropriate programs and services*” (2005, p. 38).

Ongoing social policies that privilege settler cultures and languages have meant that most Aboriginal children, especially those living in urban centres, encounter culturally dissonant learning environments in mainstream preschools and schools (Battiste, 2000).³ As a result, many of these children experience serious challenges, which undoubtedly contributes to frequent identification of First Nation children as having learning disabilities, and to consequent high rates of early school failure and drop-out (Assembly of First Nations, 2005; Richards, 2008). Recognizing the need for culturally-sensitive programming for Indigenous children, in 2009, the Council of the Ministers of Education ‘Learn Canada 2020’ declaration affirmed the importance of “community-based early-childhood centres for both urban and rural Aboriginal people (e.g., federal Aboriginal Head Start Program)” (Council of Ministers of Education, Canada, 2009, p. 21).

Similar calls for culture-based early years education programs are made within Aboriginal populations (Cardiff, Mussell & White, 2004; Hill 2009). According to First Nations scholars Svenson and Lafontaine (1999), community surveys indicate that 80 percent of Aboriginal people believe that a return to ‘traditional knowledge and ways’ can significantly promote the wellness of their communities. As Cree scholar Greenwood (2005, p. 553) explains:

Given the overwhelming need to improve Indigenous health in Canada, and given both the evidentiary foundation of improving their health through holistic health promotion strategies and the link between early childhood development and overall societal health, it is only logical to situate considerations of Indigenous health within discussions regarding the care and education of young children.”

³ Aboriginal Peoples in Canada include four main populations: First Nations, Métis, Inuit, and urban Aboriginal. There are many different cultural and language groups within each of these populations, each with their own history, community structures, and socialization practices. Indigenous children’s early experiences vary along a continuum from being raised in traditional cultural ways that tend to flourish in rural, remote, and isolated settings, to being raised in ways that are highly assimilated into the dominant Euro-Western hybrid culture that defines growing numbers of families in metropolitan centres along Canada’s southern border.

1.5 Language, culture, and health outcomes.

Many Aboriginal people affirm that without language, culture cannot exist (Little Bear, 2006). As the Language and Culture Council, First Peoples Heritage, enumerates, when an Aboriginal language is learned it:

- Opens an opportunity to gain (or regain) access to cultural knowledge, practices and values;
- Increases Aboriginal cultural identity;
- Bridges gaps and strengthens ties between Elders and younger community members;
- Has a positive impact on personal, family and community self-esteem and sense of cultural safety and belonging.

These positive outcomes that can be promoted in the early years are counteracted by federal and provincial language policies that promote mono- and bi-lingualism in English and French (the territories have multilingual policies that promote First Nations and Inuit languages). Indigenous children are increasingly less likely to learn their Indigenous language as a first language (Ball, 2009) and a growing number of Indigenous children are not being exposed to their Indigenous language at all (Norris, 2008). In 2006, barely 10 per cent of Aboriginal children were living in families where an Aboriginal mother tongue was used on a daily basis (Canadian Council on Learning, 2009), and less than 6 per cent of Aboriginal preschool children were gaining some knowledge of their heritage language (Loppie Reading & Wien, 2009).

The loss of Indigenous language has detrimental effects on Aboriginal children's mental and physical health trajectories. Indigenous scholars McIvor, Napoleon and Dickie (2009) suggest that a loss of language creates a deep psychological loss of both culture and identity. Canada's Task Force on Aboriginal Languages and Cultures acknowledges that language is one of the most tangible symbols of culture and group identity, connecting people with their past, and grounding their social, emotional and spiritual vitality (Canadian Heritage, 2005, Peltier, 2009).

A study examining impacts of language on mental and social health (Hallett, Chandler, & Lalonde, 2007) found that First Nation communities with higher levels of language knowledge experienced suicide rates that were well below the provincial averages for both Aboriginal and non-Aboriginal youth, while those with lower language knowledge had more than six times the number of suicides. Youth suicide rates effectively "dropped to zero" in those communities in which at least half the members reported a conversational knowledge of their own traditional language. Hallett et al. concluded that the level of traditional language knowledge and use is a strong predictor of health and wellbeing in Canada's Aboriginal communities.

The foregoing review suggests that opportunities provided to children participating in AHS to be exposed to and learn the rudiments of their Indigenous language can impact important social determinants of health including cultural and community connectedness, and mental, physical and spiritual well-being.

1.6 Key findings.

This review has highlighted the importance that many Aboriginal as well as non-Aboriginal thinkers place on the direct or indirect roles of language and culture in establishing positive self-esteem, a sense of social belonging, healthy lifestyles and health trajectories. Although the literature

reviewed in this report focuses mainly on Aboriginal children and their ecologies in Canada, Indigenous scholars elsewhere have identified commonalities among Indigenous populations around the world in terms of their views about the determinants of health and wellness, and links with cultural continuity (Dockery, 2009). Indeed, virtually all known Indigenous conceptual frameworks suggest that children's early experiences of their cultural identity and heritage language play a role in health trajectories and outcomes (Fuller, 2007; Nsamenang, 2008; Australia National Public Health Partnership, 2001; NSW Department of Health, 2010; Manuka District Health Board, 2001).

Section 2. Culture, Language and Wellness in AHSUNC Programs

Establishing linguistically and culturally congruent approaches to promoting the success of Aboriginal children has long been a goal of Aboriginal Peoples in Canada. (e.g., Assembly of First Nations, 2005; Battiste & Barman, 1995; National Indian Brotherhood, 1972). In 1996, the Report of the Royal Commission on Aboriginal Peoples (Vol. 3, 1996) stated:

Aboriginal people want to prepare their children for stronger academic performance, but their concerns go beyond a singular focus on cognitive development Most important, they see early childhood education as a means of reinforcing Aboriginal identity, instilling the values, attitudes and behaviours that give expression to Aboriginal cultures.

2.1 AHSUNC overview.

In 1995, as the Royal Commission was completing its work, the federal government launched the Aboriginal Head Start in Urban and Northern Communities (AHSUNC – henceforth referred to as AHS) program. Funded through the Public Health Agency of Canada (PHAC)⁴. AHS is a community-based early childhood development (ECD) program aimed at strengthening the well-being and learning readiness of First Nations, Inuit and Métis children living off-reserve. In 1998, Aboriginal Head Start programming was expanded to also serve First Nation communities on reserve (AHSOR). While the two programs are administered separately, they nonetheless work collaboratively on a number of activities such as national training, resource development, program planning and evaluation.

Among Aboriginal children living off reserve who were receiving child care in 2006, 18% were in a child-care arrangement that promoted First Nations, Inuit or Métis customs and traditional and cultural values. In breaking this 18% down by groupings, Inuit children were the most likely (62%) to participate in such Aboriginal-specific programs, proportionally much higher than off-reserve First Nations children (26%) and Métis children (15%). Among Inuit children, 86% in Nunavik, 79% in Nunavut, 78% in Nunatsiavut, and 60% in Inuvialuit were enrolled in Aboriginal-specific forms of child care.

⁴ Public Health Agency of Canada; <http://www.phac-aspc.gc.ca/hp-ps/dca-dea/prog-ini/ahsunc-papacun/index-eng.php> and Health Canada; http://www.hc-sc.gc.ca/fnih-spnia/famil/develop/ahsor-pap_intro-eng.php

Focusing on the goal of preparing children for successful transition from home to school learning environments, AHSUNC programs emphasize culturally-fitting, community-specific elaborations of six program components: (1) culture and language; (2) education and school readiness; (3) health promotion; (4) nutrition; (5) social support; and (6) parent/family involvement. The 131 AHSUNC programs across Canada are generally administered by local non-profit organizations, mostly managed and operated by Aboriginal professionals and support staff.

In most communities, efforts are made to hire Aboriginal staff, although they are in short supply. ECE practitioners work with Elders, Indigenous language specialists, traditional teachers and parents to enhance child development, cultural pride and school readiness of young children. Most sites in urban and northern communities operate primarily in English, but many also provide opportunities for children to engage with their heritage, Indigenous language. Projects are managed in such a way that parents and guardians, extended family and community members, can have meaningful input in the program design, implementation, management, evaluation and ongoing planning. Parents are encouraged to be involved in their child's early development and learning processes and to be involved in the program as a means of developing new skills and confidence. In most participating communities, parent advisory committees oversee the operation of local projects.

As Cree-Métis scholar Anderson (n.d.) notes in reference to AHSOR, many AHS programs have become the community's centre to focus energy on improving the lives of Aboriginal children, and a base on which to build other child and family related services. Members of children's own cultural communities who participate as ECEs, Elders, and parents in AHS embody the authentic cultural knowledge that is children's birthright. AHS participation provides children with opportunities to learn such time-honoured concepts and skills as their heritage Indigenous language, a literacy of the land, and the right time and place for different kinds of activities and expressions. These early learning opportunities can stimulate Aboriginal children's cultural identity and spirituality. Cultural knowledge and positive cultural identity are strengths which can be resources for building children's self-concepts as capable learners and knowledge holders. Very often, these links are not transparent. Yet this does not detract from the potential importance of children's early exposure their heritage language and culture as a critical determinant of their health trajectory (see *Figure 11*). Engagement with heritage culture and language in early learning programs such as AHS can engender and consolidate positive self-concept, cultural identity, and sense of belonging to a social community. All of these are important as foundational determinants and/or mediators of health outcomes including mental health, healthy dietary choices and physical activity, and avoidance of injury.

2.2 Promoting positive cultural identity through participation in AHS.

An Aboriginal worldview can best be understood by paying careful attention to how people talk about the world around them: relationships, the environment, family, community, and the spiritual world (Speilmann, 1998). Emery (2000) defines traditional knowledge as “a way of life, an experience-based relationship with family, spirits, animals, plants, and the land, an understanding and wisdom gained through generations of observation and teaching that uses indirect signals from nature or culture to predict future events or impacts” (p. 37). This

definition underscores that culture is dynamic and adaptive, enabling individuals, families and communities to respond to emerging concepts, needs, resources, and opportunities.

When children are given opportunities in an AHS program to interact regularly with other community members (e.g., Elders, practitioners) who share their culture of origin, the children are routinely exposed to an authentic “cultural socialization curriculum” – a way of relating themselves to the social, sensory, and physical world. As one Elder stated: “*children become members of their culture by observing the way people in their lives behave during everyday activities.*” Some activities, attitudes and values are so much a part of young children’s daily experiences that they cannot easily be codified or examined as objects to uncover their conceptual underpinnings, historical roots, or the cognitive outcomes of children’s guided participation in them (Battiste & Henderson, 2000). A First Nations early childhood educator explained: “*We do have books for the children that tell native stories and show native people. But it’s not because we read them these books that they know who they are and learn their culture. They know because we are all related here, in some way, and we are all native*” (quoted in Ball & Simpkins, 2004). It is not necessary for children to be engaged in a specific cultural curriculum or with carefully chosen cultural objects in order to learn culturally-based ways of doing things. A few examples include: what kinds of procedural knowledge should be shared and what should be kept private (Ball & Simpkins, 2004); varying protocols for speaking and listening, tone of voice, topics, conversational wait times, and turn-taking patterns are appropriate with different kinds of conversational partners and in different settings (Ball, Bernhardt, & Deby, 2007); the ordering of information to convey when reporting an experience or telling a story based on what is important for the listener to know (Peltier, 2010); and the appropriate circumstances in which to ask for help to complete a task or to listen and watch and try to complete the task independently (Battiste & Barman, 1995). This implicit, quotidian, communal knowledge that is transmitted to young children through their growing ability to observe, listen, and participate in communal activities contributes to children’s self-concept as learners with confidence to participate in increasingly complex tasks with others.

2.3 Cultural learning as a key to identity.

According to Indigenous scholar Cajete (2000), “*there is a shared body of understanding among many Indigenous Peoples around the world that education is really about helping an individual find his or her face, which means finding out who you are, where you come from, and your unique character*” (p. 183). Similarly, Rinehart (2000) explains that exposure to heritage language and culture in everyday interactions tell children who they are and how to construct their learning” (p. 136). A parent whose six children participated in an AHS program commented that their children are not going through an identity crisis as teenagers: “*They do not have to ask ‘Who am I?’ because they have known from a young age who they are*” (Ball, 2012).

2.4 Heritage language acquisition.

For many Aboriginal parents, their children’s opportunity to learn their Indigenous language is one of the most important aspects of AHS participation. Anishnaabek scholar Peltier (2009) explains that many Indigenous people believe their language was given to them by the Creator, so when children learn to speak it, they consolidate their connection to the Creator. ECEs in

AHS programs often teach an Indigenous language to young children in an experiential environment where appreciating the connection to land and traditional foods is as much a part of the learning as the language itself. In many communities where the heritage language is nearly extinct, these opportunities in AHS are irreplaceable.

2.5 A literacy of the land.

Aboriginal parents often explain that children need to experience a deep connection to the land that is their birthright. It is often Elders in AHS programs who support children to develop this knowledge and relationship to the land through guided participation in activities that help them to respect it and learn to live on it, such as learning the names and uses of plants, observing wild animals and birds, trapping and fishing, collecting wild mushrooms and eggs. AHS participants often learn about traditional foods such as fermented berries, smoked salmon, wind-dried meat, wild mushrooms and eggs, and fried bread, and how these are prepared. A parent explained that when children go to AHS: *“They start learning their culture early. They’re going into the bush and on the water - going out to see it. It’s not like learning on paper. The person who is doing it explains it with their hands”* (Ball, 2012).

2.6 Nurturing the child’s spirit.

For most Aboriginal parents, the development of a sense of one’s spirit and its relationship with one’s ancestors and with a benevolent Creator is an important goal for their children. Cajete (1994) explains that individuals *“reach completeness by learning how to ...recognize and honour the teachers of the spirit within themselves and the natural world”* (p. 227). According to many parents whose children have participated in AHS, a strong sense of one’s spiritual identity helps children to weather the difficulties they will invariably face when they go to school and broaden their interactions within a society that remains deeply colonial and racist (Ball, 2012).

2.7 Health implications for Aboriginal children.

Young children’s experiences in AHS that develop their cultural identity and knowledge most likely yield cognitive strengths that are not readily recognized in mainstream health promotion, disease prevention, health research or policy decision-making (Battiste & Barman, 1995; Castellano, Davis & Lahache, 2000; Hare, 2011). For example, teachers and health practitioners or researchers who are not informed by an Indigenous perspective may underestimate Indigenous children’s emerging bilingualism and bidialectalism, literacy of the land, ability to take their place and perform rituals, songs and dances alongside older children and adults in cultural ceremonies, and to restrain their impulses or displays of emotion in sacred settings, in the presence of Elders, or when they sense that it is not ‘the right time’ or ‘the right place.’ Agbo (2001) emphasizes that socialization and education focused on ancestral continuity, idealized human relations and a sense of personal and collective dignity can boost students’ self-esteem and self-confidence and raise their academic standards. Studies of older children point to the contributory effects of nurturing positive cultural identification in childhood on adjustment later in life. For example, following a review of several relevant studies, Demmert (2001, 9) concluded:

“Aboriginal language and cultural programs, and student identification with such programs, are associated with improved academic performance, decreased dropout

rates, improved school attendance rates, decreased clinical symptoms, and improved personal behaviour of children.”

2.8 Assessing impacts of AHS.

The AHSUNC program has been the focus of some evaluation effort, including a descriptive evaluation released in 2002, and a three-year “National Impact Evaluation” completed in 2006. The overall impression from the latter evaluation was that AHSUNC was extremely well received and seen by parents as beneficial to their children and themselves in many respects. There were no published findings on specific areas of child development, child health, or quality of life.

An evaluation of AHS sites in the Northwest Territories (NWT), undertaken from 1996 to 2006 by the Western Arctic Aboriginal Head Start Council (2006) was somewhat more informative. Findings are potentially generalizable to AHS programs as a whole, insofar as NWT programs embodied the six AHS program components that are federally mandated. Similar to descriptions of AHS programs across Canada, the programs employed activities that developed children’s knowledge of their particular cultural heritage and children’s competence in skill areas that are valued in their cultural community, ranging from pre-reading to pre-hunting skills. The study found that many AHS children entered the AHS program with deficits in language and social skills, and most showed some improvement after one winter in AHS. The most positive findings came from parent and community ratings of the culture and language components of the program. The study concluded that one of the strongest features of the AHS movement in NWT is the site-specific identity, focus, and dedication to the promotion of local culture, language and traditions.

Another perspective on the impact of AHS comes from the RHS (First Nations Centre, 2005; First Nations Information Governance Centre, 2012), indicating that participation in at least one year of AHS reduced the risk that a child would repeat a grade in elementary school. Although these reports do not yield a very differentiated view of how AHS affects children in various ways or for how long, the RHS findings are encouraging.

Section 3. Child wellness, family wellness – and community wellness – where do language and culture ‘fit’ as determinants within the ecology of Aboriginal health?

There is widespread acceptance in the population and public health sectors in Canada and internationally that health is more than the absence of disease, and that health outcomes are influenced by many factors or determinants other than the most immediate, proximal causes of illness (see Section 4). As well, healthy child development is widely recognized as foundational to future health – health trajectories set in childhood can be tracked through to the emergence of a host of health conditions later in the course of development. Obesity and its consequences constitute a very clear and well-documented example.

It is almost axiomatic that health and wellness of the child is, in important ways, a function of wellness within the family context (e.g., Case & Paxson, 2002). This contextualized view of

child wellness is deeply embedded in Aboriginal-specific conceptualizations of health and wellness, such as that held by the First Nations Information Governance Centre that has conducted the Regional Health Survey (RHS) of First Nations wellness. As shown in *Figure 1* (following page) this group emphasizes a holistic concept of wellness that includes the spiritual, mental, physical and emotional wellness of all family members, and they embed these within a broad ecological system.

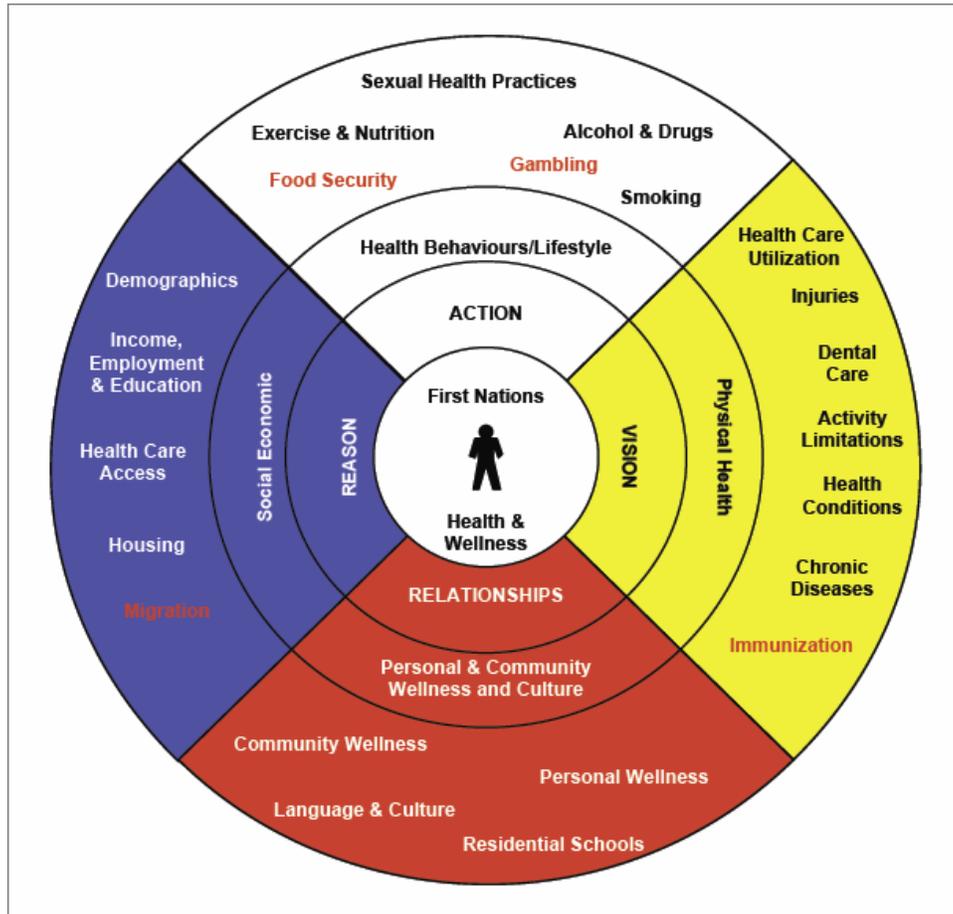
This view strongly supports a strategic focus on early childhood development programming that explicitly encompasses a child's family members in order to address both the needs of young children and their primary caregivers in their home and community environment. This family systems perspective informed the development of 'hook and hub' models of integrated ECE programs in three First Nations communities in B.C., described by Ball (2005).

