



# Northern Saskatchewan Health Indicators Report 2004

POPULATION HEALTH UNIT

Athabasca Health Authority

Keewatin Yatthé Regional Health Authority

Mamawetan Churchill River Regional Health Authority



# Northern Saskatchewan Health Indicators Report, 2004

Athabasca Health Authority  
Keewatin Yatthé Health Region  
Mamawetan Churchill River Health Region

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# INTRODUCTION

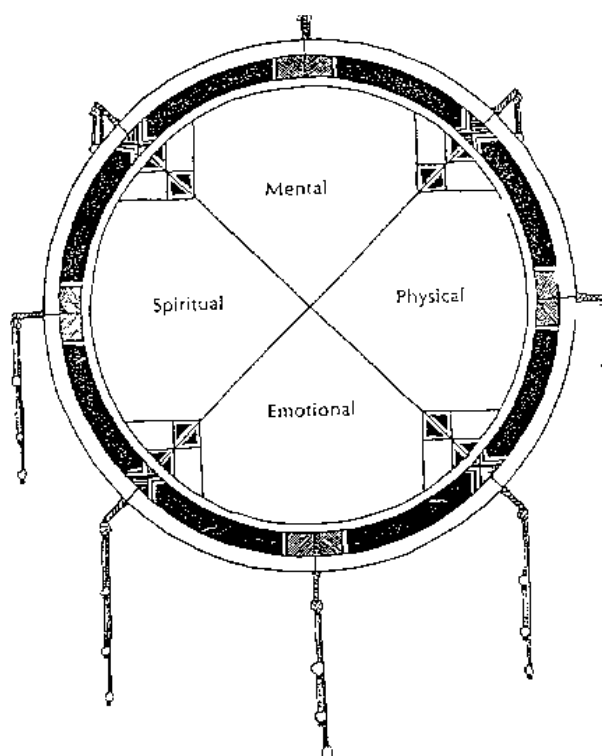
This report is the second of the major health indicator reviews for northern Saskatchewan since the creation of the northern Health Districts. Since the first Health Status Report was done for 1998, the two northern Health Districts have become Regional Health Authorities: the Keewatin Yatthé and the Mamawetan Churchill River Health Regions. There has also been the formal development of the Athabasca Health Authority – a unique arrangement of First Nations and municipal communities through the Federal and Provincial governments.

The purpose of this report is to provide a comprehensive overview of the population of northern Saskatchewan, the determinants of health (the things that influence our health), and some indicators about the health and well-being of the people of northern Saskatchewan. Each year each Regional Health Authority in Saskatchewan is to produce a health status report for their Annual Report. This present Northern Saskatchewan Health Indicators 2004 report is a more in-depth examination of the health status indicators in northern Saskatchewan, similar to the three reports done in 1998 for all three northern health authority areas and can be used to monitor trends and influences over time. Following the distribution of our 1998 report we received a lot of feedback and requests for copies from many groups and organizations. Different groups in addition to the health authorities found that the information assisted them in their assessment, planning, priority setting, proposal writing, program development, advocacy or evaluation for their health-enhancing activities. Northern university and high school students also used the report for various projects and reports.

Our health is influenced by the interaction of many factors including our socio-economic conditions, employment, education, community and family supports, healthy childhood development, and personal health practices and coping skills. There are many groups, agencies, organizations, levels of government as well as individuals that have an influence on health in addition to the individual. Improvements in health can come from many sectors including community leadership, education, recreation, economic development, community development, and groups or individuals that work to preserve or enhance our environment, preserve our culture, traditional values, language, and identity to name a few. Many of the health indicators in this report are influenced more by these groups and their health enhancing activities than they are by the health sector acting alone. You will notice that throughout the report there are a lot of health indicators for situations where treatment or supports can assist someone with an illness. For some conditions, treatment options can be limited. In order to truly make a difference working together across communities and sectors will be required in order to prevent these illnesses and to promote health.

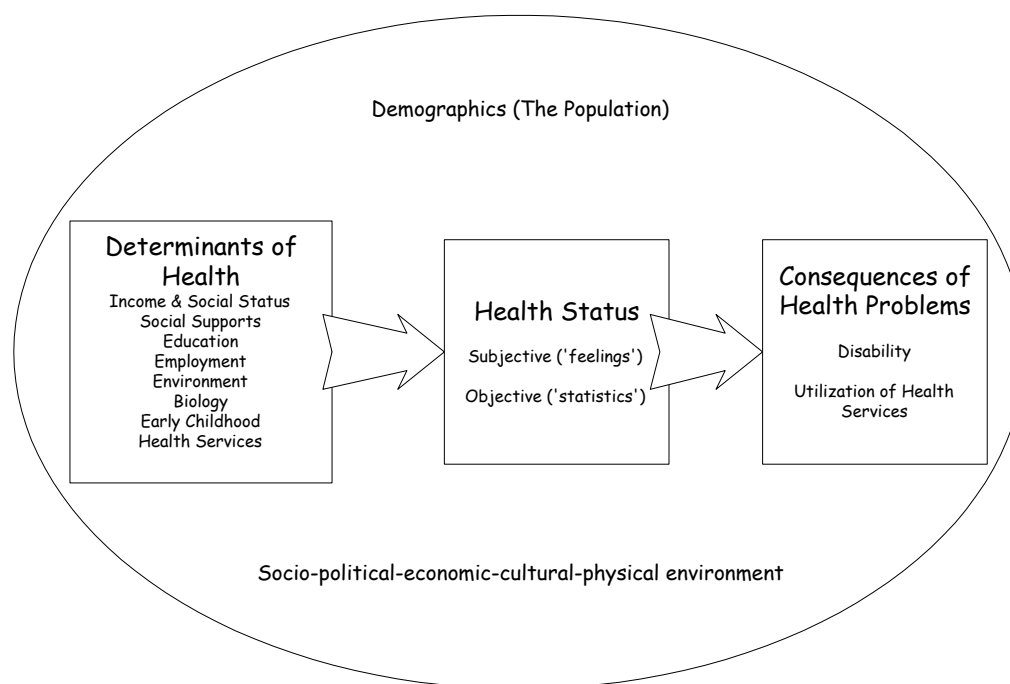
The framework for this health indicator report was based on two premises: a broad definition of health which includes physical, mental, emotional, and spiritual health, and a population health approach which emphasizes the root issues that impact health (referred to as the 'determinants of health').

Source: The Sacred Tree<sup>1</sup>



It is difficult to describe a complete picture of the health and living circumstances of northern Saskatchewan residents and there are limitations to the readily available health indicators. Looking at various indicators of health, or more often of illness, is one way that we can assess areas for special attention and action. However, sometimes this does not adequately describe the true picture. Indicators tend to be less available for many of the positive aspects of the population and environment. We know there are many positive factors of life in northern Saskatchewan – the beauty of our environment, the wisdom and resilience of the elders, the potential of our youth, and the willingness to work together. Work is being done across Canada to gradually increase the amount of information that is available on the population well-being and health determinants; where available, that information is provided in this report.

#### Approach to Health Status Report:



The approach in this ongoing health indicator report is to assess the population of northern Saskatchewan encompassing the area of the three northern health authorities; outline and describe some of the health determinants including the income and social status, employment, education, environmental conditions (human made and natural), social supports, health services and early childhood development; describe various community health indicators of health status; and describe some of the health consequences of health problems such as utilization of services.

For much of the report, the information for northern Saskatchewan includes all residents in northern Saskatchewan whereas some information is based on those living off-reserve. We have indicated in the title of the graph or the text when the information is limited to those living off-reserve.

There are several things we have added to this report based on the feedback from our previous report and based on new information sources that are now available. We have:

- updated some information on various aspects of health from the 2001 Census from Statistics Canada;
- accessed a national cross-sectional and longitudinal health survey on a variety of health and living circumstances;
- expanded the references throughout the document to assist the reader in getting further information on some of the areas (this was of particular interest to the many students that used our previous report); and
- added comparisons with our health status to other similar northern regions in Canada, in addition to the Saskatchewan population.

We are pleased to provide this report and would welcome your feedback. An electronic version of this report will be made available through the KYRHA and MCRRHA websites shortly ([www.link.ca/kyhd/](http://www.link.ca/kyhd/) and [www.mcrha.sk.ca](http://www.mcrha.sk.ca)).

# Northern Saskatchewan Health Indicators Report 2004 - Summary:

## Our Geography

- Northern Saskatchewan (the area of the Athabasca, Keewatin Yatthé, and Mamawetan Churchill River Health Authorities) covers 46% of the province
- The three health areas are the three largest health areas/regions in the province
- Our land is dominated by lakes, boreal forest, and Canadian Shield

## Our People - Our Communities

- Almost 35,000 people live in this area (about 3.4% of the provincial population)
- Our population is young and growing
  - About 37% of the population is under the age of 15 years compared to 21% for the province
  - The north grew by 3% between 1996 and 2002 compared to the provincial decrease of 1.1%.
- We have a rich mix of cultures and people in northern Saskatchewan: Cree, Dene, Métis, non-Aboriginal people - 83.5% of northern Saskatchewan people identify themselves as Aboriginal
- Language – more than 50% of our population speak an Aboriginal language at home: Cree, Dene, Michif

## Our Health Determinants - The Things That Influence Our Health

- Economic:
  - the percent of children living in low-income families off-reserve in northern Saskatchewan is almost double that of the province
  - the average income for those over 15 years of age for northern Saskatchewan Aboriginal peoples is about half that of the provincial average income
  - the costs of healthy food in the far north of Saskatchewan are significantly higher than in southern areas
- Social:
  - The percentage of northerners with trade certificates and university degrees are increasing. The percent of northern Saskatchewan residents with less than Grade 9 education is about 2½ times that of the province.
  - The long-term unemployment rate in northern Saskatchewan is more than 4 times that of the province
- Housing
  - Improvements in housing are occurring in northern Saskatchewan but there is still inadequate housing: the rate of overcrowding is still almost twice that of the province (1.8 times)
- Health Practices
  - For northerners living off-reserve, the smoking rate is about 40% for males and 42½% for females, compared to about 28 and 27% for Saskatchewan males and females.
  - A significantly higher percentage of northerners over 12 years of age report being physically active compared to the provincial average (57.4% versus 44.1%)
  - There are high rates of alcohol consumption and the consequences of alcohol abuse
  - A large percentage of northerners are involved with food gathering from the land

## Illness Status

- Rates of deaths in infants under one year of age are decreasing in northern Saskatchewan, but the rates are still almost twice that of the provincial rate
- There has been almost a 35% reduction in births in girls under 15 years of age from 1993-97 to 1998-99
- Our life expectancy is increasing but it is about 5 years less than the provincial average.
- Injuries (unintentional and suicides) are the major causes of premature death in northern Saskatchewan
- Infectious diseases: There have been reductions in many infectious diseases as a major cause of illness (e.g. hepatitis A, diarrheal diseases, meningitis) though some infections remain a concern (e.g. tuberculosis), and other infectious diseases are emerging or increasing (sexually transmitted infections, methicillin-resistant staphylococcus aureus skin infections or MRSA, hepatitis C, HIV)
- The chronic diseases, type 2 diabetes, heart disease and stroke, are increasing in northern Saskatchewan. The prevalence of type 2 diabetes is the highest in the province.
- The rate of premature deaths from cancer is significantly less in northern Saskatchewan than the provincial average but:
- Lung cancer rates in northern Saskatchewan are the highest in the province and the most common cause of cancer deaths in the north and in Saskatchewan. The lung cancer rate in women is increasing in the north and the province, associated with increased smoking rates.



## Areas of Action to Improve Health Indicators

The recently released report on “Improving the Health of Canadians”<sup>2</sup> by the Canadian Population Health Initiative (CPHI) builds on the work of a previous Report on the Health of Canadians entitled “Toward a Healthy Future” from the Federal, Provincial, and Territorial Advisory Committee on Population Health.<sup>3</sup> These reports stress three broad priority areas for action including:

- 1) Renewing and reorienting the health sector to:
  - address challenges in health promotion, disease and injury prevention, as well as treatment services,
  - increase accountability of health services through improved reporting on the quality of health services and increasing access to needed services,
  - increase our understanding of how the basic determinants of health influence collective and personal well-being; and
  - influence sectors outside of health which can significantly affect health status;
- 2) Investing in the health and well-being of key population groups (with the report emphasizing decreased opportunity for optimal well-being among three groups: children, youth and Aboriginal people); and
- 3) Improving health by reducing inequities in income distribution and in literacy and education.

Some of the recent major initiatives in northern Saskatchewan reflect some of these priority areas including;

- Working across sectors in health promotion for chronic disease prevention including diabetes, heart disease and some cancers through the Northern Diabetes Prevention Coalition;
- Intersectoral action in the area of infant health such as Kids First North;
- The expansion of health promotion and intersectoral action to include areas of:
  - Mental well-being;
  - Accessible nutritious food;
  - Decreased substance use/abuse (including alcohol, tobacco, and drugs)
  - Active Communities.<sup>4</sup>
- Working together with the health authorities across northern Saskatchewan through the Northern Health Strategy and the Primary Health Care Transition project involving health authorities of the Athabasca Health Authority, Keewatin Yatthé, Mamawetan Churchill River, Prince Albert Grand Council, Meadow Lake Tribal Council, Lac La Ronge Indian Band, Peter Ballantyne Cree Nation along with Saskatchewan Health and First Nations and Inuit Health Branch of Health Canada.

Priorities emphasized by the information in this Northern Saskatchewan Health Indicators Report 2004 continue to emphasize the importance of action in the areas of:

- Infant health
- Youth
- Mental well-being
- Substance use / abuse (including alcohol, tobacco, and drugs)
- Injury prevention
- Chronic disease prevention (active living, healthy eating, decreased tobacco use)
- Partnerships for social improvements (health determinants)
- Advocacy for improved socio-economic equity
- Community-focused comprehensive programs and services including areas of primary care, mental health and addictions, chronic disease (diabetes, heart disease, stroke, cancer), and prenatal and infant care.
- Coordination of health care services among agencies in the north as well as others involved within the province.



## Background Information on Data Sources and Comparisons:

We have tried to make specific reference where applicable throughout the document on the various sources of the information for this report. There are some resources that were extensively used and are the result of national, provincial or northern actions. Some of these resources include (in no particular order):

### 1. Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) consists of two surveys conducted by Statistics Canada to provide health information at health region and provincial levels, on a two-year, repeating cycle. The first year of the cycle provides information on health determinants, health status and health system utilization for 133 health regions across Canada and the territories. The second year is a provincial-level survey focusing on a particular topic. The survey is done mainly by telephone interviews and excludes households on First Nations' reserves, Canadian Forces Bases, and some remote areas.

The target population is all household members aged 12 years and over for the health region information. The 2002 provincial survey on Mental Health and Well-being targeted individuals aged 15 years and older.

### 2. 2001 Census

This report contains information from the 2001 Census on the demographics and non-medical determinants of health for Saskatchewan, Census Division 18, and the northern health regions. Census Division 18 includes the three northern health regions plus the Cumberland House Cree Nation and the Cumberland House northern village. Most of the information is based on a 20% sample of the population; however 100% of the households on First Nations' reserves were surveyed wherever possible.

### 3. 2001 Census Aboriginal Population Profile.

These profiles contain socioeconomic and demographic information from the 2001 Census specifically on the Aboriginal identity population for various communities in Canada where the Aboriginal identity population is above 250. Communities include; cities, towns, villages, Indian reserves and Indian settlements, counties or their equivalents and metropolitan areas. The Aboriginal identity population is composed of persons who reported identifying with at least one Aboriginal group, i.e. North American Indian, Métis or Inuit, and/or who reported being Treaty Indians or Registered Indians as defined by the Indian Act of Canada and/or who were members of an Indian Band or First Nation.

### 4. Aboriginal Peoples Survey

These profiles contain information on the adult and child Aboriginal identity population for selected communities in Canada where the Aboriginal identity population is 200 or more according to the 2001 Census. These communities include First Nations, Métis settlements, Inuit communities, urban centres and rural areas. Not all First Nations communities could be included in the sample due to operational constraints. As well, some communities chose not to participate. Eight First Nation and six Métis communities in the northern health regions were included.

### 5. Saskatchewan Health

Saskatchewan Health provided extensive data on hospital utilization which we have analyzed and interpreted for this report. They also provided some population health measures and vital statistics, such as infant mortality, birth rates, diabetes prevalence and communicable disease rates.

### 6. Additional data sources, including:

- Health Canada
- *in motion*
- Population Health Unit, in-house northern health authority data
- Saskatchewan Cancer Agency
- Saskatchewan Environment
- Saskatchewan Government Insurance
- Saskatchewan Institute on Prevention of Handicaps
- Saskatchewan Justice
- Saskatchewan Learning
- Statistics Canada
- Other reports and key informants

## Comparisons:

Sometimes it is useful to compare health indicators between countries, between provinces and between regions. When we compare health information among various populations there can be differences in rates of illness based on the age structure of that population. One would expect a difference in the rates of various ailments in a rural southern Saskatchewan community with a substantial elderly population compared to a northern community with a high proportion of young people. Age-standardization is a statistical technique used to remove the effect of differing age groups when comparing two or more populations. Thus, when you see rates that are age-standardized it means that the population age-group make-up has been considered to allow for a comparison separating out the influence of age.

Throughout this report we provide statistical information on indicators for northern Saskatchewan and in some situations for each of the three northern health areas. We have also provided information to compare with the province of Saskatchewan as a whole or with some other northern areas in Canada.

- Saskatchewan is used for comparisons for many indicators in this document. The information is readily available and the comparison can be useful. With the provincial population being made up of almost 97% from the 10 more southerly Regional Health Authorities, the provincial average approximates the indicator for southern Saskatchewan when compared to northern Saskatchewan.
- Other northern areas – in this report we have added some comparisons with some other northern Canada regions that have somewhat comparable geography, population and socio-economic conditions. Statistics Canada has created nine health region peer groups<sup>5</sup>, using twenty-four social and economic determinants of health including:
  - basic demographics (i.e., population change and demographic structure),
  - living conditions (i.e., socio-economic characteristics, housing, and income inequality),
  - working conditions (i.e., labour market conditions).

The peer group which we have used for comparisons includes:

- James Bay Cree Region, Quebec
- Burntwood/Churchill, Manitoba
- Mamawetan Churchill River/Keewatin Yatthé/Athabasca, SK
- Nunavut
- Nunavik, Quebec

We have also used the Yukon and Northwest Territories, though they are part of a different peer group.



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- <sup>1</sup> Bopp J, Bopp M, Brown L, Lane P. The Sacred Tree: reflections on Native American spirituality. Four Worlds Development Project, 1984.
  - <sup>2</sup> Canadian Population Health Initiative. Improving the health of Canadians. Canadian Institute for Health Information, 2004. Also available online at: [http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=AR\\_322\\_E](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_322_E)
  - <sup>3</sup> Federal, Provincial and Territorial Advisory Committee on Population Health. Toward a healthy future: second report on the health of Canadians. Health Canada 1999.
  - <sup>4</sup> Saskatchewan Health. Healthier places to live, work, and play. A population health promotion strategy for Saskatchewan. Regina 2004. Available from: [http://www.health.gov.sk.ca/ic\\_phb\\_hlthbook.pdf](http://www.health.gov.sk.ca/ic_phb_hlthbook.pdf)
  - <sup>5</sup> Statistics Canada. Health regions. Health indicators, 2003 November [cited 2004 May 19]. Available from: URL: <http://www.statcan.ca/english/freepub/82-221-XIE/01103/regions.htm#peer>

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**NOTES**

## COMMUNITY CHARACTERISTICS

A community's most important resource is its people. The undertakings of the Regional Health Authorities are influenced by the number of people, the rate of growth, the number of people in the various age groups, their geographic distribution and how groups of people are affiliated and work together. (Smith and Zopf) The structure and changes occurring in a population is valuable information to identify and plan for health requirements and services.<sup>1</sup>

The northern community described is made up of three areas of northern Saskatchewan covered by two Regional Health Authorities (Keewatin Yatthé and Mamawetan Churchill River) and the Athabasca Health Authority. It is roughly equivalent to the previous Northern Administrative District and the Canadian Census Division Number 18 – the major difference being the exclusion of Cumberland House which is within the Kelsey Trail Regional Health Authority.

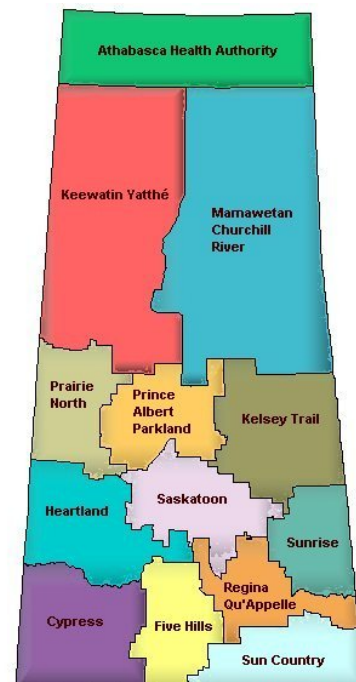
### GEOGRAPHIC PROFILE

- North covers 46% of Province of Saskatchewan (covering 268,499 of the provincial 586,581 square kilometers).
- The three northern health areas are the three largest of the 13 regions in the province.
- Land is dominated by lakes, boreal forest, Canadian Shield and sub-arctic climate conditions
- There are significant challenges because of the physical remoteness of some parts of the north including significant transportation challenges (some communities have no road access, few communities have regular bus transportation)

### PARTNERSHIPS & POLITICAL PROFILE

In the northern Saskatchewan, there has been a long history of working together. Some of the partnerships include:

1. Health – multiple jurisdictions exist within the north including:
  - Regional Health Authorities – health authority provided through the provincial Minister of Health:
    - Keewatin Yatthé Health Region
    - Mamawetan Churchill River Health Region
  - First Nations Health Authorities –transfer of authority for health services from the federal government to First Nations governments:
    - Lac La Ronge Indian Band
    - Meadow Lake Tribal Council
    - Peter Ballantyne Cree Nation
    - Prince Albert Grand Council
  - Athabasca Health Authority – a unique approach involving federal, provincial, and First Nations authority for health
  - For some specialized services, both the Regional Health Authorities and the First Nations Health Authorities have a co-management approach or partnership through:
    - Population Health Unit of the Northern Health Regions' Co-Management Partnership
    - Northern Inter-Tribal Health Authority
  - The Northern Health Strategy Working Group includes representatives of Keewatin Yatthé, Kelsey Trail, and Mamawetan Churchill River Regional Health Authorities, Athabasca Health Authority, Northern Inter-Tribal Health Authority, Saskatchewan Health and Health Canada.



## 2. Governments:

- First Nations Governments – six of the 12 First Nations associated with the Prince Albert Grand Council and five of the nine First Nations associated with the Meadow Lake Tribal Council are in this northern region.<sup>2,3</sup>
- Northern Municipalities and New North (Saskatchewan Association of Northern Municipalities)
- Métis Regions (Northern Regions I, II and III; Eastern Region I and Western Region I)<sup>4</sup>
- Provincial – Regional Health Authorities are part of the Northern Human Services Partnership which provides coordination amongst various provincial government departments and other authorities. Two provincial constituencies cover the northern area: Cumberland and Athabasca<sup>5</sup>
- Federal – the region is covered by the Churchill River Constituency

## 3. Environment

- Saskatchewan Environment: The northern health region areas have worked with three different Sask Environment Eco-Regions over the period since the last health status report:
  - Shield
  - Western Boreal
  - Eastern Boreal
 Recent changes have resulted in some reorganization of the Department.
- Environmental Quality Committees

## 4. Education

- School Divisions
  - Northern Lights School Division
  - Creighton
  - Ile a la Crosse
- Northland College: Western, Eastern and Central Regions
- First Nations Education
  - Prince Albert Grand Council
  - Meadow Lake Tribal Council

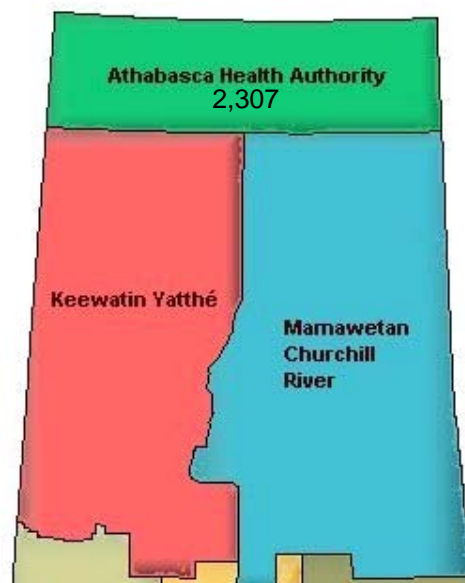
5. Cumberland House – while Cumberland House is within the Kelsey Trail Health Region, there are many affiliations with the northern regions, including Northern Lights School Division, Northern Municipalities, and Environmental Quality Committees for example.

## POPULATION PROFILE

In the three northern health areas of the Athabasca Health Authority and the Keewatin Yatthé and Mamawetan Churchill River Health Regions, there were about 34,495 people in 2003 which is about 3.4% of the total provincial population.

	Population
Mamawetan Churchill River Health Region	20,919
Keewatin Yatthé Health Region	11,269
Athabasca Health Authority area	2,307
Northern Saskatchewan	34,495
Saskatchewan	1,007,753

Source: Sask Health Covered Population 2003



## POPULATION CHARACTERISTICS

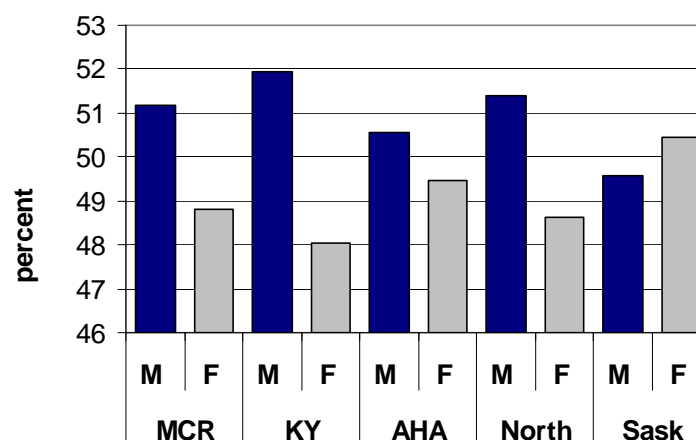
### 1. Age/Sex Distribution

The age and gender distribution of a population is useful to determine the health and social needs of the region.

#### Gender

In each of the northern Saskatchewan regions, there are a slightly higher proportion of males compared to females. In Saskatchewan as a whole, there are slightly more females than males.

**Population by Gender and Area, 2003**

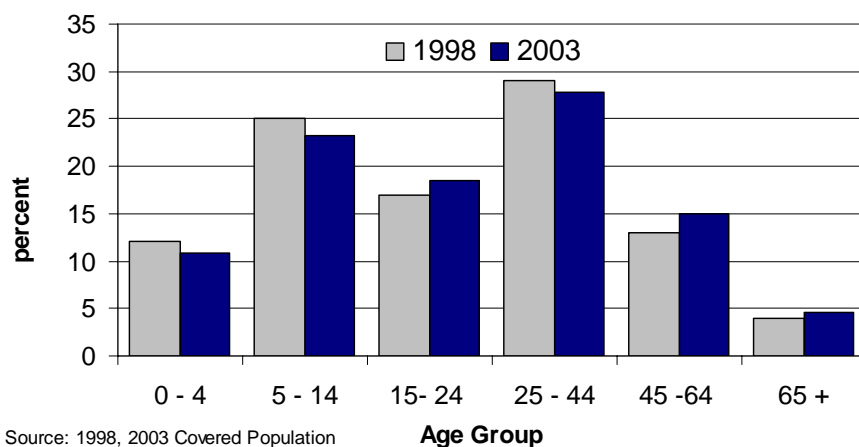


Source: 2003 Covered Population

### 2. Age Distribution

#### Northern Saskatchewan Population by Age Group

1998 and 2003



Source: 1998, 2003 Covered Population

Northern Saskatchewan has a very young population. In 1998, about 37% of the northern population was under the age of 15 and by 2003, 34% of the population was under the age of 15 years. This compares to about 20% of the overall provincial population being under the age of 15 in 2003. From 1998 to 2003, there has been a slight decrease in the under 15 population but an increase in the 15-24 and the 45 to 64 year age groups.

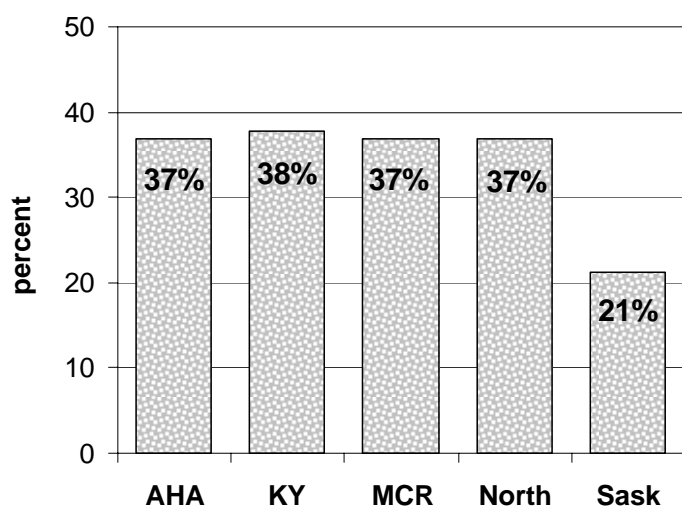
There are several sources of population information for northern Saskatchewan including the Census through Statistics Canada and the Covered Population through Saskatchewan Health. We

have provided both data sources for the overall estimate of the percentage of the northern population under the age of 15 years. For the 2001 Census, it was estimated that about 37% of the northern population was under the age of 15 years, though by the Saskatchewan Covered Population stats, by 2003 there was about 34% of the population under the age of 15 years.



## Population Less Than 15 Years of Age

Census 2001

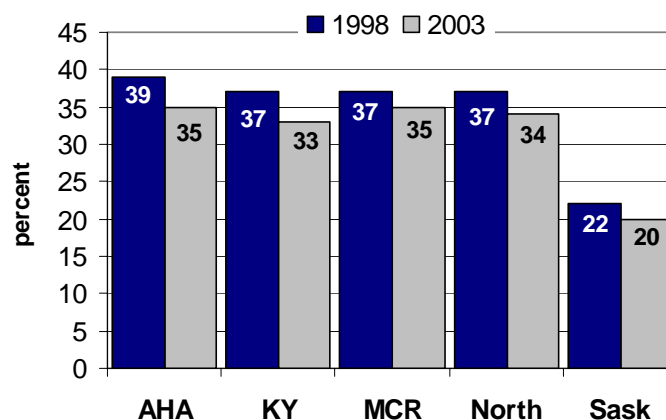


Source: 2001 Census



## Population Less Than 15 Years of Age

1998 and 2003 Covered Population



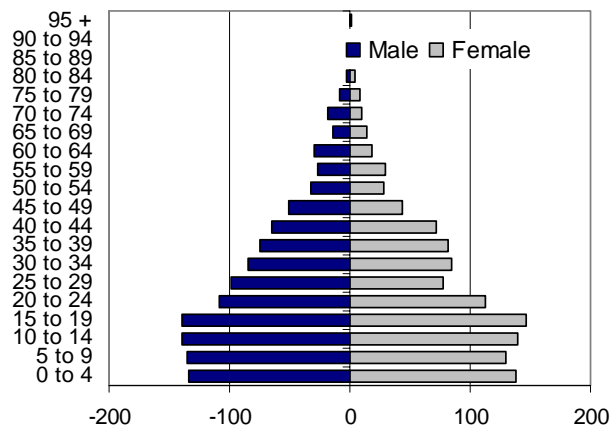
Source: Sask Health Covered Population

"We have much to learn from the Elders about our culture and about our people.  
We have much to teach the Elders about ourselves and our changing world.  
Together, we will learn in order to better understand the past, the present and the future.  
Most importantly, we will learn to better understand those things that define us as a people."

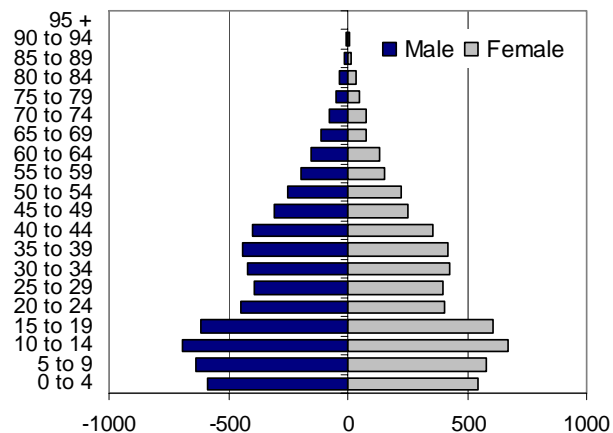
Northern Saskatchewan Youth, We Say.... Youth Workshop. Community Vitality Monitoring Partnership Process, March 2002

## Population Pyramids, By Age and Sex, 2003

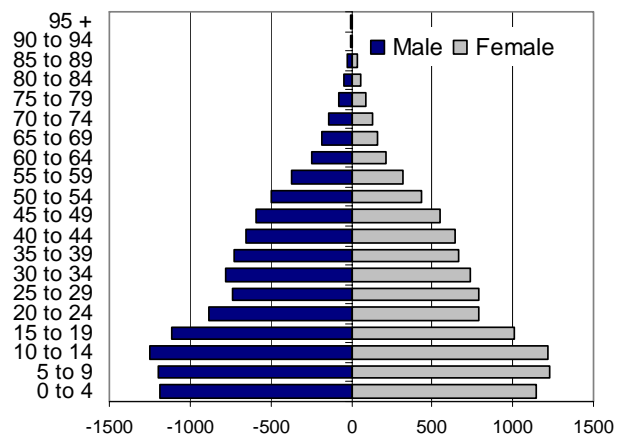
Another way of displaying populations and the proportion of each age groups making up the various populations is by using population pyramids. These population pyramids graphically show the distribution of age groups within a population for each of the health regions in comparison to the Saskatchewan population. One can see at a glance that in the northern Saskatchewan area the greatest proportion of the population is made up of the younger age groups whereas in the province as a whole, there is a larger proportion of the population in the middle age ranges over the age of 40 years.

**Athabasca**

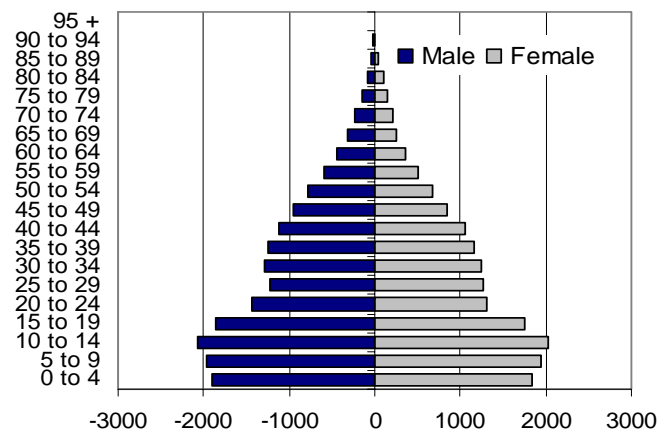
Source: 2003 Covered Population

**Keewatin Yatthé**

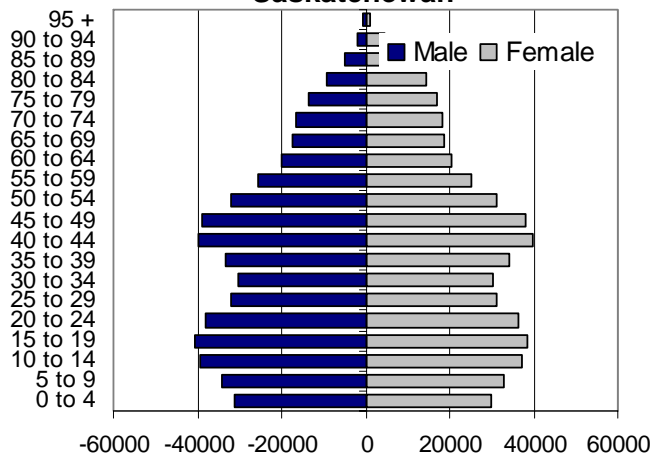
Source: 2003 Covered Population

**Mamawetan Churchill River**

Source: 2003 Covered Population

**Northern Saskatchewan**

Source: 2003 Covered Population

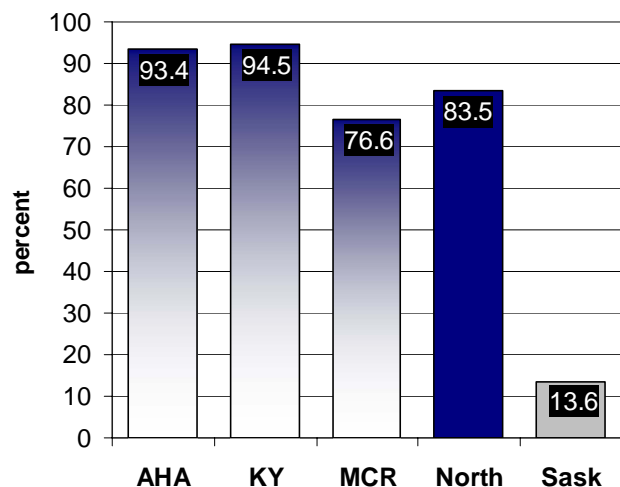
**Saskatchewan**

Source: 2003 Covered Population

### 3. Aboriginal Population

Northern Saskatchewan is a rich mix of people and cultures with a high proportion of Aboriginal people including Cree, Dene and Métis. In the Canadian Census, the Aboriginal identity population is composed of those persons who reported identifying with at least one Aboriginal group, "First Nation", "Métis" or "Inuit", and/or who reported being a Treaty Indian or a Registered Indian, as defined by the Indian Act of Canada, and/or who were members of an Indian Band or First Nation.

#### Population declaring Aboriginal Identity, Saskatchewan and northern Sask Areas, 2001



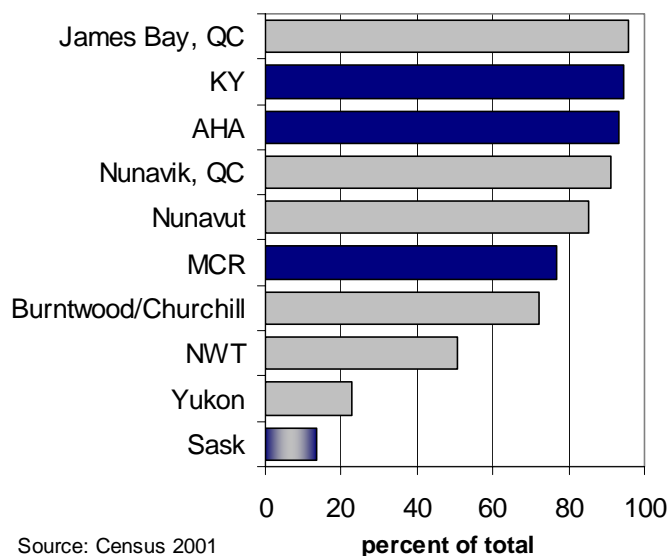
Source: 2001 Census

In comparison with other northern regions and territories in Canada (the Peer Group Regions in the Canadian Community Health Survey, NWT and Yukon), KYRHA and AHA have some of the highest proportions of Aboriginal people in their populations. Northern Saskatchewan has about the same proportion of Aboriginal people as Nunavut and significantly greater proportion than Northern Manitoba, the Northwest Territories, and the Yukon.

In the 2001 Census, 14% of individuals in Saskatchewan indicated that they were of Aboriginal ancestry. In northern Saskatchewan 84% of the population indicated they were of Aboriginal ancestry, with Keewatin Yatthé Health Region having 95% indicating Aboriginal ancestry.

#### Aboriginal Population

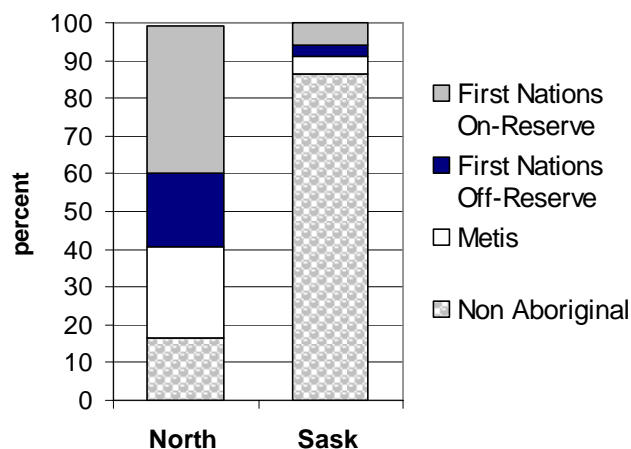
By Northern Territory / Region, 2001



Source: Census 2001

#### Population by Aboriginal Identity,

Northern Saskatchewan and Saskatchewan, 2001



Source: 2001 Census Aboriginal Profile

Northern Saskatchewan is made up of almost 84% Aboriginal peoples: 59% First Nations (approximately 20% off-reserve and 39% on-reserve), 24% Métis and 16% non-Aboriginal peoples.

In Saskatchewan's overall population, 13.6 % is Aboriginal.

## 4. Community Population

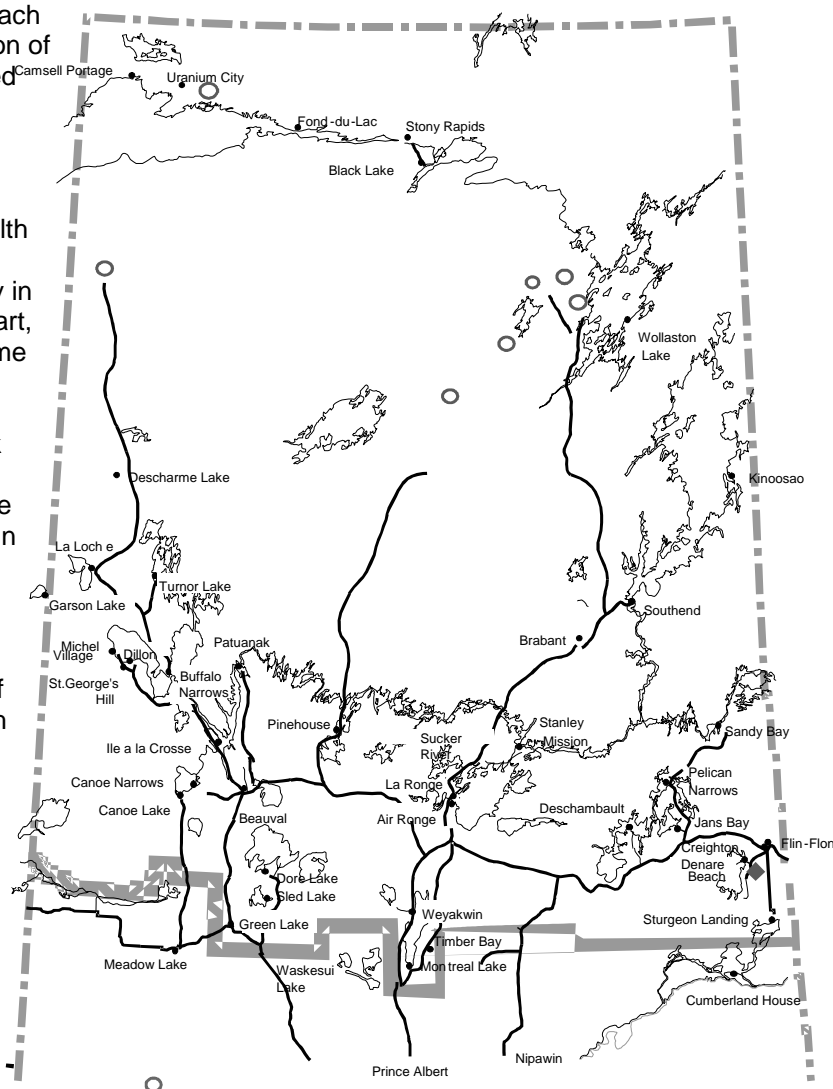
Saskatchewan Health estimates the number of individuals within a regional health authority on a year by year basis based on the postal code of the latest Saskatchewan Health registration address. While this method of assigning a residence code approximates the number of individuals within a region, the numbers don't accurately indicate the actual residence, i.e. living on a reserve or a neighbouring municipal community.

The 2001 Census underestimates the population of each health region, but is better able to reflect the population of each community than Saskatchewan Health's Covered Population numbers.

These population numbers do not include workers in the mining, forestry, or tourist industries whose permanent addresses are outside of the northern health regions. The northern mines are located in remote locations, with housing provided on site as workers fly in and out on one or two week rotations. For the most part, health care services are provided on site or in the home communities.

