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A Guide for Health Professionals Working with Aboriginal Peoples:

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Metis National Council
National Indian and Inuit Community Health Representatives Organization
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Health Issues Affecting Aboriginal Peoples

> "Good health is a balance of physical, mental, emotional, and spiritual elements. All four interact together to form a strong, healthy person. If we neglect one of these elements, we get out of balance and our health suffers in all areas … Prevention of sickness goes hand in hand with a traditional healthy lifestyle. Good health is ours when we live in a balanced relationship with the earth and the natural world. Everything we need has been provided by our common mother, the earth: whole foods, pure water and air, medicines, and the laws and teachings which show us how to use these things wisely. When we combine these gifts with an active lifestyle, a positive attitude, and peaceful and harmonious relations with other people and the spiritual world—good health will be ours."
>
> – Leslie Malloch[1]

RECOMMENDATION B1

Health professionals should appreciate holistic definitions of health as defined by Aboriginal peoples

The Royal Commission on Aboriginal Peoples (RCAP) found that the desire of Aboriginal peoples to look at concepts of health holistically was a major theme among the concerns voiced by Aboriginal individuals interviewed: "Aboriginal concepts of health and healing start from the position that all the elements of life and living are interdependent. By extension, well-being flows from balance and harmony among all elements of personal and collective life."[2]

The concept of the circle or cycle is a fundamental theme common to many Aboriginal cultures. Rather than viewing an object individually, that object may be perceived as a part of an interrelated, repeated sequence. This holistic worldview is inspired by nature. The cycles represented may be the life cycles of humans, animals or plants, the seasons, or qualities of being (physical, mental, emotional, and spiritual); and can be interrelated or overlaid, forming a rich conceptual framework through which to interpret the world. As in nature, each part of the cycle needs to be balanced with the other parts; otherwise problems such as illness or famine may occur. Rupert Ross describes his interpretation of how the cycles of nature inspired and reinforced Aboriginal culture and ethics:

> The sense of security that came from seeing life as a revolving affair was constantly reinforced by a multitude of things. The seasons followed one another in regular succession. So did every other aspect of the natural world, from ripening berries to spawning fish to mating caribou. Every part of creation repeated itself from year to year, returning in forms, numbers and conditions that were already familiar … for the wheel of life to continue revolving, it was necessary to interfere as little as possible. Each article taken, whether a bird, plant, animal or fish, was taken with regret and with respectful thanks given in obligatory ceremony. Anyone who took

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> more than was necessary put everyone else in peril when the wheel turned and the family came to that place again.[3]

Another description pertains to Inuit concepts of health and healing:

> The Inuit vision of the body offers a holistic vision of the individual and his or her unity with his/her surroundings, a part of a whole that draws its meaning from the relationships that the human being entertains with whatever is living and whatever surrounds him or her … It is a model that is characterized by its continuity with the environment, as opposed to the scientific model, which has been characterized as a model of discontinuity …[4]

The medicine wheel is a circular paradigm which can be used as a framework for understanding. Used historically as a teaching tool by Aboriginal peoples in the Algonkian language group, the medicine wheel continues to be widely applied by many First Nations and Metis peoples. Once the life cycles of various phenomena and objects, including plants, animals, seasons, and human states and contexts are laid out on the medicine wheel, the various conceptual layouts can then be overlaid in a three dimensional fashion to illustrate interrelations (Figure 1). Rosella Kinoshemeg, a nurse and traditional teacher, illustrates the application of this cyclical, holistic perspective towards health and well-being:

> The teachings of the medicine wheel gave guidelines regarding how to strive for balance physically, mentally, socially, spiritually, and emotionally. This was achieved by using the symbols of the four colours and the positive qualities of animals, birds, or plants located in the four directions.[5]

RECOMMENDATION B2

Health professionals should recognize that the degree of ill health in Aboriginal populations is unacceptable, and work with Aboriginal individuals and communities towards improved health outcomes

RECOMMENDATION B3

Health professionals should recognize and respond to key areas of morbidity and mortality without stereotyping

Aboriginal peoples in Canada experience a disproportionate burden of health problems compared to the general Canadian population. However, detailed, regionally specific knowledge about the precise extent of these health problems is limited, especially in urban areas.[6–8]

The limitations of the Census in identifying Aboriginal individuals have been discussed in Section A. The majority of available health statistics relate to Aboriginal peoples living on-reserve or who are registered with the Department of Indian and Northern Affairs Canada. In these situations, regional and provincial health records can be cross-referenced with health card numbers or postal codes to identify the on-reserve and “status Indian” and “registered” Inuit subgroups: which represent less than 60 percent of the total Aboriginal population identified in the 1996 Census.[9,10] Even this data can be limited by selective regional or provincial participation.

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Further, most of these statistics relate strictly to mortality; little information is available on contributors to health morbidity among the Aboriginal population. Research and registries collecting data about the mortality and morbidity of Canadian peoples are currently limited in their ability to correctly identify Aboriginal heritage, especially for Metis and for First Nations and Inuit individuals who are not registered with the Department of Indian and Northern Affairs Canada. For example, since Canada's national cancer registry does not identify ethnicity or race, the statistics generated from the registry regarding Aboriginal people only apply to "registered" Inuit and "status" First Nations people.[11] In their review of the research regarding excessive deaths among "American Indians and Alaska Natives," Andrews and Krouse[12] identified problems with the correct categorization of race, ethnicity, and population. Many of the studies further failed to differentiate between the cultural, geographic, and environmental diversity among the Aboriginal populations cited. Finally, most American data was found to be drawn from the Indian Health Service, which does not include urban Aboriginal populations.[12]

In 1994, Statistics Canada began three major national longitudinal surveys: the National Population Health Survey (NPHS), the National Longitudinal Survey of Children and Youth (NLSCY), and the Survey of Labour and Income Dynamics (SLID). The national sampling frame for all three surveys specifically excluded on-reserve First Nations people and Inuit communities in the provinces. Although off-reserve First Nations people and Metis could have been selected randomly, the sub-sample would not have been large enough to produce reliable information. Aboriginal peoples in the Yukon and NWT were included in a NPHS/NLSCY conducted within each territory. Data for the new territory of Nunavut has been compiled from the Northwest Territories NPHS: references to health status in Nunavut in this report have been drawn from this data unless otherwise specified.[13] Nunavik has also published a recent health status report, largely based on data from the Santé Québec Survey on the Inuit.[14] While health information from the Inuvialuit region is included in the 1999 Northwest Territories Health Status Report,[15] there is little regional or ethnospecific data.

In 1995, the First Nations and Inuit Regional Health Survey (FNIRHS) was developed in response to the need for comparable information about Aboriginal people outside the territories. Controlled and implemented by regional First Nations and Inuit organizations and coordinated by a National Steering Committee made up of regional First Nations and Inuit representatives, the project involved 183 First Nations across the country and five Inuit communities in Labrador. There were approximately 150 core variables, presented in eight thematic chapters in a National Report in 1999. However, this survey did not include off-reserve First Nations people, "non-status Indians" or Metis. Among the Inuit, only those Inuit communities in Labrador participated. Although originally designed as a longitudinal survey, funding for further research had not been secured at the time of publication.[16]

There is very little specific health information regarding the Metis. The submission regarding Metis health from the Metis National Council (MNC) to the RCAP[17] was based on data from the 1991 Aboriginal Peoples Survey. Currently, the Metis National Council and Statistics Canada are developing a new health survey tool for the Metis.