Although empirical research focusing on Aboriginal ECE is lacking, research in non-Aboriginal contexts has clearly shown that early childhood development programming can promote healthy development in both children and families, and can counteract various stressors and deprivations that can erode opportunities for optimal health and development (Doherty, 2008; Cleveland & Krashinsky, 2003; Heckman, 2006; McCain, Mustard, & Shankar, 2007; Shonkoff & Phillips, 2000; World Health Organization, 2007). In other words, family wellness can moderate the impact of an otherwise adverse set of external circumstances, enabling a more resilient and health-promoting response to factors that carry an inherent threat to the well-being of the individual.

One of the distinctive features of the RHS model of wellness is that it takes one step beyond the family and identifies "community wellness" as a determinant of the health of the family and the child within the family. Community wellness as a health determinant is the subject Chandler and Lalonde's research (1998; Chandler 2007), which addresses directly the relationship between community infrastructure, self-governance and leadership, and individual health outcomes, with a specific focus on youth suicide as an outcome. These investigators argue that:

- There is a special burden of risk or adversity within Aboriginal populations in Canada. Based on suicide rates in 196 First Nations communities in BC since 1987, Chandler (2007) concludes that the risk for suicide is 5 to 20 times higher than it is for non-Native youth.
- There is marked variation in suicide rates among communities. These disparities cannot be accounted for by the socio-economic variables (e.g. income, employment, education or housing) that most often emerge as powerful distal determinants of physical health outcomes (e.g., Type II diabetes).

Figure 1. First Nations Conceptualization of Determinants of Health and Wellness



Source: Regional Health Survey, First Nations Centre, 2005

In order to account for disparities in suicide rates, Chandler and Lalonde (1998) centred on the notion of ‘cultural continuity.’ In their research, this consists of several characteristics that relate both to preservation of heritage culture and to various activities that all entail community self-determination and management of key community services. Specifically, in their original research they identified six factors:

1. Self-government
2. Land claims
3. Education
4. Health care
5. Cultural facilities
6. Police and fire services

Through their data analysis, they determined that the risk for youth suicide was substantially lower in communities where more of these factors were present, with the rate dropping to zero in communities where all six factors were present. Lalonde (reported in Kendall, 2007) reproduced these analyses using data provided by the BC Public Health Officer, covering the period from

1992 to 2006. It was noted in this study that that the protective effect of cultural continuity was more pronounced for adolescent suicides than for adult suicides.

This work has been extended more recently (Hallett, Chandler & Lalonde, 2007) to assess the role of cultural continuity and heritage language preservation and use as components of community wellness and as predictors of suicide. Again, these authors examined the relationship between number of cultural continuity factors present and youth suicide rates. However, they conducted a two-stage analysis, looking first at the predictive power of the six original cultural continuity factors, and then evaluating whether preservation of Aboriginal language within a First Nations community could account for additional variance in suicide rates.

- Consistent with their previous findings, suicide rates were significantly predicted by the number of cultural continuity factors present.
- Of special importance, Indigenous language use at a community level demonstrated significant predictive power, over and above all the other factors. In their data, suicide rates dropped to zero in the small number of communities where at least half of the community members reported a conversational knowledge of their Indigenous language.

Chandler has focused more specifically on the question of what mechanisms are involved that link cultural/linguistic continuity at a community level with the behaviour of the individual. In a series of works (2000, 2006) Chandler attributes the disparities in outcomes to processes and contents of identity formation within the individual. In this model, identity is positioned as the ‘channel’ that links cultural continuity factors at a community level to outcomes at the level of the individual.

This formulation positions mechanisms of identity formation or identity construction squarely “in the middle” of the determinants of the health matrix, in effect brokering the relationship between distal determinants of health (both the protective cultural continuity variables and other distal health risks) and the proximal determinants of health that ‘touch’ the individual. This is reflected in the positioning of ‘identity’ in the model that is discussed in this paper (see *Figure II*).

Several features of Chandler’s model should be noted:

- Culture is positioned critically in this formulation, because culturally-defined roles, standards of conduct, goals, aspirations, modes of social interaction – and health-related practices – provide the ‘raw materials’ out of which identity is formed (via mechanisms of identification and internalization).
- Language is also positioned critically in this formulation – speaking a language that is distinctive of a particular cultural group is an ongoing affirmation of the relationship between the individual and that culture. Language may also contain special vocabularies that express contents that are of special relevance to a given community.
- Alignment of identity and behaviour – a coherent sense of self requires consistency between identity and conduct. If they decouple, a fragmented or unstable sense of identity arises, and this is associated with a variety of adverse psychological, behavioural and health outcomes, up to and including suicide. To the extent that identity has been constructed out of culturally-conditioned contents that relate to health, identity then becomes a mechanism for promoting health outcomes.

- The seven cultural continuity factors point, at least by implication, to strong leadership within the Aboriginal community who would drive the various community agendas that are associated with factors such as self-government or control over education. If communities that rank high on those seven factors have low rates of suicide, and if identity formation at the level of the individual is the mechanism whereby those factors exercise a protective effect, then the individuals may be modeling themselves after community leaders who exemplify certain key elements of healthy identity, such as a well-consolidated sense of purpose and direction. Note that the protective function performed by such characteristics is referenced in several works concerned specifically with the health of Aboriginal people in Canada.⁵

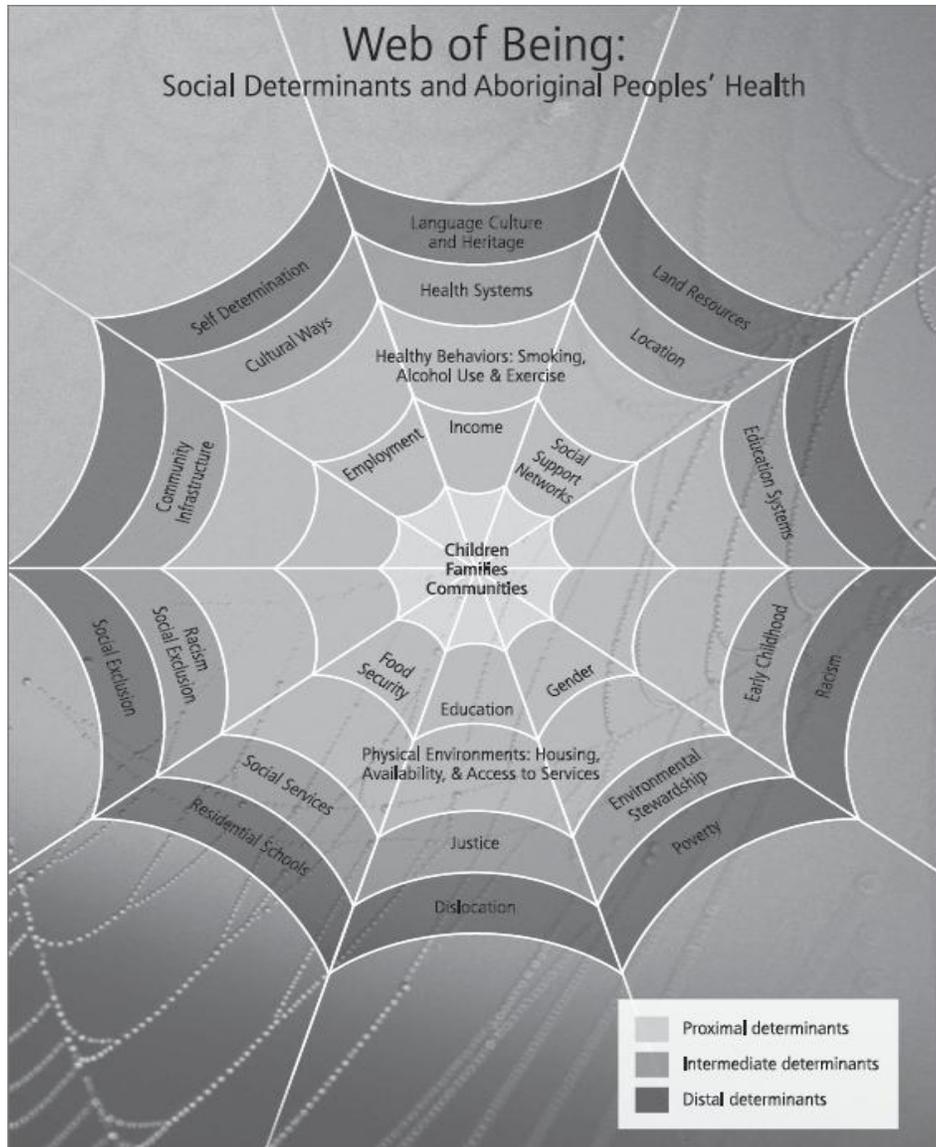
The work of Hallett, Chandler & Lalonde is echoed by the positioning of community wellness in the RHS model, and the status afforded to language and culture in their work is quite compatible with the conceptual model advanced by Gracey and King, shown in **Figure 2**(following page), which places premier importance on language, culture and heritage as a distal determinant of Indigenous people's well-being.

It is important to recognize that a current-state assessment of cultural continuity and linguistic preservation at a community level may not always be indicative of the lived experience of the people in the community. Consider Inuit communities which have well-preserved indigenous language and culturally-relevant practices. If the point-in-time level of language use is high – but deteriorating – the experience of the individual may be one of loss, not cultural robustness and integrity. In other words, it may be critical to know what that trajectory is at a community level in order to gauge the potential for these factors to exercise a protective influence within a given community. This issue is taken up at greater length in **Section 5** of this document, which is concerned with suicide in the Inuit communities.

Note that the work of Chandler and Lalonde is validated against information about suicide – in the context of First Nations communities in British Columbia. A set of risk/protective factors that are sufficient to predict suicide may not be sufficient to account for other health risk behaviours and health outcomes. **Section 5** works through a portion of the findings in the RHS, along with work done around the issue of suicide in Inuit communities, in order to position the factors that Chandler and Lalonde identify within a larger context that could relate to a broader set of outcomes in a more diverse set of communities.

⁵ See for example *What Makes Canadians Healthy* (Public Health Agency of Canada, 2013); *First Nations and Inuit Health Program Compendium* (2011/12); *Social Determinants of Health: The Canadian Facts* (Mikkonen, & Raphael, 201; Willows, Hanley & Delormier (2012), who speak specifically to weight-related issues in Aboriginal children; *Lifeline: Creating a Community Service Hub for Children* (Ball, 2012); *Founded in Culture: Strategies to promote early learning in First Nations Children in Ontario* (Best Start Resource Centre, 2010).

Figure 2. Social Determinants of Aboriginal Peoples' Health



PART II. PROXIMAL AND DISTAL DETERMINANTS OF HEALTH DISPARITIES

Section 4. Disparities in Health Outcomes and Health Determinants

The analysis of health disparities is a key investigative tool that can uncover and highlight the determinants (causes, correlates) of identified disparities. This analysis is critical to identifying specific targets or objectives for program. It is also critical for identifying which clusters of determinants are potentially within the scope of agencies or organizations or governmental entities, and which determinants fall outside the span of control/responsibility for various entities. Thus, this analysis is foundational to the development of evidence-based strategies. The same evidence base that provides the rationale for strategy also constitutes a foundation for surveillance/performance monitoring strategies.

To support the work that is presented in Section 5 and following, a careful review was conducted, looking at the epidemiology of health concerns in Aboriginal populations in Canada. This review also covered health disparities, and at disparities in the determinants of health profiles of different Aboriginal communities. The results of the epidemiological review of health concerns, along with references for the results, appears in detail in *Appendix IV* of this document. The current section of this document (Section 4) highlights key results from that Appendix. A listing of the determinants of health for Aboriginal people appears in *Appendix II*.

4.1 Health Outcomes

The data paint a clear and consistent picture of worse health outcomes for Aboriginal people:

- Life expectancy is significantly lower for Aboriginal people versus non-Aboriginal people. Infant mortality rates are higher.
- Preventable deaths due to medical treatable diseases are higher for Aboriginal people.
- Mortality due to HIV disease is higher for Status Indians, and in BC has doubled since 1993, while the rate for other residents has decreased significantly for the same period.
- Obesity rates are higher in Aboriginal communities, and rates of chronic diseases classically associated with obesity (e.g., heart disease) are much higher.
- Suicide rates are higher among Aboriginal youth, and suicide in the Inuit communities has increased dramatically over the past several decades.

As detailed in *Appendix IV*, studies and research reviews concerned specifically with health outcomes for Aboriginal children convey a very similar picture: a research review by the Canadian Institute for Health Information (2004) found evidence of poorer health outcomes among Aboriginal compared to non-Aboriginal young children on almost every health indicator. Studies on selected variables indicate that Aboriginal children who survive their infancy are more likely to suffer poor health than are non-Aboriginal children, and that their poor health status is likely to affect their development and quality of life. For example, they are more likely to suffer accidental injury, to have a disability, to be born prematurely and to be diagnosed with Fetal Alcohol Syndrome Disorder. In 1999, the RHS obtained First Nations and Inuit parents'

reports on the health and development of their children under 18 years of age. This survey found that the rates of severe disabilities, including Fetal Alcohol Spectrum Disorder, hearing loss, attention disorders, and learning disabilities among First Nations children living on reserve and Inuit children were more than twice the rates for non-Aboriginal children. The highest rates were among First Nations children living on reserves compared to off reserves (First Nations and Inuit Regional Health Survey National Steering Committee (1999).

4.2 Health Outcomes and Criminalization of Aboriginal People

In a recently-released report (*Health, Crime, and Doing Time: Potential Impacts of the Safe Streets and Communities Act (Former Bill C-10) on the Health and Well-being of Aboriginal People in BC*, March 2013), Dr. Perry Kendall, the Public Health Officer of BC provides an analysis of incarceration rates for Aboriginal versus non-Aboriginal people in BC. The disparities are particularly pronounced for younger Aboriginal persons, e.g., in 2006, Aboriginal youth aged 12-17 represented 7.9% of the population of BC, but they represented 37.6% of the youth population in open and secure custody. Kendall's analysis of the determinants of criminalization of Aboriginal people points clearly to a common origin in the determinants of a range of health conditions in the Aboriginal community. As well, the Public Health Officer highlights the mediating role of mental health/substance use outcomes in the emergence of behaviour that leads to criminalization of Aboriginal people: "**Recommendation 2: Increase collaboration, coordination, and integration between health and justice sectors, and with Aboriginal people, communities, and organizations. This collaboration should recognize the interrelationship between the determinants of health and risk factors for crime, and between health status (including mental health and well-being) and involvement in crime**" (Kendall, 2013, p. 43).

While the focus of this paper is not on criminalization of Aboriginal youth, the report from BC highlights one of the key points in this paper: social determinants of health are linked to a broad array of outcomes, which include a range of health outcomes of great concern in Aboriginal populations, and a host of other outcomes that are mediated by those health outcomes. We also note that some of these incarceration outcomes that are mediated by health outcomes such as mental health and substance use problems have a further undermining effect on the determinants of health profiles of Aboriginal communities – and the health outcomes they engender. In other words, these determinants of health do not just engender problems – they also cycle back and increase the likelihood that the situation will deteriorate.

4.3 Determinants of Health, Health Risk Behaviours

A survey of the literature on determinants of health for Aboriginal people highlights the factors that emerge in virtually any population-health-based analysis of health disparities:

- Income: higher proportions of Aboriginal people fall in the lower income ranges.
- Access to Early Childhood Education – overall, it is estimated that 90% of Aboriginal children do not have access to regulated infant development or early childhood development programs with any Aboriginal components.

- Rates of educational attainment are significantly lower in the Aboriginal versus non-Aboriginal communities.
- Smoking rates are higher in Aboriginal communities. Smoking rates in Inuit communities are the highest in the world, and this is reflected in the cancer statistics.
- Food insecurity: moderate to severe; 200-400% higher in the Aboriginal communities.

See *Appendix II* for a more exhaustive analysis of determinants of health for Aboriginal people.

4.4 Language and Culture as Health Determinants – As Reported in the First Nations Regional Health Survey

The RHS collected data on First Nations people on reserve (and some First Nations people off reserve in Northern communities). The survey was conducted first in 2002-2003, and then again in 2007-2010. The survey employs one data collection tool for adults, one for youth/adolescents, and one concerned with First Nations children.

Following are select findings from the RHS related to language, culture and health:

- A lower proportion of First Nations adults who indicated being intermediate or fluent in a First Nations language had thought about or attempted suicide in their lifetimes.
- First Nations adults who were more engaged with culturally-relevant activities in their communities reported more control over their lives, more balance (spiritual, mental, emotional, physical), less substance use, more likely to perceive greater social support, and less depression.
- A large majority of Aboriginal Youth (85.7%) regard traditional cultural events as important. This rate (from the 2007-2010 survey) represents an increase from the findings in the 2003 survey (54.8%). Note also that 42.6% percent of First Nations youth identify culture as one of the main challenges faced by their home communities (p. 315).
- The RHS notes that coming of age ceremonies play an important part in transmitting values and practices linked to safe sexual practices and healthy relationships. They note that these teachings are being replaced by Western coming-of-age practices related to use of alcohol, going to parties where alcohol is being consumed, and first time sexual encounters. The RHS cites studies that link safe sexual behaviour to identification with Native spiritual traditions.
- In the portion of the RHS concerned specifically with children, the authors note that 85% of primary caregivers report that having their First Nations children learn an Indigenous language and participate in a cultural activities was highly valued. The RHS reports that parents and grandparents function as one of the principle means for transmitting knowledge of First Nations culture and language. However, the RHS also reports that 69.1% of all First Nations children never participated in traditional cultural activities (e.g., singing, drumming, or dancing) outside of school hours. This highlights the critical role of schools for younger children in the transmission of culture. While parents place a premium on cultural transmission, the RHS suggests that they are heavily dependent on schools to support the process.

- The RHS authors note that Aboriginal children on reserve are far more likely to attend Aboriginal-specific preschool programs, citing the Aboriginal People’s Survey as a source for off-reserve Aboriginal people.
- With regard to community wellness and health, by way of a summary of their findings, the RHS authors state: “*From this data and relevant literature, it is evident that strategies aimed at improving community wellness for First Nations youth must be tied to First Nations identity, self-esteem, and cultural continuity and that they must emphasize family and social cohesion within First Nations communities*” (p. 313).

* *N.B.*: with regard to heritage language preservation: Heritage language preservation is highly variable across Aboriginal groups. For example, among Métis children, 3% are able to express their needs in an Aboriginal language. Among First Nations people on reserve, almost 70% are able to understand or speak a First Nations language, though daily use of First Nations language is diminishing in younger generations. Among Inuit people in Nunavik, 96% of the children aged 2-5 are able to understand or express their needs in an Inuit language. By contrast, outside the Inuit Nunangat, the rate falls to 5% for Inuit children.

Section 5. Determinants/Correlates of Health and Wellness in First Nations Children – Regional Health Survey

5.1 Canadian Community Health Survey, Aboriginal Peoples Survey, Aboriginal Children’s Survey, First Nations Regional Health Survey

This section provides a closer examination of the relationship between determinants and outcomes, and the positioning of language and cultural factors within a matrix of determinants.

The Aboriginal Children’s Survey (e.g., Statistics Canada, 2008 d,e,f); the Aboriginal Peoples Survey (e.g., 2008b; 2009) and the CCHS (e.g., Gionet & Roshanafshar, 2013) work largely within a health surveillance paradigm – providing information that can be trended over time, or information that can compare different Aboriginal groups, or differences between Aboriginal and non-Aboriginal groups. These surveys can also provide some information about causes or correlates of health concerns. However, the principle concern of these tools is to describe, not to place health concerns within a matrix of causes or correlates, or explain health disparities. By that same token, the 2006 Aboriginal Children’s Survey conducted by Statistics Canada has generated a picture of parents’ perceptions of a number of dimensions of children’s health, development, family and community contexts, and access to programs and services. However, the data do not readily enable linkages to be made between perceived health outcomes and determinants, and the information is not likely to be gathered iteratively to track changes. Similar issues exist with other large-scale surveys that do not delve into the links between outcomes and determinants.^{6 7}

⁶ For example, see the work done in Manitoba on Métis health (Martins, et al., 2010)

⁷ Limitations with these surveillance-oriented approaches are noted in (National Collaborative Centre for Aboriginal Health, 2011)). Note, however, that this document also points out that some of these survey have been incompletely

By contrast, the RHS restricts its attention to First Nations people on reserve (and some First Nations people off reserve in Northern communities). However, the RHS does focus on the proximal and distal determinants of health and seeks to create a rich and detailed picture of the factors that relate to health outcomes). A large number of factors related to health behaviour and outcomes come into play over the lifespan of a person, and this is reflected in a very large array of empirical findings reported in RHS (see *Figure 1* – RHS Cultural Framework). Use of indigenous language and engagement in culturally-relevant activities are important components of this cultural framework.