The tables on the following page show the 2003 Sask Health Covered Population numbers for individual communities, or for groups of communities sharing the same postal codes. The 2001 Census data is shown in the third column for individual communities, with the exception of Kinoosao, Napatak, Points North, Ramsey Bay, and Waden Bay for which key informants provided the estimates. Since the closure of the Uranium City hospital in 2003, the population of that community decreased by at least 50 percent, with some people moving to southern health regions, but the majority moving to work at the new Stony Rapids health centre, located on the reserve near Black Lake, or to Fond du Lac or Camsell Portage. These numbers have not been adjusted in the table but will be adjusted in the 2004 population statistics.

First Nations will also have their own information regarding Band population numbers – both for Band membership as well as on-reserve population numbers. A more detailed assessment for First Nations population is available through the Indian and Northern Affairs "First Nations Profiles" online.<sup>6</sup>



**Athabasca Health Authority**

<b>Community</b>	<b>2003 covered population</b>	<b>2001 census /other</b>
Black Lake FN		1075
Stony Rapids		189
Stony Rapids, Black Lake	1314	1264
Fond du Lac, Fond du Lac FN	815	682
Camsell Portage	11	37
Uranium City	167	201
<b>AHA total</b>	<b>2307</b>	<b>2184</b>

**Keewatin Yatthé Regional Health Authority**

<b>Community</b>	<b>2003 covered population</b>	<b>2001 census/other</b>
Buffalo Narrows	1326	1137
Beauval		843
La Plonge		120
Beauval/La Plonge	1052	963
Canoe Lake FN		747
Canoe Narrows		
Cole Bay		161
Jans Bay		198
Canoe Narrows area	1244	1106
Clearwater River DN	456	594
Buffalo River DN		607
Dillon		
Michel Village		70
St. Georges Hill		102
Dillon area	833	779
Dore Lake	33	27
English River FN		434
Patuanak		72
Patuanak/English River FN	683	506
Green Lake		498
Sled Lake		35
Green Lake/Sled Lake	611	533
Ile a la Crosse	1574	1268
Bear Creek		47
Black Point		47
Descharme Lake		42
Garson Lake		34
La Loche		2136
La Loche area	2882	2306
Birch Narrows FN		338
Turnor Lake		155
Turnor Lake/Birch Narrows FN	575	493
<b>KY Total</b>	<b>11269</b>	<b>9712</b>

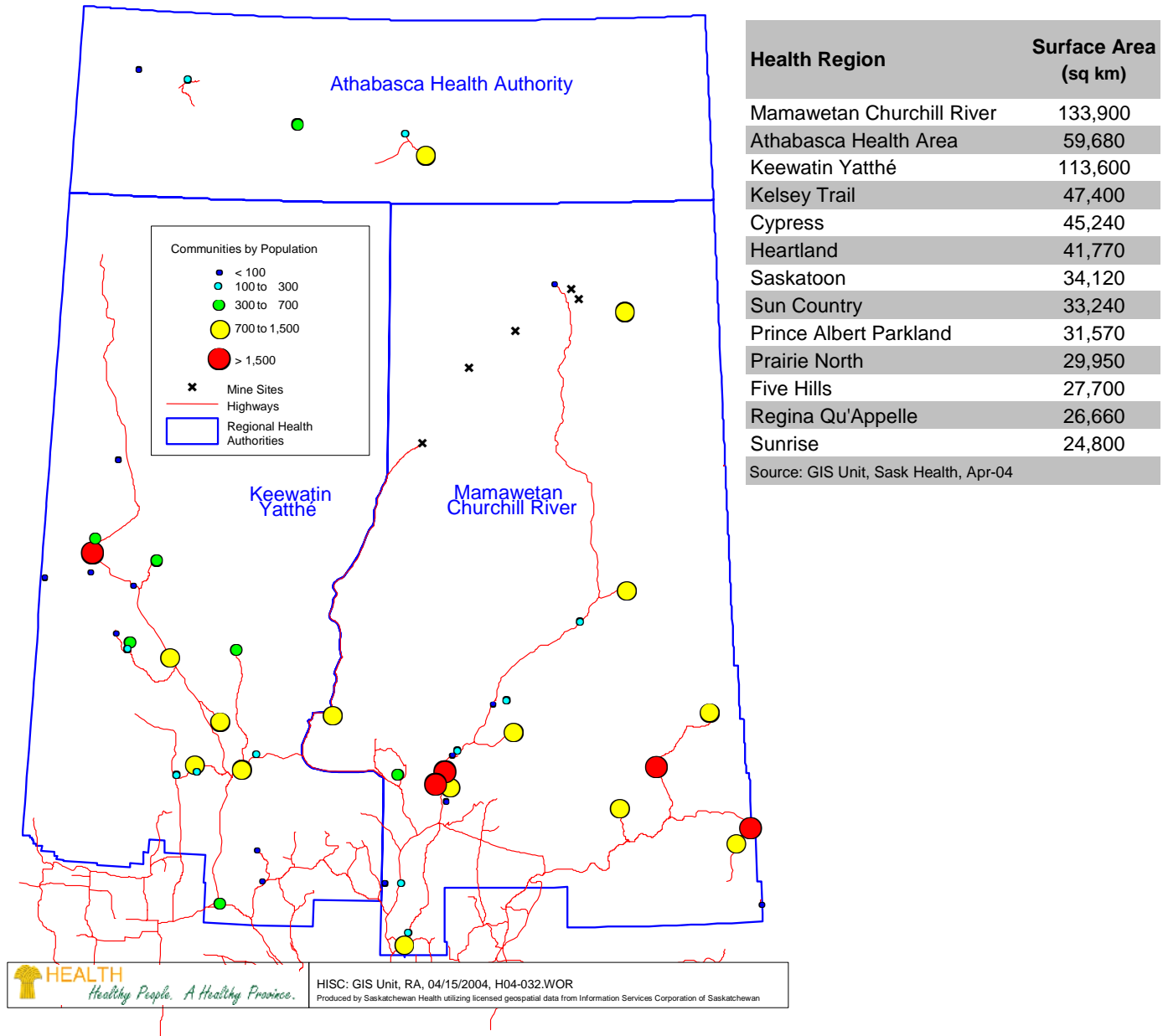
**Mamawetan Churchill River Regional Health Authority**

<b>Community</b>	<b>2003 covered population</b>	<b>2001 census/other</b>
Creighton		1556
Flin Flon		267
Creighton/Flin Flon	2077	1823
Denare Beach	746	784
Air Ronge		955
Grandmother's Bay		264
Hall Lake		381
La Ronge		2727
Lac La Ronge/Kitsakie 156		1741
Missinipe		38
Napatak		90
Nemeiben River		278
Stanley Mission		124
Stanley 157		1248
Wadin Bay		32
La Ronge/Lac la Ronge Indian Band area	8973	7878
Montreal Lake 106		861
Timber Bay		108
Montreal Lake 106/Timber Bay	1164	969
Brabant Lake		102
Deschambault		896
Kinoosao		47
Pelican Narrows		690
Pelican Narrows 184B		1153
Peter Ballantyne Cree Nation		
Southend		35
Southend 200		696
Brabant, Deschambault, Kinoosao, Pelican Narrows, Southend	4321	3619
Pinehouse	1059	1038
Sandy Bay	1102	1092
Sturgeon Landing	48	40*
Hatchet Lake		984
Points North Landing		3
Wollaston Lake		129
Wollaston Lake/Hatchet Lake FN	1186	1116
Ramsey Bay		60
Weyakwin		183
Weyakwin, Ramsey Bay	243	243
<b>MCR Total</b>	<b>20919</b>	<b>18602</b>

\*census96

## 5. Population Density

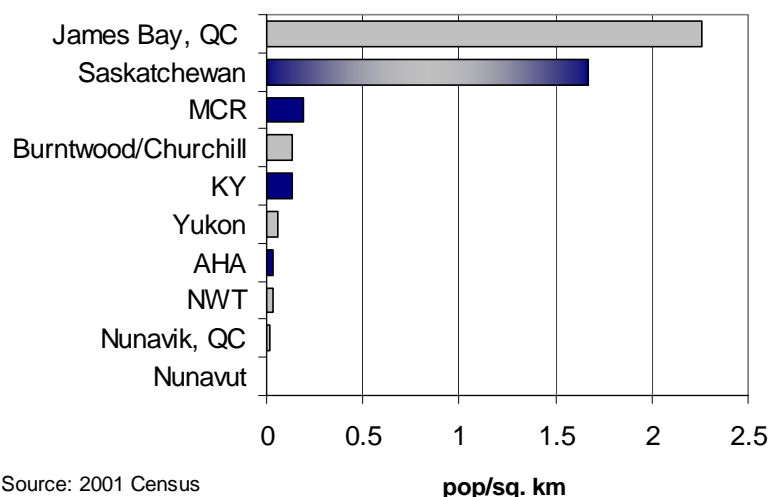
Northern Saskatchewan has a small population spread over a large geographic area. This has a great influence on how services and programs are delivered. The three northern health authority areas are the three largest areas in the province. In northern Saskatchewan as a whole, there is a population density of 0.12 people/square kilometer or about 12 people per 100 square kilometers compared to 167 per 100 square kilometers in Saskatchewan. This population density is fairly similar to other northern regions in Canada, as shown on the following page.



The above map depicts concentrations of population across the north by using different sized dots for different sizes of population in northern hamlets, villages, towns, and First Nations communities.



## Population Density by Northern Territory / Region, 2001



Statistics Canada calculates population density, based on the number of people per square kilometer of land area rather than total surface area. Inaccuracies may occur in determining the surface area of lakes and rivers, which is then subtracted from the total surface area to obtain the land area measurement.

Regardless of the method used, the northern regions all have a small population density.

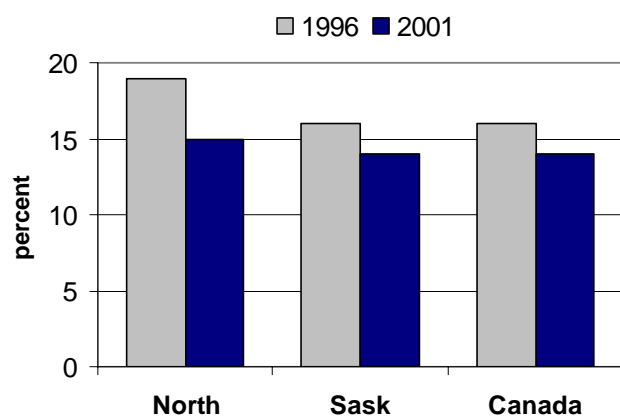
## 6. Mobility

Mobility is defined as the percentage of people who have moved from one community to another within the last five years (between the 1996 and 2001 Census) or past year (the year leading up to the Census).

The northern Saskatchewan population has been thought of as a very mobile population. Some of this mobility may be decreasing. In 2001, both the percentage of people that moved in the past year and the past 5 years decreased in northern Saskatchewan and the one-year mobility was almost comparable to the general Saskatchewan pattern. The Northern Saskatchewan Migration Survey done through the Community Vitality Monitoring Partnership Process interviewed 170 northern Saskatchewan residents who had migrated out of the north and some of whom had returned. This survey suggested that of those who moved back to live in northern Saskatchewan, more than one third moved back because they found employment in the north. The primary reasons for moving out of the north included education opportunities, employment opportunities and family reasons.<sup>7</sup>

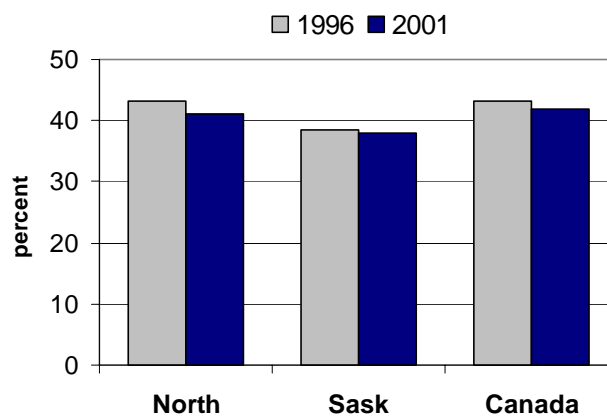
### One-Year Mobility

Percent That Have Moved In Past Year



### Five-Year Mobility

Percent That Have Moved In Past 5 Years



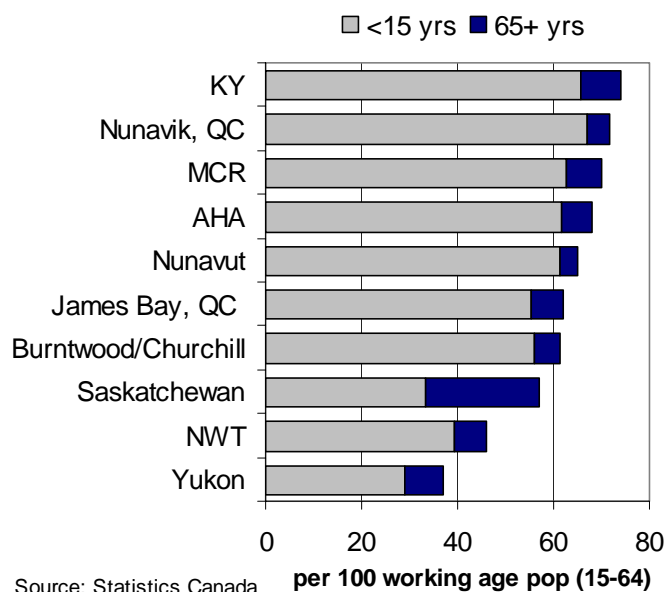
## 7. Dependency Ratio

Dependency ratio is the ratio of the combined child population (aged 0 to 14) and elderly population (aged 65 and over) to the working age population (aged 15 to 64). This ratio is usually presented as the number of dependents for every 100 people in the working age population. Canadians aged 65 and over and those under age 15 are more likely to be socially and/or economically dependent on working age Canadians, and they may also put additional demands on health services.

The Dependency ratio in northern Saskatchewan is significantly above the Saskatchewan ratio, with the larger impact from the over 65 years group in the province and from those under 15 years in the north.

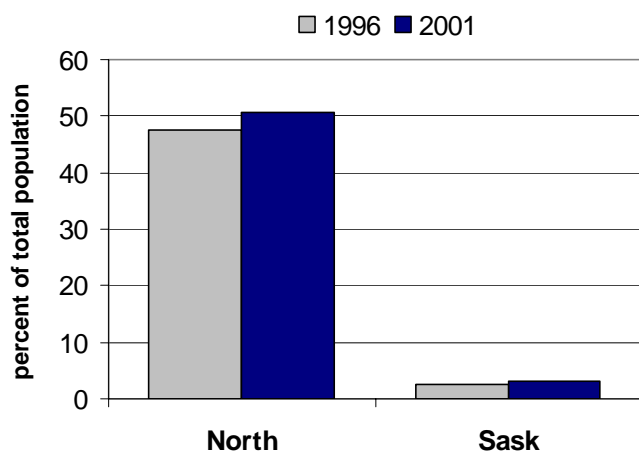
### Dependency Ratio

By Northern Territory / Region, 2001



## 8. Language

### Aboriginal language spoken at home, 1996 and 2001



Source: 2001 Census and 2001 Census Aboriginal Population Profile

Statistics Canada provides information on the use of Aboriginal languages spoken at home. Of the people who identified themselves as Aboriginal, 60.6% of those in northern Saskatchewan spoke an Aboriginal language in their home in 2001 compared to 22.4% of those self-identified as Aboriginal in Saskatchewan.

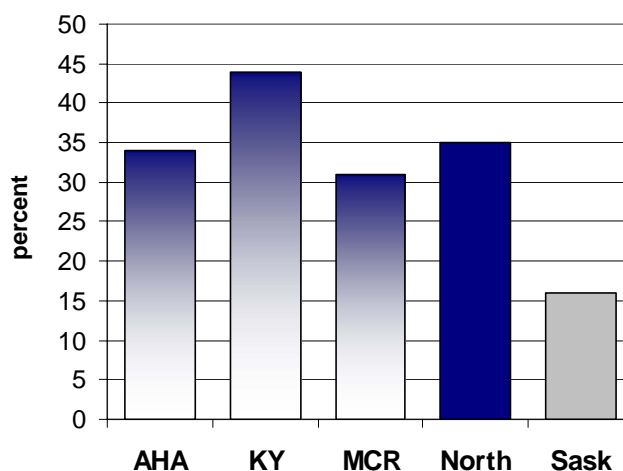
In 1996, 47.6% and in 2001, 51% of the total population of the north spoke an Aboriginal language at home compared to 2.5% and 3% for the same years in the province.

## 9. Lone Parent Families

The proportion of all families that have only one parent living in the household is about 35% in northern Saskatchewan compared to about 16% in the province as a whole.



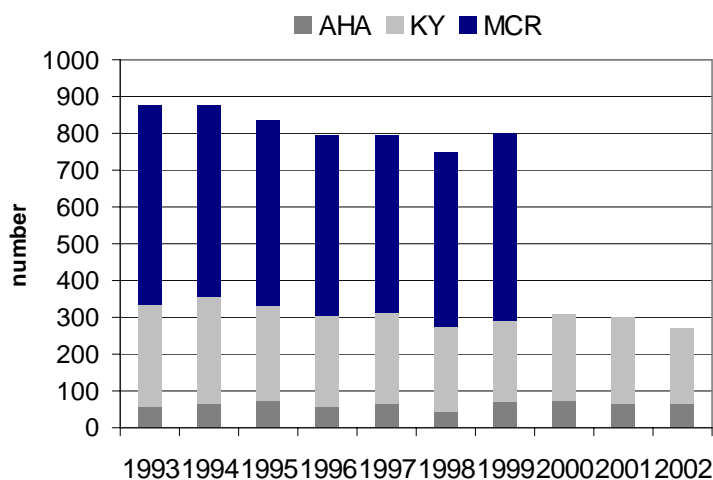
### Lone Parent Families, 2001



Source: 2001 Census

## 10. Births

### Number of Births by Year and Health Region, 1993-2002



Source: Sask Health

The number of births in the regions' population has an impact on the growth of the population as well as the type and range of health and community services required.

The data for the Mamawetan Churchill River is incomplete for the 2000 to 2002 period in this graph as out-of-province information is not available yet.

The number of births of residents in northern Saskatchewan has been gradually decreasing over the past decade. The almost 900 births a year across the north in the early 1990s have decreased to fewer than 800 births per year.

## 11. Population Change

In the 1920s the population for the northern Saskatchewan area was about 5,000.<sup>8</sup> This has steadily increased, with the greatest increase from the mid-1950s on, to a service area population today of over 34,000.

According to Saskatchewan Health, the northern health areas have increased by 2.9% whereas the province as a whole has decreased by 2.2% from 1998 to 2003.

According to Census Canada,<sup>9,10</sup> the northern Saskatchewan population grew by 5.5% between 1986 and 1991, 16% between 1991 and 1996 and 3% between 1996 and 2001. According to Census Canada information, the northern Saskatchewan population has increased by just over 26% from 1986 to 2001. Saskatchewan as a whole had a 3% decrease during the same time period.

The population growth will need to be considered in the overall health planning for the northern health regions.

Two data sources are shown for the population in northern Saskatchewan. One is based on Saskatchewan Health's Covered Population (counted yearly) and one is based on the Statistics Canada Census using Census Division Number 18 (counted every 5 years). The population for Census Division Number 18 is larger than the three northern health areas combined, as the former includes the Cumberland House northern village and First Nation. Even so, Saskatchewan Health's Covered Population, which excludes Cumberland House, is larger than all of Census Division 18, because of undercounting with the Census information.

Despite variations in the two sources of population data, both are consistent in showing about 3% population growth in northern Saskatchewan over the past 5 years (either 1998 to 2003 or 1996 to 2001).

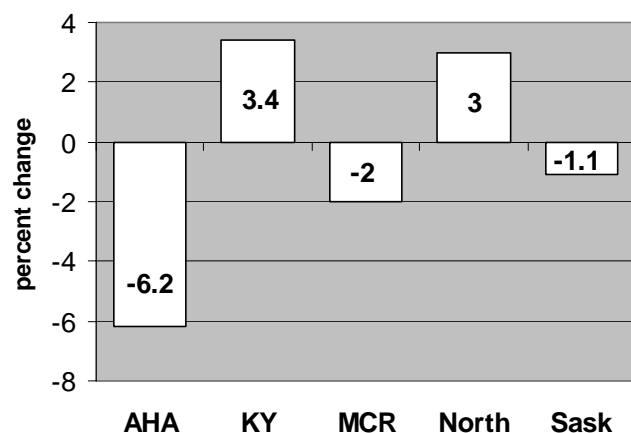
### Health Region Population Change 1998 to 2003, Sask Health Data

Health Region	1998 Population	2003 Population	5 Year Change in Population
AHA	2382	2307	-3.10%
KYRHA	10,757	11,269	4.80%
MCRHA	20,382	20,919	2.60%
North	33,521	34,495	2.90%

Source: Sask Health Covered Population 1998, 2003

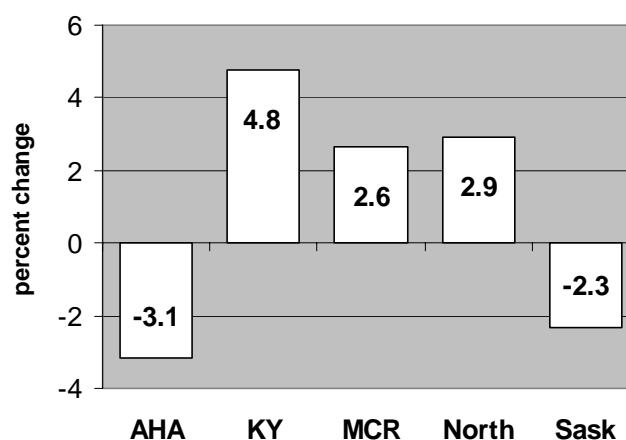
### Population Change

Statistics Canada Census Data, 1996 to 2001



Source: 2001 Census

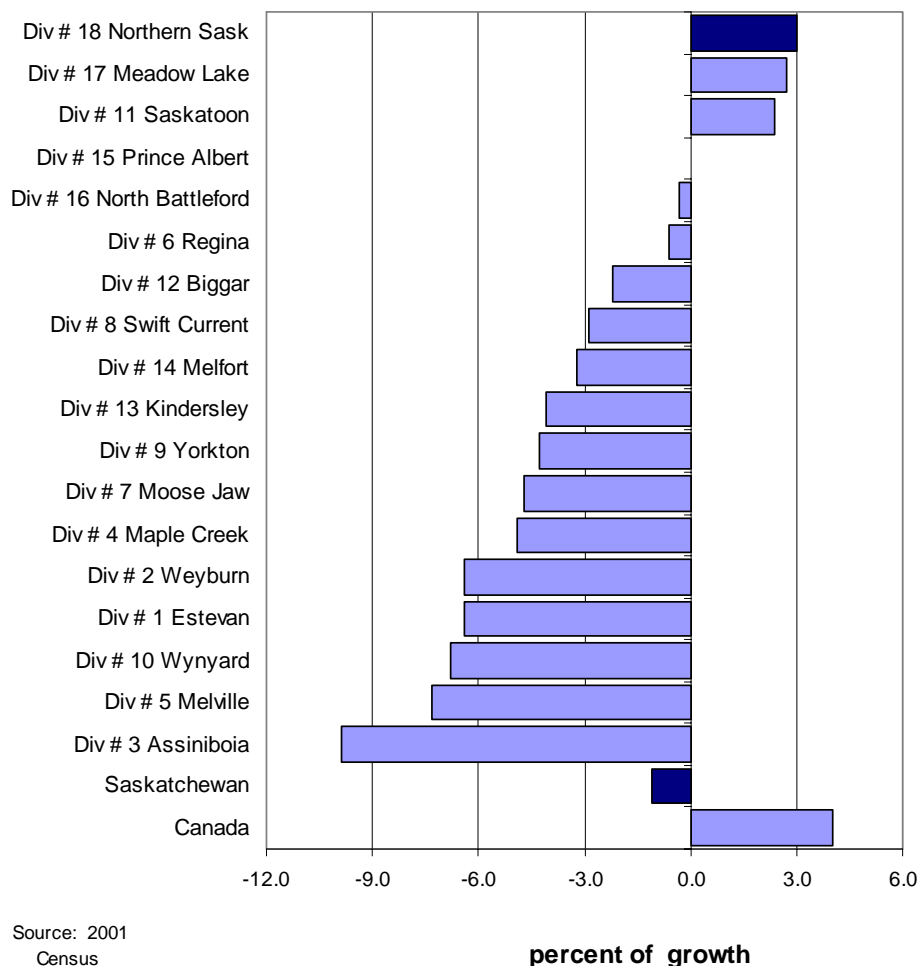
Sask Health Covered Population Data, 1998-2003



Source: Covered Population 1998, 2003

## Population Growth by Census Division in Saskatchewan 1996 - 2001

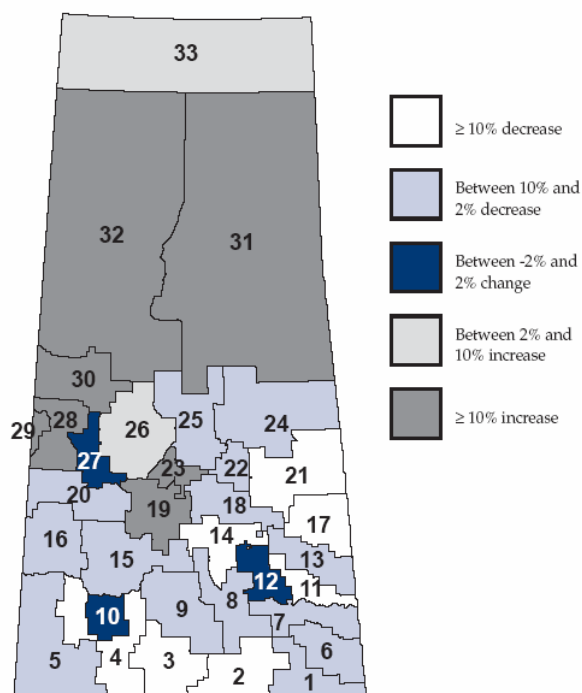
In the 5 year period 1996-2001, Statistics Canada assessed that the overall population of Saskatchewan decreased by 1.1%. Northern Saskatchewan during that same time period increased by 3% while some Census Division areas decreased by as much as almost 10%.



## Future Predictions of Population Change

Saskatchewan's Health Services Utilization and Research Commission studied the potential future population change in the 33 health districts in the province looking forward 15 years.<sup>11</sup> The three northern health regions were all predicted to increase in population over the 15 year period (KYR by 24%; MCR by 49%; and AHA by 9%) whereas many other districts in the province were predicted to decrease in populations). A similar finding was also predicted for the rate of growth of the senior population. In northern Saskatchewan, the rate of seniors was predicted to increase by 102% for MCR, 51% for KY and 39% for AHA with many districts in the province actually having a decrease predicted for the seniors population. Population growth has impacts on the services required.

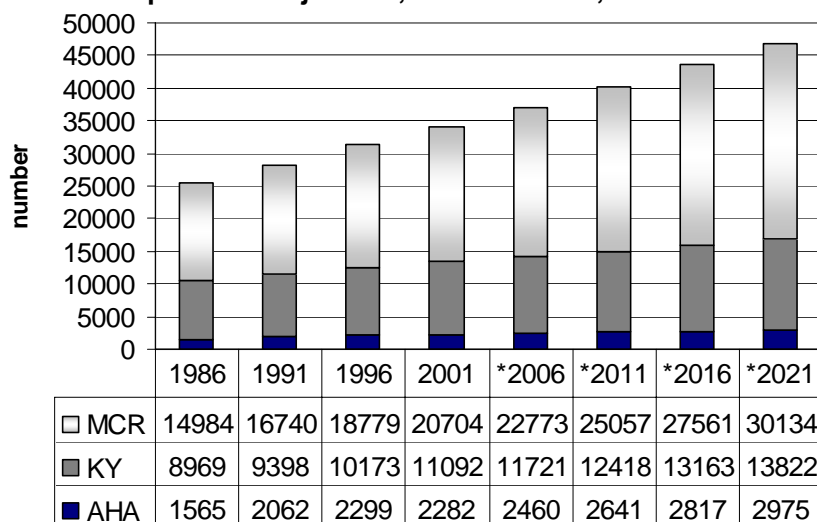
### Change in Health Region Population 2000-2015



Source: HSURC Planning for Saskatchewan's Future: Population and Health Services Projections to 2015

Saskatchewan Health has also provided information on population changes from 1986 to 2001 and made some projections for the future based the population trends. The three northern Saskatchewan health areas are all predicted to continue to increase over the next two decades.

### Population Projections, Northern Sask, 2006-2021



Source: Sask Health

\* indicates approximations

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- <sup>1</sup> Peron Y, Srohmenger C. Demographic and health indicators. Statistics Canada. Ottawa, 1985.
  - <sup>2</sup> First Nations Bands of Saskatchewan. Tribal Councils of Saskatchewan. Accessed online: April 11, 2004. <http://www.sicc.sk.ca/bands/index.html>
  - <sup>3</sup> Indian and Northern Affairs Canada. First Nations of Saskatchewan (Map). Accessed online: April 11, 2004 [http://www.ainc-inac.gc.ca/sk/FNL\\_e.pdf](http://www.ainc-inac.gc.ca/sk/FNL_e.pdf)
  - <sup>4</sup> Métis Employment and Training of Saskatchewan Inc. Regional Map. Accessed online: April 11, 2004 <http://www.metsi.sk.ca/regional.html>
  - <sup>5</sup> Elections Saskatchewan. Constituency Locator. Accessed online; April 11, 2004. <http://www.elections.sk.ca/find.php>
  - <sup>6</sup> Indian and Northern Affairs Canada. First Nations Profiles. Accessed Online: April 11, 2004 [http://sdiprod2.inac.gc.ca/FNProfiles/FNProfiles\\_home.htm](http://sdiprod2.inac.gc.ca/FNProfiles/FNProfiles_home.htm)
  - <sup>7</sup> Anderson/Fast & Assoc. Northern Saskatchewan Migration Survey: April – July 2000. Community Vitality Monitoring Partnership Process. 2000.
  - <sup>8</sup> Dominion Bureau of Statistics, in Center of Community Studies – The Indian and Métis of Northern Saskatchewan
  - <sup>9</sup> Statistics Canada. 91 Census: profile of census divisions and subdivisions in Saskatchewan – part A. Ottawa, 1992.
  - <sup>10</sup> Statistics Canada. Community Profiles. Available online: <http://www12.statcan.ca/english/census01/home/index.cfm>
  - <sup>11</sup> Saskatchewan Health Services Utilization and Research Commission. Planning for Saskatchewan's future: population and health services projections to 2015 (revised). April 2001. Summary report No. 15.



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## NOTES

# NON-MEDICAL DETERMINANTS OF HEALTH

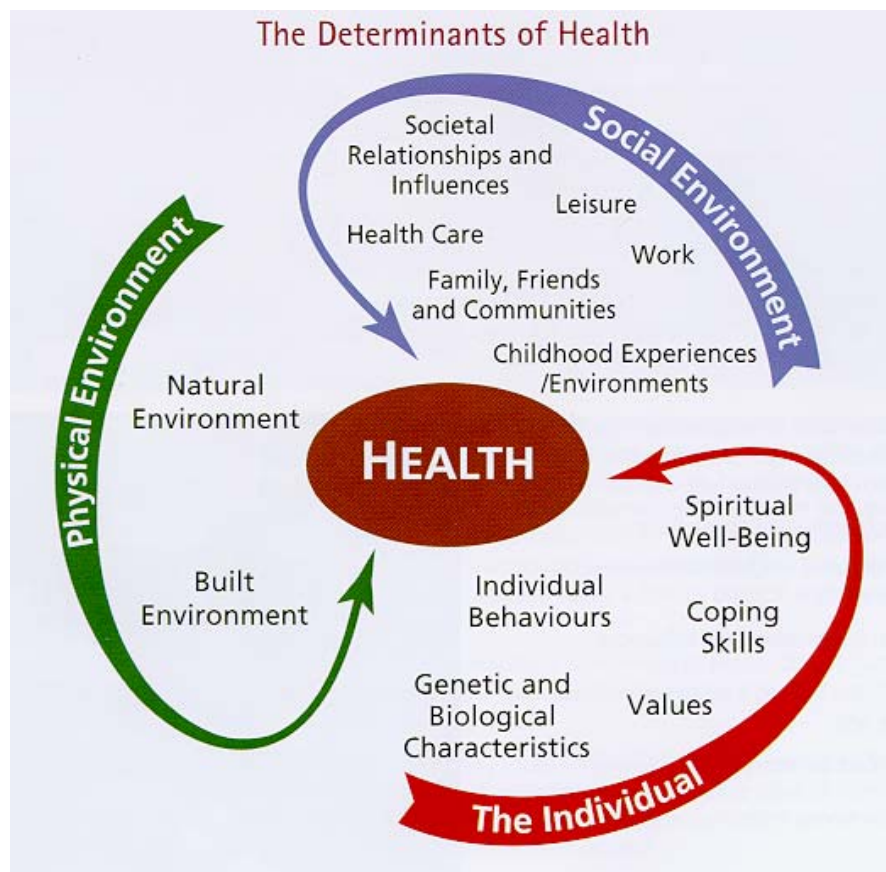
The determinants of health refer to those basic factors and influences that shape or determine the health of individuals and communities. Health determinants can help identify the areas where action could improve health, approaches to improving health, and can serve as a basis for planning community or region initiatives.

The determinants of health are interrelated and include:

- Income and social status
- Social support networks
- Education and literacy
- Employment and working conditions
- Social environments
- Physical environment
- Personal health practices and coping skills (also referred to as health behaviours)
- Healthy child development
- Biology and genetics
- Gender
- Culture
- Health services

There is more and more evidence regarding the overall impact of these factors on health.<sup>1</sup>

These factors do not act in isolation from each other but it is the interactions of these determinants that have an impact on the health of individuals and the community.



Source: Saskatchewan Provincial Health Council;<sup>2</sup> Adapted from "Health Impact Assessment Guidelines", B.C. Ministry of Health

In this section, the information that is available on some of the determinants will be presented. Many of the determinants are intertwined and interrelated and at times difficult to assess which is the chicken and which is the egg as one discusses cause and effect (e.g. education, employment, income and social status, physical environment).

Another source for information on non-medical determinants of health in northern Saskatchewan is the Northern Saskatchewan Training Needs Assessment Report 2003.<sup>3</sup>

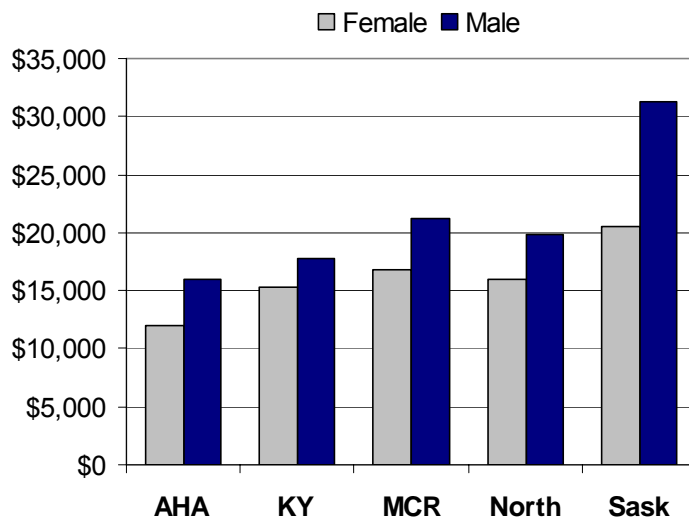
## INCOME AND SOCIAL STATUS

“There is strong and growing evidence that higher social and economic status is associated with better health.”<sup>1</sup>

In northern Saskatchewan, there are significant challenges related to economic status. There are also changes occurring in social and economic status during the transition from a culture that placed social status on sharing, community, tradition, spirituality, skills in hunting and gathering to a society that places more social status on education, employment and income levels.

### Average Personal Income

By Sex, 2000

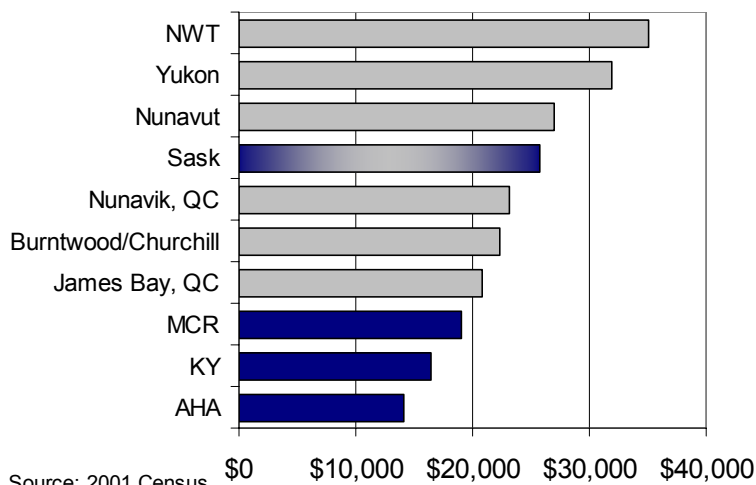


Source: 2001 Census

Average personal income includes pre-tax and post-transfer income for the year prior to the Census for persons aged 15 and over who reported income. There are significant differences in the average personal income levels of individuals living off reserve in northern Saskatchewan compared to the provincial average personal income. The average male in northern Saskatchewan has an income of approximately \$20,000 in 2000 compared to about \$32,000 in the province. The differences in personal income between men and women is slightly less in northern Saskatchewan (a difference of about \$4,000 or 26%) compared to the province (a difference of about \$11,000 or 35%).

### Average Personal Income

By Northern Territory or Region, 2000

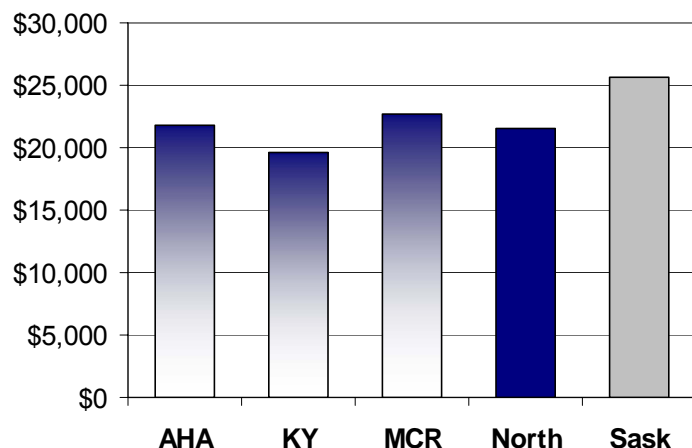


Source: 2001 Census

When we compared the average personal income levels for men and women combined with other northern regions in Canada for people living off-reserve, the three areas of northern Saskatchewan appear to be much less economically well off.

### Average Earnings, 2000

Of all persons with earnings

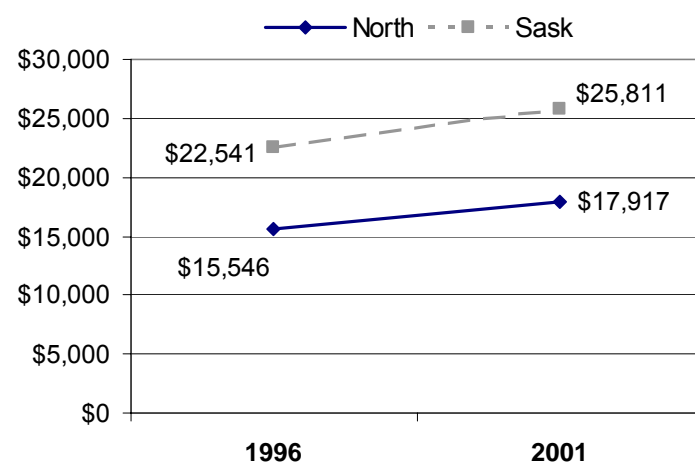


Source: 2001 Census

Earnings are defined in the Census as total income for persons 15 years of age and over who received wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income during calendar year 2000. In 2000, the average earnings were \$21,509 in the North and \$25,691 in all of Saskatchewan.

### Average Total Income, 1996 and 2001

Of persons reporting income



Source: 1996, 2001 Census

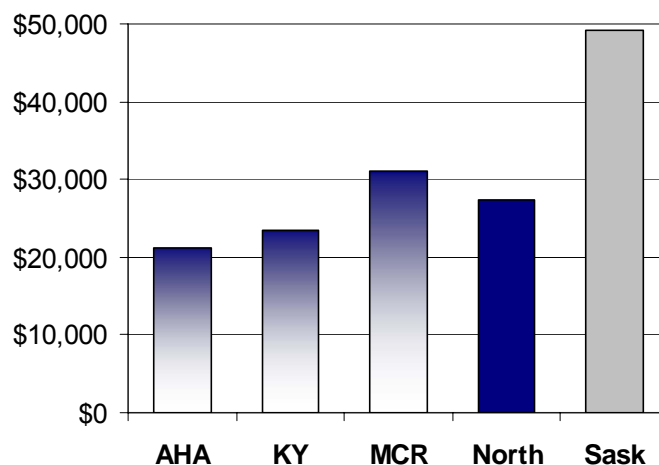
In looking at the trend for average total income for persons reporting income in northern Saskatchewan, there has been an increase from 1996 to 2001 but the increase has not been as great as in the province as a whole. Thus the gap in total average income for persons reporting income in the north compared to the province is greater in 2001 than it was in 1996.

The median income of families is that amount which divides their income distribution into two halves, i.e. the incomes of the first half of the families are below the median (middle point), while those of the second half are above the median.

Median family income refers to total money income received from all sources including wages and salaries, Old Age Security, benefits from Pension or Employment Insurance, other government sources, farm income, etc.

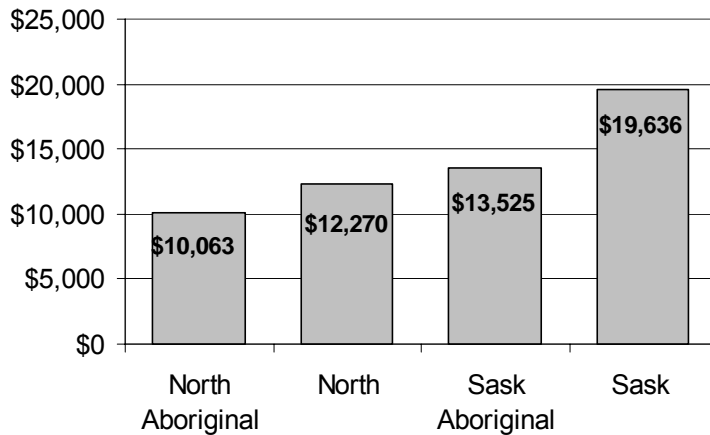
The median family income for northern Saskatchewan (\$27,323 annually) is significantly lower than the provincial median family income (\$49,264 annually).

### Median Family Income, 2001



Source: 2001 Census

### Median Income, Age 15 Years and Older, 2001

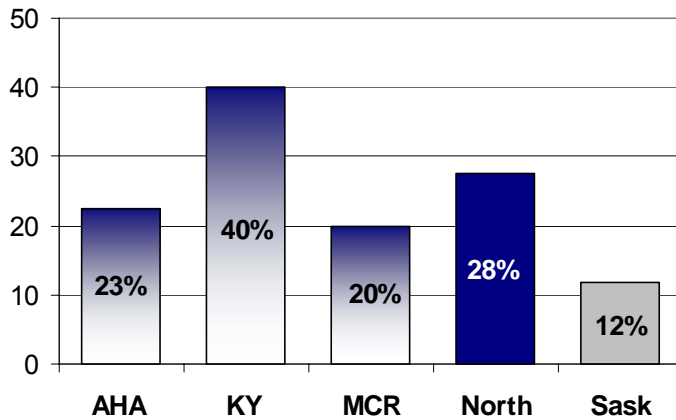


Source: 2001 Census

In looking at median income for those age 15 years and older for the 2000 calendar year, there are differences between Aboriginal and non-Aboriginal populations. The median income for Saskatchewan residents is almost double the median income for the northern Saskatchewan Aboriginal (First Nations and Métis) populations.

### Incidence of Low Income – Off-Reserve

Percent of Economic Families, 2000 Income



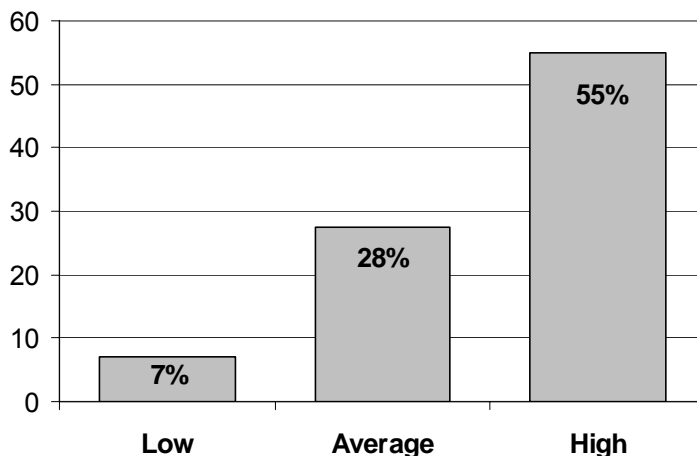
Source: 2001 Census

The term economic family refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption. Low income cutoffs (LICOs) represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. They are based on family and community size. Individuals and economic families in the territories or on First Nations' reserves, and institutional residents are excluded.