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HEALTH CONCERNS FOR ABORIGINAL PEOPLES

LIFE EXPECTANCIES

Life expectancy for “registered Indians” is seven to eight years less than for other Canadians. In 1995, the life expectancy for “registered Indians” at birth was 68.0 years for men and 75.7 years for women. This compares to a life expectancy in the total population of 75.2 years for men and 81.4 years for women.[16,18,19] Data from a different study for the Inuit population[21] showed an Inuit life expectancy at birth of 58 years for men and 69 years for women in 1991. It has been projected that the life expectancy at birth for “registered” Indians would improve to 70.2 years for men and 77.3 years for women by the year 2000.[18]

INFANT MORTALITY

One major reason for shorter Aboriginal life expectancy is a higher infant mortality rate among Aboriginal peoples. The infant mortality rate among “registered Indians” is twice the Canadian rate (12 per 1000 live births compared to 6.0 per 1000 live births in 1994), despite a marked drop in the past 15 years (the rate was 28 per 1000 live births in 1979). Infant mortality is divided into two periods: neonatal mortality (death from 0–27 days) and post-neonatal mortality (death between 28 days and one year of age). Although neonatal death rates among “registered Indians” are close to the national average (5.12 per 1000 live births vs. 4.2 per 1000 live births in 1994), the post-neonatal death rate remains markedly elevated (6.85 per 1000 live births vs. 2.1 per 1000 live births). The major causes of post-neonatal death among “registered Indian” infants in 1994 were: sudden infant death syndrome (SIDS) (44%), congenital anomalies (11%), respiratory (10%), infections (6%), and injury (8%).[22]

Infant mortality rates are also elevated among the Inuit in Nunavut and Nunavik, averaging 17.4 per 1000 live births in Nunavut between 1994 and 1996, and 25.5 per 1000 live births in Nunavik between 1989 and 1994.[13,14] For the 1990 to 1994 period, the neonatal death rate was 10.1 per 1000 live births and the post-neonatal death rate was 15.9 per 1000 live births in Nunavik: over two and seven times the national average respectively.[14] Two thirds of neonatal deaths were attributable to birth defects (7 per 1000, compared to a national average of 1.6 per 1000). The post-neonatal death rate, despite being markedly elevated, has actually improved from a high of 29.7 per 1000 between 1980 and 1984.[14] The majority of post-neonatal deaths were attributed to SIDS (10 per 1000), a rate twenty times that for the rest of Quebec. Due to the low numbers of live births a SIDS rate cannot be calculated for Nunavut, but empirical data would indicate similarly high rates of SIDS (16 recorded SIDS deaths between 1991 and 1996 in a population of 21,500).[13]

BIRTH WEIGHT

Despite higher infant mortality rates, the proportion of low birth weight babies (< 2500 grams, a group traditionally considered at risk of higher mortality and morbidity) is slightly lower among the First Nations population than the general Canadian population. The numbers of high birth weight babies (> 4000 grams) is higher among First Nations compared to the general population: in 1994, 18 percent of First Nations babies were high birth weight, compared to 12.2 percent of Canadian babies.[16,22] High birthweight is more

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common among male babies, and is associated with a higher incidence of birth injuries and developmental problems.[16]

The rates of low birth weight among the Inuit of Nunavut (6.8% in 1994–1996) and Nunavik (4.1% in 1991–1993) are slightly higher than among First Nations infants, and approach or surpass the Canadian average (5.8% in 1994–1996).[13,14] This is associated with higher rates of prematurity in Nunavik (8.4% in 1991–1993). These rates of prematurity surpassed those of the James Bay Cree (5.4%) and Quebec (6.8%) for the same time period.[14]

Birth weight data should be interpreted with caution, as the norms regarding high and low birthweights are based on data for non-Aboriginal infants.

MORTALITY RATES*

The crude mortality rate among “registered Indians” in 1994 was 5.3 per 1000 population. However, when comparing mortality rates with the general Canadian population, rates need to be age standardized, as the Aboriginal population of Canada is much younger (see section A). Age standardized death rates for “registered Indians” and the general Canadian population for 1992 are shown in Table 1.[20] The principal causes of death among both “registered Indians” and Inuit (Nunavut and Nunavik) are injuries, diseases of the circulatory system, neoplasms, and diseases of the respiratory system.[13,14,19] Injuries, including suicide, were the leading cause of death for both these Inuit regions.[13,14]

INJURIES, POISONING, AND SUICIDE

The high rate of injuries as a primary cause of mortality among “registered Indians” is the second major reason for the lower life expectancy of “registered Indians” compared to the general Canadian population. Injuries and poisoning have been the leading cause of mortality for the Inuit (Nunavut and Nunavik) and “registered Indian” population every year from 1984 to 1994,[9,13,14] with mortality rates due to injuries three to four times higher in “registered Indians” than in the Canadian population as a whole.[9,23]

The category “injuries and poisonings” includes deaths from unintentional injuries, such as motor vehicle accidents, drowning, exposure, and poisoning, as well as intentional injuries from homicide and suicide. The major causes of death from injury among “registered Indians” in 1992 were motor vehicle accident, drowning, suicide, homicide, and drug overdose. Mortality rates due to non-intentional injury for the Inuit in Nunavut are three times higher than the national rate,[13] while Nunavik mortality rates from non-intentional injury are four times higher than Quebec’s, and 40 percent higher than for other Aboriginal groups in Canada.[14]

Suicide rates among “registered Indians” are over twice the rate for other Canadians. In 1991, the rate was 36.1 per 100,000 for “registered Indians,” compared to 14.5 per 100,000 for other Canadians. Rates among “registered Indian” youth (age 15 to 24 years) are five to six times the rate among other Canadian youth.[6,24] Furthermore, rates among young children

*The mortality discussion for registered Indians in the following sections also draws heavily on Dr. Vincent Tookenay’s analysis of the same in an unpublished report prepared for medical students at the University of Ottawa.

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(younger than 14 years) are significant for First Nations children (3.9 per 100,000), but almost non-existent for other Canadians.[25]

In Nunavut, suicides are the most common form of injury and death. The suicide rate for Nunavut is five times the national average, with rates being highest in the 15 to 29 year age group. Suicides have similarly been concentrated in the under 25 year age group in Nunavik. Between 1987 and 1994, the suicide rate in Nunavik among the 15 to 25 year age group was twenty times the rate in the rest of Quebec.[14]

OTHER CAUSES OF DEATH

Age standardized data from 1992 indicates that death rates of "registered Indians" from diseases of the circulatory system and respiratory causes were higher than the rates in the general Canadian population. The death rate of "registered Indians" from neoplasms was slightly lower than the average Canadian rate in the same year, but had increased over time.[20,23] This increase appeared to be mainly attributable to an increase in the male death rate from neoplasm among "registered Indians."[20] Of particular note is mortality attributed to lung cancer among the Inuit of Nunavut and Nunavik (see "Health Issues of Specific Concern to the Inuit"). Chronic obstructive pulmonary disease (COPD) is common among the Inuit of Nunavik, accounting for one in ten deaths.[14]