The work of Statistics Canada makes a clear statement: in order understand the determinants of health for Aboriginal people in Canada, you must move beyond the standard set of socio-economic status indicators that are so powerfully related to health outcomes for other groups (Garner et al., 2010). *Figure 1* depicts the RHS cultural framework which situates health within a broad array of proximal and distal determinants, including language and culture. It is clear from the scope of issues reflected in this model that the RHS holds potential for significantly advancing knowledge of clusters of factors that relate to a broad array of health outcomes in First Nations people (children, youth and adults).

The scope of issues considered in the RHS work is broad, and the reports include extensive and detailed analyses of relationship among the various factors. In order to discern the patterns embedded within this large set of results, the authors of this document constructed a set of diagrams that illustrate graphically some –but by no means all – of the key findings. These diagrams are based largely on results reported in the second wave of RHS data collection (2008-2010). To a lesser extent, the diagrams may also contain empirical findings from other research that have been referenced directly in the RHS work and are reported by the RHS authors as established results or parameters within the area of health. For example, the RHS authors reference the relationship between degree of food insecurity and diet quality, and note that food insecurity typically plays out in the diets of adults before those of young children. These relationships have been documented in numerous studies.

The intention in these diagrams is not to summarize all of the RHS data on health-related conditions for all ages into a determinants of health framework. The intention is to highlight enough material from the RHS work to provide some reasonable degree of evidence in support of an argument that appears repeatedly in many published works; namely, that promoting use of Indigenous language and encouraging integration of Aboriginal cultural contents into identity and activity can promote resiliency and ‘launch’ Aboriginal children on a developmental trajectory that will promote health.

However, in order to ensure that language and culture as non-medical determinants of health are positioned within a framework that provides reasonable coverage of the range of determinants related to health, some material is presented in order to highlight the contribution of other factors, particularly health risk factors, over which language and culture might confer some protection.

analyzed, and could shed more light on the larger context of determinants out of which a collection of determinants emerge.

In the diagrams in this section, it is important to note that because the RHS was a self-report survey, and information about determinants comes from the same sources as information about outcomes. For this reason, the modeling cannot be taken as definitive demonstrations of linkages among factors. For a similar reason, the results should not be interpreted as demonstrations of causal relations among factors, though in many cases the direction of apparent causality is quite clear (e.g., use of sugar in baby bottles produces baby bottle tooth decay, not vice versa). Nevertheless, our analyses of the RHS data resonate with observations and speculations repeatedly found in many reports concerned with social determinants of health and chronic conditions, and therefore offers plausible key linkages that should be subject to empirical investigation in future. Note that many risk factors are not unique to Aboriginal children and families. As well, some determinants are protective factors that may be unique to Aboriginal populations.

Child Outcomes

5.2 Wellness

The first diagram based on the RHS is concerned with child wellness, overall (see *Figure 3*, below). Key determinants and relationships among those factors are reflected in the diagram.

For *Figure 3* and those that follow in this section, note the following:

- Key variables of interest/concern are identified as the Focus in a particular diagram. For example, in the diagram below, Absence of Emotional or Behavioural Problems and Well-Being are the focus. The diagram as a whole is concerned with the proximal or distal determinants of those characteristics.
- Determinants (proximal or distal) of the focus may have a positive impact or a negative impact. For example, in the diagram below, poverty is exercising a negative influence on other factors that have a positive relationship to well-being. In other words, with high levels of poverty, those conditions associated with wellness are less likely to be present in the sample of individuals who participated in the survey. It is important to realize that the term “positive” is being used here in a statistical sense, i.e., a “positive factor” is directly related to the target or focus (in contrast to a factor that is inversely related). If the target is a health problem such as obesity, then a positive factor would be one that increases the likelihood that a person will be obese, and an inversely related factor would be one that diminishes the likelihood that a person will be obese.
- The other boxes indicate factors/determinants that are related to the areas of focus. Boxes that are connected directly fall within the domain of proximal determinants. Boxes that are further removed – i.e., more distal determinants - are indirectly related to the focus, but they may be more directly related to other determinants. This corresponds to the notion that proximal determinants are related more directly to the behaviour and the experience of the individual, and distal determinants engender those conditions that affect the likelihood that a constellation of proximal determinants will be present in the lives of populations of individuals.
- It is important to realize that the ‘potency’ of a determinant is not necessarily a function of the proximity to the individual. For example, poverty can have a profound impact on

an individual's health, but it works indirectly *via* constellations of proximal determinants, e.g., access to healthy food, crowded/unhealthy housing, limited educational opportunities, etc.

Figure 3. Proximal and Distal Determinants of Overall Child Wellness

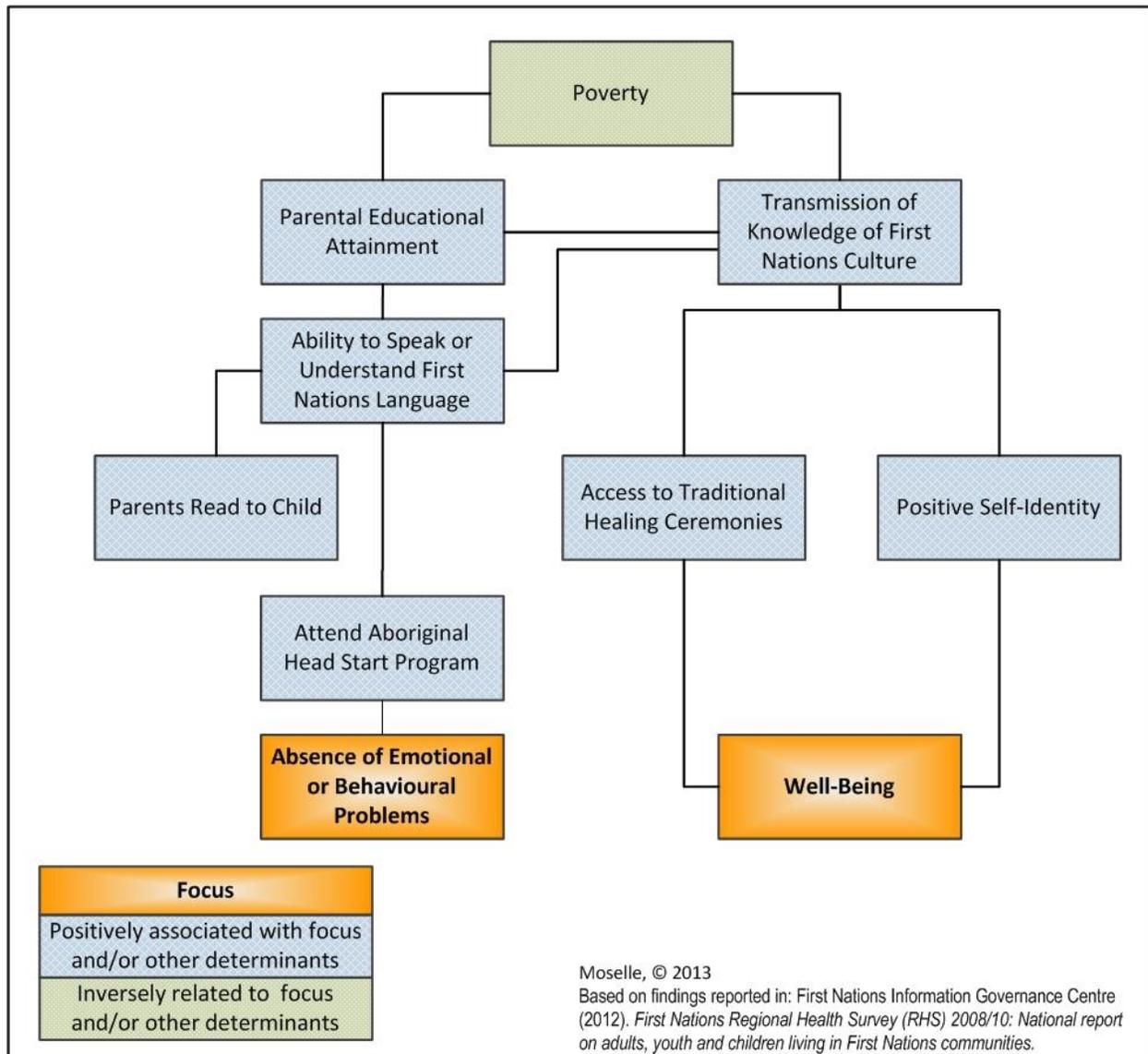


Figure 3 summarizes findings that relate a range of factors to prosocial behaviour and well-being in children. This diagram may be decoded as follows:

- Absence of emotional problems or behavioural problems (specifically, conflict with other family members) is more likely to be reported by caregivers in families where the child attended Aboriginal Health Start.

- Attending Aboriginal Head Start is associated with children who have developed some ability to speak or understand a First Nations Language – and that is associated with parents/caregivers who read to the child, and to educational attainment by the caregivers.
- In the other stream in this diagram, the results show that in families where parents/caregivers ascribe high levels of well-being to their child, they also ascribe a positive sense of self-identity to the child, and they also report that the child has access to traditional healing ceremonies.
- As expected, the diagram indicates that in families where knowledge of First Nations culture has been transmitted to the child, the child is also more likely to have access to traditional healing ceremonies, and the child is more likely to understand a First Nations Language. The diagram is also indicating that transmission of knowledge of First Nations culture to the child is associated with parent educational achievement.
- In this diagram, poverty is positioned as a negative determinant. It has a direct and statistically significant association with parental educational attainment with it is also associated with parental transmission of knowledge of First Nations culture to the child. It is more indirectly associated with other factors in the diagram, which are themselves directly associated with well-being in the children and with the absence of emotional or behaviour problems.

In summary, this diagram shows that:

- Engagement in various culturally-relevant activities is related proximally and positively to child wellness and positive relationships with family members.
- However, poverty sits as a distal determinant in the model, diminishing the probability in any given family that these positive circumstances and associated child outcomes will emerge.
- In other words, language and culture emerge clearly as factors promoting healthy development in children, but they are not the only factors in the mix.
- Language and culture are positioned in between poverty and these broad-based indicators of child wellness, and they appear to be moderating or mitigating factors. From this, we can conclude that even in circumstances where poverty cannot be addressed directly, its impact may be mitigated through activities that strengthen the child's engagement in culturally relevant activities and by strengthening the child's connection to the culture and the community via use of First Nations language.

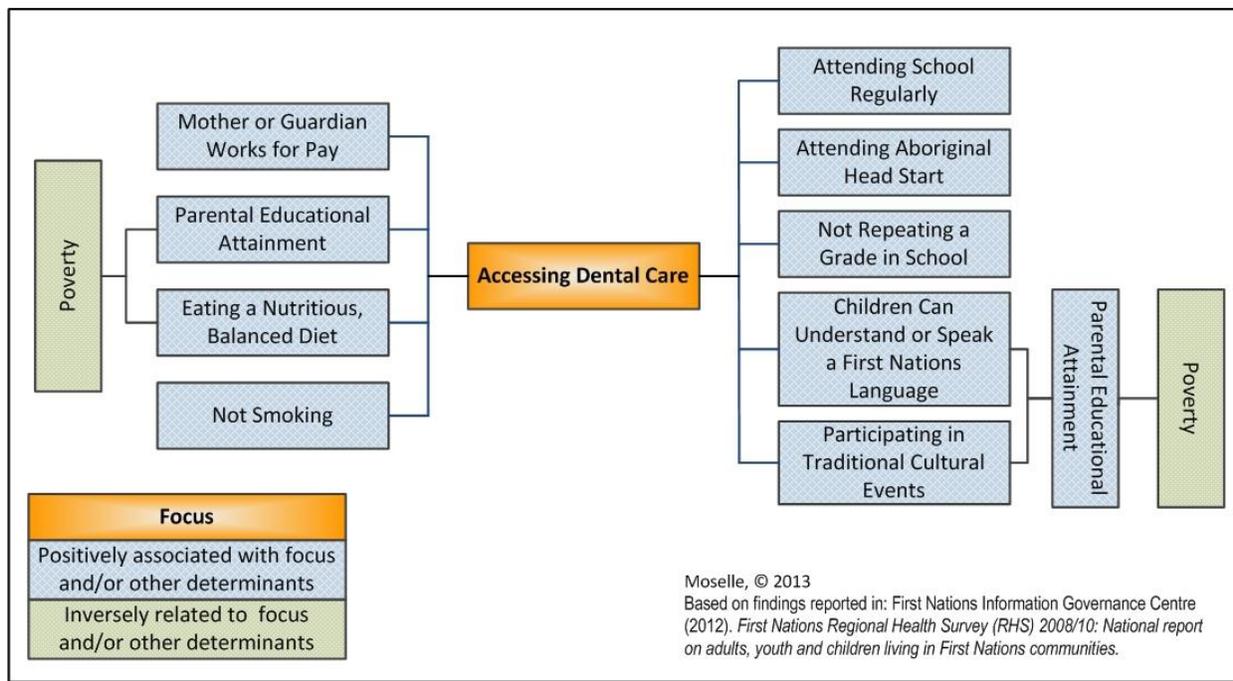
5.3 Oral Health – Accessing Dental Care, Baby Bottle Tooth Decay

The following diagrams illustrate the social determinants of health that contribute to and result from oral health, in the context of First Nations children. The first figure (**Figure 4**) is concerned with access to dental care. The second is concerned with baby bottle tooth decay, one of the principle drivers for access to dental care. As with the previous diagram, the figures reflect findings reported in the RHS.

Note that the issue of oral health is significant in that it is positioned both as a consequence of actions on the part of the mother in the post-natal period, and as a cause of later health problems. It is also of significance because, as the diagram illustrates, issues relating to oral health do not

exist in a vacuum – they are related to clusters of determinants and emerge as part of a constellation of outcomes that are ‘linked’ by virtue of their common origins.

Figure 4. Access to Needed Dental Care – Proximal and Distal Determinants



This figure may be interpreted as follows:

- The focus is on appropriate access to dental care.
- Such access is positioned at the centre of a constellation of factors, which include:
 - ‘Wellness’ within the domain of parents/caregivers – specifically, parental educational attainment and the mother or guardian working for pay;
 - Health practices within the family – diet, as well as parents/guardians not smoking;
 - Child education variables – including attending Aboriginal Head Start, attending school regularly, and not repeating a grade in school
 - Language and culture factors – ability to understand or speak a First Nations language, and participation in traditional cultural events (related to parental educational attainment, as noted in the previous diagram).
 - All of these positive determinants or correlates of appropriate access to dental care are ‘sandwiched’ in between poverty, a more distal determinant which can diminish the likelihood that the more proximal positive determinants will be present in a population of individuals.

This figure is of significance in that it depicts a specific health-promoting activity, namely, appropriate use of dental care, as part of two constellations of factors:

- One set of factors may be interpreted holistically as healthy functioning of the family unit as an integrated whole, including parent variables, diet and smoking.

- The second set of factors are concerned with wellness in the child, as reflected in participation in Aboriginal Head Start, effective engagement in school, and the child's 'connection' to First Nations culture and language.

This diagram illustrates a basic principle that applies to the relationship between non-medical determinants and health outcomes: in situations where health conditions are the expression of multiple contributing factors, we often find clusters of determinants related to clusters of outcomes. Such is the case with appropriate access to dental care, and – as the figure below illustrates – this is also the case with the incidence of baby bottle tooth decay in Aboriginal populations (and other populations affected by poverty).

This empirical finding and the findings below concerned with baby bottle tooth decay are consistent with the analytical and service system planning frameworks of organizations such as the World Health Organization or the health service systems in Australia and New Zealand, which look at health as clusters of outcomes, health risks as clusters of behaviours, and determinants as clusters of predisposing factors (Counties Manuka District Health Board, 2001; Kowanko, Helps, Harvey, Battersby, McCurry, Carbine, Boyd & Abdulla, 2012; National Public Health Partnership, 2001; New South Wales Department of Health, 2010; World Health Organization 2002, 2009).

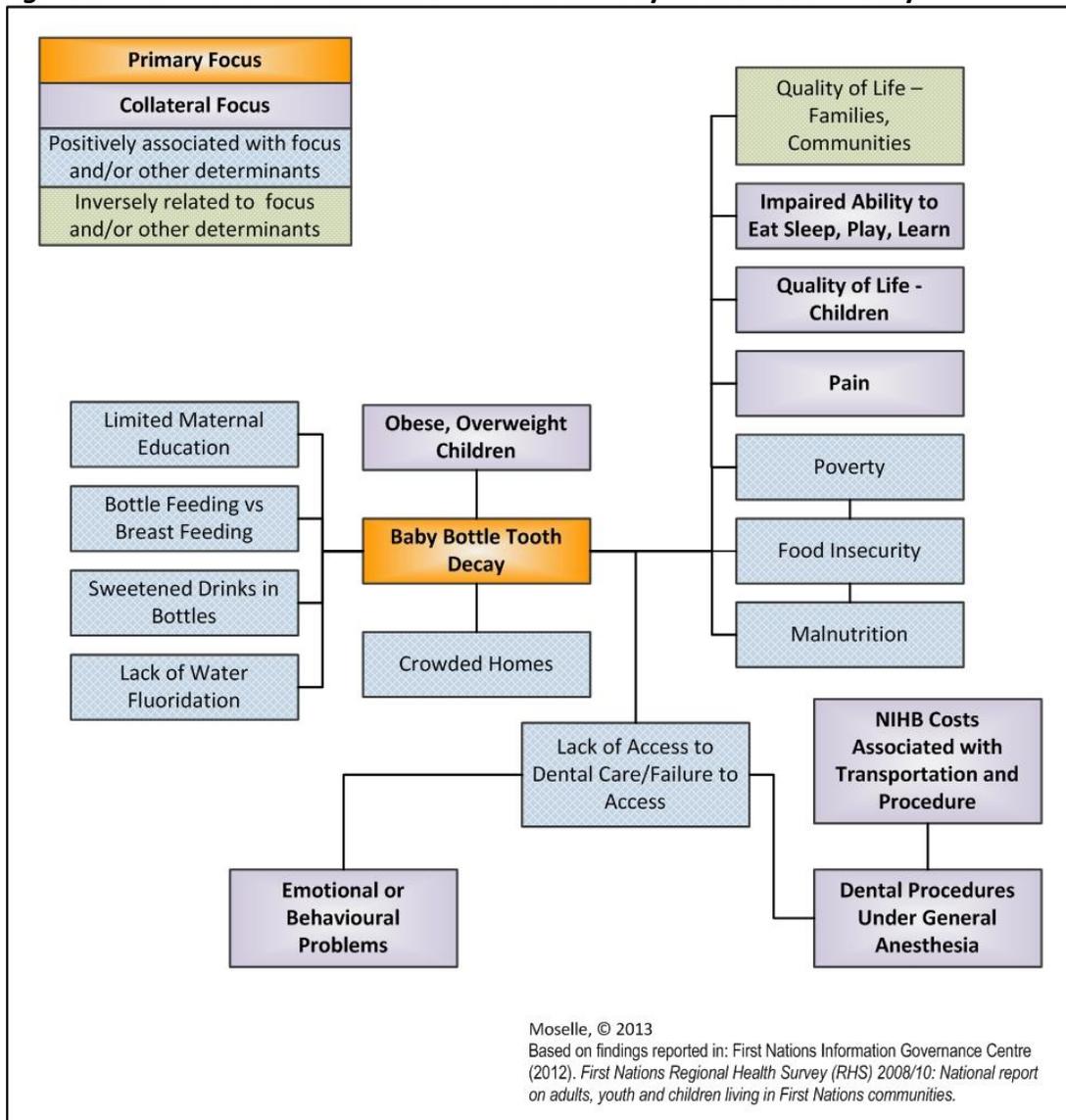
The diagram in *Figure 5* is concerned specifically with the determinants or correlates of tooth decay. Note that although the focus is on tooth decay, as the diagram illustrates, those factors that are related to tooth decay are also associated with a host of other physical and mental health outcomes in First Nations children.

