

THE NWT HEALTH STATUS REPORT 2005

The NWT Health Status Report 2005



Northwest
Territories Health and Social Services

December 2005

Message from the Minister



I am pleased to report on the health status of the people of the Northwest Territories.

The Health Status report is intended to inform the public about the well-being of the population in general. It is also intended to inform people about the major determinants of health in the Northwest Territories.

Since the last report in 1999, the 2005 report focuses on changes in the health status and determinants within the territory over time. Comparisons have been made between community types to reflect different demographic, ethnic, social and economic realities.

What emerges is a picture of a population that has experienced improvements in a number of areas, deterioration in others, but overall little change in most health indicators during the past ten to fifteen years. Evidence suggests that a large number of NWT residents are still at risk due to making unhealthy lifestyle choices.

Everyone in the Northwest Territories has a role to play in improving our health status. Unhealthy behaviors like smoking, drinking alcohol, taking drugs, eating unhealthy foods and not exercising contribute to health problems. By leading a healthy lifestyle, and setting a positive example for others to follow our health status will prosper.

As the Minister for Health and Social Services, I look forward to monitoring our health status and reporting on improvements in the next status report.

A handwritten signature in dark ink, appearing to read "J. Michael Miltenberger". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Honourable J. Michael Miltenberger

Minister of Health and Social Services

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Executive Summary

The NWT Health Status Report 2005 presents information on the health status of the residents of the Northwest Territories along with information on some factors known to influence health status. The report is divided into two major sections. The first presents a series of indicators that measure aspects of the population's health status. The second part of the report examines a number of health determinants including social and economic factors, the physical environment, as well as personal behaviours and early childhood development. Below is a summary of key findings.

Highlights

Health Status of the Population

Well-Being

- Self-reported health status is a good measure of overall health. In 2003, only 10% of NWT residents 12 years of age and older indicated their health was fair or poor, unchanged from 1994/95. Residents of Yellowknife were more likely than those living in the territory's other communities to rate their health as good or better (93% vs. 86%).
- Self-esteem and a sense of mastery are conducive to coping successfully with life stresses. There were no significant differences in levels of self-esteem between any of the population sub-groups examined. Residents of Yellowknife were more likely than residents of the other communities to report a high sense of mastery (38% vs. 23%).
- Functional health status measures a person's overall ability to perform daily tasks. In 2003, 81% of the NWT population 12 years of age and older indicated they had perfect or very good functional health, a significant decrease from 91% in 1994/95. Much of this decrease occurred among individuals between 12 and 24 years of age.
- The proportion of the population living in Yellowknife who reported some form of long-term activity limitation was significantly lower than the proportion living in the other communities (19% vs. 27%). In general, activity limitation increases with age.

Health Conditions

- The incidence of tuberculosis declined significantly since the mid-1990s from 7.6 new cases per 10,000 population in 1994-96 to 1.9 per 10,000 in 2001-03. The risk of tuberculosis is higher among seniors and residents of the smaller NWT communities.
- The incidence of the two most common sexually transmitted infections (STIs) – chlamydia and gonorrhea – has increased significantly since the mid-1990s. The rate of the former went from 91.7 cases per 10,000 population in 1995 to 134.6 new cases per 10,000 population in 2003. Meanwhile the incidence rate for gonorrhea increased from 8.1 per 10,000 population in 1996 to 49.5 per 10,000 in 2003. Individuals between 15 and 24 years of age, females and residents of the smaller NWT communities were most at risk of these two types of STIs.
- The prevalence of diabetes in the territory increased significantly between fiscal years 1997/98 and 2001/02 from 2.5% of the population 20 years of age and older to 3.6%. The prevalence of diabetes increases with age.

- The prevalence of a number of other chronic health conditions including arthritis/rheumatism and asthma did not increase significantly between 1994/95 and 2003.
- The incidence of cancer did not change substantially between 1992 and 2002. Colorectal cancer was the most common type of cancer diagnosed for men, breast cancer was the most common type for women. There were no significant differences in overall incidence rates between Yellowknife and the regional centers of Hay River, Fort Smith and Inuvik, and the smaller NWT communities after differences in the age structures of the three community types were taken into account.
- In 2003, 5% of NWT residents 12 years of age and older reported a major depressive episode and were probably clinically depressed, unchanged from 1994/95. Residents between 12 and 39 years of age were two times more likely than those 40 years of age and older to report symptoms of depression (6% vs. 3%). No significant differences were observed in the prevalence of depression when sex and community of residence were compared.
- Hospitalizations due to mental disorders decreased between fiscal years 1999/00 to 2002/03 as the result of a decline in the number of hospitalizations due to alcohol and drug use disorders along with mood disorders such as depression.
- Hospitalization rates due to self-inflicted injury were fairly constant for most of the eight years between 1996 and 2003. Youth between 15 and 24 years of age had the highest hospitalization rate due to self-inflicted injury during the period 2001 to 2003 (28.1 per 10,000 population). Overall, the hospitalization rate for females was two times higher than the rate for males (16.1 vs. 7.8 per 10,000 population).
- Overall, suicide rates declined between 1990-92 and 1994-96 from 2.1 to 1.1 per 10,000 population. However, between 1994-96 and 2001-03 the rates increased significantly from 1.1 to 2.4 per 10,000 population, with most of this increase occurring between 1994/96 and 1997/99. Youth between 15 and 24 years of age were at highest risk of suicide - 5.6 per 10,000 population between 1999 and 2003. For this period, males were over five times more likely than females to die by suicide (4.2 vs. 0.8 per 10,000 population).

Mortality

- Life expectancy is generally accepted as a good overall indicator of population health status. An infant born in the NWT in 2001 would be expected to live 76 years, virtually unchanged since the mid 1980s and 3.5 years less than their Canadian counterpart. Given 2001 mortality patterns, a male born in the NWT can be expected to live to the age of 74 years and a female infant would be expected to live 79 years.
- Infant mortality – the death of babies less than one year of age – is considered an important public health indicator. Infant mortality rates in the NWT declined significantly throughout the 1980s from 16.6 per 1,000 live births for 1982-84 to 5.8 per 1,000 live births for 1988-90. The rates leveled off during the 1990s. The infant mortality rate for the smaller communities was significantly higher than the rate for Yellowknife (13 vs. 6 per 1,000 live births).
- Conditions originating in the prenatal period, which include disorders related to short gestation, low birth weight, and respiratory distress were the leading cause of infant death (39%), followed by congenital anomalies (25%).

- The overall mortality rates for both sexes declined significantly during the 1980s but remained relatively steady during the 1990's. In 2000-02 the male age-standardized mortality rate was significantly higher than the female rate (41.7 vs. 26.1 per 10,000 population). Meanwhile, the age-standardized mortality rate in the smaller communities was significantly higher than the rate in Yellowknife (40.4 vs. 31.9 per 10,000 population).
- Between 2000 and 2002, the leading causes of death in the Northwest Territories were cancers (25%), cardiovascular diseases (22%), and injuries (19%). Respiratory diseases such as chronic obstructive pulmonary disease accounted for 11% of all deaths during this period.
- The age-standardized cancer mortality rate did not significantly change between 1980-82 and 2000-02. Meanwhile, the age-standardized mortality rate for cardiovascular disease declined significantly between 1980-82 and 1988-90 then remained steady throughout the 1990s. This same general trend was also observed for age-standardized injury mortality rates.
- The premature mortality rate (PMR) is a standardized rate of "premature" deaths, that is, death before the age of 75 years. PMR is considered a good overall measure of the health status of the population in an area. The premature mortality rates in the NWT declined significantly during the 1980s. A slight drop continued through the 1990s, but this trend was not significant. Males in the NWT are much more likely than females to die before the age of 75, largely due to much higher injury mortality rates among males. The age-standardized premature mortality rates were significantly higher in the smaller communities and the regional centers than they were in Yellowknife.

Determinants of Health

Social and Economic Influences on Health

- While still young relative to Canada as a whole, the population of the NWT is also aging. In 2004, 24% of the population was 45 years of age and older, compared to 16% in 1991. Moreover, it is anticipated that the number of seniors will more than double by 2019, making it the fastest growing age group. As a result, the number of residents susceptible to a large number of chronic conditions including heart disease, diabetes and cancer will likely increase unless major shifts occur in many of the underlying determinants of health, such as personal health practices.
- Higher levels of education are normally associated with higher levels of health, longer life expectancy and other positive outcomes. Educational attainment is a key factor in socioeconomic status. Between 1991 and 2001, the percentage of the NWT population age 25 and older with less than high school decreased from 34% to 29%. Meanwhile, the percentage with a university degree increased from 14% to 16%. Residents of the smaller communities still have lower levels of educational attainment than do residents of the regional centers and Yellowknife.
- Higher incomes are also related to better health status. The average income across the NWT varies from a high of \$42,815 in Yellowknife to a low of \$23,159 for residents of the smaller communities.

- Employment is another key aspect of the social and economic environment that affects health. The unemployment rate was 7.1% in 2003, down from 11.7% in 1996. Within the Northwest Territories there were significant differences between communities in terms of labour market activity. The unemployment rate was lower, and the participation rate was higher in Yellowknife than in the rest of the territory.
- Support from families, friends, and communities helps people solve problems and deal with adversity, as well as maintain a sense of control over life circumstances. Most people in the NWT reported having a high level of social support (82% overall). Yellowknife residents were more likely than other NWT residents to report high social support (86% vs. 79%).
- The crime rate is an indicator of the level of safety in a community. The overall crime rate for the NWT has increased in recent years, after falling for much of the 1990s. Between 1998 and 2002, Yellowknife had the lowest overall crime rate at 241 incidents per 1,000 persons, compared to 315 per 1,000 for the regional centers and 373 per 1,000 for the smaller communities. However, despite the lower crime rate, Yellowknife has experienced the largest overall increase in crime in recent years.

The Physical Environment

- Long-term exposure to environmental tobacco smoke (commonly known as second-hand smoke) is a significant health hazard. In 2003, an estimated 44% of non-smoking NWT residents indicated they were exposed to ETS everyday or almost everyday at home, in a motor vehicle or in public places.
- Access to shelter is not only a requirement for health, it is also a prerequisite for life. Housing must also meet certain standards if it is to contribute to good health. According to a 2004 survey, 16% of all households in the territory were in core need. Within the territory, the proportion of households with core need varied between communities. An estimated 30%, or 1,316 households in the smaller communities were in core need, compared to 11% (374 households) in the regional centers and 9% (570 households) in Yellowknife.

Personal Health Practices

- Good nutrition is important for achieving optimal growth and development. Canada's Food Guide to Healthy Eating recommends that individuals eat five to ten servings of fruits and vegetables each day. In 2003, 66% of NWT residents 12 years of age and older reported they were not meeting this recommendation. Males were significantly less likely than females to eat the recommended daily level of fruits and vegetables.
- Body weight is largely determined by eating habits and physical activity. Excess weight is a major risk factor for a wide variety of health problems. According to results from a 2003 survey, 33% of NWT adults between 20 and 64 years of age were overweight and another 24% were obese. It appears the prevalence of obesity in the NWT adult population has increased in recent years. In 1994/95 an estimated 18% of NWT adults between 20 and 64 years of age were considered obese, significantly lower than the 2003 estimate of 24%.
- Participation in physical activity has been shown to reduce the risk of a number of illnesses. The proportion of the NWT population engaged in leisure time physical activity appears to have increased between 1994/95 and 2003. However, the level of physical inactivity still presents a serious health issue for the population with 45% of the population 12 years of age and older physically inactive.

- Cigarette smoking is known to harm every system and function of the human body. In 2004, an estimated 41% of territorial residents age 15 and older indicated they smoked cigarettes. This was two times higher than the Canadian rate of 20%. There is some evidence to suggest that smoking rates may be declining in Yellowknife. In 2004, 52% of residents 15 years of age and older living in the smaller NWT communities indicated they smoked compared to 27% in Yellowknife.
- Regular heavy drinking contributes to several negative health outcomes. The consumption of five or more drinks on one occasion is a fairly reliable indicator of heavy or binge drinking. In 2003 an estimated 33% of all NWT residents 15 years of age and older indicated they drank heavily once a month or more in the previous year. This is a significant increase from 26% in 1996/97. Compared to other age groups, regular heavy drinking was more common among youth and young adults. Men are much more likely than women to report drinking heavily on a regular basis.
- The role of seat belts in reducing fatalities and serious injury has been well established. However, according to results from a 2003 survey, only 52% of residents 12 years of age and older indicated they always fasten their seat belt when riding in a car, truck or van. Females were significantly more likely than males to always wear a seat belt when in a car, truck or van (57% compared to 47%). Yellowknife residents were significantly more likely than residents of the other NWT communities to always wear a seat belt when in a motor vehicle.
- The consistent use of condoms, particularly in short-term relationships, can reduce the risk of sexually transmitted infections. An estimated 37% of individuals age 15 to 49 who had more than one sexual partner the previous year indicated they did not use a condom the last time they had sexual intercourse.

Healthy Childhood Development

- Birth weight is a health status indicator for newborns. Moreover, birth weight can be predictive of later adult health status. Low birth weight babies (< 2500 grams) accounted for 4% of all live births in the Northwest Territories during 2000-02, about the same proportion as Canada. However, high birth weight babies (> 4000 grams) accounted for 20% of all birth births in the territory.
- Smoking during pregnancy is an important risk factor for low birth weight babies. An estimated 27% of NWT women 15 to 55 years of age who gave birth in the last five years indicated they smoked during their last pregnancy. In addition, 38% indicated that someone regularly smoked in their presence during or up to six months after they gave birth.
- Breastfeeding is beneficial to healthy child development. Nearly half (47%) of recent mothers in the NWT reported they exclusively breastfed their last baby for at least four months.
- Teen births are associated with particular health risks for both mother and child, including physical complications such as prematurity and low birth weight, as well as psychological stress. The territory's teen birth rate declined significantly throughout the 1990s, from 79 births per 1,000 women age 15 – 19 in 1990-92 to 50 per 1,000 in 2000-02. Most of the decline occurred in the communities outside of Yellowknife. However, rates in the smaller communities are still significantly higher than those in Yellowknife and the regional centers.

- Childhood immunization coverage rates for the NWT are higher than rates for Canada as a whole. In all, approximately 70% of NWT children born in 2000 were fully immunized at age two according to the recommended schedule for the territory.
- Evidence suggests that youth smoking is a major public health problem in the Northwest Territories. Results from a 2002 survey indicated that 18% of children between 10 and 14 years of age were smokers, about three times higher than the Canadian rate. Moreover, the proportion of children in this age group who reported smoking increased slightly during the 1990s. In 1993, an estimated 15% indicated they smoked.

Preventative Health Services

- According to a 2003 survey, an estimated 68% of NWT residents 15 years of age and older reported they had their blood pressure checked within the previous year. Another 15% had a test between one and two years prior to the survey. Women were significantly more likely than men to have had their blood pressure checked within the past year (80% vs. 55%).
- Mammography is recommended every two years for women between 50 and 69 years of age. In 2003, an estimated 67% of NWT in this age group reported they met this recommendation. Meanwhile, 77% of NWT women indicated they had received a mammogram within the previous five years.
- In 2003, 83% of women in the NWT between 18 and 69 years of age indicated they received a Pap smear in the last three years – about the same as the rate for Canadian women (76%).

Conclusion

This report presents a broad look at the health of the people of the Northwest Territories at the turn of the 20th Century and the beginning of the 21st. What emerges is a picture of a population that has experienced improvements in a number of areas, deterioration in others, but overall little change in most health indicators during the past ten to fifteen years. Evidence suggests that a large number of NWT residents are still at risk due to making unhealthy lifestyle choices. However, high-risk behaviours do not occur in isolation. Rather, there are complex interactions between high-risk behaviours and other major determinants of health. Challenges to maintaining and improving the health status of the territory's population still lie ahead.

Chapter 1

1.0 Introduction

The NWT Health Status Report: 2005 provides information about the state of health of the Northwest Territories population. In this report, the definition of health is adapted from one proposed by the World Health Organization:

Health is a complete state of physical, mental, social and emotional wellbeing, and not merely the absence of disease or infirmity.

This definition draws attention to the multi-dimensional nature of health. It embraces the traditional concept of health held by Aboriginal people, as expressed in the medicine wheel with inter-related physical, social, emotional and spiritual dimensions that need to be in balance for optimum health. In this view, health is not simply an objective in itself, but a resource for everyday life that enables individuals to achieve well-being and contribute to the life of their family, community and society. “An individual and group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.”¹

The above definitions highlight the complex nature of health. It is not easy to measure in strictly quantitative or operational terms. Many of the more commonly used indicators such as mortality and morbidity rates can be considered proxy measures rooted in the old view of health as the absence of disease, with lower mortality and morbidity rates indicating a “healthier” population. While a number of indicators such as self-rated health status, psychological well-being, and functional health status do reflect a more holistic and positive definition of health, there is a recognition that more work needs to be done to develop indicators that better measure people’s quality of life and well-being.

Added to this complexity is the growing recognition that a population’s health status is influenced by a wide variety of determinants. These include the socioeconomic environment, the physical environment, early childhood experiences, personal health behaviours and coping skills, biology and genetics, as well as the organization and resources of the health care system. Developing a picture of such a complex and wide-ranging concept is a challenge and can only be done indirectly using a set of health indicators that reflects in some way the health status and health determinants of a population. The indicators in this report have been selected because they are either measures of health status (e.g., life expectancy, incidence of disease, self-reported health status) or because they have been shown to influence health status (e.g., education level, income, housing adequacy).² As such this report takes a population health approach and follows a framework similar to the one developed by the Federal, Provincial and Territorial Advisory Committee on Population Health.³

¹ *Ottawa Charter for Health Promotion. Health and Welfare Canada, Canadian Public Health Association, and WHO. Ottawa, 1986.*

² *Determinants of health indicators are not in themselves measures of health status. Rather, these indicators are presented because they represent important factors that are known to impact on the health status of populations.*

³ *Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. Toward a Health Future: Second Report on the Health of Canadians. Public Works and Government Services Canada.*

1.1 About the Report

The NWT Health Status Report: 2005 presents information on the health status and determinants of health for the population of the Northwest Territories. The report is intended to serve several objectives: first, to inform people about the health and well being of the population; second, to inform the public, practitioners and decision-makers about the challenges and opportunities that stand on the path toward health and well being; and third, to measure changes in population health and well-being over time, and examine differences within the Northwest Territories. These objectives all serve the same goal – improved health and well being for all residents of the Northwest Territories – as highlighted in the Department of Health and Social Services strategic plan, *Shaping Our Future*.

This report also provides information on some of the key determinants of population health in the Northwest Territories including demographic variables, aspects of the socio-economic and physical environments, personal behaviours, early childhood development, and the accessibility of health services. Information about the determinants of health is important for a number of reasons: first, it can help people make informed choices about their own health and well being; second, it can assist program planners to make informed decisions about strategic initiatives in the health field; and third, it can guide policy makers to shape healthy public policies that are grounded in sound knowledge.

The last report on the health status of the Northwest Territories was published six years ago, in 1999. While *The NWT Health Status Report: 2005* presents many of the same indicators using the same population health approach, there are a number of notable differences. In the 1999 report, comparisons were made between the Northwest Territories and Canada as a whole for a large number of indicators. The focus in the current report, where possible, is on changes in health status and determinants within the territory over time. Comparisons were also made between community types: Yellowknife, the largest center, the regional centres (Fort Smith, Hay River and Inuvik) and the other smaller communities. For a number of health indicators comparisons were only possible between Yellowknife and all other communities combined. These community types reflect different demographic, ethnic, social and economic realities. Finally, for each health indicator, differences between age groups and the sexes were examined.

Persons interested in comparisons between the Northwest Territories and Canada should consult the *Report to Residents of the Northwest Territories on Comparable Health and Health System Indicators*. This report is part of a federal/provincial/territorial biennial reporting initiative, released in 2002 and again in 2004. The *NWT Health Status Report: 2005* is also not a report about the health care system and the costs of providing health care in the Northwest Territories. Those interested in this topic should consult: *The NWT Health Services Report: 2000*.⁴

⁴ Copies of these three reports can be found at Northwest Territories Health and Social Services Website; http://www.blthss.gov.nt.ca/content/Publications/publication_index.htm

1.2 Organization of the Report

The report is divided into two major sections. The first section – chapters 2 to 4 – looks at the health status of the population. The second section – chapters 5 to 9 – examines some of the determinants of health.

Chapter 2 presents a number of indicators that measure aspects of positive health, a sense of vitality and a general sense of self-worth. Several indicators of general health and functional ability are also examined.

Chapter 3 looks at the existence of specific diseases or conditions in the population including communicable diseases, selected chronic conditions and mental illness. These indicators measure health status in the “negative” sense where higher morbidity rates indicate a less healthy population.

Chapter 4 presents information on life expectancy at birth, mortality rates and the major causes of death in the Northwest Territories.

Chapter 5 provides an analysis of some of the major social and economic influences on population health. Demographic variables, including the population’s age distribution, birth rates and fertility rates are also examined. Measures of socio-economic status, such as education, income and employment are included along with levels of social support and crime.

Chapter 6 looks at a number of physical environment indicators that are known determinants of health, including information on housing, food and water borne diseases, and contaminants.

Chapter 7 highlights some of the personal practices and choices people make that impact on their health. Included in this chapter is information on diet, body weight, alcohol abuse and tobacco use.

Chapter 8 looks at another major determinant of health – healthy childhood development. Indicators in this chapter include low birth weight, smoking during pregnancy, immunization rates and child abuse and neglect.

Chapter 9 examines a small number of the preventative health services designed to maintain and promote health, to prevent disease. These include screening tests, such as pap smears and mammograms.

Chapter 10 provides some concluding remarks.

Because of space limitations, the list of indicators presented in this report is not comprehensive. Moreover, a trade-off had to be made between the level of detailed analysis carried out on each topic and the need to present information on a broad range of indicators in order to provide an overview of health. To some degree, the selection of indicators also reflects the availability of appropriate data. (See Appendix A for discussion of data sources and limitations.)

1.3 The Population of the Northwest Territories

The Northwest Territories comprises approximately 1,350,000 square kilometers situated in northern Canada. The population of approximately 43,000 individuals lives in 32 communities scattered throughout this huge landmass. Nearly half (45%) of the total population lives in the capital, Yellowknife. Another 23% lives in the communities of Fort Smith, Hay River and Inuvik, all with populations over 2,500 persons. The remaining 32% of the territory’s population reside in one of 28 smaller communities that range in size from 1,900 to 70 individuals. Many of these communities are not accessible by road, except for brief periods during the winter months.

About one-half of the territory's population is Aboriginal, and 86% of people living in the smaller communities are Aboriginal. Meanwhile, Aboriginal people make up about 23% of the population of Yellowknife and about 52% of the communities of Fort Smith, Hay River and Inuvik. The Aboriginal population includes First Nations who make up 29% of the total population. Inuvialuit who live mainly in the six northern-most communities make up 11% and Metis who live mainly in the communities of Yellowknife, Hay River and Fort Smith comprise 10% of the total population.

The population of the Northwest Territories is younger than that of Canada as a whole. One quarter of the total population is less than 15 years of age. Meanwhile 4% are 65 years of age and older, and 20% between 45 and 64 years of age. However, like that of Canada, the population of the NWT is aging. It is anticipated that people 45 years of age and older will be the fastest growing age group in the next 20 years. This could have a large impact on population health profiles in the future.

1.4 The Population Health Approach

For a long time, many people including health care professionals, policy makers and program administrators have acted in the belief that good health depended on good health services. Rapid advances in medicine, the development of new technologies, the creation of potent new drugs, and the building of more hospitals have all tended to reinforce this notion. To some extent it does, particularly during the prenatal and early childhood periods, but most clinical services are there primarily to help sick people get better. The question of how to prevent people from becoming ill in the first place requires a broader look at factors leading to good or poor health. Assessments of the history of major infectious disease has shown that improvements in general living conditions were critically important in reducing illness and deaths due to these diseases.

More attention is now being focused on the role that social, economic, environmental and personal factors play in determining health status. This is often called a *population health approach* – a way of understanding the challenge of achieving health for everyone that extends beyond the conventional programs and services of public health, medical care and health promotion. Proponents of the population health framework maintain that health status is influenced by the complex interaction of a large number of factors, many outside of the health system, including the social, economic and physical environments, personal health practices, individual capacity and coping skills and early childhood development. Addressing these determinants through healthy public policy is as important for the health of a population as are good medical care, primary prevention and health promotion.

In 1997 the Federal, Provincial and Territorial Advisory Committee on Population Health provided the following definition:

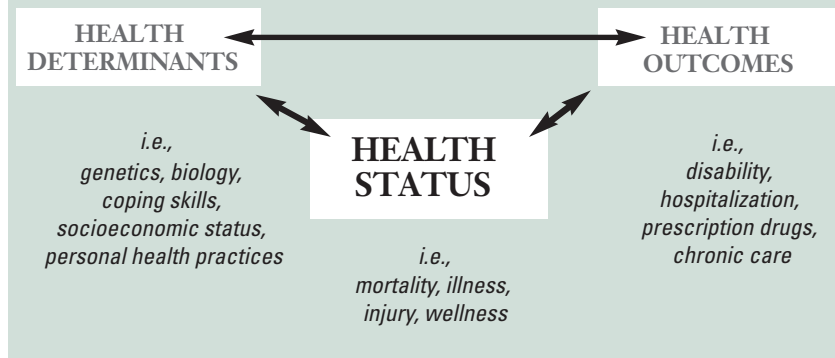
Population Health refers to the health of a population as measured by health status indicators and as influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services.

As an approach, population health focuses on the interrelated conditions and factors that influence health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations.⁵

⁵ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Toward a Health Future: Second Report on the Health of Canadians*. Public Works and Government Services Canada. P. 7.

The relationship between health determinants, health status and health outcomes is presented in Figure 1.1. In general, health determinants influence health status, which in turn influence health outcomes. For example, illiteracy can have a negative influence on the choice of diet and/or on the use of medications, and thus contribute to the emergence of illness. The reverse can be true as well, since health outcomes can also directly influence health status, as well as health determinants. For example, prolonged hospitalization and/or permanent disability caused from an injury can lead to reduced quality of life, social isolation and limitations in activity levels. Limitations in activity levels and social isolation can in turn have a negative influence on health status, increasing chance of illness, and potentially resulting in another hospitalization.

Figure 1.1



Part A:

Health Status of the Population

Chapter 2

Well-Being

Indicators of well-being attempt to measure aspects of positive health, a sense of vitality, and general sense of empowerment. These measures are subjective and provide an indication of people's feelings about themselves. As the Report on the Health of Canadians pointed out: "Well-being, or positive health, can be defined as consisting of those physical, mental and social attributes that permit the individual to cope successfully with challenges to health and functioning."¹ Self-rated health status is based on people's perceptions of their health. Satisfaction with life, self-esteem and sense of mastery are other measures used to assess well-being.