The incidence of low income in northern Saskatchewan is about 28%, almost a third of all families in the north compared to about 12% in the province.

### Range of Low Income Families in Northern Off-Reserve Communities

Percent of Northern Economic Families, 2000 Income

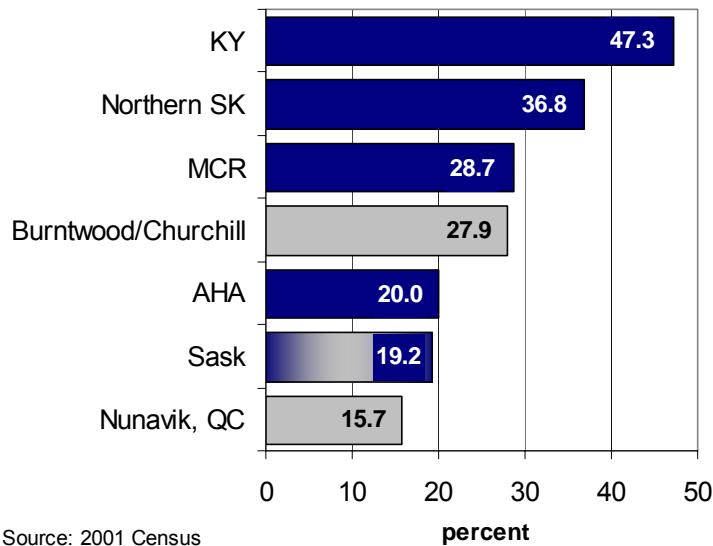


Source: 2001 Census

The percentage of economic families being of low income in off-reserve communities ranges widely, from a minimum of 7% in one off-reserve community to a maximum of 55% in another. The differences in proportions of low income families would contribute a significant difference in the health patterns seen in these communities.

## Children in Low Income Families, Age 17 and Under

By Northern Region (Off Reserve Communities), 2000



A child living in poverty is a widely-used measure of children at risk for a wide variety of health and social issues.

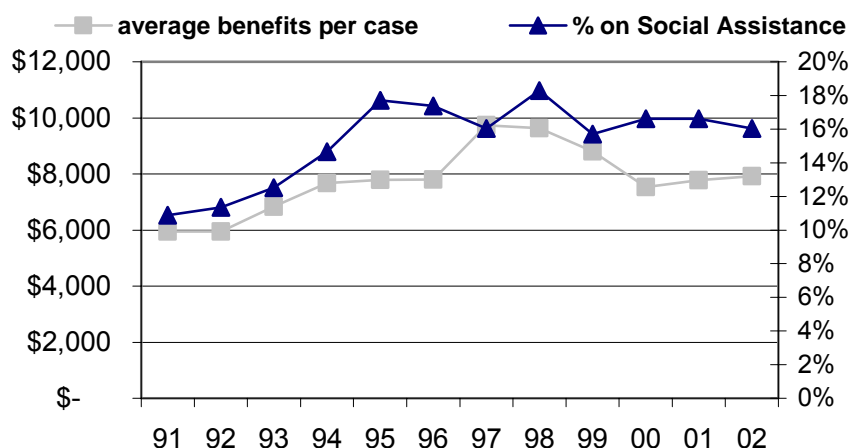
The measure of Children in Low-Income Families (income for the year prior to the Census) refers to the population of children aged 17 and under living in economic families with incomes below Statistics Canada's low-income cut-offs (LICO). The cut-offs represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. LICOs are based on family and community size; cut-offs are updated to account for changes in the consumer price index.

Low income cut-off (LICO) data were not available for economic families or unattached individuals in the territories or on First Nations' reserves from the 2001 census.



## Income Inequality

### Proportion of the Population on Provincial Social Assistance in Northern Saskatchewan



Provincial Social Assistance dependency has grown from 11% of the northern population in 1991 to 16% of the population in 2002.

The average financial benefit per case has increased by 34% from \$5900 to \$7900.

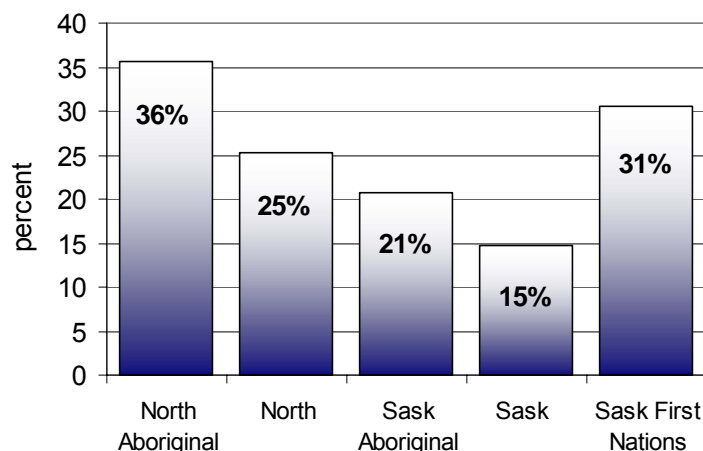
Based on 2.2 persons per case. Saskatchewan Health Covered Populations 1991 to 2002.

Source: Saskatchewan Community Resources and Employment, report to Northern Labour Market Committee, June 4, 2003. In: Northern Saskatchewan Regional Training Needs Assessment Report 2003.

### Government Transfer Income, 2000 Percent of Total Income

Government Transfer Income is the proportion of all income that comes from federal, provincial or municipal government transfers (e.g., Guaranteed Income Supplement/Old Age Security, Canada or Quebec Pension Plan, Unemployment Insurance) for the population 15 years of age and over, excluding institutional residents. It is used as another economic indicator for a community or region.

In northern Saskatchewan, 36% of the Northern Aboriginal income is from government transfers compared to 25% of the overall northern population's income and 15% of the provincial population's income.



Source: 2001 Census

## EDUCATION AND LITERACY

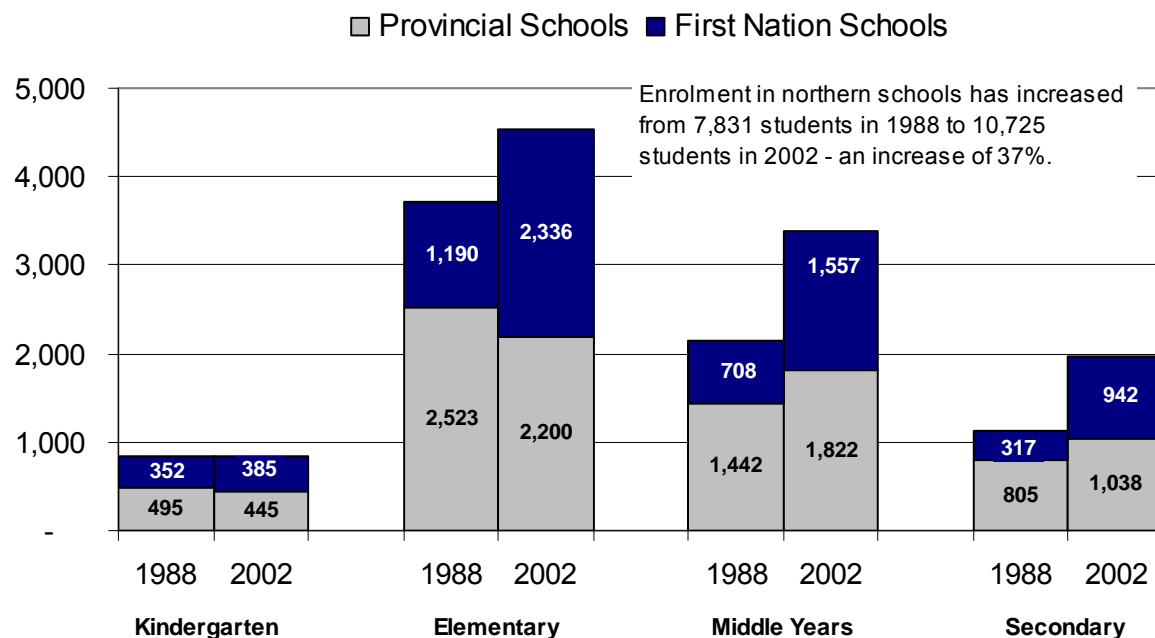
In any society, education links to health. Gains in education produce gains in health. Education increases opportunities for income and job security. It also equips people with coping skills needed to identify and solve individual and group problems. One's level of education is also widely seen as an indicator of socioeconomic status.

Learning, however, does not take place exclusively in schools or during school hours. Families also pass on knowledge and skills that people need to thrive.



## Northern Saskatchewan School Enrolments

By First Nations and Provincial School Systems, 1988 and 2002



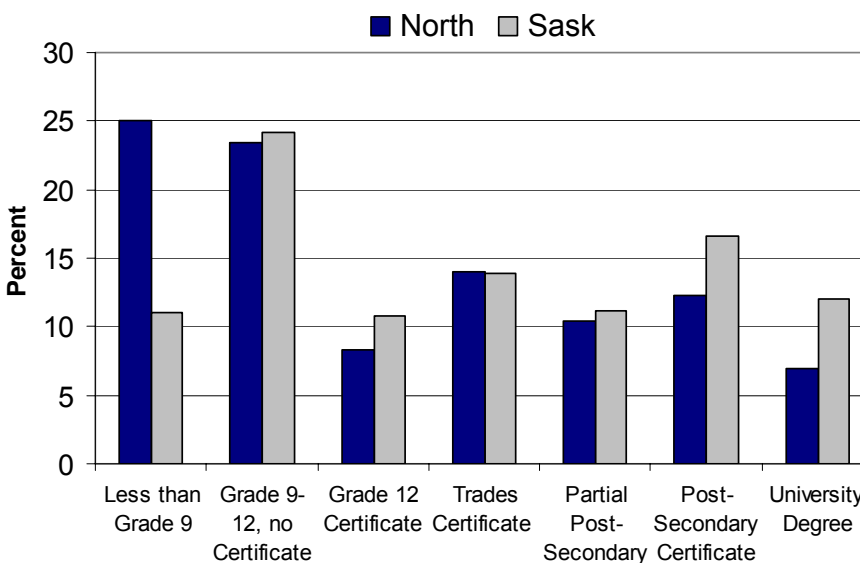
Source: 2002-2003 Provincial school enrolments from Northern Lights, Ile a la Crosse, and Creighton School Divisions. First Nations Schools: Northern Education Task Force Report 1989, Indian and Northern Affairs Canada 2002/2003 Nominal Roll. In: Northern Saskatchewan Regional Training Needs Assessment Report 2003

Enrolments in schools increased from 1988 to 2002 in northern Saskatchewan with the greatest increase found in the secondary schools, followed by the middle years and elementary schools. First Nations' schools had larger increases in enrollments in all levels compared to northern provincial schools, in which there was a slight decrease in enrollment in kindergarten and elementary grades during this period.

## Levels of Education, Age 20 and over, 2001

The 2001 Census provides data to compare educational attainment in northern Saskatchewan with the whole province. The proportion of adults aged 20 years and over with less than Grade 9 education in northern Saskatchewan is about 2 ½ times that of the provincial proportion. The percent of northerners with a university degree is about half that of the province.

The way Statistics Canada has presented the information on education in the 1996 and the 2001 periods makes it difficult to make true comparisons between the two time periods to assess progress. The 1996 Census presented information on educational attainment for those over the age of 15 years, whereas the 2001 Census presented information by age groups starting at age 20 years.

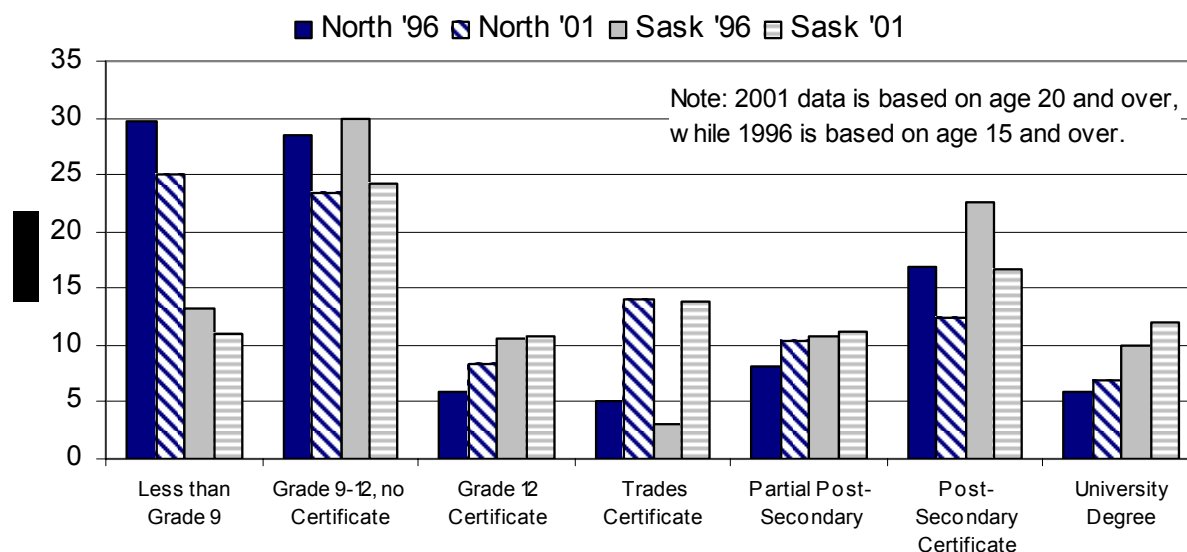


Source: 2001 Census

The following graph shows differences in educational attainment between northern Saskatchewan and the whole province. As it includes both 1996 and 2001 Census information, it is not entirely accurate to compare over the two time periods.

## Highest Level of Education

1996 and 2001



Source: Census 1996, 2001

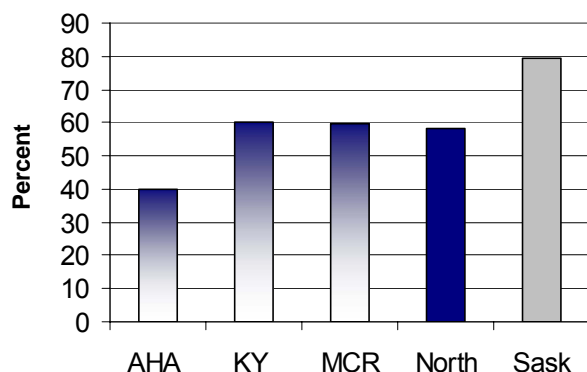
Another way to compare progress is by looking at the educational attainment of various age groups. In 2001, 50% of northerners aged 45 to 64 years of age reported having less than high school graduation compared to 34% of people in Saskatchewan in the same age group. The 20 to 34 year age group showed an improvement in high school completion rates in both the north and the whole province. However the gap between the north and the province was greater in the younger age group; 45% of northerners aged 20 to 34 years had not finished high school, more than double the 21.8 % in all of Saskatchewan.

The other interesting trend is that the difference in male and female educational attainment is widening in the younger age groups. In 2001, almost 12% more northern females aged 20-34 years had graduated from high school than males (57.9% compared to 51.8%). More than 60% more northern females aged 20-34 years had university degrees than males (8.3% compared to 5.1%).

In the 25 to 29 year age group, almost 60% of northerners had graduated from high school compared to about 80% in the province as a whole; almost 40% of northerners in the same age group were post-secondary graduates compared to just over 50% in the province as a whole.

## High School Graduates Aged 25 to 29

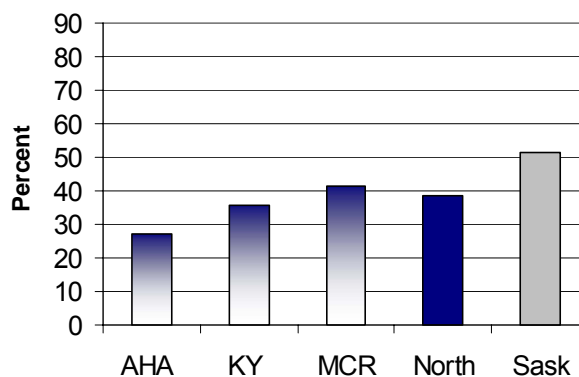
Proportion of population aged 25 to 29



Source: Census 2001

## Post-Secondary Graduates, Aged 25 to 29

Proportion of population aged 25 to 29



Source: Census 2001

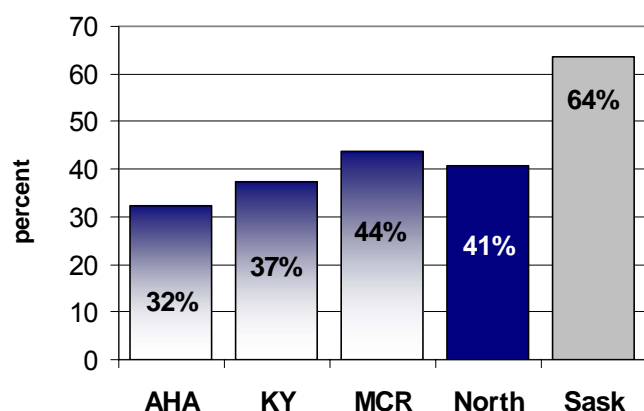
## EMPLOYMENT

“Employment has a significant effect on a person's physical, mental and social health. Paid work provides not only money, but also a sense of identity and purpose, social contacts and opportunities for personal growth”.<sup>1</sup>

In Census data, employment rate refers to the number of persons employed in the week prior to Census Day, expressed as a percentage of the total population 15 years of age and over.

### Employment Rate

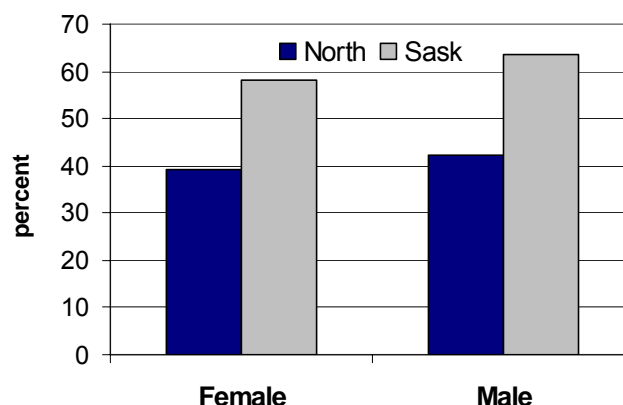
Percent of population aged 15 and up, 2001



Source: 2001 Census

### Employment Rate, by Sex

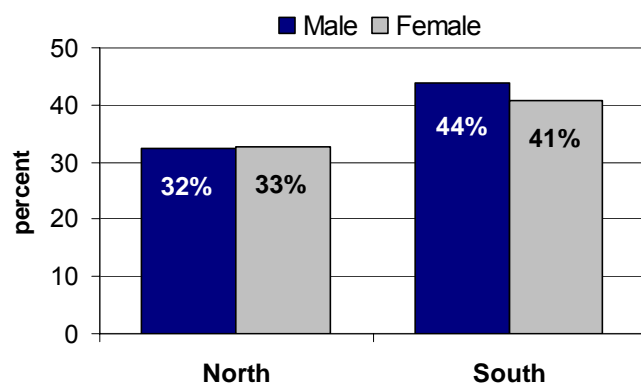
Percent of population aged 15 and up, 2001



Source: 2001 Census

Across northern Saskatchewan the employment rate is almost 41% compared to 64% for the province as a whole. There are some differences in employment across the north, with the far north having the lowest employment rate. There are also differences in the employment rate between males and females.

### Employment Rate by Sex, Aboriginal People, 2001



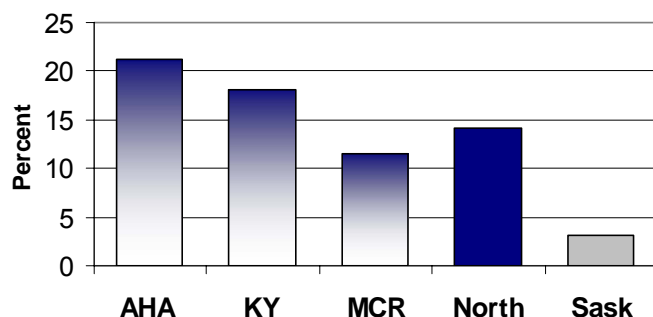
Source: 2001 Census Aboriginal Profile

The employment rate is lower for northern Aboriginal peoples (32% for northern Aboriginal women, 33% for Aboriginal men compared to almost 38% and 42% for all northern women and men). The rates of employment for northern Aboriginal men and women are lower than the southern Aboriginal men and women.

Unemployed people tend to experience more health problems. Long-term unemployment could extend ones' susceptibility to poor health. The long-term unemployment rate is the proportion of the labour force aged 15 and older that did not have a job at any time in 2000-2001. The labour force consists of people currently employed and people who are unemployed but were available to start work in the week prior to enumeration and looked for work in the past 4 weeks.

## Long-Term Unemployment Rate

Labour Force Aged 15 and Over



Source: Census 2001

The long-term unemployment rate in northern Saskatchewan is significantly greater than that in the whole province (14% compared to 3%). The rates for the Keewatin Yatthé and the Athabasca areas are significantly greater than many other northern regions in Canada.

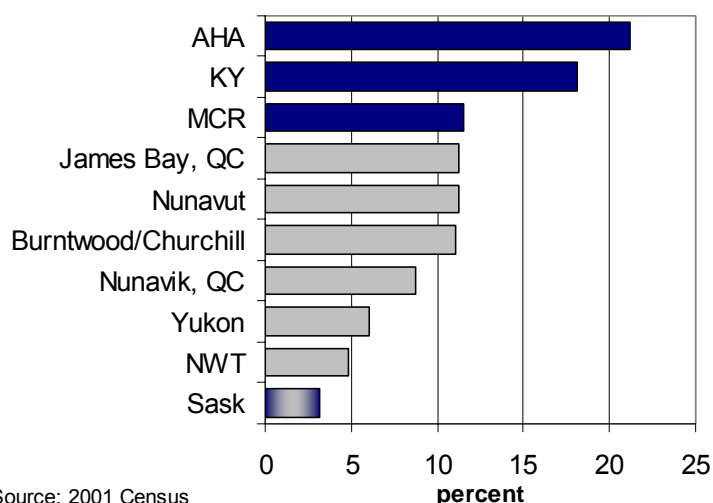
For a more detailed assessment of employment in northern Saskatchewan by sector, the Northern Saskatchewan Training Needs Assessment Report 2003 is an excellent source and is available on the Internet.<sup>3</sup>

If we compare the northern Saskatchewan long-term unemployment rates with other northern areas across Canada there are significant differences especially in the AHA and KYRHA areas which appear higher than the other compared northern regions.

This indicator excludes institutional residents.

## Long-term Unemployment Rate, 2001

By Northern Region, Labour Force Aged 15 and over



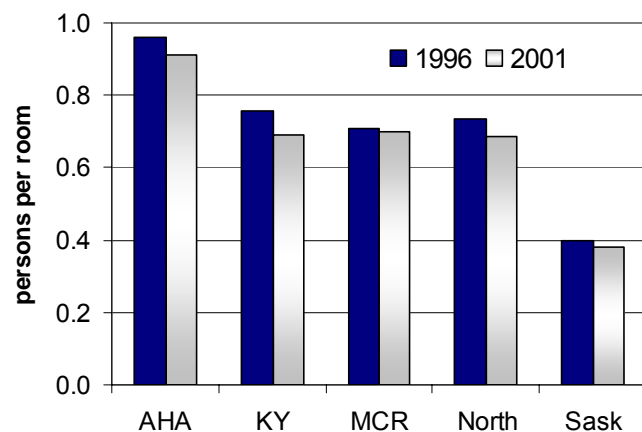
Source: 2001 Census

## PHYSICAL ENVIRONMENT

### 1. Housing

A variety of health concerns are associated with poor housing conditions related to crowding, heating, water supply and sanitation, indoor air quality and general safety reflecting inadequate housing and community infrastructure. Poor housing conditions have been associated with a wide variety of health conditions including infectious diseases, non-infectious respiratory diseases, mental health concerns and inter-personal conflicts, possibly injuries from violence and suicides and deaths or injuries from fires.<sup>4</sup>

### Crowding in homes, by Region, 1996 and 2001



Source: Census 1996 and 2001

There are a variety of indicators that give a rough idea on the extent of crowding. One way of comparing between regions that Census Canada uses is the average number of persons per room in a house.

In northern Saskatchewan there has been a slight improvement in the number of persons per room between 1996 and 2001, though there remains a significant difference with that of the whole province. In northern Saskatchewan there is an average of 0.69 persons per room compared to 0.38 for the provincial average. In the Athabasca area, the average number of persons per room is as high as 0.91.

Another way of assessing adequacy of housing is the proportion of the population with more than one person per room in a dwelling, commonly regarded as “overcrowding” in the Canadian context. For Aboriginal people in Saskatchewan as a whole it is estimated that about 8.7% live in a dwelling with more than one person per room, whereas in northern Saskatchewan, that rate is estimated at just over 20%. For Aboriginal people in northern Saskatchewan, the average number of persons per room is 0.8 compared to the provincial number of 0.38 for 2001.

### Occupied Private Dwelling Characteristic

Aboriginal People in Sask, 2001

	North	Sask
% of Occupied Private Dwellings with more than one person per room	20.1%	8.7%
Average Number or persons per room, 2001	0.8	0.6

Source: 2001 Census Aboriginal Population Profile

## 2. Water

Clean, safe water that is readily available in our homes is an important factor for health – in the protection against water borne diseases that can be spread through drinking water that is contaminated by human or animal activity, but also for the prevention of many illnesses through washing our hands, our bodies, our clothes and our homes.

More and more municipalities and First Nations communities are getting access to clean drinking water. The First Nations drinking water is monitored through the First Nations communities with assistance from their Environmental Health Officers. Northern municipalities own, operate and monitor their drinking water facilities. Monitoring is done with the assistance of Saskatchewan Environment. The water testing results of each municipality in the province is available online through the SaskH2O website.<sup>5</sup>



In the municipal communities, Emergency Boil Water Orders (EBWOs) are issued by the Regional Health Authority when a confirmed threat to public health exists (i.e. microbial contamination). Precautionary Drinking Water Advisories (PDWAs) may be issued by Saskatchewan Environment or the Regional Health Authority for smaller centers when drinking water quality problems may exist although an immediate public health threat has not been identified.

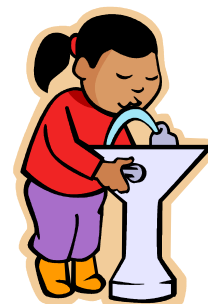
### Municipal Precautionary Drinking Water Advisories and Emergency Boil Water Orders: 2003

#### Total New Advisories / Orders in 2003

- EBWO - 1 Northern Village
- PDWA - 2 Northern Settlements
- 4 Northern Hamlets
- 4 Northern Villages

#### Ongoing Advisories – In Place as of December 31, 2003

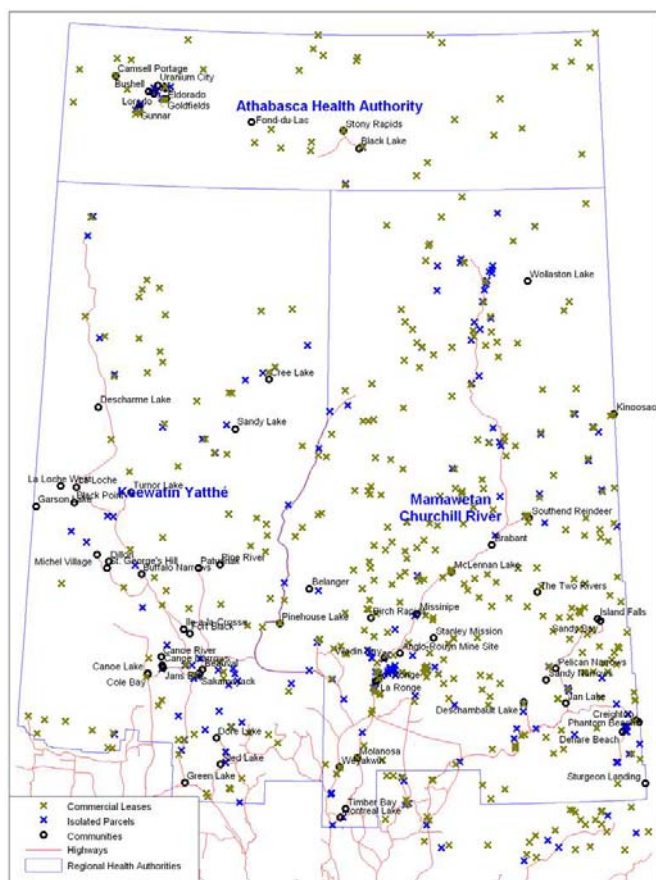
- EBWO - 1 Northern Settlement
- PDWA - 5 Northern Settlement
- 2 Northern Hamlets
- 2 Northern Villages



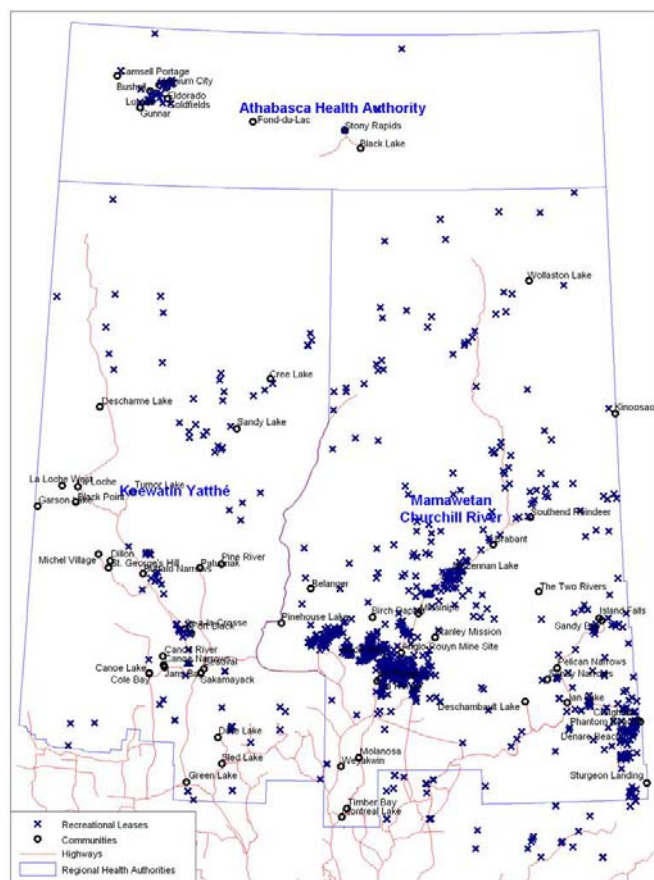
There are also many semi-public water supplies across northern Saskatchewan which do not fall under the Saskatchewan Environment regulations. These water supplies are monitored by the operator with assistance from the Public Health Inspectors with the Population Health Unit.

Public Health Inspectors also provide support for private individuals and families with their own water supplies / systems.

## Semi-Public Water Supplies



## Private Water Supplies



## Water Fluoridation

Two northern Saskatchewan off-reserve communities have natural or added fluoride in their drinking water. Fluoride makes the outer layer of the teeth stronger and thus reduces dental cavities. Adding fluoride to the water is the best way to provide fluoride protection to a large number of people at a low cost. That's why many towns and cities put fluoride in the water in a controlled manner. The U.S. Centers for Disease Control recently named fluoridation of drinking water one of the 10 most successful public health measures in this century.<sup>6</sup> It is also an effective community measure to reduce inequalities in oral health.<sup>7</sup>

In many communities in northern Saskatchewan where there is not adequate fluoride in the water, fluoride mouth rinse programs are offered to school children. The table on the right shows the communities in which fluoride is available through the water or through mouth rinse programs. Mouth rinse programs are also available in most First Nation communities.

### Access to fluoride: water or mouth rinse programs

Community	Adjusted or Natural Fluoride Level	Fluoride Mouth Rinse Program
<b>Athabasca Health Authority</b>		
Stony Rapids		✓
Uranium City		✓
Camsell Portage		✓
<b>Keewatin Yatthé Regional Health Authority</b>		
Beauval		✓
Buffalo Narrows		✓
Bear Creek		✓
Green Lake		✓
Ile a la Crosse		✓
LaLoche	Natural avg 1.38 ppm	
St. George's Hill		✓
<b>Mamawetan Churchill River Regional Health Authority</b>		
Air Ronge		✓
Creighton		✓
LaRonge	Adjusted avg 1.14 ppm	
Pinehouse Lake		✓
Sandy Bay		✓

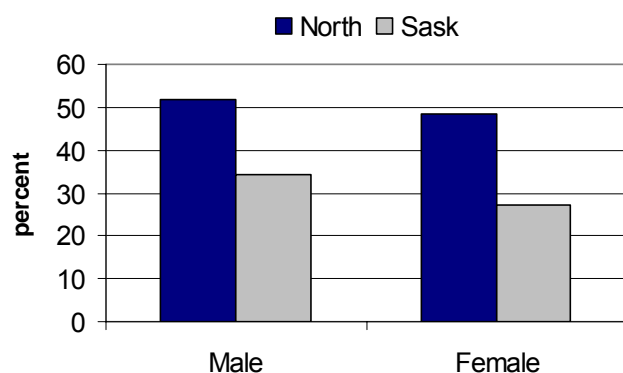
Source: Population Health Unit Dental Stats Apr 04



### 3. Air

We are blessed in northern Saskatchewan with a very picturesque natural environment and high air quality. Human health impacts of air quality are often localized and of an event-specific nature, such as the seasonal impact of forest fire smoke. During severe fire incidents, communities or susceptible individuals are periodically evacuated, primarily as a precaution against the direct assault of fire but also because of the impact of smoke. Indoor air quality is affected by overcrowding, environmental tobacco smoke, wood burning, and the storage of fuels and solvents in the homes.<sup>8</sup>

#### Exposure to Second-Hand Smoke, 2000-01



Source: CCHS 2000/01

Individuals smoking in the home, workplace or public places contribute to problems of air quality. There is stronger evidence now for the negative health effects of environmental tobacco smoke (also known as second hand smoke) including lung cancer, heart disease, reduced lung function, increased risk of lower respiratory tract illnesses such as emphysema, acute exacerbation of asthma resulting in hospitalization, increased risk for sudden infant death syndrome (SIDS), middle ear infections, and for infants being born with low-birth weight.

The percentage of children under the age of 2 being exposed to tobacco smoke at home decreased in Saskatchewan from 40% to 26% from 1996/97 to 2001<sup>9</sup>. This information is not available for northern Saskatchewan.

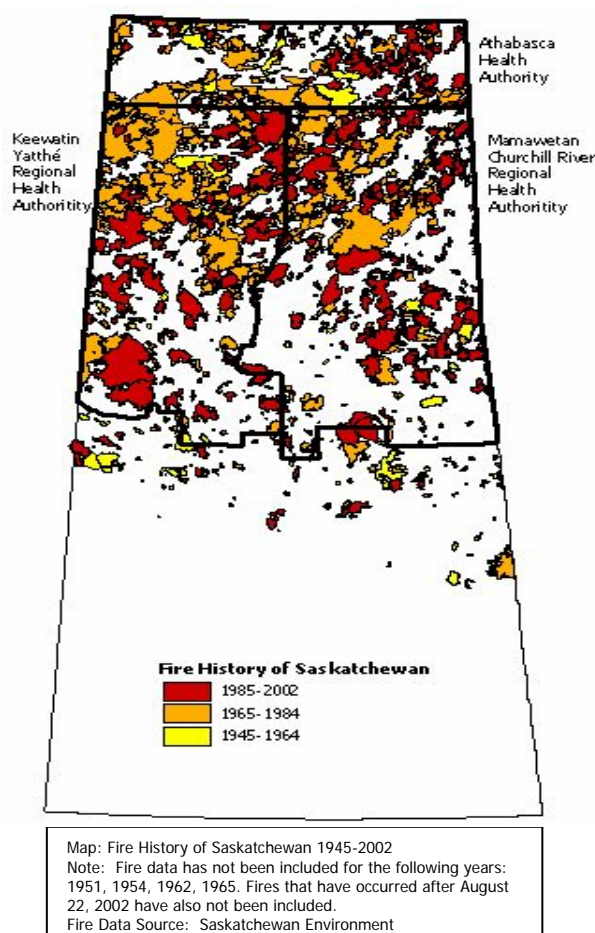
However, we do know that the exposure to environmental tobacco smoke for northern males and females is greater than their Saskatchewan counterparts at 52 and 48% versus 35 and 28%, which for northern women is almost double the provincial exposure rate.

#### Forest Fires in Northern Saskatchewan

Much of northern Saskatchewan has been affected by fires over the past decades. The accompanying map shows the areas where forest fires have occurred in Saskatchewan with most of the fire activity on the map occurring since 1965.

Forest fires can impact health because of the threat to the community from the fire itself but also because of smoke. Communities, health agencies and other organizations need to consider both the threat of fire and smoke impacts in their emergency plans.

A project that has just started and been approved for funding from Natural Resources Canada is entitled "Climate changes, wildfires, and respiratory ailments in northern Saskatchewan". It is being conducted by a team including Saskatchewan Environment, Saskatchewan Research Council, the northern health authorities' Population Health Unit and Saskatchewan Health. The project will examine the relationship between wildfire conditions and respiratory ailments in northern Saskatchewan and to estimate possible impacts of climate change on wildfires.<sup>10</sup>



## SOCIAL ENVIRONMENT

Social environments include things such as the strength of social networks within a community, social stability, recognition of diversity and culture, safety, good working relationships, civic participation, and volunteerism. A good social environment can reduce or avoid many potential risks to good health.<sup>1</sup> The caring that comes from social networks brings a sense of well-being and seems to act as a buffer against health problems.<sup>11</sup> Some studies have shown that high levels of trust and group membership were found to be associated with lower death (mortality) rates.<sup>12</sup> A social environment that supports working together on common issues through partnerships is valuable. Northern Saskatchewan has many positives with communities and families working together.

Wealth distribution can be seen as part of the social environment. Much discussion has occurred relating the impact of income on health. There is also strong evidence that the health of a population is influenced by the equality of income distribution more than just the average income in a community.<sup>11</sup> We do not have a lot of information on income distribution in northern Saskatchewan but this is an area to be aware of in the development of educational and economic options and policies. Kawachi and Kennedy as a result of their research in the U.S. suggest that economic inequities contribute to frustration, stress, and family disruption which then contribute to the rates of crime and violence.<sup>12</sup>

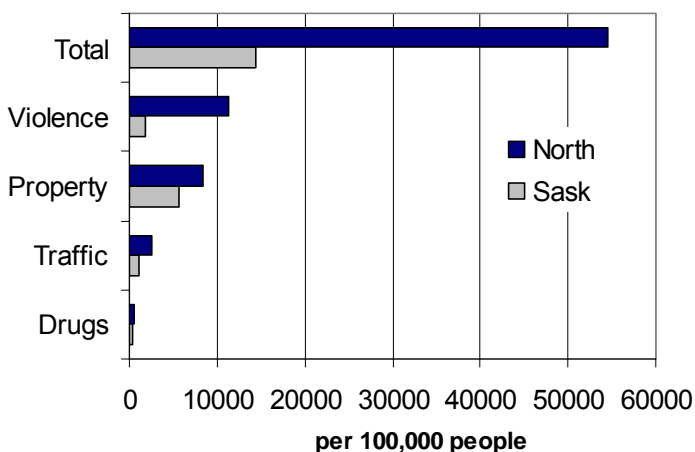
Crime and violence indicators of the social environment are concerns.

### Crime Incidents

Crime is associated with a variety of social and socio-economic issues. The same social and environmental factors that predict geographic variation in crime rates may also be relevant to explaining community variations in health and well-being.<sup>13</sup> A report on crime in England reported in the London Health Observer stated that there are many links between crime and health. The level of crime and fear of crime affects people's quality of life and can contribute to social isolation. Personal violence and assault can have both mental and physical consequences for health in the short and long term. Abuse of children can have both short and long term effects on the health of children. The short term effects of child abuse may result in physical injury, depression, learning problems in school and behavioural disorders, while the long term consequences can affect a child's development and psychosocial functioning.

Drug and alcohol are key factors in many crimes. Often drug related crime is non-violent and includes theft, shoplifting, burglary and prostitution. Alcohol consumption is strongly associated with violent crime particularly amongst men in the 15 to 25 year age groups.

### Crime rate, total and selected offences, 2002



Source: Uniform Crime Reporting Survey, Canadian Centre for Justice Statistics (Sask Justice Mar 04)

The total crime rate is the number of Criminal Code offences per 100,000 people, for violent crimes, property and other crimes. Violent crimes are "person offences", which include homicide, attempted murder, sexual and non-sexual assault, abduction, and robbery. The crime rate is based on the number of incidents reported to or by the police, which includes only a portion of all criminal events. It is influenced by the extent that community members recognize that a crime has occurred and choose to report it to the police and by local police resources, enforcement priorities, and discretion in the recognition and recording of a crime.<sup>14</sup> Based on victim survey research, 4 in 10 incidents come to the attention of the police<sup>15</sup>.

Saskatchewan reported the highest crime rate among the provinces in 2002, followed by British Columbia and Manitoba. Saskatchewan also had the highest

violent crime rate, while British Columbia reported the highest property crime rate<sup>16</sup>.

The statistics for the northern health regions shown in the chart above include incidents reported by all northern RCMP detachments, including the Waskesiu detachment. They do not include Cumberland House or Pierceland, which cover part of the northern health regions and are part of the former northern administrative district, but are based in the south. The total crime rate in the northern health regions (54,482.5/100,000) was 3.8 times higher compared to the whole province (14,378.2/100,000) in 2002. Among the major types of offences, the rate was highest in the north for violent crime (11,354/100,000), which was 6.8 times the rate for all of Saskatchewan (1811.7/100,000).



“We may not be able to change the world, but we can change our communities by starting with ourselves.”

Northern Saskatchewan Youth, We Say...Youth Workshop. Community Vitality Monitoring Partnership Process, March 2002



## PERSONAL HEALTH PRACTICES

Personal health practices generally refer to actions by which individuals can prevent disease or promote health. It includes such things as smoking, physical activity, diet, use of alcohol and illicit drugs, and our use of preventive health services.

The term “lifestyle” is often used to describe personal health practices. It includes not only individual choices, but also the social, economic, and environmental influences on the decisions people make about their health.

There is growing recognition that personal life “choices” are greatly influenced by the socioeconomic environment.<sup>1</sup>

### 1. Smoking

Smoking is estimated to be responsible for at least one-quarter of all adult deaths. Smoking has an impact on a variety of cancers (especially lung cancer), heart disease and stroke, chronic lung disease, SIDS, and diabetes. Previous information was centered on smoking and the increased risk of complications for people with diabetes – more recent evidence is also strengthening the association of smoking with the risk of developing type 2 diabetes.<sup>17,18,19</sup>

Non-traditional use of tobacco is an important health issue in Aboriginal communities as it is for non-Aboriginal populations. In Canada, the percentage of smokers declined from 30% in 1990 to 23% in 2000.<sup>20</sup> In 1997, First Nations in Canada reported smoking rates of 62%. Sixty percent of smokers started before the age of 16.<sup>21</sup>

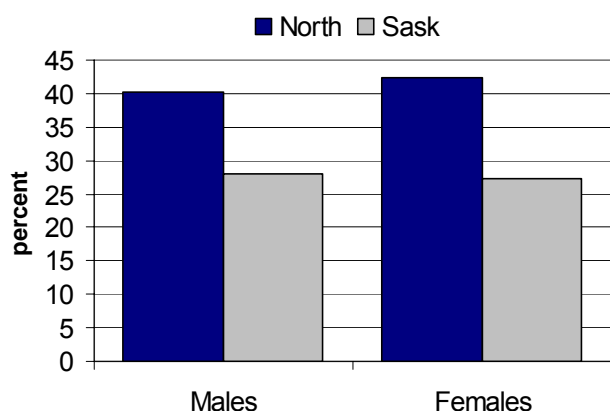
In northern Saskatchewan off-reserve communities, the smoking rates were found through the Canadian Community Health Survey to be higher than the provincial rates. Northern males (40%) reported being smokers more often than the provincial males (28%). Northern females (42%) reported being smokers more than the provincial females (28%) and more than the northern males. The graph on the rate of daily or occasional smoking by age group shows that the northern off-reserve population reported being smokers more frequently than their provincial counterparts in all age groups. The highest rate was reported in the 20 to 34 year age group where it reached more than 50%.

Saskatchewan information shows that while the overall smoking rates in youth between 15 and 19 years of age have decreased from 34% in 1999 to 21% in 2003, there are some worrisome trends. The percentage of Saskatchewan females smoking between 15 and 24 years of age is 33% - higher than the males of that age group at 24%.<sup>22</sup>

This information on smoking patterns should be considered in viewing the other information in the health status chapter dealing with cancer, diabetes, sudden infant death syndrome, respiratory diseases and heart disease and stroke.