This diagram illustrates the following set of findings:

- Overall, baby bottle tooth decay sits as one element within a cluster of health outcomes that are related to a cluster of determinants. These other health outcomes include:
 - Direct consequences of baby bottle tooth decay including: pain; impaired ability to eat, sleep, play learn; dental procedures under general anaesthesia.
 - Other health issues related to the determinants of baby bottle tooth decay. These health issues include emotional or behavioural problems. These are of major concern because of their relationship to significant problems later in the course of development (e.g. Type II diabetes; suicide).
 - Baby bottle tooth decay becomes a drain on non-insured health benefits made available to First Nations and Inuit people due to the association of such decay with dental procedures that must be carried out under general anaesthesia.
- On the determinants side of the equation, we see that baby bottle tooth decay, in particular, is related to a pernicious coming together of several factors:
 - Use of sweetened drinks in baby bottles is a primary cause of tooth decay in babies and young children. This is more likely to occur when a baby is not breast fed. Lack of water fluoridation is also a contributing factor.
 - Limited maternal education emerges as a factor associated with baby bottle tooth decay.
 - Food insecurity emerges as a key factor related both to poverty and to malnutrition.

- Crowded housing forms part of the matrix of factors related to baby bottle tooth decay, due to its association with poverty. Crowding is positioned in the model in a direct relationship with baby bottle tooth decay because such a statistical relationship is reported in the RHS. This is not because crowding is a proximal determinant of baby bottle tooth decay but rather because crowding tends to be the product of poverty.

Figure 5. Proximal and Distal Determinants of Baby Bottle Tooth Decay



Note that when different determinants and health outcomes are positioned as elements within a complex matrix of interacting factors, it is sometimes difficult to determine what should be regarded as “outcome” and what should be regarded as “determinant”. For example, in this figure, quality of life in families and communities may be a determinant of the health issues in questions, but high rates of such health problems will detract from quality of life in communities.

In such cases, what we have are reciprocally-reinforcing cycles in which poor health outcomes increase the prevalence of the contributing factors that determine poor health outcomes.

What is noteworthy in this diagram is the absence of reference to language or culture within the matrix of determinants. As the previous diagrams illustrate, language and culture are moderators of the impact of poverty in relationship to more non-specific elements of child wellness, however when we look at specific medical outcomes such as baby bottle tooth decay, the determinants are more direct, e.g., use of sweetened drinks in bottles.

Note that while language and culture may not be positioned as moderating variables in between poverty and the health-related concerns in the figure, an Early Childhood Education program that promotes language and culture may be optimally positioned to target those factors that are more directly related to baby bottle tooth decay and obesity. In particular, given the scope of activities in Aboriginal Head Start, these programs would be well positioned to provide education regarding healthy dietary practices and the serious adverse consequences (short and longer-term) associated with use of sweetened drinks in baby bottles, since mothers of a first child attending an Aboriginal Head Start program are likely to have at least one more child who would benefit from this education, in addition to the child in the program.

Youth Outcomes

This document is concerned overall with health trajectories that are launched in the post-natal/early childhood period of development, in an effort to assess the potential impacts of early interventions. The focus is more specifically on the role of Aboriginal language and culture as a focus within Early Childhood Development programs, and the potential for such a program emphasis to shift the developmental trajectory in the direction of health. Given the significant health-determining role played by other factors such as poverty, crowding, environmental changes, and numerous others (see *Appendix II* for a more exhaustive enumeration), the analysis considers the role of language and culture within a matrix determinants where it functions as a potentially significant factor, but not the only factor.

Because the relationship between clusters of health outcomes and clusters of determinants can change over the course of development, and because different determinants can enter into the mix at different points in the course of development, it is important to consider how factors that are important in the early childhood period function further along the course of development.

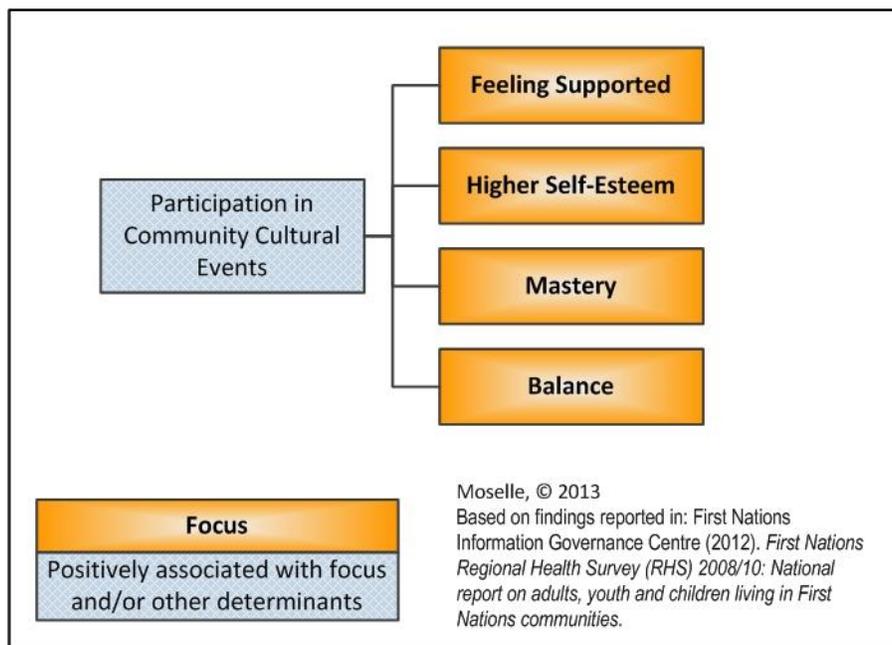
While it is beyond the scope of this work to track the impacts of a complex set of determinants all the way from the period of early childhood into the adult years, it is important to at least plot two ‘points’ on the developmental line, to validate any hypotheses that might be generated with regard to the impact of determinants at a single point in time. For this reason, the following section looks at select health outcomes in First Nations youth, in an effort to track the impact of key determinants over time and in order to ascertain whether language and culture continue to show a relationship to health. Three areas are considered:

- Wellness overall;
- High-risk sexual behaviour ;
- Suicide, Depression, Mental Health.

5.4 Youth - Wellness

There are a large number of factors that are related to lack of wellness in First Nations youth. However, the relationship between culture and the presence of wellness shows up clearly in the RHS data. See **Figure 6**, below. This diagram illustrates a positive relationship between participation in community cultural events and feeling supported, self-esteem, a sense of mastery, and a sense of balance.

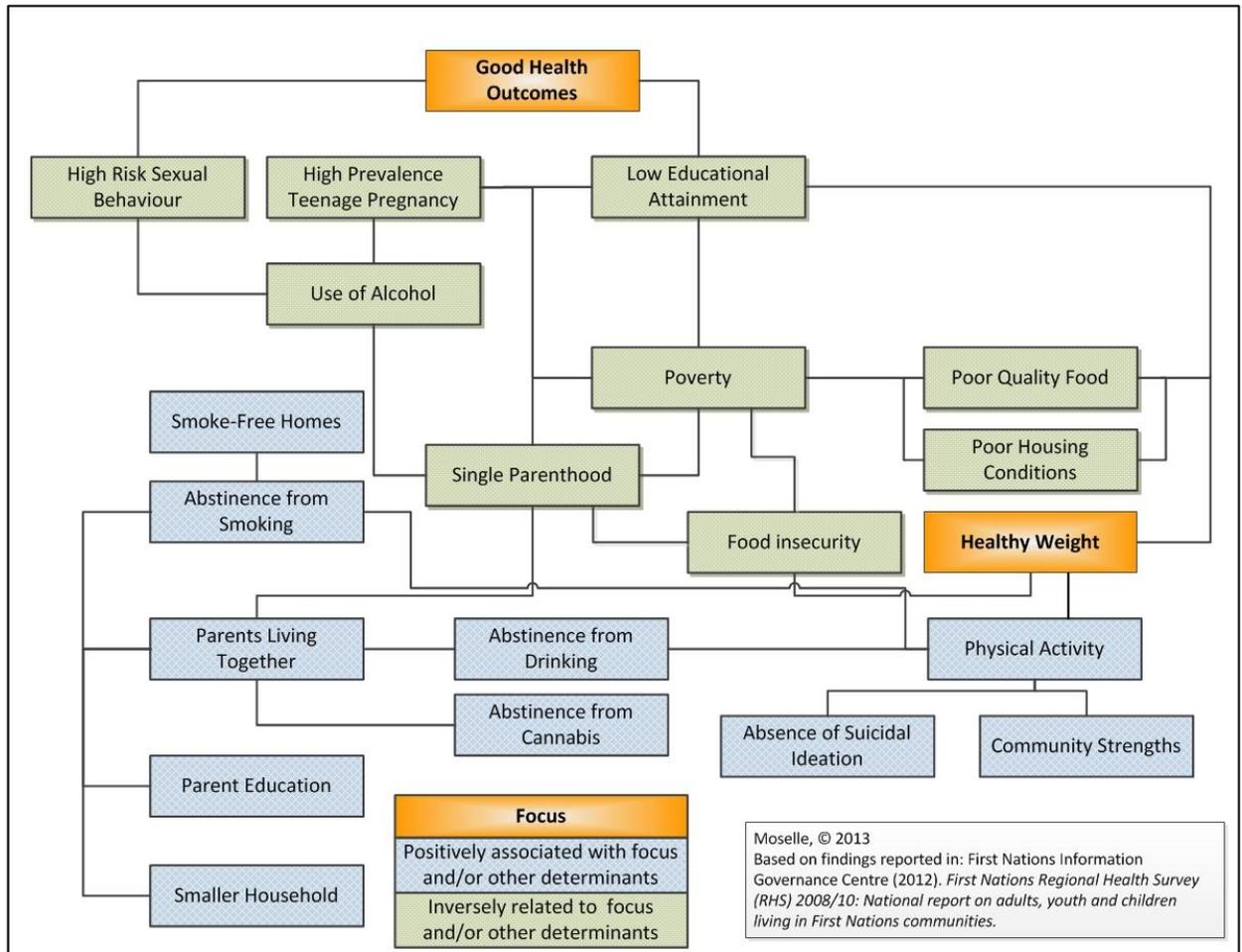
**Figure 6. First Nations Youth Wellness –
Linked to Participation on Community Cultural Events**



5.5 Youth - Obesity

The following diagram (**Figure 7**) illustrates some of the key relationships between healthy weight and a complex array of proximal determinants such as diet and physical activity, as well as distal determinants that are related to those proximal factors. Note that many of the relationships illustrated in this diagram do not ‘belong’ to First Nations youth. They refer to any person, including a First Nations youth, exposed to the determinants/risks. As well, some of the relationships may be stronger or less strong depending on the age or stage of life of the person in question. For example, there is a relationship between poverty and food insecurity that is a fairly direct function of the relationship between the cost of food and family/personal income. However, the relationship between food insecurity and diet quality may vary according to age, as families will attempt to protect younger children from the potential dietary impacts of poverty. As a consequence, the causes or determinants of obesity in younger children may be more indirect or complex, e.g., use of sweetened liquids in bottles to put weight on low-birth weight babies (which could result from food insecurity experienced by the mother).

Figure 7. Proximal and Distal Determinants of Health Weight and Other Outcomes in First Nations Youth.



To summarize, this diagram conveys the following:

- Healthy weight is related to diet and exercise.
- Physical activity forms part of a cluster that includes mental health variables (absence of suicidal ideation), abstinence from drinking, and a perception of the community as possessing strengths. Note that in the RHS, physical activity in First Nations youth is not associated with abstinence from cannabis.
- A constellation of distal determinants are related to food/diet, including poverty, food insecurity, and poor housing conditions.
- As expected, distal determinants function as a cluster. As indicated in this figure, the distal determinants are also related directly or indirectly to single parenthood, low educational attainment, use of alcohol, high risk sexual behaviour, and teenage pregnancy.
- Healthy factors that exist in opposition to poverty include: intact families, educational achievement of parents, smaller households, and abstinence from use of alcohol.⁸

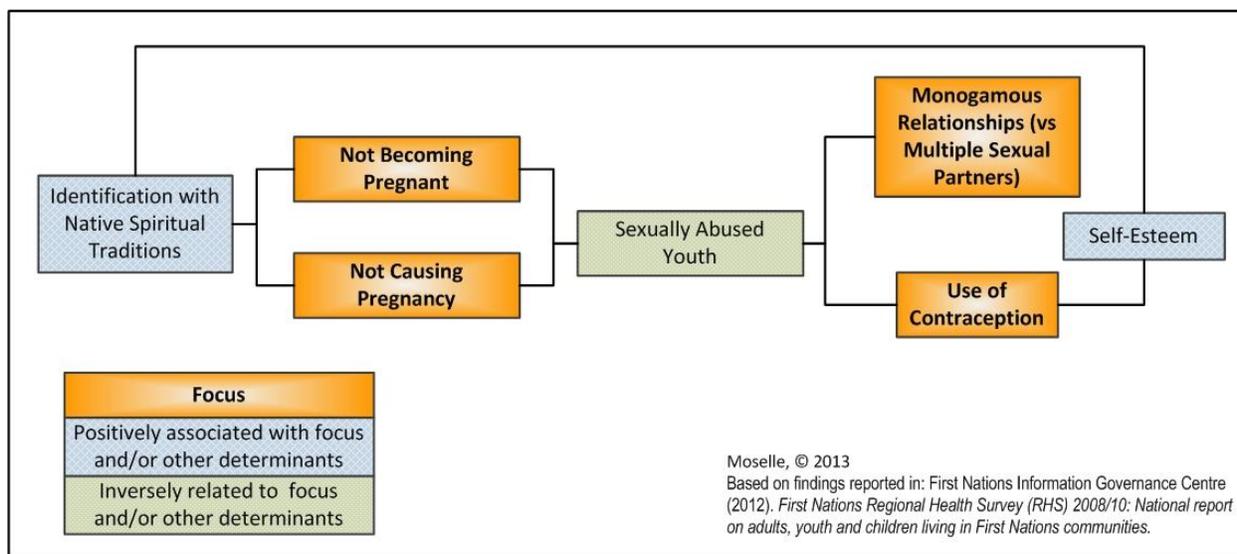
⁸ Other studies have confirmed that perception of the community as healthy is related to other health-related outcomes including the health and practices of individuals within the community.

5.6 Youth - High-Risk Sexual Behaviour

The RHS findings paint a complex picture. Some key features are highlighted in *Figure 8*, below. The following features should be noted in this figure:

- In First Nations youth, lack of identification with native spiritual traditions is associated with low self-esteem, and lower self-esteem is associated with failure to use contraception.
- Lack of identification with native spiritual traditions is associated with increased likelihood that a First Nations youth will become pregnant or cause another First Nations youth to become pregnant.
- Sexually abused youth are more likely to engage in a complex of high-risk behaviours, including having multiple sexual partners, failure to use contraception, and causing pregnancy or becoming pregnancy.

Figure 8. Proximal and Distal Determinants of High-Risk Sexual Behaviour in First Nations Youth



The RHS also identifies other factors/determinants related to high-risk sexual behaviour (or its absence):

- Educational attainment;
- Use of substances;
- Diet;
- Parent factors, e.g., educational attainment, parent use of substances, smoking in the home;
- Smaller households.

Finally, as with so many other health outcomes and proximal determinants, poverty sits in the middle of a network of factors as a distal determinant that is associated with a host of negative outcomes and determinants of those outcomes.

5.7 Youth - Suicide, Depression, Mental Health in First Nations Communities (RHS)

The RHS (p. 328) reports that rates of suicidal ideation in First Nations youth are much higher than the rates in the general population (20.5% versus 7.1%). Data on Métis people in Canada is quite limited; however data from Manitoba indicate rates of suicide attempts that are higher than the general population (Martins, 2010) Citing Kirmayer et al., 2007, they report that completed suicides among Aboriginal adolescents in Canada overall was 4-5 times higher than among the general population in Canada.

The problem of suicide in Aboriginal communities challenges efforts to provide a relatively 'full' explanation. The authors of the RHS draw upon a combination of their own data and other sources that they treat as authoritative in attempting to understand the nature and determinants of suicide. To summarize, they note:

1. Residential school – their data indicate a relationship between depression in First Nations youth and parent/grandparent residential school status
2. Self-esteem and a sense of mastery – this was inversely related to depression and positively related to a range of other positive outcomes, e.g., and educational aspiration.
3. Referencing various external sources, the RHS authors suggest that boredom is associated with depression and distress. They note that the RHS data shows that engagement in extracurricular activities and community cultural events is associated with increased self-esteem, mastery, a feeling of being socially supported, and perception of balance in one's life.
4. The RHS authors identify cultural identity as a possible protective factor and cite one author who stresses the importance of pride in one's group membership as a key element of cultural identity.
5. Social support, feeling loved – this was inversely related to self-esteem and to depression.
6. The RHS looks at suicide, depression and mental health in younger youth (aged 12-14) and older youth (aged 15-17). In comparison to the results of the 2003 survey, they note that changes in the rates of suicidal ideation did not parallel changes in depressed mood or suicide attempts. Together with findings that there are significant numbers of First Nations youth who do not report depression but do report suicidal ideation, the authors suggest that there is effectively a decoupling, or partial decoupling of depression and suicidal ideation in First Nations youth.

The RHS authors conclude from their data that engagement in traditional and cultural activities may be a promising strategy for improving resilience and wellness. The RHS authors draw upon the work of several external sources in order to make sense of their own data related to depression and suicidal ideation, and they highlight the need for further research, as the RHS does not paint a definitive picture of the determinants of health mental health in First Nations youth.

5.8 Suicide in the Inuit Communities

A review of work addressing the issue of suicide in the Inuit communities provides a more exhaustive treatment of factors related to suicide, some of which are more 'potent' factors specifically within the Inuit communities compared to other groups, and some of which are probably relevant to other Aboriginal groups.

As discussed earlier, in considering the 'break' in the relationship between depression and suicidality, the RHS authors suggest that this reflects the presence of other determinants that are linked to suicidality. They consider use of alcohol/substances as one possible contributor, citing a study that involved a large sample of First Nations and American Indian youth. They cite other authors who document a relationship between excessive drinking and hopelessness (one of the hallmarks of depression) in First Nations youth. The RHS authors do note that they may have incompletely sampled the range of traumatic events or stressors that contribute to suicide in First Nations communities.

As noted previously in this document, the suicide rates in some Inuit communities eclipses the rates both in the Canadian population at large, and in other Aboriginal communities. The 2010-2011 Annual Report on the State of Inuit Culture and Society identifies the following risk factors/determinants related to suicide:

- Poverty;
- Inadequate and overcrowded housing;
- Negative perception of self and community;
- Colonialism;
- Substance abuse;
- Sexual assault;
- Inadequate mental health and child, youth and family services;
- Political, social, cultural and economic disempowerment;
- Lacking a frame of reference to understand the traumatic nature of the lived experience;
- Rapid and radical societal changes;
- Introduction of a cash economy;
- Government of Canada's relocation of Inuit into sedentary communities;
- Residential schooling;
- Epidemic diseases such as tuberculosis or influenza.

In this 2010-2011 annual report, it is noted that between 1999 and 2004, the suicide rates for Inuit men between the age of 19-24 was 50 times greater than the rate among all men in Canada, and they state that there is no evidence that young Inuit men suffer from mental illness at 50 times the rate in the general population in Canada. Again, the implication is that factors other than depression/mental illness are contributing in key ways to the problem. A similar point is raised in the RHS. Suicide appears to be a reflection of factors other than 'mental health' problems.

There are other factors that are more distal to suicide as an outcome but are still important contributors. For example, there are high rates of teenage pregnancy in Inuit communities, and this is associated with lower levels of educational attainment and higher rates of poverty.

The authors of the 2010-2011 report identify factors that contribute not just to a markedly adverse determinants of health profile for Inuit communities, but also to a deteriorating picture:

- Food insecurity exacerbated by global warming:
 - In 2007/2008, 72% of children in Nunavut lived in a household with an active hunter;
 - Animal stocks are going down while costs for gasoline for a hunting trip by 2008 had risen to \$340, with no guarantee that any animals would be caught;
 - Global warming thins the ice, causes later fall freeze ups, earlier spring break-ups, which affect distribution of animal populations, the amount of time to hunt, and the risks associated with hunting.
- Other linked deteriorating cycles: as poverty rates go up, smoking goes up, use of alcohol/drugs increases, there are increasing numbers of assaults, and diminished capacity to address economic challenges.