2.1 Self-Rated Health

Self-reported health status is often used as a proxy measure for well-being. This measure is based on a survey question that asks people to rank their health as excellent, very good, good, fair or poor. It is a surprisingly accurate measure of overall population health. Research has shown that it correlates strongly with more "objective" measures of health status.² However, there are limitations to this indicator. Acute temporary symptoms such as a cold or flu may bias the self-report. Certain groups, for example men, may be more likely to provide a biased positive assessment. Different cultural groups may subjectively assess their health differently.³ It is also possible that the degree of variation this question attempts to measure may not make sense for some cultural groups. For example some may view their health as either "good" or "poor" only.⁴ Nonetheless, self-rated health is a useful and often used measure of a population's level of general well-being.

In 2003, 56% of NWT residents 12 years of age and older rated their health status as either excellent or very good, another 34% rated their health as good, and 10% indicated their health was fair or poor. These results are similar to the overall Canadian estimates where 59% rated their health as excellent or very good, 30% said it was good and 11% indicated their health was fair or poor.⁵

When results from the 2003 survey are compared to those from 1994/95, the proportion of the NWT population reporting fair or poor health did not change (see Figure 2.1.1).

¹ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Statistical Report on the Health of Canadians*. Public Works and Government Services Canada. p. 220.

² Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Towards a Healthy Future: Second Report on the Health of Canadians*. Public Works and Government Services Canada.

³ CIHI. 1997. *Community Health Indicators: Definitions and Interpretations*.

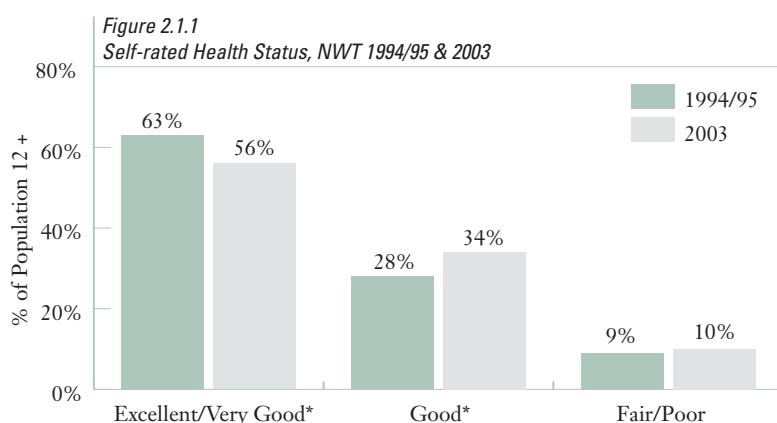
⁴ Flaskerud J H. 1988. *Is the Likert Scale Format Culturally Biased?* *Nursing Research*. 37:3 185-186.

⁵ Canadian Source: 2003 CCHS Share File. To control for differences in the age structures of the two populations, the Canadian estimates were age-standardization using the 2003 CCHS NWT population as the standard population. The Canadian age-standardized estimate for those who said their health was excellent or very good increased to 62% (significantly different from the NWT), while 29% said it was good and 9% fair or poor.

However, the proportion of the population rating their health as excellent or very good declined, and the percentage rating their health as good increased. This change in ranking occurred among NWT residents between 12 and 64 years of age.⁶

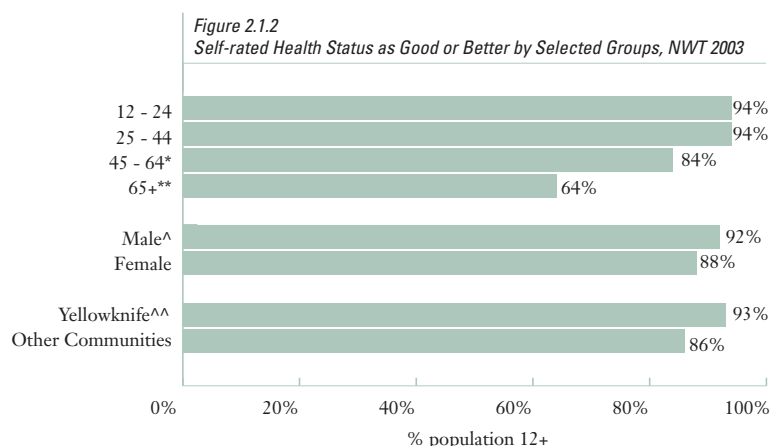
The proportion of the population rating their health as excellent, very good or good was combined before comparisons between groups in the territory were made.⁷ In 2003, 90% of NWT residents 12 years of age and older rated their health as good or better. Figure 2.1.2 shows that proportion of the population who rated their health as excellent, very good or good tends to decline as age increases. Women were less likely to rate their health as good or better (88%) than men (92%). The difference was observed for all four of the age groups examined.

People living in Yellowknife were more likely than those living in other communities to rate their overall health as good or better, (93% vs. 86%). The difference between community types was greater for residents between 25 and 44 years of age and those between 45 and 64 years of age.



Sources: Statistics Canada, 2003 CCHS Share File; NWT Bureau of Statistics, 1994/95 NPHS

* Significant difference between years ($p < 0.05$)



Source: Statistics Canada, 2003 CCHS Share File

*Significantly lower than 12-24 & 25 - 44;

** Significantly lower than other age categories;

^ Significantly higher than Female

^^ Significantly higher than other communities ($p < 0.05$).

⁶ Self-rates health status and age are strongly correlated. If the 1994/95 estimates were age-standardized to the 2003 CCHS population the age-standardized proportion for excellent/very good would become 61% and the difference with 2003 would no longer be statistically significant.

⁷ Collapsing the categories in this way provides an indication of the percentage of the different groups who do not perceive themselves in good health. It also compensates to some degree for any possible differences between groups in their responses to Likert scales.

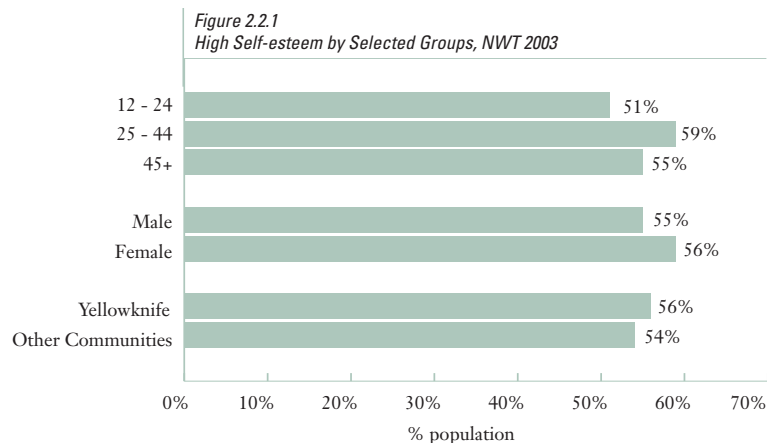
2.2 Psychological Well-being

Having a positive view of one's-self (self-esteem) and feeling in control of life's circumstances (sense of mastery) are important to people's sense of well-being. "Self-esteem refers to the general sense of self-worth as a person, while mastery measures the extent to which individuals feel their life chances are under their own control."⁸ In general, self-esteem and mastery are conducive to coping successfully with life stresses. In turn, the ability to cope successfully with stressors tends to have a positive impact on a person's health status. Sense of self-esteem and mastery reported here are based on responses to a series of questions asked in the Canadian Community Health Survey (CCHS). Responses to questions in the survey were used to develop a summary score. Individuals who measured above a particular, somewhat arbitrary, score were considered to have "high" self-esteem or mastery. While this method permits inter-group comparisons, it is not possible to make meaningful statements about absolute levels of positive mental health.⁹

According to the 2003 CCHS, an estimated 55% of residents age 12 years and older had high self-esteem. Figure 2.2.1 shows there were no significant differences between males and females (55% and 56% respectively). There were also no significant differences between age groups with 51% of residents 12 to 24 years of age reporting high levels of self-esteem, compared to 59% of those between 25 and 44 years of age and 55% of those 45 years of age and older.

Approximately the same proportion of residents 12 years of age and older living in Yellowknife and in the other communities reported high self-esteem (56% and 54% respectively). There were no significant differences between Yellowknife and the other communities for any of the age groups studied.

Questions regarding people's sense of mastery were not included in the 2003 CCHS. However, they were asked in the 2000/01 CCHS and the following discussion of mastery is based on results from that earlier survey. Due to the high non-response rates for residents less than 25 years of age and those 65 and older, the results for this indicator are presented only for the population between 25 and 64 years of age. An estimated 30% of NWT residents between 25 and 64 years of age reported a high sense of mastery. There were no differences between age groups (see Figure 2.2.2).

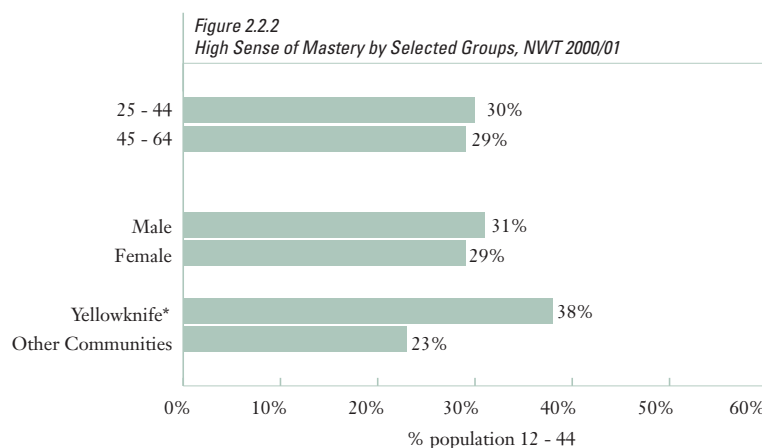


Source: Statistics Canada, 2003 CCHS Share File

⁸ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Statistical Report on the Health of Canadians*. Public Works and Government Services Canada. p. 220.

⁹ *Ibid.*

Males were slightly more likely than females to report a high sense of mastery, but the difference was not statistically significant. On the other hand, residents of Yellowknife were more likely than residents of the other communities to report a high sense of mastery (38% vs. 23%). The difference was similar and significant for both age groups.



Source: Statistics Canada, 2000/01 CCHS Share File

* Yellowknife significantly higher than other communities ($p < 0.05$).

General Health and Function

Like the previous indicators, functional health status and long-term activity limitations provide an indication of general health. Functional health status measures a person's overall ability to perform daily tasks, while long-term activity limitations measure the impact of health problems on people's daily lives. The latter indicator can be viewed more as a measure of negative health in the sense that health is defined as the absence of the problem.

2.3 Functional Health Status

Functional health status is based on eight attributes: vision, hearing, speech, mobility (ability to get around), dexterity (use of hands and fingers), cognition (memory and thinking), emotion (feelings), and pain and discomfort. A person with excellent or very good health status would have indicated they have no problems in any of these areas or have ailments of a minor nature that can be fully corrected, such as near-sightedness.

In 2003, 81% of the NWT population 12 years of age and older indicated they had perfect or very good functional health, similar to the Canadian rate estimate of 82%.¹⁰ The 2003 NWT estimate represents a significant decrease from 1994/95 when 91% of the population reported perfect or very good functional health status.¹¹ The decline was accounted for in large part by a significant decrease in the functional health status of residents between 12 and 24 years of age, which dropped from 94% to 74% (see Figure 2.3.1). This apparent drop was due to a larger proportion of individuals in this age group reporting difficulty remembering things as well as difficulty thinking and solving day-to-day problems.

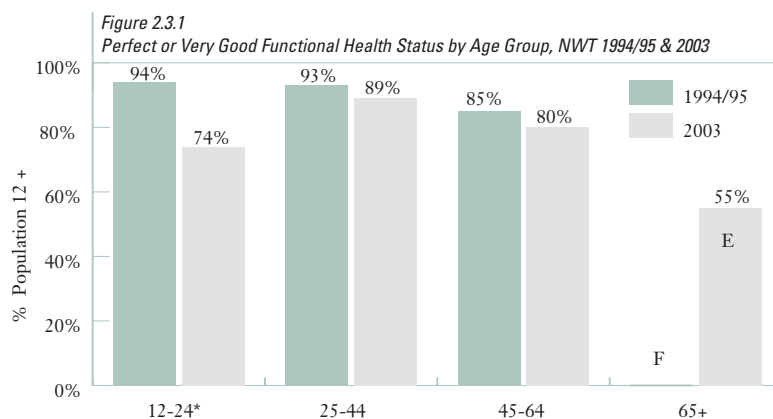
¹⁰ Canadian Source: 2003 CCHS Share File. After age-standardization, using the NWT population as the standard, the Canadian estimate increased to 84%, still not statistically significant different from the NWT.

¹¹ It is important to keep in mind that comparisons between the two surveys should be made with caution.

A significantly lower proportion of residents between 12 and 24 years old recorded perfect or very good functional health status than residents between 25 and 64 years old. This finding is potentially worrisome, and contrary to national results as well as results from previous surveys in the NWT where the proportion of 12 to 24 year olds reporting perfect or very good functional health was the same as those between 25 and 44 years of age. This indicator should be monitored in future years to see if this trend continues or whether the 2003 estimates were due to a survey anomaly.

Not surprisingly, seniors were more likely to report moderate or severe functional health problems. In 2003, just over half (55%) scored perfect or very good functional health status. This was significantly lower than all other age groups.

Overall, the proportion of males recording a perfect or very good functional health score was significantly higher than females (85% vs. 77%). This difference was observed for all residents 25 years of age and older, and was particularly evident among those between 45 and 64 years of age. Meanwhile, the proportion of Yellowknife residents scoring very good or perfect functional health status in 2003 was not significantly different from the proportion for residents of the other NWT communities (83% and 78% respectively). This outcome was observed for all age groups studied.



Sources: Statistics Canada, 2003 CCHS Share File & NWT Bureau of Statistics, 1994/95 NPHS

* Significant difference between 1994/95 and 2003 ($p < 0.05$).

F: Suppressed due to extreme sampling variability

E: High sampling variability use with caution.



Source: Statistics Canada, 2003 CCHS Share File

^ Significantly higher than female ($p < 0.05$).

2.4 Long-Term Activity Limitations

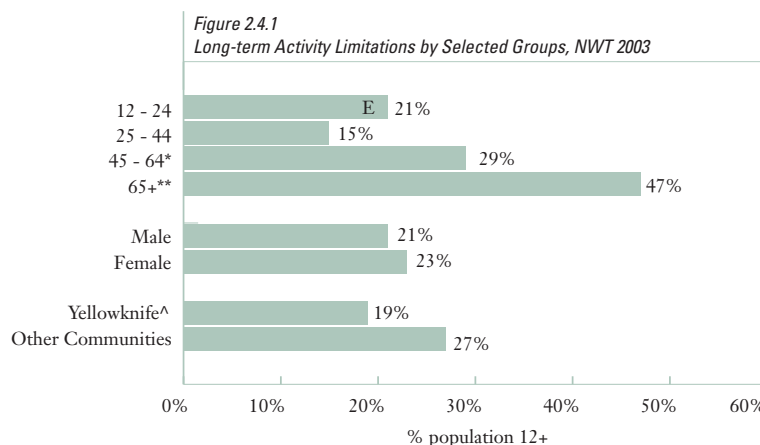
Long-term activity limitation refers to people who indicated that they were limited in certain activities on a continuing basis (at least 6 months) because of a physical condition, mental condition, or other long-term health problem. It is important to point out that this indicator should not be used to describe the rate of disability in the population. The questions used to develop this measure likely underestimate the number of people with other than severe disabilities. Also, because of differences in question wording between the CCHS and the National Population Health Survey (NPHS), estimates from 2003 cannot be directly compared to results obtained in 1994/95.

In 2003, 22% of NWT residents aged 12 or older reported limitations in their normal activities at school, at work and/or at home, similar to the Canadian proportion of 24%.¹² In general, activity limitation increases with age. While those between 12 and 24 years of age seem more likely to report a long-term activity limitation than residents between 25 and 44, this difference is not statistically significant and may be due to higher sampling variability for the former group. Again, this indicator should be watched in future years to determine whether the 2003 estimate for the 12 – 24 year olds was due to a survey anomaly or is indicative of a developing trend.

Apart from the outcome noted above, the prevalence of long-term activity limitation increased with age with nearly half of seniors reporting some limitation of activity (see Figure 2.4.1). About the same proportion of men and women reported activity limitations (21% and 23% respectively). There were no significant differences between the sexes for any of the age categories examined.

As Figure 2.4.1 shows, the proportion of the population living in Yellowknife who reported some form of long-term activity limitation was significantly lower than the proportion living in the other communities (19% vs. 27%). The difference between Yellowknife and the other communities was observed for all of the age groups studied.

Individuals who reported activity limitations were asked the cause of their condition. Overall, disease or illness was cited most often (30%), followed by injury (26%). Some differences were noted when age groups were compared. Residents between 12 and 24 years of age cited emotional or mental problems most frequently (24%), followed by injury (19%). An estimated 38% of residents between 25 and 44 years of age indicated disease or illness was the cause of their activity limitation, followed closely by injury at 33%. Similarly, an estimated 38% of residents between 45 and 64 cited disease or illness as the cause of their activity limitation and another 29% indicated it was due to injury. Meanwhile, seniors were more likely to cite the natural aging process (51%) as the main reason for their condition, followed by disease or illness (26%).



Source: Statistics Canada, 2003 CCHS Share File

*Significantly higher than 25 - 44;

** significantly higher than other age categories;

^ significantly higher than other communities (p < 0.05).

¹² Canadian Source: 2003 CCHS Share File. After age-standardization, using the NWT population as the standard, the Canadian estimate decreased to 22%, still not statistically significant different from the NWT.

Chapter 3

Health Conditions

The existence of specific diseases or conditions in the population points to health problems that require prevention, treatment and support services. The rates at which these conditions occur also provide an indication of the health status of the population. This section reports on a number of specific diseases and conditions that impact on health and quality of life using data from both administrative and survey sources.

The information for depression and selected chronic conditions including high blood pressure and asthma is based on results from the Canadian Community Health Survey (CCHS). Respondents were asked if they had any condition, from a predetermined list, diagnosed by a health professional. These self-reports provide an estimate of prevalence rates, or the number of people in the population who have a specified disease at a given time.

Data for a number of diseases including tuberculosis, sexually transmitted infections, vaccine preventable diseases, and cancer are based on disease registries and represent the most complete and consistent source of information at the person level. These sources also provide information on incidence rates, or the number of new cases of a disease in the population over a period of time.

Hospitalizations due to mental illness and hospitalizations due to respiratory syncytial virus (RSV) are also obtained from an administrative source, but one that only provides an indirect inference of the disease, since it is based on the number of events (hospital separations) rather than on the number of individuals. As a result, this source does not provide an accurate estimate of prevalence or incidence rates.

3.1 Communicable Diseases

Communicable diseases can be passed from one person to another. They vary in severity from the common cold, to life threatening diseases like AIDS. The rates of communicable disease in the population can highlight deficiencies in public health programs and are often associated with socio-economic and environmental conditions. Generally speaking, the rates for communicable diseases in the Northwest Territories are similar to Canada, with some notable exceptions.

This section groups communicable diseases into three categories: diseases passed by direct contact/respiratory route (i.e., Tuberculosis); diseases passed by sexual contact or blood (i.e., Chlamydia and Hepatitis C); and vaccine-preventable diseases (i.e., whooping cough and chickenpox).

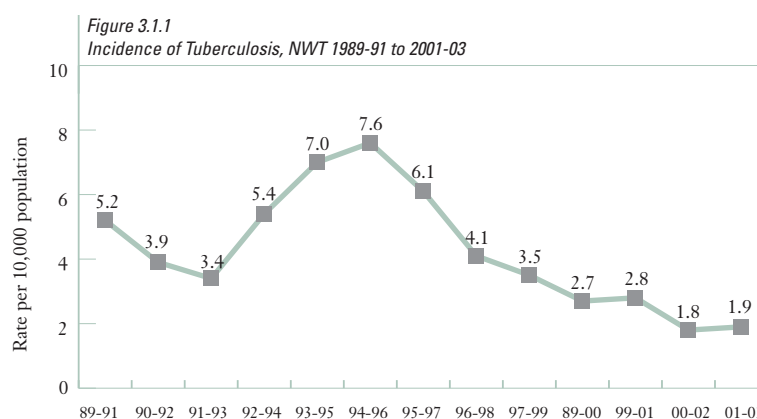
Diseases by Direct Contact/Respiratory Route

Tuberculosis

Tuberculosis (TB) is a disease that often attacks the lungs, but can also affect other parts of the body, including the brain, the lymph nodes and bones. Although TB can be treated with antibiotics, it remains a significant health problem and outbreaks still occur in Northwest Territories. Direct exposure to someone with active TB increases one's risk for contracting the infection. The bacterium that causes TB is spread through the air from coughing or sneezing. BCG vaccine is recommended as soon as possible after birth for all infants residing in high-risk communities or families as protection against more serious forms of disease such as TB meningitis.

Figure 3.1.1 shows the rate of TB in three-year annual averages between 1989-91 and 2001-03.

Overall, the rate of TB declined significantly during that time period. However, TB rates are influenced by occasional outbreaks that occur in one or two communities. The actual number of cases can increase from less than ten in a year to over 40 when such an outbreak occurs. Moreover, while the incidence of TB has decreased since the mid-1990s, the current NWT rate is still over three times higher than the Canadian rate (0.55 per 10,000 population in 2000).¹



Source: NWT Health & Social Services

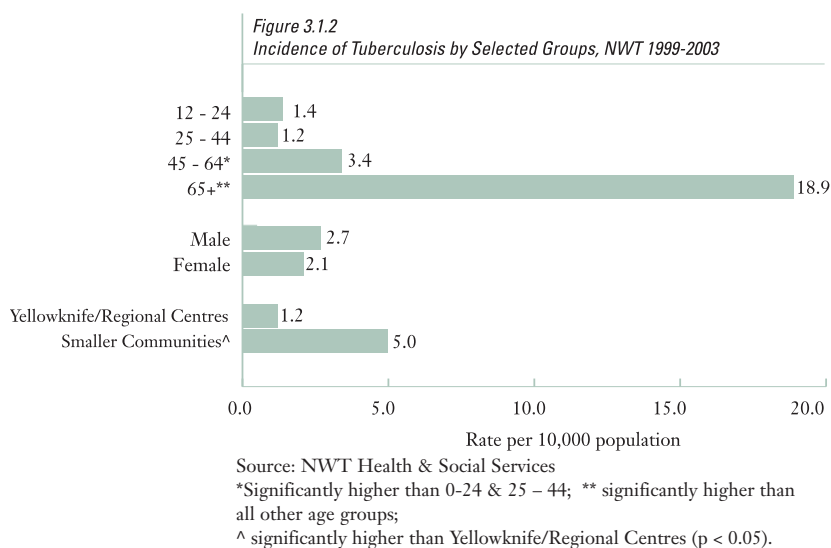
Note: Rate declined significantly between 1989-91 and 2001-03 ($p < 0.05$).

TB is found in all age groups but the risk of developing the disease is significantly higher among seniors. Over a lifetime, people who were exposed to TB and did not receive prophylactic treatment are at risk of developing active infection whenever their immune system weakens. Seniors have had the largest number of years in which to be exposed to TB and their immune systems are often weaker than those in younger people. During the period 1999 to 2003, the annual average rate of TB among NWT seniors was over ten times higher than the rate among residents less than 45 years of age, and over five times higher than those between 45 and 64 years of age (see Figure 3.1.2).

It is important to point out that while the risk of TB is significantly higher among older residents, the actual number of cases is more evenly divided across age groups. Between 1999 and 2003, 24% of the 50 new TB cases occurred among residents less than 25 years of age, 18% among those 25 to 44 years of age, 26% among persons 45 to 64 years of age, and individuals 65 years of age and older accounted for 32% of all new cases. The high rate of TB among seniors reflects the relatively small number of residents in this age group.

¹ Source: Health Canada, http://dsol-smmed.phac-aspc.gc.ca/dsol-smmed/ndis/c_dis_e.html

People living in smaller communities have historically higher rates of TB infection than those living in larger centers. Poorer housing conditions (i.e. overcrowding) than in larger centers (see section 6.5) may be a contributing factor. Figure 3.1.2 shows the rate of TB in smaller communities was over four times higher than the rate in Yellowknife and the regional centers between 1999 and 2003.

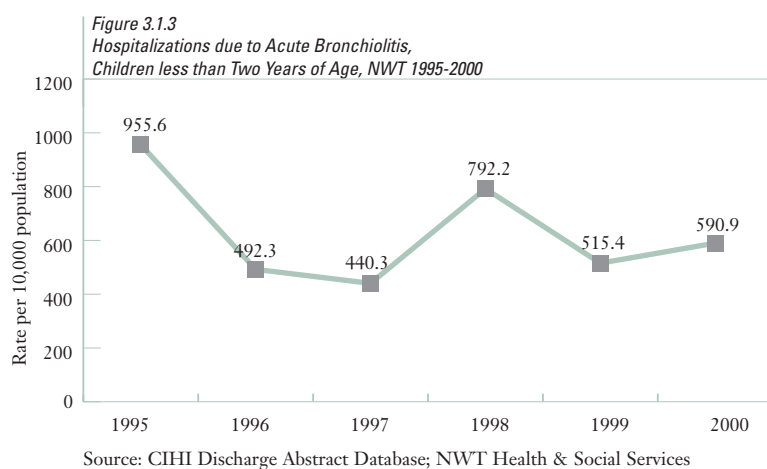


Generally speaking tuberculosis is associated with risk factors such as over-crowded housing, smoking, malnutrition and chronic disease. If these indicators improve in the future, the number of cases should continue to decrease. Also, active surveillance of high-risk populations plays an important role in preventing outbreaks of this disease.

Respiratory Syncytial Virus

Respiratory syncytial virus (RSV) is a virus that may cause severe respiratory infection among infants and young children. RSV can be spread by hand contact with any contaminated object. It is primarily introduced by contact of the virus with the mucous membranes of the eyes, mouth and nose. It can also spread through droplets from a cough or sneeze. Although infections can occur throughout the year, outbreaks in the NWT usually occur during the winter months and early spring from October to April.

RSV is the principal cause of bronchiolitis in children less than two years of age. Hospitalizations for bronchiolitis not only represent the most severe forms of RSV infection but are also markers of community outbreaks. Figure 3.1.3 presents the rate of hospitalizations for acute bronchiolitis in children less than two years of age. The higher rate of hospitalization in 1995 and 1998 may reflect larger outbreaks of the disease in those years.