#### Daily or Occasional Smokers

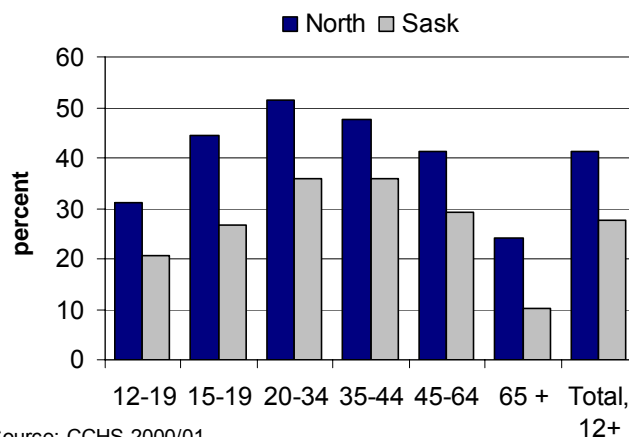
Off reserve population, by sex, 2000-01



Source: CCHS 2000/01

#### Daily or Occasional Smokers

Off reserve population, by age group, 2000-01



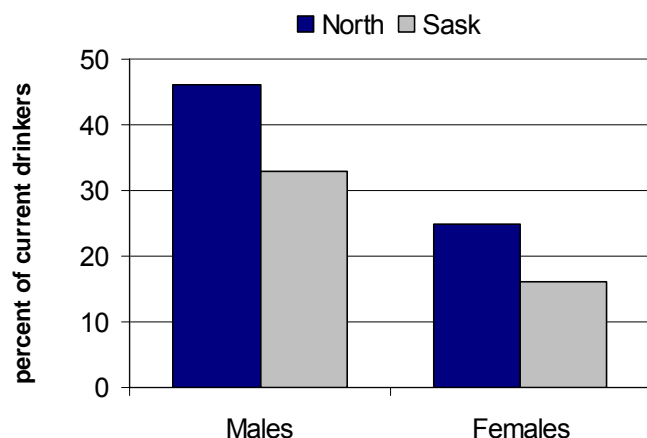
Source: CCHS 2000/01

## 2. Drinking Alcohol

There are consistent reports about the major significance of alcohol and other substance abuse in northern and Aboriginal communities. Information from 1985 to 87 for Saskatchewan First Nations suggested that alcohol use was implicated in 92% of motor vehicle accidents, 46% of suicides in the 15 to 34 year age group, 38% of homicide perpetrators, 50% of fire and drowning deaths, and 80% of exposure deaths.<sup>23</sup> Drinking in pregnancy has implications for infant health including fetal alcohol spectrum disorders.

### Heavy Drinking among Current Drinkers

Five or more drinks at one time, 12 or more times per year,  
Ages 12 and over, 2000-01

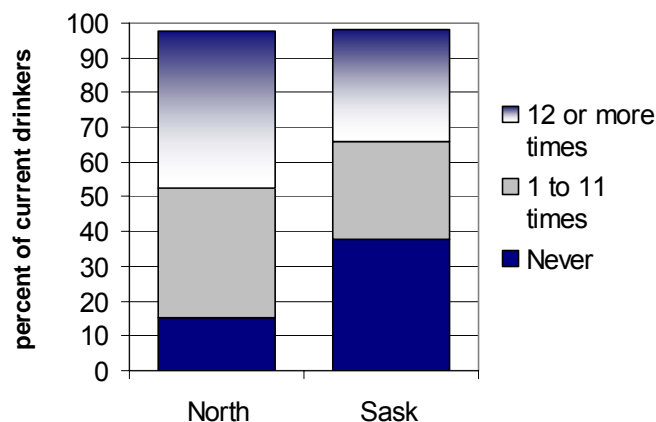


Source: CCHS 2001

Heavy drinking was defined in the Canadian Community Health Survey as drinking 5 or more alcoholic drinks at one time 12 or more times per year.

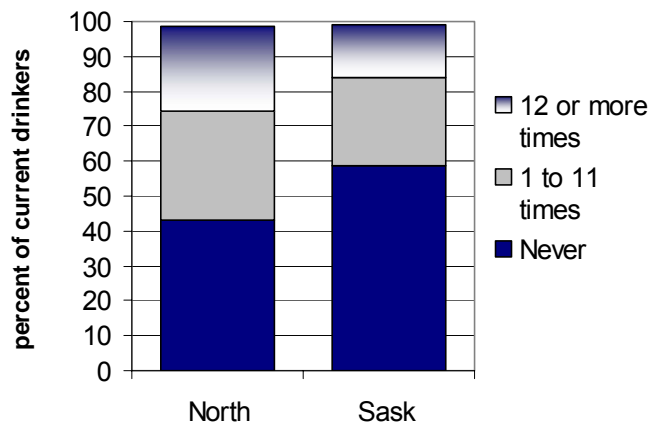
In off-reserve communities, 46% of northern Saskatchewan males, aged 12 and over, who currently drink reported heavy drinking compared to the provincial average of about 33%. About 25% of northern females who drink reported heavy drinking, compared to about 16% in the province.

### Males aged 12 years & over, 2000-01



Source: CCHS 2001

### Females aged 12 years & over, 2000-01



Source: CCHS 2001

The above graphs show the differences in males and females in northern Saskatchewan off-reserve communities compared to the provincial averages for frequency of heavy drinking. Heavy drinking 12 or more times per year among current drinkers is more common in northern Saskatchewan males and females than their provincial counterparts.

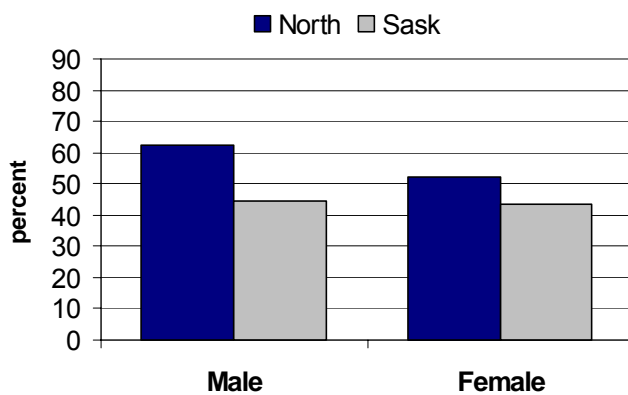
### 3. Physical Activity

Physical activity has been found to have significant health impacts including:

- **disease prevention and management** for heart disease and stroke, type 2 diabetes, some cancers (including colon and breast), osteoporosis (or weak bones), obesity and mental health disorders; and
- **health enhancement** including improved health and quality of life, psychological well-being, improved behaviour in children and ability to learn, better health habits and reduced health care costs.<sup>24</sup>

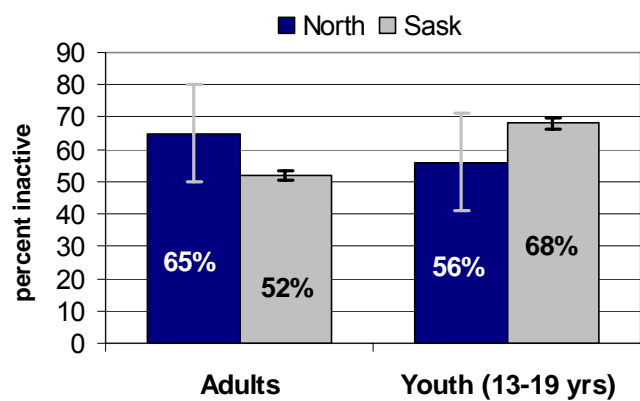
A greater proportion of men and women in northern Saskatchewan report being active or moderately active compared to the provincial population, as shown in the left-hand graph below. More northern men tend to be active (62%) compared to provincial men (45%); more northern Saskatchewan women (52%) tend to be active compared to provincial women (43%).

**Being Active or Moderately Active During Leisure Time, 2000-01**



Source: CCHS 2001

**Levels of Inactivity, 2003**



Source: Saskatchewan In-Motion 2003

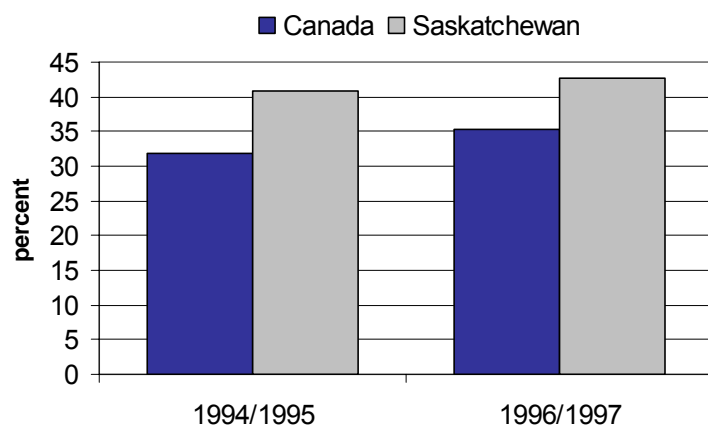
In-Motion commissioned a survey in Saskatchewan in 2003 looking at levels of inactivity across various regions in the province. It was found that fewer northern youth were inactive than the provincial youth, though northern adults were more inactive than provincial adults. Neither of these differences was statistically significant because of the small sample sizes, as indicated by the overlapping error bars in the graph on the right, above.<sup>25</sup>



## 4. Breastfeeding Practices

The World Health Organization (WHO) states that breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants. It is also an integral part of the reproductive process with important implications for the health of mothers. The WHO report goes on to say that as a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health.<sup>26</sup>

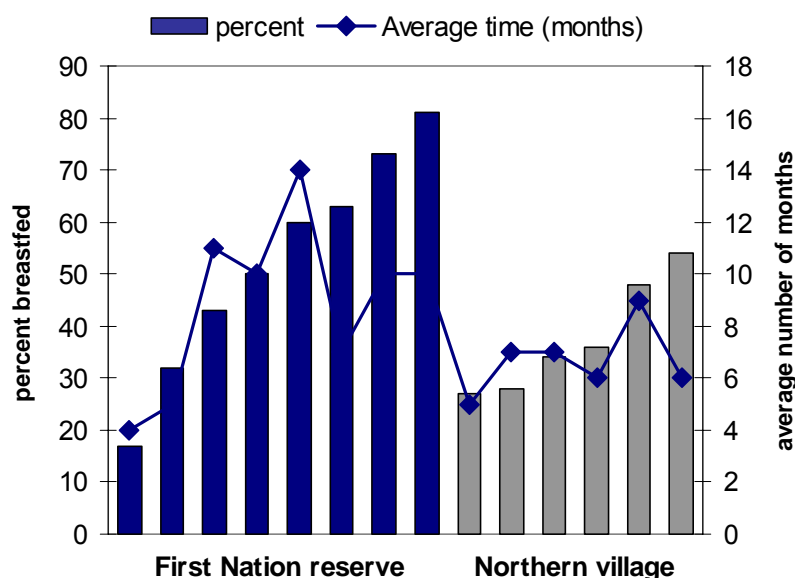
### Children born in the past 3 years who were breastfed more than 3 months, 1994/95 to 1996/97



Source: Statistics Canada

There is good evidence that breastfeeding provides infants with protection against gastrointestinal infections (e.g. diarrhea), respiratory illness, and the development of food allergies; benefits for cholesterol levels later in life; and an increase in the weight loss in women who breastfeed. A recent study in Manitoba has also suggested that breastfeeding reduces the risk of type 2 diabetes among Native Canadian children.<sup>27</sup>

### Past Breastfeeding Practices, by Community, 2001, Northern Saskatchewan Aboriginal children, Aged 4 to 14 years



Source: Aboriginal Peoples Survey, 2001

The 2001 Canadian Aboriginal Peoples Survey assessed, by community, the percentage of children aged 4 to 14 who had been breastfed as infants and the average length of time they were breastfed. In northern Saskatchewan, Aboriginal people from 6 Métis and 8 First Nations communities, totaling about 45 percent of the northern Aboriginal population, were included in the survey.

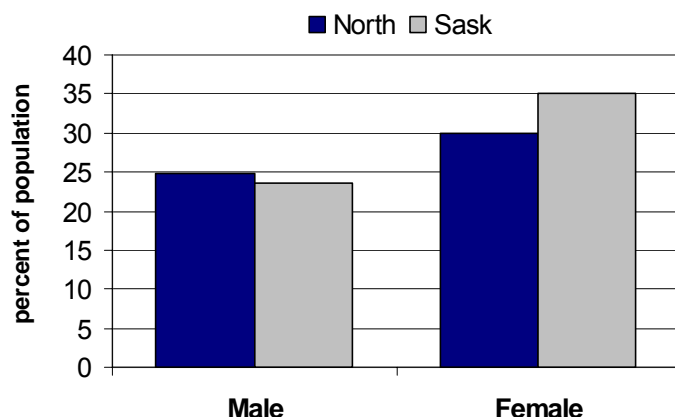
The percent of children now aged 4 to 14 years who were breastfed as infants and the length of time they were breastfed varied a lot among selected First Nation and Northern communities. Some communities had fairly high levels of breastfeeding – one community as high as 80% of children. One community's average length of breastfeeding was almost 14 months. Along with the increasing awareness of the benefit of breastfeeding and increased support for women wanting to breastfeed, it will be important to monitor progress in this area, as it is so important for infant health.



## 5. Dietary Practices

Dietary practices, particularly the consumption of fat, are linked to a variety of health concerns including heart disease, cancer, type 2 diabetes, and obesity. There has been a lot of attention placed on making it easier for people to make healthy choices through the Northern Diabetes Prevention Coalition, including creating healthy public policy to increase the access to healthy foods.<sup>28</sup>

### People Who Eat Fruit and Vegetables, 2000-01 5 or more times a day, Age 12 and over

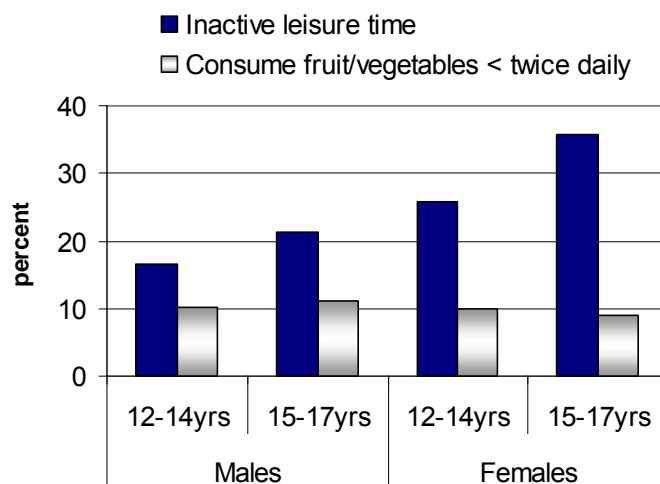


Source: CCHS 2000-01

Canada's Food Guide to Healthy Eating recommends 5 to 10 servings of fruits and vegetables each day.<sup>29</sup>

About 25% of northern Saskatchewan males living off-reserve eat 5 or more servings a day of fruits and vegetables compared to about 24% of provincial males. Females eat fruits and vegetables more often than males. However, fewer northern females living off-reserve (30%) eat the recommended amounts than do Saskatchewan females (35%).

### Adolescents Reporting Inactive Leisure Time and Low Consumption of Fruit and Vegetables



Source: CCHS 2000-01

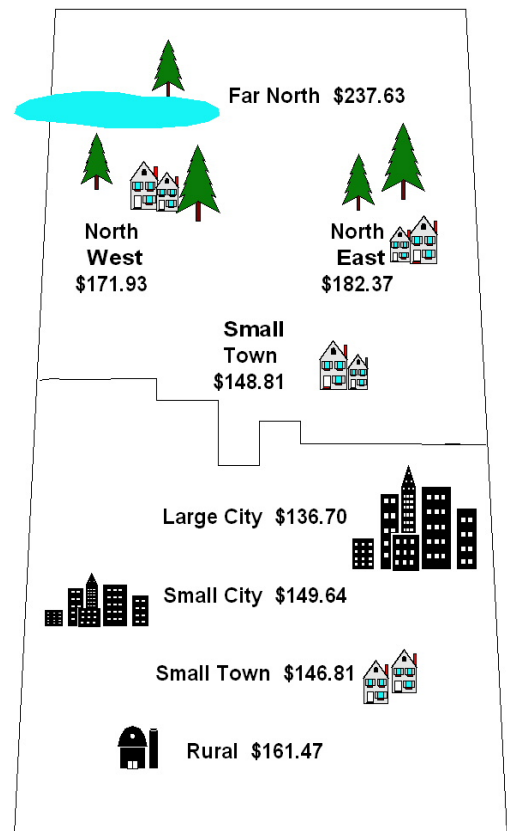
Physical activity and healthy eating go together in maintaining a healthy body weight.

If one looks at the combination of inactivity and the lack of consumption of fruits and vegetables, there are a significant number of children at risk. The patterns of females being less active than males and activity decreasing from early to late adolescence are common across the country.

Dietary practices are influenced by many factors: knowledge, awareness, food traditions, the availability of healthy foods and the cost of foods. Over the past several years, the Northern Diabetes Prevention Coalition has worked to increase the awareness and availability of healthy food choices at various functions, organizations and locations across the north. Schools have been making changes to increase the availability of healthy food choices.

The cost of healthy foods also influences eating practices, particularly for low income families. An assessment was done in 2001 in Saskatchewan to compare the costs of a Nutritious Food Basket for a family of four for one week. The cost of this Nutritious Food Basket was found to be significantly more expensive in parts of northern Saskatchewan compared to other areas of the province. Costs in the Athabasca area, for instance, were found to be almost 75% higher than in the large cities of Regina and Saskatoon.<sup>30</sup>

The Nutritious Food Basket is a useful tool to monitor food affordability – one of the key determinants of food accessibility. It doesn't adequately monitor the nutritional health of the population, however.<sup>31</sup>



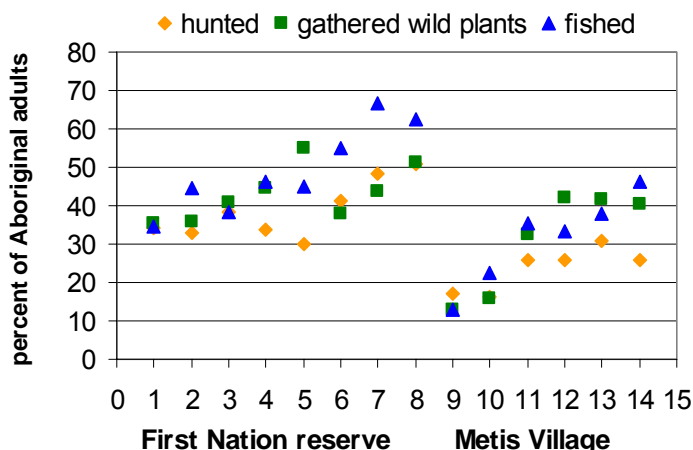
**AVERAGE COST TO FEED A FAMILY OF 4 FOR 1 WEEK**

Source: PHU, La Ronge, 2001

## 6. Traditional land use activity and food gathering

Country or traditional food gathering and consumption are important for Aboriginal peoples for physical health, and social, cultural and economic reasons.<sup>32</sup> Food gathering and activities on the land have been a large part of the social culture of many northern Aboriginal groups – a time of social and family cohesion and passing down of knowledge from one generation to the next.

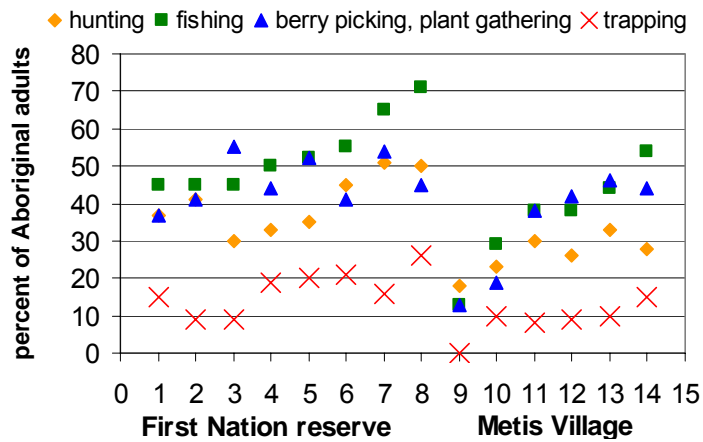
### Activities Primarily for Food Gathering in Past Year, Northern Saskatchewan Communities, 2001



Source: Aboriginal Peoples Survey, 2001

The graph on the left shows the percentage of the population in 15 First Nations and Métis communities that gathered food from the land. It ranges from about 12 to 18% for fishing, hunting and gathering wild plants to as high as 55% hunting, 68% fishing and 55% of the adults in the community gathering wild plants.

### Activities on the Land in Past Year, Northern Saskatchewan Communities, 2001



Source: Aboriginal Peoples Survey, 2001

Participation in activities on the land for all reasons, including food gathering, in these same 15 First Nations and Métis communities, ranged up to 26% of all adults for trapping, 51% for hunting, 71% for fishing, and 55% for berry picking and plant gathering.



Āpwenas or roasting fish



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- 14 Statistics Canada. An overview of the differences between police-reported and victim-reported crime, 1997. Catalogue No.: 85-542-XIE. [cited 21 Apr 2004]. Available from: URL: <http://www.statcan.ca/english/IPS/Data/85-542-XIE.htm>
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## HEALTH STATUS

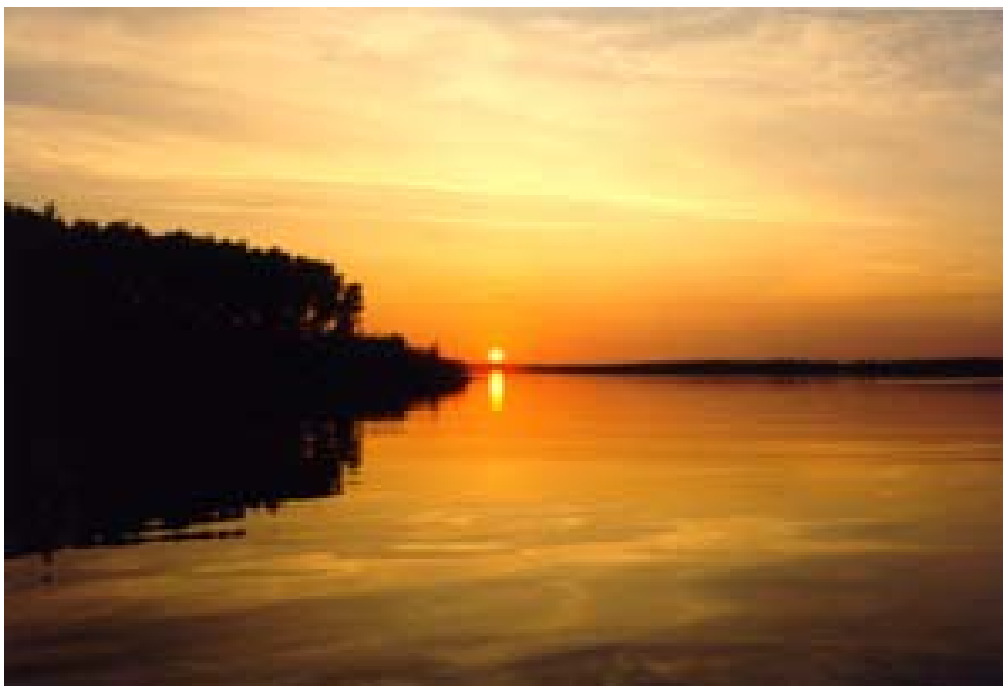
An assessment of the health status of the residents of northern Saskatchewan, based on information about how healthy people perceive themselves to be, about health risks, about disease trends and use of health services, is useful and even necessary for effective planning and evaluating the health services.

As discussed in the previous chapter, health status is a reflection of the many determinants of health including income and social status, employment, education, housing, environment, and social, family and community supports. Health status is not only the result of 'health' services but is also a reflection of many other socio-cultural-economic factors. Many different organizations and groups are involved with activities which impact the health status of the northern Saskatchewan community.

There are various indicators that can be used to monitor community health status. Not all desired community health indicators are readily available. Some of the indicators used in this report are provided on a north wide basis, some indicators may be provided that are regionally specific (i.e. with specific information provided for each health region area). While some indicators are for all residents in northern Saskatchewan, some are limited to those living off-reserve only (such as the indicators from the Canadian Community Health Survey<sup>1</sup> or CCHS). The distinction will be provided for each table or graph.

In some situations we have provided two sources of data when there is some variation of results (e.g. Statistics Canada Census Data<sup>2</sup> versus Saskatchewan Health's Covered Population). Variation in results may depend on the methodologies of obtaining the data, extent of ascertainment, and sample size which can influence accuracy.

There are some challenges in interpretation or predictions of trends because of the small numbers in northern Saskatchewan so some caution is advised.



# WELL-BEING

## Self-Rated Health

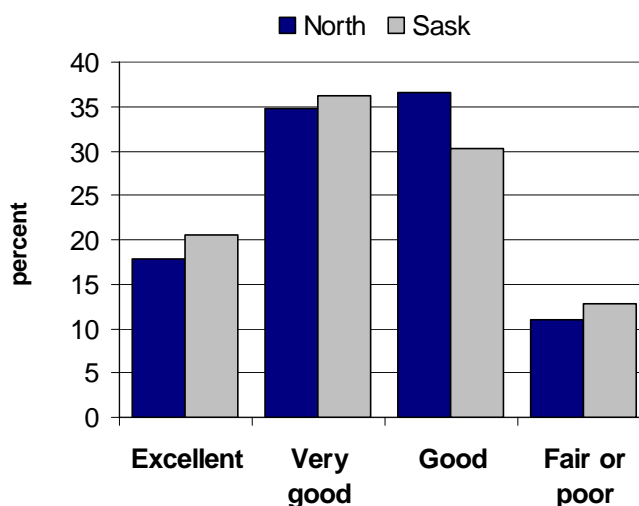
The Canadian Community Health Status Survey of 2001 provides us with some information on how healthy we see ourselves. Self-rated health is an indicator of our “well-being”. This self-rated health status is for off-reserve residents in Canada.

When people are asked how they would rate their health (excellent, very good, good, or fair/poor) and these results are averaged over a population, it can provide a rough indicator of the sense of wellness.

In northern Saskatchewan, a smaller percentage of people rated their health as “excellent” or “very good” as compared to the overall Saskatchewan population. A higher percentage related their health as “good”; and a slightly smaller percentage rated their health as “fair” or “poor”.

### Self Rated Health Level Off-Reserve

Ages 12 & Over: Northern Sask Off-reserve, 2000-01



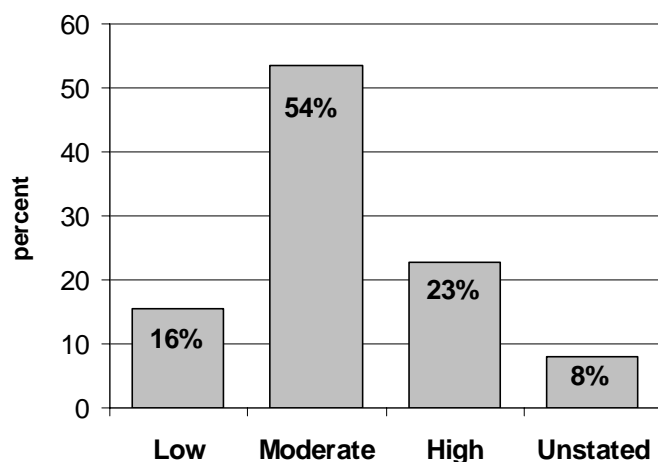
Source: CCHS 2001

## Self-Esteem

In the Canadian Community Health Status Survey 2001, individuals living off-reserve over the age of 12 years were asked about their level of self-esteem. Self-esteem is what people think about themselves. It is measured by responses to whether or not they have some good qualities; have a positive self-attitude and self-satisfaction; feel they are of equal worth and are able to do things as well as most others, or have feelings about being a failure.

### Levels of Self Esteem

Ages 12 & Over in Northern Sask, Off-reserve 2000-01



Source: CCHS 2001

Approximately a quarter of the population (23%) felt that they had a high level of self-esteem, whereas 16% felt that they had a low level of self-esteem. We can use this information to compare over time and monitor positive or negative changes. Self-esteem levels may be influenced by our education system, socio-economic factors, parenting, community services and media.

# MORTALITY (DEATH AND CAUSES)

Mortality or death is used for a variety of community health indicators and is useful to some extent for health planning. It is a crude indicator as it only measures illnesses or injuries which are severe enough to cause death.

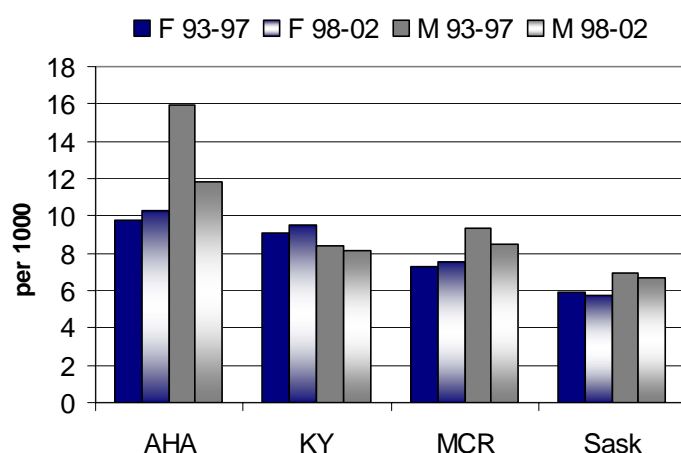
## TOTAL MORTALITY RATES

Overall rates of death for all causes in northern Saskatchewan regions (for residents in the north living on and off-reserve) are compared to the Saskatchewan rates and assessed for changes over time. The following graphs show the overall rate for the whole population and for various age groups as well.

In comparing different populations such as northern Saskatchewan and the total Saskatchewan population, we are comparing two populations with very different age structures. The Saskatchewan population with its greater proportion of elders would be expected to have a higher death rate particularly for those illnesses that are more common in that age group. In order to make a fair comparison between two or more populations that may have different characteristics such as age-structure, an epidemiologic tool is used in order to make the comparisons more realistic. In most of our comparisons "age-adjusted" or "age-standardized" rates are used, which indicates the rates that one would predict if the compared groups had the same age-group characteristics.

### Annual Age-Adjusted Mortality Rates

By Sex and Region, 1993-2002



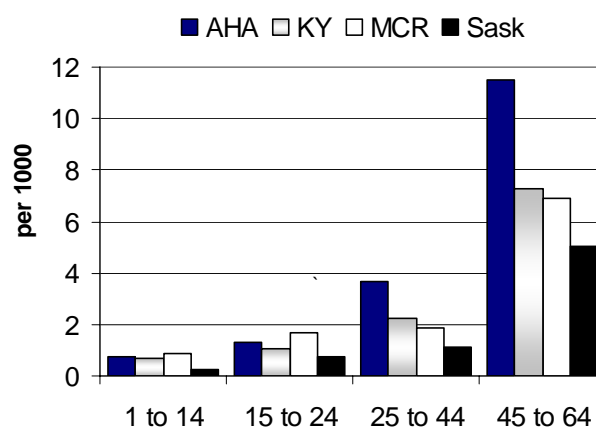
Source: Sask Health

Generally the age-adjusted mortality rate for males is higher than for females, which is the case in northern Saskatchewan and Saskatchewan as a whole except for Keewatin Yatthé Health Region where females have a slightly greater mortality rate.

The mortality rate has been generally decreasing in Saskatchewan and northern Saskatchewan over the 2 five-year comparison time periods; 1993-97 and 1998-2002. This decrease is seen more in males in both the provincial and northern data; in fact, though small, there has been a slight increase in the mortality rate of women in AHA, KYRHA, and MCRRHA during these two periods.

### Annual Age-Specific Mortality Rates

1998-2002 (1998-2000 for MCR)

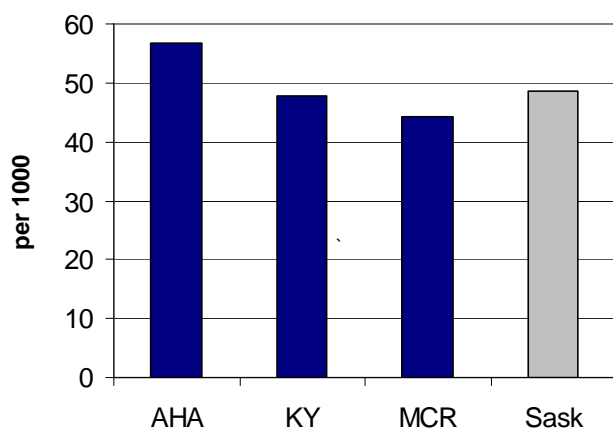


Source: Sask Health

It is generally expected that the mortality rate increases with age. When comparing the age-specific mortality rates less than age 65 years with those of the province, the rates are higher for all three northern health areas for all age groups. This situation also exists for mortality rates under the age of one year (referred to as infant mortality rates).

## Annual Mortality Rates, Age 65 and Over

By Region, 1998-2002 (1998-2000 for MCR)



Source: Sask Health

Across the north the mortality rate for those over the age of 65 years is just slightly less than the provincial rate, which is a great distinction from the mortality rate figures for those under the age of 65 years which is almost double the provincial rate.

The reason for the similarities in the mortality rates over the age of 65 years while there is a large gap under the age of 65 years is not clear. One of the possible explanations is that northern elders have benefited from the greater physical activity and healthier diet of a traditional lifestyle in comparison with the younger generations, and have had fewer injuries than their southern counterparts.

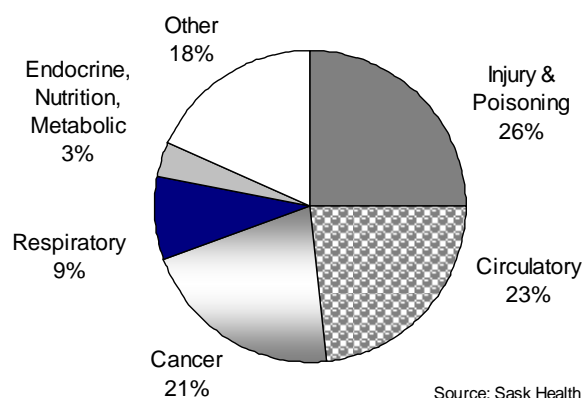
## MAJOR CAUSES OF MORTALITY

There are some differences in the highest causes of mortality in northern Saskatchewan compared to the province. Injuries and poisoning make up the greatest proportion of deaths in northern Saskatchewan, at 26% compared to 7% of the provincial deaths.

In the province as a whole, circulatory deaths (such as ischemic heart disease, myocardial infarctions, and strokes), make up the greatest proportion of deaths at 39%, followed by cancer at 26%. In northern Saskatchewan, circulatory deaths are the second most frequent cause of deaths at 23% and cancer third at 21%.

### Top Five Causes of Death, North

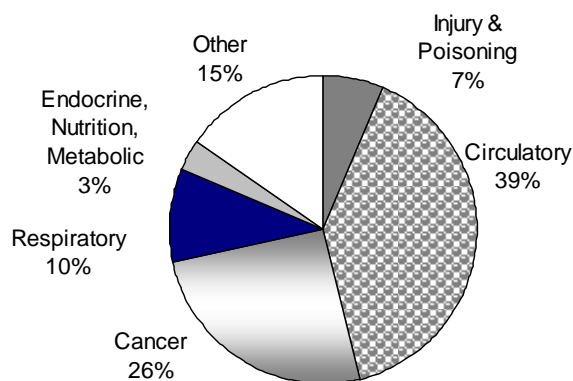
1993-99



Source: Sask Health

### Top Five Causes of Death, Saskatchewan

1993-99



Source: Sask Health

### Number and percent of deaths, by cause, North and Sask

Cause (ICD9 chapter)	1993-99			1974-96
	North #	North %	Sask %	North %
Injury & Poisoning	250	24.9	6.5	30.1
Circulatory	234	23.3	39.5	22.5
Cancer	212	21.1	25.5	16.3
Respiratory	88	8.8	9.9	10.1
Endocrine, Nutrition, Metabolic	35	3.5	3.2	2.0
Digestive	29	2.9	3.5	2.5
Symptoms, Ill-Defined	25	2.5	1.1	3.8
Perinatal	22	2.2	0.5	3.2
Congenital	19	1.9	0.7	2.5
Nervous Sys & Senses	17	1.7	3.5	1.4
Unknown	17	1.7	0.3	0.0
Infectious & Parasitic	16	1.6	0.9	2.5
Mental Disorders	16	1.6	2.0	0.9
Genitourinary	13	1.3	1.8	1.3
Musculoskeletal	5	0.5	0.6	0.3
Blood	2	0.2	0.5	0.3
Skin	2	0.2	0.1	0.2
Pregnancy, childbirth	1	0.1	0.0	0.1
Grand Total	1003	100.0	100.0	100.0

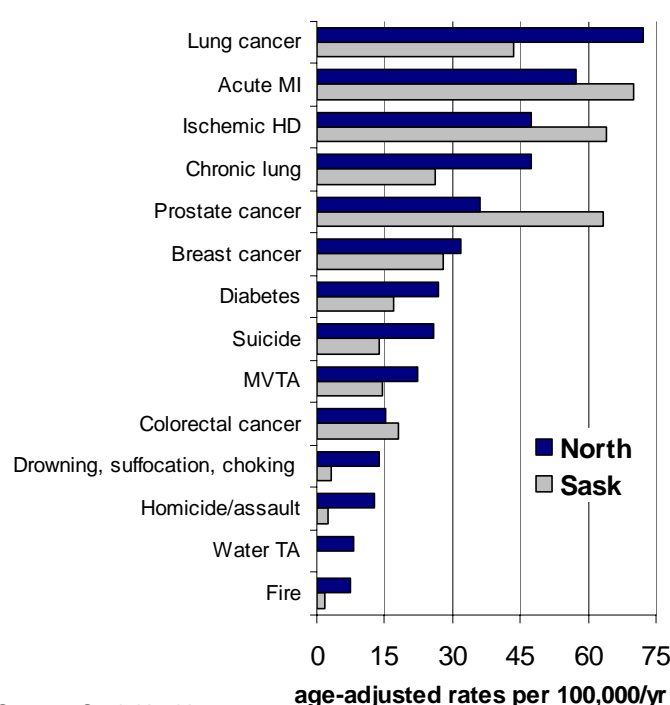
In comparison to the time period of 1974-96, the top five overall causes of death remain the same and in the same order for northern Saskatchewan as compared to 1993-99.

However, there have been small changes. There has been a slight reduction in the proportion of deaths in northern Saskatchewan from injuries and poisonings (from about 30% to about 25%), perinatal and congenital conditions, and infectious diseases though an increase in the proportion of deaths from cancer (16.3% to 21.1%, some of which may be related to the increased number of elders in the more recent time period), from endocrine & metabolic disorders (2% to 3.5%), and from circulatory diseases (22.5 to 23.3%).

The following graph reveals the most common causes of chronic disease and injury deaths in northern Saskatchewan for 1993-99. This graph reveals some differences compared to the above pie charts that assess causes of death by group of disease: injuries and poisoning, circulatory, cancers, etc. The following reveals the most common causes of death by specific cause.

### Common Causes of Chronic Disease and Injury Deaths

1993-99



Source: Sask Health

The five most common specific causes of death chronic disease and injury in the north are:

- 1) Lung cancer
- 2) Acute myocardial infarction (heart attack)
- 3) Ischemic heart disease
- 4) Chronic lung disease
- 5) Prostate cancer

The five most common specific causes of death from chronic disease and injury in Saskatchewan are:

- 1) Acute myocardial infarction
- 2) Ischemic heart disease
- 3) Prostate cancer
- 4) Lung cancer
- 5) Breast cancer

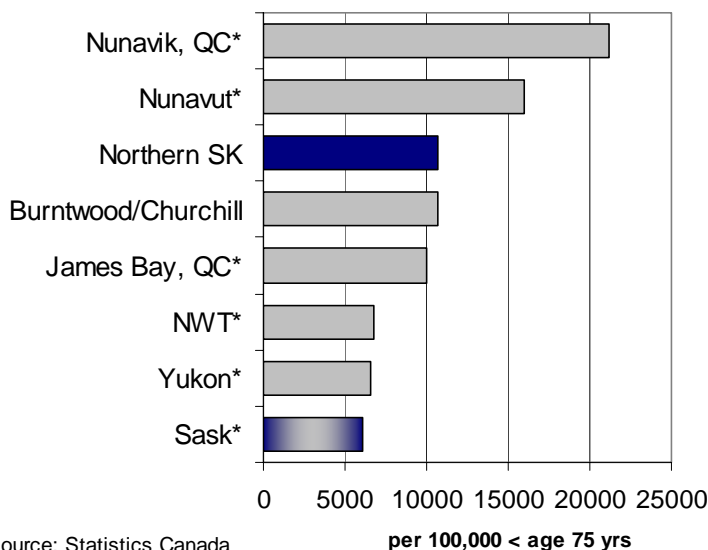
The rates of death from lung cancer, chronic lung disease, diabetes, suicides, motor vehicle traffic accidents, drowning, homicides, water traffic accidents and fires are higher in northern Saskatchewan but the rates of death from acute myocardial infarction, ischemic heart disease, and prostate cancer are lower than the provincial rates. Injuries and the smoking related diseases of lung cancer and chronic lung disease make up a large part of the differences in death rates between northern Saskatchewan and the province.

## POTENTIAL YEARS OF LIFE LOST (PYLL)

Potential Years of Life Lost (PYLL) is an indicator of premature mortality. It gives more weight to causes of death occurring at younger ages than to those occurring at later ages. More specifically, the indicator PYLL estimates the total years of life lost before age 75 years by persons between their 1<sup>st</sup> and 75<sup>th</sup> birthdays. The death of a 12 year old child contributes 63 years to the potential years of life lost, while the death of a 74 year old contributes only one year.

### Potential Years of Life Lost (PYLL) Rate, All Causes

By Northern Region / Territory, 1997



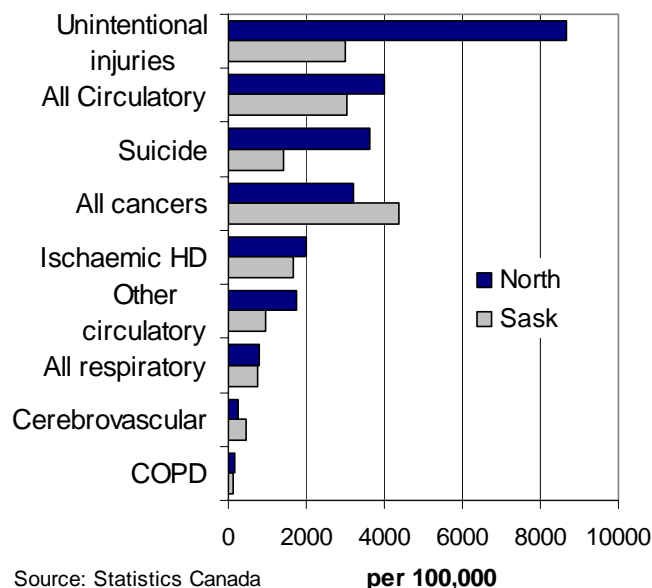
The rate of potential years of life lost in northern Saskatchewan is about 11,000 per 100,000 compared to 6,500 for Saskatchewan. Thus the premature death rate in northern Saskatchewan is about 1.8 times greater than the provincial rate. If we compare premature death rates across other northern locations in Canada, the rates for northern Saskatchewan are significantly greater than the Yukon, Northwest Territories and the Quebec James Bay Cree, approximately equivalent to that in the Burntwood/Churchill region of Manitoba and significantly less than the rate in Nunavut and Nunavik.

\*The difference between northern Sask and all other regions, except Burntwood/Churchill, is statistically significant.

When we look at selected causes of premature death we can see that unintentional injuries and suicides make up a very large proportion of the differences in premature death in northern Saskatchewan compared to the provincial rates. Premature deaths from circulatory diseases and ischemic heart disease are also greater in the north. Cancer is the fourth leading cause of premature deaths in northern Saskatchewan but it is the leading cause of premature deaths in the province. The rate of premature deaths from cancer is slightly lower in northern Saskatchewan than in the province.