The result is a sense of hopelessness among members of the community, accompanied by a negative perception of community wellness, which Chandler and Lalonde argue is reflected in the identity of the person. Against a backdrop of the numerous factors listed above, what emerges in Inuit communities is a ‘perfect storm’, reflected in suicide and a host of other negative health outcomes.

5.9 Community Wellness

Chandler and Lalonde (e.g., 1998) and other authors position community wellness as a determinant of identity formation in Aboriginal youth, and identity in Aboriginal youth as a factor in suicide and other outcomes. They identify community wellness outcome of preservation of indigenous language and community member engagement in culturally relevant practices.

The RHS survey focuses on community wellness in the youth and parent surveys (but not so directly in the Child survey). The RHS authors (p. 314) reference a standard Community Well-Being Index (CWB) which is based on data falling into four categories:

1. Education
2. Labour force participation
3. Income
4. Housing

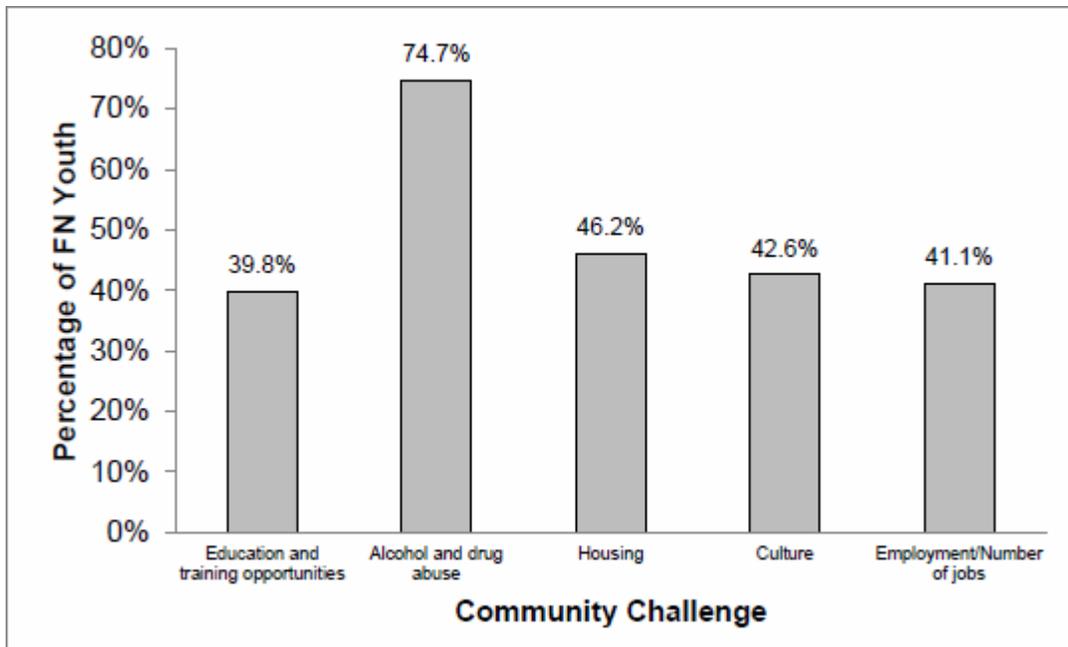
When the CWB index is generated for communities across Canada (Aboriginal as well as non-Aboriginal), only one First Nations community ranks in the top 100 communities, whereas 92 of the bottom 100 communities were First Nations.

While this work may provide an accurate ‘objective’ picture of the economic determinants of health profile for the majority of First Nations communities, and convey accurate the economic/employment/housing challenges faced by members of those communities, the work does not necessarily provide an accurate picture of First Nation’s experience and assessment of the wellness of their communities.

The authors of the RHS echo similar concerns related to this index, and their survey methodology and analysis of the results provide a more clear and direct picture of community wellness as experienced by First Nations community members.

The first figure, below (**Figure 9**), taken directly from the RHS, illustrates the assessment of First Nations youth regarding the main challenges facing communities. Note that this does not constitute a direct, global summary judgment of the “health status” of the communities, but it does reflect the views of First Nations youth regarding those factors that challenge their communities.

Figure 9. Main Challenges Facing Communities, as Reported by First Nations Youth



Source: RHS, p. 317

This diagram reads similarly to the factors referenced in the Community Well-Being Index, with two notable differences:

- Alcohol and drug abuse is identified as a community challenge for almost 75% of the respondents.
- Loss of culture is identified as a challenge at approximately the same rate as educational opportunities, employment or housing.

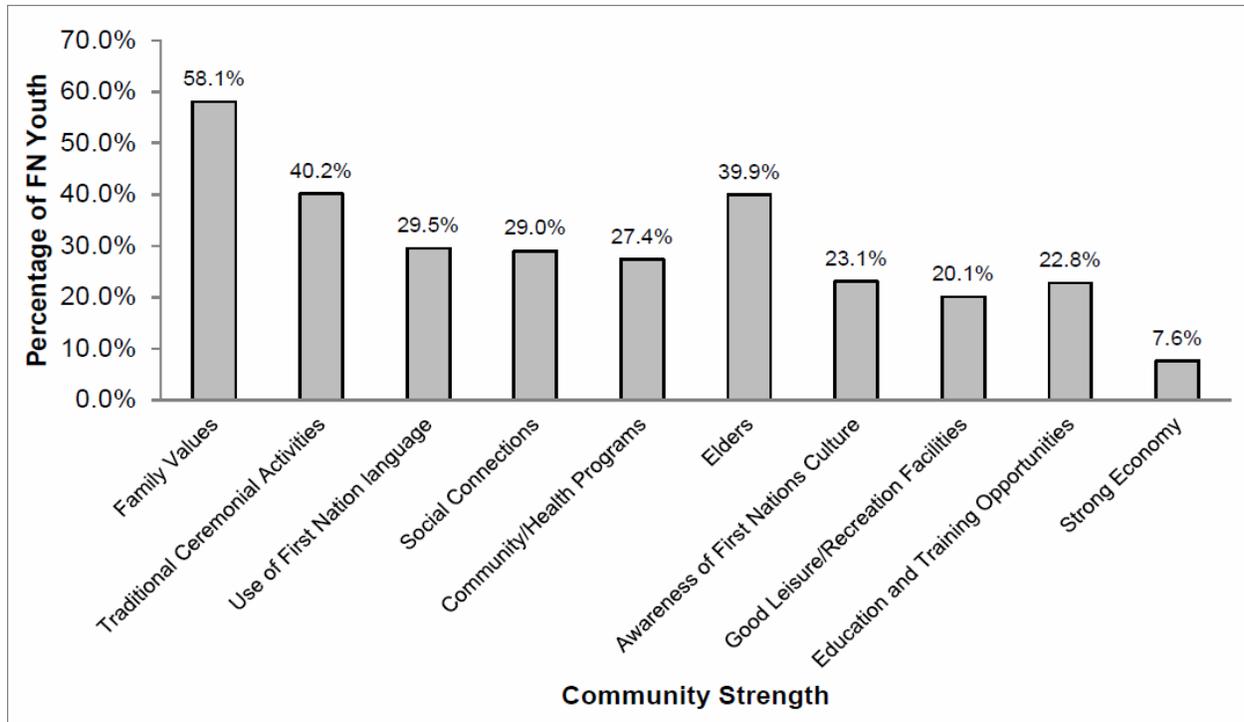
What is critical to note is that the four factors that are composited to form the CWB are characterized as indicators of community wellness, whereas they appear as *challenges* in the RHS work – and the RHS does not assume that community members regard community wellness as the *absence* of these concerns. The RHS addresses this question directly. **Figure 10** on the following page illustrates the thinking of First Nations youth with regard to community wellness.

What is significant in this diagram is the role played by family values, engagement in First Nations cultural activities, use of First Nations language, and other social factors. This does not mean that First Nations youth are not attuned to challenges in their community. What **Figure 10** is saying is that First Nations youth can see other factors as components of a vital community.

Roughly 75% of First Nations youth reported that cultural events were “very important” or “somewhat important”, and close to 75% reported that they “always/almost always” or “sometimes” took part in local community cultural events.

Presumably if those factors could be strengthened in communities, First Nations youth would relate positively to those aspects of their community.

Figure 10. Community Strengths, as Identified by First Nations Youth.



Chandler and Lalonde (2006; Chandler & Lalonde, 1998; Hallett et al., 2007) are very clear - culture performs a protective function in the health of First Nations youth via its relationship to identity formation. If identity is ‘assembled’ out of culturally conditioned contents, and if culture and language are key elements of a healthy community (as the RHS data suggest), then it follows that strengthening the culturally-conditioned elements of the community would reflect in more resilient youth.

5.10 Trajectory

Hopelessness is identified in some of the work above, either directly or indirectly, as a significant determinant of outcomes. This highlights the importance of understanding not just the current state of affairs, but the direction in which the current state is moving. For example, in Inuit communities where Inuit language is still spoken by a large portion of the community, its use may be diminishing, and what any given community member experiences may not be

“preserved language”. Their lived experience with respect to language (and/or culture) may focus on loss.

Though First Nations youth judge culturally-conditioned features of their community in a positive light, and could conceivably be positioned to benefit from efforts to strengthen language and culture, the data in the RHS raises significant concerns – not with regard to the value the survey participants place in language and culture, but rather with regard to the overall direction or trajectory in which the communities are headed.

Table 1. Community Challenges in First Nations Communities - Trajectories

Community challenge	First Nations Adults		First Nations Youth		
	Community Challenges Identified % [95% CI]	Challenges – No Change or Worsening	Community Challenges Identified	Challenges – No Progress or Situation Worsening	Challenges – Situation Worsening
Alcohol and drug abuse	82.6 [±1.3]	84.2 [±1.6]	74.7	79.4	36.7
Housing/Housing Quality	70.7 [±1.9]	69.6 [±2.4]	46.2	62.4	22.8
Employment or number of jobs	65.9 [±2.1]	81.4 [±1.8]	41.1	68.4	20.4
Education and training opportunities	57.5 [±1.9]	63.1 [±2.5]	39.8	59.3	12.9
Funding	55.8 [±2.1]	80.3 [±2.1]			
Health	44.6 [±2.3]	64.7 [±2.4]		69.0	23.0
Loss of Culture	42.3 [±2.1]	62.7 [±2.7]	42.6	60.0	21.7
Control over decisions	37.9 [±2.0]	80.6 [±2.1]			
Gang activities	33.2 [±2.8]	88.1 [±2.7]			
Natural environment and resources	32.5 [±2.1]	74.4 [±2.5]		75.2	31.6

(RHS, p. 191, 192, 317)

These findings are alarming, in part because we note a similar set of concerns among First Nations youth and First Nations adults, and a similar degree of pessimism. Alcohol and drug abuse figure prominently as concerns. Loss of culture is not as pervasive a concern among respondents, but it is still wide-spread. It also appears from the data that the respondents are not as pessimistic about the prospects of improvement in this area, though there is still widespread negative assessment of the prospects for change.

This gloomy assessment of the prospects for improvement in the state of community wellness is particularly alarming because it constitutes the third leg in what Beck refers to as the “cognitive triad” in depression (Beck, Rush, Shaw & Emery, 1979). The first two legs are a negative view of self and a negative view of the “world” (the community at large). Beck argues that the presence of all three factors is virtually a pathognomonic indicator for clinical depression, and others have demonstrated the at-risk status for individuals who display all three components (Chang, Lin & Lin, 2007). First Nations youth who harbour a negative view of themselves, regard the community as challenged along several dimensions that bear on their own prospects in life, and do not see the situation improving, must be regarded as significantly at risk.

Section 6: Conclusion. The contributory role of culture and language experiences in AHS in children's health trajectories

The social determinants of health model that is widely espoused in Canada identifies cultural knowledge and positive cultural identity as contributors to health. In virtually every conceptual model of Aboriginal wellness, preservation of heritage language and positive cultural identity are featured as components of wellness.

This report provides evidence supporting a somewhat stronger position: positive cultural identity, reflected in active engagement in culturally relevant practices (including use of heritage language) is a *component* or element of wellness, but it *also* functions as a *protective* factor against the backdrop of a markedly adverse health determinants ecology that constitutes the daily lived experience of large portions of the Aboriginal communities in Canada. The report supports the potential for Early Childhood Development programs to serve as platforms for efforts to strengthen the components of language and culture in the identity formation of Aboriginal children and youth.

This report reflects the complexity of demonstrating empirically that AHS program activities are causally related to health and wellness outcomes, in large measure because these outcomes are often not realized until far later in the course of development, when numerous other factors come to bear on the health risk behaviour and health outcomes of children and youth. The report relies heavily on modeling to synthesize concepts and large bodies of information about health determinants, Aboriginal views about health and wellness, and research in order to examine how knowing one's culture and mother tongue can contribute to young children's positive self-concept and their resilience, contributing to later success in life.

6.1 Research Findings

Several conclusions may be drawn from the review of the literature and research covered in this report:

- There is an overabundance of epidemiological evidence that highlights the range of poor health outcomes in Aboriginal populations. Further, it appears that a large portion of the burden of illness relates to conditions that either emerge in childhood and youth, or can be traced back to health trajectories that are set in the period of early childhood. This includes a host of health concerns that are related to obesity (e.g., Type II diabetes, cardiovascular conditions) as well as problems that can become quite severe and disabling by the period of adolescence (e.g., mental health problems).
 - Suicide is a concern in Aboriginal communities, and - particularly within the Inuit community – suicide appears to serve as a ‘canary in a coalmine’, signaling the presence of fairly catastrophic changes in the determinants of health profiles for Inuit individuals, families, communities, as well as the larger ecological context for Inuit groups.
 - While suicide is clearly a major concern in Aboriginal communities, other problems such as substance abuse have far higher prevalence and have broad consequences for wellness within large numbers of individuals, families and the community at large. These effects include direct health consequences, impact on

educational attainment, teen pregnancy, impacts on family life, and they ramify in other areas such as incarceration (see Kendall, 2013).

- Wellness represents the product of a range of distal and proximal determinants. More indirect determinants such as SES (e.g., income and education), have a potent impact on health outcomes – for virtually all populations, non-Aboriginal as well as Aboriginal. However, as Statistics Canada has shown in its analysis of the Aboriginal People’s Survey, there is ‘more to health’ in Aboriginal people than impacts of SES.
 - There is a virtual consensus among Aboriginal scholars that preservation of heritage language and culture, and incorporation of distinctively Aboriginal cultural contents into the identity of individuals, are critical components of wellness in Aboriginal persons. This view is echoed by the Aboriginal communities at large (Svenson and Lafontaine, 1999).
 - The work of Hallett, Chandler and Lalonde (2007; Lalonde, 2006) highlight the importance of language, cultural integrity within communities, and culturally-based identity within the array of non-SES-based – however their work is focused on suicide as an outcome within First Nations communities in BC.

Similar to the ecological ‘space’ within which Hallett, Chandler and Lalonde set their examination of suicide, the RHS views wellness within a comprehensive framework that encompasses physical, mental, emotional and spiritual components. The RHS conceives of the individual, the family and the community as ‘entities’ that can have an impact on health and that can be impacted by health determinants, including language and culture.

6.2 Research and Program Evaluation

There is an outstanding need for improved data upon which to base programming decisions and especially for information about AHS program experiences and health trajectories of Aboriginal children who participate in these programs. The methods employed in this paper work with data from multiple sources in order to provide evidence of links between early childhood experiences that focus on heritage language and engagement in culturally relevant practices. This method is inherently more limited than longitudinal research designs that look directly at longer-term impacts of early childhood educational experiences.

The creation of new information gathering strategies to monitor conditions and measure program effectiveness is recommended in order to create a case for long-term investments in programs that produce lasting opportunities for Aboriginal children to enjoy quality of life and achieve their developmental potential. A crucial question that needs to be asked in a cross-sectional comparison-control study is: what is the health and quality of life among graduates from AHS? Are there characteristic patterns or predictors? A study with this driving question could evaluate the impact of participation in a year or more of AHS upon the incidence of injury, healthy weight, and mental health/substance use patterns of children whose health outcomes remain largely unknown.

This report worked within a fairly orthodox population health framework, employing a standard determinants of health lexicon (e.g., looking at health outcomes within populations as clusters that are related to clusters of proximal and distal determinants). It is therefore encouraging that examination of data for the report yielded models of health determinants that reinforce notions of “wholeness” that are central to Aboriginal models of wellness. The results of analyses for the

current report support the utility of Aboriginal models of wellness to inform future research efforts.

6.3 Culturally-Based Identity as a Protective Factor

Figure 11 shows the distinctive mediating role of language and culture, located in the central vertical bars, as proximal determinants of healthy identity and associated resilience.

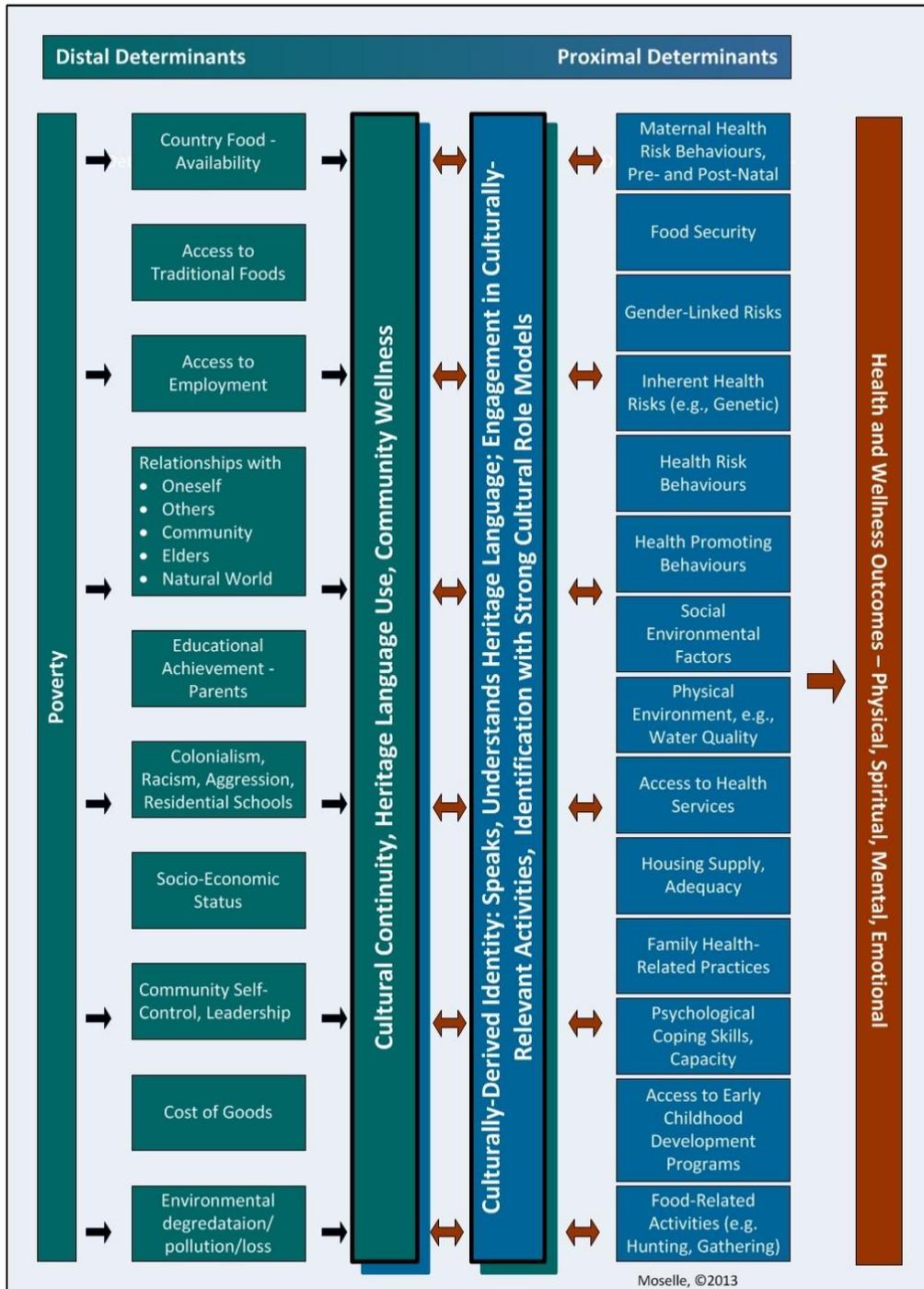
When language and culture are encompassed within the identity of the individual, they can perform a mediating or moderating role with respect to some health determinants, mitigating both the psychological impact of adverse circumstances, and shaping clusters of behaviours in ways that promote physical health and relationships to promote wellness at a family and community level. As the analysis in this report shows, language and culture are not cure-alls for the many health disparities experienced by Aboriginal children, but they contribute in meaningful ways within the matrix of interacting determinants of wellness as children grow and develop.