CHRONIC DISEASE

The FNIRHS found that self-reported prevalence rates of five chronic health conditions were all increased for First Nations and Inuit survey participants compared to the general Canadian population. First Nations/Inuit to Canadian rate ratios for disease-specific, age-adjusted prevalence rates were: diabetes (3.3 M, 5.3 F), heart problems (3.0 M, 2.9 F), cancer (2.0 M, 1.6 F), hypertension (2.8 M, 2.5 F), and arthritis/rheumatism (1.7 M, 1.6 F). These figures, although believed to be underestimates as a result of underreporting by participants, still show profoundly high rates of chronic disease compared to the general Canadian population. Examination of age specific prevalence rates revealed, not surprisingly, that prevalence rates of all the chronic diseases increased with increasing age.[16]

Since the 1970s, Inuit communities in Nunavik have seen a trend toward increase in chronic degenerative diseases such as cancer and circulatory disease as important causes of mortality,[14] although prevalence data is not available for all Inuit communities. The prevalence of hypertension, heart disease, and diabetes appears to be lower for the Inuit than in First Nations communities, but is increasing in Nunavik. COPD is common in Nunavik among older adults.[14]

Limited Metis health data indicates a tendency towards high prevalence rates of chronic diseases, including diabetes, hypertension, and arthritis. The pattern of disease prevalence for diabetes, hypertension, emphysema, tuberculosis, heart problems, and epilepsy closely parallels that of the total Aboriginal population. Rates of arthritis/rheumatism, bronchitis, and asthma were higher than those of the total Aboriginal population.[17]

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DIABETES

Diabetes is a particular health challenge for Aboriginal communities. The FNIHS found a prevalence rate of 11 percent in the communities surveyed, with Aboriginal men and women having 3.3 and 5.3 times more diabetes respectively compared to the Canadian average.[16] The APS similarly found an age adjusted prevalence rate of 9.9 percent for diabetes among Aboriginal peoples surveyed, compared to 3.1 percent for the general Canadian population.[26] The prevalence of diabetes increases among Aboriginal peoples with increasing age. Over 25 percent of the participants in the FNIHS who were older than 45 years reported having diabetes.[16]

Numerous regional studies of diabetes among Aboriginal peoples in Canada indicate that the prevalence of diabetes among Aboriginal peoples varies regionally according to language family, geographic location, and degree of isolation.[16,26] Although these studies are difficult to compare because of different methodologies and diagnostic criteria, certain Aboriginal communities have been identified as having particularly high prevalence rates, such as the Pima people in the United States (prevalence rate of 65 percent among individuals aged 45–74 years). In Canada, researchers have noted a general trend towards lower rates among Aboriginal peoples in the western and northern parts of the country.[26,27] Some researchers have postulated that this geographic trend may be reflective of an association between diabetes among Aboriginal peoples and the influence of European diet and lifestyle on traditional Aboriginal lifestyle, since northern and western Aboriginal communities tend to have experienced shorter timelines of contact with the Europeans, and hence possibly a lesser impact upon traditional Aboriginal lifestyle. Although research to date looking specifically at the connection between traditional lifestyle and diabetes among Aboriginal peoples has shown conflicting results,[26] it is certain that diabetes was extremely rare among Aboriginal peoples in Canada and the United States prior to the 1950s.[16,28]

Aboriginal individuals with diabetes have high rates of complications and co-morbidities. Fifty-four percent of participants in the FNIHS who identified having diabetes also identified another chronic health condition.[16] The APS also found high rates of co-morbidities among Aboriginal diabetics, ranging from 36 percent in the 30 to 39 year age group to 77 percent among individuals aged over 65 years.[26] A study among Mohawks with diabetes found over 60 percent had at least one major complication.[29] Among diabetic participants in the FNIHS, only five percent rated their health as excellent, while 21 percent rated their health as poor.[16]

Hypertension was the most common co-morbidity among Aboriginal diabetics participating in the FNIHS and APS, with an incidence rate of 48 and 43 percent respectively.[16,26] Heart disease was also a common problem, with prevalence rates among diabetics in the FNIHS and APS of 25 and 28 percent respectively.[16,26] In the FNIHS, diabetes appeared to precede cardiovascular problems, since the cardiovascular co-morbidity for diabetes increased with increasing age.[16] End-stage renal disease, as a complication of diabetes, glomerulonephritis, and pyelonephritis, has an age standardized incidence rate among Aboriginal people 2.5 to 4.0 times higher than the national rate.[6] Of the diabetic respondents to the APS, 8.9 percent had visual problems that prevented them from seeing print on a page or faces across a room, even with glasses.[26]

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Both the FNIHS and APS found that approximately 20 percent of Aboriginal diabetics identified had a level of formal education of primary school or less.[16,26] Additionally, First Nations people with diabetes had on average lower incomes than First Nations people without diabetes.[26]

The limited health data available for the Metis indicates prevalence rates of diabetes among the Metis are similar to those of Aboriginal people as a whole.[17]

Diabetes is less prevalent among Inuit communities than among the First Nations and Metis, although rates have been increasing. In 1994–95, 6.4 percent of Inuit older than age 45 years met the criteria for diabetes in Nunavik.[14]

The 1988 clinical practice guidelines for the management of diabetes in Canada[30] recommended community-based screening of Aboriginal peoples using a fasting plasma glucose level, and that clinicians consider doing this more frequently and starting at an earlier age than the every three years over the age of 45 years recommended for non-high risk groups. Primary prevention programs “initiated by Aboriginal communities” were encouraged. Finally, the guidelines also recommended “recognition of, respect for and sensitivity regarding the unique language, culture and geographic issues as they relate to diabetes care in Aboriginal communities across Canada.” All recommendations were Grade D, based on a consensus of expert opinion.[30]

INFECTIOUS DISEASES

Aboriginal peoples in Canada have increased rates of infectious disease compared to the general Canadian population. The incidence of tuberculosis cases among “registered Indians” in 1994 was 47 per 100,000,[9] compared to an average annual incidence of tuberculosis in Canada between 1990 to 1998 of 7.1 cases per 100,000.[13] In 1991, 75 percent of tuberculosis cases reported in Canada were of First Nations or Inuit origin.[24] The crude prevalence rate of tuberculosis in the FNIHS was over five percent. For Aboriginal people over the age of 50 who participated in the FNIHS, the prevalence of tuberculosis (TB) was ten percent.[16][†] Increased prevalence rates of other infectious diseases including hepatitis A, B, and C, gastroenteritis, meningitis, gonorrhea, and chlamydia have been reported among Aboriginal people in Canada.[6,31,32] First Nations children have higher rates of respiratory tract infections (bronchitis, pneumonia and croup) as well as severe otitis media.[6]

Incidence rates of tuberculosis are also elevated among the Inuit of Nunavut and Nunavik. The average annual incidence rate in Nunavut was 61.9 cases per 100,000 between 1990 and 1998.[13] In Nunavik, which had an average annual incidence rate of 86 cases per 100,000 between 1990 and 1994, cases of tuberculosis were found to be principally concentrated in four communities.[14]

[†]This data may be more a measure of lifetime occurrence rather than prevalence, as the original question in the FNIHS asked if a person had ever been told by a health professional that they had TB.