The annual average bronchiolitis hospitalization rate of male children was 70% higher than female children over the six-year period (801.8 vs. 461.5 per 10,000 population). In comparison to children residing in Yellowknife, hospitalization rates for bronchiolitis among children living in smaller communities was three times higher, and two times higher in the regional centers during the six year period (322.9 per 10,000 population in Yellowknife, 671.1 per 10,000 in the regional centers and 948.7 per 10,000 population in the smaller communities).²

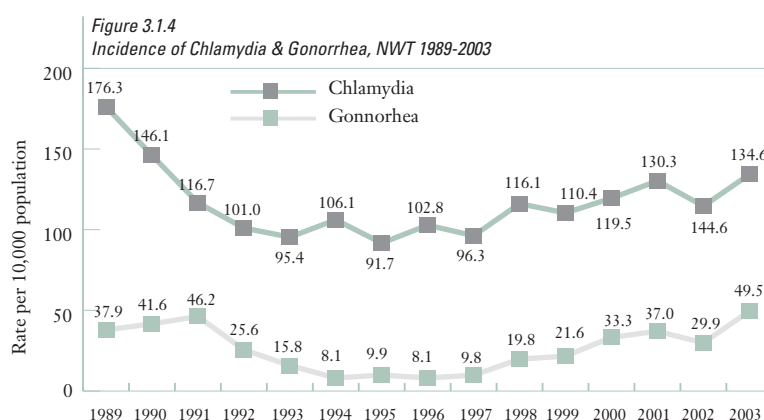
Children's exposure to environmental tobacco smoke is one of the risk factors associated with hospitalization due to RSV. In 1999, 39% of Yellowknife children under the age of 15 lived in households where regular smoking took place, compared to 50% in the regional centers and 56% in the smaller communities.³ However, it is also important to note that children with bronchiolitis who live in smaller communities may also be more likely to be admitted (for practical reasons) than those residing in proximity to a hospital (such as residents in Yellowknife and the regional centers).

Sexually Transmitted and Bloodborne Infections

Sexually transmitted infections (STIs)⁴ can have a negative impact on the general health, well-being, and reproductive capacity of NWT residents. Sexually risky behaviours increase the chance of acquiring an STI (see section 7.7 for a discussion of high risk sexual behaviours). Bloodborne infections are primarily transmitted through exposure to infected blood (e.g. intravenous routes such as injection drug use, tattooing or body piercing; sexual contact; or mother to child transmission during delivery and/or breast-feeding).

Chlamydia and Gonorrhea

Chlamydia and gonococcal infections are two most common types of sexually transmitted infections. There have been no cases of syphilis reported in the NWT during the period under study. Females are mostly affected by the complications of chlamydial and gonococcal infections. When women are not treated, these infections can lead to a painful, long-term condition known as pelvic inflammatory disease (PID) and/or infertility (the inability to have children). Untreated infections also increase the risk of miscarriage. Furthermore, a pregnant woman can pass the infection to the baby during birth, leading to infection of the eyes or lungs for the infant. Most infected individuals do not have symptoms, thus contributing to the "silent" spread of these infections.



Source: NWT Health & Social Services

Note: Significant decrease for both STIs between 1989 and 1996.

Significant increase for both STIs between 1997 and 2003 ($p < 0.05$).

² Source: Health Canada, http://dsol-smcd.phac-aspc.gc.ca/dsol-smcd/ndis/c_dis_e.html

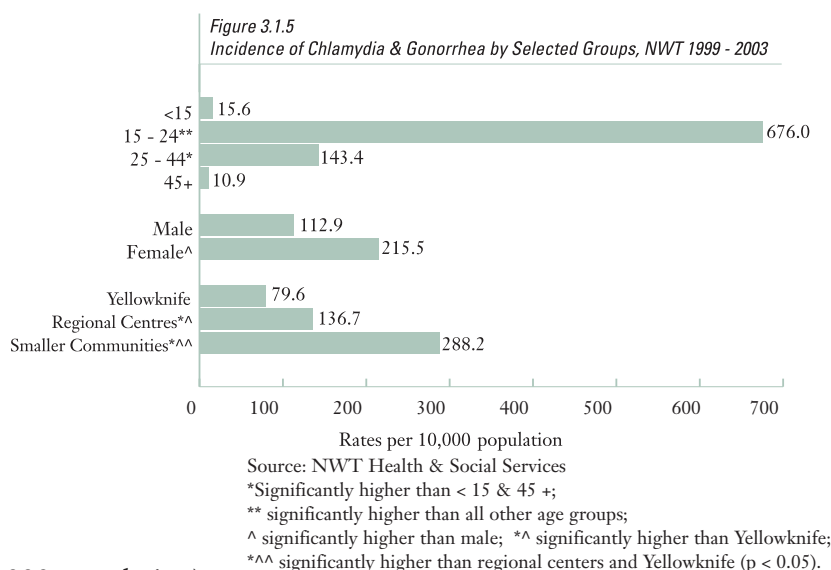
³ Note: Rate for smaller communities significantly higher than rate for regional centers and Yellowknife, and rate for regional centers significantly higher than rate for Yellowknife ($p < 0.05$).

⁴ Source: NWT Bureau of Statistics, 1999 NWT Labour Force Survey

Figure 3.1.4 shows a significant downward trend for both chlamydia and gonorrhea from 1989 to the mid-1990s. However, since then the rates of both STIs have been increasing. A recently released STI strategy is attempting to address this rise in STI rates.⁵

Figure 3.1.5 reports the average annual rate of STIs (Chlamydia and Gonorrhea) by selected groups for the five-year period 1999 to 2003.

Youth and young adults, age 15 to 24, had by far the highest rate of STIs, followed by adults, age 25 to 44. Overall, women were nearly two times more likely than men to be diagnosed with a STI (215.5 vs. 112.9 per 10,000 population). Females between 15 and 24 had the highest rate of STIs during this period (676.0 per 10,000 population), compared to 411.4 per 10,000 for males.



The difference in STI rates between the sexes was observed for all age groups studied. However, the finding reflects the fact that women are more likely than men to get tested for an STI. This may be due to two reasons: 1) men tend to show fewer symptoms than women, thus decreasing the likelihood of seeking treatment; and 2) women are more likely to encounter the health care system due to well-women clinics and infant/child programs.

Between 1999 and 2003, the rate of STIs was over two times higher in the smaller communities than the regional centers, and over three times higher than the rate for Yellowknife (see Figure 3.1.5). Differences between community types were noted for all age groups studied. Youth and young adults had the highest STI rate within each community type. For 15 to 24 year olds, there were 1,176.1 cases per 10,000 population in the smaller communities, compared to 601.7 and 310.6 per 10,000 in the regional centers and Yellowknife.

Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS)

The Human Immunodeficiency Virus (HIV) is the virus that causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system, resulting in a chronic, progressive loss of function that leaves infected people increasingly vulnerable to other infections and cancers. The median time from HIV infection to AIDS diagnosis now exceeds 10 years, due to improvements in care and available medications. However, there is no cure or vaccine and cases of AIDS inevitably result in death.⁶ HIV is transmitted through:

1. unprotected sexual intercourse;
2. needle-sharing;
3. pregnancy, delivery and breast feeding (from an infected mother to her infant);
4. occupational exposure to contaminated blood in health care and other settings.

⁵ Formerly known as sexually transmitted diseases or STDs.

⁶ NWT Health & Social Services. 2005. *Sexually Transmitted Infections, The Naked Truth: A Strategic Directions Document*. http://www.blthss.gov.nt.ca/content/Publications/Reports/comm_dis/sti/stijan2005.pdf

Between 1987 and 2003, there were 25 cases of HIV/AIDS reported in the NWT, of which 88% occurred among males and 92% were reported among those aged 20-49 years. Between 1990 and 2001, six deaths due to AIDS occurred.

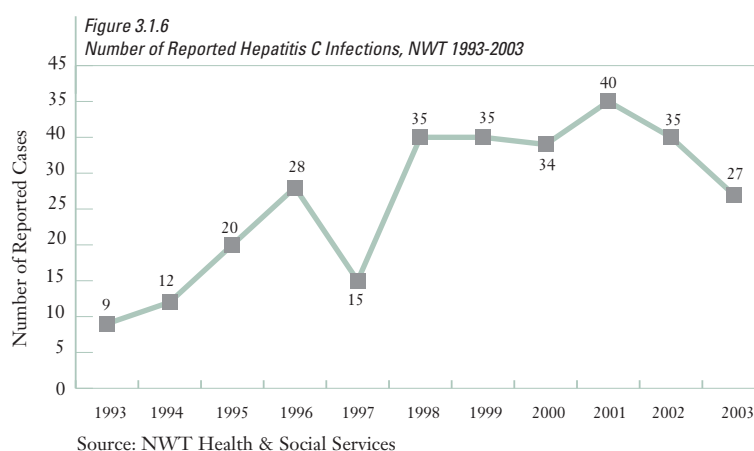
In Canada, HIV/AIDS cases were historically associated primarily with men who had sex with men (MSM) and those who received blood and blood products. Now, the epidemic primarily affects injection drug users (IDU), MSM and, increasingly, women and Aboriginal people. Although these epidemics spread to populations at different rates, the social factors and conditions that lead to the spread are related.⁷ Having earlier discussed the increasing rates of chlamydia and gonorrhea in the NWT, it is important to stress that having a sexually transmitted infection increases the chance of becoming infected by or transmitting HIV. Thus an increase of STIs in the population may be a precursor to an increase in HIV cases.

Hepatitis C

Hepatitis C is a bloodborne infection of the liver caused by the hepatitis C virus (HCV). The virus is spread by direct exposure to the blood of those infected with HCV. People who inject drugs are particularly at risk of exposure to HCV as well as those with multiple sex partners and those who received transfusion or organ transplants prior to the early 1990s. About 85% of people infected with HCV carry the virus for the rest of their lives. People with acute HCV usually remain asymptomatic. Furthermore, those with chronic infection typically do not manifest symptoms for 20-30 years.⁸ It is estimated that only 30% of infected Canadians are aware of their infection.⁹ Complications due to chronic infection include cirrhosis (scarring) of the liver, liver failure and liver cancer, which can take more than a decade to manifest.

This virus was only identified in 1989.¹⁰ The apparent increase in the number of reported hepatitis C cases in the NWT during the mid 1990s may therefore reflect primarily an increase in the use of laboratory testing for hepatitis C. As seen in Figure 3.1.6, the number of hepatitis C reports has leveled off since 1998.

The early identification of people with HCV is important because appropriate treatment and counseling can now lead to cure or at least extend the health of the infected individual and protect others in the community. However, treatment for HCV is not only expensive but can have significant side effects, while being effective in only about 40% of people.¹¹



⁷ Health Canada. *Aids*. Retrieved May 2004 from <http://www.hc-sc.gc.ca/english/diseases/aids.html>

⁸ Indian Health Services. Retrieved May 2004 from <http://info.ihb.gov/Health/Health8.pdf>.

⁹ Medical Research Council of Canada (June 1999). *Report to the Minister of Health: Identification of a Research Agenda for the Diagnosis, Care and Prevention of Hepatitis C in Canada*.

¹⁰ Q-L Choo et al. "Isolation of a cDNA clone derived from a blood-borne non-A, non-B viral hepatitis genome" in *Science* 1989; 244:359-62

¹¹ Indian Health Services. Retrieved May 2004 from <http://info.ihb.gov/Health/Health8.pdf>.

3.2 Vaccine-Preventable Diseases

For some communicable diseases, vaccination can greatly reduce the risk of becoming infected. As the proportion of the population immunized increases, the opportunity of transmitting the disease within the population decreases. Most often vaccinations take place through public health childhood immunization programs, or by special programs such as the annual influenza vaccine campaign aimed at protecting the elderly and the sick. As a result of the success of immunization programs, some diseases have come to be known as “vaccine-preventable”. In spite of public health’s efforts, cases of these diseases still occur on an occasional basis. The following vaccine-preventable diseases will be examined below: Invasive *Haemophilus influenzae* type b disease, Hepatitis B, Pertussis (whooping cough), Chickenpox, and Invasive meningococcal disease

Invasive Haemophilus influenzae type b (Hib) disease

Before the introduction of Invasive *Haemophilus influenzae* type b (Hib) vaccines, this organism was the most common cause of bacterial meningitis and a leading cause of other serious invasive infections in children. Person-to-person transmission occurs by direct contact or through inhalation of droplets of respiratory tract secretions containing the bacteria. Between 1989 and 1992, there were ten cases of Invasive Hib infection among children in the NWT. Since 1992, when a vaccine program targeting infants was introduced, there has been a dramatic decline in the number of bacterial meningitis cases due to Hib. There has been only one case in children under the age of five since 1992.

Hepatitis B

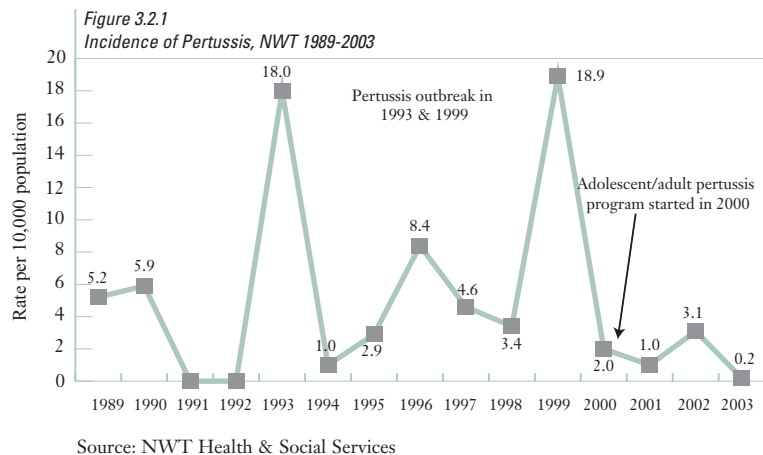
Hepatitis B virus is one of several viruses that cause hepatitis. Symptoms may or may not appear during initial infection with the virus. However the risk of becoming a chronic carrier of the virus is highest in infected infants and relatively low in infected adults. Future complications can include cirrhosis and liver cancer. Transmission usually occurs through exposure to blood or infectious body fluids by sexual contact, injection drug use, and perinatal transmission (mother to infant). The hepatitis B vaccine was introduced to the NWT in 1995. Between 1999 and 2003, there were five new cases reported in the territory, for an incidence rate of 2.4 per 100,000 population. Meanwhile, the Canadian incidence rate was 2.3 per 100,000 in 1998-1999.¹²

Pertussis

Pertussis (also known as whooping cough) is a highly contagious disease. The symptom of severe coughing spasms may or may not be associated with the classical high-pitched whoop. Pertussis is a severe disease that often causes complications in children less than one year of age. There has been a sharp decline in the number of cases since the introduction of the adolescent/adult pertussis vaccination program in 2000.

¹² Health Canada. 2001. *Viral Hepatitis and Emerging Bloodborne Pathogens in Canada. Canadian Communicable Disease Report. Volume 27S3: September 2001.*

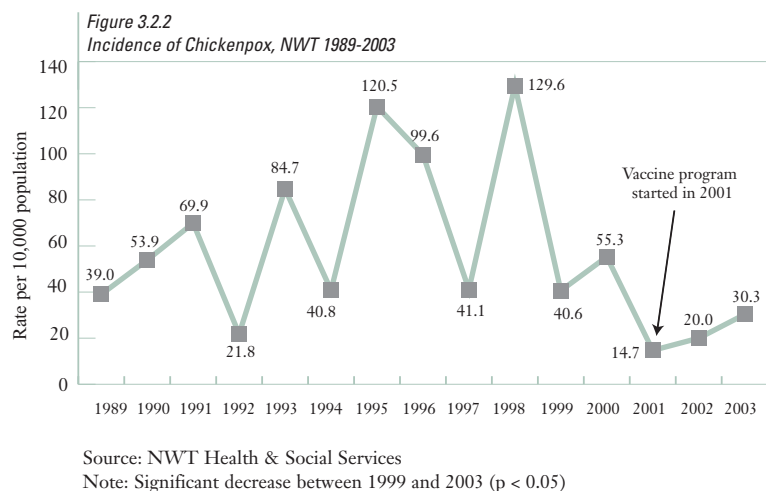
Figure 3.2.1 shows the annual rate of pertussis cases based on laboratory results between 1989 and 2003. The results show that during the 1990s, the disease was characterized by periodic outbreaks (1993 and 1999) with lower number of cases during intervening years. Since 2000, when the vaccination program began, there has been a drop in cases. However, given the periodic nature of outbreaks in the past, it is too early to conclude that the vaccination has been a complete success.



Chickenpox

Chickenpox is an infection caused by the varicella zoster virus and is characterized by itchy lesions (made up of fluid-containing vesicles) and mild fever. Transmission occurs primarily by direct contact with respiratory droplets from the nose and throat or fluid from the vesicles. Although chickenpox occurs mostly among children, adolescents and adults who are infected can suffer from serious complications (such as bacterial infections of the skin and soft tissue, pneumonia and encephalitis) and death.

Figure 3.2.2 shows the annual rate of reported chickenpox cases between 1989 and 2003. Similar to pertussis, periodic outbreaks occurred throughout the 1990s (particularly 1995 and 1998). However, except for one year, the rate of reported chickenpox infections was higher than 40 per 10,000 population. Since the introduction of the chickenpox vaccine program in 2001, the number of cases has declined and the rate for infection for 2001 to 2003 remained below 31 per 10,000.



Again, more years of data are required to evaluate the success of the vaccination program. Moreover, it is important to note these cases represent only individuals who sought medical care. Due to both the commonality of the disease (historically has affected most children) and isolation recommendations for preventing the spread of infection, some cases of chickenpox do not seek attention at medical settings, and are thereby not reported.

Other vaccine-preventable diseases, such as measles, mumps, rubella, diphtheria, tetanus and polio have not been reported in over a decade in the NWT. The absence of these diseases is proof of the success of NWT, as well as Canada-wide, vaccination programs. As long as immunization rates remain high in the NWT, outbreaks of these preventable diseases will be prevented, minimizing individual suffering and associated health care costs (See Section 8.4 for immunization rates).

3.3 Diabetes

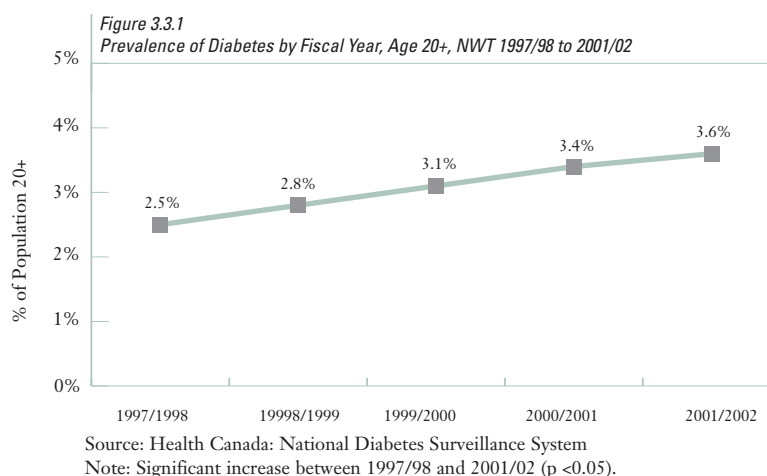
Diabetes, undiagnosed and untreated, can lead to a large number of serious health problems including: blindness, limb amputations, kidney failure, stroke and heart attack and ultimately premature death. There are three types of diabetes: Type 1, Type 2 and gestational. Type 1 usually occurs before age 30 and affects about 10% of all diabetics. In this type of diabetes, “the immune system destroys the insulin-producing cells of the pancreas. Although the process is poorly understood, a combination of genetic factors and environmental stressors, such as viruses, is believed to be the trigger. Type 1 diabetes requires treatment with insulin throughout the rest of life and is associated with a high incidence of complications usually resulting in a reduction in quality of life and shortened lifespan.”¹³

Type 2 diabetes occurs most often in obese individuals over the age of 40 who lead a sedentary lifestyle, though it is also on the increase in younger ages. A family history of diabetes increases the risk of getting the disease. Type 2 accounts for about 90% of all diabetes. Some people with this type are “insulin resistant” and are not able to use the insulin their body makes to control blood sugar. Type 2 diabetes may be controlled by weight loss, exercise and medication taken orally, but some people eventually require daily insulin injections. “Life expectancy is also reduced in people with type 2 diabetes.”¹⁴

Gestational diabetes occurs during pregnancy and usually ends after giving birth. Nevertheless, 40 to 50% of women with gestational diabetes will go on to develop Type 2 diabetes within 15 years after giving birth.¹⁵

As part of the Canadian Diabetes Strategy, the National Diabetes Surveillance System (NDSS) began operations in 1999 to determine the prevalence of diabetes across Canada. The first report of the NDSS was released in 2003. It showed that for fiscal year 2001, 3.6% of the territory’s population 20 years of age and older (approximately 1,000 individuals) were known to have diabetes, slightly lower than the 1999 Canadian prevalence rate of 5.1%.¹⁶

The NWT figure represents a significant increase from the estimated 2.5% for fiscal year 1997 (see Figure 3.3.1). During this five-year period, approximately 150 new cases of diabetes were reported each year.



¹³ Health Canada. 2003. *Responding to the Challenge of Diabetes in Canada: First Report of the National Diabetes Surveillance System (NDSS)*. p. 3.

¹⁴ *Ibid.*

¹⁵ Elsie De Roose, et al, “Gestational Diabetes Mellitus” in *Epi North*, Fall 2001, Vol. 13, Issue 4, p. 12.

¹⁶ Health Canada. 2003. *Responding to the Challenge of Diabetes in Canada: First Report of the National Diabetes Surveillance System (NDSS)*. p. 3.

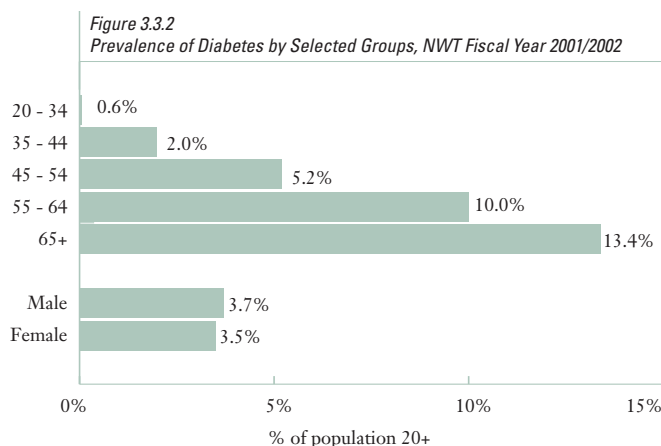
The prevalence of diabetes increases with age, with less than one percent of the population between 20 and 34 having diabetes to a high of 13.4% for those aged 65 and up (see Figure 3.3.2). The prevalence increased significantly for each age group examined with the largest increase occurring after the age of 54.¹⁷ No significant difference was noted between men and women (3.7% and 3.5% respectively).

With an aging population, it is likely that prevalence of diabetes will continue to increase in the Northwest Territories in the near future unless large numbers of individuals take up preventive measures such as regular exercise and eating a healthy diet.

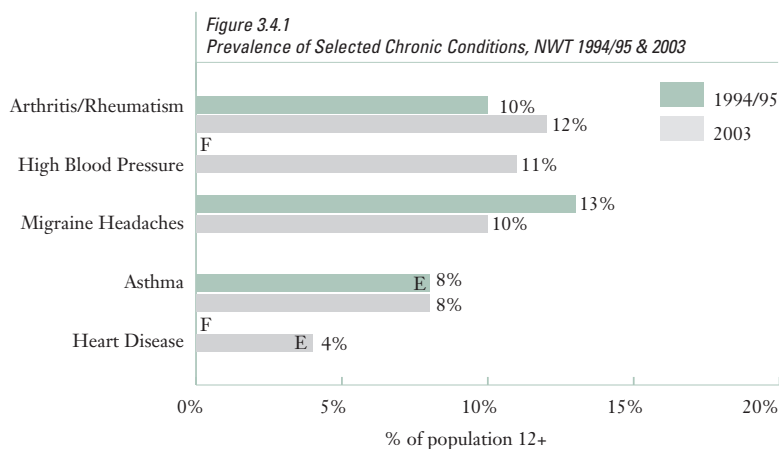
3.4 Other Chronic Conditions

Certain chronic conditions such as cardiovascular and pulmonary diseases are major causes of mortality and hospitalization in the Northwest Territories. Other chronic conditions such as arthritis, asthma and migraine headaches also affect a person's functional health status and quality of life. In this section the prevalence of selected chronic conditions is estimated using results from a population survey. The estimates are based on self-reports where the respondents indicated the duration of the condition was at least six months and where the condition was diagnosed by a health professional. The following chronic conditions were examined: asthma, arthritis or rheumatism, high blood pressure, heart disease and migraine headaches.

According to results from the 2003 Canadian Community Health Survey (CCHS) an estimated 33% of the NWT population (approximately 11,000 residents) aged 12 years and older reported having at least one of the above chronic conditions. Of the selected conditions, arthritis/rheumatism was the most common followed by high blood pressure and migraine headaches (see Figure 3.4.1). An estimated 30% of those who reported a selected condition said they were diagnosed with more than one.



Source: Health Canada: National Diabetes Surveillance System
Note: Significant differences between all age groups ($p < 0.05$).