### Premature Deaths (PYLL)

By Selected Causes, Sask and North, 1997



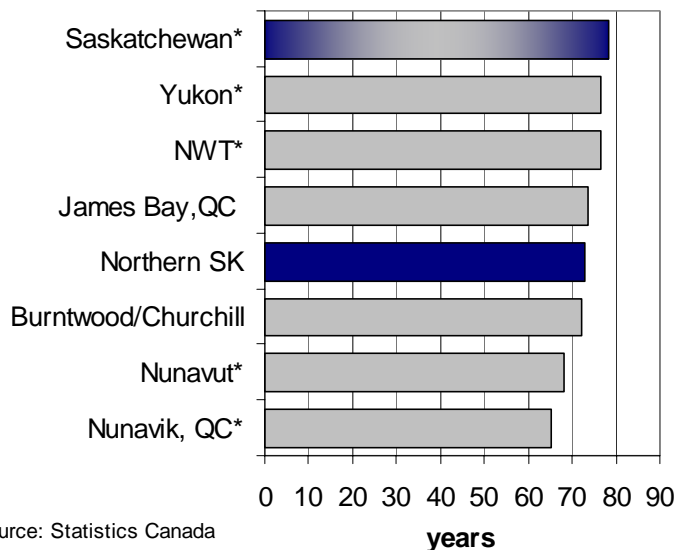


## LIFE EXPECTANCY

The life expectancy at birth is the estimated life span for someone who is born in that particular year. The life expectancy at birth for people in northern Saskatchewan born in 1997 was 73 years compared to 78.5 for Saskatchewan.

### Life Expectancy at Birth

By Northern Region, 1997

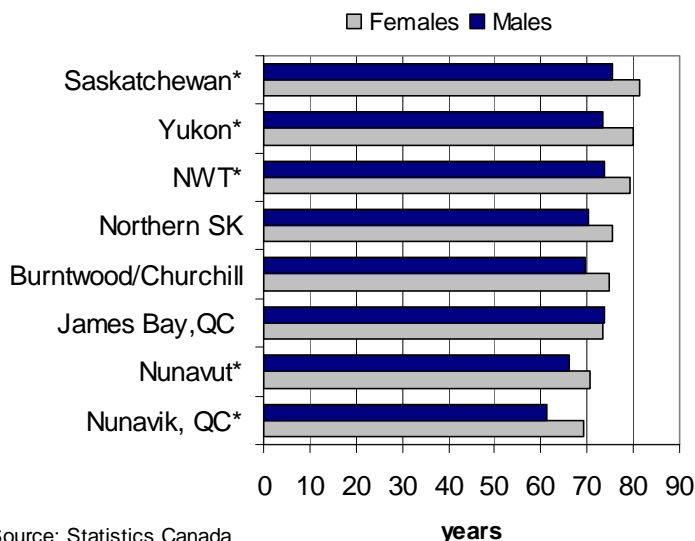


In comparing the life expectancy for various regions of northern Canada, a Saskatchewan northerner has a significantly shorter life expectancy than the average Saskatchewan, Yukon, or Northwest Territories resident; the same life expectancy as the Quebec James Bay Cree, and the Burntwood/Churchill area of northern Manitoba; and a longer life expectancy than the average resident of Nunavut or Nunavik.

\*Difference is statistically significant

### Life Expectancy at Birth

By Sex and Northern Region, 1997



In most circumstances, life expectancy at birth is greater for women than for men. This is the situation in Canada, in Saskatchewan as well as in northern Saskatchewan. In northern Saskatchewan, the life expectancy at birth for men is 70.4 years and 75.6 years for women.

Life expectancy at birth in northern Saskatchewan is significantly lower than in Saskatchewan (75.6 years for men and 81.4 for women), the Northwest Territories and for women in the Yukon; approximately the same as males in the Yukon, and both men and women in Burntwood/Churchill, MB and the James Bay Cree of Quebec; and significantly greater than in Nunavut and Nunavik.

\*Difference from Northern Sask is statistically significant except between Yukon and Northern SK males

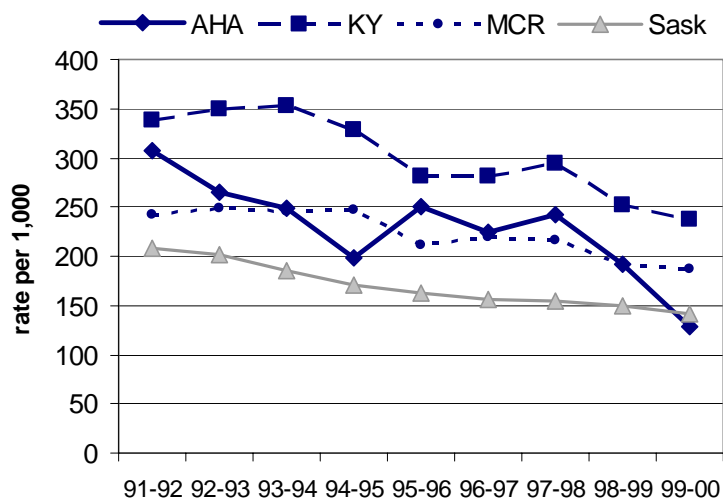
# MORBIDITY & CHRONIC CONDITIONS

## HOSPITALIZATIONS

Hospitalization rates are commonly used as a proxy for health status. Caution is advised in the interpretation of hospital utilization rates as there are other influences on hospitalization rates in addition to health status, including the availability of and access to hospital beds, physician practice patterns, the availability of and access to alternative facilities, services and supports distance from the hospital.<sup>3</sup>

### Crude Hospitalization Rates

All Causes, by year and region, 1991- 2000



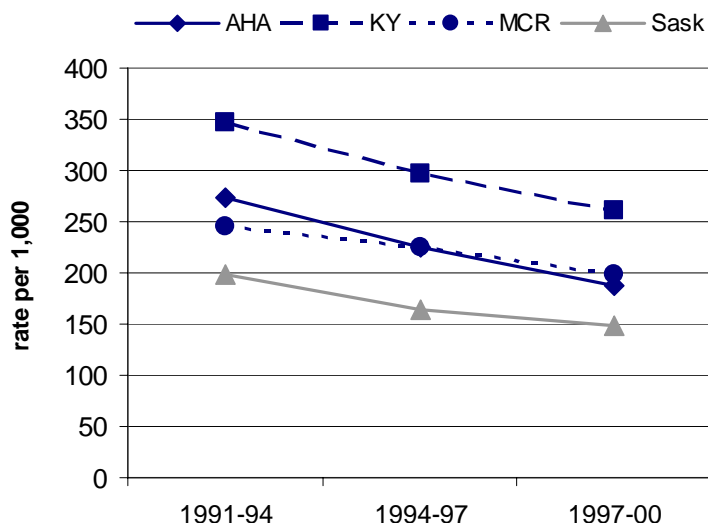
Source: Sask Health

Hospitalization utilization across the country has been decreasing over the past decade. This is also the situation in Saskatchewan. The hospitalization rates (number of hospital separations or discharges per year per 100,000 people) have decreased in Saskatchewan by about 25% over the past decade.



### Crude Hospitalization Rates, By Region

All Causes, Average three-year rates, 1991-2000

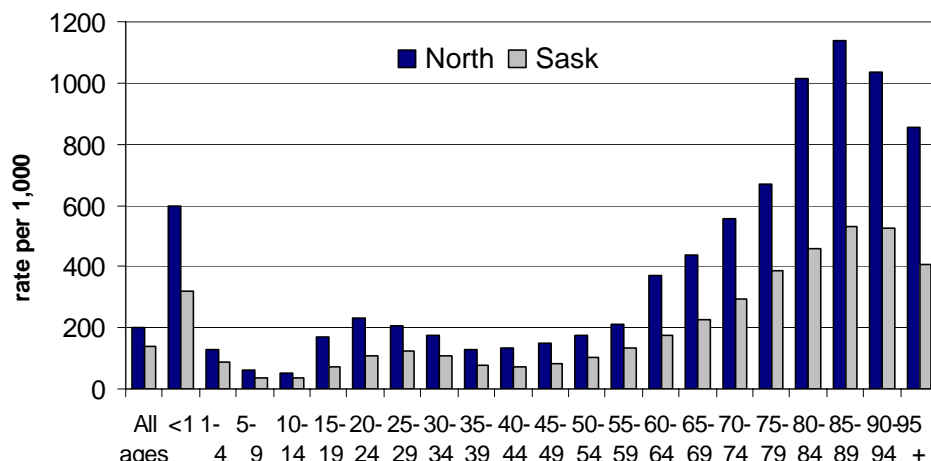


Source: Sask Health

The hospitalization rates have decreased as well in all three northern health areas. Hospitalization rates in the Athabasca area have decreased significantly over this past decade – during a period with increasing challenges in maintaining the Uranium City Hospital and during the planning for the new health facility. The Uranium City Hospital was in an isolated location from the majority of the population it served with most people requiring air transportation to get to any hospital service. There were also significant staffing challenges to maintaining full hospital services during the last few years. These two factors may have resulted in a reduction in hospitalizations for the people in the Athabasca area that cannot be attributed to changes in health status. This trend may change as the new facility close to Stony Rapids is utilized.

## Hospitalizations by Age Group

All Causes, Age-Specific Rate, 1999-2000

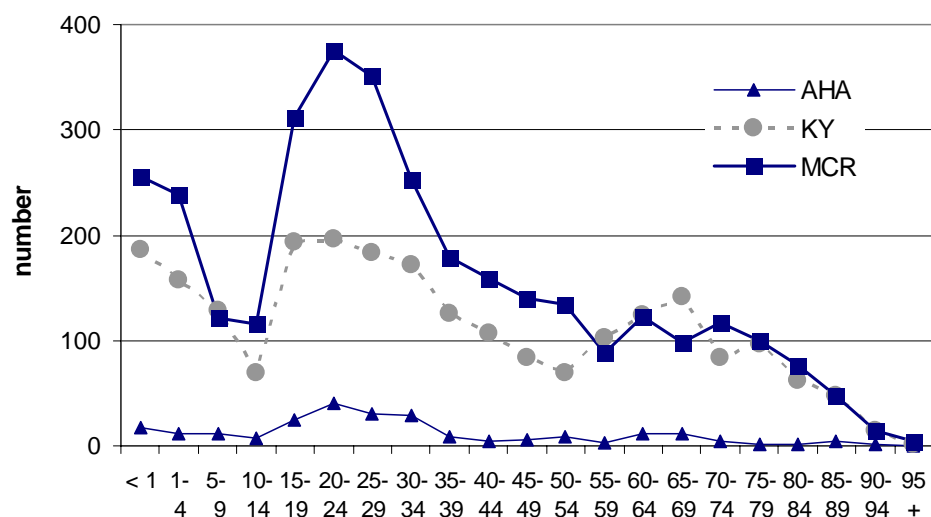


Source: Sask Health Oct/03

The hospitalization rate is greatly influenced by age with the highest rates of hospitalization occurring in the older age groups (over the age of 75 years of age) followed by the under one age group. The hospitalization rates in northern Saskatchewan exceed the provincial rates in all age groups.

## Hospitalizations by Age Group

All Causes, Number, 1999-2000

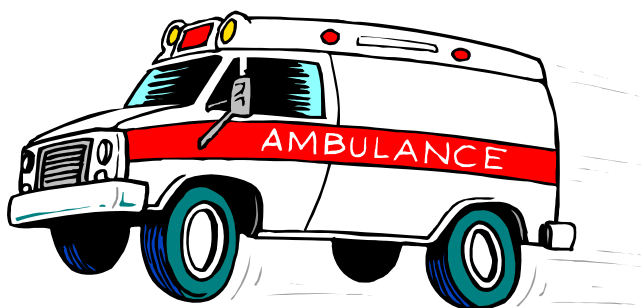


Source: Sask Health Oct/03

The absolute number of hospitalizations as opposed to the rate provides an indication of the volume of hospitalization. In northern Saskatchewan there is a larger proportion of the population in the younger age groups and so even with lower rates of hospitalizations in some age groups the numbers may be greater.

In the three northern health areas, the 15 to 34 year age group has the greatest number of hospitalizations, followed by the 1 to 4 year age group. Mamawetan Churchill River and then the Keewatin Yatthe Health Regions have higher numbers of

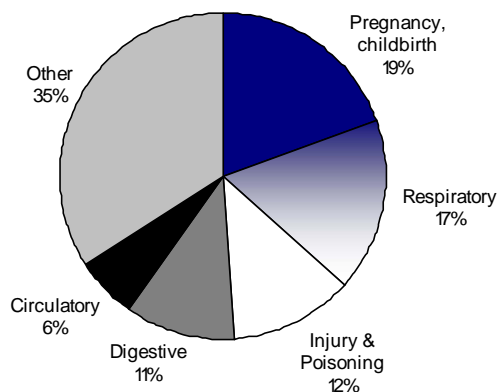
hospitalizations in most age groups because they have larger populations than the Athabasca area.



## Hospitalizations for Top Five Causes

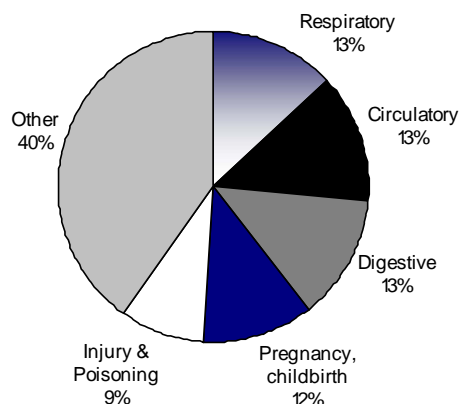
Percent of all Hospitalizations, 1997-2000

**Northern Saskatchewan, 1997-00**



Source: Sask Health

**Saskatchewan, 1997-00**



Source: Sask Health

If we look at the most common reasons (by primary diagnosis) for admission to hospital in the north, there are some differences in comparison to the province. In northern Saskatchewan, the most common reasons in order of frequency are:

- Pregnancy and childbirth 19%
- Respiratory conditions 17%
- Injuries and poisoning 12%
- Digestive conditions 11%
- Circulatory conditions 6%

In the province, the same five reasons are the most common diagnoses for hospitalization but with a different order of frequency:

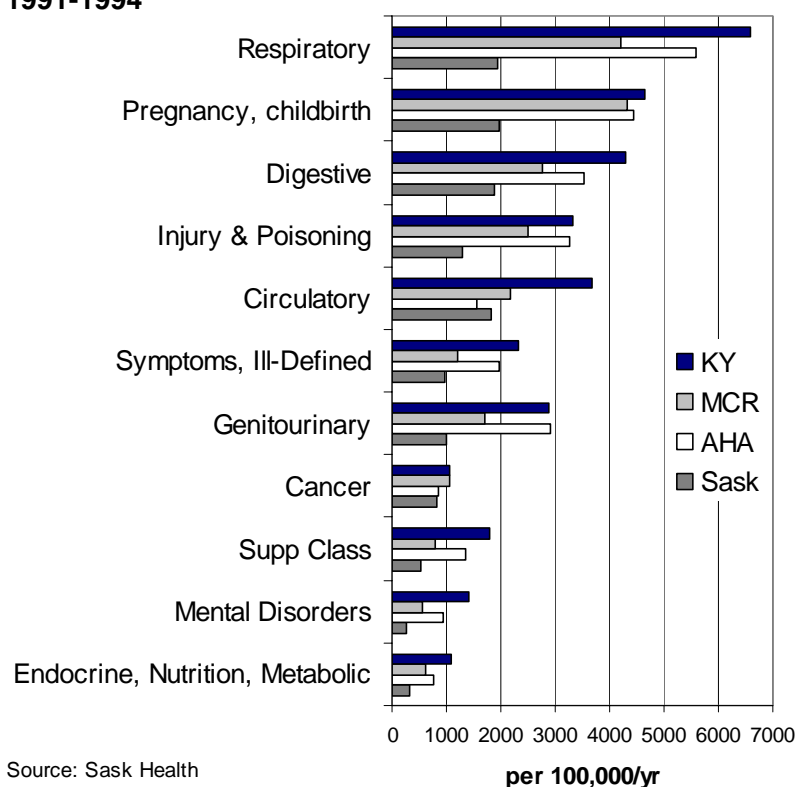
- Respiratory conditions 13%
- Circulatory conditions 13%
- Digestive conditions 13%
- Pregnancy and childbirth 12%
- Injuries and poisoning 9%



## Hospitalizations for Common Causes

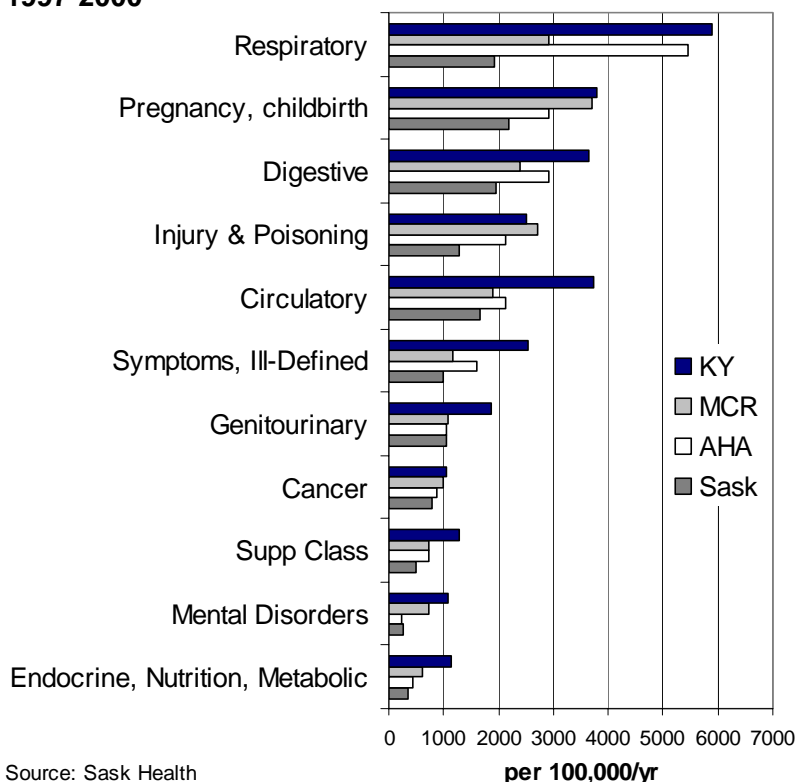
Average Annual Age-Standardized Rate, 1991-2000

### 1991-1994



In northern Saskatchewan health areas, hospitalization rates are generally greater than provincial rates for most diagnosis though hospitalization rates for cancer are nearly the same in 1991-94.

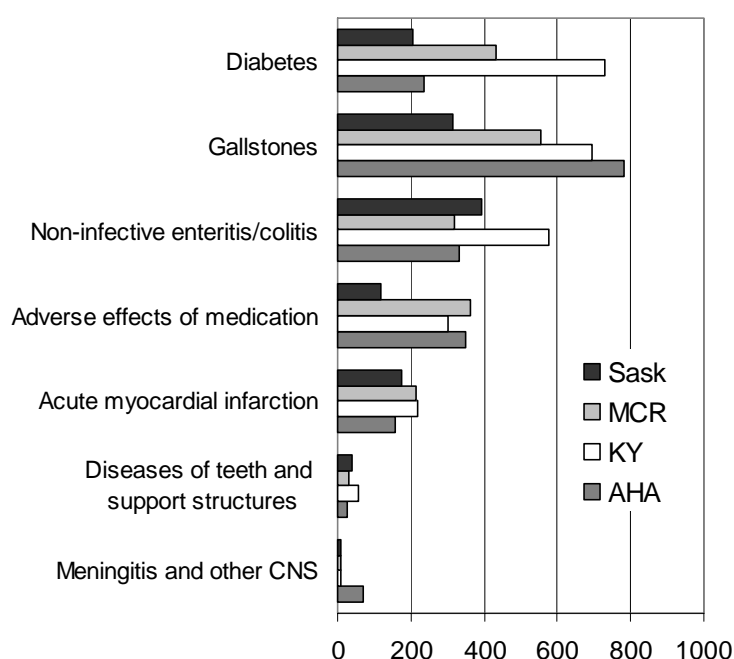
### 1997-2000



Compared to 1991-1994, hospitalization rates have changed slightly with slightly lower respiratory rates (especially for MCRRA and somewhat for KYRHA), pregnancy and childbirth rates, digestive conditions, injuries and poisonings, and genitourinary conditions. The rates for circulatory, cancer, and endocrine/ nutrition/ metabolic and mental disorders have remained almost the same.

## Hospitalizations for Selected Conditions, 1997-2000

Average Annual Age- Adjusted per 100,000(Census 1991)



Source: Sask Health

In assessing the hospital utilization rates for the three year period of 1997-2000 for conditions of special interest, there are a couple of noteworthy patterns.

The hospitalization rate for diabetes is almost 4 times the rate for KYRHA, 2 times higher for MCRRA, and almost the same for AHA in comparison to the hospitalization rate for diabetes in the province. This can be a reflection of a variety of factors including the prevalence of diabetes and its complications, the ambulatory care services available, the physician practice pattern for use of hospitalization in the care of diabetes.

Hospitalization for gallstones is also more common than in the province as a whole (approximately double). This pattern of increased gallbladder disease in northern Saskatchewan and in First Nations groups has been described previously.<sup>3</sup> Hospitalization for adverse effects of medication is over twice the provincial rate; hospitalization for acute myocardial infarction is about the same as the province or a little greater.

## MENTAL HEALTH

Health is a balance of various components of one's life as embodied by the medicine wheel: physical, emotional, mental and spiritual.<sup>4</sup> A mental or social health problem is "a stressful imbalance among the respective demands and resources of the individual, the group and the environment", whereas a mental disorder is "a recognized medically diagnosable illness that results in the significant impairment of an individual's cognition, affective or relational abilities".<sup>5</sup>

It is estimated that 20% of Canadians will personally experience a mental illness (disorder) during their lifespan and that the onset of most mental illnesses occurs during adolescence and young adulthood.<sup>6</sup> Mental illness is caused by a complex interplay of socio-environmental, genetic, biological, and personality factors. There seems to be a complicated relationship between poverty and mental illness with many studies showing higher rates in the socio-economically disadvantaged. There may be a combination of cause and effect with mental illness increasing personal poverty and lower socio-economic status increasing the risk for mental illness. There is very consistent evidence that a history of severe trauma (such as physical or sexual abuse) is correlated with various mental health problems.

Mental health problems and mental health illness are related to many other health issues especially when one considers self-inflicted injuries, other forms of injuries and violence, the abuse of alcohol, drugs, and tobacco, and the impact of mental health on other health behaviours.

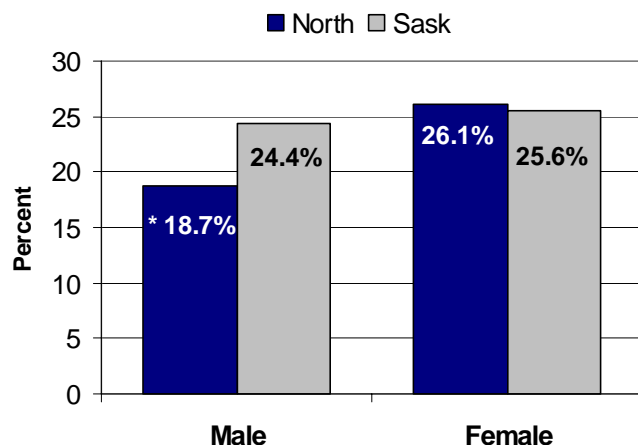
The World Health Organization (WHO) has suggested that burdens of mental illnesses, such as depression, alcohol dependence and schizophrenia, have been seriously underestimated by traditional approaches to health assessment that account for only causes of death and not disability.

The WHO looks at Disability-Adjusted Life Years (DALY) to measure burden of disease by calculating the loss of future disability-free life through premature death or disability. DALY is the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability. One DALY is one lost year of healthy life.

In 1990, three of the top-10 contributors to DALYs were mental disorders: unipolar major depression was the 2<sup>nd</sup>, alcohol use the 5<sup>th</sup> and self-inflicted injury the 9<sup>th</sup> most common contributors in developed countries. Unipolar major depression was the leading cause of DALYs worldwide.<sup>7</sup> In 2002, neuropsychiatric conditions (includes the mental health disorders, alcohol and drug use disorders, and some disorders such as dementia, Parkinson's disease, multiple sclerosis) accounted for 22% of DALYs in the developed countries of the world.<sup>8</sup>

Hospitalizations for mental health disorders are about 1.6% of the total hospitalizations for people from northern Saskatchewan compared to 2% for Saskatchewan. See Hospitalizations for Common Causes.

### Population Dealing With Stress, 2000-01, Off-Reserve

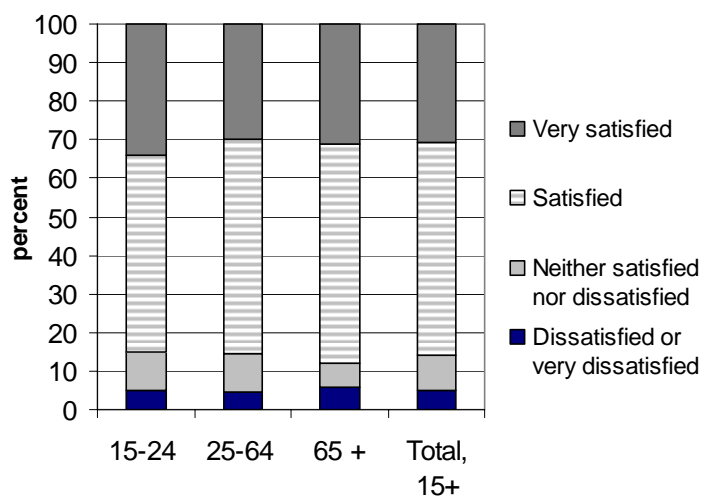


Source: CCHS, 2000-01

\* uncertain accuracy

In the Canadian Community Health Survey in 2000-1, about 1 in 4 northern women living off-reserve reported dealing with “quite a lot of stress” and about 1 in 5 northern men living off-reserve reported the same. The small numbers of males in the survey leads to some concerns for the accuracy of the male rate.

### Satisfaction with Life in Canada, by Age, 2002



Source: CCHS, Mental Health and Well-being, 2002

The Mental Health and Well-being part of the Canadian Community Health Status Survey in 2002 asked Canadians aged 15 and over about their satisfaction with life in general. In Canada, around one-third of individuals in all the age groups reported being very satisfied with their lives and a further 50 to nearly 60% reported being satisfied. Around 5% reported dissatisfaction.

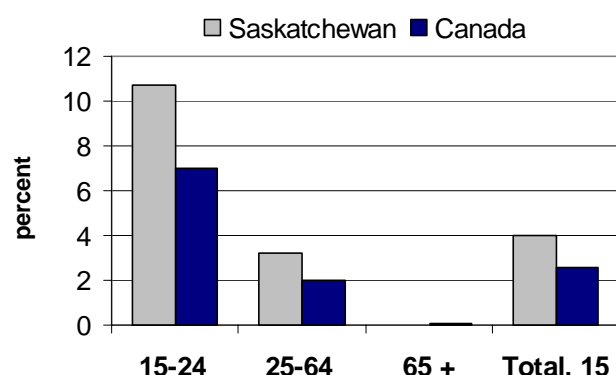
This survey also revealed that in Canada 4.4% of 15-24 year olds, 4.5% of 25-64 year-olds had suicidal thoughts in the past 12 months.

## 1. Alcohol use and abuse

Alcohol dependence and abuse can have significant impact on mental health and well-being.

### Alcohol dependence

Ages 15 and over, Off-Reserve 2002



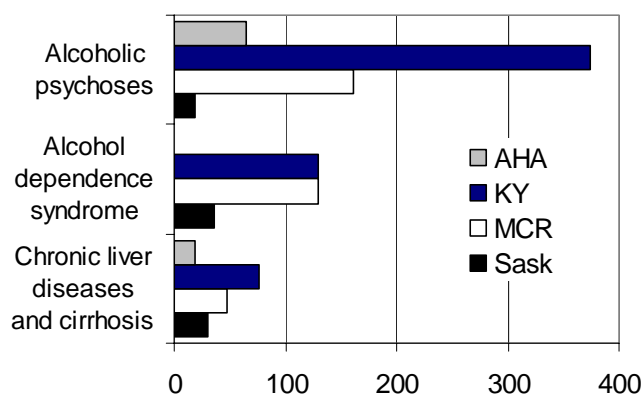
Source: CCHS, Mental Health and Well-being, 2002

The Mental Health and Well-being Survey in 2002 asked Canadians aged 15 and over questions which examine aspects of alcohol tolerance, (for example, needing more to have an effect), withdrawal, loss of control, and social or physical problems related to alcohol use in daily life. The chart shown on this page shows the percent of people with a high probability of alcohol dependence, based on the profiles of alcohol use in the 12 months prior to the interview.

The differences between Saskatchewan and Canada were statistically significant for all ages over 15 years, but not for individual age groups. In Saskatchewan, the 15 to 24 year age group had a significantly higher percent of alcohol dependence (10.7%) than the 25 to 64 year age group (3.2%).

### Hospitalizations for Alcohol Related Conditions

1997-2000



Source: Sask Health

Hospitalizations for selected alcohol related conditions in northern Saskatchewan are generally greater than the provincial hospitalization rates especially for alcoholic psychosis and alcohol dependence syndrome (though there were no admissions for alcohol dependence syndrome during 1997-2000 for people from the Athabasca Health area).

Alcohol is also a contributor to other hospitalizations and deaths especially injuries and suicides. See Injuries and Deaths due to a Drinking Driver: 1998-2002.

## 2. Gambling problems

### Risk of Having a Gambling Problem, By Age Group, 2002

Location		Risk			
		15-24	25-64	65 +	Total 15 +
Saskatchewan	Non-gambler	45.1	35.4	49.8	39.7
	Non-problem or low risk gambler	51.1	61.3	48	57.1
	Moderate risk or problem gambler		3.0		3.0
Canada	Non-gambler	51.4	46.3	54.5	48.3
	Non-problem or low risk gambler	46.3	51.2	44.5	49.4
	Moderate risk or problem gambler	2.2	2	0.7	2

In the Mental Health and Well-Being Survey, gamblers were defined as those who participated in a gambling activity at least 6 times in the past year. Specific information is not readily available for northern Saskatchewan for gambling problems though in Saskatchewan, about 3 % of the population surveyed were at moderate risk for being a problem gambler or were classified as being a problem gambler. Gambling problems may have significant impact on the mental health of the gambler or his/her family.



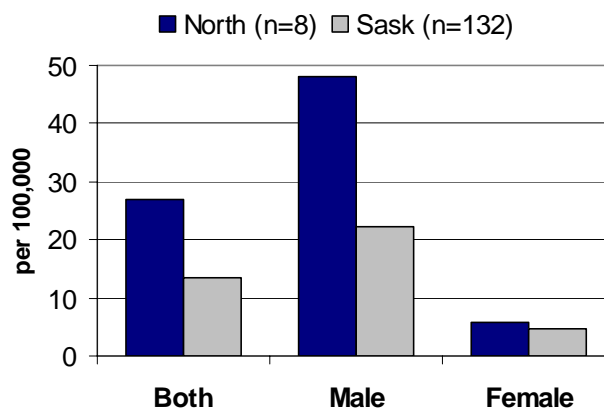
### 3. Suicide

Suicide is a major consequence of problems with social and mental health and well-being.

Age-standardized suicide rates for males in northern Saskatchewan are over double the provincial rates. For females the rate is about 1/8 the rate for males and about the same as the provincial rate.

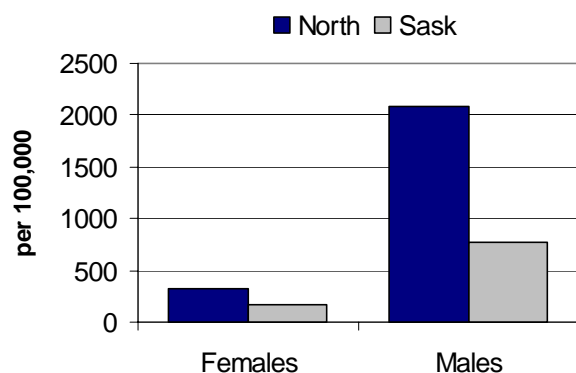
The absolute numbers of suicides in northern Saskatchewan for 1997 was 8 and 132 for Saskatchewan as a whole.

#### Age standardized Suicide Rates 1997



Source: Statistics Canada

#### Potential Years of Life Lost Due to Suicide, 1997

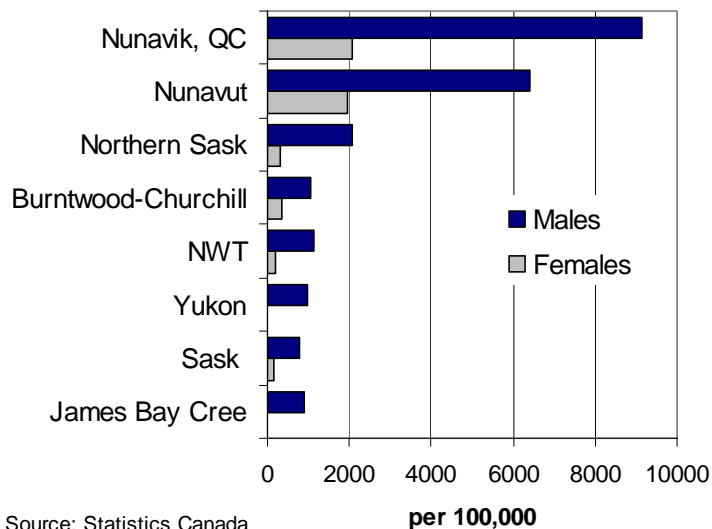


Source: Statistics Canada

Premature deaths (Potential Years of Life Lost) due to suicide in 1997, were about double the rate for northern females compared to the provincial rate and more than almost triple for males in the north compared to the province. This indicates that suicide in young people is more common in the north.

#### Premature deaths (PYLL) due to Suicide Northern Regions in Canada, 1997

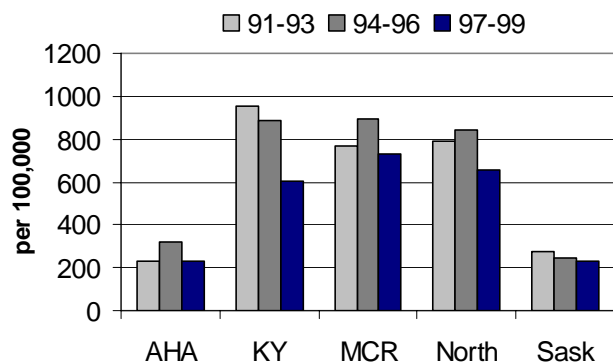
The rates of Potential Years of Life Lost for suicide in northern Saskatchewan is greater than in the Burntwood/Churchill region, the Northwest Territories, the Yukon, Saskatchewan, and James Bay Cree in northern Quebec. The rates are significantly lower for Nunavik and Nunavut.



Source: Statistics Canada

## Hospitalization Rate for Suicide/ Self-Inflicted Injury

Ages 15 -24, 1991-99

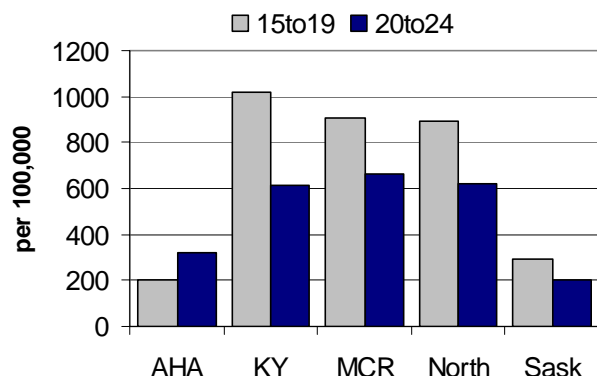


Source: Sask Health

Generally across the north, the hospitalization rates for self-inflicted injuries have decreased since 1991-93 though the rates are greater than in the province as a whole. The rates in the Athabasca Health area are approximately equal to the Saskatchewan rates.

## Hospitalization Rate for Suicide / Self-Inflicted Injury

Youth, 1991-99



Source: Sask Health

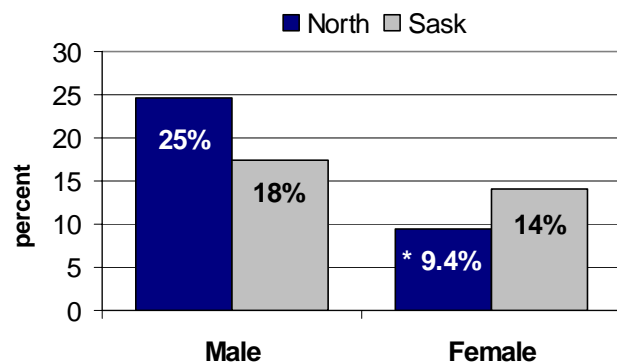
The age group that has the highest hospitalization rates for self-inflicted injuries is the 15-19 year age group except for the AHA area where 20-24 years is the group with the highest rate.

## INJURIES

Injuries are the leading cause of death in northern Saskatchewan with injuries causing about 26% of the deaths in the north compared to 7% for the province. Injuries and violence also are by far the most common cause of premature death or potential years of life lost in northern Saskatchewan.

In assessing the major causes of death in northern Saskatchewan over time, there is a slight reduction in the proportion of deaths attributed to injuries. In 1974 to 1988, injuries resulted in about 30% of deaths in the north compared to about 10% in the south. During this period 35% of all male deaths and 22% of female deaths were due to injuries.<sup>9</sup>

## Population Injured in Past Year, Off-Reserve 2000-01



Source: CCHS 2000-01

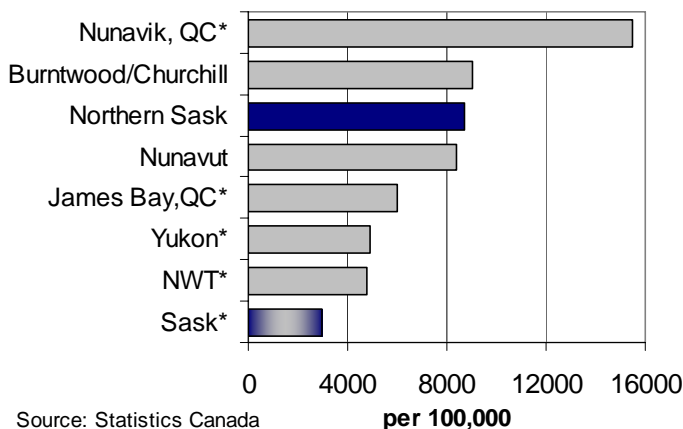
\*uncertain accuracy

For northern Saskatchewan people living off-reserve who had responded to the Canadian Community Health Status Survey, 25% of males and about 9.4% of females stated that they had some form of injury in the past year compared to 18% of males and 14% of females in the overall Saskatchewan population. The percentage value for northern females has some degree of uncertainty because of the small number of respondents.

## Premature deaths (PYLL) Unintentional Injuries

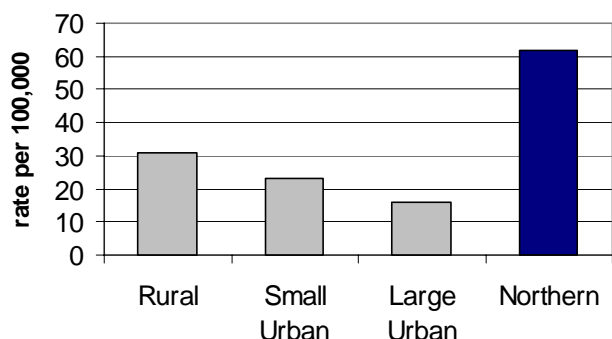
Northern Regions, 1997

For unintentional injuries in 1997, northern Saskatchewan rates for premature deaths due to unintentional injuries (8687 per 100,000) were significantly higher than rates in the province as a whole (2994 per 100,000) as well as higher than in the James Bay Cree of Quebec, the Yukon, and the Northwest Territories. Northern Saskatchewan rates were approximately equal to those in Burntwood/Churchill and Nunavut though significantly lower than in Nunavik.



## Injury-Related Death Rates for Saskatchewan Children and Youth<sup>10</sup>

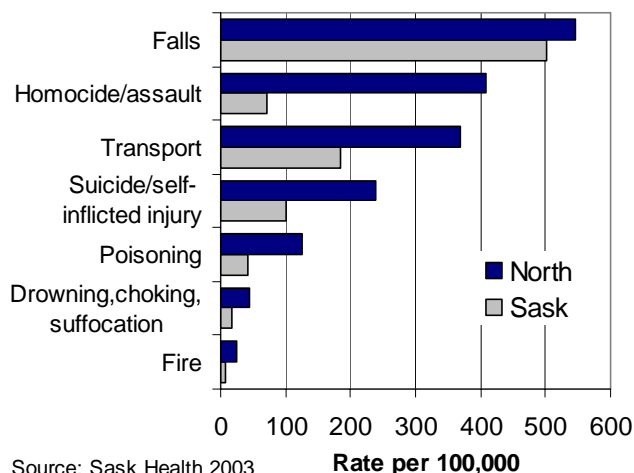
Under 20 Years of Age, by Geographic Group, 1995-99



Youth are particularly affected by injuries. The Saskatchewan Institute on Prevention of Handicaps in their studies on child and youth injuries in Saskatchewan, assessed death rates of children under the age of 20 in Saskatchewan from various areas of the province. The death rates in northern Saskatchewan were almost 4 times the rate in large urban centers and about double the rate in rural areas of the province.

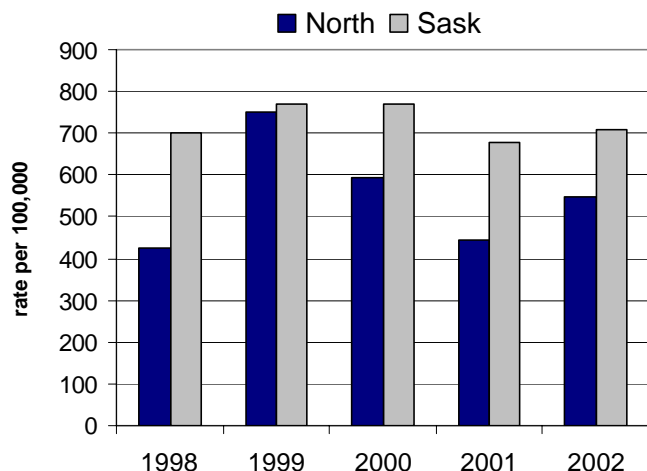
## Injury Hospitalizations by Selected Causes

Average Annual Rate, 1997-2000, per 100,000



In looking at the specific cause for injury hospitalizations falls make up the greatest proportion followed by assaults, transportation accidents, self-inflicted injuries, poisoning, drowning, choking and suffocation and fires. For each of these causes, the rates are significantly higher in the north than the province other than for falls where they are fairly comparable.

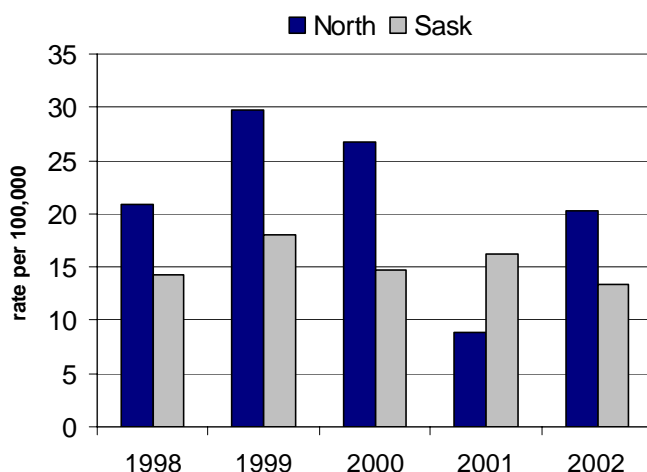
## Injury in Traffic Collisions, Northern Sask and Sask, 1998-2002



Source: SGI Traffic accident information

Information is available to assess the extent of injuries from traffic accidents. If one looks at the overall rate of injuries per 100,000 in traffic accidents the rate in the north fluctuates from year to year with a peak rate occurring in 1999. The rates in the north are generally lower in the north than the south. This may be a result of significantly less traffic in northern Saskatchewan communities.

## Deaths from Traffic Collisions, Northern Sask and Sask, 1998-2002



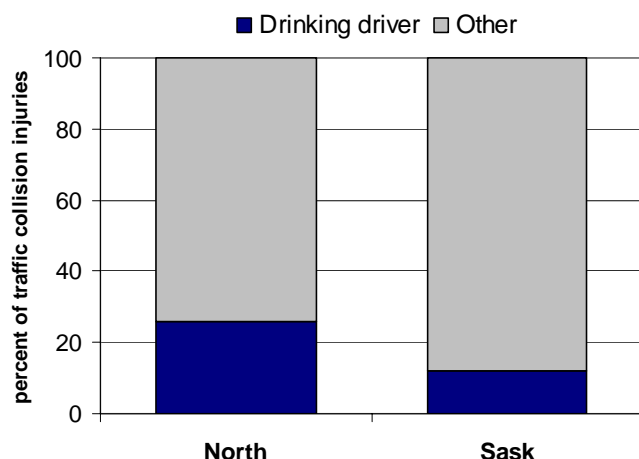
Source: SGI Traffic accident information

In contrast to traffic injuries were rates in the north are generally lower than the provincial rates, deaths from traffic collisions are usually greater in the north. Thus a higher proportion of northern traffic collisions result in death compared to the provincial rates.