Rates of chlamydia and gonococcal infections are also elevated among the Inuit of Nunavut and Nunavik. In Nunavut, between 1989 and 1998, rates of chlamydia and gonorrhea were 15 and 25 times the national rates respectively; and rates in Nunavik were similarly elevated.[13,14] In 1991, both Nunavut and Nunavik suffered a measles outbreak, during which there were 475 and 71 reported cases respectively:[13,14] a new two dose measles vaccine programme has since been introduced to both regions. Complicated otitis media is also common in Nunavik, with most infants suffering at least one ear infection by age six months and a quarter of children suffering significant hearing loss in at least one ear by age five.[14]

The 1991 APS revealed that the incidence of tuberculosis among the Metis is similar to the incidence in the Aboriginal population as a whole, and considerably higher than among Canadians in general.[17]

HIV/AIDS

There has been a marked increase in the number of HIV/AIDS cases identified among Aboriginal peoples in Canada. Of the 79 percent of AIDS cases for which ethnicity was known, the proportion of cases involving Aboriginal peoples rose from 1.5 percent in 1989 to 5.6 percent between 1993 and 1996, and to more than ten percent in 1998.[33] Similar trends of increasing prevalence of AIDS have been reported among Aboriginal peoples in the United States.[6] The proportion of AIDS cases involving adult women is two times higher among identified Aboriginal AIDS cases compared to non-Aboriginal AIDS cases (17.5% vs. 6.5%). Finally, a higher proportion of Aboriginal peoples with AIDS are diagnosed at less than 30 years of age compared to non-Aboriginal peoples with AIDS (29.3% vs 17.6%).[33]

Eleven cases of HIV infection were reported in Nunavut from 1987 to 1998, with seven deaths from AIDS during this same period.[13] Data regarding the prevalence of HIV and AIDS is not available for other Inuit regions, but the prevalence is thought to be low in Nunavik.[14] Despite the indication that HIV and AIDS might not be a grave problem among the Inuit, several factors keep this population at risk, including: high rates of other STDs, high rates of substance abuse, a lack of knowledge about the disease and how to prevent it, and a lack of culturally appropriate educational resources and strategies.[34] Data regarding the prevalence for HIV in Nunavut and other Arctic regions may tend to underestimate the problem: since smaller, closeknit communities make confidentiality and anonymous testing very difficult, Inuit at risk for HIV may thus travel outside of their communities for testing.

OBESITY

Obesity is a relatively new, major health problem facing Aboriginal communities which has been linked to changes in diet and activity level over the past two generations.[35] Although the prevalence of obesity varies regionally, most Aboriginal communities examining this issue report high levels of obesity,[6,36,37] with rates being higher for women than for men. While studies of children have also shown high weight-for-height patterns, this information needs to be examined in the context of racially specific weight-for-height data, which is not available for all Aboriginal communities.[6] A study in northern Ontario and Manitoba[35] showed a prevalence of body mass index in the overweight or obese range of up to 90

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percent. Higher serum lipids, blood pressure, serum glucose, and hemoglobin A1C levels were found in obese compared to non-obese individuals, with obesity also being found to have an independent association with hypertension and diabetes mellitus.[35] In some Aboriginal communities in the United States, more than 65 percent of adults are obese.[38]

The prevalence of obesity is lower in Nunavut (19%) and Nunavik (19%) than the Canadian national average (23%).[13,14] However, the proportion of obese adults has increased in Nunavik from 16 percent in 1983 to 19 percent in 1992.[14]

SMOKING

The FNIHS found the prevalence of smoking among First Nations and Inuit people to be 62 percent, twice the rate of smoking in the general Canadian population.[16,39] It also found a strong negative correlation between age and current smoking, from a high of 72 percent prevalence in those age 20 to 24 to a low of 23 percent in the over 75 year age group. Dr. Reading comments:

> The exceedingly high and stable smoking rates would not be expected in a population that is so culturally diverse and geographically dispersed. Such a result could suggest a strong cultural identification with tobacco, a reluctance to view it as harmful to health and an association to social and economic health determinants.[16]

In Nunavut and Nunavik, smoking prevalence rates among adults are 67 and 68 percent respectively.[13,14] Smoking begins at a young age in these two regions. In Nunavik, two thirds of children age 12 to 13 are smokers, while in Nunavut, over 75 percent of smokers started before age 20 years. Data also exists regarding the prevalence of smoking during pregnancy in these two communities: 75 and 73 percent for Nunavik and Nunavut respectively.[13,14]

Forty-nine percent of Metis surveyed by the 1991 APS were daily smokers.[17]

ALCOHOL AND DRUG ABUSE

Alcohol and drug abuse were identified as significant community issues by many of the participants in the 1991 Aboriginal People's Survey:[39] 61.1 percent reported that alcohol abuse was a problem in the community where they were living, while 47.9 percent felt that drug abuse was similarly a community problem (Table 2).

Accurate prevalence figures regarding alcohol and drug abuse among Aboriginal peoples in Canada are generally not available and would be subject to individual and community variation; however, a small number of studies have found elevated rates of substance abuse, including solvents, among First Nations youth,[6,40] and studies in Nunavut[13] and Nunavik[14] identify 24 and 25 percent of the respective populations as "at-risk"[††] drinkers. Morbidity and mortality related to solvent abuse is significant among the Inuit in Nunavik,[14] and current marijuana use was reported by the majority of men under the age of 45 years.[13,14]

[††]"At-risk" is defined as five or more drinks at a time.

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Traditional formulas for determining alcohol abuse rates extrapolate from the rates of liver cirrhosis and other alcohol related diagnoses, incarceration, violent death, treatment participation, and alcohol sales. Of these, liver cirrhosis rates may not be an accurate correlate among Aboriginal peoples because of shorter lifespan.[41] Other indicators, particularly the statistics on violent deaths, suggest that Aboriginal peoples have a greater relative risk for the physical consequences of alcohol and drug abuse than non-Aboriginal Canadians. American research has found that the prevalence of alcohol consumption among Aboriginal peoples in the United States declines sharply after age 40.[42]

FETAL ALCOHOL SYNDROME AND FETAL ALCOHOL EFFECTS

Although several studies have suggested that fetal alcohol syndrome (FAS) is more prevalent among First Nations children than among Canadian children in general, the data remains inconclusive since there is insufficient information about the prevalence of FAS in the general Canadian population.[6] In addition, Canadian studies examining the prevalence of FAS among First Nations children have been criticized for lack of standardized diagnostic criteria and failure to blind examiners for maternal alcohol use.[43] American data indicates that the prevalence of FAS is identical to the general American population for some Aboriginal communities, including Navajo and Pueblo, and higher than the average in other specific groups such as Plains. Community specific prevalence assessments would therefore appear to be important.[44]

There are no statistics indicating the prevalence of fetal alcohol syndrome and fetal alcohol effects (FAE) in Northern Inuit communities, although data regarding drinking patterns during pregnancy in Nunavut and Nunavik suggests a significant risk of FAS/FAE in these regions: 18 percent of pregnant women surveyed in Nunavut and between 25 and 30 percent of pregnant women surveyed in Nunavik admitted to alcohol use during pregnancy.[13,14] Services to diagnose and address FAS/FAE are very limited in the North.[34]

Individuals suffering from FAS/FAE are at high risk of legal problems.[45]

FAMILY VIOLENCE AND PHYSICAL AND SEXUAL ABUSE

The participants in the Aboriginal People's Survey also identified family violence and sexual abuse as significant social problems: 39.2 and 24.5 felt that family violence and sexual abuse respectively were problems in the community where they were living (Table 2).[39] Although mainstream research documenting domestic violence has rarely been inclusive of Aboriginal families, the available literature indicates that most Aboriginal women have experienced physical domestic violence and that child sexual abuse is common. One study conducted by the Ontario Native Women's Association[46] found that 80 percent of Aboriginal women were victims of abuse.[‡] Some authors describe family violence and sexual abuse as uncommon prior to European colonization, and link the increased prevalence to forces of acculturation, including residential schools.[47,48] Consultations conducted by the Aboriginal Circle of the Canadian Panel on Violence Against Women found that factors contributing to the abuse of

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[‡]It is important to note that the response rate to the survey questionnaire in this study was only 15 percent.