Sources: Statistics Canada, 2003 CCHS Share File; NWT Bureau of Statistics, 1994-95 NPHS
E: High sampling variability, interpret with caution;
F: Extreme sampling variability, data suppressed

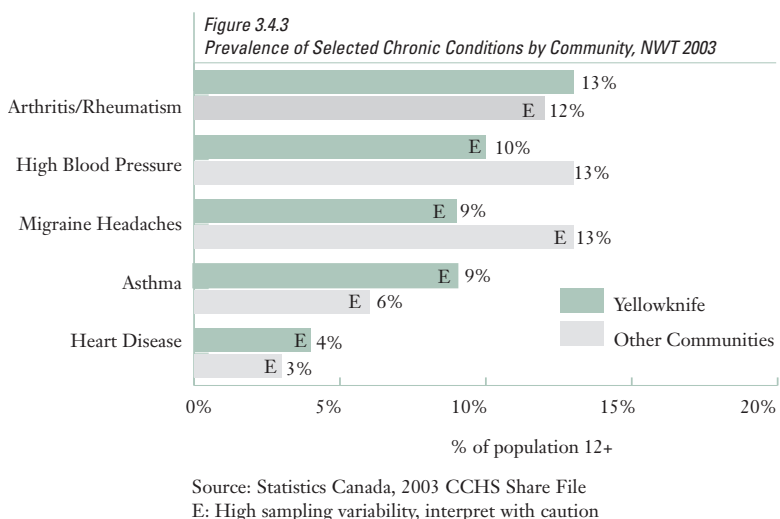
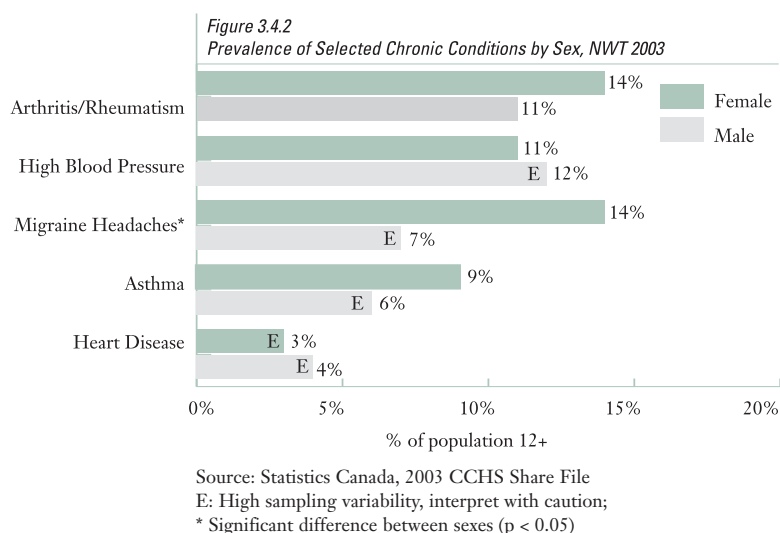
¹⁷ An aging population cannot explain the significant increase in diabetes prevalence noted earlier. Even after adjusting for differences in the age structure of the population during the five-year period, the prevalence of diabetes still increased significantly. Using the population for the last fiscal year under study as the standard, the age standardized prevalence rate increased from 2.7% in 1997/1998 to 3.6% in 2001/2002.

A comparison of the 2003 CCHS results with those obtained from the 1994/95 National Population Health Survey revealed no significant change over the ten-year period. In 1994/95, 29% of NWT residents 12 years of age and older indicated they had at least one of the chronic conditions listed above.¹⁸ Figure 3.4.1 also shows there were no significant changes in the prevalence of any of the self-reported chronic conditions between 1994/95 and 2003.

Older individuals were more likely to report a chronic condition than younger residents. Overall, NWT residents 45 years of age and older were over 2.5 times more likely than those between 12 and 44 to report being diagnosed with at least one of the selected five chronic conditions (58% vs. 22%). Not surprisingly, heart disease, high blood pressure and arthritis/rheumatism were much more common among older residents. For example, 35% of those 45 years of age and older reported they had arthritis/rheumatism and 28% said they had high blood pressure, compared to 3% and 4% of those between 12 and 44 years of age.¹⁹

The prevalence of asthma and migraine headaches was about the same for both age groups. An estimated 7% of individuals between 12 and 44 years indicated they had asthma and 11% said they had migraine headaches, compared to 10% and 9% of residents 45 years of age and older.²⁰

Overall, a higher proportion of women than men reported having being diagnosed with at least one of the listed chronic conditions (36% vs. 29%).



¹⁸ If the 1994/95 estimate was age standardized using the 2003 CCHS population as the standard population, the proportion would increase to 31%, making the change over time even smaller and pointing to the role an aging population will have on the prevalence of many chronic conditions.

¹⁹ Estimates for those between 12 and 44 years of age should be treated with caution due to high sampling variability.

²⁰ Estimates for those 45 years of age and older should be treated with caution due to high sampling variability.

This difference was close to statistical significance ($p = 0.06$). No significant differences between men and women were noted for four of the five conditions (see Figure 3.4.2). However, women were twice as likely as men to indicate suffering from migraine headaches (14% vs. 7%).

Comparisons between Yellowknife and the other NWT communities revealed no significant difference in the prevalence of self-reported chronic conditions. Overall, 32% of Yellowknifers age 12 and older reported at least one of the five conditions, compared to 34% for the other communities.

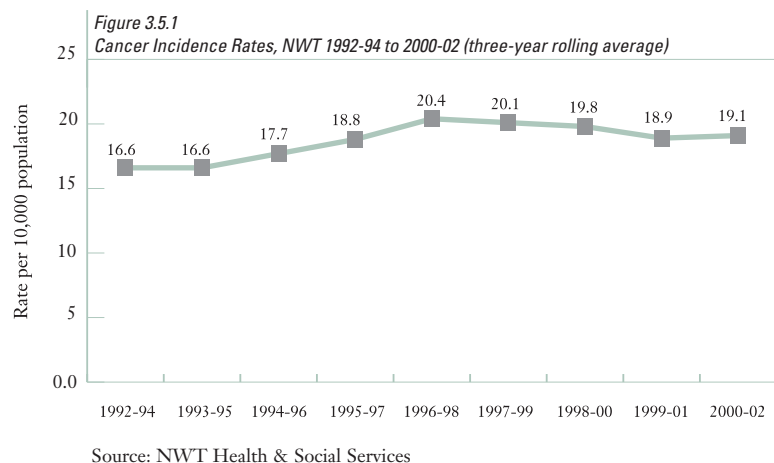
While it appears that residents of the smaller communities may be slightly more likely than residents of Yellowknife to report having high blood pressure and migraine headaches, the differences were not statistically significant (see Figure 3.4.3).

3.5 Incidence of Cancer

Cancer is the uncontrolled growth of cells in the body. The immune system can usually recognize abnormal cells and destroy them. However, if cancer cells succeed to bypass this defense mechanism, they can multiply and form a lump or tumor. When cancer cells invade the surrounding tissue and spread to other parts of the body, the tumor is labeled malignant. While some malignant cancer cells grow rapidly, most grow slowly. Furthermore, some cancers can be treated successfully if diagnosed early, whereas others are more resistant to treatment and therefore more life threatening.

The occurrence of cancer is often associated with specific risk factors. Genetics can play a role, as individuals who have a previous family member with the disease can be at greater risk. However, more commonly, cancer results from repeated exposure to external agents such as cigarette smoke, ultra-violet rays from the sun, and viruses or environmental substances, including those contained in certain types of food. Obesity is also a known risk factor for some types of cancer. While the above exposures increase a person's chance of getting cancer, a healthy diet, a smoke-free lifestyle, and regular physical exercise can reduce a person's risk of getting the disease by over 50%.²¹

Cancer is the leading cause of death in the Northwest Territories (see section 4.4). An average of 75 new cases of cancer were diagnosed each year between 1992 and 2002. The incidence of cancer remained relatively unchanged during this time. Figure 3.5.1 presents three-year rolling averages for crude incidence rates between 1992-94 and 2000-02. The analysis shows that the rates increased by 15% from 16.6 per 10,000 population in 1992-94 to 19.1 per 10,000 in 2000-02.

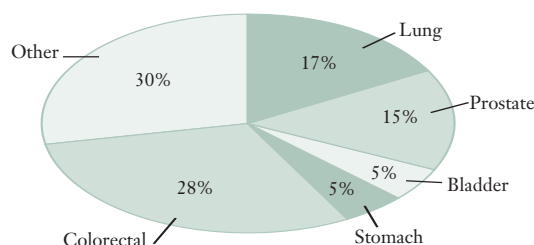


²¹ For a more detailed analysis of cancer in the Northwest Territories see: NWT Health & Social Services. 2003. *Cancer in the Northwest Territories 1990 – 2000: A Descriptive Report*. Available at http://www.blhss.gov.nt.ca/content/Publications/publication_index.htm

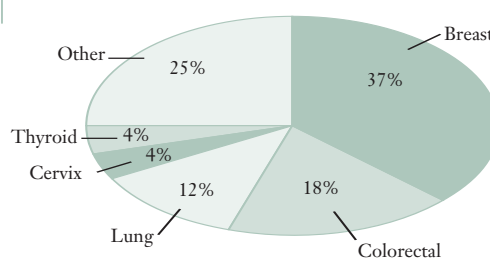
However this slight increase was not statistically significant. Moreover, an aging population explains much of this increase. After adjusting for age differences in the population over time, the incidence rates were stable during the first half of the study period and declined insignificantly after 1996/97.²²

After taking differences in the age distribution of the two populations into account, the overall age-standardized cancer incidence rate for males in the NWT was significantly lower than the Canadian rate. Meanwhile, the age-adjusted incidence rates for females were similar in the NWT and Canada as a whole.²³

Figure 3.5.2
Top Cancer Diagnoses, Males, NWT 1998-2002 (n=199)



Top Cancer Diagnoses, Females, NWT 1998-2002 (n=196)



Source: NWT Health & Social Services

Overall, colorectal cancer was the most common type of cancer diagnosed in the NWT between 1998 and 2002, accounting for 23% of all new cases. Breast cancer was the second most common type (18%), followed by cancer of the lung (14%), prostate (7%) and stomach (4%). Figure 3.5.2 illustrates the distribution of cancer types for NWT males and females. From 1998 to 2002 three sites accounted for over half of all new cancers in men: colorectal (28%), lung (17%) and prostate (15%). Breast cancer was the most common cancer diagnosed in females (37%), followed by colorectal (18%) and lung cancer (12%). Cancer of the cervix was also among the top five cancer sites among women.

The crude incidence rates for all forms of cancer for males and females between 1998 and 2002 were similar (18.8 and 19.8 per 10,000 population respectively). Not surprisingly, cancer incidence rates increase with age. The incidence rate for NWT residents less than 45 years of age was 4.2 per 10,000 population between 1998 and 2002, while the rate among those between 45 and 64 years of age was 47.1 per 10,000, and 188.6 per 10,000 among those 65 and older.²⁴

Figure 3.5.3 provides age-specific cancer incidence rates for males and females in the NWT between 1998 and 2002. The incidence rates for both males and females between 45 and 64 years old were similar, as were those 65 years and older. However, the incidence rate for females less than 45 years of age was significantly higher than the corresponding male rate (6.6 vs. 2.0 per 10,000 population). New cases of female breast cancer explain much of this difference, accounting for 37% of all cases of cancers for the population less than 45 years of age. Moreover, one-third of breast cancers among all women occurred in this age group.

²² The crude incidence rates were age-standardized using the direct method and the NWT 1996 population as the standard. For each of the time periods presented in figure 3.4.1 the age-standardized rates were: 18.1, 17.7, 18.2, 18.8, 19.7, 18.9, 18.0, 16.8, 16.7

²³ NWT Health & Social Services. 2003. *Cancer in the Northwest Territories 1990 – 2000: A Descriptive Report*. Available at http://www.blthss.gov.nt.ca/content/Publications/publication_index.htm

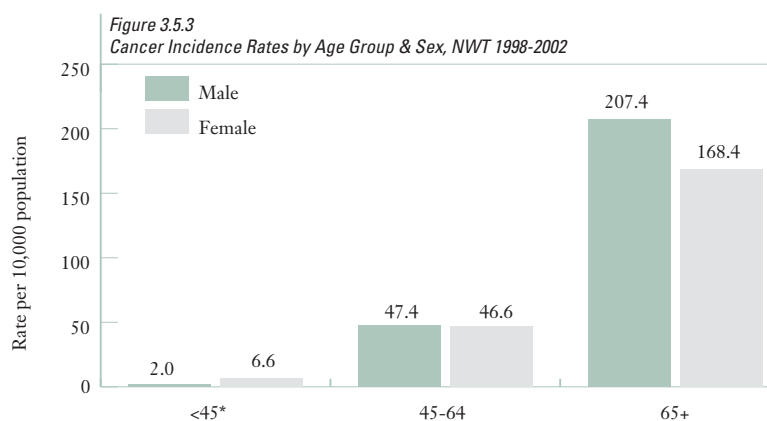
²⁴ All differences were statistically significant ($p < 0.05$).

Breast cancer was also the most common type of cancer among women between 45 and 64 years of age, accounting for 43% of all new cases of female cancer in this age group, and 20% of new cases of cancer in the total population between 45 and 64 years of age. Meanwhile, colorectal cancer was the most common type of cancer among men in this age group, accounting for 33% of new cases of male cancer, and 18% of all cancers for individuals between 45 and 64 years of age. Lung and prostate cancers were also among the top three types of new cancers for men 45 to 64 years of age, while colorectal and lung cancers were among the top three types of cancer among women.

Between 1998 and 2002, colorectal cancer was the most common type of new cancer among both males and females age 65 and older, accounting for 30% of female cancers and 27% of male cancers in this age group. Meanwhile lung cancer accounted for 22% and breast cancer 21% of female cancers, while prostate cancer accounted for 20% and lung cancer 19% of all male cancers among individuals 65 years of age and older.

The crude incidence of cancer among residents of Yellowknife was significantly lower than the rates among residents of the regional centers of Hay River, Fort Smith and Inuvik, and residents of the other smaller NWT communities between 1998 and 2002 (14.7 per 10,000 population compared to 23.5 and 22.3 per 10,000 population respectively).

However, this difference can be explained for the most part by the fact that the population of Yellowknife is younger than the populations of the regional centers and the smaller communities. During the study period, 7% of Yellowknife's population was 55 years of age and older compared to 12% in the regional centers and the smaller communities. As observed above, the risk of cancer is much higher among older individuals. The differences between community types were no longer significant when the differences in the population age structures were taken into account. The age-standardized rate for Yellowknife was 15.5 per 10,000 population compared to 18.3 per 10,000 for the regional centers and 16.9 per 10,000 for the smaller communities.²⁵



Source: NWT Health and Social Services

* Significant difference between sexes ($p < 0.05$).

²⁵ Age standardized using the direct method and the NWT 1996 population as the standard.

3.6 Mental Illness

Mental health involves subjective well-being, individual capacities, the ability to set and achieve goals and the ability to establish meaningful relationships with others. These types of measures are often not available. Therefore, indicators that measure the presence of mental disorders are often used to estimate the level of mental health in a population. As a result, this report describes more the status of mental illness in the population rather than the mental health of the population.

Mental illness includes a large number of different disorders ranging from mild forms of anxiety and/or depression to extremely debilitating episodes of irrational thought and behaviour. In general, “mental illnesses are characterized by alterations in thinking, mood or behaviour (or some combination thereof) associated with significant distress and impaired functioning over an extended period of time.”²⁶ In this section, three indicators of mental illness will be presented: estimates of the prevalence of depression, hospital discharges due to mental illnesses, and suicides.

Depression

Depression is a disabling condition that accounts for an important proportion of psychiatric hospitalizations and, arguably, the majority of suicides. Depression is also sometimes linked with other conditions such as alcoholism and substance abuse. It is often characterized by feelings of profound sadness and a sense of helplessness and hopelessness. This depressed mood is often accompanied by a variety of other symptoms including changes in appetite or weight, a general lack of energy, disruptions of usual sleep patterns, variations in routine activities, decreased feeling of self-worth, and difficulties concentrating or making decisions.

In the 2003 Canadian Community Health Survey (CCHS), the risk of experiencing a major depressive episode was estimated by means of a subset of questions from the Composite International Diagnostic Interview. Responses to these questions were scored and transformed into a probability estimate of a diagnosis of depression. If the estimate was 0.9 or more (that is, 90% certainty of a positive diagnosis), then the respondent was classified as depressed.

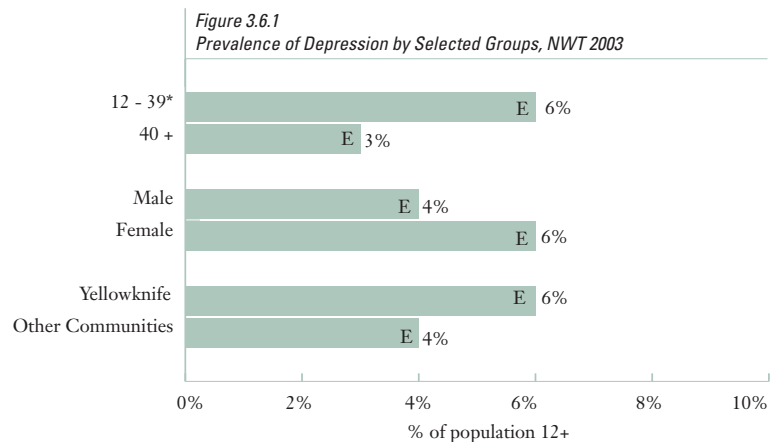
In 2003, 5% of NWT residents age 12 and older reported a major depressive episode and were probably clinically depressed, unchanged from 1994/95.²⁷ In other words, approximately 1,600 NWT residents age 12 and older were likely suffering from clinical depression. Another 3% of residents (approximately 1,000 people age 12 and older) had some features of depression and could possibly be rated as depressed. The prevalence of depression in the NWT appears to be slightly lower than in Canada as a whole. According to the 2000/01 CCHS, 7% of Canadians were probably depressed.²⁸

²⁶ Health Canada. 2002. *A Report on Mental Illnesses in Canada*. Ottawa, Canada p. 16.

²⁷ According to results from the 1994/95 National Population Health Survey, and estimated 5% of NWT residents 12 years of age and older were probably depressed.

²⁸ Source: Statistics Canada CCHS 1.1 Share File. A Canadian estimate for the prevalence of depression was not available from the 2003 CCHS. When the 2000/01 Canadian estimate was age-standardized to the 2003 NWT population, it increased to 8%.

The prevalence of depression was higher among younger individuals. Those between 12 and 39 years of age were two times more likely than those 40 years of age and older to report symptoms of depression (6% vs. 3%). No significant differences were observed in the prevalence of depression when sex and community of residence were compared (see Figure 3.6.1). An estimated 6% of females could be considered depressed in 2003, compared to 4% of males. Approximately 6% of residents of Yellowknife and 4% of those living in the other communities reported a major depressive episode.



Source: Statistics Canada, 2003 CCHS Share File

* Significantly higher than 40 + ($p < 0.05$).

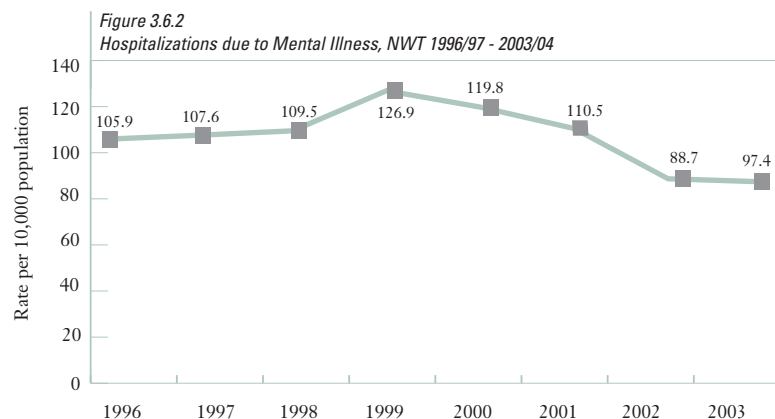
E: High sampling variability, interpret with caution.

Hospitalizations due to Mental Illness

The following section examines hospital utilization due to mental illness for NWT residents in the territory's acute care hospitals. It is important to point out a number of limitations to this analysis. The information represents the number of hospital separations (discharges) and not the number of individuals hospitalized. An individual may be hospitalized more than once due to mental illness in a given year. Moreover, an individual may be transferred between NWT hospitals for treatment of mental illness. In both cases, each event is counted. Many people with mental illness are treated in the community rather than a hospital. Hospitalizations may represent more severe cases where the individual is unable to manage his/her illness in the community.

Many factors other than prevalence and severity of the illness may influence hospital admission, including the individual's coping skills, family supports and the socio-economic environment, including the extent of treatment options and formal supports in the community. Also, the analysis looks at the main reason for hospitalization in NWT hospitals only. Patients transferred to facilities outside of the territory are not recorded.

With these limitations in mind, Figure 3.6.2 presents hospitalization rates due to mental illness for fiscal years 1996 to 2003. In general, the number of hospitalizations was consistent for fiscal years 1996 to 1998, but jumped in 1999 due mainly to an increase in the number of hospitalizations for alcohol and drug use disorders, along with schizophrenia.



Source: CIHI Discharge Abstract Database; NWT Health & Social Services

Hospitalizations decreased between fiscal years 1999 to 2002 as the result of a decline in the number of hospitalizations due to alcohol and drug use disorders along with mood disorders such as depression.²⁹

Figure 3.6.3 shows the breakdown of hospitalization due to mental illness by major condition for fiscal years 2001 to 2003. Alcohol and drug use disorders were the main reason for hospitalizations due to mental illness (36%) during this period, followed by depression and bipolar/emotional disorders (30%). Depression accounted for 82% of this latter category. Other non-psychotic disorders include anxiety along with personality disorders and other neuroses. This category accounted for 12% of mental illness hospitalizations.

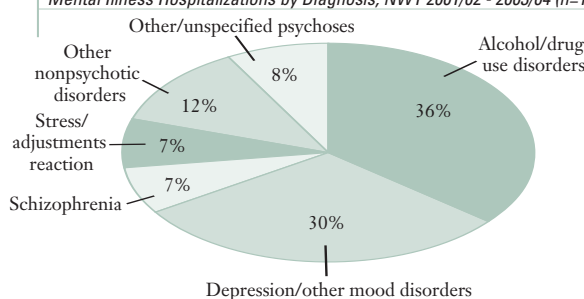
Figure 3.6.4 provides information on overall hospitalizations due to mental illness for different groups in the territory. Residents between 35 and 44 years of age had the highest, and residents less than 15 years of age the lowest hospitalization rates. In general, all residents over 15 years of age had similar hospitalization rates, but the types of mental illnesses varied between age groups. Most of those less than 15 years of age were hospitalized due to non-psychotic disorders such as unspecific neurosis and personality disorders.

Depression was the leading cause among those 15 to 24 years of age, followed by non-psychotic disorders including stress/adjustment reaction and psychoses such as schizophrenia. Meanwhile, alcohol and drug use disorders were the leading cause among residents 25 years of age and older. These conditions made up nearly half of all mental illness hospitalizations for individuals between 35 and 64 years of age.

Depression was the second leading cause for age groups between 25 and 64. Alcohol use disorder was also the leading cause of hospitalizations due to mental illness for seniors 65 years of age and older, followed closely by organic psychotic conditions such as dementia.

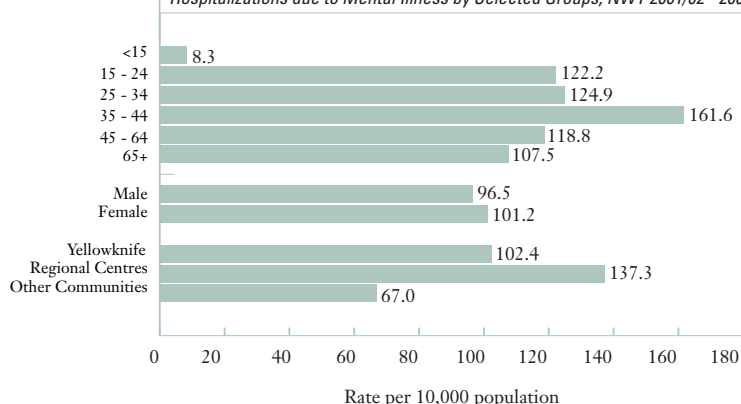
Hospitalization rates due to mental illness were similar for both males and females (96.6 and 101.2 per 10,000 population respectively). Alcohol and drug use disorders were the leading cause of hospitalization due to mental illness for males while depression was the leading cause for females. Depression was the second most common reason for mental illness hospitalization among males, while alcohol and drug use disorders were the second most common reason for females. Males were more likely than females to be hospitalized due to schizophrenia, while females were more likely than males to be hospitalized due to anxiety and personality disorders.

Figure 3.6.3
Mental Illness Hospitalizations by Diagnosis, NWT 2001/02 - 2003/04 (n=1,230)



Source: CIHI Discharge Abstract Database; NWT Health & Social Services

Figure 3.6.4
Hospitalizations due to Mental Illness by Selected Groups, NWT 2001/02 - 2003/04



Source: CIHI Discharge Abstract Database; NWT Health & Social Services

²⁹ Age standardization had very little effect on the crude rates.

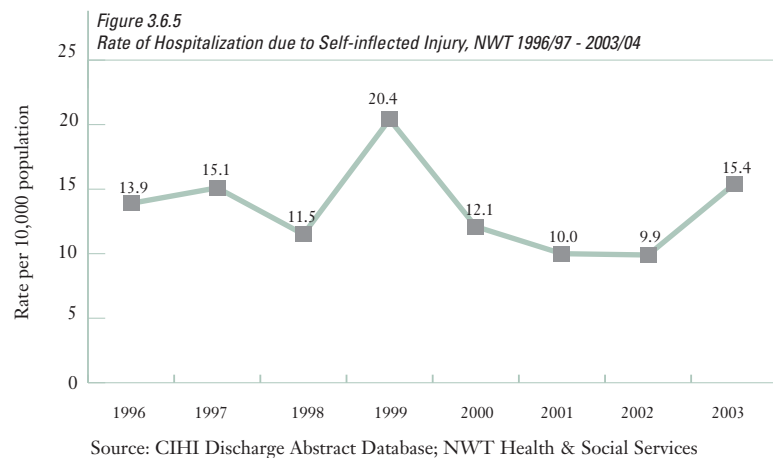
Individuals living in the regional centers had the highest hospitalization rate for mental illness, followed by residents of Yellowknife and residents of the smaller NWT communities. However, it is important to keep in mind that factors other than prevalence and severity of the illness may influence hospital admissions. Alcohol and drug use disorders accounted for nearly half of all mental illness hospitalizations for residents of the regional centers, compared to about one-third for residents of Yellowknife and the smaller communities. Depression accounted for about one-third of mental illness hospitalizations for residents of Yellowknife and the smaller communities, compared to about one-quarter for residents of the regional centers. Meanwhile, psychoses, including schizophrenia, accounted for about one-quarter of hospitalizations for residents of the smaller communities, compared to about 15% for residents of Yellowknife and 11% for residents of the regional centers.

Suicidal Behaviour

Suicidal behaviour is a sign of serious distress and sometimes is an outcome of mental illness such as depression as well as substance abuse. Assessing the incidence of attempted suicide is very difficult. Unless a suicide attempt leads to a serious injury requiring hospitalization, the individual may be treated in the community or he/she may not see a health professional at all. While hospitalization data provides some insight into suicide attempts, the information must be interpreted with caution because it provides only part of the picture.³⁰

Attempted Suicide

Between fiscal years 1996 and 2003, an average of 56 hospitalizations took place each year in the NWT due to self-inflicted injury. The number of hospitalizations ranged from a low of 41 in 2002 to a high of 83 in 1999.³¹ Given the relatively small number of cases involved, the spike in hospitalization rates for 1999 may be due to random fluctuation and should be interpreted with caution (see Figure 3.6.5). Aside from that particular year, hospitalization rates due to self-inflicted injury were fairly constant for most of the eight years studied.³² More years of data are required to determine if the increase between 2002 and 2003 is part of a new trend.