Early Childhood Development Programs, Aboriginal Head Start – Optimal Point for Intervention

Health can be conceptualized in terms of four components: physical, mental, emotional and spiritual. These components can all be tracked back to the period of infancy/early childhood:

- Physical: a host of health risks emerge in the period of early childhood. In some cases, the problems are notoriously difficult to reverse once they have taken hold (e.g., obesity). In other cases, the damage can be reversed, but at significant cost to the person and the health care system (e.g., oral health-related problems) – assuming the health care system is prepared to cover the full costs for full remediation.
- Mental, emotional, spiritual: this covers off a host of factors, ranging from relationship with the environment to mood to interpersonal behaviour to patterns of social interaction and engagement with key social institutes such as educational systems and the world of work. Identity figures quite centrally in the work related to psychological health determinants/protective factors.
 - Identity forms through a process of identification with external role models and internalization of externally-derived standards of conduct.
 - Interaction with non-Aboriginal society; ongoing assimilative pressures – these hold the potential for ‘digging out the cultural foundations’ from healthy Aboriginal identity.
 - Because the final common pathway for so many health concerns is behaviour, e.g., diet, physical activity, use of substances, Aboriginal people are particularly exposed to ‘blaming the victim’ scenarios, and when this is internalized, it re-emerges as damaged self-concept and self-esteem – a negative identity.

Figure 11. Overall Model- Proximal and Distal Determinants of Health and Wellness in Aboriginal People in Canada



- Negative identity leaves a gap or a space within the individual, and renders the individual vulnerable to the images and standards of conduct promoted by media, advertising and society at large – which target the largest groups of individuals with disposable income, i.e., non-Aboriginal people. As Aboriginal children get older, they are increasingly vulnerable to a host of factors that encourage them to re-define and re-articulate themselves in terms of modern images that are fundamentally at variance with Aboriginal spiritual beliefs and values – and with Aboriginal knowledge of how to create a viable and sustainable lifestyle with a physical ecology.

Just as wellness is a characteristic of the individual in relationship to the family in relationship to the community, issues of wellness cannot be addressed effectively through programs that focus only on the individual. A targeted intervention to address a specific health-related behaviour or concern (e.g., education on healthy eating in a school) can easily be undone by a family that does not support healthy eating. Efforts on the part of a family to promote healthy practices can be undone by a community that does not take an active and proactive approach to managing its internal affairs (e.g., Chandler & Lalonde, 1998), or a government that does not support infrastructure to ensure a healthy food environment.

From all of this, we conclude:

- When it comes to addressing issues related to health-risk behaviour and to identity, the time to engage is early. In view of the health consequences of prenatal factors, the starting point must extend back at least to the prenatal period.
- Issues related to identity and health risk cannot focus strictly on the child. At a minimum, they must focus on the family.

Given all of the above, the most strategic point to intervene would be the prenatal period and the phase of early childhood. There are several reasons why AHS programs would be regarded as optimal:

- These programs already include a major focus on health-related behaviours (e.g., diet and nutrition).
- These programs are organized around engagement with family members. Given the fact that Aboriginal mothers are likely to have more than one child, and given the relatively young age of children targeted by AHS programs, such programs provide an opportunity to impact prenatal factors for future children of mothers, as well as maternal behaviour in relationship to the child in the program. The effectiveness of the AHS program as a child-centred, community hub and coordinating point for multiple services and provider organizations has been highlighted elsewhere (e.g., Ball, 2005; 2012).
- As highlighted in the RHS, while family members (particularly Elders) are in a position to provide cultural teachings, it appears that parents are at least partially dependent on schools to support children in engaging in culturally relevant activities. Particularly for younger children, Aboriginal beliefs and norms communicated via the medium of

language may be somewhat abstract – more abstract than beliefs and norms embedded in activities.

6.4 Conclusion

This report highlights the goodness-of-fit between research data and Indigenous concepts of wellness and emphasizes culture and language as key determinants of wellness and as foundational for health-promoting programs in the critical early years. AHS programs provide Aboriginal children with experiences of their culture and language that build their self-concept, readiness for life experiences, and resilience. This report provides an informed perspective on the potential for participation in AHS, positive cultural identity, and experiences with one's heritage language to contribute to positive health trajectories. Indeed, one of the most promising approaches to closing gaps in health and improving health trajectories for Aboriginal children may well be through the federal investment in Aboriginal Head Start programs.

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Appendix I

CMEC Summit – Education Programs to Help Eliminate the Gap in Academic Achievement Between Aboriginal and non-Aboriginal Learners

From: Council of Ministers of Education, Canada (2009) *CMEC Summit on Aboriginal Education, February 24: Strengthening Aboriginal Success – Summary Report*. February 24-25, 2009, p. 21

Summary of education programs and services to help eliminate the gap in academic achievement between Aboriginal and non-Aboriginal learners

The following are existing programs and services and/or new ideas that are categorized under each of the four pillars of lifelong learning identified in CMEC's Learn Canada 2020 declaration (2008).

Early Childhood Learning and Development

- Community-based early-childhood centres for both urban and rural Aboriginal people (e.g., federal Aboriginal Head Start Program)
- Early-years/transition-to-kindergarten assessment programs and intervention services
- High-quality language-learning resources
- All children learn about First Nations cultures and histories

Elementary to High School Systems

- Transition-to-school supports and services
- Mentors
- Instructional methods and resource supports
- Active community and family engagement, perhaps through community-school programs; provision of family needs so students can participate more fully (e.g., meals, transportation, child care)
- Culturally sensitive curricula
- First Nations, Métis, and/or Inuit language programs (regionally adapted to meet local needs)
- Citizenship: elementary level — curricula and associated resources adjusted/broadened to reflect treaties and other “Aboriginal”-sensitive materials
- Citizenship: high-school level — public awareness of Aboriginal history, role, and rights (treaties) (e.g., First Nations, Inuit, and Métis history and culture in curriculum relative to European culture [English/French], relative to influence)
- Recognition of Aboriginal traditional knowledge
- Transition-to-school and workplace supports and services

Postsecondary Education

- Transition-to-school supports and services
- Mentors
- Instructional methods and resource supports
- Active community and family engagement, perhaps through community-school programs; provision of family needs so students can participate more fully (e.g., meals, transportation, child care)
- Culturally sensitive curricula
- First Nations, Métis, and/or Inuit language programs (regionally adapted to meet local needs)
- Recognition of Aboriginal traditional knowledge
- Recognition of need to eliminate the current federal 2-per-cent cap on postsecondary funding
- Civic studies: at the secondary level, familiarize students with the history of Aboriginal peoples, as well as their historical roles and rights (treaties); specifically, include more First Nations, Métis, and Inuit history and culture in curriculum relative to European culture (French/English), so that the role/influence of Aboriginal peoples is better appreciated
- Equitable funding for all Aboriginal groups (First Nations, Inuit, and Métis)
- Recognition of Métis eligibility (currently not acknowledged in federal programming)
- Equitable funding for postsecondary students (loans/bursaries/scholarships)
- In-school intervention supports
- Transition-to-school and workplace supports and services

Adult Learning and Skills Development

- Equitable and targeted programs
- Private-sector engagement
- Employment placement (affirmative action)

Appendix II

Proximal, Distal Determinants of Health Outcomes in Aboriginal Communities

DIRECT CAUSES/PROXIMAL DETERMINANTS	
<p>Biology and genetic endowment; external causes</p> <p>Biological factors – generic reference</p> <p>Mother use of alcohol, drugs prenatally</p> <p>Maternal health behaviours, pre-pregnancy</p> <p>Maternal dietary practices prenatally</p> <p>Gestational diabetes</p> <p>Maternal smoking during pregnancy</p> <p>Low birth weight baby, foetal malnutrition</p> <p>High birth weight baby</p> <p>Genetic – risk for physical health problems</p> <p>Genetic – cognitive capacity</p> <p>Genetic – capacity for behavioural, emotional self-regulation (e.g. ADD/ADHD)</p> <p>Insulin resistance – child</p> <p>Insulin resistance - mother</p> <p>Gender-linked health risks</p> <p>Neurological maturation & development</p> <p>Speech-language capacity</p> <p>Disabilities, special needs</p> <p>Childhood infections (e.g. ear)</p> <p>Self-harm behaviour, intentional or unintentional</p> <p>Self-harm behaviour</p> <p>Suicide</p> <p>Accidents</p> <p>Healthy child development, overall</p> <p>Healthy child development</p> <p>Maternal-child health behaviours, post-natal</p> <p>Parenting knowledge, skills</p> <p>Secure attachment</p> <p>Exposure to/freedom from neglect, abuse, violence</p> <p>Food</p> <p>Diet practices, infancy (breast feeding; bottle feeding practices)</p> <p>Shift to high sugar/low value fats; access to healthy food; proximity of health/unhealthy foods</p> <p>Food insecurity</p> <p>Family food-related practices</p> <p>Access to traditional food, traditional food practices</p> <p>Physical environments</p> <p>Physical environment – generic reference</p> <p>Loss of land</p> <p>Housing – availability</p> <p>Housing – crowding</p> <p>Housing – physical safety (mold, ventilation, vermin, etc.)</p> <p>Homelessness, unstable housing</p>	<p>Contamination, e.g., persistent organic pollutants, heavy metals, water quality, air quality</p> <p>Sanitation</p> <p>Exposure to disease agents</p> <p>Water fluoridation (RHS)</p> <p>Geographic isolation (RHS)</p> <p>Adverse weather</p> <p>Wildlife stocks</p> <p>Social environments</p> <p>Social environment, generic reference</p> <p>Social role models for health/poor health</p> <p>Social networks – social contacts, supports</p> <p>Social risks, threats (exposure to illicit substances; bullying; gangs)</p> <p>Education, literacy</p> <p>Health literacy re: physical health risk factors & practices</p> <p>How to access, utilize services</p> <p>How to solve problems</p> <p>Recreational opportunities</p> <p>Physical recreation – opportunities</p> <p>Personal health practices</p> <p>Smoking, exposure to second-hand smoke</p> <p>Alcohol</p> <p>Other substances</p> <p>Abstinence from use of alcohol or other substances</p> <p>High-risk sexual practices</p> <p>High risk behaviours (e.g., drinking and driving)</p> <p>Oral health practices</p> <p>Physical activity – generic/culturally neutral, e.g., bicycling</p> <p>Physical activity- culturally-relevant, e.g., hunting</p> <p>Screen time</p> <p>Coping skills, psychological dimensions</p> <p>Self-esteem, emotional self-control</p> <p>Depression</p> <p>Sense of balance (mind, body, emotions, spirit) vs. stress, distress, post-traumatic stress</p> <p>Identity - sense of purpose, sense of effectiveness</p> <p>Body image</p> <p>Sense of control, influence</p> <p>Social skills</p> <p>Educational aspiration, e.g., to complete university</p> <p>Adaptive response to challenges, healthy choices</p> <p>Opportunities for personal growth</p> <p>Working conditions</p>

Safe/unsafe working conditions; stressful working conditions
 Employment security
Health services
Health Services
 Access to health care
 Integrated service delivery models
 Support for self-management practices
 Navigation, coordination & linkage
 Health providers with knowledge of Aboriginal culture/languages/history; Access to pediatrician, other specialists

Various specialist services, e.g., PT, SLP
 Public health nurse
 Disease prevention, immunization
 Access to diagnostic equipment, procedures
 Access to emergency response, urgent care
 Chronic disease treatment, management
 Access to home care
 Uninsured benefits , supplemental benefits (including pharmaceuticals; home care)
 Dental care

DISTAL DETERMINANTS	
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<p>Birth rates Birth rates, family size Income Income – generic reference Access to housing Access to education Access to food Transportation Income, income distribution, community level Safety Nets, Supports Income assistance Unemployment assistance Food Housing Suicide prevention Childcare, respite Substance use; harm-reduction (substance-related) Social status Racism, social exclusion Economic status, employment status Gender inequities, e.g., over-representation of women in unstable work situations Social environment, social interaction Parents’ educational attainment Educational opportunities; affordable educational Law and justice, e.g., diversion programs Engagement with elders Monogamous relationships Social engagement, social participation Family wellness /intactness (e.g., parents living together) Community wellness, strength of social networks Community feasts; other community gatherings Residential Schools, Other forced family separations Colonization</p>	<p>Education, literacy Access to early childhood development, Head Start Early literacy activities; parents read to child; Access to educational opportunities First Nations Language – understand or speak Cultural knowledge Level of educational attainment School attendance Employment Employment opportunities Employment skills training Unemployment, underemployment, job insecurity/labour force attachment Gender Gender-based discrimination (e.g., access to employments) Exposure to violence, exploitation – gender-related Culture Practices – cultural Initiation, rituals, support around developmental transitions (e.g., into sexual adolescence) Philosophical/spiritual outlook, values Policy, Legal Engagement in political process Policy, legislation (content) Policy alignment Control over child welfare Treaties Community self-control, leadership International agreement Health Infrastructure Integrated services (service system interoperability) Consistent financing Human resource development eHealth – interoperable EHR; electronic Clinical Decision Support eHealth – telehealth eHealth - governance, oversight</p>
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Surveillance; data to support demand estimation/capacity planning, funding efforts
 Performance monitoring, KPI's
 Evidence-based decision support/care
 Socio-economic research, monitoring, indicators

The material above is drawn from the following documents. For complete references, see Bibliography, above.

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Appendix III

Age-Standardized Mortality Rates (ASMR) by Risk, Sex and Cause of Death- Canada and Inuit Nunangat

Table 2. Age standardized mortality rates (ASMR) by Risk, Sex and Cause of Death – Canada and Inuit Nunangat

Sex/Cause of death	1994 to 1998						2004 to 2008					
	Canada			Inuit Nunangat			Canada			Inuit Nunangat		
	ASMR	95% confidence interval		ASMR	95% confidence interval		ASMR	95% confidence interval		ASMR	95% confidence interval	
		from	to		from	to		from	to		from	to
Both sexes - All causes	44.7	44.0	45.4	210.1	182.6	241.7	35.3	34.7	35.9	188.0	163.9	215.7
<i>Group I: Communicable diseases</i>	9.4	9.1	9.7	34.3	24.5	48.0	9.9	9.6	10.3	35.6	25.6	49.3
Infectious and parasitic	1.0	0.9	1.1	5.2	2.1	12.4	0.8	0.7	0.9	9.1	4.8	17.6
<i>Group II: Non-communicable diseases</i>	15.7	15.3	16.1	36.3	26.0	50.6	12.0	11.7	12.4	22.4	14.8	33.7
Congenital anomalies	6.9	6.6	7.2	16.4	10.0	26.9	4.7	4.5	5.0	11.5	6.5	20.2
<i>Group III: Injuries</i>	15.5	15.1	15.9	109.6	89.9	133.7	10.9	10.6	11.2	115.3	97.1	136.9
Unintentional	11.2	10.9	11.6	46.8	34.7	63.2	7.8	7.5	8.0	40.4	30.0	54.4
Road traffic	6.6	6.3	6.8	9.6	5.0	18.5	4.3	4.1	4.5	7.7	3.8	15.5
Drownings	1.0	0.9	1.1	X	...	...	0.7	0.6	0.8	7.4	3.7	14.8
Intentional	4.2	4.0	4.4	62.8	48.2	81.8	3.1	3.0	3.3	74.9	60.7	92.5
Self-inflicted	3.3	3.1	3.5	58.5	44.5	77.0	2.2	2.1	2.3	72.1	58.2	89.3
Firearm	0.8	0.7	0.9	16.1	9.5	27.1	0.2	0.1	0.2	9.5	5.2	17.1
Hanging/Suffocation	1.8	1.7	2.0	41.3	29.8	57.3	1.6	1.5	1.7	60.9	48.2	76.9
Males - All causes	53.2	52.2	54.2	258.2	215.9	308.8	41.7	40.7	42.6	244.5	206.6	289.5
<i>Group I: Communicable diseases</i>	10.4	9.9	10.8	40.1	25.8	62.2	10.9	10.4	11.4	40.8	26.6	62.7
Infectious and parasitic	1.1	0.9	1.2	X	...	...	0.8	0.7	1.0	13.9	6.6	29.2
<i>Group II: Non-communicable diseases</i>	16.9	16.3	17.5	41.3	26.6	64.2	13.2	12.7	13.7	18.8	10.1	35.0
Congenital anomalies	7.5	7.2	7.9	22.7	12.5	41.0	4.9	4.6	5.2	12.8	6.1	27.0
<i>Group III: Injuries</i>	20.9	20.3	21.5	147.2	115.6	187.4	14.5	14.0	15.0	163.5	133.5	200.3
Unintentional	14.8	14.3	15.3	68.1	47.9	97.0	10.3	9.9	10.7	58.2	41.1	82.4
Road traffic	8.3	7.9	8.7	16.8	8.4	33.7	5.5	5.2	5.8	11.6	5.2	25.8
Drownings	1.5	1.3	1.7	X	...	...	1.1	1.0	1.3	12.8	6.1	27.0
Intentional	6.1	5.8	6.5	79.1	56.8	110.2	4.2	4.0	4.5	105.3	82.0	135.1
Self-inflicted	5.0	4.7	5.3	77.2	55.2	108.0	2.9	2.7	3.1	101.6	78.9	131.0
Firearm	1.5	1.3	1.6	22.7	12.2	42.1	0.4	0.3	0.4	18.7	10.3	33.8
Hanging/Suffocation	2.6	2.4	2.9	54.5	36.5	81.4	2.0	1.8	2.2	81.3	61.2	108.0
Females - All causes	35.7	34.9	36.6	161.2	128.6	202.0	28.6	27.8	29.4	129.5	102.2	164.2
<i>Group I: Communicable diseases</i>	8.3	7.9	8.8	28.4	16.8	48.1	8.8	8.4	9.3	30.1	18.1	50.0
Infectious and parasitic	0.9	0.8	1.1	X	...	...	0.7	0.6	0.9	X	...	...
<i>Group II: Non-communicable diseases</i>	14.3	13.8	14.9	31.2	18.8	51.9	10.9	10.4	11.4	26.1	15.1	44.9
Congenital anomalies	6.2	5.8	6.6	10.2	4.2	24.5	4.5	4.2	4.9	10.1	4.2	24.3
<i>Group III: Injuries</i>	9.8	9.3	10.2	71.5	50.5	101.1	7.1	6.7	7.4	65.6	47.5	90.6
Unintentional	7.5	7.2	7.9	25.3	14.4	44.7	5.1	4.8	5.4	22.0	12.5	38.8
Road traffic	4.7	4.5	5.1	X	...	...	3.1	2.9	3.3	X	...	...
Drownings	0.5	0.4	0.7	X	...	...	0.3	0.2	0.4	X	...	...
Intentional	2.2	2.0	2.4	46.1	29.7	71.5	2.0	1.8	2.2	43.6	29.4	64.5
Self-inflicted	1.5	1.3	1.6	39.5	24.5	63.5	1.5	1.3	1.6	41.6	27.9	62.1
Firearm	0.1	0.1	0.2	X	...	...	X	...	...	X	...	...
Hanging/Suffocation	1.0	0.9	1.1	27.9	15.8	49.1	1.2	1.1	1.3	39.9	26.5	60.1

† excludes residents of Inuit Nunangat
... not applicable
X suppressed to meet confidentiality requirements of the Statistics Act
Source: Custom population estimates, Demography Division; Vital Statistics Database.