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Aboriginal women included economic stressors, substance abuse, and loss of traditional lifestyle.[49]

MENTAL HEALTH

There is little published information regarding the prevalence of mental health problems among Aboriginal people in Canada.[6] Diagnosis and classification of mental health problems cross-culturally using Western medical definitions continue to present a challenge for health professionals, but high suicide rates and the adverse socioeconomic circumstances facing many Aboriginal peoples indicate higher prevalence rates for some mental health problems, including depression, with large variation between different communities: this is supported by American data.[50] Nine out of ten former residential school students felt that mental health services were in need of improvement.[16]

DISABILITY

The Aboriginal People's Survey revealed that in 1991, 31 percent of First Nations, Inuit, and Metis people over the age of 15 years had a disability, more than double the national rate.[16] The most commonly reported disabilities were mobility, agility, hearing, and seeing: 15 percent of all First Nations and Inuit people have difficulty hearing a conversation,[16] as well as eight percent of Inuit women and 11 percent of Inuit men in Nunavik.[14] Rates of disability among First Nations and Inuit people increase with age. Chronic diseases, including hypertension, diabetes, arthritis, heart problems, and cancer, were associated with substantial disability prevalence ranging from 24 to 38 percent.[16] According to the 1991 APS, 34 percent of Metis adults surveyed reported a hearing disability and 22 percent reported a seeing disability.[17]

DENTAL HEALTH

National surveys on the dental health of Aboriginal children in 1992 and 1996 revealed a high prevalence of dental health problems. In 1996, 89 percent of 12-year-olds and 95 percent of six-year-olds had dental caries. Two thirds of children surveyed required urgent treatment, restoration work, or extractions. In the 1992 study, approximately 25 percent of Aboriginal children suffered from toothache or bleeding gums.[51] Inuit children in the Northwest Territories were found to have a 95 percent prevalence of dental caries and a decayed-missing-filled-teeth index (DMFT) of 8.2 to 8.7: compared to dental caries rates of 52 percent and a DMFT of 1.7 among Ontario children in general.[52] In addition, high rates of baby bottle tooth decay were noted among the Inuit children.[52] A survey of dental needs of Aboriginal adults in the Keewatin region revealed that 60 percent of adults required at least one restorative procedure, 68 percent needed prophylaxis, and 45 percent needed periodontal treatment.[53] Over 45 percent of the respondents to the FNIHS needed dental work at the time of the survey.[16] American studies have shown similar increased rates of dental caries and higher DMFT indices among Aboriginal peoples in the United States.[54,55]

Historically, at least some groups of Aboriginal peoples in Canada had very low rates of dental problems. For example, surveys of Inuit dental health in the early 1900s showed "minimal caries, and little tooth loss even in old age."[53] It was not until the introduction of an non-traditional diet, including refined sugars, that dental caries became endemic in

Northern Inuit communities. Fluoridated communities in Nunavut were shown to have 35 to 38 percent less tooth decay for children under the age of 12 years compared to non-fluoridated communities.[13]

ENVIRONMENTAL EXPOSURES

Aboriginal peoples who live in contaminated areas or consume wild meats and fish are at increased risk of exposure to environmental contaminants. High levels of mercury have been found in some Aboriginal individuals living in northern Ontario and Quebec. The source was postulated to be flooding for hydroelectric projects or contamination from paper mills. The mercury accumulated in the fish, which were in turn consumed by members of these communities.[48] Mean cord-blood levels of mercury have been found to be 18 times higher in Nunavik than in southern Quebec.[14] Polychlorinated biphenyls (PCB) are another common environmental contaminant: a study of Inuit women in northern Quebec showed that their breast milk had a total PCB concentration seven times greater than the breast milk of women of European descent living in southern Quebec.[14] Another study has shown high levels of PCB in traditional game foods in Broughton Island, NWT.[6,48]

HEALTH ISSUES OF SPECIFIC CONCERN TO ABORIGINAL WOMEN

a) Cervical cancer—The incidence and death rate from cervical cancer among Aboriginal women is disproportionately high when compared with the Canadian population.[6] First Nations women in British Columbia have six times the mortality rate from cervical cancer than non-First Nations women, and are much less likely to be screened for cervical cancer:[56] Similar increased risks of cervical cancer among Aboriginal women have been found in Saskatchewan and the United States.[57–59] Cervical cancer is three times more common among Inuit women in Nunavik than the general population.[14] A small study in an Inuit community revealed low participation rates in cervical screening.[13,60]

b) Gestational diabetes—Studies of the prevalence of gestational diabetes among Aboriginal women in northern Ontario and Quebec have shown regional prevalence rates of 8.4 to 12.8 percent.[61–63] These studies excluded women with known pre-existing diabetes. One study showed a prevalence rate of diabetes in pregnancy of 46.9 percent among women over the age of 35 years.[61] Thirty percent of female diabetics participating in the FNIHS reported that their diabetes had been first diagnosed during pregnancy, leading its authors to recommend screening of all pregnant Aboriginal women with oral glucose testing.[16] Follow-up is also required, as screening during pregnancy gives no information as to whether or not a women had pre-existing diabetes prior to the pregnancy. Gestational diabetes was associated with advanced maternal age, fetal macrosomia, fetal hypoglycemia and hyperbilrubinemia, and assisted delivery.[62]

c) Violence—Pauktuutit, the national Inuit Women's Association, has identified violence, including physical and mental abuses as well as child sexual abuse, as a major women's health issue.[33]

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HEALTH ISSUES OF SPECIFIC CONCERN TO THE INUIT

Lung cancer is the most common type of cancer among Inuit men and women in Nunavut and Nunavik.[13,14] The mortality rate from lung cancer in Nunavik was 3.4 times the mortality rate from the same disease in Quebec between 1987 and 1994: at least 90 percent of cases were linked to smoking. This appears to be a relatively new problem. Bowel cancers were also common, ranking as the second most common cancer among men and the third most common cancer among women (after cervical cancer) in Nunavik.[14] Bowel cancers accounted for 30 percent of total cancer mortality in Nunavut between 1991 and 1996.[13] Inuit people are also noted to be at extremely high risk of nasopharyngeal and salivary gland cancers, which are relatively rare in other populations.[6]

HEALTH ISSUES OF SPECIFIC CONCERN BY LIFE CYCLE/AGE GROUP

Specific health issues of concern for Aboriginal peoples (as identified in the literature review) in relation to the four stages of the life cycle are outlined in tables 3, 4, 5, and 6, and illustrated in Figure 2. Further detailing of specific health issues for Aboriginal peoples is beyond the scope of this paper and available elsewhere.[38,64]