The rates of death from traffic collisions vary year to year with a peak occurring in 1999.

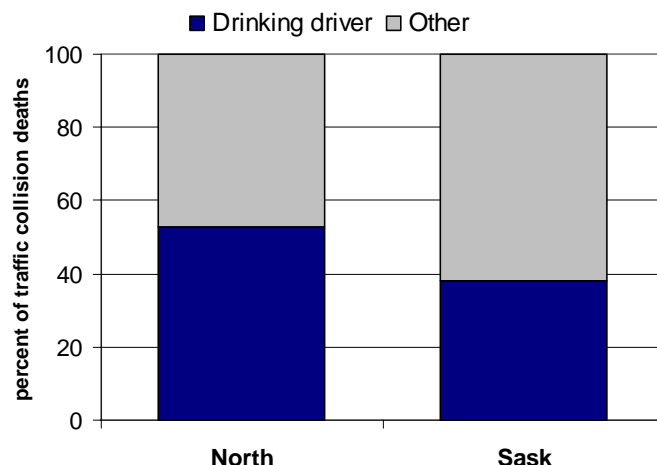


### Injuries Due To a Drinking Driver, Northern Sask and Sask, 1998-2002



Source: SGI Traffic accident information system (prelim)

### Deaths Due to a Drinking Driver, Northern Sask and Sask, 1998-2002



Source: SGI Traffic accident information system (prelim)

In northern Saskatchewan, 26% of traffic collision injuries involve a drinking driver, compared to 12% in Saskatchewan. For traffic collisions resulting in death, 53 % involve a drinking driver in northern Saskatchewan compared to 38 % in southern Saskatchewan.

## DIABETES

Diabetes is a chronic condition that results from the body's inability to sufficiently produce and / or properly use insulin. Without insulin or without the ability to use insulin properly, the cells of the body, primarily in muscle, fat and liver tissue cannot absorb sufficient glucose from the bloodstream. Chronic high levels of blood glucose (sugar) can result in long-term damage, leading to the dysfunction and failure of various organs, such as the kidneys, eyes, nerves, heart and blood vessels. Diabetes occurs in several forms: type 1, type 2 and gestational diabetes.<sup>11</sup>

Type 2 diabetes is far the most common type of diabetes in northern Saskatchewan.

Northern Saskatchewan has the highest prevalence of diabetes type 2 in the province and our rates are increasing.

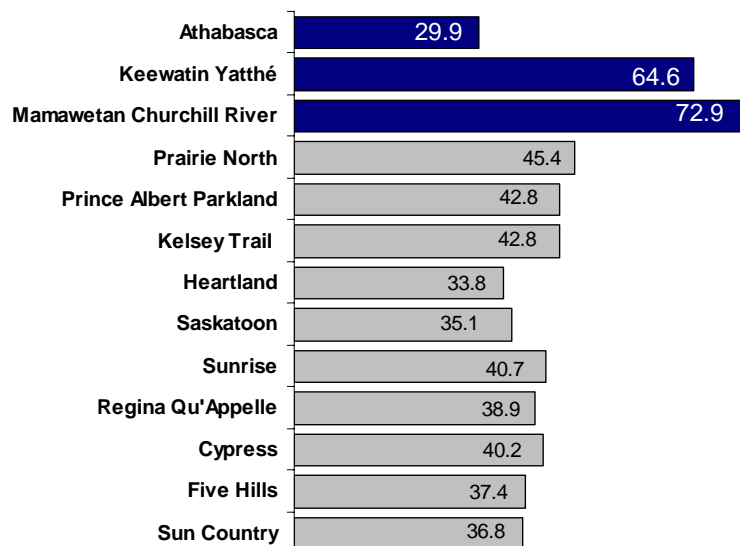
In comparison to other health regions in the province, Mamawetan Churchill River and the Keewatin Yatthé Health Regions have the highest rates of diabetes as determined by Sask Health. The Athabasca Health Authority area was determined to have the lowest rates.

Some caution needs to be considered in the interpretation of these results. Sask Health utilized three sources of information: hospitalizations for diabetes, physical billing records for diabetes, and prescription records for diabetes medications. In northern Saskatchewan, there are two physician groups which do not submit claims for physician billings – one in the Athabasca area and one in the Keewatin Yatthé region. As well, only provincial drug data was utilized, and the out-of-province hospitalizations from MCCRHA was incomplete. Therefore, the number of people with diabetes in all three northern areas, may be underestimated.



## Prevalence of Diabetes in Saskatchewan

By Region, Age-Sex Adjusted, 2000-01



Source: Sask Health, Apr/02

rate per 1,000

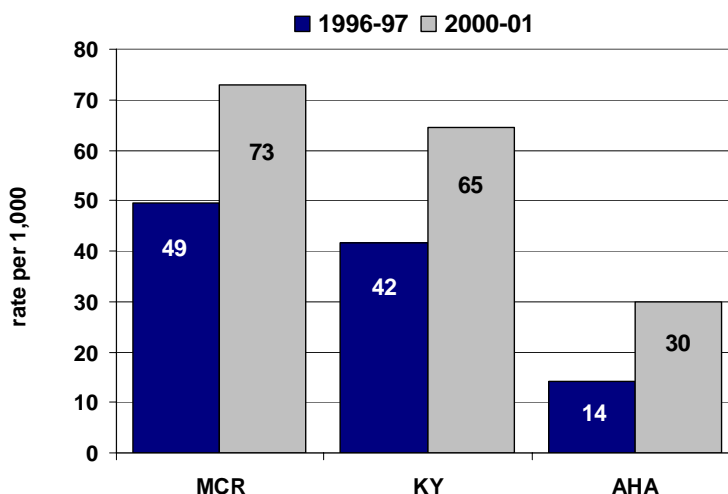
Body weight and physical activity are modifiable risk factors that can decrease the risk of developing type 2 diabetes among those at increased risk. Recently, there has been more evidence suggesting that tobacco smoking not only increases the risks of complications of diabetes but may also increase the risk of developing diabetes in those at risk.<sup>12,13,14</sup>

There are a number of risk factors for the complications of diabetes, including tobacco smoking, dyslipidemia (high cholesterol), high blood pressure and poorly controlled diabetes. Socio-economic factors influence the risk of diabetes partly because individuals with lower income and less formal education are more likely to smoke and to be physically inactive and overweight. (See Health Determinants chapter) Further information on diabetes in northern Saskatchewan is available online.<sup>15</sup>

The Northern Diabetes Prevention Coalition, a partnership involving many health, education, recreation and community groups and organizations throughout the north, has been active in a number of areas to help slow the increasing numbers of people with diabetes in northern Saskatchewan through supporting healthy eating, physical activity and non-smoking through a wide variety of initiatives.<sup>15</sup>

## Prevalence of Diabetes

Age-Sex Adjusted 1996-97 and 2000-01



Source: Sask Health, Apr/02

## CARDIOVASCULAR AND CEREbroVASCULAR DISEASES (HEART DISEASE, HIGH BLOOD PRESSURE AND STROKE)

Cardiovascular diseases (or circulatory diseases) include illnesses such as heart attacks (myocardial infarctions), ischemic heart disease, peripheral vascular disease, valvular heart disease, congestive heart failure, arrhythmias (irregular heart beats), high blood pressure and cerebrovascular diseases (stroke).

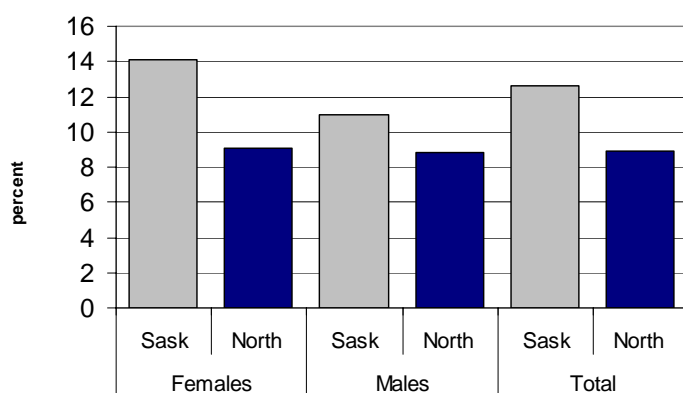
Cardiovascular diseases have a significant impact and are the leading cause of death in Canada (36% of all deaths in 1999<sup>16</sup>) and Saskatchewan (39% of all deaths in 1993-99).

Cardiovascular diseases are the underlying cause of death for 1 in 3 Canadians, and 1 in 4 for people in northern Saskatchewan.

Circulatory diseases made up about 23% of the deaths in northern Saskatchewan, though 39% of the deaths in the province in 1993-99 (Sask Health). They also made up about 6% of the hospitalizations for northerners versus 13% for the Saskatchewan population. In Canada in 2000-1, 18% of hospitalizations were due to cardiovascular or circulatory diseases.<sup>16</sup>

### Self-Reported High Blood Pressure

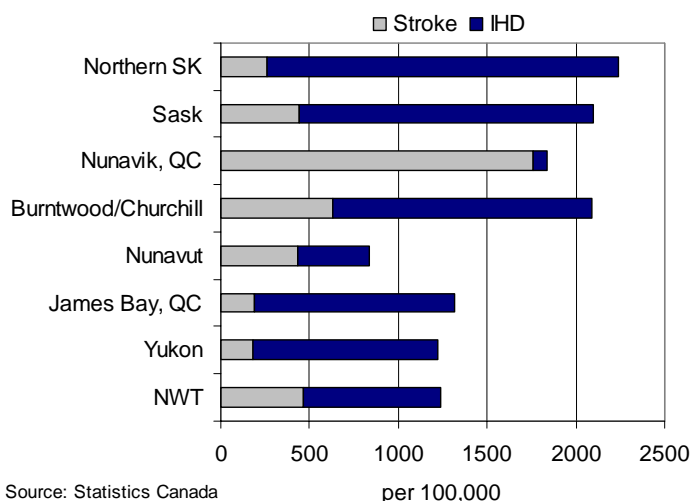
By Sex, Aged 12 and Over, Off-reserve, 2000-01



Source: CCHSS 2001

Asking people in surveys whether they have high blood pressure is one way of getting an idea of the prevalence of this ailment. The percentage of people self-reporting high blood pressure is dependant on the prevalence of the condition but also that it has been recognized or diagnoses. In some situations the differing self-reported rate can be dependant on differing use of preventative health care services (i.e. people have had to have had their blood pressure checked in order to know if they have high blood pressure). The rates of self-reported high blood pressure for those living off-reserve in northern Saskatchewan are lower than the provincial rates. As well, in the north, the rates for males and females are approximately equal.

### Premature Deaths (PYLL) from Circulatory Disease, 1997



Source: Statistics Canada

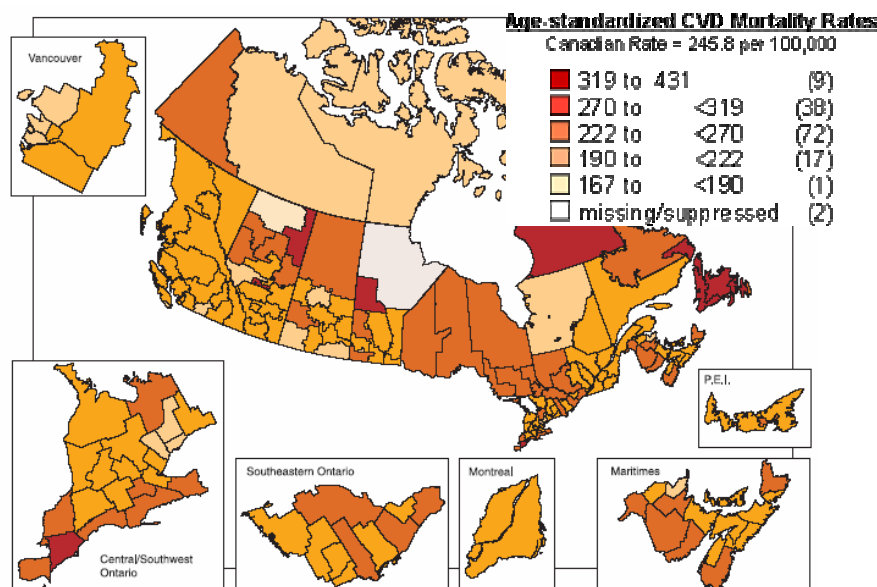
The premature deaths from circulatory diseases in 1997 were fairly comparable in northern Saskatchewan in relation to Saskatchewan and Burntwood/Churchill region though it appears higher than the other northern peer group regions.

The rate of premature deaths from stroke may be slightly less in northern Saskatchewan than the provincial rate but fairly close.



The following map shows the age-adjusted death or mortality rate for cardiovascular disease in various regions in Canada.<sup>17</sup> Northern Saskatchewan rates are now higher than in some regions in Saskatchewan and higher than some of the northern peer group areas (including Northwest Territories, Nunavut, and James Bay Cree of northern Quebec). Northern Saskatchewan mortality rates from cardiovascular diseases are lower than in the Yukon and Nunavik.

### Cardiovascular Disease Mortality Rates ,1995-97 Age-standardized per 100,000 population



The number of deaths in northerners due to cardiovascular diseases will likely increase as the population ages.

Education, income and personal health practices can influence the incidence and impact of cardiovascular diseases. Income, education and employment can influence the adoption of healthy behaviours, provide a wider array of lifestyle choices, increase knowledge and skills specific to health behaviours, impact personal influence (stress), as well as impact an individual's ability to purchase healthy foods.<sup>16</sup> Geography, travel distances to services, and from recent studies in Canada, lower socioeconomic backgrounds influence access to cardiovascular health services.<sup>18</sup>

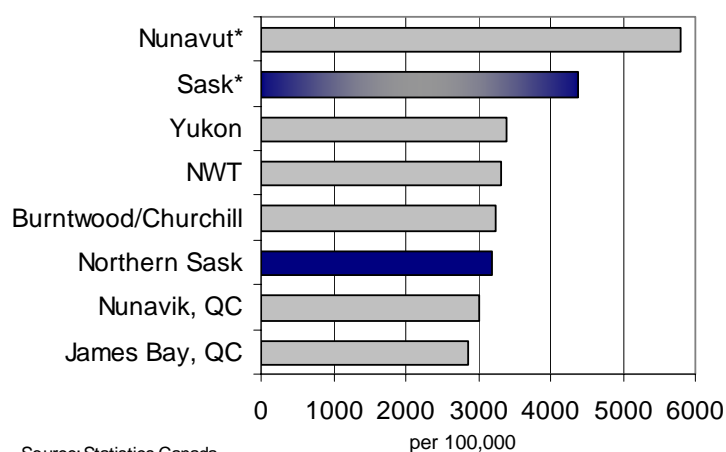
The risk factors for cardiovascular diseases include smoking, physical activity, inadequate consumption of fruits and vegetables, being overweight, and the two health conditions associated with these risk factors (diabetes and high blood pressure).<sup>16</sup>

## CANCER

A recent report from the Saskatchewan Cancer Agency<sup>19</sup> as well as Statistics Canada provide us with some information regarding the overall impact of cancer, what types of cancer are most common and what are the most common causes of cancer deaths by health region.

Cancers are the underlying cause of death for 1 in 4 people in Saskatchewan, and 1 in 5 for people in northern Saskatchewan.

### Potential Years of Life Lost (PYLL) from Cancer, 1997



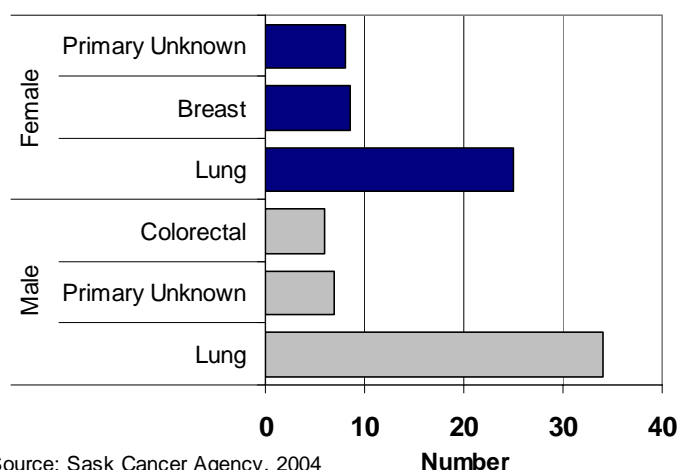
Northern Saskatchewan had a significantly lower rate of Potential Years of Life Lost (PYLL) or premature deaths from cancer than Saskatchewan in 1997 according to Statistics Canada (3199.3 compared to 4377.5 per 100,000).

The premature death rate from cancer was fairly comparable to other northern locations or peer groups in Canada except for Nunavut which had a significantly higher rate than the other northern regions. Although this information was averaged over three years, caution should be used in the interpretation as the potential for small number variability over the years exists.

Source: Statistics Canada



## Top Three Cancer Causes of Death



### Northern Saskatchewan by Sex, 1998-2002

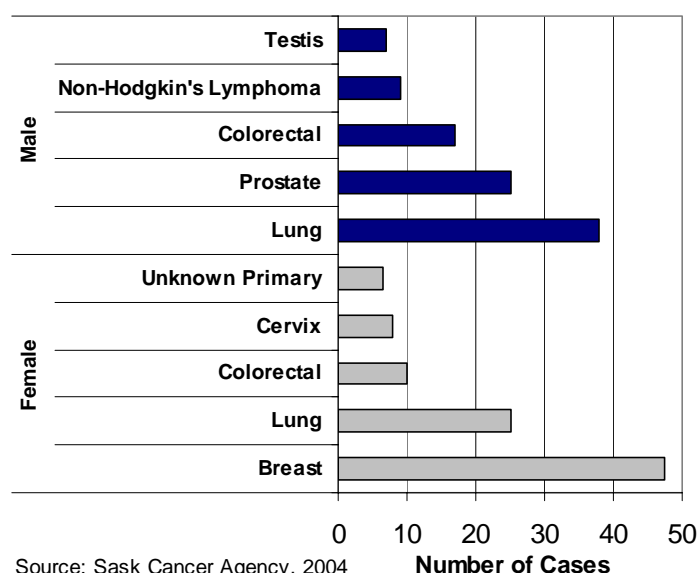
In northern Saskatchewan, lung cancer is the most common cause of cancer death in both men and women. The second leading cause of death is markedly lower than lung cancer deaths in both men and women. In the province, lung is also the most common cause of cancer deaths in men and women but the second leading causes for both men and women are fairly close behind: breast in women and prostate in men followed by colorectal third.

## Cancer Incidence

Incidence is the number of new cases of a particular event; in this situation, the number of new cancers. The incidence rate is the number of new cancers per 100,000 persons. Age-adjustment is done to remove the effects of the differences in the age groups when comparing differing populations. As cancer risk increases as one gets older, it would be expected that a population that had a high proportion of elders would have a higher cancer rate (e.g. southern Saskatchewan as compared to northern Saskatchewan which has a higher proportion of young people). Age-adjustment corrects for the effects of age to allow better comparisons between populations.

## Cancer Incidence, Top 5 Causes By Sex

Northern Sask, 1998-2002



In northern Saskatchewan, lung cancer was the most common cancer found in men with 38 lung cancers diagnosed in this five year period followed by prostate with 25 cancers, and colorectal with 17 cancers. In women, breast cancer was the most commonly diagnosed cancer with 48 cancers, followed by lung with 25 and colorectal with 10 in the five year period.

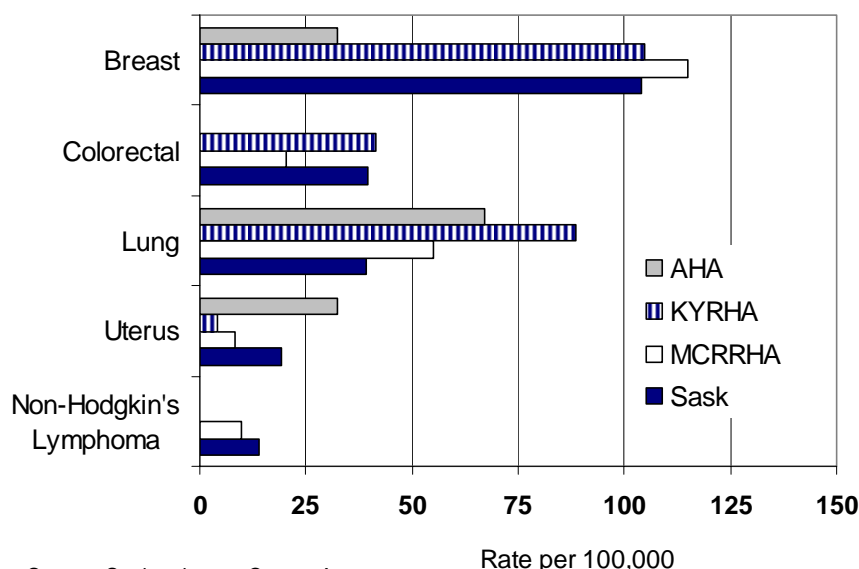
Cervical cancer in northern Saskatchewan women was the fourth most common type of cancer diagnosed at 8 over the five years. The rates of cervical cancer are higher in northern Saskatchewan than the provincial rates but the discrepancy is narrowing. A provincial program is being implemented to assist access and appropriate utilization of pap smears particularly for those women who have not been screened within the recommended time frame. Screening helps to detect the early cervical changes for treatment prior to the development of cancer. As

the risk for cervical cancer is greater in women with sexually transmitted infections (STIs), risk reduction strategies for STIs will also reduce the risk for cervical cancer.

In men, testicular cancer is the fifth most common cause of cancer, with 8 cases over the five year period (about the same number as there were cervical cancers in women). Education and awareness on testicular cancer and the benefit of self-examination for early detection is important for young men.

## Cancer Incidence Rates for Females

Age-Adjusted, 1998-2002



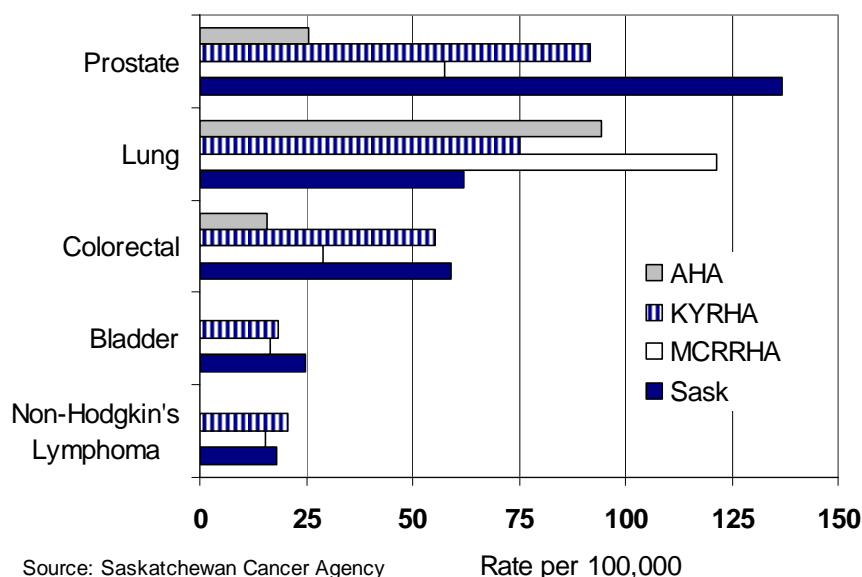
Source: Saskatchewan Cancer Agency

In Saskatchewan women, the top three types of cancer in 1998-2002 were breast, colorectal and lung. In northern Saskatchewan, the rates of breast cancer were about the same (though lower in AHA despite relatively similar mammography screening coverage) as that in Saskatchewan. Lung cancer was the second most common cancer in northern women with rates about double the Saskatchewan rate in KYRHA (significantly higher statistically,  $p = 0.0201$ ). Colorectal was the third most common cancer in northern Saskatchewan women (though there were no cases reported in AHA during this period and the rate in MCRRA was statistically lower than the provincial rate with  $p = 0.0304$ ). Uterine cancer followed by non-Hodgkin's lymphoma were the fourth and fifth most common cancers in

Saskatchewan women. Rates appear higher in uterine cancer in the AHA area though, because of very small numbers, this is not statistically significant. There were no cases of non-Hodgkin's lymphoma diagnosed in AHA or KYRHA during this period.

## Cancer Incidence Rates for Males

Age-Adjusted, 1998-2002



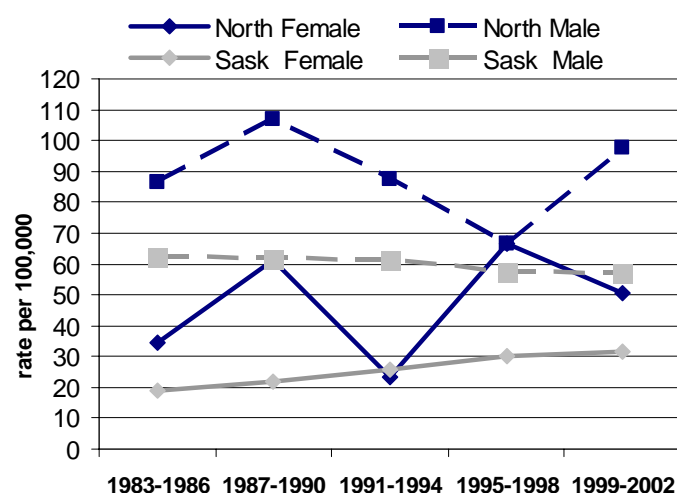
Source: Saskatchewan Cancer Agency

For men in Saskatchewan, prostate cancer was the most common cancer followed by lung and colorectal for 1998-2002. For males in northern Saskatchewan rates of prostate cancer were lower than the provincial rate (significantly lower statistically in AHA with  $p = 0.0466$  and MCRRA with  $p = 0.0006$ ). Northern lung cancer rates were higher than the provincial rates (statistically significant only in MCRRA with  $p = 0.0029$ ). Colorectal cancer was generally lower in northern men compared to provincial rates (significant statistically only in MCRRA with  $p = 0.0458$ ). Bladder cancer and non-Hodgkin's lymphoma were the fourth and fifth most common cancer in Saskatchewan males, though no cases of either were detected in AHA during this

five-year period. Leukemia was the sixth most common cancer in provincial males. In northern Saskatchewan no leukemia was diagnosed in males in the AHA or KYRHA area and the rate in MCRRA was lower than the provincial rate (though not statistically significant).

Lung cancer is the most common cause of death from cancer in northern Saskatchewan men and women. It is estimated that almost 90% of lung cancers are attributable to smoking.

## Trends in Mortality (Death) Rates for Lung Cancer, 1983-2002



Source: Sask Cancer Agency

In males across Canada, there has been a gradual reduction in cancer deaths over the past decade.<sup>20</sup> This is a similar pattern though perhaps not as marked for males in Saskatchewan. In northern Saskatchewan, the trend pattern is harder to detect because of the variations with small numbers but on average the rate for 1995-2002 appears lower than for 1983-1990.

For females across Canada, though the rate is lower than in males, there is a continuing increase in the rate of lung cancer deaths. This is similar to the situation in Saskatchewan and appears to be the same situation in northern Saskatchewan.

## Cervical Cancer Rates by Health Area and Saskatchewan, 1998-2002

(Age-Adjusted Rates per 100,000), 1998-2002

Saskatchewan	MCRRHA	KYRHA	AHA
8.9	12.4	20.6	23.3

Cervical cancer rates were consistently higher for the three northern health areas as compared to the overall provincial rates. This may be due to the increased prevalence of risk factors for cervical cancer as reflected by the much higher sexually transmitted infection rates especially amongst younger women in northern Saskatchewan. Cervical cancer rates are also a reflection of the access or utilization of pap smears. There were a total of 8 diagnosis of cervical cancer in this 5 year period.

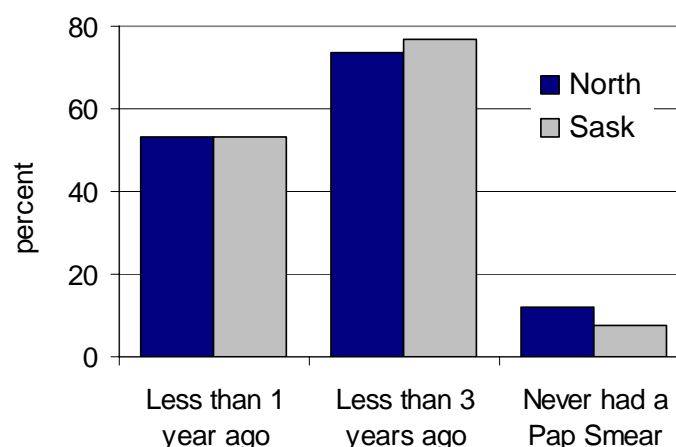
## 1. Pap smear testing

For self-reported pap smear testing for women off-reserve as reported in the Canadian Community Health Status Survey in 2000-1, the percentage of women reporting having had a pap smear in the past year in northern Saskatchewan was the same as the provincial percentage and the percentage reporting pap smears in the last three years is fairly comparable to the provincial percentage.

A previous study by the Health Services Utilization and Research Commission suggested the percent of women unscreened with Pap smears was greatest in First Nations and northern women and this rate increased with age.<sup>21</sup> This information is somewhat limited however, as analysis of physician billing data was used to determine adequacy of screening coverage and some physician groups in northern Saskatchewan do not submit physician billing data – thus the coverage in the north would be underestimated.

### Pap Smear Testing, Self-reported

Women off-reserve, ages 18-69 years, 2000-01

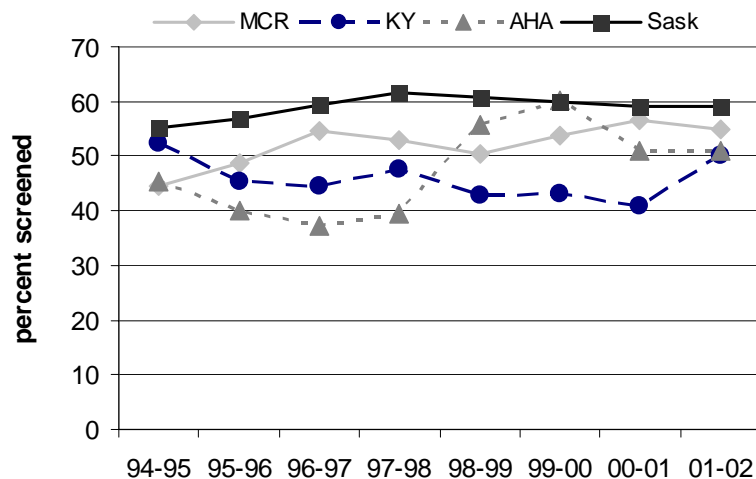


Source: CCHS 2000-01

## 2. Mammography

### Mammography Screening, 1998-2002

Percent of women aged 50 to 69 years, two-year moving rates



Source: Sask Cancer Agency

It is recommended that all Saskatchewan women between the ages of 50 and 69 years have a mammogram screening for breast cancer every two years. Screening is done in northern Saskatchewan by the mobile van that travels to LaLoche, Buffalo Narrows, Ile a la Crosse, Beauval, LaRonge and Creighton every two years. Women in the outlying areas travel to these sites. For instance, women in the Athabasca area travel down to LaRonge for their screening.

Saskatchewan Cancer Agency data shows that for 2001-2 about 50% of women in KYRHA and AHA, 55% of women in MCRRA and about 60% of women in the province have had a mammogram in the past two years.

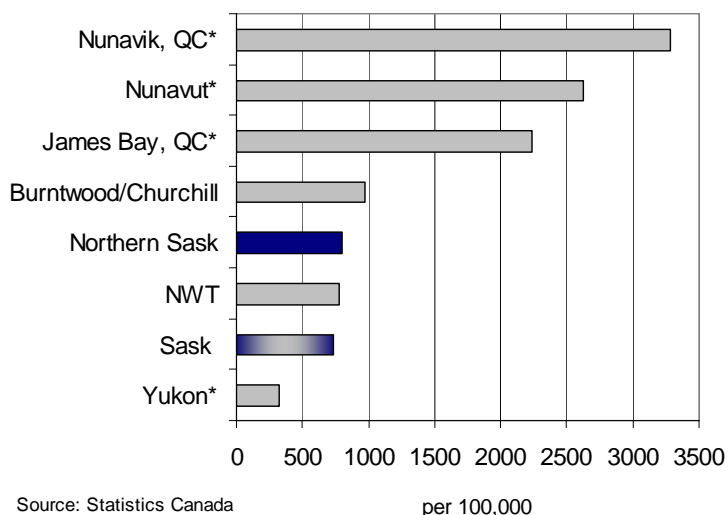
## RESPIRATORY DISEASE

Respiratory diseases include a variety of illnesses including a chronic obstructive pulmonary diseases (COPD), asthma, lung cancer, asthma, influenza and pneumonia, bronchiolitis, tuberculosis, cystic fibrosis and respiratory distress syndrome.

Respiratory diseases contribute to 9% of deaths in northern Saskatchewan and 10% in the province (see graph on the next page). Deaths from lung cancer and from chronic obstructive lung disease in northern Saskatchewan are greater than in the province as a whole. Lung cancer deaths in the north in 1993-99 were about 72 versus 44 per 100,000 for the province and chronic obstructive lung disease rates were almost double the provincial rates (47 versus 25 per 100,000)(Common Causes of Chronic Disease and Injury Deaths)  
See Cancer for lung cancer rates and trends in males and females.

### Potential Years of Life Lost (Premature Deaths) from Respiratory Disease: 1997

Potential Years of Life Lost in 1997 for respiratory diseases in northern Saskatchewan is statistically the same as Saskatchewan, the Burntwood/Churchill region, and the Northwest Territories though higher than the Yukon. The rates are significantly lower than in Nunavik, Nunavut and the James Bay Cree of Quebec.

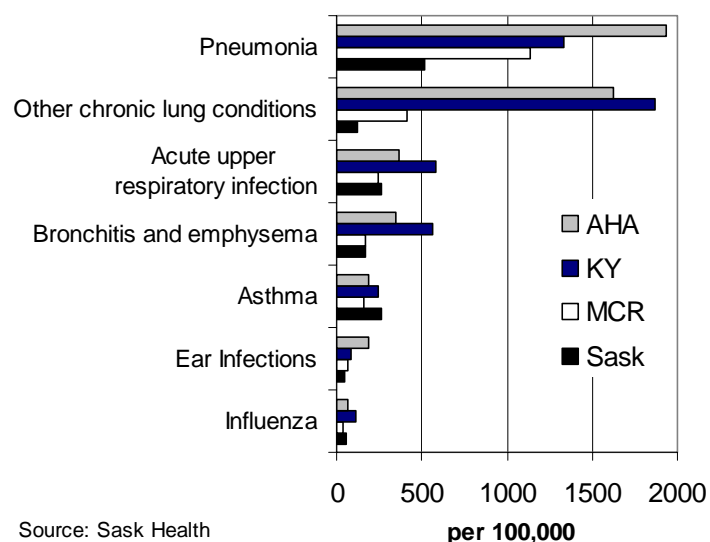


Source: Statistics Canada

per 100,000

## Hospitalizations for Respiratory Conditions

Average Annual Age-Adjusted Rate, 1997-2000



In northern Saskatchewan for 1997-2000, respiratory conditions make up 17% of hospitalizations while in the province as a whole, 13% of the hospitalizations are for respiratory conditions. In Canada in 1998, hospitalizations for respiratory conditions made up 11.9% for men and 10.3% for women.<sup>22</sup>

For most respiratory conditions (pneumonia, chronic lung disease, acute respiratory infections, bronchitis and emphysema and ear infections), hospitalizations are greater in northerners though slightly lower for asthma.

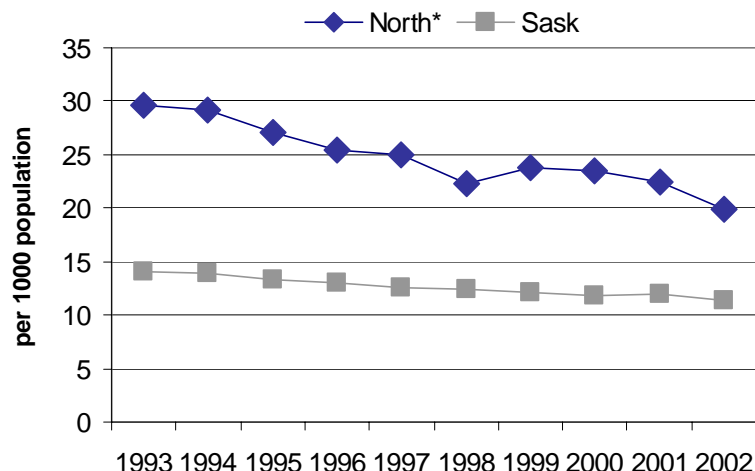
The incidence of tuberculosis is also significantly greater in northern Saskatchewan, though with new treatments for tuberculosis, TB doesn't play as great a role in hospitalizations. (See Communicable Disease section for more TB information)

Respiratory diseases can be influenced by smoking, environmental tobacco smoke, housing conditions, other air quality influences, and other factors. In Canada, the two most important preventable risk factors for respiratory disease are smoking (both personal smoking and exposure to environmental tobacco smoke) and air quality (indoor and outdoor). Smoking increases the risk of developing lung cancer, COPD and asthma. Maternal smoking in pregnancy also contributes to preterm birth, the major factor associated with the development of Respiratory Distress Syndrome in infants.<sup>22</sup> See Health Behaviours 1. Smoking in the Health Determinants Chapter.

# FAMILY HEALTH

## BIRTH RATES

### Crude Birth Rate by Year, Northern Sask and Sask, 1993-2002



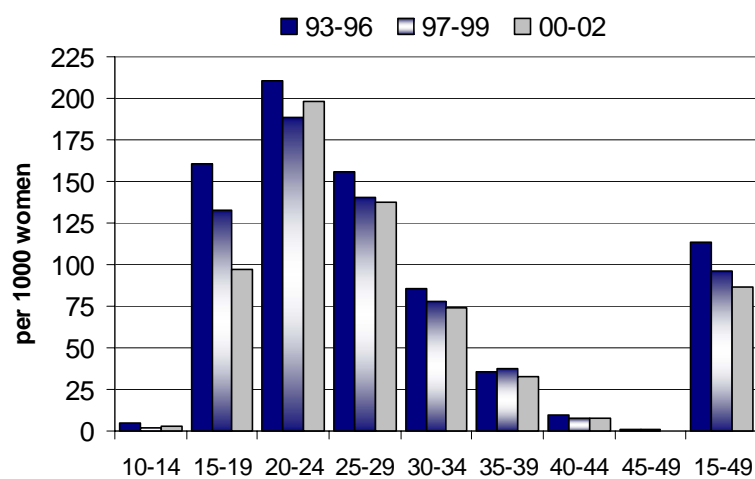
Source: Sask Health

\*excludes MCR rates for 2000-2



The crude birth rate is the number of births per 1,000 total population per year. The Saskatchewan birth rate declined from 14 to 11.3 per 1,000 during the 1993 to 2002 time period. The birth rate decreased for the whole north from 29.6 in 1993 to 23.7 in 1999. The average birth rate for AHA and KYHR further decreased to 19.9 in 2002, narrowing the gap from 2.1 times higher in 1993 to 1.8 times higher than the Saskatchewan rate in 2002. As complete birth data for MCR is not available for 2000 to 2002, it has been excluded from this report for these years.

### Birth Rates by Mom's Age Group over Time, Northern Saskatchewan, 1993 – 2002



Source: Sask Health

2000-02 excludes MCR

Rates of birth decreased in most age groups in northern Saskatchewan from 1993-96 to 2000-02. The largest decrease occurred in the first 4 years of the ten-year period.

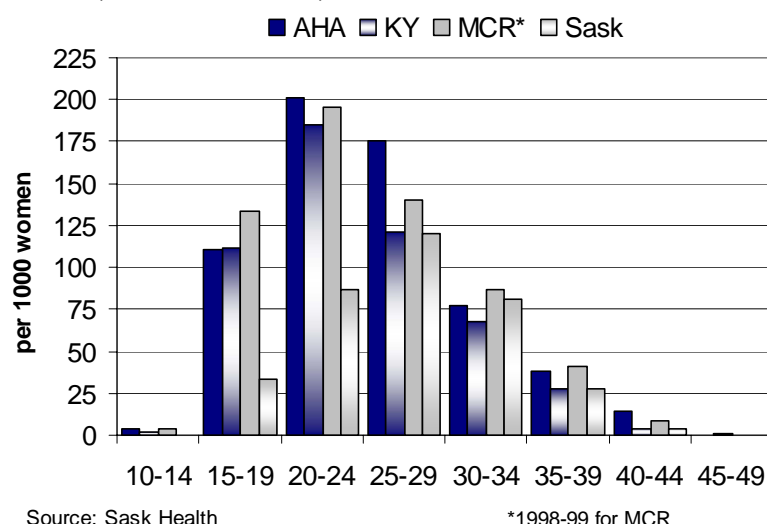
The rates increased slightly in 2000-02 for the 20 to 24 year age group. The rates for 2000-02 exclude MCRHR, as the complete data is not available.

The 20-24 year age group has the highest birth rate in the north, followed closely by both the 25-29 and 15-19 year groups which are nearly equal. In the province, the age groups with the highest birth rates are the 25-29, 20-24 and 30-34 year age groups.

The general fertility rate for northern Saskatchewan women declined from 113.6 to 87 births per 1,000 women of reproductive age (15 to 49 years) in the period from 1993-96 to 2000-02 (shown in the graph above). In comparison, the Saskatchewan general fertility rate (not shown) declined from 54.8 to 47.1 births per 1,000 women aged 15 to 49 years. Based on the age-specific birth rates for 1997-99, in her lifetime an average woman would give birth to 2.9 children in northern Saskatchewan and 1.8 children in all of Saskatchewan.

## Annual Birth Rate by Mother's Age by Area

1998-02 (\*1998-99 for MCR)



In looking at the annual birth rate by area of the north averaged over 5 years (2 years for MCR), the rates are fairly comparable across the health areas. The rates in the 15-19 year age group may be slightly higher in MCRHA though this statistic does not have data available for 2000-2002. The birth rate in the 25-29 year age group is higher in the AHA area.

In comparison with the provincial rates, the differences are substantial in the 10 to 24 year age groups though area fairly similar in the 25 to 34 year groups. After 35, the rates in the north increase relatively to the provincial rates.

## TEEN PREGNANCY

Teen pregnancy is often assessed by looking at births to mothers aged 15 to 19 years of age. Here we have looked at two groups: mothers aged 10 to 14 and those aged 15-19 years. In comparing among regions in the country, differing birth rates may reflect differing rates of pregnancy but also access to and utilization of therapeutic terminations of pregnancies.

In the accompanying table on Births to Teen Females in Northern Saskatchewan, data for 2000-2002 is not complete for MCRHA (missing out of province data for these years) so the number of births for MCRHA and the total north are not included for 2000-2002. Information for the AHA and KYRHA area is complete for 2000-2002, allowing an additional look at the most recent time period.

### Births to Teen Females in Northern Saskatchewan, By Year and Age Group

	1993-97		1998-1999		2000-2002	
	10-14 yr	15-19 yr	10-14 yr	15-19 yr	10-14 yr	15-19 yr
<b>Average Number per Year</b>						
AHA	1.0	16.2	0.5	15.0	0.7	17.0
KY	1.0	66.0	0.0	64.5	1.7	47.7
MCR	4.6	127.8	4.5	122.0		
North	6.6	210.0	5.0	201.5		
Sask	25.4	1545.0	16.5	1462.0	18.0	1223.3
<b>Rate per 1000 women per Year</b>						
AHA	6.6	160.1	3.2	111.9	4.8	110.4
KY	2.0	153.8	0.0	141.9	2.5	93.3
MCR	4.8	153.6	4.1	133.3		
North	4.1	154.1	2.7	134.0		
Sask	0.6	40.9	0.42	37.0	0.5	30.9
<b>Relative Rate compared to Saskatchewan</b>						
North	6.4	3.8	6.4	3.6		
Sask	1	1	1	1		

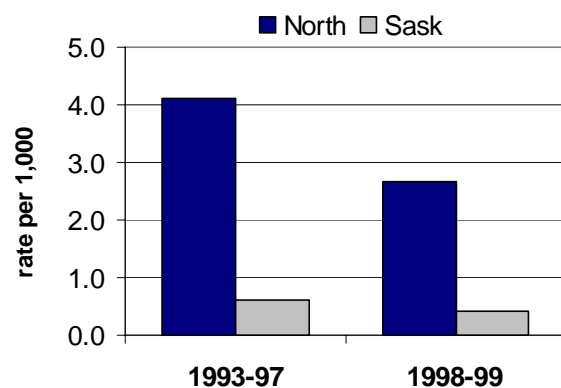
Source: Sask Health

The population of girls aged 10 to 19 increased by almost 32% in the north from 1993 to 2002.