Table 3 Rate ratios for age-standardized mortality rates, by sex and cause of death, population aged 1 to 19, Inuit Nunangat compared with Canada, 1994 to 1998 and 2004 to 2008

Sex/Cause of death	1994 to 1998			2004 to 2008		
	Rate ratio	95% confidence interval		Rate ratio	95% confidence interval	
		from	to		from	to
Both sexes - All causes	4.7	4.1	5.4	5.3	4.6	6.1
<i>Group I: Communicable diseases</i>	3.7	2.6	5.1	3.6	2.6	5.0
Infectious and parasitic	5.2	2.1	12.5	11.7	6.0	22.8
<i>Group II: Non-communicable diseases</i>	2.3	1.7	3.2	1.9	1.2	2.8
Congenital anomalies	2.4	1.5	3.9	2.4	1.4	4.3
<i>Group III: Injuries</i>	7.1	5.8	8.7	10.6	8.9	12.6
Unintentional	4.2	3.1	5.6	5.2	3.9	7.0
Road traffic	1.5	0.8	2.8	1.8	0.9	3.6
Drownings	X	...	...	10.1	5.0	20.5
Intentional	14.9	11.4	19.4	24.1	19.4	29.9
Self-inflicted	17.8	13.5	23.6	32.8	26.2	40.9
Firearm	19.6	11.5	33.4	51.3	27.4	96.1
Hanging/Suffocation	22.5	16.1	31.5	38.0	29.8	48.5
Males - All causes	4.9	4.1	5.8	5.9	5.0	7.0
<i>Group I: Communicable diseases</i>	3.9	2.5	6.0	3.7	2.4	5.7
Infectious and parasitic	X	...	...	16.9	7.9	36.0
<i>Group II: Non-communicable diseases</i>	2.4	1.6	3.8	1.4	0.8	2.7
Congenital anomalies	3.0	1.7	5.5	2.6	1.2	5.5
<i>Group III: Injuries</i>	7.0	5.5	9.0	11.3	9.2	13.8
Unintentional	4.6	3.2	6.6	5.6	4.0	8.0
Road traffic	2.0	1.0	4.1	2.1	0.9	4.7
Drownings	X	...	...	11.5	5.4	24.4
Intentional	12.9	9.2	18.1	25.0	19.3	32.4
Self-inflicted	15.4	10.9	21.7	35.0	26.9	45.6
Firearm	15.5	8.3	29.2	52.4	28.0	98.2
Hanging/Suffocation	20.6	13.7	31.1	40.9	30.4	55.0
Females - All causes	4.5	3.6	5.7	4.5	3.6	5.7
<i>Group I: Communicable diseases</i>	3.4	2.0	5.8	3.4	2.0	5.7
Infectious and parasitic	X	...	...	X	...	...
<i>Group II: Non-communicable diseases</i>	2.2	1.3	3.6	2.4	1.4	4.1
Congenital anomalies	1.6	0.7	4.0	2.2	0.9	5.4
<i>Group III: Injuries</i>	7.3	5.2	10.4	9.3	6.7	12.9
Unintentional	3.4	1.9	6.0	4.3	2.4	7.6
Road traffic	X	...	...	X	...	...
Drownings	X	...	...	X	...	...
Intentional	20.8	13.3	32.5	22.2	14.8	33.3
Self-inflicted	27.2	16.7	44.3	28.4	18.8	43.1
Firearm	...	...	...	...	...	...
Hanging/Suffocation	28.3	15.8	50.7	33.4	21.8	51.2

† excludes residents of Inuit Nunangat
... not applicable
X suppressed to meet confidentiality requirements of Statistics Act
Source: Custom population estimates, Demography Division; Vital Statistics Database.

Date Modified: 2012-07-18



[Important Notices](#)

Source:

Oliver, L, Peters, P., Kohen, D. *Mortality rates among children and teenagers living in Inuit Nunangat, 1994 to 2008*. Statistics Canada, 2012.

<http://www.statcan.gc.ca/pub/82-003-x/2012003/article/11695/tbl/tbl4-eng.htm>

Appendix IV

Health Outcomes and Determinants for Aboriginal People in Canada

This review paper aims to move beyond the rhetoric repeated in much of literature on the social determinants of health and Indigenous wellness literature that sometimes refers to secondary sources pertaining to non-Aboriginal health. A challenge for assessing the empirical validity of these conceptual frameworks is that there are few well-integrated data sets that simultaneously examine Aboriginal children's health outcomes and the conditions of life, including exposure to their Indigenous language and culture that are linked to the outcomes.

Nevertheless, data do exist, and there is sufficient content coverage from several large-scale surveys to piece together a composite picture that is organized around health profiles of Aboriginal communities, health disparities, and the matrix of determinants that are linked to those disparities. Because the principle data sources are surveys, it is not possible to make strong statements about cause-effect relationships (which require more controlled experimental research designs). However, these data sources can be employed to establish the plausibility of hypothesized cause-effect relationships, and to provide an evidence base for decisions regarding intervention strategies and associated research/evaluation studies, which would support stronger statements about relationships between various health determinants and outcomes.

The material in this appendix draws heavily upon the following data sources:

- First Nations Regional Health Survey (First Nations Information Governance Centre, 2012). This is a large-scale survey, conducted by the First Nations Information Governance Centre, covering First Nations communities on reserve and off reserve in more remote northern locations:
 - The survey was first conducted in 2002-2003 and was repeated in 2008-2010.
 - Data were collected on three groups within the communities:
 - Adults aged 18 and over
 - Youth aged 12-17
 - Children aged 0-11
 - The survey is organized around a culturally-based model that includes many of the determinants of health identified in other work (e.g., poverty, education), along with a set of determinants that are often identified in work concerned with health in Aboriginal communities – including language and culture.
 - The report on the 2008-2010 survey compares that panel of data to the 2002-2003 data, and also includes extensive analysis of the relationship between outcomes and determinants, as well as relationships among proximal and distal determinants.
- 2007 Canadian Community Health Survey (CCHS), Cycle 4.1 (*Select health indicators of First Nations people living off reserve, Métis and Inuit*, Gionet & Roshanafshar, 2013). This covers off-reserve First Nations, Inuit and Métis people, aged 12 and over.
- 2006 Aboriginal Peoples Survey (APS – Tait, 2008; Statistics Canada, 2008a,b; Bougie, 2008; Janz, Seto & Turner, 2009; Statistics Canada, 2009). Like the CCHS, it covers off reserve First Nations, Inuit and Métis, but extends down to the age of 6.
- 2006 Aboriginal Children's Survey (ACS – Statistics Canada, 2008c,d,e,f; Oliver, Findlay, McIntosh & Kohen, 2009; Bougie, Tait & Cloutier, 2010; Cloutier, Bougie & Tait; 2010;

Guevremont, 2010a,b,c). Conducted by Statistics Canada, this is the first parent-report database on the developmental milestones, health, and quality of life of off reserve First Nations children, and Inuit and Métis children.

This appendix also draws from other sources, for example the 2010-2011 Annual Report on the State of Inuit Culture and Society (Nunavut Tunngavik Incorporated, 2012). While there is no single source that covers all Aboriginal people, including both First Nations persons on and off reserve, the array of sources referenced above collectively provide such coverage.

Note that the concern in this Appendix is with problems whose roots can be traced back to the period of early childhood, though the problems themselves may not emerge until later in the course of development. As well, when it comes to key determinants such as socio-economic status – generally a reflection of the earning capacity/education of adults – the typical data sources will look both at SES status in adults and at health outcomes for those adults. An example is found in the work of Statistics Canada on the relationship between socio-economic status on inequalities in health among Inuit, Métis and First Nations adults living off-reserve in Canada (Garner, Carriere, Sanmartin, 2010).

For this reason, although the material in this Appendix is concerned principally with health disparities related to developmental health trajectories set in childhood, some of the pertinent information may come from data on adults.

The material in this Appendix is concerned principally with identifying the range of determinants that are key to understanding health disparities among Aboriginal groups and between Aboriginal and non-Aboriginal groups. The section that follows is concerned more with specific health conditions and their relationships to a select set of determinants – including language and culture.

Health Outcome Disparities in Aboriginal Children and Youth: Key Indicators

This section summarizes data about various health concerns in Aboriginal children and youth. The section focuses in on health disparities between Aboriginal and non-Aboriginal children/youth, and the differences in the health profiles among Aboriginal groups and communities.

7.1 Canadian Community Health Survey

The findings in this section are published by Statistics Canada, and are based on the CCHS. Data were collected for persons aged 12 and above, and the data were broken out by Aboriginal status (First Nations off Reserve, Métis, Inuit). See Table 4 (below) for details. Note that the data in Table 4 include all respondents aged 12 and above.

**Table 4. Health Indicators, Health Behaviours/Determinants –
First Nations Off-Reserve, Métis, Inuit, non-Aboriginal**

Health Indicator	First Nations Off Reserve	Métis	Inuit	Non- Aboriginal
	Percent			
General				
Perceived health, very good or excellent	50 _{__} *	54 _{__} *	55 _{__} *	63
Perceived health, fair or poor	16 _{__} *	13 _{__} *	8	9
Perceived mental health, very good or excellent	66 _{__} *	67 _{__} *	65 _{__} *	75
Perceived mental health, fair or poor	8 _{__} *	8 _{__} *	5 ^E _{__}	5
Life satisfaction, satisfied or very satisfied	89 _{__} *	90 _{__} *	92	93
Perceived life stress, quite a lot (15 years and over)	24	25	19	23
Participation and activity limitation, sometimes or often	33 _{__} *	33 _{__} *	30	26
Chronic Conditions				
One or more chronic conditions	56 _{__} *	55 _{__} *	43	48
Arthritis	14 _{__} *	14 _{__} *	10 ^E _{__}	12
Asthma	14 _{__} *	13 _{__} *	14 ^E _{__}	9
Diabetes	6 _{__} *	4	2 ^E _{__} *	4
High blood pressure	9 _{__} *	9 _{__} *	7 _{__} *	12
Mood disorder	12 _{__} *	10 _{__} *	5 ^E _{__}	6
Respiratory problems	15 _{__} *	15 _{__} *	15 ^E _{__}	10
High blood pressure, heart disease, or suffering from effects of stroke	11 _{__} *	10 _{__} *	9 ^E _{__}	14
Pain or discomfort, moderate or severe	14 _{__} *	14 _{__} *	9 ^E _{__}	10
Pain or discomfort that prevents activities				
Health Behaviours				
Influenza immunization (less than one year ago)	27	22 _{__} *	31	27
Breastfeeding initiation	82 _{__} *	78 _{__} *	77 _{__} *	88
Exclusive breastfeeding (at least 6 months)	19	14 _{__} *	26 ^E _{__}	25
Current smoker, daily or occasional	40 _{__} *	36 _{__} *	48 _{__} *	21
Current smoker, daily	32 _{__} *	30 _{__} *	39 _{__} *	15
Five or more drinks on one occasion (at least once a month in the past year)	26 _{__} *	27 _{__} *	26 _{__} *	19
Never had any alcoholic drinks in the past 12 months	29 _{__} *	23	34 _{__} *	24
Fruit and vegetable consumption (5 times or more per day)	36 _{__} *	39 _{__} *	27 _{__} *	45
Physically active during leisure	56 _{__} *	61 _{__} *	51	54

Health Indicator	First Nations Off Reserve	Métis	Inuit	Non-Aboriginal
time, moderately active or active				
Physically inactive during leisure time	44 _{—*}	39 _{—*}	49	46
Contact with a medical doctor (in the past 12 months)	74 _{—*}	76	62 _{—*}	78
Has a regular medical doctor	78 _{—*}	80 _{—*}	44 _{—*}	83
Obese (18 years and over)	26 _{—*}	22 _{—*}	26 _{—*}	16
Overweight (18 years and over)	31	32	32	32
Overweight or obese (18 years and over)	57 _{—*}	54 _{—*}	58 _{—*}	48
Overweight or obese (12 to 17 years)	26 _{—*}	28 _{—*}	25 ^E _—	19
Influenza immunization (less than one year ago)	27	22 _{—*}	31	27
Exposure to Second-Hand Smoke				
In vehicles and/or public places (in the past month)	25 _{—*}	31 _{—*}	24 ^E _—	17
At home	15 _{—*}	16 _{—*}	17 ^E _{—*}	7
In public places (in the past month)	15 _{—*}	18 _{—*}	13 ^E _—	12
In vehicles (in the past month)	16 _{—*}	20 _{—*}	18 ^E _{—*}	9
Other				
Sense of belonging to local community, somewhat strong or very strong	63	63	81 _{—*}	65
Food insecurity – moderate or severe	22 _{—*}	15 _{—*}	27 _{—*}	7
^E use with caution * significantly different from reference category (p < 0.05). For this table, the reference category is "Non-Aboriginal". Notes: 1. The Aboriginal population is younger than the non-Aboriginal population. To account for this, the data were age standardized to the Aboriginal identity population 2007-2010. 2. The survey does not capture all diagnosed chronic conditions. Certain diagnosed chronic conditions are not shown because their prevalence rates were too low or the data were not collected in the survey. 3. Inuit data do not include Nunavik and some remote communities. Source: Canadian Community Health Survey, combined 2007 to 2010 cycles. Please refer to CANSIM tables 105-0512 and 105-0513 (age standardized).				

<http://www.statcan.gc.ca/pub/82-624-x/2013001/article/app/11763-01-app1-eng.htm>

7.2 Demographic Profiles

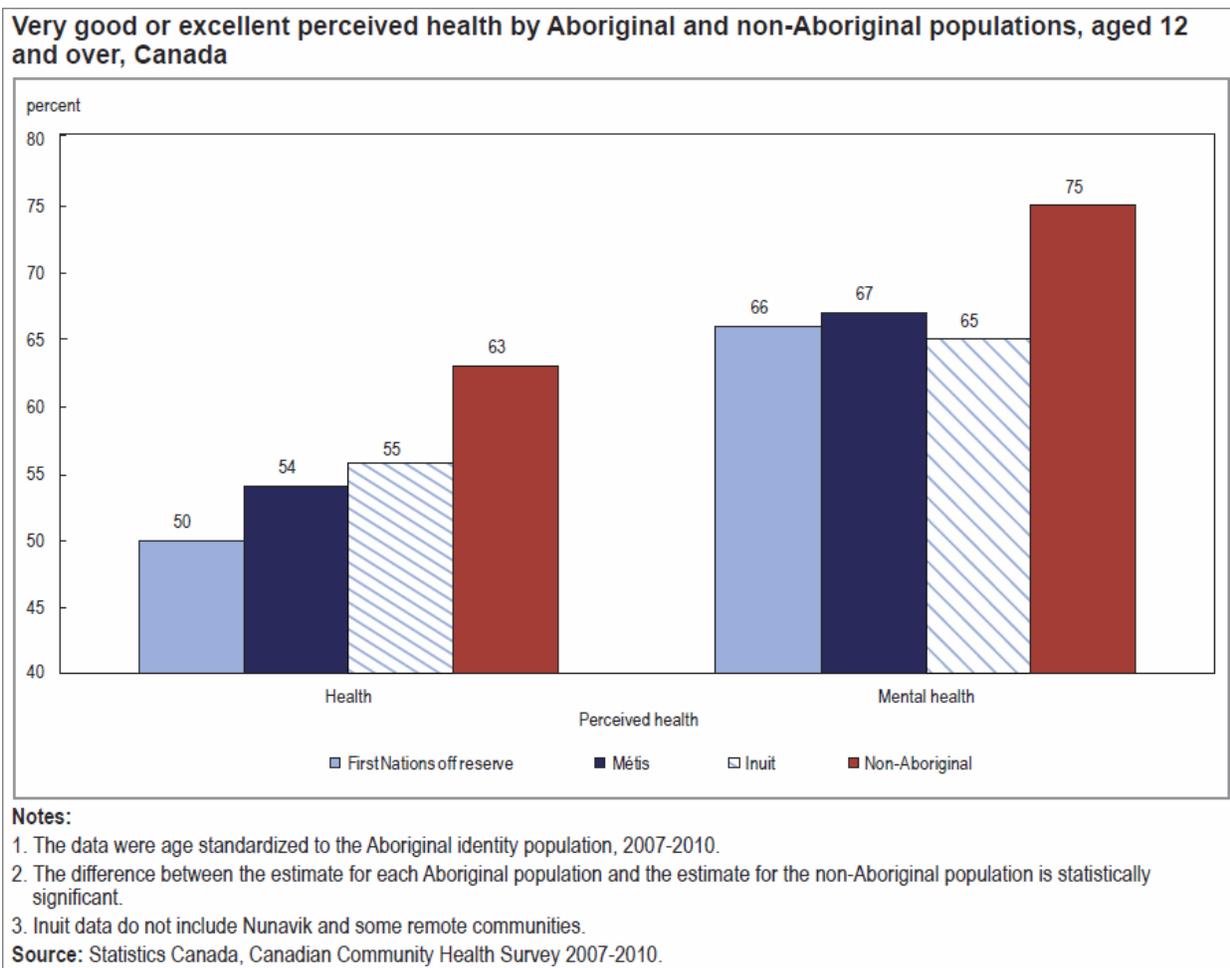
- Education – there are significantly lower rates of educational attainment in the Aboriginal communities.
 - Retention – this is an issue for Aboriginal people. For example the proportion of Métis children in Manitoba who are retained at least once between Kindergarten and Grade 8 is significantly higher than all other Manitoban children (Marens et al. 2010). The RHS reports that 24.4% of First Nations youth reported having repeated a grade, with 22.3% repeating a grade by age 12-13.

- Less than secondary completion – significantly higher rates for Aboriginal people, with the rates for Inuit people close to 300% higher than Non-Aboriginal people, 210% higher than Métis people, and 170% higher than First Nations people.
- Post-secondary education – lower rates lower for Aboriginal people and the lowest rates for Inuit people.
- Income – higher proportion of Aboriginal groups in the lower income ranges, and a lower proportion in the higher income ranges. The differences among Aboriginal groups are not so pronounced.

7.3 Health Outcomes

- General health – self-perceived general health is lower in Aboriginal communities (First Nations Off reserve, Métis, Inuit) versus non-Aboriginal communities.
- Self-perceived health fair or poor – for First Nations and Métis – more frequent than non-Aboriginals. The rates for Inuit versus Non-Aboriginal people do not differ. See **Figure 12**, below (Gionet & Roshanafshar, 2013, p. 5).
- Suicide (see Section 5 in this document for more detailed analysis of determinants or correlates of suicide).
 - Within the Inuit communities, where the Inuit language has been well-preserved (see **Figures 12,13** below), there are still extremely high rates of suicide. For example, the suicide rate for Inuit males between 1994 and 1998 was 12.9 times as high as the rate for Canadians overall. That rate ratio increased to 25.0 times as high for the period of 2004 to 2008. The rate ratios for Inuit female have remained fairly steady and quite high (20.8 times as high as the Canadian population from 1994 to 1998; 22.2 times as high for the period 2004 to 2008). See **Appendix III** which details on causes of death in the Inuit communities in Canada.
 - In Métis communities, the rates are far lower, though they are still higher than Canadian averages – the rate ratio for suicide in Métis communities between 1991 and 2001 was 1.6 (Tjepkema, Wilkins, Senecal, Guimond & Penny, 2009).
 - The figures are similar for Registered Indians during the period from 1991-2001: the rate ratio for suicide (compared to Canadian averages) is 1.66 (Tjepkema et al., 2009).
 - The BC Provincial Health Officer’s report on health for Status Indians in BC notes that rates have dropped from 1993 to 2006 but are still over twice the rate of other BC residents.

Figure 12. Perceived Health/Mental Health – Aboriginal and non-Aboriginal Populations



- Activity limitations: First Nations off Reserve and Métis people are more likely than non-Aboriginal people to experience activity limitations (disabilities). The rates for Inuit versus non-Aboriginal people do not differ.
- Chronic health conditions: these are more prevalent in the First Nations and Métis communities than the non-Aboriginal communities. Rates for Inuit versus non-Aboriginal people do not differ. However, Statistics Canada cautions that these data are concerned specifically with chronic conditions that have been diagnosed by a medical practitioner, and the differences between Inuit versus other Aboriginal communities may be an artifact of access to a physician to make a diagnosis.
- Acute illness: Inuit people have extremely high rates of smoking, and the 2010-2011 report on Inuit health states that Inuit people have the highest rates of lung cancer of any group in the world (p. 9; the 2010-2011 report *2010-2011 Annual Report on the State of Indian Culture and Society* references Statistics Canada). Inuit people also contend with other conditions associated with smoking, such as COPD. Given the high rates of crowding and poor ventilation in Inuit communities, it is expected that these outcomes are not restricted to the primary smoker.