GRANDPARENTS AND ELDERS

Although the Aboriginal population of Canada is heavily weighted towards younger age groups, as life expectancy has increased, so has the population of Aboriginal elders. The number of Aboriginal peoples over the age of 65 is expected to triple between 1991 and 2016.[66]

Aboriginal elders face a heavy burden of health problems. Earlier discussion outlined the increased prevalence of diabetes, heart problems, cancer, hypertension, and arthritis among participants in the First Nations and Inuit Health Survey compared with the general Canadian population: all five of these chronic diseases have the highest prevalence rates in the over 65 year age group.[16] Of those over the age of 75 years, 48.9 percent are limited in their everyday activities due to their health.[18] Rates of hearing and vision impairment are also high among older Aboriginals.[18,54] Self assessments of health status not surprisingly decline with age: only 11 percent of female and 22 percent of male participants in the First Nations and Inuit Health Survey over the age of 75 years rated their health as good or excellent.[16]

A significant proportion of older Aboriginal peoples were forced to attend residential schools as children. Residential school abuses, and the impact of these abuses on the individual as well as on multiple generations of family and community, were discussed in the first part of this document under recommendation A4.[**] It is difficult to quantify the specific health effects of residential school on long-term health outcomes since the impact was on entire communities, and there are major cofounders such as employment, education level, and income. The FNIHS did find that 39 percent of respondents identified themselves as residential school survivors: likely an underestimation, as participants were advised to skip this question if it was viewed as a sensitive issue that they did not want to discuss.

[**] J Soc Obstet Gynaecol Can 2000;22(12):1074–6.

Sixty-five percent of those who attended residential school reported fair or poor health.[16] The pervasive impact of the residential school experience on individuals, families, and communities needs to be taken into consideration when examining health status.

Cueller summarizes some of the pertinent issues faced by Aboriginal elders when accessing health services:

> Health and human service systems have failed to address the needs of older Indians because they do not integrate family generations; are not based on adequate information of older Indians; and do not include assessment of family lifestyle, institutional arrangements, cultural factors, and native languages in their service plans.[75]

Elder abuse is becoming an issue of increasing concern in First Nations and Inuit communities.

SUMMARY

The first segment of this document[***] discussed the concept of epidemiologic transition as applied to Aboriginal peoples in Canada. Of the three progressive stages of health and illness seen internationally among indigenous peoples who experience European colonization, indigenous peoples in Canada appear to be between the second and third stages.[76] Along with declining rates of infectious diseases and rapid population growth, there is a rise in chronic degenerative diseases: these patterns vary depending on the particular community. In his review of American Navajo health and health services, Haraldson points out that while Western public health interventions such as immunizations, sanitary engineering, and organized clinical care can have a marked impact on health indicators in the second stage of transition, the more behaviourally influenced morbidity and mortality patterns associated with chronic degenerative diseases present a much larger health challenge: "Further improvements in these patterns will require significant changes in lifestyle and behaviour, and will extensively depend upon internal tribal interest and activities."[79]

There is a critical need for accurate, regionally specific data about the precise nature of health problems for all Aboriginal peoples, including "non-registered" First Nations and Inuit people, the Metis, and Aboriginal people living in urban areas. Committed health care providers can share health information with Aboriginal individuals and communities to help create a more accurate, culturally appropriate understanding of community health status. Individuals and communities need to have a clear picture of the health problems they are facing before they can make change.

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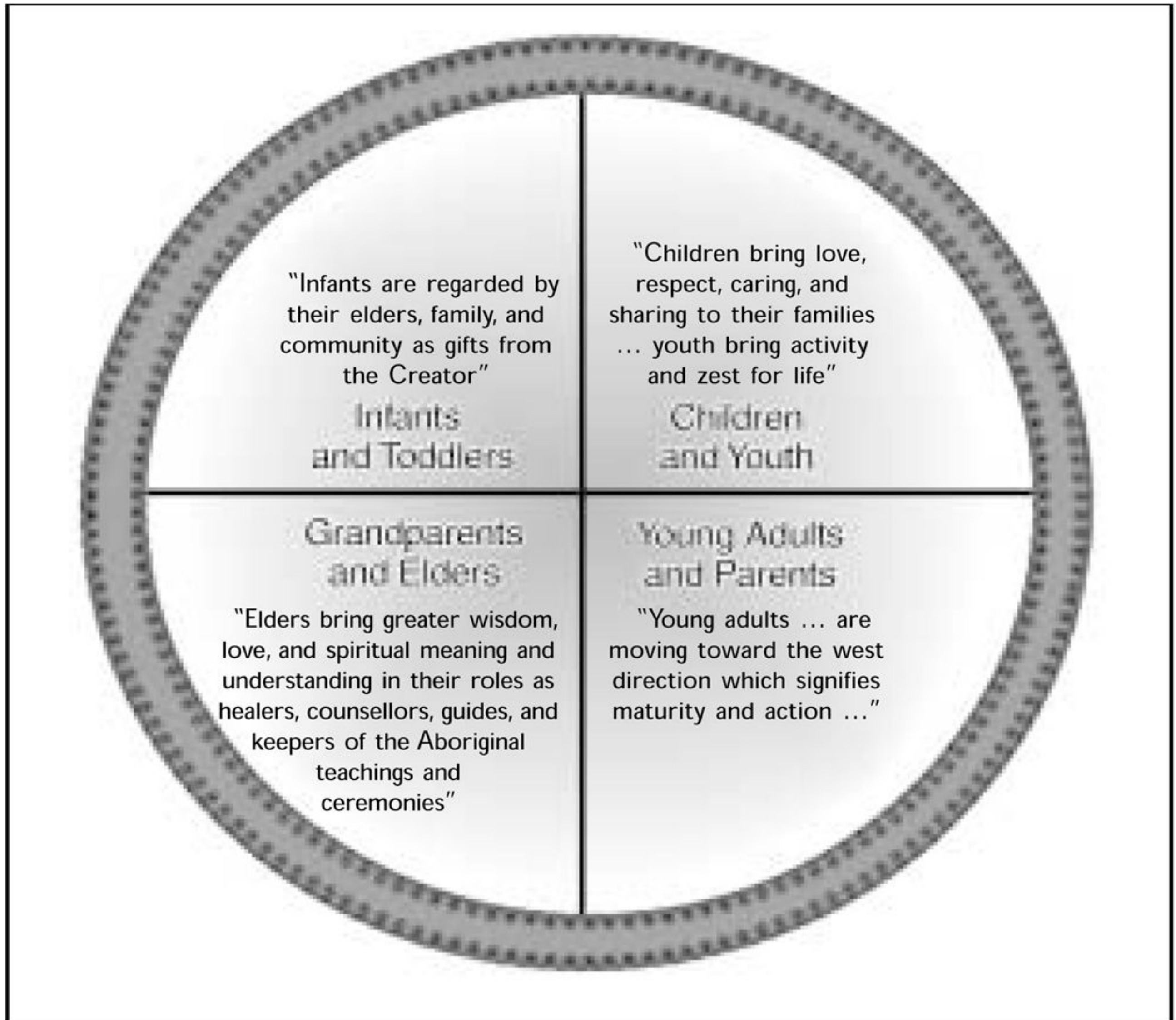