³⁰ Health Canada. 2002. *A Report on Mental Illnesses in Canada*. Ottawa, Canada

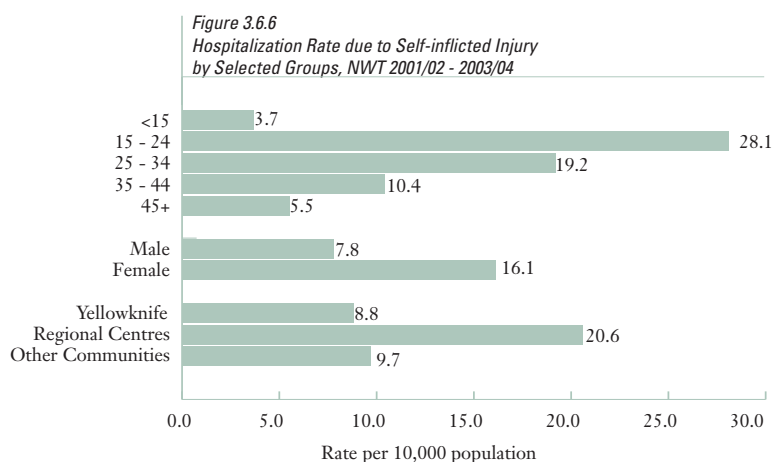
³¹ Again, it is important to keep in mind these cases represent hospital separations and not individuals.

³² Age standardization had very little effect on the crude rates.

Youth between 15 and 24 years of age had the highest hospitalization rate due to self-inflicted injury during the period 2001 to 2003 (28.1 per 10,000 population). Adults between 25 and 34 years of age had the second highest rate (see Figure 3.6.6). Overall, the hospitalization rate for females was two times higher than the rate for males (16.1 vs. 7.8 per 10,000).

Females between 15 and 24 years of age had the highest hospitalization rate (44.0 per 10,000 population). Meanwhile, the rate for males between 15 and 24 years of age and those age 35 and 44 years was about the same (13.7 and 13.9 per 10,000 respectively).

Hospitalization rates due to self-inflicted injury was over two times higher for residents of the regional centers, compared to residents of Yellowknife and residents of the smaller communities in the territory (see Figure 3.6.6). This difference was observed for all age groups studied. Youth between 15 and 24 years of age had the highest rates in all three types of community.



Source: CIHI Discharge Abstract Database; NWT Health & Social Services

Suicide

Suicide is a preventable cause of death. It reflects the “tip of the iceberg” of mental anguish and depression. Given the relatively small number of cases that occur each year in the NWT the following discussion needs to be prefaced with a caution: rates may be unstable and fluctuate from year to year, making it difficult to identify trends.

Figure 3.6.7 presents crude suicide rates in the NWT between 1990-92 and 2001-03. Three-year moving averages were calculated to smooth out annual fluctuations. Overall, suicide rates declined between 1990-92 and 1994-96 from 2.1 to 1.1 per 10,000 population. However, between 1994-96 and 1999-01 the rates increased significantly from 1.1 to 2.7 per 10,000 population, with most of this increase occurring between 1994-96 and 1997-99.³³

Between 1999 and 2003, 53 NWT residents died due to suicide, for an overall rate of 2.6 per 10,000. This was twice the 2001 Canadian crude rate of 1.2 per 10,000 population.³⁴ Suicide rates increase dramatically in the late teens and early twenties. Youth between 15 and 24 years of age were at highest risk of suicide (5.6 per 10,000 population), followed by residents between 25 and 44 years of age (see Figure 3.6.8).

³³ Age-standardization had very little effect on the crude rates. Direct adjustment using the 1996 NWT population as the standard produced the following age-standardized rates:

90-92	91-93	92-94	93-95	94-96	95-97	96-98	97-99	98-00	99-01	00-02	01-03
2.0	2.0	1.7	1.7	1.1	1.4	1.6	2.4	2.5	2.7	2.3	2.3

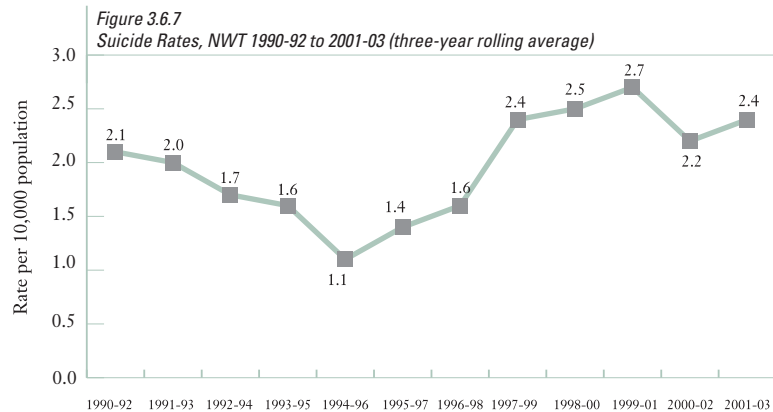
³⁴ Source Statistics Canada: <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>. The NWT rate was also two times higher when the rates were age-standardized.

Youth suicidal behaviour is in part related to events associated with this life stage. Identity formation, gaining acceptance and approval from peers and family is a stressful time for youth.

Sex differences in suicide rates were significant. Between 1999 and 2003, males were over five times more likely than females to die this way (4.2 vs. 0.8 per 10,000 population). Males between 15 and 24 years of age had the highest rate (9.5 per 10,000 population).

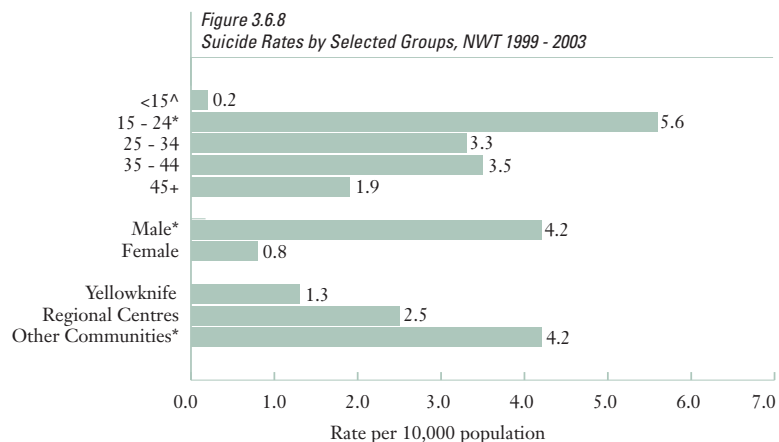
Both sexes appear to exhibit suicidal behaviour. While males are more likely than females to commit suicide, females are more likely than males to be hospitalized due to self-inflicted injury. The difference in rates of suicide and attempted suicide among men and women may in part be explained by males using more lethal means (firearms and hanging) to express their despair.³⁵

Residents of the smaller territorial communities had significantly higher rates of suicide than residents of Yellowknife. A number of socio-economic factors in the smaller communities including lower incomes, housing conditions and access to firearms may contribute to higher suicide rates.³⁶



Source: NWT Health & Social Services

Note: Significant increase between 1994-96 and 1997-99 ($p < 0.05$).



Source: NWT Health & Social Services

* Significant difference between age groups 15 - 24 and 45 +; between males & females; and between Yellowknife and other communities ($p < 0.05$).

^ Rate is based on small number of cases and very unstable; interpret with caution.

³⁵ Health Canada. 2002. *A Report on Mental Illnesses in Canada*. Ottawa, Canada

³⁶ *Ibid*

Chapter 4

Mortality

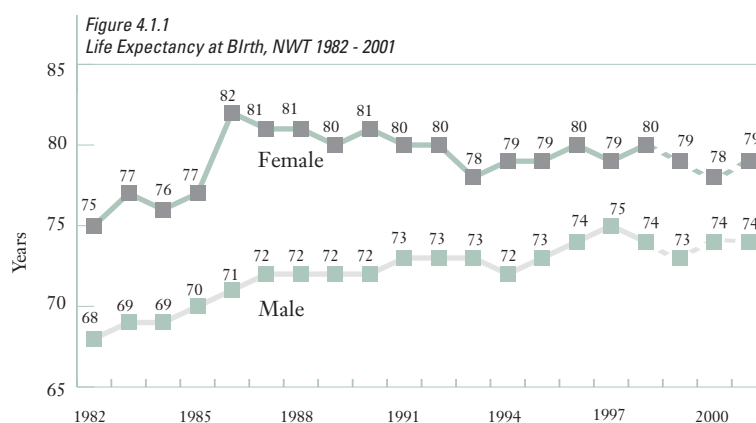
Understanding the causes of death is an important part of understanding the overall health of the population, since whatever causes death, especially premature death, provides valuable information about major risks to health. Information about mortality is also important to establish public health priorities. In particular, the information provided in this chapter highlights the need for prevention programs aimed at reducing unnecessary deaths from injuries and smoking in the Northwest Territories.

4.1 Life Expectancy at Birth

Life expectancy at birth is a commonly used summary indicator of the health status of populations. It refers to the average number of years a newborn can be expected to live if current mortality patterns continue. As such, life expectancy at birth is a reflection of the lifetime health and disease experience of those people who died in any given year. For example, if a NWT infant born in 2001 was to experience throughout his/her life the risks of dying that were observed in that year, he/she would be expected to live for 76 years. Meanwhile, the life expectancy at birth for Canadians in general was 79.5 years in 2001.¹

Given current mortality patterns, a male born in the NWT can be expected to live to the age of 74 years and a female infant would be expected to live 79 years. The difference can be explained in large measure by higher mortality rates for males between 15 and 54 years of age compared to females in the same age group, due mainly to a higher number of injury deaths.

Life expectancy at birth for men increased from 68 years in 1982 to 72 years in 1987. During the 1990s the trend leveled off (see Figure 4.1.1). Life expectancy for women also increased during the early 1980s from 75 years in 1982 to 81 years in 1987. The gap between men and women appears to have narrowed over the past two decades. During the early 1980s women lived on average seven years longer than men. By the late 1990s, the gap had narrowed to five years. It is important to point out that the estimates of life expectancy for the Northwest Territories should be interpreted with some caution due to the small number of cases used in the calculation. The small underlying counts have produced variability in this indicator as seen in Figure 4.1.1.



Sources: NWT Bureau of Statistics; & Statistics Canada

Note: Life expectancy at birth for years 1982 to 1997 obtained from NWT Bureau of Statistics. Three year rolling averages were used to smooth the annual variability. Life expectancy at birth for years 1998 to 2001 – represented by dotted line – obtained from Statistics Canada and represent annual estimates.

¹ Source: Statistics Canada: <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXEDisability-free Life Expectancy>

Disability-free Life Expectancy

Life expectancy measures length of life without considering health-related quality of life. There are currently few ways of knowing if individuals also enjoy a high quality of life or if they suffer from chronic illnesses and functional limitations. Disability-free life expectancy is one measure that expands the concept of life expectancy to include an individual's functional state in society.² It differentiates between years of life free of any major activity limitations and years lived with at least one major activity limitation. As such, this indicator is another measure of general functional health status of a population and places more emphasis on the quality of life rather than exclusively on the length of life.

The calculation of disability-free life expectancy is based on data obtained from vital statistics mortality databases and the Canadian census. Unfortunately this measure is currently available for only one year. According to Statistics Canada, disability-free life expectancy for both sexes in the Northwest Territories was estimated at 67.0 years in 1996. The estimate was 66.2 years for males and 67.8 for females. The overall Canadian disability-free life expectancy at birth was estimated to be 68.6 years. The estimate was 66.9 years for Canadian males and 70.2 for females.³

4.2 Infant Mortality

Infant mortality refers to the death of babies less than one year of age. The infant mortality rate is the proportion of these deaths per 1,000 live births and has traditionally been considered an important public health indicator. It is a measure of a region's health status along with the effectiveness of preventive care and the attention paid to the health of the mother and her infant.⁴ The infant mortality rate is related to the underlying health of the mother, public health practices, the mother's socioeconomic conditions, and availability of, and appropriate use of health care, for and by pregnant women and infants.

Before an analysis of infant mortality rates in the Northwest Territories is presented, it is important to point out that due to the territory's small population, along with the small number of births and infant deaths, the trends presented must be interpreted with caution. For example, two or three additional infant deaths in any year can change the annual rate substantially. Recognizing this limitation, Figure 4.2.1 presents three-year moving averages, thereby smoothing the annual variability. Even using this method, infant mortality rates still fluctuate substantially, particularly during the 1990s.

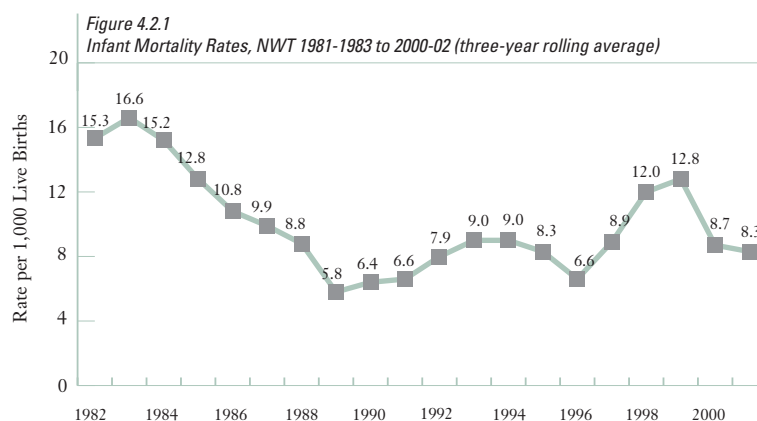
² Mayer F, Ross N., Berthelot J., Wilkins R. 2002. "Disability-free life expectancy by health region." *Health Reports*, 13:49-60.

³ Source: Statistics Canada: <http://www40.statcan.ca/101/cst01/health38.htm>

⁴ Canadian Institute for Health Information. *Community Health Indicators: Definitions and Interpretations*. 1997.

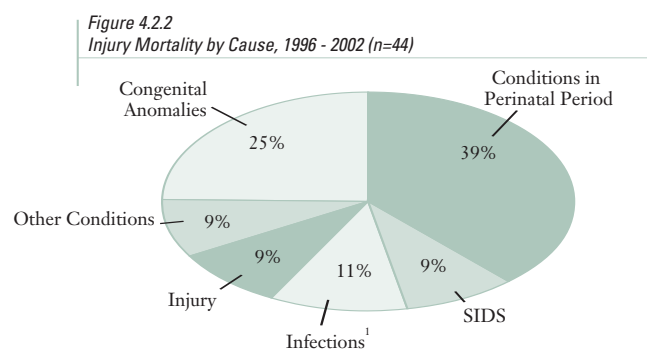
Figure 4.2.1 shows that the infant mortality rates in the Northwest Territories declined significantly throughout the 1980s from 16.6 deaths per 1,000 live births for 1982-84 to a rate of 5.8 per 1,000 live births for 1988-90 (a decline of about 65%). The rates leveled off during the 1990s. The jump in rates at the end of the decade was not significant and was attributable to a higher than average number of infant deaths in one year - 1998 -

when 12 deaths were recorded compared to an annual average of 6 deaths during the rest of the 1990s. The NWT infant mortality rate was 8.3 per 1,000 live births for 2000-02 while the 2001 Canadian rate was 5.3. This difference was not statistically significant.⁵



Sources: NWT Bureau of Statistics & NWT Department of Health & Social Services

Figure 4.2.2 presents the leading causes of infant mortality for years 1996 to 2002.⁶ Conditions originating in the prenatal period, which include disorders related to short gestation, low birth weight, and respiratory distress was the leading cause of infant death (39%), followed by congenital anomalies (25%). Meanwhile, sudden infant death syndrome (SIDS) and various types of infections each accounted for 9% of all infant deaths during this period.



Source: NWT Department of Health & Social Services

¹ Infections include bronchopneumonia

Infant mortality can be separated into neonatal (deaths under 28 days of life) and post-neonatal (deaths from 28 to 364 days). Generally, the causes of deaths are different in each category and this has implications for prevention.

Neonatal deaths are considered to be more closely associated with the quality of medical care, while post-neonatal deaths are more heavily influenced by socioeconomic conditions.⁷ For the period 1996 to 2002, neonatal deaths accounted for 61% of all infant deaths and post-neonatal 39%.

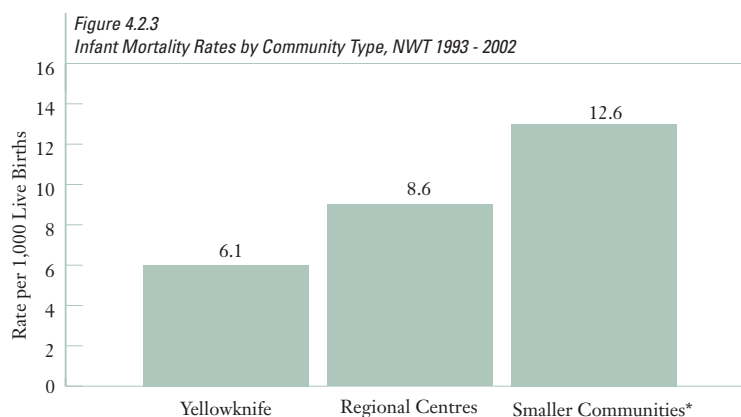
All of the deaths due to conditions originating in the perinatal period occurred during the first 27 days. The vast majority of deaths due to congenital anomalies also occurred during the neonatal period. In fact, all but one of the neonatal deaths were due to these two categories. Meanwhile, sudden infant death syndrome, infections, and injury were the leading causes of post-neonatal deaths.

⁵ Source Statistics Canada: <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>

⁶ The causes of infant death for the year 1998 were no different than causes recorded for the entire period 1996 and 2002.

⁷ Young, T.K. 1998. *Population Health: Concepts and Methods*. Oxford University Press: New York.

Due to the small numbers of infant deaths and births in the NWT, comparisons between community types were made using ten years of data. Figure 4.2.3 shows the average infant mortality rate by community type between 1993 and 2002. During that time period, the rate for the smaller communities was significantly higher than the rate for Yellowknife (12.6 vs. 6.1 per 1,000 live births). Meanwhile, at 8.6 per 1,000 live births, the rate in the regional centers was not significantly different from the other two community categories.

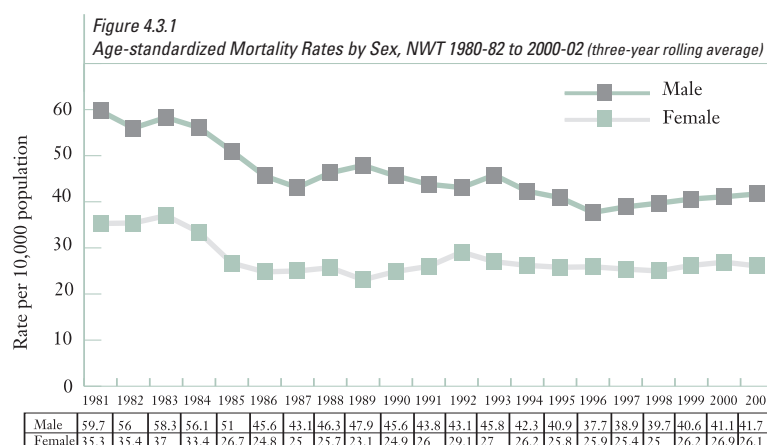


Source: NWT Department of Health & Social Services

* Smaller communities significantly higher than Yellowknife ($p < 0.05$)

4.3 Overall Mortality

Age is the major factor influencing risk of death. The higher the proportion of elderly in the population, the higher the death rate for that population. Differences in overall crude rates between different populations or within a population over time, may therefore be due to differences in age structure rather than differences in the risk of death. To remove this effect and still provide one summary measure for the total population, it is necessary to control for differences in age structure through a process of age standardization.⁸ Moreover, due to the relatively small number of annual deaths for specific age groups, moving averages were calculated for three-year periods and these estimates were used to calculate the standardized mortality rates. Averaging estimates over longer time periods is a useful method for reducing variability when dealing with a small number of observations for any particular time period.



Source: NWT Department of Health & Social Services

In 2000-02, the overall age-standardized mortality rate in the NWT was 34.0 per 10,000 population. This represents a significant decrease from 48.4 per 10,000 during 1980-82. Most of this decline occurred during the early 1980s. There has been no significant change in age-standardized mortality rates between 1986-88 and 2000-02, with rates ranging between 32 and 36 deaths per 10,000 population during that period.

⁸ In this analysis, the July 1st NWT 1991 population estimates were used as the standard population and rates were standardized using the direct method. It is important to point out that standardized rates are not "real" rates but are fictional rates based on an arbitrarily chosen standard population. However, the standardized rate can be trusted in a head-to-head comparison with rates adjusted to the same standard population.

The mortality rates for both sexes declined significantly during the 1980s but remained relatively steady during the 1990's (see Figure 4.3.1). In 2000-02 the male age-standardized mortality rate was significantly higher than the female rate: 41.7 vs. 26.1 per 10,000 population.

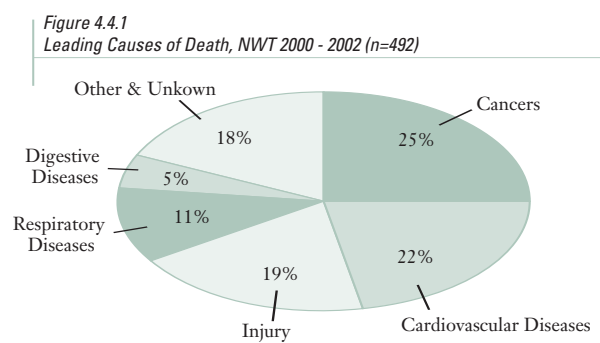
Because of the relatively small number of events and the sizes of the population, mortality rates for each community type were calculated for five year time periods. For the period 1998 to 2002, the age-standardized mortality rate in the smaller communities was significantly higher than the rate in Yellowknife (40.4 vs. 31.9 per 10,000 population). Meanwhile, at 38.3 per 100,000, the mortality rate for the regional centers was similar to the rate for the smaller communities, but the difference with Yellowknife neared significance ($p = 0.05$).

4.4 Leading Causes of Mortality

An examination of the leading causes of death reveals much about lifestyle choices. People who smoke are more likely to die of cancer. Those who eat poorly and are relatively inactive increase their risk of dying of a cardiovascular disease. Individuals who engage in high-risk behaviours are more likely to die from an injury.

Between 2000 and 2002, the leading causes of death in the Northwest Territories were cancers (25%), cardiovascular diseases (22%), and injuries (19%). Respiratory diseases such as chronic obstructive pulmonary disease accounted for 11% of all deaths during this period. Together these four major causes accounted for three out of every four deaths in the territory (see Figure 4.4.1).

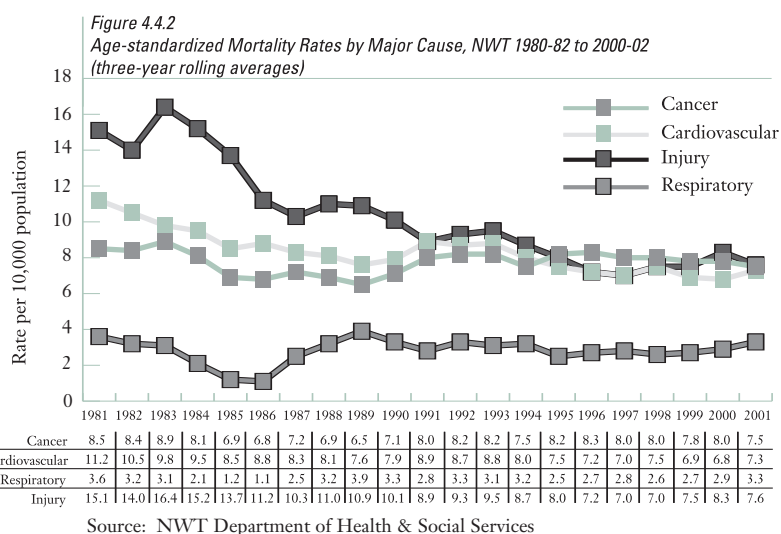
The four leading causes of death were the same for both males and females. However, the relative ranking differed between the two groups. For males, cardiovascular disease was the leading cause (26%), followed closely by injury (23%) and cancers (23%), with respiratory diseases at 11%. Cancer was the leading cause of death for females (28%), followed by cardiovascular disease (16%), injury (13%) and respiratory diseases (11%).



Source: NWT Department of Health & Social Services

The leading causes of death were also similar for each community type, but again, the relative ranking for each major cause differed. Cancer accounted for 32% of all deaths among Yellowknife residents between 2000 and 2002, followed by cardiovascular diseases (20%) and injury (16%). Diseases of the digestive system, which include liver diseases, accounted for 8% for Yellowknife residents, with respiratory diseases at 7%. Meanwhile, cardiovascular disease was the leading cause of death for residents living in the regional centers of Hay River, Fort Smith and Inuvik (29%), followed by cancer (21%), injury (17%) and respiratory diseases (11%). In the smaller NWT communities, injury accounted for 22% of all deaths between 2000 and 2002. Cancers also accounted for 22%, followed by cardiovascular diseases (20%) and respiratory diseases (13%).

Figure 4.4.2 presents the three-year average age-standardized rate of death by the four leading causes between 1980-82 and 2000-02. The age-standardized cancer mortality rate did not significantly change during this period. It was 8.5 deaths per 10,000 population during 1980-82, 7.1 per 10,000 in 1990-92 and 7.5 per 10,000 in 2000-02.⁹ Meanwhile, the age-standardized rate for cardiovascular disease declined significantly between 1980-82 and 1988-90 from 11.2 deaths per 10,000 population to a rate of 7.6 per 10,000. The rate remained steady throughout the 1990s and stood at 7.3 per 10,000 during 2000-02.



This same general trend was also observed for age-standardized injury mortality rates. The rate declined significantly during the 1980s from 16.4 deaths per 10,000 population in 1982-84 to 8.9 per 10,000 in 1990-92. Most of this drop was due to a decrease in the number of deaths from fires, off-road motor vehicle crashes, and unintentional poisonings. While the age-standardized injury mortality rate continued to decline slightly during the 1990s, to 7.6 deaths per 10,000 in 2000-02, the change was not significant. Meanwhile, the age-standardized mortality rate due to respiratory diseases did not change significantly during the time period. It was 3.6 deaths per 10,000 population in 1980-82, 2.8 per 10,000 in 1990-92 and 3.3 per 10,000 population in 2000-02.