- Obesity: there are higher rates of obesity in all three Aboriginal groups compared to Non-Aboriginal populations. Note that for both Aboriginal and non-Aboriginal the rates roughly double between the age range 12-17 and 18+, with the rates for Aboriginal people remaining significantly higher than the rates for Non-Aboriginal people. At the highest end of the weight range (BMI falling in the 'obese' category) the rates range from 22 to 26 in the Aboriginal community compared to the non-Aboriginal community.

Figure 13. Inuit Children Aged 2-5 Able to Understand/Communicate Needs in the Inuit Language

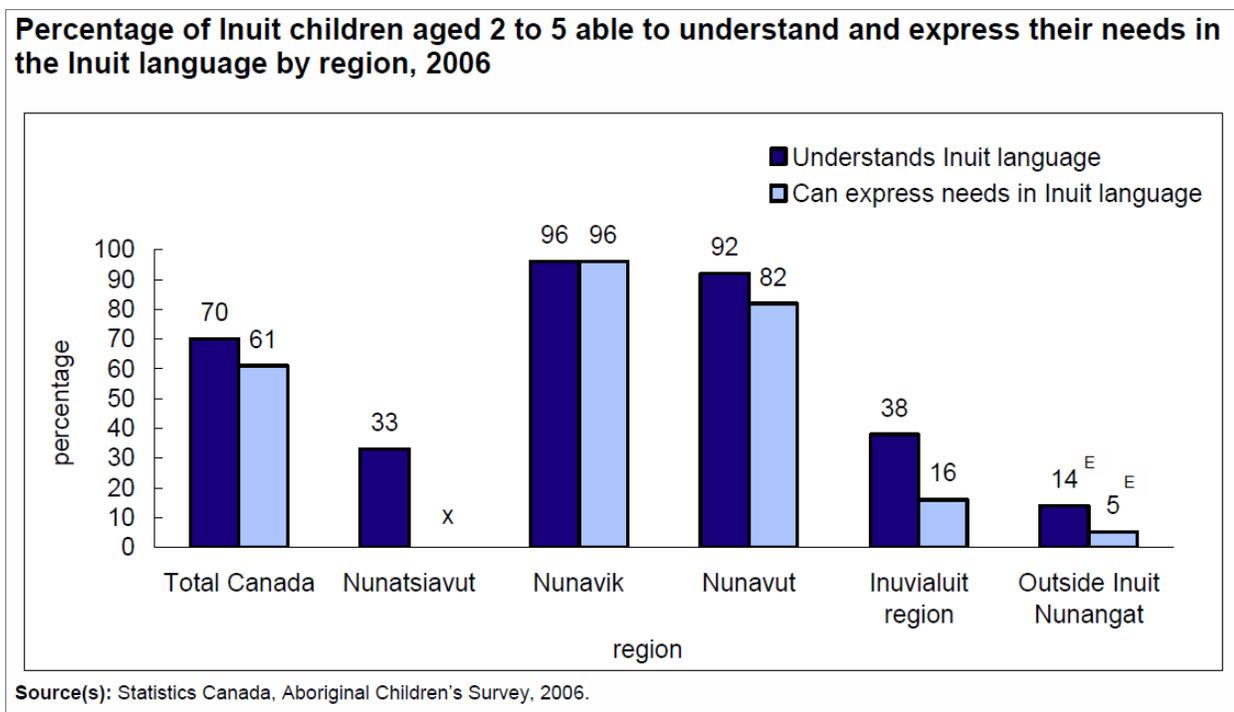
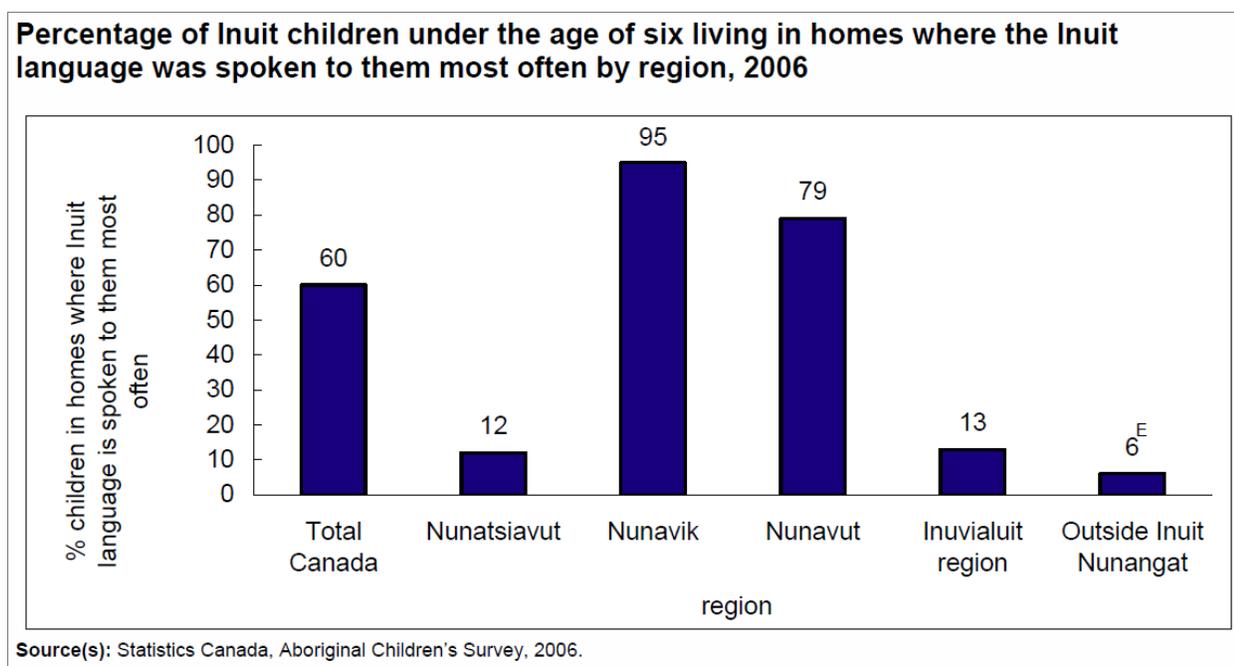


Figure 14. Percentage Inuit Households Where Inuit Language is Spoken



7.4 BC Provincial Health Officer Report

The BC Provincial Health Officer report (Kendall, 2007) points to the period of pregnancy/early childhood as an area of particular concern for Status Indians in BC:

- Infant mortality: the rates are down for Status Indians from 1993 to 2006, but the rates are still 2+ times higher for Status Indians versus other BC residents.
- Healthy Beginnings – Pregnancy, Infants and Children: various indicators (e.g. teen pregnancy, preterm births, low birth rates, infant mortality, neonatal mortality) demonstrate that outcomes are 2-5 times worse for Aboriginal people.

Other outcomes are flagged in the Provincial Health Officer's Report:

- HIV mortality: rates are dropping for BC residents (down to 0.2 per 10,000), whereas rates are rising among Status Indians (up from 0.8 to 1.9 per 10,000 from 1993 to 2006).

Disparities in Health Determinants

Significant health disparities on the outcome side are indicators of disparities on the determinants side – see **Table 2**, above.

With regard to health disparities and determinants of those disparities, Statistics Canada (Gionet & Roshanafshar, 2013) notes the following:

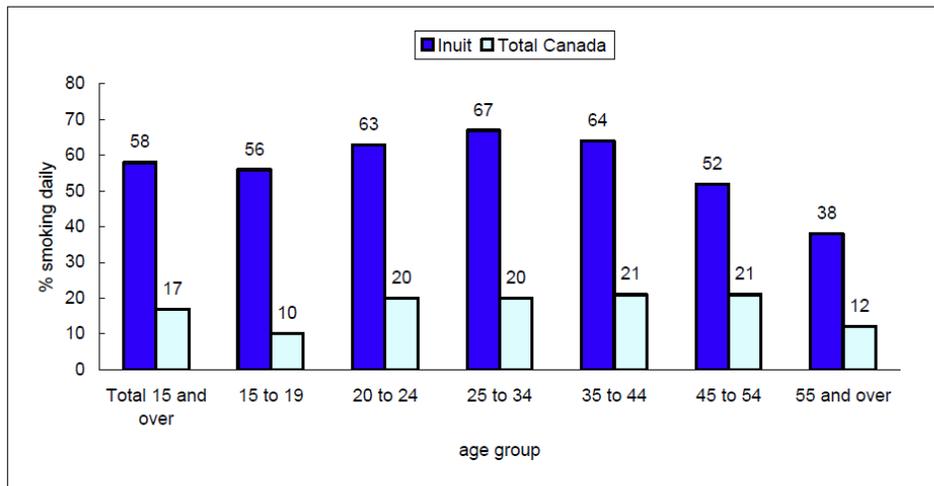
- Food insecurity – moderate or severe: 200-400% higher in the Aboriginal communities versus Non-Aboriginal communities. The problem is most prevalent in Inuit communities.
- Diet – fruit and vegetable consumption (5 or more per day): this is lower among Aboriginal versus Non-Aboriginal people. The lowest rates are for Inuit people, which may reflect

availability and cost of fruits and vegetables in those communities. By contrast, in Inuit Nunangat, the Inuit homeland, the majority of Inuit men and women of all ages are involved in harvesting country foods (e.g., seal, caribou, fish, etc.).

- Smoking: regular smoking is far more prevalent in the Aboriginal communities compared to the non-Aboriginal communities, and the rates are highest in the Inuit communities (see **Figures 15** (Tait, 2008) and **Figure 16** (Gionet & Roshanafshar, 2013) below for illustrations). Aboriginal people are also more likely to be exposed to second-hand smoke than non-Aboriginal people (though Statistics Canada flags the Inuit information related to second-hand smoke for caution due to issues with the data). Statistics Canada (Inuit Health and Social Conditions, p. 14) reports that lung cancer rates among Inuit in Canada are the highest in the world. Smoking rates for Inuit people between the age of 15 and 19 are 560% higher than rates for the total Canadian population in that age range.
- Note also that in a study conducted in the US and reported on the 2010-2011 Annual Report on the Status of Inuit Culture and Society, it was found that smoking doubles the rate of food insecurity and triples the incidence of severe food insecurity (p. 51).
- Alcohol: use of alcohol is more prevalent in the Aboriginal communities compared to the non-Aboriginal communities (see **Figure 16**, below). However, alcohol abstainers are also more prevalent in First Nations off reserve (RHS) and Inuit communities than they are in non-Aboriginal communities.
- Physical activity during leisure time: First Nations off Reserve and Métis people tend to be more physically active than Non-Aboriginal people. Inuit people as a group are comparably active to Non-Aboriginal people.
- Has a medical doctor: all three Aboriginal groups differ significantly from non-Aboriginal people, and the difference is quite striking for Inuit people (44% versus 78% for First Nations on reserve and 80% for Métis). This reflects the limited availability of physicians in the Inuit communities.
- Water quality: Statistics Canada does not provide data comparing to the non-Aboriginal communities. With the Aboriginal communities, access to a safe supply of water is an issue, and in the case of Inuit people, in roughly one third of the households, the water supply becomes contaminated at certain times of the year.
- Housing: this is particularly an issue in Inuit communities, where approximately 25% of the dwellings are in need of major repair. Statistics Canada notes the relationship between housing adequacy and high rates of asthma in the Inuit community. They also note that Inuit people are ten times more likely than non-Aboriginal people to live in crowded homes.
- Early Childhood education: over half of Inuit children aged 6-14 had attended an early childhood development program. Of these, 59% attended programs designed specifically for Aboriginal children.
- Overall, it is estimated that 90 percent of Aboriginal children do not have access to regulated infant development or early childhood development programs with any Aboriginal components, and waitlists are long (Ball, 2008 – citing Battiste, 2005, Public Health Agency of Canada and others).

Figure 15. Daily Smokers Among Inuit and Total Canadian Population, Aged 15 and Over

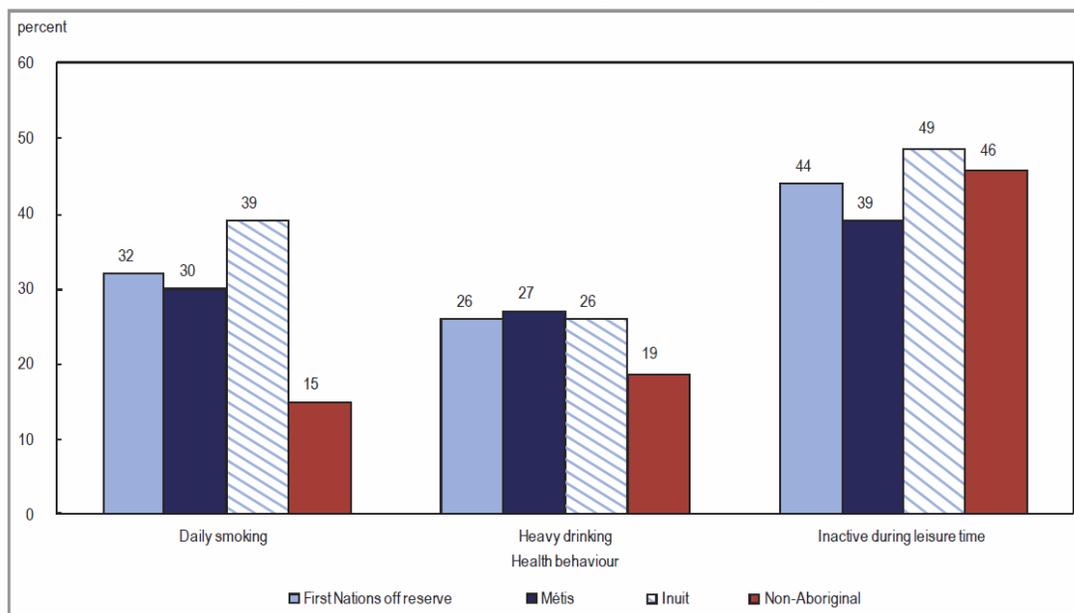
Daily smokers among Inuit and total Canadian population aged 15 and over, 2005/2006



Sources: Statistics Canada, Aboriginal Peoples Survey, 2006 and Canadian Community Health Survey, 2005

Figure 16. Smoking, Heavy Drinking, Inactivity during Leisure Time – First Nations Off Reserve, Métis, Inuit

Select health behaviours by Aboriginal and non-Aboriginal populations, aged 12 and over, Canada



Notes:

1. The data were age standardized to the Aboriginal identity population, 2007-2010.
2. The difference between the estimate for each Aboriginal population and the estimate for the non-Aboriginal population is statistically significant.
3. Inuit data do not include Nunavik and some remote communities.
4. Heavy Drinking: Having five drinks or more on one occasion at least once a month during the past year.
5. Smoking: Current smokers who smoke daily.
6. Inactive during leisure time: average daily physical activity of respondents over the past 3 months has been used for this measure. Inactive respondents are those where the sum of the average daily energy expenditures of all their leisure time activities is less than 1.5 kcal/kg/day.

Source: Statistics Canada, Canadian Community Health Survey 2007-2010.

7.5 From the Aboriginal Peoples Survey (APS), Aboriginal Children's Survey (ACS); Regional Health Survey

Statistics Canada's 2006 APS (e.g., Bougie, 2009; Statistics Canada 2008a,b, 2009) adds some additional information to the emerging picture of health status and determinants of health for Aboriginal people in Canada. Statistics Canada's Aboriginal ACS (e.g., Bougie, Tait & Cloutier, 2010; Statistics Canada 2008 c,d,e,f) and the APS provide substantial additional data about Métis, Inuit and off reserve First Nations children under six years of age in urban, rural and northern locations across Canada.

Ability to speak/understand an Aboriginal language:

- First Nations, off reserve: about 17% of off reserve First Nations children were reported to be able to speak and understand an Aboriginal language. About 31% were able to understand (even if only a few words), but not speak, an Aboriginal language. Half (50%) of off reserve First Nations children could neither speak nor understand an Aboriginal language. Off reserve First Nations children with registered Indian status were four times as likely as those without status to be able to speak and understand an Aboriginal language (24% versus 6%).
- With regard to Inuit people, there is substantial variability in the proportion of children under the age of six who have the Inuit Language as their mother tongue (see **Figures 15, 16** above). Within the four major Inuit communities, the rates vary from 16% who can express their needs in the Inuit language (Inuvialuit region) to 96% in the Nunavik region.
- The picture is quite different for the Métis. According to the ACS, among Métis children considered to be of speaking age, 3% are able to express their needs in an Aboriginal language, and 7% are able to understand an Aboriginal language (Cloutier, Bougie & Tait, 2010).
- According to the RHS, 69.6% of the predominantly on-reserve First Nations people are able to understand or speak a First Nations language. However, they note that the ability to understand or speak a First Nations language or daily use of a First Nations language is diminishing in younger First Nations adults (p. 213). Among First Nations youth, 56.3% reported that they could understand or speak a First Nations language, but only 21.5% reported daily use. If daily use by 30% of the community is treated as a critical cut-off for preservation of an indigenous language (as per Hallett, Chandler & Lalonde, 2007) then at least in the younger First Nations community, indigenous language is at risk. Among First Nations children, 49.7% were reported to be able to understand or speak a First Nations language.

7.6 Determinants of health disparities documented in the Canadian Community Health Survey and the Aboriginal Peoples Survey

Statistics Canada analyzes the relationship between socioeconomic status and health status in Aboriginal people in Canada (Garner, Carriere, Sanmartin, 2010). Their analysis reveals the following:

- First Nations off reserve, Métis and Inuit adults were all significantly less likely than non-Aboriginal adults to report being in excellent or very good health
- When age is controlled as a factor, the difference in self-assessed health status between the Aboriginal and non-Aboriginal population becomes greater. In other words, when controlling for age disparities between Aboriginal and non-Aboriginal populations, the data suggest that health problems in the Aboriginal community are getting worse.
- Even when income and educational attainment are controlled, the self-perceived health status of Aboriginal people is worse than the health status of non-Aboriginal people. The APS data

also indicate the having parents who attended residential schools predicts lower educational achievement in children.

- Having seen a doctor or nurse in the past 12 months does not appear to be a factor in the reported disparities. This suggests that factors other than access to healthcare, income and education are producing these disparities.
- When a host of variables are factored out (age, sex, income, education, smoking, body mass index, access to doctor/nurse, urban residence), the self-reported health status of Aboriginal people starts to look more like the self-reported health status of non-Aboriginal people . However, First Nations people living off reserve appear to be an exception. Even with all of those factors controlled, it appears that First Nations people living off reserve are still contending with more significant health concerns than non-Aboriginal people.

It is important to note, as Statistics Canada does in its analysis of relationships between SES and health in the CCHS and APS, that the failure of SES to account for health disparities does not mean that SES is not a factor. In fact, there is a large volume of information that demonstrates the potency of income and related factors as a determinant of health outcomes: *“When one sorts through this vast collection of studies, the relationship of low socioeconomic status and poor health rises to the top of the findings over and over again, across different disease outcomes, in different age groups, and in different areas of the world”* (Guralnik & Leveille, 1997).

What the Statistics Canada data do suggest is that there are other factors that are impacting on the health of Aboriginal people. As Statistics Canada notes, the data also suggest that factors that impact health may not have the same kind of impact that they do outside the Aboriginal community.

Finally, in reviewing the full body of information available on health disparities among Aboriginal groups, they highlight: *“there are also important differences between First Nations, Métis and Inuit adults in terms of the factors that impact health, which highlights the importance of examining these identity groups separately and not using a pan-Aboriginal approach when examining health”* (Garner et al, p. 22).

7.7 Language, Culture and Suicide

The work of Chandler and Lalonde (e.g., 1998, 2004; Hallet et al, 2007) demonstrates that cultural continuity at a community level and preservation of indigenous language can have a very powerful relationship to suicide – in the context of First Nations communities in BC. At the same time, other data indicate that in some Aboriginal groups where language has been well preserved (Inuit communities) and traditional lifestyles persist, suicide rates may be extremely high. These results do not necessarily mean that the work of Chandler and Lalonde is incorrect or that their results have been misinterpreted. However, this does suggest that there are other comparably potent distal factors that may also be impacting significantly on suicide rates and on other health outcomes, factors that are not a direct focus of Chandler and Lalonde’s work. As the information demonstrates in **Appendix II** a large number of distal and proximal determinants figure quite centrally in the work of several different sources concerned with health disparities. In order to plan strategies for addressing health concerns in Aboriginal communities, it is important to understand this larger context.