FIGURE 1.
MEDICINE WHEEL APPLIED TO THE HUMAN LIFE CYCLE

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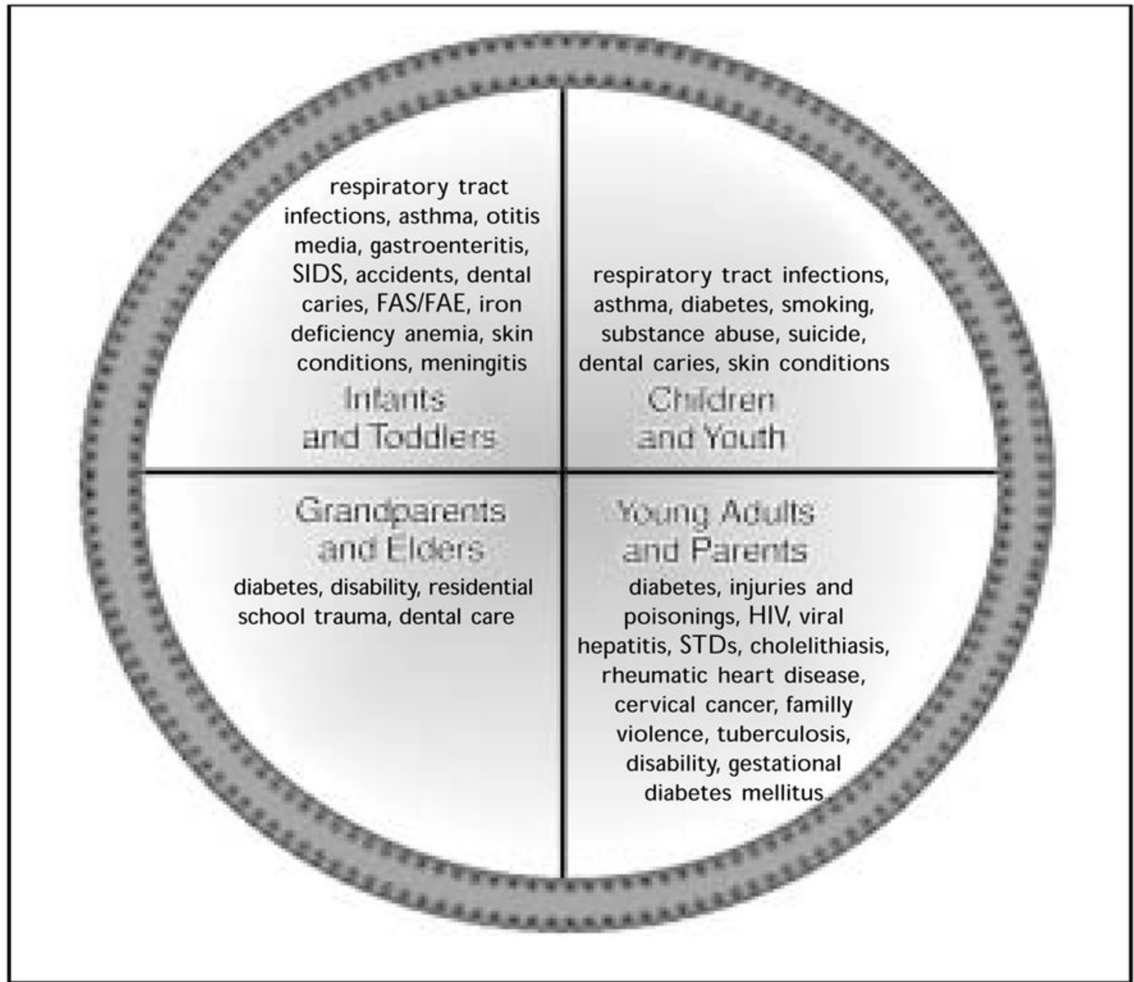

FIGURE 2.

HEALTH PROBLEMS OF SIGNIFICANCE TO ABORIGINAL PEOPLES

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TABLE I

1992 DEATH RATES PER 1,000 TOTAL REGISTERED INDIAN/CANADIAN POPULATION[20]

Sex	Registered Indian	Canada
Female	8.3	5.2
Male	11.0	6.5
Male + Female	9.7	5.8

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TABLE 2

NO. (AND %) OF PEOPLE REPORTING THAT THEY FEEL SOCIAL ISSUES ARE A PROBLEM IN THE COMMUNITY WHERE THEY ARE LIVING[39]

Social Issue	North American Indian people on Indian reserves and settlements n = 102,075	North American Indian people off reserves n = 186,295	Metis people n = 84,155	Inuit people n = 20,805	Total† n = 388,900
Suicide	35,195 (34.5)	38,005 (20.4)	18,200 (21.6)	8,575 (41.2)	98,690 (25.4)
Unemployment	79,900 (78.3)	112,195 (60.2)	56,330 (66.9)	15,505 (74.5)	261,100 (67.1)
Family Violence	44,975 (44.1)	67,820 (36.4)	32,805 (39.0)	9,040 (43.5)	152,435 (39.2)
Sexual Abuse	29,555 (29.0)	40,605 (21.8)	19,350 (23.0)	7,305 (35.1)	95,400 (24.5)
Drug Abuse	60,010 (58.8)	80,390 (43.2)	38,060 (45.2)	10,195 (49.0)	186,425 (47.9)
Alcohol Abuse	74,715 (73.2)	104,280 (56.0)	49,520 (58.8)	11,980 (57.6)	237,680 (61.1)
Rape	16,735 (16.4)	24,725 (13.3)	12,305 (14.6)	5,190 (24.9)	58,120 (14.9)

Source: Statistics Canada, *The Daily*, catalogue no 11 001E, June 29, 1993 : S.© Minister of Industry, 1993.

† Totals are less than the sum of the preceding groups because many native people are included in more than one group

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TABLE 3
INFANTS AND TODDLERS: SPECIFIC HEALTH PROBLEMS OF SIGNIFICANCE

"Infants are regarded by their elders, family, and community as gifts from the Creator." [65]

Respiratory tract infections	• Bronchitis reported by family in 9% of newborns to age 5 (FNIHS) versus 3% NLSCY all ages[16] • In Nunavik, one baby was hospitalized for bronchitis and pneumonia during the first year of life for every three babies born (32% incidence)[14] • Pneumonia was the fourth leading cause of death age 28 days to one yr among Aboriginal peoples in the United States[67]
Asthma	• 5% (FNIHS age 0 to 5) vs. 11% NLSCY all ages[16]
Otitis media	• 58–60% of "Alaska native" and First Nations children living in the southwestern United States respectively had at least one episode of acute otitis media in the first year of life[68] • Also increased rates of complications such as chronic perforation and hearing loss: 15–60 times the complication rate in the non-Native population[68] • "A significant trend towards higher rates of ear problems in the youngest age group was observed"[16] • Most infants in Nunavik suffer at least one episode of otitis media by age six months[14]
Gastroenteritis and colitis	• third leading cause of hospitalizations among Indian and Alaska Native infants, American data, 1994[69]
SIDS	• three to four times Canadian rate[6,48,69]
Accidental injury	• four times greater rate of death from injury[6,16]
High birth weight	• 17% of Aboriginal infants > 4000 grams vs. 12% of Canadian infants[16]
Dental caries	• incidence of baby bottle tooth decay averages > 50 percent[52,55]
Fetal alcohol syndrome/fetal alcohol effect	• incidence rate 2.2 to 17.9 per thousand live births in the United States[69] • inconclusively increased prevalence in Canada[6]
Developmental dysplasia of the hip	• 35–600 per 1000 in Island Lake, Manitoba vs. 2–19 per 1000 in North America[70]
Bacterial meningitis	• one in thirty infants developed bacterial meningitis during the first year of life along the Hudson coast of Nunavik between 1980–1990 with prevalence rate of 543/100,000 for children under the age of 5 years[14] • > 400 cases per 100,000 in southwestern Alaska 1970s[71] with prevalence subsequently decreasin- with HIB immunization[71]
Iron deficiency anemia	• 31.9% and 43% respectively of Aboriginal infants in two regional studies had hemoglobin levels of < 110 g/L[72,73] • 60% of babies aged nine to fourteen months in Nunavik had hemoglobin levels < 110 g/L[14]
Skin conditions[77]	
Vitamin D deficient rickets	40 cases of rickets among First Nations and Inuit infants and children age one month to 49 months documented in Manitoba between 1972 and 1984[74]