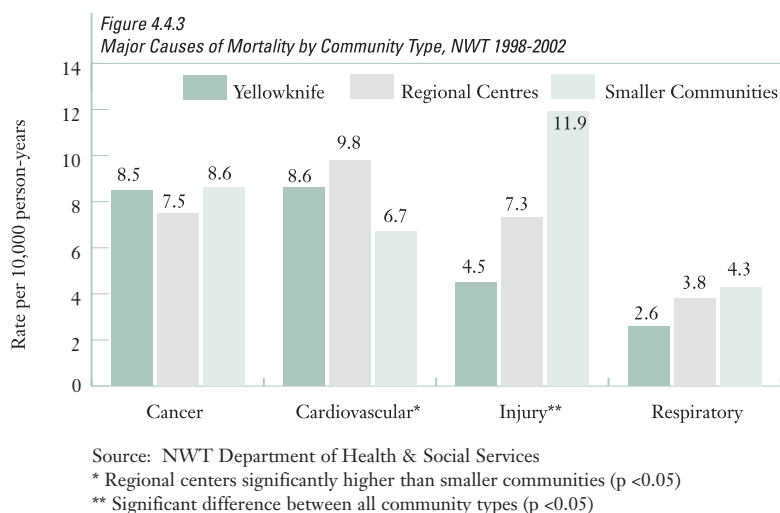


Figure 4.4.3 presents the age-standardized mortality rates by leading cause for each community type for the time period 1998 to 2002.¹⁰ The likelihood of dying due to cardiovascular disease was significantly higher for residents of the regional centers when compared to the rate for residents of the smaller communities. Mortality rates for cancer and respiratory diseases were similar for each community type.

Residents of smaller communities were over two times more likely than residents of Yellowknife to die from an injury during this time period (11.9 deaths vs. 4.5 per 10,000 population). The injury mortality rate for the former group was also significantly higher than the rate for residents of the regional centers, who in turn, were significantly more likely to die from an injury than residents of Yellowknife.

⁹ The crude mortality rates for cancer increased significantly between 1990 and 2002 ($p < 0.05$). The increase was largely due to an aging population during that period (see section 6.1.1).

¹⁰ The time period under study was expanded to five years in order to provide more stable rates.

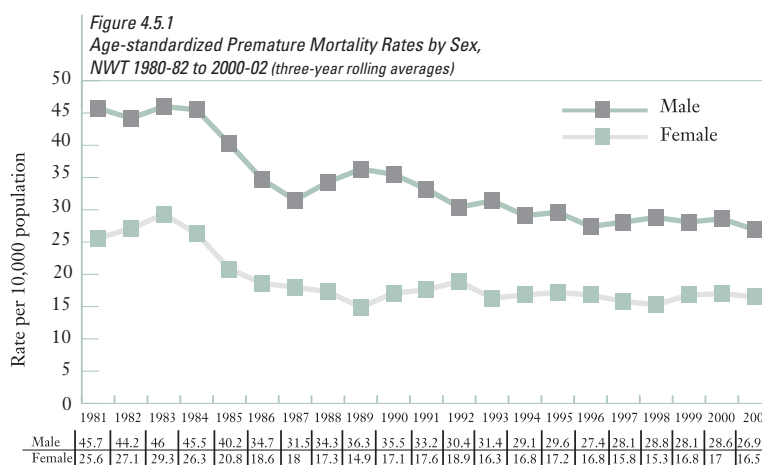
4.5 Premature Mortality

The premature mortality rate (PMR) is a standardized rate of “premature” death, that is, death occurring before the age of 75 years. PMR is considered a good overall measure of the health status of the population. Regions with higher rates of premature death tend to have higher burden of illness and lower rates of self-reported health.¹¹ Moreover, PMR is a good way to track improvements in the health of population, as rates should drop with improving health conditions and thus longer lifespan.

As was the case with mortality rates in general, the premature mortality rates in the NWT declined significantly during the 1980s from 36.6 deaths per 10,000 population in 1980-82 to 26.0 per 10,000 in 1990-92. Much of the decrease was due to a decline in the rate of injury deaths. A slight drop continued through the 1990s, by 2000-02 the age-standardized premature mortality rate had reached 22.0 per 10,000 population, but this trend was not significant. The 2000-02 NWT rate was significantly higher than the 2001 Canadian age-standardized rate of 15.6 per 10,000 population.¹²

Males in the NWT are much more likely than females to die before the age of 75. In 2000-02, the age-standardized male premature mortality rate was 26.9 deaths per 10,000 population compared to the female rate of 16.5 per 10,000 (see figure 4.5.1). This difference was in large part due to much higher injury mortality rates among males.

Most injury deaths occurred before the age of 75. The rate for both sexes declined significantly during the 1980s but leveled off during the 1990s.



Source: NWT Department of Health & Social Services

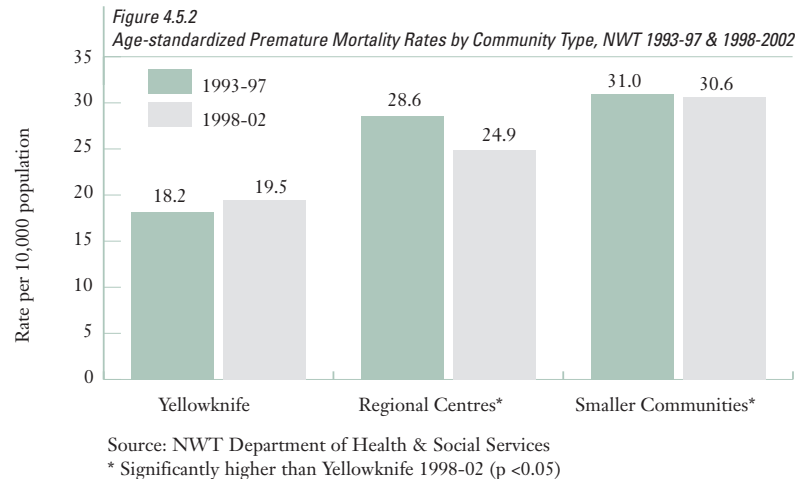
Note: Significant decline for both males and females between 1980/82 and 1990/92 ($P < 0.05$)

Cancers accounted for 29% of all premature mortality between 2000 and 2002, followed closely by injury (27%). Cardiovascular diseases accounted for 15% of all premature deaths during these three years. Among males, injury accounted for 33% of all premature deaths, followed by cancer (26%) and cardiovascular diseases (17%). Meanwhile, cancer was the leading cause of premature death for females (35%) followed by injury (16%).

¹¹ Martens P.J., et. al. (2003). *The Manitoba RHA Indicators Atlas: population-Based Comparisons of Health and Health Care Use*. Manitoba Centre for Health Policy. Winnipeg.

¹² Source: Statistics Canada. All rates were age-standardized using the 1991 NWT population as the standard.

Figure 4.5.2 provides age-standardized premature mortality rates by community type for the periods 1993-1997 and 1998-2002.¹³ Rates in the two time periods were similar for all community types. When the 1998-2002 age-standardized premature mortality rates were compared, there were significant differences between community types. The rate in the regional centers was significantly higher than the Yellowknife rate. The rate in the smaller communities was also significantly higher than the rate in Yellowknife. Moreover, the difference between the smaller communities and the regional centers tended towards significance ($p=0.06$).



¹³ Because of small population sizes, premature mortality rates for each community type were calculated for five year time periods to ensure stability.

Part B:

Determinants of Health

Chapter 5

Social and Economic Influences on Health

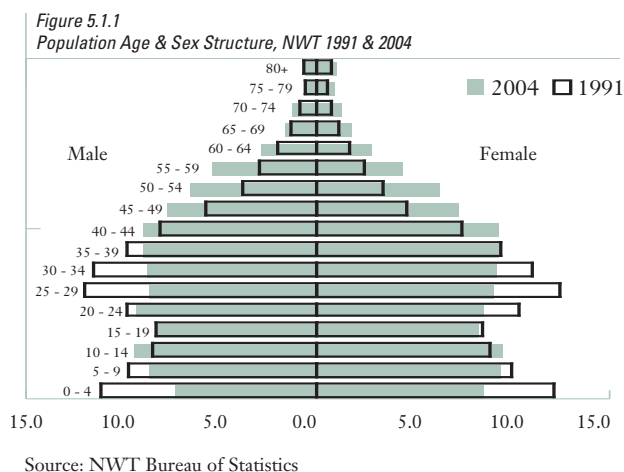
The demographics of a population – its size, composition and other characteristics – have an influence on the overall health of that population. For example, a population with a large proportion of elders will have different health conditions and health care needs than a population with a large proportion of children. Socioeconomic status is also an important determinant of health. There are positive correlations between education, employment, income and health status. Simply put, those who are poor and are struggling through lack of education and/or employment tend to have greater needs for health care and social services. Low socioeconomic status may result in ill health due to associated deprivation and stress, and lead to a narrower degree of control over life circumstances and, hence, ability to take action.¹

5.1 Age and Sex

Figure 5.1.1 shows the age structure of the Northwest Territories population in 1991 and 2004. Differences in the shapes of the population pyramids point to changes in the age distribution. The bottom half of the pyramid has narrowed over the last 14 years, while the top half has widened, indicating an aging population. The change is particularly evident for those between 45 and 64 years of age.

In 2004 approximately 25% of the population was under 15, down from 28% in 1991. The proportion of the population between 15 and 44 also declined during this time period from 56% to 50%. In contrast, 20% of the population was age 45 to 64, and just over 4% of the population was 65 & over in 2004, compared to 13% and 3% in 1991.

Men slightly outnumber women overall (52% compared with 48%). However, in the 75 and over age group, there were more women than men – 54% and 46% – due to the longer life expectancy of women.



Nearly half of residents age 65 years and older currently live in the smaller NWT communities. Seniors make up 5% of the population in these communities, compared to 2% in Yellowknife and 3% in the regional centers of Hay River, Fort Smith and Inuvik. The proportion of the population less than 15 years of age is also higher in the smaller communities. As a result these communities have the highest dependency ratios² in the NWT.

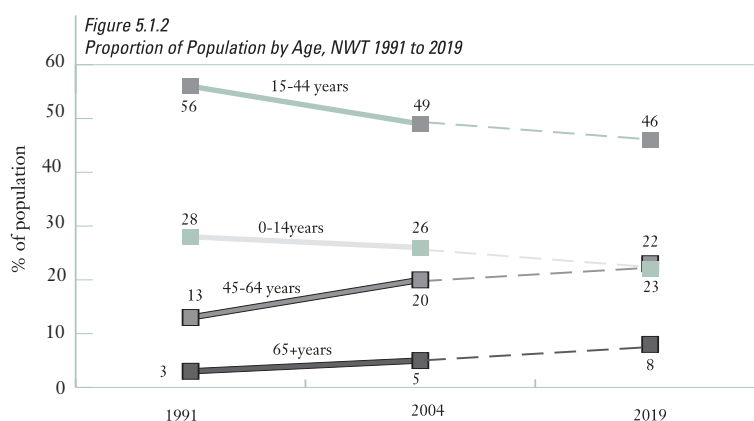
¹ T. Kue Young, *Population Health: Concepts and Methods* (New York: Oxford Press, 1998).

² The dependency ratio is the proportion of the population under the age of 15 and over the age of 65, compared to the remainder of the population.

Between 1991 and 2004, the population of the NWT increased by 10% from 38,750 to 42,810 individuals. The size of a population increases when there is an excess of births over deaths (natural increase) and/or more people move into an area than leave (net in-migration). Over the past fifteen years, the number of births has tended to outnumber deaths by about 5 to 1. Migration has had a large variable impact on the population of the territory during this time. The population of the NWT decreased between 1996 and 2001 due to net out-migration associated with government downsizing and a downturn in the gold mining industry. Since 2001 the population increased each year as more people moved into the territory due to a recent upturn in the economy following the development of two diamond mines and oil and gas exploration. The population is expected to enter a period of steady increases, as the economy continues to expand. By 2019, the population is projected to be just over 50,300.³

While the NWT population is and will continue in the near future to be young relative to the rest of Canada, it is nonetheless aging. As can be seen in Figure 5.1.2, the proportion of the population age 65 years and older is expected to increase from 5% currently to 8% by 2019. It is anticipated that the number of seniors will more than double during this period, making it the fastest growing age group. Meanwhile, the number of people between 45 and 64 years of age is expected to increase by 35%, making it the second fastest

growing age group. Overall, as the population ages, the proportion of the NWT population age 45 and older is expected to increase by 50% over the next 15 years. As a result, the number of residents susceptible to a large number of chronic conditions including heart disease, diabetes and cancer, and the need for associated services, will likely increase unless major shifts occur in many of the underlying determinants of health such as personal health practices (see chapter 7).



Source: NWT Bureau of Statistics

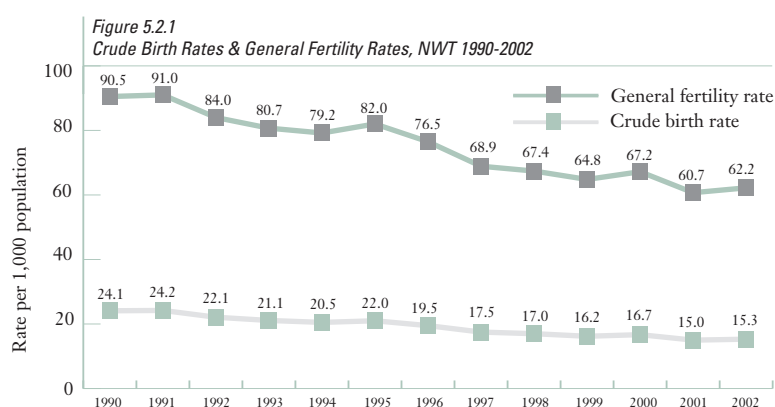
Note: Dotted line indicates projected population estimates.

5.2 Births and Fertility

As noted earlier, an excess of births over deaths is one of the major reasons why the size of a population increases. Examining trends and patterns of birth rates provides some indication of reproductive health along with the need for services that contribute to reproductive and infant health. Several indicators are used to measure the fertility of a population. One measure is the crude birth rate – the ratio of the number of live births during a given period of time to the population at that time. A more refined measure is the general fertility rate – the ratio of the number of live births to the number of women of childbearing age (usually 15 to 44 years of age).

³ NWT Bureau of Statistics: <http://www.stats.gov.nt.ca/Statinfo/Demographics/population/popproj.html>

The crude NWT birth rate decreased by 36% between 1990 and 2002, from 24.1 to 15.3 births per 1,000 people. Figure 5.2.1 also shows a significant decline in the general fertility rate from 90.5 to 62.2 per 1,000 women between 15 and 44 years of age. The number of women of childbearing age increased slightly during this time. Meanwhile, the annual number of births decreased from about 900 during the early 1990s to 635 by 2002.

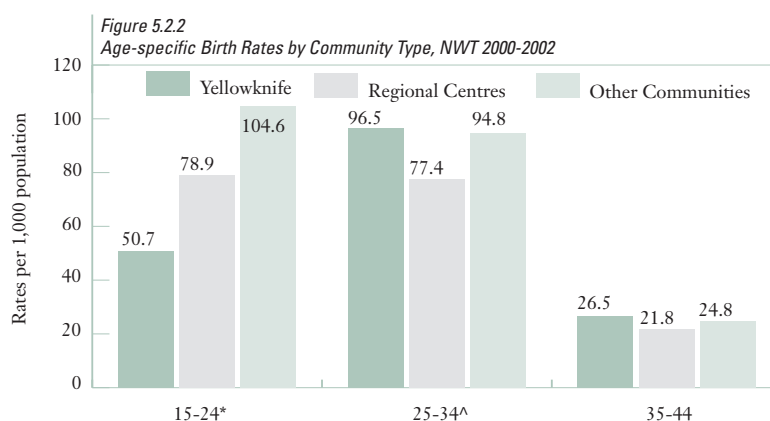


Source: NWT Health & Social Services

Note: Significant decline for both crude birth rate and general fertility rate ($p < 0.05$).

Age-specific fertility rates – the number of births to women in a specific age group – constitute another, more detailed, indicator of fertility within a population. A decrease in the age-specific birth rates among women between 15 and 24 and those between 25 to 34 years of age accounted for the decline in the general fertility rate observed in figure 5.2.1. The age-specific birth rate for women 15 to 24 decreased significantly from 110.9 in 1990 to 70.7 births per 1,000 in 2002 (see section 8.3 for a discussion of teen births). For women between 25 and 34 years of age, the birth rate declined significantly from 121.6 to 97.6 per 1,000. Meanwhile, the birth rate for women between 35 and 44 remained fairly steady throughout the thirteen-year period (21.4 per 1,000 in 1990 and 20.5 per 1,000 in 2002).⁴

The general fertility rates for Yellowknife and the regional centers of Hay River, Fort Smith and Inuvik were similar during the period 2000 to 2002 (56.9 and 58.1 births per 1,000 respectively). Both were significantly lower than the rate for the smaller communities (77.7 per 1,000 women 15 – 44 years of age). Figure 5.2.2 presents age-specific birth rates by community type.



Source: NWT Health & Social Services

* All groups significantly different; ^ Yellowknife and other communities significantly higher than regional centers ($p < 0.05$).

⁴ Births to women under 15 years of age were assigned to the 15 – 24 age group. Births to women over 44 were assigned to the 35 – 44 age group.

Women giving birth in the smaller communities were more likely than those in Yellowknife and the regional centers to be 15 to 24 years of age. Nearly one half of all births for women in these communities occurred in this age group, compared to one-quarter in Yellowknife and about 40% in the regional centers. The birth rate for women age 15 to 24 in the smaller communities was significantly higher than the rate in Yellowknife and the regional centers. Meanwhile, the rate for the regional centers was significantly higher than the rate for Yellowknife (see Figure 5.2.2).

The birth rates for women 25 to 34 years of age were similar for Yellowknife and the smaller communities (96.5 and 94.8 births per 1,000). Both were significantly higher than the rate for women living in the regional centers (77.4 per 1,000). In Yellowknife, nearly 60% of all babies were born to women in this age group, compared to 47% in the regional centers and 44% in the smaller communities. However, women in this age group living in the smaller communities were more likely than women in the regional centers and Yellowknife to have previously given birth (84%, 67% and 53% respectively).⁵ Meanwhile, the birth rates for women 35 to 44 years of age were similar for all three categories of community types. In Yellowknife, a higher proportion of births occurred among women in this age group (18%) compared to 13% for the regional centers and 9% for the smaller communities.

5.3 Education and Literacy

Higher levels of education are associated with higher levels of health, longer life expectancy and other positive outcomes. Educational attainment is a key factor in socioeconomic status. A person with a high level of education is more likely to be employed and earning a higher income than someone with low educational attainment. Research also indicates that people with higher levels of education are more likely to engage in healthy behaviours and avoid unhealthy lifestyle choices.⁶ For example, within the NWT the smoking rate for residents 20 years of age and older with less than high school is more than two times higher than the rate for those with a university degree. The age-standardized rate for the former group was 62% in 2003, compared to 27% for the latter group.⁷ A high level of education provides people with knowledge and skills for problem solving and helps develop a sense of mastery over life circumstances. It also improves their ability to access and understand information that promotes good health.

⁵ All differences were statistically significant ($p < 0.05$).

⁶ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Towards a Healthy Future: Second Report on the Health of Canadians*. Public Works and Government Services Canada.

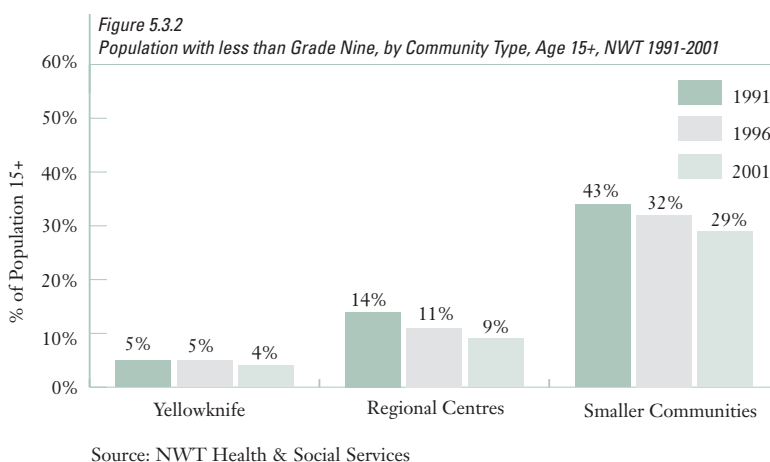
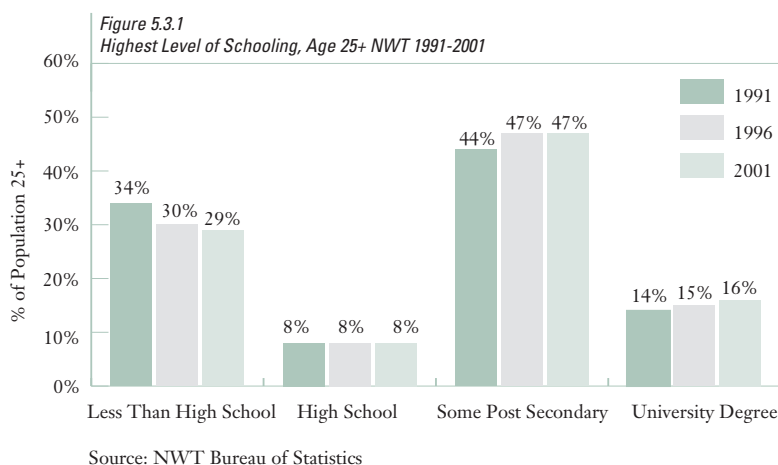
⁷ Source: Statistics Canada: 2003 CCHS cycle 2.1 Share File. The 2003 NWT population was used as the standard. Age-standardization was necessary because education levels and age are inversely associated as are age and smoking rates. For example, 63% of population age 65 and over have less than grade nine, compared to less than 10% for those under the age of 54.

Figure 5.3.1 shows the educational attainment of Northwest Territories residents age 25 and over improved between 1991 and 2001. The percentage of the population with less than high school decreased from 34% to 29%. Meanwhile, the percentage of the population with some post-secondary increased from 44% to 47% and the percentage with a university degree increased from 14% to 16%. Between 1991/92 and 2000/01, the number of full-time post secondary

enrollments increased by over a third from around 950 to over 1,300.⁸ As for gender differences, there is presently little difference in educational attainment between men and women.⁹

Perhaps the education indicator most relevant to health and well-being is literacy. Without strong social supports, people with low literacy skills may find it difficult to access health information and services. They are also more likely to be unemployed and poor. In the absence of comprehensive data on NWT literacy levels, the completion of grade nine is used as a proxy indicator for being literate. Of course, there are people with less than grade nine who are literate, and those with higher levels of education who have poor literacy skills.

The biggest change in educational attainment in the NWT is found in the proportion of the population having less than a grade nine education. The percentage of the population with less than grade nine dropped from 19% in 1991 to 13% in 2001. As seen in Figure 5.3.2, the percentage of the population with less than grade nine decreased across the NWT over that ten-year period. However, despite dramatic improvements, the smaller communities still have the highest percentages of people with less than grade nine. In 2001, over one in four residents of these communities have less than grade nine – about seven times the percentage for Yellowknife residents.



⁸ NWT Department of Education, Culture and Employment, *NWT Indicators 2003*, Figure 16.

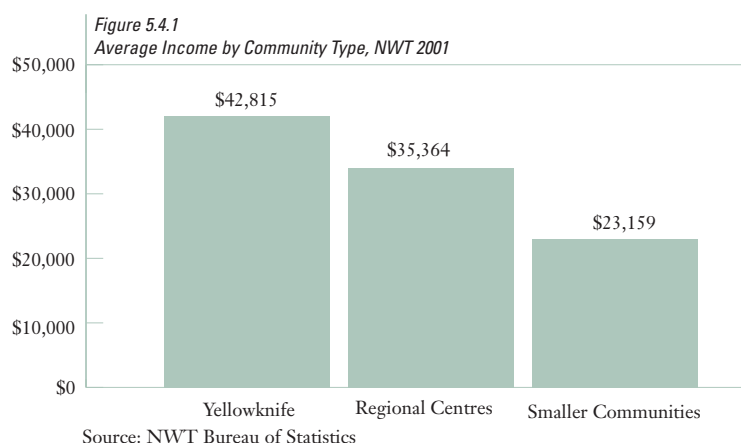
⁹ Statistics Canada, *2001 Census*.

5.4 Income

The 1996 Report on the Health of Canadians stated that: “Higher incomes are related to better health, not only because of the ability to purchase adequate housing, food, and other basic necessities. A higher income also means more choices and a feeling that we have more control over decisions in our life. This feeling of being in control is basic to good health.”¹⁰ Higher income generally results in more control and discretion. Limited options and poor coping skills for dealing with stress can increase vulnerability to a range of diseases.

People in higher income brackets tend to be healthier and live longer than those in the lower brackets. For example, NWT residents in the lowest income group were more than two times as likely than residents in the highest income group to rate their health as fair or poor.¹¹ Moreover, the relationship between health and income is not just a matter of being very rich or very poor. There is also a gradient in health status, such that health increases at each step of the income hierarchy. In other words, high-income people are more likely to be healthy than middle-income people, who are in turn healthier than low-income people. A gap between rich and poor exists for most types of illness and for almost all causes of death. In other words the poor do not only suffer from particular types of diseases but are generally more susceptible to becoming ill and to die.¹²

Average income is one measure of income within a population. As can be seen in Figure 5.4.1, the average income across the NWT varies, from a high of \$42,815 in Yellowknife, to a low of \$23,159 for residents of the smaller communities. There are also income differences between men and women. Men tend to earn more than women, at an average \$39,795 compared to \$29,911 in 2000, according to 2001 Census.

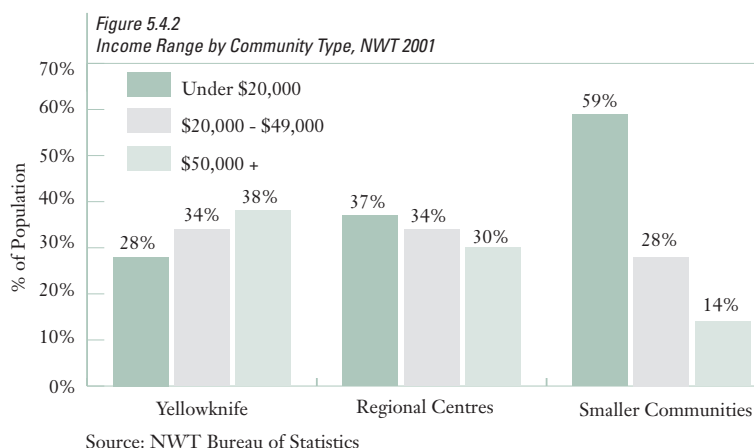


¹⁰ Federal, Provincial and Territorial Advisory Committee on Population Health. 1996. *Report on the Health of Canadians*. Public Works and Government Services Canada. p. 28.