## Birth Rates per Year

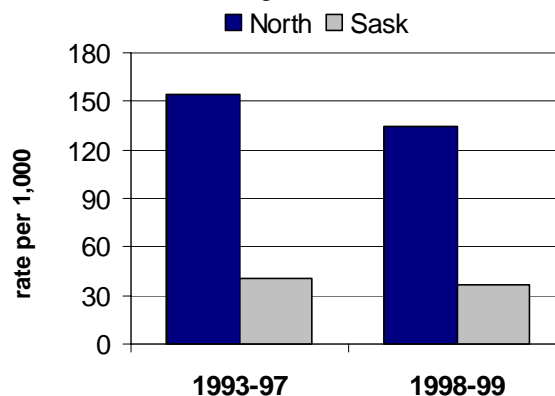
10-14 Years of Age



Source: Sask Health

	2000-02
AHA	4.8
KY	2.5

15-19 Years of Age



Source: Sask Health

	2000-02
AHA	110.4
KY	93.3

The overall rate of births to teen females is greater in northern Saskatchewan for both the 10 to 14 year olds as well as the 15 to 19 year olds in each of the time periods assessed. The 10 to 14 year old birth rates in northern Saskatchewan have been decreasing, with a 37% decrease from the 1993-97 to 1998-1999 period. There was less of a decrease in the AHA rate and the decrease was temporary in the KYRHA area for the 2000-02 period. The rate in KYRHA is actually higher for the 2000-2 period than it was in the 1993-97 period though the rate appears lower than the other northern areas for each of the time period assessed.

The rates of 10 to 14 year old teen births are 6.4 times greater than the provincial rates for 1993-97 and for 1998-1999. There was almost a 35% decrease in birth rate in this age group in northern Saskatchewan from 1993-97 in comparison to 1998-2000.

The 15 to 19 year old birth rates in northern Saskatchewan have been decreasing with a 13% decrease from the 1993-97 to 1998-1999 period. The rates of 15 to 19 year old teen births were 3.8 times greater than the provincial rates for 1993-97 and 3.6 times for 1998-1999.

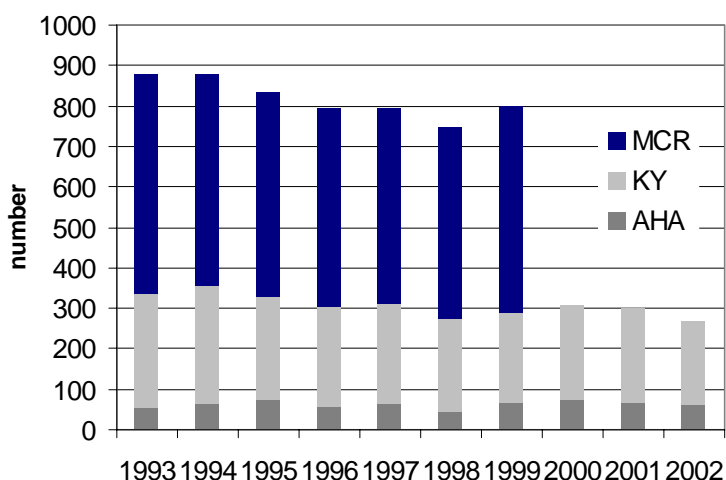
The average annual rates of 15 to 19 year old teens in AHA decreased 30% from 1993-97 to 2000-2002 and the rates in KYRHA decreased almost 40% during the same period.

## NEWBORNS AND THEIR HEALTH

Generally over the past decade, the number of births has been decreasing slightly each year in the north. In the early 1990s there were almost 900 births per year whereas in the late 1990s, there were 800 or fewer births per year.

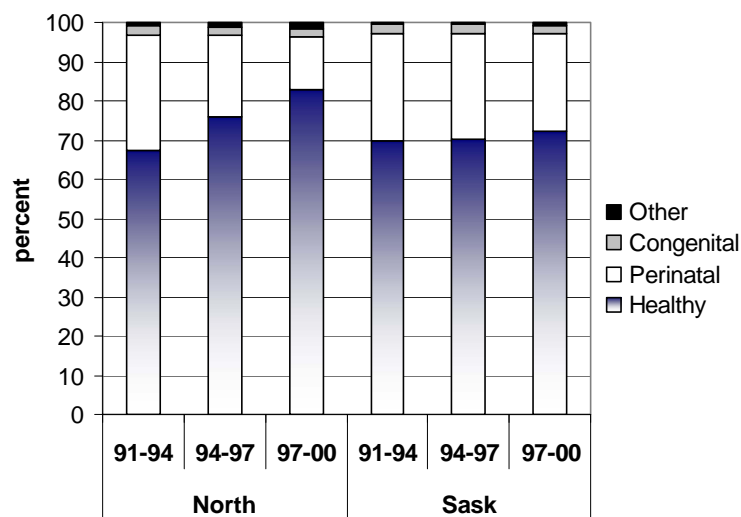
Complete information is not available for all the births in the MCRHR for 2000-02, though it appears from the other two areas that this trend of decreasing births continues.

### Number of Births by Region, 1993-2002



Source: Sask Health

## Diagnoses for Newborns, 1991-2000



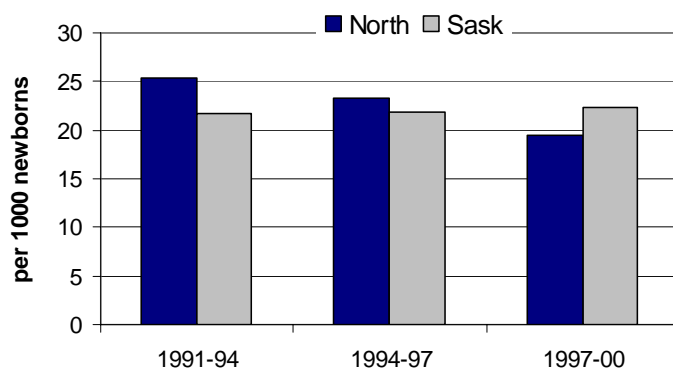
Source: Sask Health 2003

When we look at diagnoses at the time of discharge from hospital for newborn infants, we can see that the vast majority are for healthy infants. For infants from northern Saskatchewan, the percentage of healthy infants has been increasing from the early to late 1990s reaching about 82% of newborns. The next most common diagnosis is for general perinatal conditions followed by congenital anomalies.

From this information, a higher proportion of northern newborns as diagnosed as healthy in the most recent time period than in the province as a whole.

## Congenital Anomalies

Diagnosed At Birth in Hospital, 1991-2000



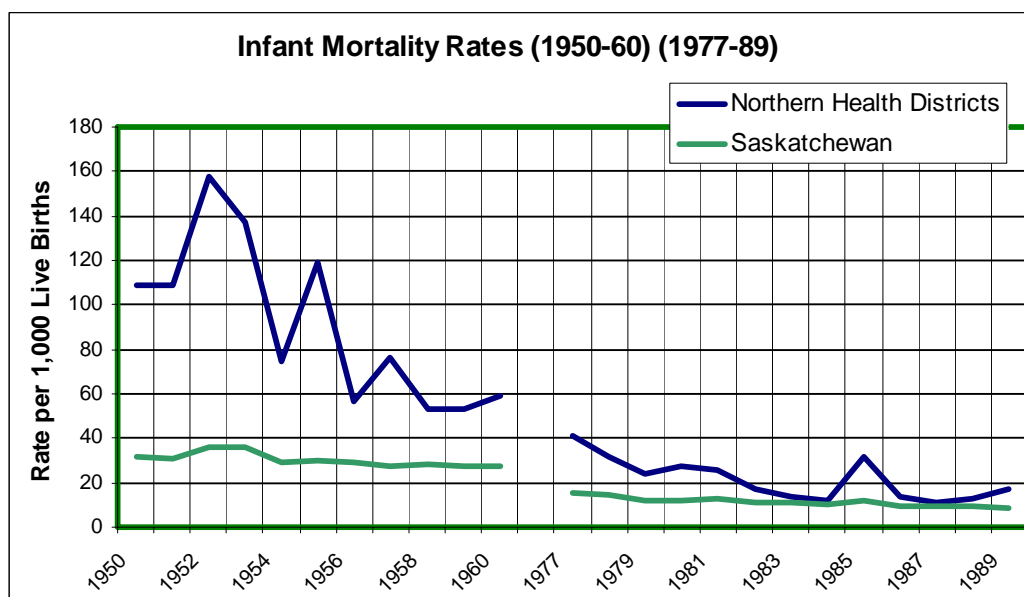
Source: Sask Health 2003

If we look more specifically at the trends in congenital anomalies diagnosed in hospital, we notice that the rates in northern Saskatchewan appear to be decreasing over time and are fairly comparable to the provincial rates.

## INFANT MORTALITY

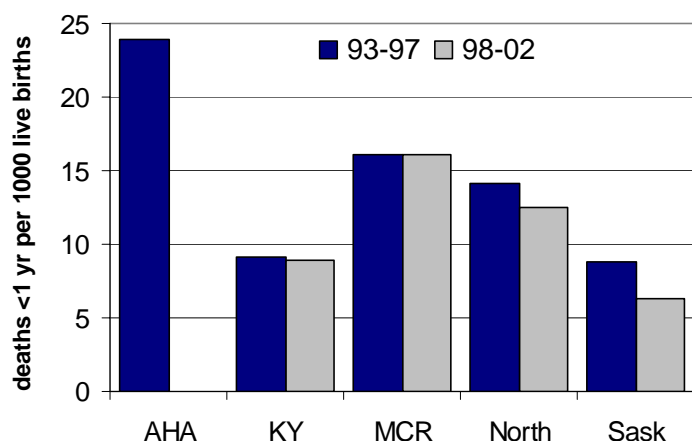
Infant mortality is death in children in their first year of life. The infant mortality rate (IMR) is the number of deaths in infants under one year of age per 1,000 live births, and internationally is commonly used as a health indicator to compare various countries or regions. IMR has been seen as an indicator of hygiene and health conditions in a population or unfavourable living conditions, including the overall level of economic and social development.<sup>23</sup>

There have been marked improvements in the infant mortality rate in northern Saskatchewan over the last decades likely attributed mainly to reductions in infectious diseases. The northern Saskatchewan rate in the early 1950s was between 110-160 per 1,000 live births (compared to about 33 for the province) and around 60 per 1,000 in 1960 (with a provincial rate of about 24).



There has been about a ten-fold reduction in infant mortality in northern Saskatchewan since the early 1950s. However, there continues to be a higher rate of infant deaths in northern Saskatchewan, with the overall northern rate being approximately double that of the province for the most recent time period of 1998 to 2002.

### Annual Infant Mortality Rate 1993-2002



Source: Sask Health

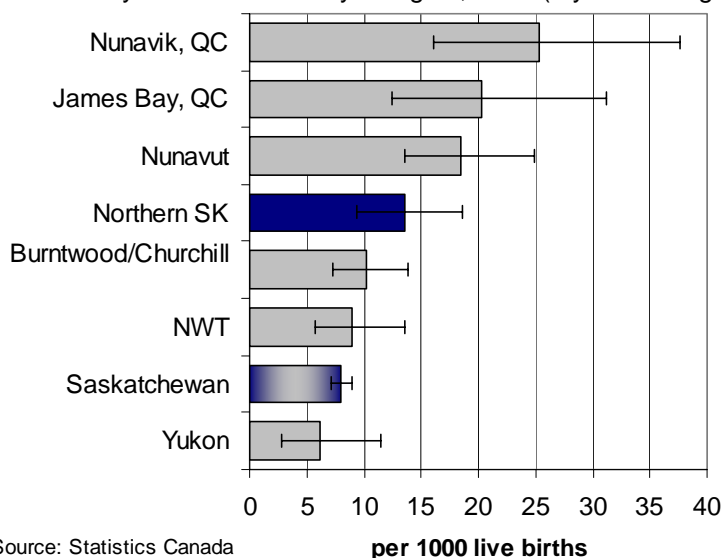
The infant mortality rate (IMR) for northern Saskatchewan decreased slightly from 14.1 per 1000 live births in 1993-97 to about 12.5 per 1000 live births in 1998-2002. During this same period the provincial infant mortality rate decreased from 8.8 to 6.3 per 1000 live births. Even though there was a decrease in the IMR for northern Saskatchewan during the period from 1993-97 to 1998-2002, the decrease was not as great as the provincial decrease, so that the northern rate is now about 2 times that of the provincial rate (1.98) in 1998-2002 compared to 1.6 times in 1993-97.

Across the north during the time periods of 1993-97 to 1998-2002, the IMR hasn't changed much, if at all for the MRRHA and KYRHA. In the AHA, there were no infant deaths in 1997-00, though there were 6 in the 1993-97 period. It is uncertain whether this reduction in rate in the AHA is due to the variability of small numbers over time, or a significant long-term trend. The average IMR for AHA for 1993-00 is 11.6 deaths per 1000.

Infant death continues to be a significant problem in northern Saskatchewan. The infant mortality rate in northern Saskatchewan in 1998-2002 was about 12.5 per 1,000 live births compared to 6.3 in Saskatchewan. For Canada as a whole in 1999, the infant mortality rate was 5.5 and for Canadian First Nations in the same year it was 8.0 deaths per 1,000 live births.<sup>24</sup>

### Infant Mortality Rate

By Northern Territory / Region, 1997 (3 year average)

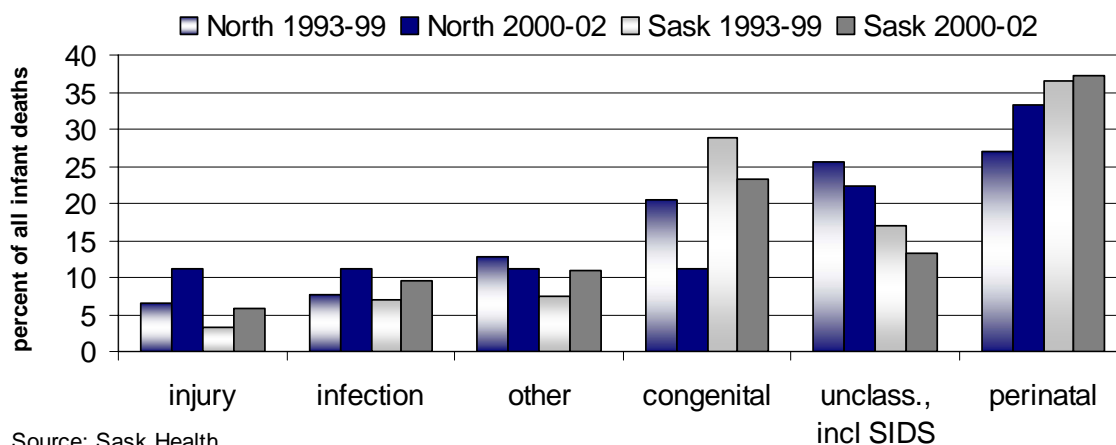


In comparing IMRs across peer groups and other northern regions across the country, the IMR in northern Saskatchewan is higher than in the Yukon, Northwest Territories and Burntwood/Churchill, Manitoba but less than in Nunavut, Quebec James Bay Cree and Nunavik.

The rates are averaged on 3 years of data, as the numbers are small with fluctuations. For the northern regions, the number ranged from n=3 to n=13 for each 3 year period.

### Causes of Infant Death 1993-2002

Percent of all infant deaths

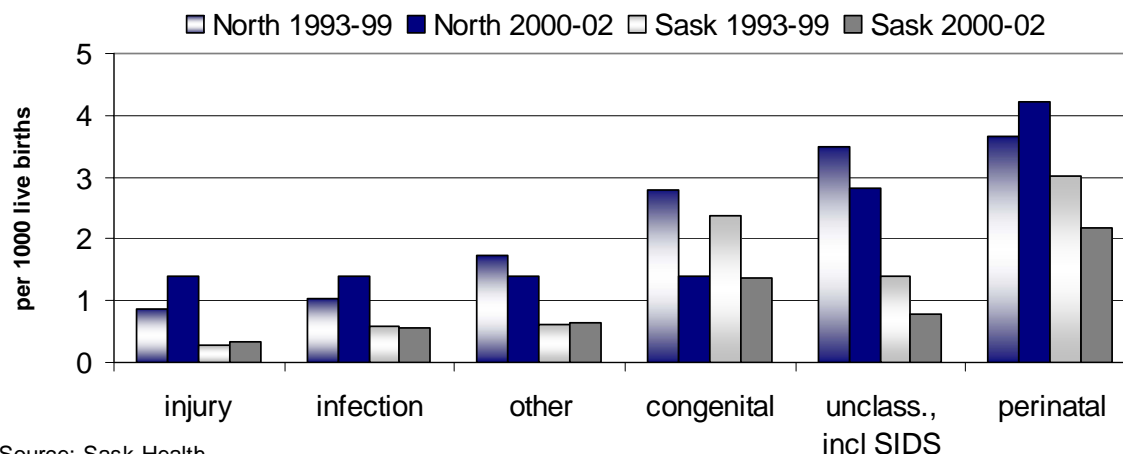


The causes of infant death were assessed over time and compared between northern areas and the province. For this assessment, the infection category includes all respiratory and meningitis codes. The percents and rates for 2000-02 should be viewed with caution, especially for the north. They are based on small numbers (27 infant deaths in total). Not all live births and deaths are captured for 2000-02 so the rates are estimated from the data from most regions in the north. In addition, the data for 2000-02 is based on ICD10 codes which have some major differences compared with the ICD9 codes for used for 1993-99. For example 44% of deaths coded to the respiratory group under ICD9 are coded to the other group under ICD10.

In the overall assessment of the causes of infant deaths (deaths prior to one year of age), conditions arising from perinatal conditions are the leading cause in both Saskatchewan and the north. For the second most frequent cause of infant deaths, congenital conditions is the second most frequent condition in Saskatchewan contributing to infant deaths whereas in northern Saskatchewan, unclassified / unknown and SIDS (Sudden Infant Death Syndrome) are the second most frequent with congenital anomalies being third. In comparison with Canadian First Nations causes of infant mortality, in 1999 about 34% were from SIDS or unknown causes, 27% were due to conditions arising in the perinatal period, 25% were due to congenital anomalies (a slightly greater proportion than in northern Saskatchewan), and 14% from other (including injury and infection).<sup>24</sup>

## Causes of Infant Death 1993-2002

Rate per 1000 live births



Source: Sask Health

Sudden Infant Death Syndrome (SIDS) is a common cause of infant mortality. In many First Nations in Canada, SIDS is the leading individual cause of infant mortality.<sup>24</sup> Though the specific cause of SIDS remains unknown, more information is available on the risk factors for SIDS including:

- Infants sleeping on their tummy (prone position);
- Maternal smoking during pregnancy;
- Exposure to environmental tobacco smoke (smoking around the infant);
- Bed sharing with the infant does not seem to increase the risk except if the person sharing the bed is a smoker or has been consuming alcohol;
- Some suggestion that using certain drugs or substances (such as marijuana, crack, cocaine, etc) as well as binge drinking may increase the risk;
- Infants becoming too hot while sleeping; and
- Not breast feeding may increase the risk.<sup>25</sup>

In Canada, between 2 and 3% of infants born each year will have a serious congenital anomaly. Many of these infants will be born to women with no family history and no known risk factors for congenital anomalies. Reduction in the prevalence of congenital anomalies can occur through primary prevention through ensuring the healthiest possible pregnancy (e.g. food fortification with folic acid, promoting folic acid-containing multivitamin use prior to pregnancy, pre-pregnancy immunization against rubella, interventions to reduce alcohol and drug use in pregnancy) or secondary prevention (prenatal diagnosis and with either subsequent termination of affected pregnancy or in-utero treatment).<sup>26</sup> Fetal alcohol spectrum disorder (FASD) has been recognized in Canada as one of the leading causes of preventable birth defects and developmental delay in children.

Caution needs to be used when interpreting congenital anomaly data especially for deaths because the numbers in northern Saskatchewan are small. Congenital anomalies are influenced by a variety of factors including genetics (family history), maternal age, nutrition, alcohol, tobacco, and drug intake. Data on congenital anomalies are also influenced by the utilization of prenatal diagnosis and therapeutic abortion acceptance and access. There can appear to be reductions in deaths from congenital anomalies over time or between regions from increased prenatal diagnosis and termination of pregnancy when congenital anomalies are identified.

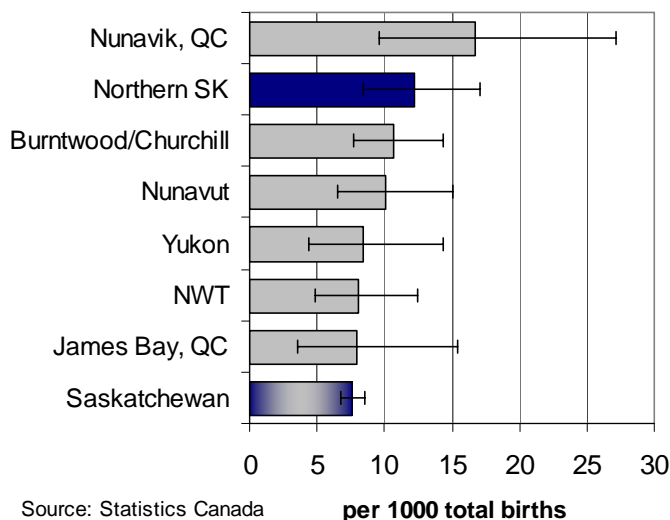
In northern Saskatchewan, there has been some involvement in preventive genetic counseling as well as prenatal screening pilot projects for a few congenital conditions that can run in families such as HHH Syndrome,<sup>27</sup> Sandhoff Disease,<sup>28</sup> and autosomal recessive microcephaly and micromelia.<sup>29</sup>

## PERINATAL MORTALITY

The perinatal mortality rate is the total number of stillbirths (infants with gestational age of 28 or more weeks) and early neonatal deaths (deaths within the first week of life) per 1,000 total births. It is a community health indicator which reflects both obstetric and pediatric care as well as socio-environmental conditions and public health actions.<sup>23</sup>

## Perinatal Mortality Rate, by Northern Region, 1997

With 95% confidence intervals (shown by the bars)



Perinatal mortality is the total number of stillbirths (gestational age of 28 or more weeks) and early neonatal deaths (deaths in the first week of life) per 1,000 total births (livebirths and stillbirths). Counts in this graph are based on an average of three consecutive years of data.

The perinatal mortality rate in northern Saskatchewan was about 50% greater than the Saskatchewan rate. However, the difference is not statistically significant, likely because of small numbers.

The rate in northern Saskatchewan was greater than the Quebec James Bay Cree, the Northwest Territories, Yukon, Nunavut and Burntwood/Churchill, Manitoba rates, but lower than the Nunavik rate though none of these differences were statistically significant, as shown by overlapping 95% confidence intervals.

## BIRTH WEIGHT

Birth weight is one of the predictors of infant health and well-being and can be influenced by:<sup>24</sup>

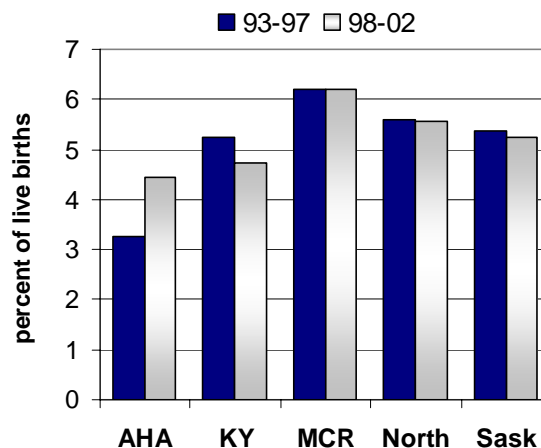
- Socio-economic conditions
- Maternal age
- Maternal weight
- Previous births by the mother
- Maternal nutrition
- Maternal smoking
- Illness during pregnancy
- Diabetes
- Length of pregnancy

Low birth weight is a key determinant of infant survival, health, and development. Low birth weight infants are at a greater risk of having a disability and for diseases such as cerebral palsy, visual problems, learning disabilities and respiratory problems. Low birth weight is also a predictor of subsequent diabetes perhaps due to nutritional deprivation in the womb. Birth weight information for the following graphs only includes infants born in Saskatchewan or Alberta.

In northern Saskatchewan the proportion of infants born with low birth weight is slightly greater than in Saskatchewan; however, the proportion of infants born with high birth weight is higher in the north than in Saskatchewan as a whole. Low and high birth weights in Saskatchewan First Nations have been associated with the increase in diabetes among Aboriginal women.<sup>30</sup>

### Low Birth Weight (<2500 gm)

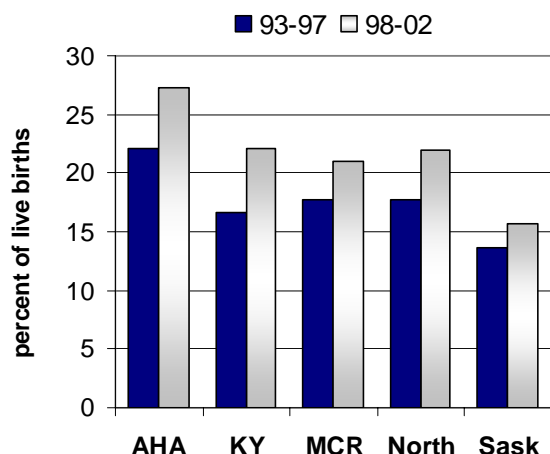
By residence, 1993-2002



Source: Sask Health

## High Birth Weight (4000 gms +)

By Residence, 1993-02



Source: Sask Health

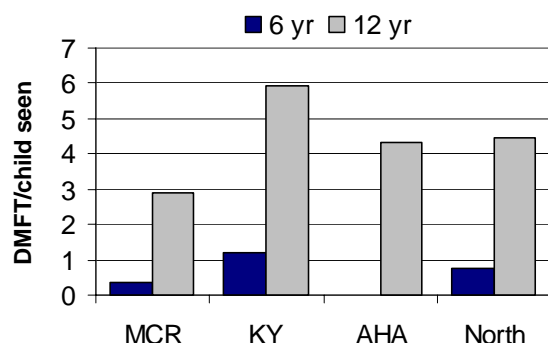
There is not a lot of information reported on the risk factors for infants with high birth weight or who are for large-for-gestational-age.<sup>31</sup> Maternal diabetes is one of the risk factors identified for high birth weight or specifically for macrosomia ("large body"). Genetic predisposition for a large infant and maternal diet may also contribute to the rate of high birth weight infants. High birth weight or macrosomia is associated with birth complications. Large infants have been reported to be more common among Canadian Aboriginal women.<sup>32</sup>

## ORAL HEALTH

For comparing oral or dental health across regions or over time, a common indicator used is the number of decayed, missing or filled teeth (DMFT) for permanent teeth or decayed, extracted, or filled teeth for primary teeth (def).

### Decayed, Missing and Filled Teeth

By Child's Age and RHA, 2002-03



Source: Northern Children's Dental Program

The graph to the left shows the average DMFT per child seen through the northern dental health program (off-reserve) in 2002-03. This shows for example that in KYRHA, the average 12 year old had almost 6 decayed, missing or filled teeth and the average 6 year old had just over one.



### Decayed, Missing or Extracted, and Filled Teeth, Northern Saskatchewan Children, 2002-3

Region	age-indicator	Decayed	Missing/ Extracted	Filled	# Patients	def or DMF per patient
MCR	5yr - def	528	157	261	176	5.4
	6yr - DMF	49	1	3	146	0.4
	12yr - DMF	163	20	146	114	2.9
KYR	5yr - def	481	56	198	132	5.6
	6yr - DMF	86	14	62	135	1.2
	12yr - DMF	229	45	456	123	5.9
AHA *	5yrs - def	0	0	0	0	0.0
	6yrs - DMF	0	0	0	2	0.0
	12yrs - DMF	8	0	5	3	4.3
North	5yr - def	1009	213	459	308	5.5
	6yr - DMF	135	15	65	283	0.8
	12yr-DMF	400	65	607	240	4.5

\* Note: includes only Uranium City & Camsell Portage

Source: Northern Children's Dental Program, 2002/3



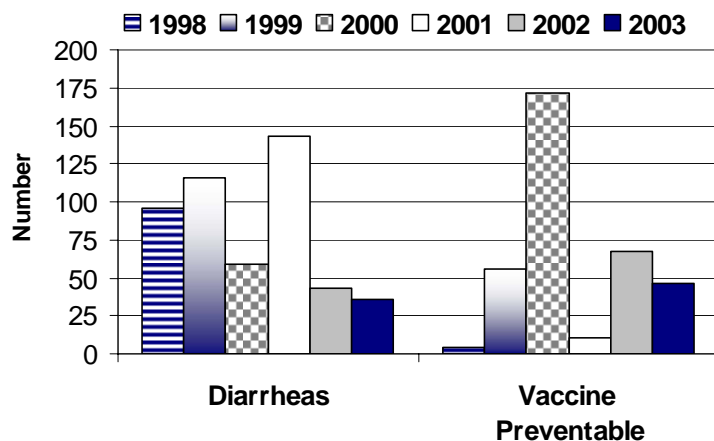
# COMMUNICABLE DISEASES

## REPORTABLE COMMUNICABLE DISEASES

Many communicable diseases are reportable to the Medical Health Officer in each region, including some diarrheal type diseases, vaccine preventable illnesses, sexually transmitted infections, hepatitis A, B and C, HIV, tuberculosis, meningitis and a variety of others.

### Selected Communicable Diseases Reported

Northern Sask, 1998-2003



Source: Population Health Unit, Northern RHAs

In grouping some of the reportable communicable diseases into categories for comparison over time, infectious diarrhea and vaccine preventable infections are shown in this graph over the past six years. Reportable diarrhea type illnesses can be influenced by the availability of water for handwashing, clean drinking water, healthy food storage and preparation, as well as factors such as overcrowding and poverty. There was a peak in the diarrheal illnesses in 2001, some of which were due to cryptosporidium at the time of an outbreak in the North Battleford area due to drinking water contamination. Since that time the number of diarrheal illnesses have decreased to a low of about 32 in 2003.

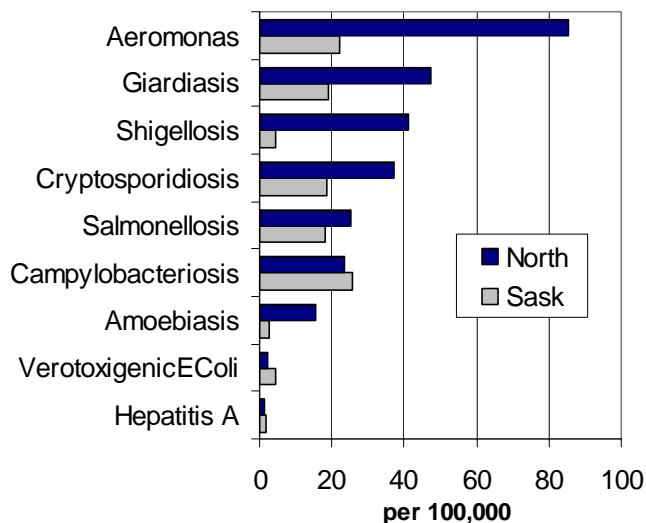
During 2000, there was a large outbreak of trichinellosis in two communities in northern Saskatchewan from consumption of inadequately cooked bear meat— sometimes this illness can cause diarrhea but these cases were not included in this graph.<sup>33</sup> There were several other smaller outbreaks of diarrheal type illnesses that were included.

Historically, the enteric disease rates shown below as selected food and water-borne diseases have been significantly higher in northern Saskatchewan. Though there has been a decrease, we still have a significantly higher rate of a variety of these enteric (or diarrheal) diseases.

For vaccine preventable diseases, there was an outbreak of pertussis (whooping cough) in parts of the north in 2000. This was not so much of an issue of low immunization coverage as it was of decreasing immunity with age. Since that time a pertussis booster immunization has been added to the adolescent immunization program.

### Selected food and water-borne diseases

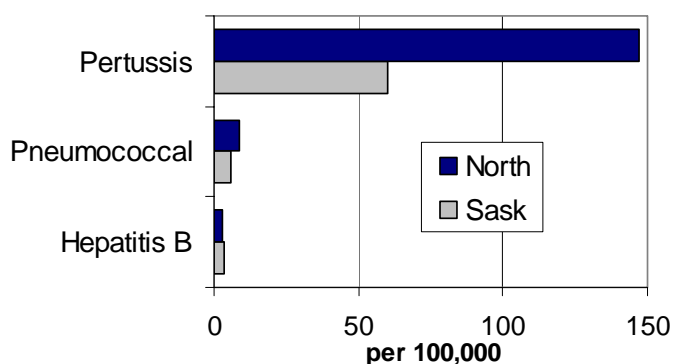
Five-year average rate, 1998-2002



Source: Health Canada, Sask Health, Northern RHAs Population Health Unit

### Most common vaccine-preventable diseases

Five-year average rate, 1998-2002

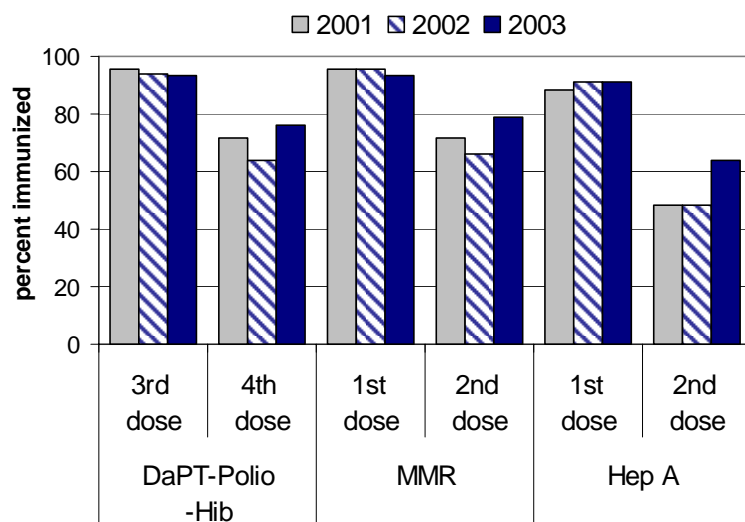


Source: Health Canada, Sask Health, Northern RHAs Population Health

## CHILDHOOD IMMUNIZATIONS

### Immunization Coverage at 2nd Birthday

Northern Sask (off-reserve)

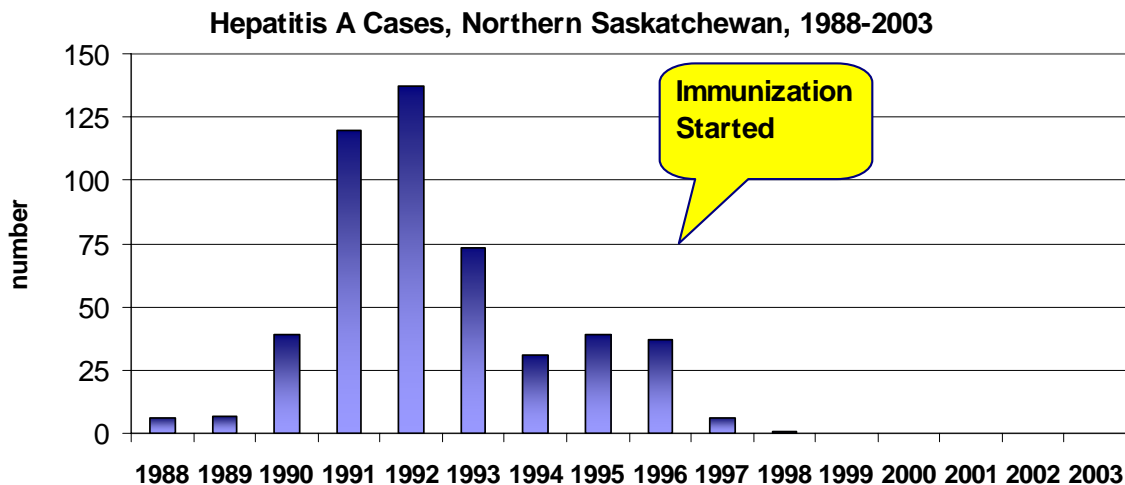


Source: Population Health Unit, April 2004

Immunization is an important, effective public health strategy to reduce illness and improve health. Vaccine coverage is shown for the vaccines provided through the children's immunization program in Saskatchewan. The hepatitis A vaccine is provided selectively in the province to children on First Nations reserves and to selected at-risk northern Saskatchewan communities. DaPT-Polio-Hib vaccine provides protection for diphtheria, pertussis (whooping cough), tetanus, polio and Haemophilus meningitis (previously a common form of meningitis in children in northern Saskatchewan prior to this immunization program). Ideally, immunization coverage at two years of age should be in the range of 95% coverage for the 4<sup>th</sup> DaPT-Polio-Hib, the 2<sup>nd</sup> MMR and at least the first hepatitis A vaccination.

### Hepatitis A in Northern Saskatchewan 1988-2003

Hepatitis A is an infectious liver disease that can be associated with food and waterborne outbreaks which are common in situations where there is poverty, overcrowding and poor water availability. It was a very common illness in northern Saskatchewan and it would often occur in outbreaks. Since the hepatitis A immunization program was initiated there has been a major reduction in the number of cases of hepatitis A in northern Saskatchewan with subsequent major reductions in childhood illness, hospitalizations, and doctor visits. Two deaths had been attributed to hepatitis A in children in northern Saskatchewan in the few years prior to the immunization program. This has been a truly effective program.<sup>34</sup>



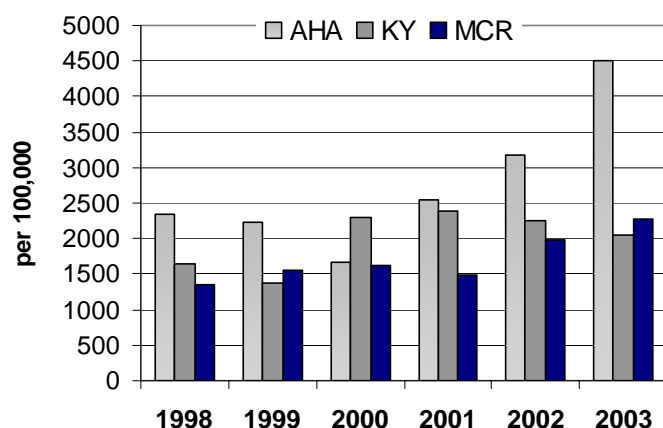
Source: Population Health Unit, 2003

## SEXUALLY TRANSMITTED INFECTIONS

Two of the most common sexually transmitted infections (STIs) in northern Saskatchewan are chlamydia and gonorrhea. Over the past few years, diagnosis has become easier because of improvements in the diagnostic tests and they are also more convenient acceptable tests for clients. This may be part of the explanation for increasing rates of these ailments. There have also been increases over the past few years in chlamydia and gonorrhea in Canada.

### Chlamydia and Gonorrhea

#### Chlamydia Rate in Northern Health Regions, 1998-2003

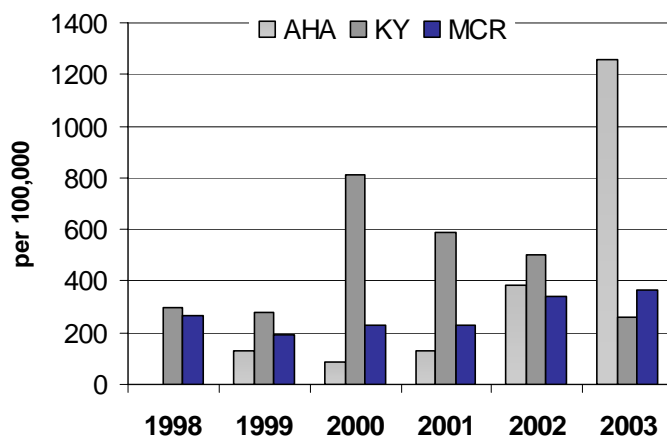


Source: Population Health Unit, 2004

Chlamydia rates have increased significantly in AHA and to a lesser extent MCR and a somewhat more static or 'up and down rate' in KY.

During the time period of 1998 to 2003, the Canadian chlamydia rates have increased by about 40% and the Saskatchewan rates by almost 60%. Canadian rates have gone from 128.8 to 180.9 per 100,000 projected for 2003; Saskatchewan rates have gone from 233.9 in 1998 to 370 per 100,000 projected for 2003.<sup>35,36</sup>

#### Gonorrhea Rate in Northern Health Regions, 1998-2003



Source: Population Health Unit, 2004

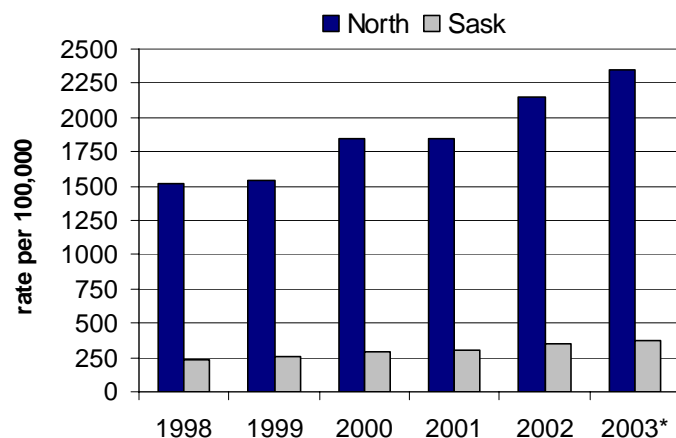
Gonorrhea rates are following a similar pattern in northern Saskatchewan to the chlamydia rates. In KY, high rates in 2000 have decreased more recently.

Chlamydia rates are 6 times higher than gonorrhea rates in northern Saskatchewan.

During the time period of 1998 to 2003, the Canadian gonorrhea rates increased by over 30% and the Saskatchewan rates by about 50%. Canadian rates went from 16.4 to 21.9 per 100,000 projected for 2003; Saskatchewan rates went from 31.8 in 1998 to 47.9 per 100,000 projected for 2003.<sup>35, 36</sup>

## Chlamydia by Year Reported

1998-2003

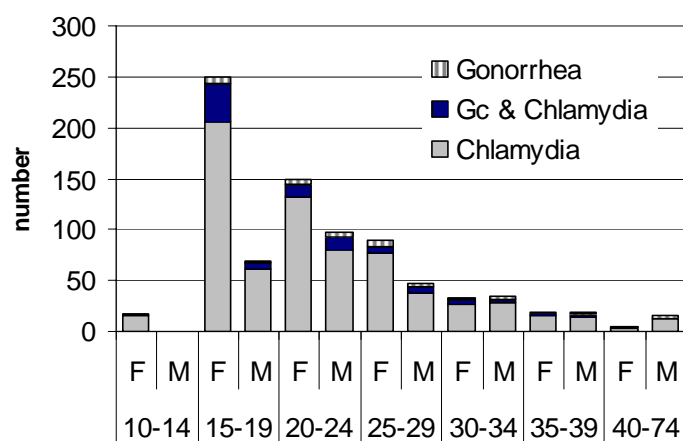


Source: Health Canada, Sask Health, Population Health Unit

\*projected for Sask

The rates of Chlamydia have been increasing in both Saskatchewan and northern Saskatchewan by about the same percentage; however, the northern Saskatchewan rates remain a little more than 6 times greater than in Saskatchewan for 2002.

## Chlamydia and Gonorrhea, By Sex and Age Group, Northern Sask, 2003 (n=845)

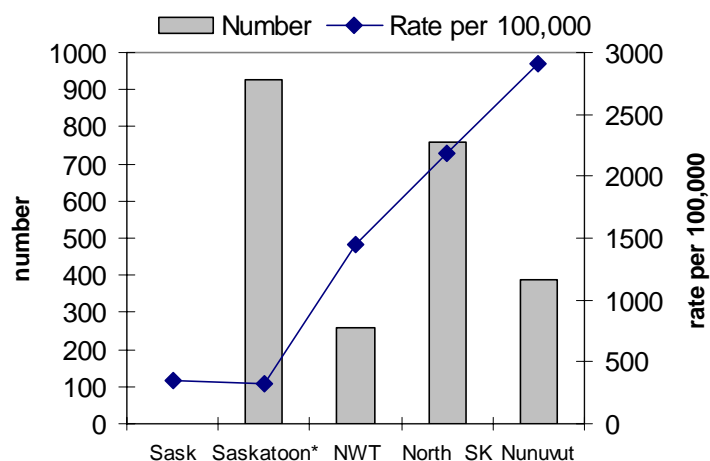


Source: Population Health Unit

If we look at the age groups most greatly affected by these sexually transmitted infections in northern Saskatchewan it is the females in the 15 to 19 year group followed by females in the 20 to 24 year group. For males the group with the highest numbers of STIs is the 20 to 24 year age group then followed by the 15 to 19 year age group.

In comparing the number of chlamydia cases as well as the rate per 100,000 across various regions in Saskatchewan and Canada in 2002, the rate in northern Saskatchewan was higher than Saskatchewan, Saskatoon RHA, and the Northwest Territories and 75% of the rate in Nunavut. The absolute number of cases of chlamydia in northern Saskatchewan is about 75% of the number in the Saskatoon RHA despite having a much smaller population.