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TABLE 4
CHILDREN AND YOUTH: SPECIFIC HEALTH PROBLEMS OF SIGNIFICANCE

"Children bring love, respect, caring, and sharing to their families … youth bring activity and zest for life." [65]

Condition	Details
Respiratory tract infections[16,77]	
Asthma[16]	
Complicated otitis media	• By age five years, a quarter of children in Nunavut have significant hearing loss in at least one ear
Skin conditions[77]	
Accidental injuries	• Rate of death from injury among Aboriginal teenagers age 15 to 19 years is three times greater than the Canadian average (176 vs. 48 per 100,000)[6]
Diabetes	• Increasing prevalence in the Sioux Lookout region among First Nations children age 7–15 years— up to 2.5 per 1000 in 1994[78]
Smoking	• In a survey of Cree children residing in northern Quebec, 51.4% of children ages 11 through 18 were classified as current smokers[16] • 72% of Aboriginal individuals age 20–24 were smokers[16]
Substance abuse	• One study of a central midwest city in Canada found a greater proportion of Native youth reported use of LSD, marijuana, solvents, and other hallucinogens compared to non-Native youth. Rates of alcohol use were similar[6] • A survey of youth on 25 Manitoba reserves revealed a 20% prevalence of solvent abuse. The median age of use was 12 years, however, sniffing was reported in children as young as 4 years[6]
Suicide	• Suicide rate in the 15 to 24-year-old age group is 6 times the national average[23]
Dental caries	• 89% of 12-year-old and 95% of 6-year-old Aboriginal children suffered from dental caries in a 1996 national survey[51]

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TABLE 5

YOUNG ADULTS AND PARENTS: SPECIFIC HEALTH PROBLEMS OF SIGNIFICANCE

"Young adults … are moving toward the west direction which signifies maturity and action …" [65]

Diabetes	• by age 30–39 years, 5% of First Nations people have diabetes, compared to 1% of the general Canadian population in the same age group[26]
Injuries and poisonings	• leading cause of death for "registered Indians" every year from 1984 to 1994[9] • motor vehicle accidents commonest type of injury, followed by suicide[25] • most motor vehicle accidents occurring over the age of 15 years[25] • suicide rates in 25 to 34-year-old group 4 times the national average[25] • persons aged 24 to 64 years comprise the majority of poisoning/drug overdose deaths[25]
HIV/AIDS	• >10% of reported Canadian AIDS cases in 1998 involved persons of Aboriginal heritage[33] • recent data from British Columbia, Alberta, and Saskatchewan show that Aboriginal people account for 15%, 26%, and 30% respectively of newly diagnosed HIV infections[33] • 30% of Aboriginals having AIDS are under the age of 30[33]
Hepatitis A, B and C	• Significantly higher seroprevalence rates for all three infections[31] • HAV-seropositivity is twice that of general population[31] • HbsAg-seropositivity rate is 6–10 times the general population[31] • Anti-HCV 10–20 times the general population[31]
Sexually transmitted diseases	• One study in Manitoba reported that Aboriginal women were at higher risk of chlamydia and gonorrhea.[80] • Rates of gonorrhea and chlamydia in the Yukon and NWT (regions predominately populated by Aboriginal people) are 2–11 times the national average[25] • American data shows regional variance. Higher than average rates of chlamydia, gonorrhea, and syphilis have been reported[32]
Cholelithiasis	• Higher than average rates of gallbladder disease have been reported among First Nations people in northern Ontario, northern Quebec, Nova Scotia, and several First Nations in United States[81]
Rheumatic heart disease	• Prevalence rate of acute rheumatic fever for First Nations peoples in the United States is double the general American rate[82]
Dyslipidemias	• American data shows generally lower cholesterol concentrations among American Indians compared to the general American population but the data varies regionally[83] • Aboriginal diabetics had higher prevelances of dyslipidemias[83]
Gestational diabetes mellitus	• Studies in northern Ontario and northern Quebec showed prevalence rates of 8.4%,[61] 8.5%[63] and 12.8%.[62] These studies excluded women with pre-existing diabetes • Rates increased with increasing maternal age, up to a 46.9% prevalence rate in women over the age of 35 years[61] • Gestational diabetes was associated with fetal macrosomia, fetal hypoglycemia, and hyperbilirubinemia, and increased rates of assisted delivery[62]
Cervical cancer	• First Nations women in British Columbia. have six times the mortality rate from cervical cancer compared to non-First Nations women[56]

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	• Increased risk of cervical cancer for Aboriginal women has been demonstrated in Saskatchewan and in the United States[57–59] • Cervical cancer is three times more prevalent among Inuit women of Nunavik than in the general population[14]
Rheumatoid arthritis	• Prevalence rate of up to 4% in specific First Nations communities in northwestern Ontario[84]
Family violence	• 39% of Aboriginal people in a national survey identified family violence as a problem social issue in their community[39] • 24.5% likewise identified sexual abuse as a problem social issue in their community[39]
Tuberculosis	• 75% of the cases of tuberculosis reported in Canada in 1991 involved Aboriginal people[85]
Disability	• In the 15–34 year age group, the rate of disability among Aboriginal peoples is three times the national rate[86] • 8% of Inuit women and 11% of Inuit men report difficulties hearing a normal conversation[14]

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TABLE 6

GRANDPARENTS AND ELDERS: SPECIFIC HEALTH PROBLEMS OF SIGNIFICANCE

"Elders bring greater wisdom, love, and spiritual meaning and understanding in their roles as healers, counsellors, guides, and keepers of the Aboriginal teachings and ceremonies." [65]

Diabetes	• Approximately 1 in 3 people over age 50 reported diabetes[16]
Disability	• 48.9% of Aboriginal people aged 75 or over were limited in their everyday activities due to their health or physical condition[18] • 49.6% of the same group found it difficult to follow a conversation, usually because of a hearing problem[18] • 50% found it difficult to leave their homes or to travel more than a short distance[18]
Residential school trauma	• 39% of respondents to the First Nations and Inuit Regional Health Survey who were over the age of 65 years reported that they had attended residential school[16] • 65% of those who attended residential school reported fair or poor health[16]
Dental care	• 3 out of 4 elders above age 65 years had not received dental care over the past year • Approximately 30% of the same group reported they needed dental treatment at the time of the survey[16]