¹¹ Since income is strongly associated with age with the young and the old tending to have lower incomes than people between 25 and 64, the rates were age-standardized using the 2003 NWT CCHS population as the standard.

¹² Dennis Raphael and Sara Farrell, “Income Inequality and Cardiovascular Disease in North America: Shifting the Paradigm” in *Harvard Health Policy Review*, Fall 2002, Vol. 3, No. 2.

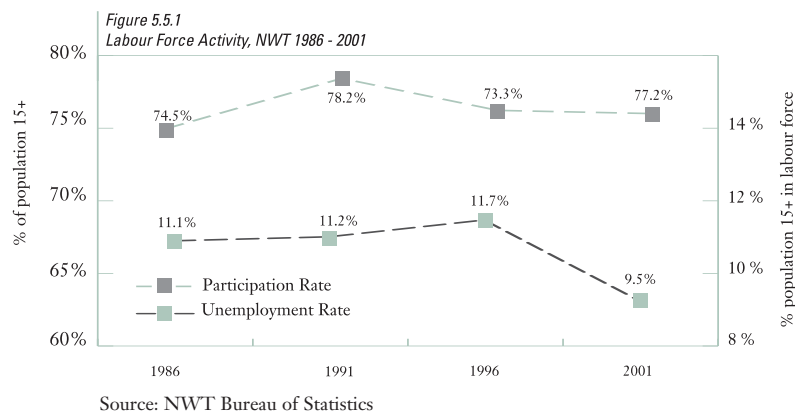
Another way to measure income is to present the proportion of the population by income levels or brackets. Figure 5.4.2 shows the proportion of the population by community type across three income brackets: under \$20,000, \$20,000 to \$49,999, and \$50,000 and up. Yellowknife has the lowest proportion of income earners in the less than \$20,000 bracket, and the highest in the \$50,000 and up bracket. Conversely, the smaller communities have the highest proportion of income earners at less than \$20,000 and the lowest proportion in the \$50,000 and up bracket.¹³



5.5 Employment

Employment is another key aspect of the social and economic environment that affects health. Unemployed people tend to have a reduced life expectancy and suffer more health problems than those who are employed. Even unstable employment can be a distressing situation and the resulting stress could in turn have a negative impact on people's physical, mental and social well-being.¹⁴

According to census data, in 2001, 77% of NWT residents 15 years of age and older were participating in the labour force – they were either employed or actively looking for work. This means that 23% of the population was outside of the labour force engaged in unpaid household activities or otherwise not actively looking for employment. The unemployment rate was 9.5% in 2001, down



from 11.7% in 1996 (see Figure 5.5.1). The economy of the NWT has continued to improve, creating more jobs and lowering unemployment. Signs of this improvement were seen in a monthly labour force survey, with more recent data for 2003 putting the NWT unemployment rate at 7.1% with participation rates remaining fairly constant since 1991.¹⁵

¹³ Comparative analysis of income over several years is difficult due to changes in the cost of living, i.e. a dollar was worth more five years ago than it does today.

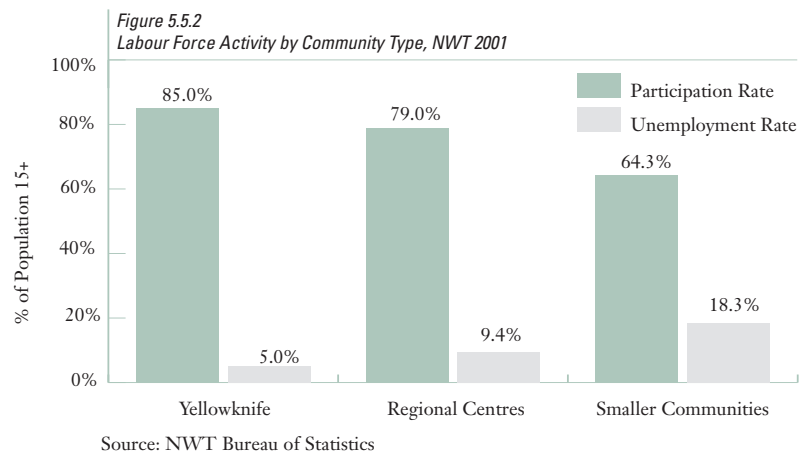
¹⁴ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Towards a Healthy Future: Second Report on the Health of Canadians*. Public Works and Government Services Canada.

¹⁵ NWT Bureau of Statistics, *Statistics Quarterly*, Vol. 26 No. 4.

Men participate in the labour market at a higher rate than women. In 2001, the participation rate for men was 80.5% compared to 73.6% for women. Meanwhile, the unemployment rate was higher for men than for women (10.4% compared to 8.5%).

Women's labour force participation rate increased significantly during the 1980s, from 59% in 1981 to 73% in 1991.

Young people 15 to 24 years old had more difficulty finding work relative to older age groups. At 18%, the unemployment rate for this age group was almost twice as high as other age groups in 2001. Meanwhile, they had the second lowest participation rate (62%) – seniors had the lowest (16%). While the low participation rate for young people may reflect enrollment in education programs, it may also indicate the difficulties they were having in entering the labour market.



Within the Northwest Territories there were significant differences between communities in terms of labour market activity. The unemployment rate was lower, and the participation rate was higher in Yellowknife than in the rest of the territory. In turn, the labour markets were stronger in the regional centers of Hay River, Fort Smith and Inuvik than in the smaller communities.

In 2001, the unemployment rate in Yellowknife was 5.0% compared with 9.4% in the regional centers and 18.3% in the smaller communities (see Figure 5.5.2). At 64.3% the participation rate in the smaller communities was much lower than the rate in Yellowknife (85.0%) and the regional centers (79.0%). Due to a scarcity of steady employment, people in smaller communities may eventually give up looking for work and therefore become excluded from the labour force figures. If these people were included in the labour force figures, then unemployment figures would actually be higher.¹⁶ Labour force participation rates tend to increase and unemployment rates tend to decrease with higher education levels. As noted earlier, people in Yellowknife and the regional centers also tended to have higher levels of education than the population in the smaller communities.

¹⁶ For comparison of standard (national) and alternative (no job available) definitions of unemployment, see NWT Bureau of Statistics, 1994 Labour Force Survey Overall Results and Community Detail, Report No. 1, p. 14.

The Social Environment

The social environment includes the informal networks in which people engage, formal groups to which they belong, and the communities in which they live. Receiving high levels of support from family and friends in times of stress, engaging in community life, and living in a safe community all appear to increase people's sense of well-being and act as a buffer against health problems.¹⁷

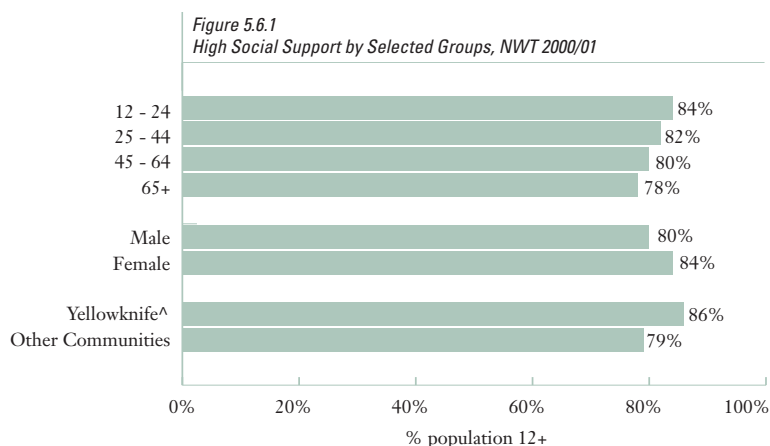
Isolation and loneliness are often associated with poorer health status. This section looks at three indicators of the social environment: social support, volunteering, and personal security (violence in the home and crime in the community).

5.6 Social Support

Support from families, friends, and communities can be very important in helping people solve problems and deal with adversity, as well as in maintaining a sense of control over life circumstances. The 2003 CCHS did not ask questions about social support to NWT residents, but questions were included in the 2001/02 cycle of the survey. In this analysis, the level of perceived social support is defined as having emotional or informational support based on a series of questions about how often an individual had

someone to confide in, ask advice of, and trust to share their personal feelings with. From answers to these questions, an index was created to measure the level of social support.

Figure 5.6.1 shows the proportion of the population with a level of high social support by age group and for other selected groups. Most people in the NWT reported having a high level of social support (82% overall), with no significant differences between age groups. Males and females also reported similar levels of social support. A significant difference was noted when Yellowknife residents were compared to residents living in other NWT communities. Yellowknifers were more likely than other NWT residents to report high social support (86% vs. 79%).



¹⁷ Federal, Provincial and Territorial Advisory Committee on Population Health. 1999. *Towards a Healthy Future: Second Report on the Health of Canadians*. Public Works and Government Services Canada.

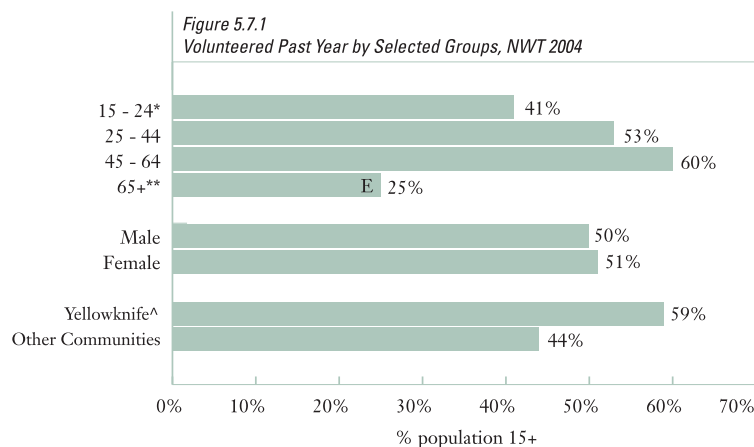
5.7 Volunteering

The health of a community is influenced by the amount of social capital and civic vitality that exists. Citizen participation in voluntary activities is an important aspect of a strong civic society. Engagement in social networks also appears to have a beneficial effect on health status. In 2004, NWT residents 15 years of age and older were asked if they took part in any volunteer activity in the previous year. An estimated 51% indicated they had done so.

Residents between 25 and 64 years of age were more likely to report participating in volunteer activities than those between 15 and 24, and those 65 years and older (see figure 5.7.1).

The rates of volunteering were similar for both males and females (50% and 51% respectively).

Meanwhile, residents of Yellowknife were significantly more likely to engage in volunteer organizations than residents of the other NWT communities.



Source: 2004 NWT Northern Tobacco Use Monitoring Survey

*Significantly lower than 25-44 & 45-64; ** significantly lower than other age categories;

^ significantly higher than other communities ($p < 0.05$).

E: High sampling variability, interpret with caution.

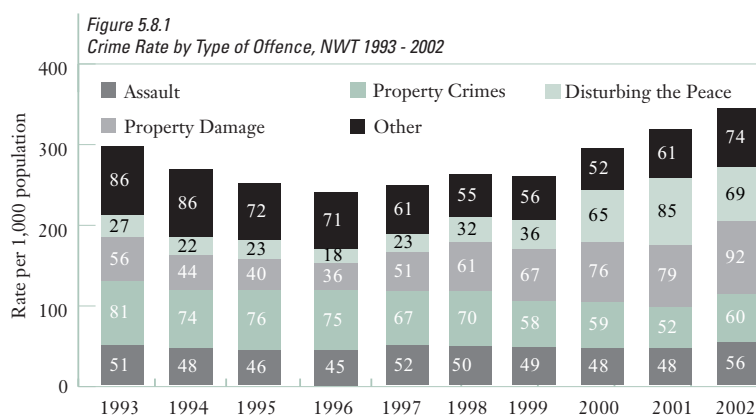
5.8 Crime in the Community

The crime rate is an indicator of the level of safety in a community. Victims of crime are affected negatively, and their health may suffer through injury along with stress caused by insecurity and fear. People convicted of more serious crimes are often removed from their home communities and, in cases of sentences over two years, from the Northwest Territories itself.

Extreme changes in a community-based economy may increase the crime rate, especially in the area of illegal drug trafficking and property crimes. Moreover, crime rates are affected by demographic shifts in the relative weighting of age groups of any given population. For example, with property and substance abuse related crimes often perpetrated by youth and younger adults, crime rates may fall over time simply as a reflection of an aging population.

The overall crime rate for the NWT has increased in recent years, after falling for much of the 1990s. Between 1993 and 1997, the overall rate decreased by 16% from 302 to 254 incidents per 1,000 persons. However, by the mid to late 1990s, the trend reversed, with the crime rate increasing by 31% from 268 to 351 per 1,000 persons between 1998 and 2002. The overall increase is due to large increases in relatively less serious offences, particularly property damage and the disturbing the peace, 50% and 112%, respectively since 1997. Meanwhile, the rate of assaults has remained relatively steady over the last nine years, while property-related offences dropped from 81 to 60 per 1,000 persons between 1993 and 2002 (see figure 5.8.1).

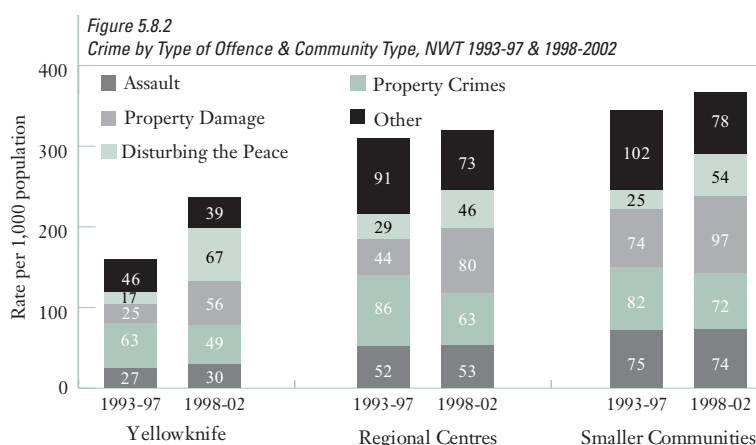
In terms of offenders, the proportion of youth (age 12 to 17) charged has remained virtually unchanged at 20% between 1993 and 2002. However, there has been a large increase in female young offenders. They made up nearly 27% of all young offenders in 2002, a 101% increase from the 1993 proportion of 13%. There was also an increase in the proportion of adult offenders who are female. Over the same nine-year period, the proportion of female offenders rose by 42% from 12% to 16%.



Sources: Statistics Canada and NWT Bureau of Statistics

Between 1998 and 2002, Yellowknife had the lowest overall crime rate at 241 incidents per 1,000 persons, compared to 315 per 1,000 for the regional centers and 373 per 1,000 for the smaller communities (see Figure 5.8.2). However, despite the lower crime rate, Yellowknife experienced the largest overall increase in crime in recent years. Between 1993-1997 and 1998-2002, the overall crime rate increased by 35% in Yellowknife from 178 to 241 crimes per 1,000 persons, compared to an increase of 4% from 302 to 315 per 1,000 persons for the regional centers, and an increase of 4% from 359 to 373 per 1,000 persons in the other communities.

Figure 5.8.2 also compares crime rates by type of offence and by community type. All three groupings have seen increases in the rate of property damage ranging from 125% for Yellowknife, 82% for the regional centers, to a 30% increase for the other communities. Incidents of disturbing the peace have increased by 285% in Yellowknife, 115% in the other communities and 59% in the regional centers. Combined, the increases in incidents of property damage and disturbing the peace were responsible for much of the increases in the overall crime rates seen in each community type.



Sources: Statistics Canada and NWT Bureau of Statistics

While the more serious incidence of assault did not change much between 1993-97 and 1998-02, there were some striking differences between community types. Yellowknife had the lowest rate of assaults at 30 incidents per 1,000 persons compared to regional centers at 53 per 1,000 and smaller communities at 74 per 1,000.

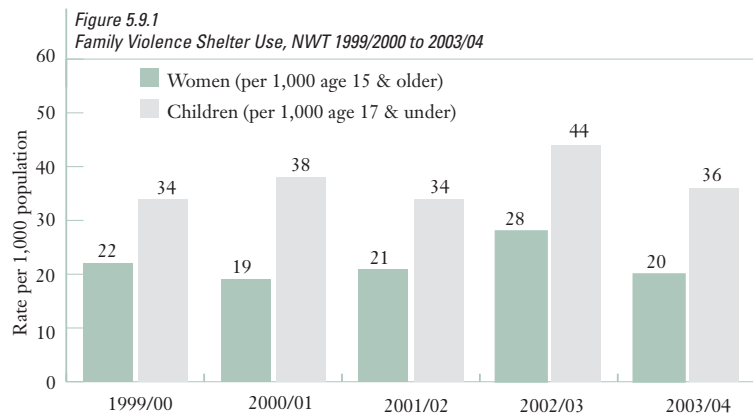
5.9 Family Violence

Victims of family violence are likely to suffer from psychological as well as direct or indirect physical harm.¹⁸ Children who grow up in violent homes are at a higher risk of ending up becoming abusers themselves than those who grow up in non-violent homes. Moreover, a study of federal inmates revealed that half had suffered from abuse or had witnessed family violence as a child.¹⁹

The reasons for family violence are complex and numerous. Studies have demonstrated that “factors such as the stresses and pressures associated with male unemployment and poor financial status, age, type of marital union, emotional abuse, alcohol use and early childhood exposure to violence all play a role in the complex dynamics of wife assault.”²⁰

There are a number of different indicators of family violence including spousal and child abuse (physical, sexual, emotional, verbal, financial and psychological). Measuring spousal abuse, though, is difficult. One way is to examine the number of women and children entering family violence shelters. It is important to keep in mind that shelter statistics do not capture all acts of spousal abuse. The incidence of spousal abuse is under-reported due to many factors including secrecy, dependency on the perpetrator, fear of reporting, and a lack of knowledge of available help.

The NWT has five family violence shelters that provide some statistics on the number of women and children admitted to their facilities. Figure 5.9.1 shows the rate of admissions for women and children for the five shelters.²¹ Admission rates were fairly constant between 1999/2000 and 2001/02 for both women and their children. However, the rates took a jump in 2002/03 for both groups before falling back to more typical levels in 2003/04.



Sources: Statistics Canada and NWT Bureau of Statistics

¹⁸ Working Group on Community Health Information Systems and S. Chevalier et al, *Community Health Indicators: Definitions and Interpretations* (Ottawa: Canadian Institute for Health Information, June 1995), pp. 108 and 109.

¹⁹ National Crime Prevention Council of Canada, *Offender Profiles: Prevention and Children Committee*, 1995.

²⁰ Bunge, Valerie Pattie, and Levett, Andrea, *Family Violence in Canada: A Statistical Profile 1998* (Statistics Canada, May 1998), p. 13.

²¹ Data for one shelter was not available for 2002/03 and was estimated based on the average admissions in the previous three years. Shelter data includes some out of territory residents.

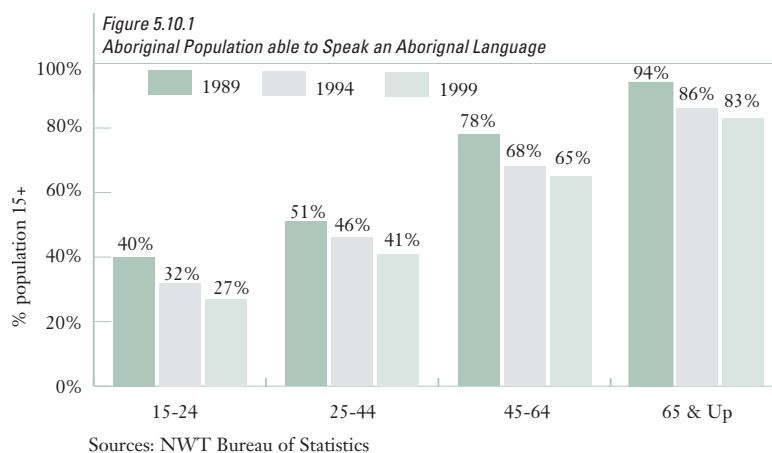
5.10 Cultural Continuity

Culture is important in helping to determine a sense of identify and belonging. This is especially relevant in the North, with its rich and diverse set of Aboriginal and non-Aboriginal cultures. The Northwest Territories is culturally unique compared to most of Canada. Slightly more than half of the Northwest Territories population is Aboriginal. Moreover, the Aboriginal population is diverse with significant representation from the Dene, the Metis and the Inuit. Moreover, the non-aboriginal populations particularly in larger centers such as Yellowknife have diverse cultural backgrounds with immigration increasingly from Asia and Africa.

Culture relates to health in different ways. To the degree that it contributes to social cohesion, community support and a sense of common purpose, it can have a positive impact on population health. Moreover, some traditional cultural practices such as dietary customs and an active lifestyle can also have a protective effect. On the other hand, in populations undergoing rapid cultural change, health can be negatively affected if the changes reinforce individual vulnerability and place individuals and groups under stress.²² For example, the residential school experience resulted in significant family and cultural disruption for many Aboriginal people.

Language use is closely tied to culture, framing how people understand and communicate about the world around them. The use of traditional languages within communities is one possible indicator of the continued strength of traditional culture. Figure 5.10.1 shows the proportion of the aboriginal population who can speak an aboriginal language. It appears that the use of aboriginal languages declined during the 1990s. This decline was noted for

all age groups. The figure also shows large differences between generations with one quarter of the aboriginal population between 15 and 24 years of age able to speak a traditional language, compared to 83% of those 65 years of age and older.



²² Young T.K. 1998. *Population Health: Concepts and Methods*.

Chapter 6

The Physical Environment

The safety, quality, and sustainability of the physical environment have a large impact on the health status of a population. Good health requires access to good quality air, water and food.

Environmental threats to human health include factors related to household living conditions associated with unsafe drinking water, and poor indoor air quality, and factors related to industrial development with inadequate health and environmental safeguards, such as water and air pollution, chemical contaminants in food, and unsustainable consumption of natural resources.¹

Contaminated water and food can pose a threat to human health. Water- and food-borne bacteria can cause illness within a matter of hours while chemical hazards can pose long-term health problems. Air pollution, both indoor and outdoor, affects the lungs and respiratory tract. It is also taken up by blood and transported throughout the body. Indoor air pollution, such as second hand smoke, can be particularly hazardous to health because it is released in close proximity to people and exposure is more prolonged (particularly during the winter months).

At a global level, ozone layer depletion, if it continues, may cause an increase in the incidence of cataracts and skin cancer. Climate change is also of concern for many northerners. However, it is hard at this point to determine exactly what effects climate change may have on the health status of northern residents.

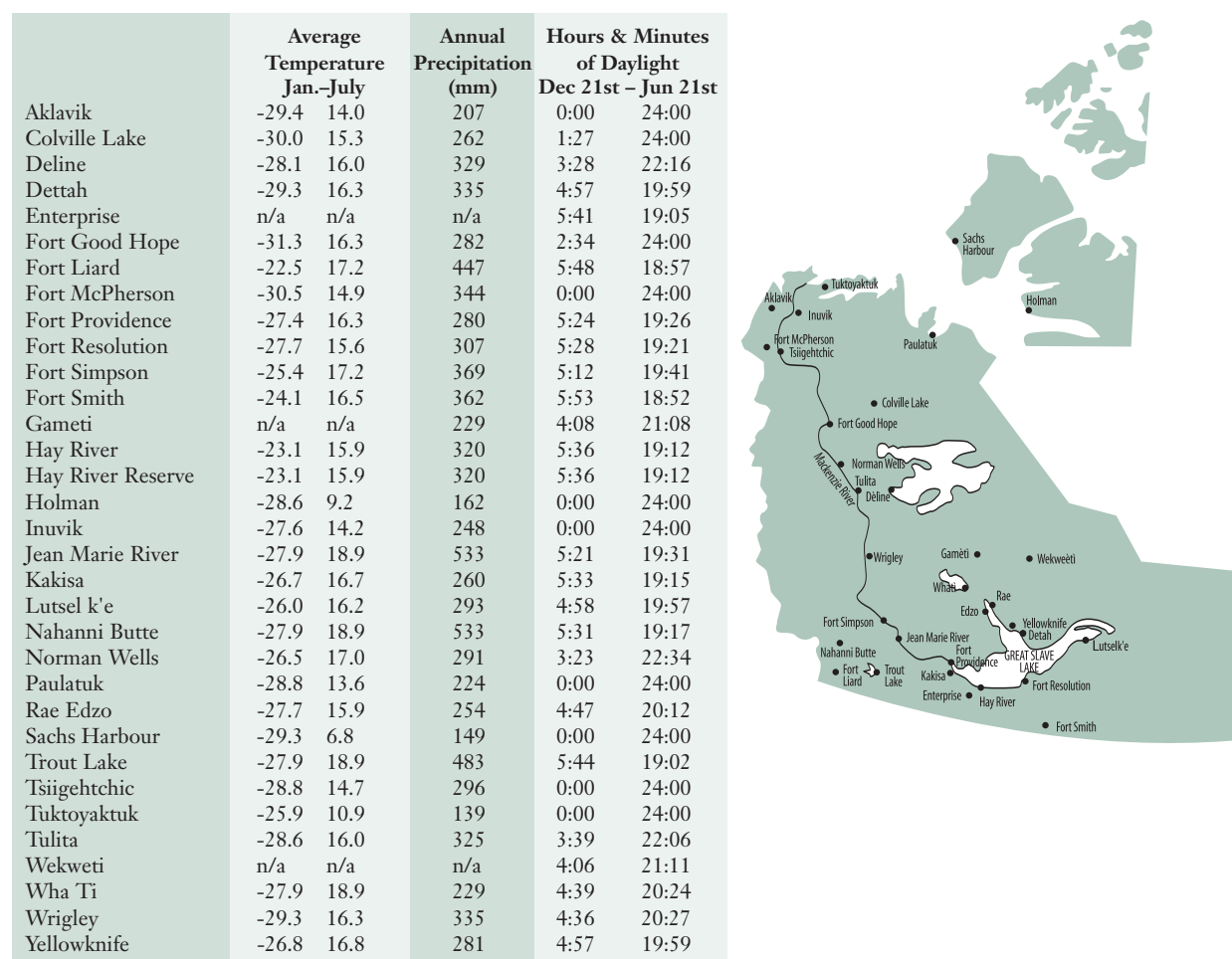
¹ World Health Organization, *The World Health Report 1998: Life in the 21st Century A Vision for All*.

6.1 Climate

As the map and table below shows, winters are long and cold in the Northwest Territories. This means people are more likely to spend a great deal of time indoors for extended periods of time. Indoor air quality is therefore an important issue. Cold winter temperatures also means that the risk of injury or death due to exposure would be higher in the north than in southern Canada. Moreover, snow and ice can make walking surfaces slippery, thereby increasing the risk of injury due to falls.