## Chlamydia Incidence by Health Region, 2002



Source: Sask Health, Health Canada, Saskatoon RHA

\*preliminary data

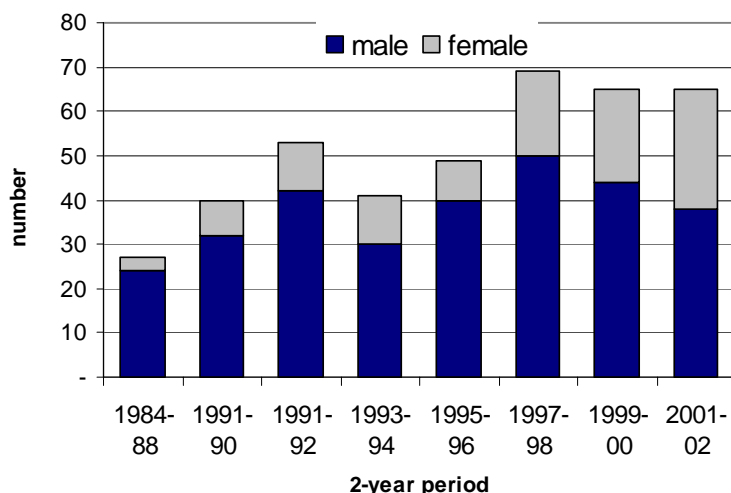
## HUMAN IMMUNODEFICIENCY VIRUS (HIV)

HIV is the virus that causes AIDS (Acquired Immune Deficiency Syndrome). This virus impacts most health regions across Canada. Though there are some uncertainties in the information on ethnicity in the national data, there are some general trends noted for HIV in Aboriginal people in Canada:<sup>37</sup>

- Aboriginal peoples are over-represented in the HIV epidemic in Canada
- Aboriginal peoples make up a growing percentage of positive HIV test reports and reported AIDS cases
- Injecting drug use continues to be a key method of transmission in the Aboriginal community
- HIV/AIDS has a significant impact on Aboriginal women
- Aboriginal people are being infected with HIV at younger age compared to non-Aboriginal people

Information is available for the Saskatchewan HIV cases or people who have been infected with HIV.

### HIV Cases by Sex and Year Diagnosed, Total Saskatchewan, 1984-2002



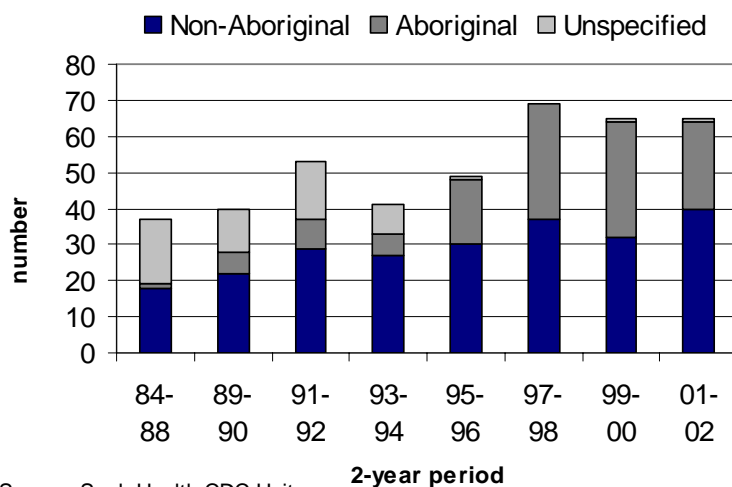
Source: Sask Health CDC Unit

This graph shows the number of people with HIV identified in Saskatchewan since 1984. There were 27 cases identified in the first (four year) time period of 1984 to 1988; the subsequent time periods reveal the numbers over 2-year time periods.

Over the 1980s and 1990s there was a fairly steady increase in the number of people with HIV identified with a slight reduction in the last few years. The proportion of females identified has also been increasing, similarly to the Canadian picture.

Over the 2001-2002 time period, there were almost 33 newly identified people with HIV diagnosed each year in Saskatchewan.

### Saskatchewan HIV Cases by Aboriginal Status, 1984-2002



Source: Sask Health CDC Unit

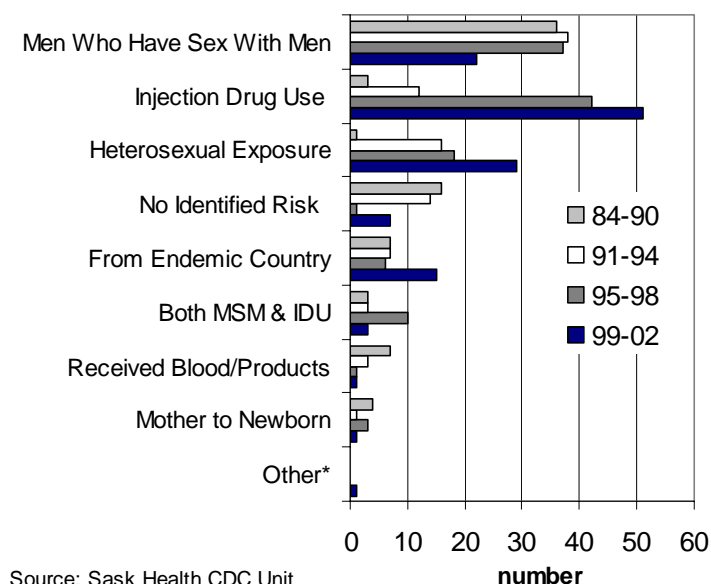
In Saskatchewan statistics as in Canadian statistics, there is some uncertainty of the ethnicity data as it has relied on self-reporting of Aboriginal status. In the 1980s and early 1990s, the ethnicity data was not complete.

The data however is consistent with the Canadian data in that Aboriginal peoples are over-represented in the HIV epidemic.

The first period in the graph to the left is for four years; the remaining time periods are 2 years.

## New HIV Cases by Reported Source Risk

Saskatchewan, 1984-2002

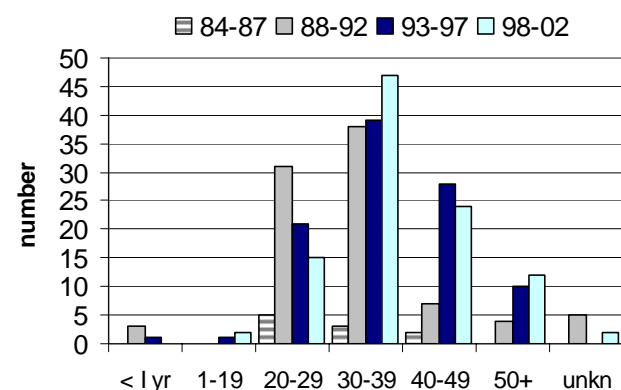


In looking at the risk factors that may have contributed to the HIV infections in Saskatchewan over the past two decades, there are a couple of trends. There has been a reduction in the HIV diagnosis with men who have had sex with men (MSM). In the 1980s and 1990s, this was the most common risk factor, though in the most recent time period it has been surpassed by injection drug use. Heterosexual contact has also increased as a risk condition and, in fact, for the most recent time period was a more common risk factor than MSM.

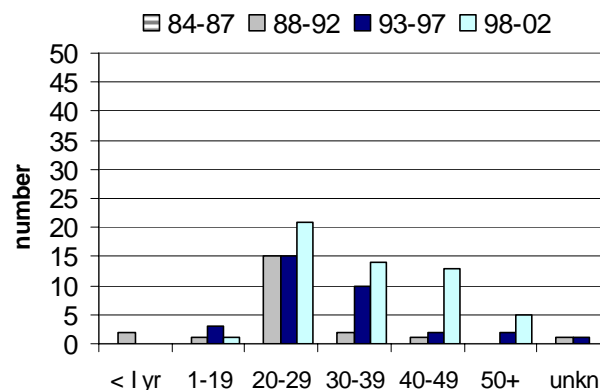
In looking at the age groups at the time of diagnosis, there are slight differences for men and women (shown on the following page). The most common age of diagnosis for men is the 30 to 39 year age group, followed by the 40-49 year age group. In women, the identification has occurred at a younger age, with the numbers greatest in the 20-29 year age group.

## HIV Cases by Age and Year Diagnosed, Saskatchewan, 1984-2002

### Male



### Female



Because there are new therapies that delay the onset of AIDS illness in individuals with HIV and that reduce the risk of passing the infection from mother to infant, it is increasingly important to offer HIV testing to all pregnant women and all individuals who have risk factors, such as injection drug use, men who have sex with men, and both men and women with multiple sexual partners.

The HIV picture also continues to stress the importance of prevention (through education, awareness, harm reduction strategies) as well as early diagnosis, support and care for individuals who may be affected by AIDS.

A project now occurring in northern Saskatchewan in partnership with the Saskatchewan Population Health and Evaluation Research Unit (SPHERU), the northern health authorities' Population Health Unit, NITHA and four northern communities is looking at the knowledge, attitudes and awareness of HIV and AIDS in these northern communities. It will assist all northern Saskatchewan communities in HIV prevention and support. The project "Determining factors toward improving HIV/AIDS support structures in northern Saskatchewan Aboriginal (First Nations and Métis) communities" is funded by the Canadian Institute of Health Research.<sup>38</sup>

## HEPATITIS C

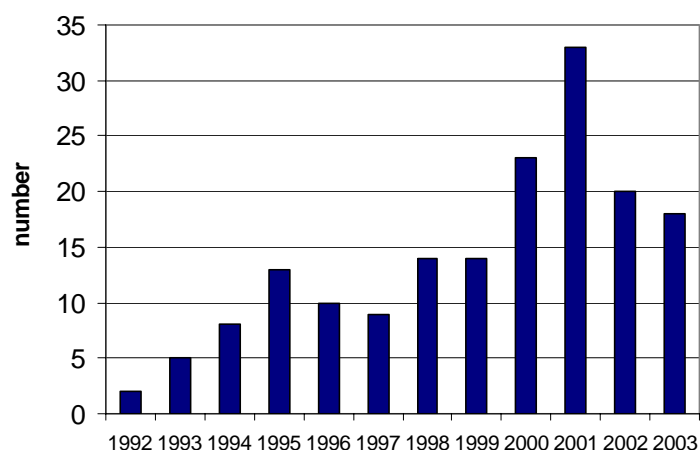
Hepatitis C (HCV) is a virus that can infect the liver and cause hepatitis C disease.

People who are at most risk of hepatitis C include:

- drug users who share needles, spoons, straws and other drug-related equipment that is contaminated with HCV,
- people who get tattoos or body parts pierced with dirty or unsterile needles and ink,
- people who received blood transfusions or blood products before 1992, and
- people who share a razor or toothbrush with someone who has hepatitis C.

Many individuals with hepatitis C infection may not know they have it as the infection may not cause symptoms, though the individual may go on to develop chronic liver disease and its complications. This is why any individual that may have had any of the risk factors for hepatitis C are encouraged to be tested. The testing has been more available across the north over the past decade.

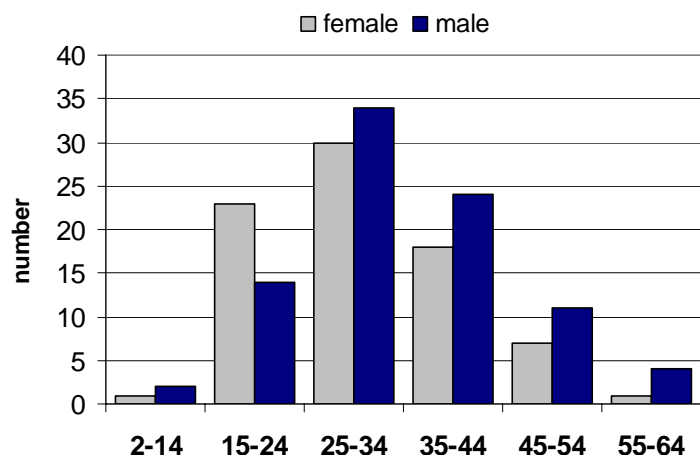
### Hepatitis C by Year Diagnosed, Northern Sask



Source: Population Health Unit, 2004

In northern Saskatchewan over the past decade we initially saw increasing numbers of individuals with hepatitis C infection and then a decrease over the past two years. Some of the decrease may not be a real decrease in the numbers of people with new infection, but rather the result of a 'catch-up' of previously infected clients being diagnosed in 2000-2001 when testing became more utilized in northern Saskatchewan.

### Hepatitis C Cases Reported, by Age Group and Sex Northern Sask, 1992-2003



Source: Population Health Unit, 2004

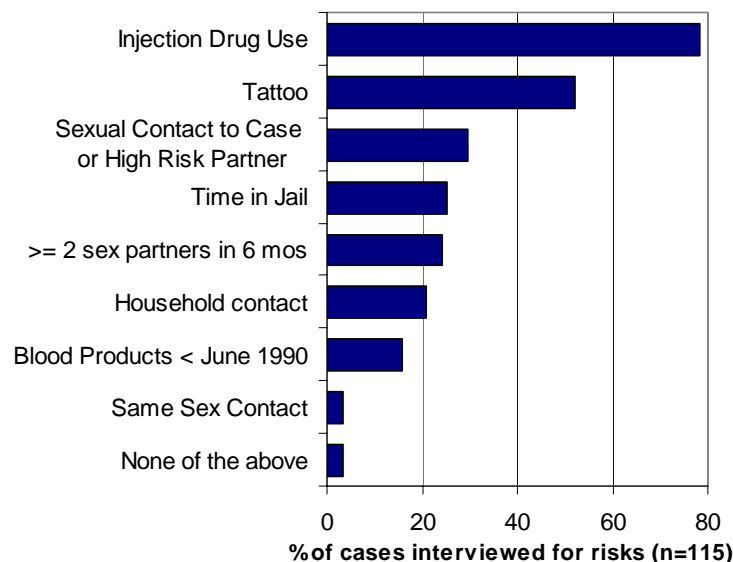
Hepatitis C infections cross most age groups though the group with the most number of diagnosis has been in the 25-24 year age group for males and females followed by 15-24 year age group for females and the 35-44 year age group for males.

In Canada, children infected with hepatitis C may have been infected in the past through blood transfusions or the use of other blood products. These risks have decreased since 1992. The other way that children may be infected is by mothers passing it to their infants in pregnancy or childbirth.



## Risk Factors for Hepatitis C Cases (n=169)

Northern Sask, 1992-2003



Source: Population Health Unit, 2004

In northern Saskatchewan, of the individuals who were interviewed for risk factors that may have caused their infection with HCV, almost 80% have utilized or are using injection drugs. Another about 50% had identified tattooing and less than 20% identified using blood products such as transfusions prior to June 1990 when there was a risk of transfusion transmission.

Though these risk factors do not indicate what actually caused an individual's HCV infection, it does show that injection drug use is the more common risk factor for this infection in northern Saskatchewan.

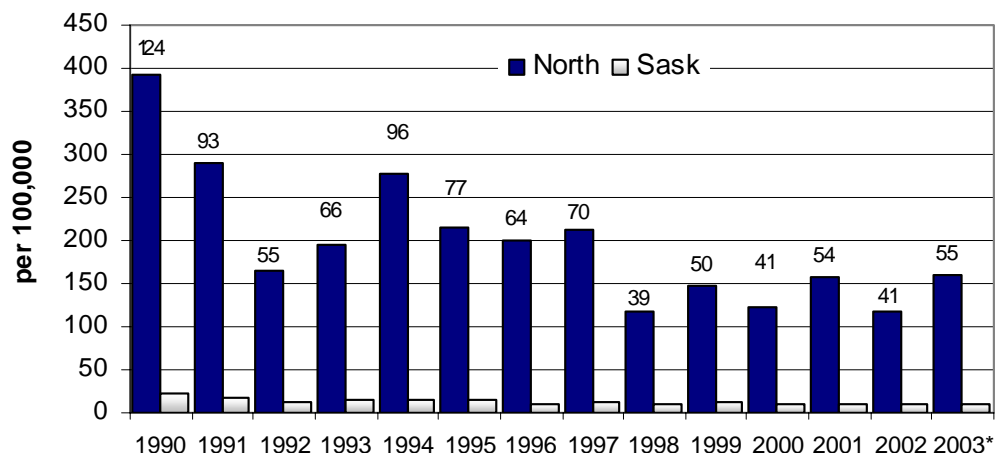
## TUBERCULOSIS

For most people in Canada, the risk of developing tuberculosis (TB) is very low.<sup>39</sup> However, certain population groups in Canada have an increased risk of TB infection including people born in countries where TB is widespread, Aboriginal peoples, homeless people, and people who live in long-term care or correctional facilities. In northern Saskatchewan, even though TB is completely curable with antibiotics, it continues to be a health problem.

Since 1990 there has been a reduction in the rate of TB in northern Saskatchewan. In 1990, the rate was almost 400 cases per 100,000 population and this has decreased to about 160 per 100,000. In comparison to the Saskatchewan rate, the rate has remained at more than 17 times greater in the north for both 1990 and 2003. The rate has remained relatively level with some ups and downs over the past 5 years.

### Reported New Active & Relapsed Tuberculosis Incidence Rate

By year of diagnosis, 1990-2003



Source: Sask Health, TB Control and Health Canada

\*preliminary data

## Tuberculosis in Northern Saskatchewan

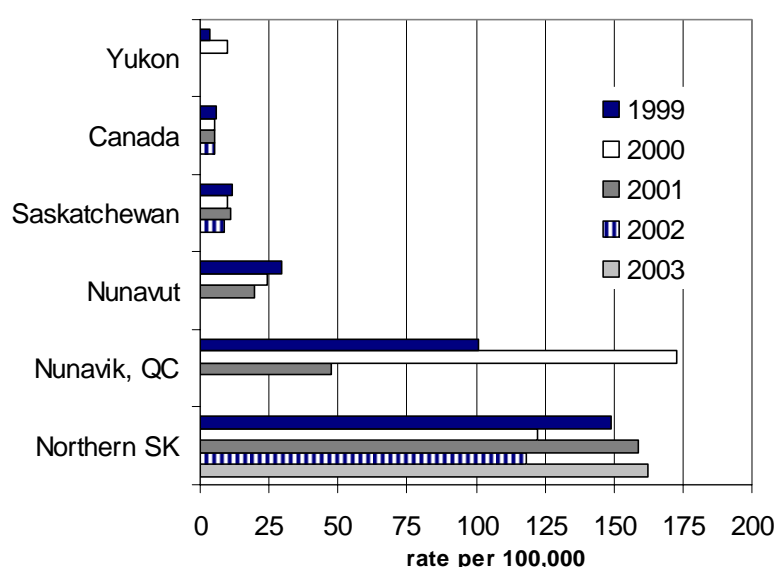
	<i>New and Relapsed Cases, 2002 and 2003</i>			
	<i>2002</i>		<i>2003</i>	
	<i>Off-reserve</i>	<i>On-reserve</i>	<i>Off-reserve</i>	<i>On-reserve</i>
AHA	0	2	0	22
KY	18	5	23	1
MCR	4	9	1	8
<b>North</b>	<b>22</b>	<b>16</b>	<b>24</b>	<b>31</b>

There were 41 cases of tuberculosis diagnosed in 2002 and 55 in 2003 in northern Saskatchewan. In 2002, 22 cases (or almost 54% of the northern cases) were located off-reserve and in 2003, 24 cases (or almost 45% of the northern cases) were located off-reserve. Northern Métis and First Nations peoples are the most impacted. In 2002, about 46% of the Saskatchewan cases of TB occurred in the north. In 2003, almost 60% of the cases occurred in northern Saskatchewan.

In 2003, almost 60% of the provincial tuberculosis cases occurred in the three northern health authority areas.

## Tuberculosis Incidence, 1999-2003

New and Relapsed Cases, By Region



Source: Health Canada, Sask Health, Nunavut Health & Social Services, Pop Health Unit

In looking at TB rates in northern Canada over the past 5 years, northern Saskatchewan has had the highest rate other than in 2000 when Nunavik's rates were higher.

Drug resistant tuberculosis, tuberculosis infection that is resistant to one or more of the usual TB antibiotics, is a concern across Canada and around the world. It has also been a concern in northern Saskatchewan. The TB Program has made significant changes in the early 1990s to institute directly-observed therapy (DOT) which is a strategy to reduce the development of drug-resistant tuberculosis. Providing DOT will assist in reducing the numbers of newly acquired resistance, but it will not impact the resistance previously developed in cases relapsing after receiving TB treatment prior to the implementation of the DOT program. The proportion of TB cases with some degree of drug resistance has decreased over the past almost 20 years, with rates for all new and relapsed cases being about 8.9% in 1986-88 and down to

4.3% in 2001-2003.<sup>40</sup> Over the past 5 years (1999-2003), there were four cases of drug resistant tuberculosis in northern Saskatchewan (2 new and 2 relapsed), all of whom were people living off-reserve. There were no new or relapsed cases of drug resistant TB diagnosed in 2003.

Over the past 5 years, there were four cases of drug resistant tuberculosis in northern Saskatchewan (2 new and 2 relapsed), all of whom were people living off-reserve. There were no new or relapsed cases of drug resistant TB diagnosed in 2003.

The rates of tuberculosis in northern Saskatchewan, the threat of drug resistance and the risk of combined infections of TB and HIV make it very important to remain vigilant in the awareness and early detection of tuberculosis, maintaining treatment until completion using DOT, as well as on-going advocacy for improved socio-economic conditions including housing. The immunization for tuberculosis is not as effective as many of the other immunizations we have available, but it may have some benefit in high-risk situations. Continued research for a vaccine may prove beneficial but this is unlikely to have an impact for some years.

## EMERGING ISSUES IN COMMUNICABLE AND INFECTIOUS DISEASES

There are a number of viral and bacterial diseases that were previously unknown that have emerged as either a present or a potential health problem in northern Saskatchewan. The National Advisory Committee on SARS and Public Health identified a number of infections that were unknown prior to 1973, including SARS, E.coli 0157:H7, hepatitis C, variant Creutzfeldt-Jakob disease, H5N1 influenza A or avian (bird) flu, and others that have increased their geographic spread, such as West Nile Virus.

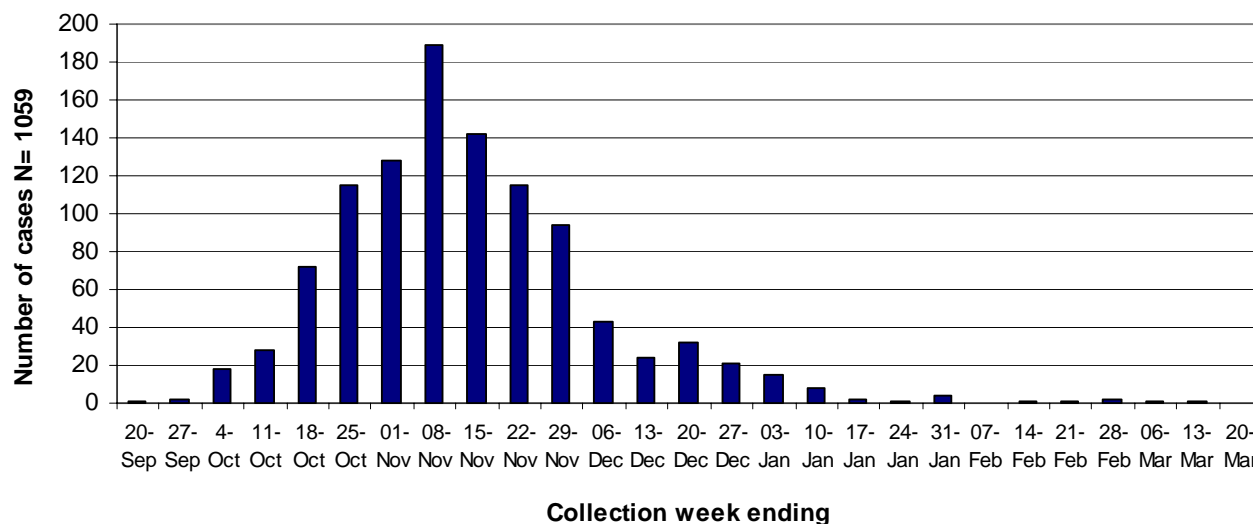
### 1. Influenza

Each year we see outbreaks of influenza in northern Saskatchewan. There continues to be concerns regarding the potential for a large, world-wide or "pandemic" outbreak of influenza as a result of a major change in the influenza virus. We are not isolated from communicable diseases seen in other parts of Canada. In northern Saskatchewan today we have people traveling in and out of the north and in fact in and out of Canada. Travel times are much shorter than in the past as well. There have been various strategies developed to monitor influenza illness patterns in northern Saskatchewan in keeping with approaches throughout Canada. Plans are underway in most health regions in anticipation for a large influenza outbreak or pandemic.

Each year, the northern health authorities work with Sask Health to monitor influenza-like illnesses using sentinel physician clinics, sentinel schools and laboratory diagnosis of influenza. This is done to determine the need and extent of public health action required in a timely manner.

In 2003-2004, over 1,000 cases of influenza were diagnosed in Saskatchewan through the Provincial Laboratory. This year's outbreak occurred earlier in the fall than usual. Most years we don't see the start of the influenza season until about November or even as late as February. This year's influenza was predominately influenza A. Most of the influenza cases were A Fujian or Panama. The Panama strain was part of the influenza vaccine program this year but the Fujian strain was not. There was still some benefit of the vaccine in reducing the impact from Fujian influenza because of the close relationship of the two strains.

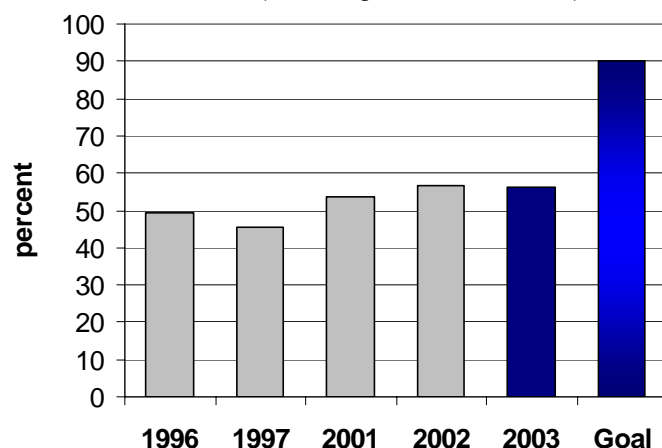
### Lab Confirmations of Influenza, Saskatchewan, 2003-04



There are several population groups that are at greater risk of complications of influenza and for which vaccination is provided free of charge in the province. This includes individuals with a variety of chronic diseases as well as everyone over the age of 65 years. The goal in Canada is for 90% immunization coverage among elders over 65 years each fall. In Saskatchewan in 2002 the coverage was just over 60%. In northern Saskatchewan the coverage increased each year from 1997 to 2002. The same number of vaccines was given in 2003 as in 2002, but with a small increase in the elderly population, the coverage decreased a fraction of a percent (56.5 to 56.3%). In 2003, the coverage was 68.2%, 54.1%, and 56.4% in the Athabasca, Keewatin Yatthé and Mamawetan Churchill River health areas respectively.

## Coverage of Influenza Vaccine, Age 65 and Over

Northern Communities (including FN communities)



Source: Population Health Unit, 2004



## 2. Antimicrobial Resistance

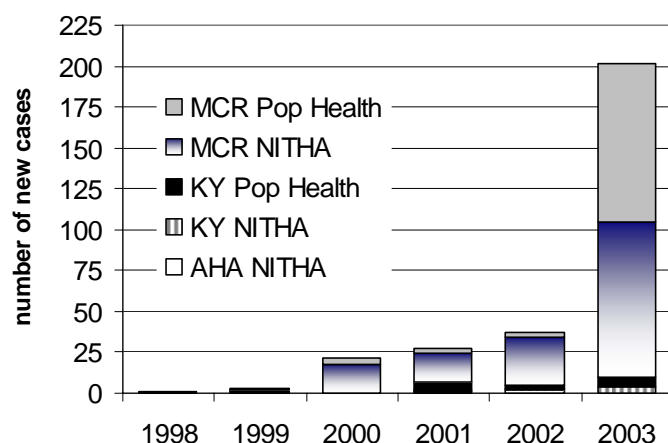
Antimicrobial resistance is when a microbial organism (bacteria, parasite or virus) is resistant to some of the medications usually used to treat that infection. Antibiotic resistance is when the usual antibiotics are not effective in treating specifically a bacterial infection.

In northern Saskatchewan in the past we have had some cases of tuberculosis which were resistant to at least one of the first line medications usually used for tuberculosis as discussed in the previous section on tuberculosis.

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacteria called *Staphylococcus aureus* (or sometimes referred to as simply 'Staph', pronounced 'staff') that is resistant to commonly used antibiotics including methicillin. It has been known to occur in hospital settings and over the past few years has become increasingly recognized in community settings. Those that appear to have arisen in a community setting are referred to as community-acquired MRSA or CA-MRSA. We have seen over the past few years an increasing frequency of MRSA in northern Saskatchewan. A few communities have experienced an outbreak of predominately CA-MRSA, mainly causing skin infections.

Widespread use and misuse of antibiotics can increase the incidence of MRSA both in the hospital and in the community. Overuse of antibiotics as well as inappropriate use, such as not completing the prescribed treatment, can increase the risk of resistant bacteria including MRSA.

### MRSA by Region and MHO, Northern Sask, 1998-2003



Source: Population Health Unit, Northern RHAs

In northern Saskatchewan, MRSA has impacted predominately 3 communities this past year, mainly seen as skin infections. In northern Saskatchewan in 2003, there were over 200 cases of MRSA diagnosed.

New guidelines have been developed to assist with management of MRSA in the community to complement those already available for the hospital setting.

A research project looking at ways to prevent and reduce the impact of antimicrobial resistance in northern communities has been initiated by a partnership between the University of Manitoba, the Saskatchewan and Manitoba provincial laboratories, Health Canada, the northern health authorities' Population Health Unit, the Northern Inter-Tribal Health Authority and various partnering communities and their health authorities.

Funding has been provided through the Canadian Institute on Health Research.

### 3. West Nile Virus (WNV)

North America first began experiencing West Nile Virus in 1999 when an outbreak occurred in the New York area. Since that time it has spread throughout most of North America. Last summer, southern Saskatchewan reported over 800 people with West Nile Fever or Neurologic Syndrome. There were no cases detected in northern Saskatchewan.

This disease is spread through specific types of mosquitoes (*Culex tarsalis* being the most common spreader in Saskatchewan). This infection can also cause illness in birds when they are bitten by infected mosquitoes. Ongoing surveillance over the past 2 years has not detected any birds in northern Saskatchewan health authority areas, though the number of birds sampled was small. Bird surveillance will continue in northern Saskatchewan as a early-warning system for the presence of WNV in the north. Human testing will continue for individuals showing illnesses that possibly could be from WNV.

Mosquito surveillance using special mosquito traps helps determine if the types of mosquitoes that could possibly spread the WNV are present in the north and if those mosquitoes are infected with WNV. So far, *Culex tarsalis* mosquitoes have not been detected in the area of the three northern health authorities but monitoring needs to continue through mosquito trapping and speciation.

Advisories continue to recommend measures to reduce:

- the potential reproduction of *Culex tarsalis* mosquitoes by reducing stagnant water in the community and near homes by draining clogged eave troughs, removing old tires or tin cans
- the potential for mosquito bites by repairing screens on windows, wearing long-sleeved shirts and trousers, using insect-repellants containing DEET

West Nile Infections in Saskatchewan People, 2003				Other West Nile Surveillance Results, 2003		
Regional Health Authority	No Symptoms	West Nile Fever	West Nile Neurology Syndrome	Regional Health Authority	Mosquito Pools	Birds
AHA				AHA		
KY				KY		
Kelsey Trail		2		Kelsey Trail		5
MCR				MCR		
Prairie North		10		Prairie North	3	7
PA Parkland		7		PA Parkland	1	10
Other RHAs	10	767	62	Other RHAs	32	134
<b>TOTALS</b>	<b>10</b>	<b>786</b>	<b>62</b>	<b>TOTALS</b>	<b>35</b>	<b>156</b>
Source: Sk Health, Jan 22, 2004				Source: Sk Health, Jan 22, 2004		

There were no cases of West Nile Fever or Neurologic Syndrome in northern Saskatchewan this past year, though our neighbouring three Regional Health Authorities to the south (Kelsey Trail, Prairie North and Prince Albert Parkland) each had a few people with West Nile Fever. Those three areas also detected WNV infected birds.<sup>41</sup>

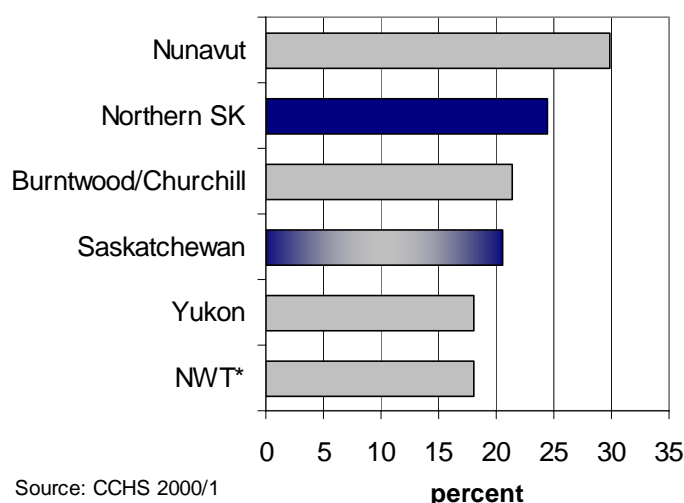
# DISABILITIES

## HUMAN FUNCTION/DISABILITY

The 2000-01 Canadian Community Health Survey assessed the population aged 12 and over for data on measures of overall functional health, based on 8 dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition and pain). A score of 0.8 to 1.0 was considered to be very good or perfect health; scores below 0.8 were considered to indicate moderate or severe functional health problems. Otherwise known as the Health Utility Index (HUI), developed at McMaster University's Centre for Health Economics and Policy Analysis, this index is based on the Comprehensive Health Status Measurement System (CHSMS).

### Moderate or Severe Functional Health Problems

by Region, Off-reserve, 2000-01



About 24% of people over the age of 12 in northern Saskatchewan people living off-reserve reported moderate or severe functional health problems compared to about 21% for Saskatchewan as a whole.

Northern Saskatchewan had a statistically significant higher percent of people reporting functional health problems compared with the Northwest Territories, but the difference with other regions was not significant.

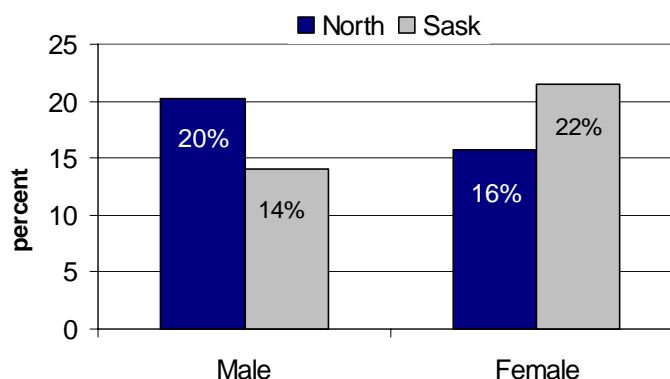
The above information is somewhat limited as the Canadian Community Health Status survey reached only those living off-reserve and for those, only individuals who could be reached by phone. Phone access is limited in some areas of the north especially for some individuals who could be at high-risk for disabilities. Other studies have shown that in Canada,

the rate of disability among Aboriginal peoples is more than double (2.3 times) the national average.<sup>42</sup> Some studies have suggested that Aboriginal peoples have congenital disabilities at about the same rate as the rest of Canadians<sup>43</sup> but "the disparity between Aboriginal and non-Aboriginal rates of disability correspond to disparities in rates of injury, accident, violence, self-destructive or suicidal behaviour, and illness (such as diabetes) that can result in permanent impairment"<sup>44</sup>

The responses heard in community forums in the La Ronge area by the Saskatchewan Council on Disability Issues served to highlight the enormous problems faced by individuals with disabilities in Aboriginal communities. The problems bear some similarity to those experienced by individuals with disabilities in other communities but are aggravated by isolation and issues related to jurisdiction and the acceptance of disability in the community.<sup>45</sup>

### Two-Week Disability Days, 2000-01

Two-week disability days is the proportion of the population surveyed who stayed in bed or cut down on normal activities because of illness or injury, on one or more days in the past two weeks preceding the survey. Fourteen percent of males in Saskatchewan and 20% of males in northern Saskatchewan had at least one day of disability in the previous two weeks. Twenty two percent of females in Saskatchewan and 16% of females in northern Saskatchewan had at least one day of disability in the two weeks preceding the 2001 survey.



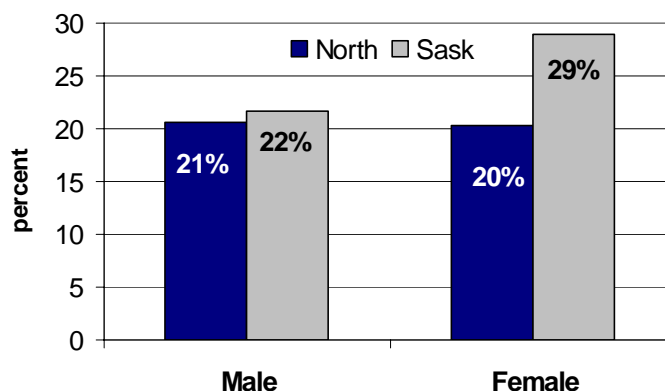
## ACTIVITY LIMITATION

Activity limitation was assessed through the Canadian Community Health Status Survey. Activity limitation refers to the population aged 4 and over who report having a disability or handicap or being limited in certain activities on a continuing basis because of a health problem.

Twenty two percent of males in Saskatchewan and 21% in northern Saskatchewan reported activity limitations. For females, 29% in Saskatchewan and 20% in northern Saskatchewan reported activity limitations.

### Population with Activity Limitations

Off-reserve, 2000-01

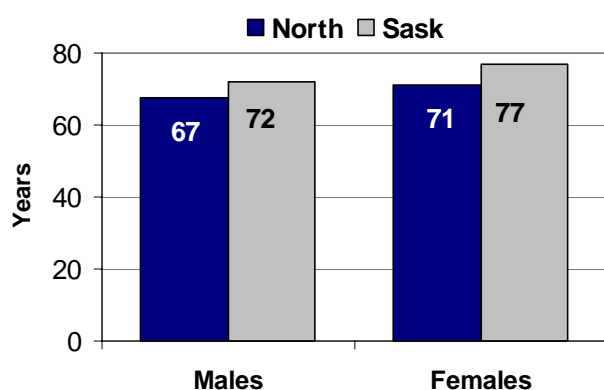


Source: CCHS 2001

## DISABILITY-ADJUSTED LIFE EXPECTANCY

Disability-adjusted life expectancy (DALE) is a more comprehensive indicator than that of life expectancy alone because it introduces a concept of quality of life. DALE integrates information on mortality, long-term institutionalization and activity limitations into a single comprehensive index of population health. The result is a type of 'quality-adjusted' life expectancy, combining both the length and the quality of life.

### Disability-Adjusted Life Expectancy at Birth, 1996



Source: Statistics Canada, Oct 02

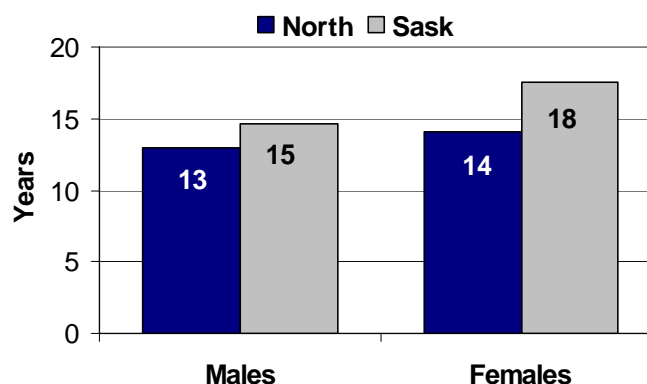
Disability-adjusted life expectancy at birth is the number of years a person would be expected to live and allows comparisons for the quality of life as well starting from birth.

In comparing the northern population with the provincial population by gender, males and females have a lower disability-adjusted life expectancy from birth than their Saskatchewan counterparts. Females have a longer disability-adjusted life expectancy than males in both the north and the province as a whole.

Disability-adjusted life expectancy at age 65 is an indicator of the number of quality life years expected for the average member of the population at age 65.

In comparing the northern population with the provincial population by gender, males and females have a lower disability-adjusted life expectancy from age 65 than their Saskatchewan counterparts. Females have a longer disability-adjusted life expectancy than males in both the north and the province as a whole.

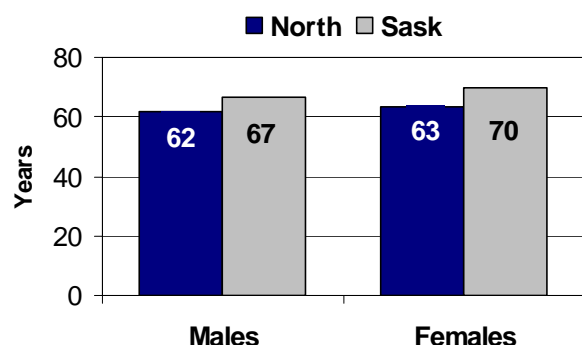
### Disability-Adjusted Life Expectancy at Age 65, 1996



Source: Statistics Canada, Oct 02



## Disability-Free Life Expectancy at Birth, 1996



Source: Statistics Canada, Oct 02

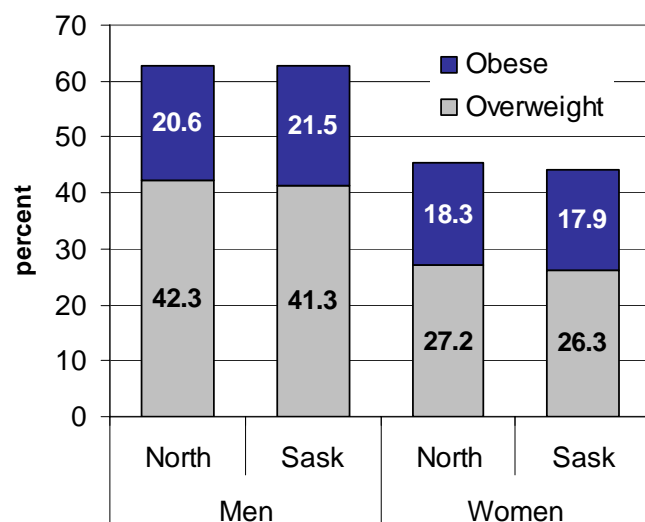
Disability free life expectancy is a similar indicator as disability-adjusted life expectancy as it includes the concept of quality of life. It takes into consideration years of life free of any activity limitation expected at birth.

Northern Saskatchewan residents (both males and females) have fewer disability-free years expected than their provincial counterparts.

## OBESITY AND BODY MASS INDEX (BMI)

### Overweight or obese population, 2000-1

Age 20-64, Off-reserve excluding pregnant women



Source: CCHS 2000-1

There is a relationship between BMI and health risk. There is an increasing health risk with BMIs in the overweight and obese categories for diseases such as type-2 diabetes, dyslipidemia (high lipids or fats in the blood), high blood pressure, coronary artery (heart) disease, gallbladder disease, obstructive sleep apnea and some cancers.

In 2001, 41.3% of Saskatchewan males reported being overweight and 21.3% reported being obese compared to northern males reporting 42.3 and 20.6% respectively. Females reported lower rates of being overweight or obese: 27.2 and 18.3% of northern females and 26.3 and 17.9% of Saskatchewan females.

The international standards are as follows:<sup>46</sup>

### Overweight or obese population by region,

BMI	Description
< 18.5	Underweight
18.5 to 24.9	Normal Weight
25.0 to 29.9	Overweight
30 and Over	Obese

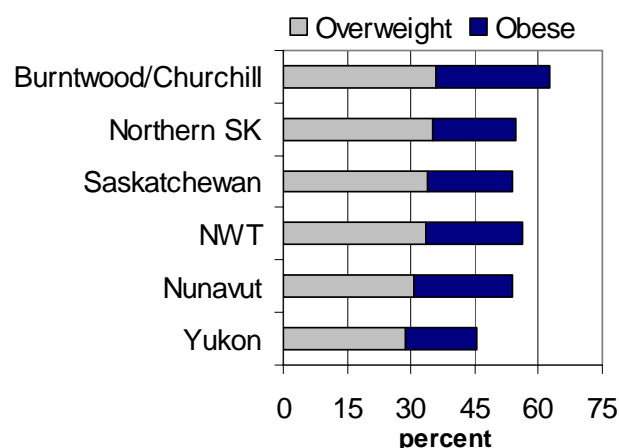
To determine your BMI, take your weight in kilograms; divide by your height in meters squared.

or

$$\text{BMI} = \text{weight (kg)} / \text{height (m)}^2$$

### 2000-1

Age 20-64, Off-reserve excluding pregnant women



Source: CCHS 2000-1 Overweight BMI 25-29.9; Obese - BMI 30 +

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## NOTES