The Northwest Territories experiences large seasonal variations in the amount of daylight which can also impact on people's health status. Lack of daylight during the winter can affect people's mood, causing 'winter blues' and in some cases clinical depression. Meanwhile, long hours of sunshine during the summer, could mean higher rates of exposure to ultraviolet radiation, increasing the risk of skin cancer and cataracts if precautions are not taken.

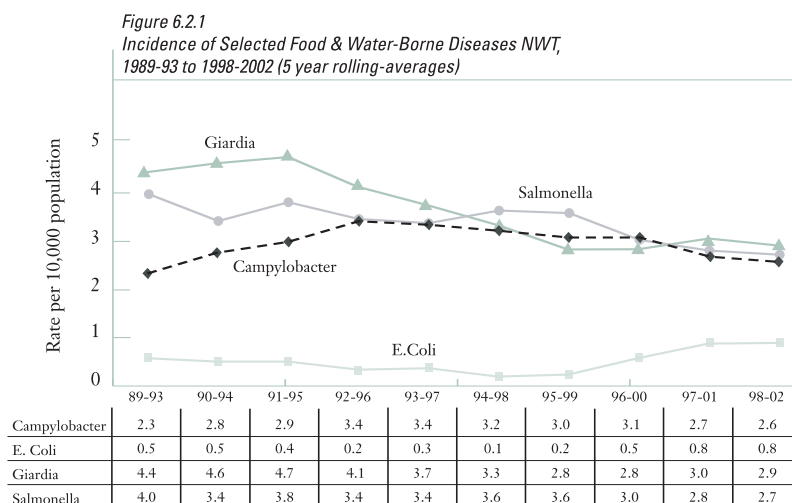
Figure 6.1.1



6.2 Food & Water Safety

One aspect of the physical environment that impacts on population health is the quality of the food and water supply. One way of measuring this is to examine the incidence of food and water-borne diseases.

The most common forms of food-and water-borne diseases in the Northwest Territories are Salmonella, Giardia ('beaver fever') and Campylobacter. Salmonella and Campylobacter can be picked up by eating raw, poorly cooked or unpasteurized foods. Giardia is acquired from drinking contaminated, untreated water. The incidence of these diseases, along with E.Coli – also contracted by poorly prepared foods as well as inadequately treated water supplies – are shown in Figure 6.2.1.



Source: NWT Department of Health & Social Services

Since the number of cases in a given year is relatively low for these diseases, ranging from 11 to 14 cases per year for Campylobacter, Giardia and Salmonella, and two cases a year for E. Coli, the data were presented as five-year averages in an effort to provide more stable rates.² The incidence of Giardia declined during the 1990s from a rate of 4.7 per 10,000 population in 1991-1995 to a rate of 2.9 per 10,000 in 1998-2002. The incidence of Salmonella also declined during this time period from 3.8 per 10,000 population to 2.7 per 10,000.

There was very little change in the notification rates for Campylobacter between 1992-96 and 1998-2002. The rate for this disease was 2.6 per 10,000 in 1991-95 and in 1998-2002. The rate for E. Coli also changed very little during the last decade. The rate for this disease was 0.5 per 10,000 in 1989-93, compared to 0.8 per 10,000 in 1998-2002.

6.3 Environmental Contaminants

Environmental contaminants can affect human health by entering the body through various means – breathing the air, drinking the water, or consuming birds, fish or mammals that have become contaminated themselves through the food chain. The contaminants found in the Northwest Territories include chemicals like PCBs, pesticides and dioxins, and metals like lead, mercury and cadmium. These contaminants may come from a variety of sources, including mines, DEW Line sites, and garbage dumps. However, the majority of contaminants found in the food chain arrive in the Northwest Territories from industrial activities in southern Canada and in the United States, traveling on wind currents.

² Moreover, the number of cases of E. Coli fluctuates a great deal from year to year. One outbreak of the disease, say with improperly cooked hamburger meat, can cause a cluster of cases.

There is still some uncertainty about the nature and extent of the risks to human health posed by northern contaminants. The Government of Canada has initiated a “Northern Contaminants Program” to measure and evaluate the effect of contaminants on the health of northern people. The latest report from this program, Canadian Arctic Contaminants Assessment Report II, was published in 2003.³

The multi-volume report is too extensive to summarize here, but an important message from the report is as follows:

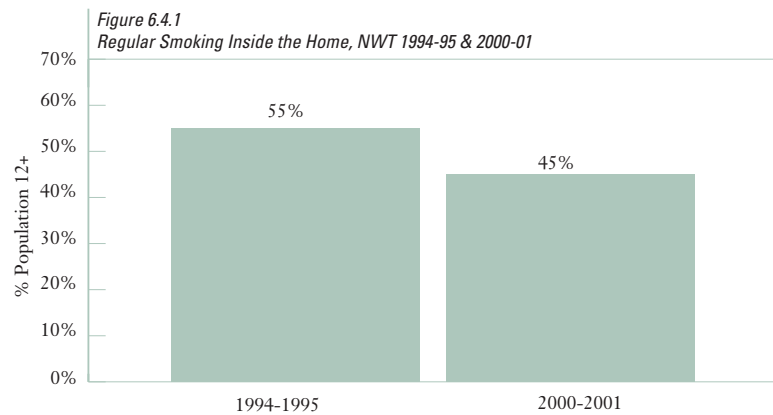
“Traditional/country foods are very healthy, very nutritious and provide many benefits not available from other foods or practices. Contaminants may sometimes be present in fish and wildlife that cause concern for human health. The health risks from contaminants, however, are currently outweighed by the benefits of continuing to harvest, prepare and consume traditional/country foods.”⁴

On the vast subject on the relationship between contaminants and human health, the report concludes that “it is not yet possible to say with confidence that some health conditions are caused by contaminants.... Research is now underway and, while some results are expected over the next few years, more research is still needed.”⁵

6.4 Environmental Tobacco Smoke

Long-term exposure to environmental tobacco smoke (commonly known as second-hand smoke) is a significant health hazard. In addition to being a general irritant to non-smokers, second-hand smoke exposure is linked to lung cancer, respiratory and cardiovascular diseases. Mothers smoking while pregnant run the risk of bearing babies with lower birth weights and children living in homes where they are exposed to tobacco smoke have higher rates of asthma and other respiratory problems.⁶

There are two indicators that provide a measure of exposure to second-hand tobacco smoke in the Northwest Territories. The first is the proportion of the population who reported someone smoking in their home in the year prior to being surveyed. The strength of this indicator is that data is available from the 1994/95 National Population Health Survey as well as the 2000/01 Canadian Community Health Survey (CCHS).



Sources: Statistics Canada, 2000-01 CCHS Share File & NWT Bureau of Statistics, 1994-95 NPHS

³ Department of Indian Affairs and Northern Development (DIAND), *Canadian Arctic Contaminants Assessment Report II*, (Ottawa, 2003).

⁴ DIAND, *Canadian Arctic Contaminants Assessment Report II – Highlights*, (Ottawa, 2003), p. 71.

⁵ *Ibid*, p. 72.

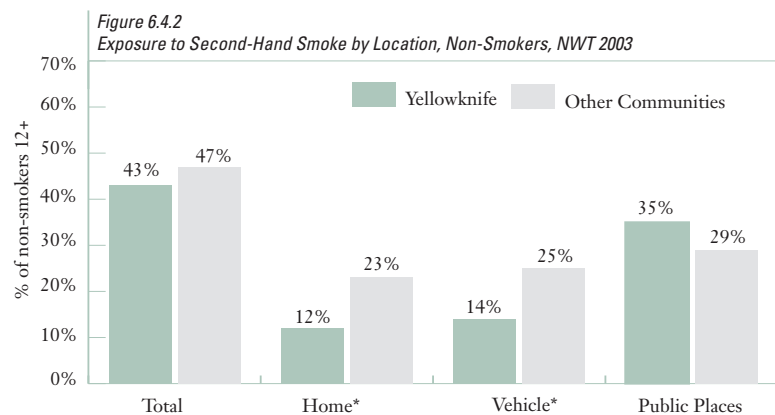
⁶ NWT Department of Health and Social Services, *Report to Residents of the Northwest Territories on Comparable Health and Health System Indicators* (September 2002), p. 29. See also, NWT Department of Health and Social Services, *The Facts About Smoking in the Northwest Territories* (2001), p. 13.

The weakness of this indicator is that it includes smokers and assumes exposure to ETS among non-smokers inside the home. Moreover, it does not include reported exposure to second-hand smoke outside of the home (e.g. workplace, restaurant, or automobile). The second measure looks at exposure among non-smokers at home, in a motor vehicle or in public places

Evidence suggests that while regular smoking inside the home is still high in the NWT, it became less common during the latter part of the 1990s. Figure 6.4.1 shows that the proportion of residents 12 years and over reporting someone regularly smoked in their home decreased significantly between 1994/95 and 2000/01 from 55% to 45%.

A more accurate measure of exposure to ETS for the population 12 years of age and older can be obtained from the 2003 CCHS. In this survey, non-smokers were asked if they were regularly exposed to second-hand smoke at home, in a motor vehicle or in public places.⁷ An estimated 44% of non-smokers indicated they were exposed to ETS everyday or almost everyday in one of these places. About 16% of non-smokers indicated they were regularly exposed to second-hand smoke in the home, 18% said they were exposed to ETS every day or almost everyday in a car or other private vehicle, and 33% indicated they were regularly exposed to second-hand smoke in public places such as bars, restraints and bingo halls. It is important to point out that these findings relate to the year 2003. A ban on smoking in public places came into effect in the city of Yellowknife during 2004. As a result, the percentage of non-smokers exposed to second-hand smoke in public places would be expected to be lower if a similar survey was conducted in the future.

Figure 6.4.2 shows reported exposure to second-hand smoke for residents of Yellowknife and residents of the other NWT communities in 2003. Nearly one-half (47%) of non-smokers 12 years of age and older living in communities other than Yellowknife reported regular exposure to second-hand smoke at home, in a private motor vehicle or in a public place. As outlined above, the recent introduction in Yellowknife of a smoking ban in public places is not reflected in this data. It is expected that future surveys will show a reduction among Yellowknife non-smoker's exposure to second-hand smoke in public places.



Source: Statistics Canada, 2003 CCHS Share File

* Significant difference between community types ($p < 0.05$).

Note: Sum of locations does not add to total due to persons exposed in multiple locations.

Meanwhile, an estimated 12% of non-smokers 12 years of age and older living in Yellowknife reported exposure to second-hand smoke in the home, significantly lower than exposure among their counterparts in the other NWT communities (23%). This same pattern was also observed for exposure in private cars and other motor vehicles.

⁷ The definition for exposure to second-hand smoke was changed in 2003 to reflect changes in questionnaire wording. Data from CCHS 2000/01 are therefore not comparable.

6.5 Housing

Access to shelter is not only a requirement for health, it is also a prerequisite for life. Housing must also meet certain standards if it is to contribute to good health. Good housing minimizes disease and injury and contributes to the physical, mental and social well-being of the population.

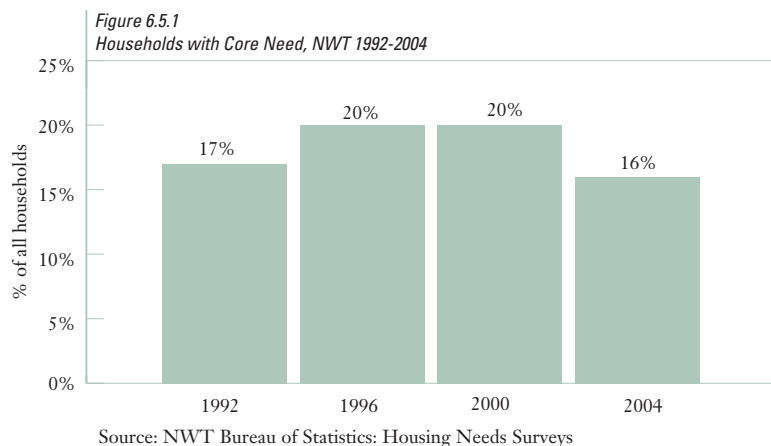
The World Health Organization identified several housing features that have important direct or indirect effects on the health of occupants. These include: an adequate supply of good quality water; the extent of overcrowding which can lead to an increased transmission of airborne infections such as acute respiratory infectious diseases; proper disposal of refuse; and indoor air quality.⁸ In addition, if the cost of housing consumes too much of available household income, other needs, including health needs may suffer.

The Northwest Territories Housing Corporation has conducted several housing surveys to monitor housing conditions and needs, with the latest conducted in 2004. The surveys identify three types of housing problems: suitability, which refers to the problem of overcrowding or whether a household has enough bedrooms appropriate for the number of household members; adequacy, which refers to the physical condition of the dwelling or whether a household has basic facilities to provide a safe and healthy environment; and affordability, which refers to the extent that the household pays an excessive amount for shelter, defined as more than 30% of a household's income.

Households with one or more of these problems and a total income below a community specific threshold were considered to be in core need. Due to this income threshold, a number of households with housing problems were not included in the number with core need, because they had sufficient income to solve their housing problem without government assistance.⁹

According to the 2004 survey, there were an estimated 2,260 households in core need, representing 16% of all households in the territory.

Compared to a previous survey, this finding indicates there were about 500 fewer households in core needs in 2004 than in the year 2000 (see Figure 6.5.1). An increase between 1992 and 1996 was possibly due to population growth, a reduction in funding for social housing by the federal government and fiscal constraints faced by the territorial government.

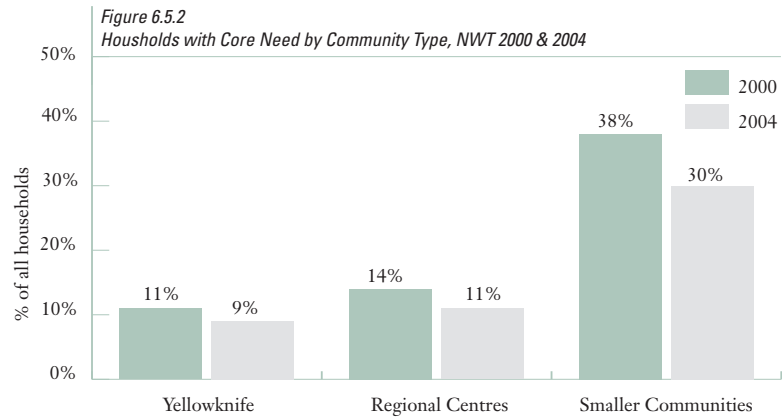


Adequacy is the most common type of housing problem in the territory as a whole, followed closely by affordability and suitability.

⁸ World Health Organization, *The World Health Report 1998: Life in the 21st Century A Vision for All*.

⁹ More information regarding housing needs surveys in the Northwest Territories can be obtained at the NWT Bureau of Statistics' website: http://www.stats.gov.nt.ca/Statinfo/2004NWTComm_Survey.html

Within the territory, the proportion of households with core need varied between communities. In 2004, an estimated 30% of all households in the smaller communities were in core need, compared to 11% in the regional centers and 9% in Yellowknife (see Figure 6.5.2).¹⁰ Reductions in the proportion of households with core need occurred in all three community-types between 2000 and 2004, but were particularly evident in the smaller communities.



Source: NWT Bureau of Statistics: Housing Needs Surveys

There were also variations between community-types in the nature of the housing problems experienced. Affordability was the most common problem in Yellowknife. In the regional centers, adequacy and affordability were the most common housing problems. Meanwhile, adequacy was the most common housing problem in the smaller communities, followed by suitability.

¹⁰ When only those households with core need were examined, over half (58%) were located in the smaller communities, 25% in Yellowknife and 17% in the regional centers.

Chapter 7

Personal Health Practices

People who exercise regularly, eat well-balanced meals, maintain a healthy weight, do not smoke and/or abuse alcohol are generally healthier than those who do the opposite. Moreover, people who engage in one health promoting behaviour are more likely to engage in others. For example, people who have a healthy diet are more likely to be physically active, less likely to smoke and more likely to drink responsibly.

While these are personal choices, for the most part, there is a growing recognition that personal life choices are greatly influenced by the socio-economic environments in which people live. Supportive environments can add to the capability of individuals to make healthy lifestyle choices. The themes presented in this chapter are fundamental to personal health, yet affect the health of the population as a whole. Identifying and understanding risk-taking behaviours such as a poor diet, smoking, heavy alcohol consumption, or high-risk sexual activities can help explain variations in population health status.

7.1 Healthy Eating

Good nutrition is important for achieving optimal growth and development. Healthy eating provides many benefits, such as reducing the risk of developing disease (such as heart disease, cancer, high blood pressure and osteoporosis) and improving overall mental and physical well-being. Canada's Food Guide to Healthy Eating recommends that Canadians eat a variety of foods from each food group: grain products, fruits and vegetables, milk products and meat and alternatives. The Guide also recommends five to ten servings of fruits and vegetables each day.¹

In 2003, 34% of NWT residents 12 years of age and older reported they consume fruits and vegetables at least five or more times per day. In other words, 66% of NWT residents 12 years of age and older were not meeting the daily Canada Food Guide recommendations for healthy eating. This was significantly higher than the Canadian estimate of 58%.²

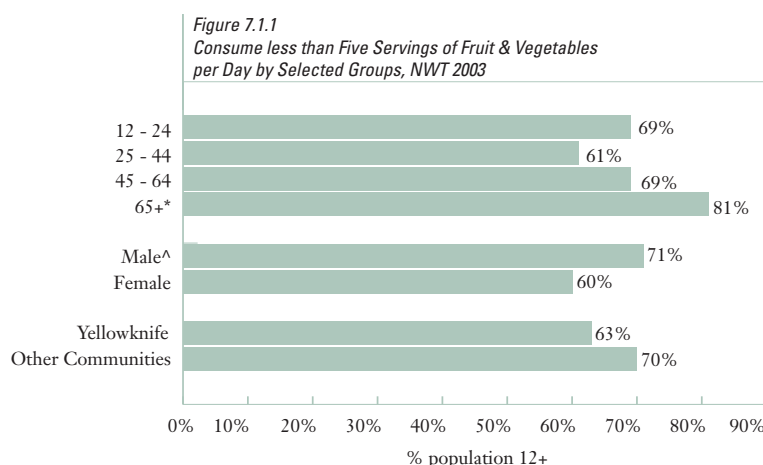
Males were significantly less likely than females to eat the recommended daily level of fruits and vegetables. An estimated 71% of males indicated they did not eat five or more servings of fruits and vegetables per day, compared to 60% of females. This difference was observed for all age groups except those between 12 and 24 among whom 69% of males and 68% of females indicated they didn't eat the recommended daily servings. The difference between the sexes was particularly evident among individuals 25 to 44 years of age, where 73% males indicated they didn't eat a healthy diet compared to 50% of females. This latter group was the most likely to eat the recommended daily servings of fruits and vegetables.

¹ In this case, healthy eating is measured by the consumption of a serving of fruits and vegetables five or more times per day. A serving is considered to be one medium size fruit or vegetable. This is a new health status indicator and as yet, no trend data are available.

² Canadian Source: 2003 CCHS Share File. To control for differences in the age structures of the two populations, the Canadian estimate was age-standardization using the 2003 CCHS NWT population as the standard population. After this adjustment the Canadian estimate was 59%.

Seniors 65 years of age and older were less likely to eat the recommended daily amount of fruits and vegetables than other age groups. According to the 2003 CCHS, 81% of NWT residents 65 years of age and older reported they eat less than five servings per day, compared to 65% of those between 12 and 64 years of age.

While it appears that residents of Yellowknife were more likely than residents of other NWT communities to report consuming five or more servings of fruits and vegetables per day (37% vs. 30%), this difference was not statistically significant.



Source: Statistics Canada, 2003 CCHS Share File

*Significantly higher than other age categories;

^ significantly higher than female ($p < 0.05$).

7.2 Healthy Weights

Body weight is largely determined by eating habits and by physical activity. Excess weight is a major risk factor for a wide variety of health problems, particularly cardiovascular disease, stroke, gastrointestinal illness, diabetes and some forms of cancer. For example, compared to healthy weight adults, obese adults between 45 and 64 years of age are at 3.3 to 10.4 times greater risk for diabetes.³

Body Mass Index (BMI) is one of the most common ways of determining whether a person is overweight or obese. BMI is calculated by taking an individual's self-reported height and weight into account. This method can be imperfect if people underestimate their weight. Moreover, the measure becomes less accurate for seniors, for children and for athletic individuals who have a higher proportion of their weight from muscle. Despite these problems, the BMI is still the simplest and most standardized means of obtaining information about weight distribution in a population. According to the World Health Organization and Health Canada guidelines, overweight individuals (BMI between 25.0 and 29.0) have increased health risk while obese individuals (BMI of 30 or more) have high health risk.

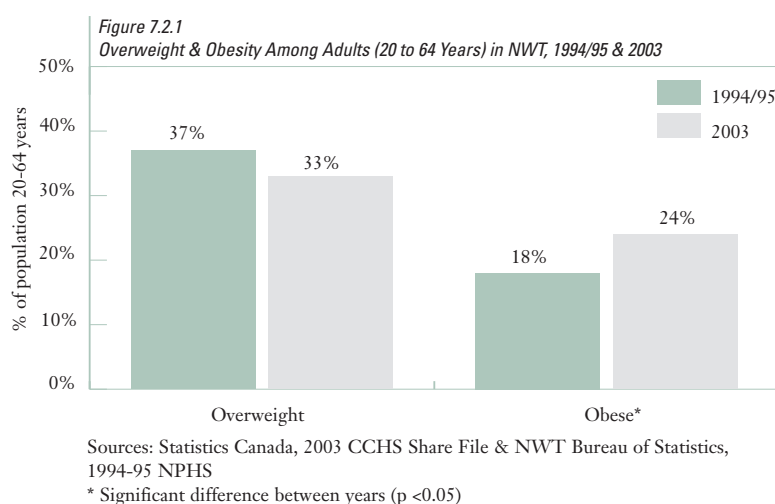
Results from the 2003 CCHS indicated that 33% of NWT adults between 20 and 64 years of age were overweight and another 24% were obese. In other words, over half (57%) of NWT adults in this age group have an increased health risk due to excessive body weight.⁴

³ Canadian Institute for Health Information. 2004. *Improving the Health of Canadians*. Ottawa.

⁴ Note 1994/95 BMI estimates for the 2005 NWT Health Status Report differs from the 1999 NWT Health Status Report due to changes in the standard grouping for overweight. This report uses the International Standard as opposed to the Canadian Standard used in the 1999 health status report where a BMI greater than or equal to 27 was considered overweight.

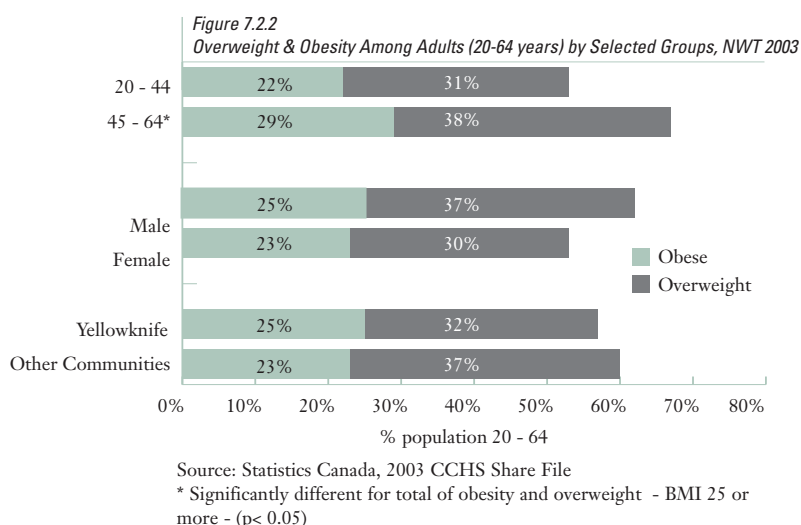
The prevalence of obesity in the territory was significantly higher than in Canada, where an estimated 15% of Canadians indicated they were obese. Meanwhile, the estimated proportion of overweight Canadians was similar to the NWT estimate (34%).⁵

It appears the prevalence of obesity in the NWT adult population has increased in recent years. In 1994/95 an estimated 18% of NWT adults between 20 and 64 years of age were considered obese, significantly lower than the 2003 estimate of 24% (see Figure 7.2.1). The increase in the prevalence of obesity was observed for both adults between 20 and 44 and those between 45 and 64 years of age. The percentage of the population considered overweight did not differ significantly between 1994/95 and 2003.



The prevalence of obesity in 2003 was similar for all groups examined. The seven percent difference between residents 20 to 44 and those 45 and 64 years of age was not significant. However, the rate for overweight and obesity was significantly higher for the older age group (67% vs. 53%).

Figure 7.2.2 shows that the rates of obesity among males and females between 20 and 64 years of age were similar. In 2003, 25% of men and 23% of women reported a BMI of 30 or more. However, men were more likely than women to be overweight. The difference between the sexes for overweight and obesity combined (BMI of 25 or greater) tended towards statistical significance ($p = 0.06$).⁶



The self-reported obesity rate for Yellowknife residents was similar to the rate for residents of the other NWT communities (25% compared to 23%). The rates were also similar for those who reported being overweight.

⁵ Canadian Source: 2003 CCHS Share File. After age-standardization the Canadian estimate for obesity was still 15% while the estimate for overweight was 33%. The Canadian estimates were age-standardized using the 2003 NWT CCHS population as the standard.

⁶ It should be pointed out that gender comparisons for prevalence of overweight should be made with some caution, since men tend to be more muscular than women. As noted above individuals with more muscle mass may be considered overweight using the BMI method.

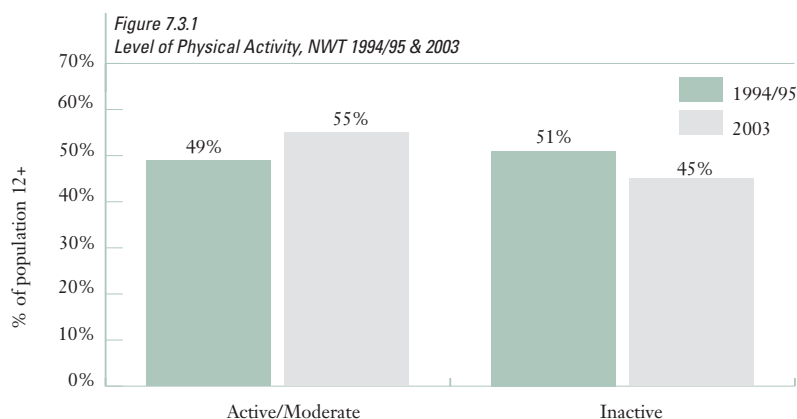
7.3 Physical Activity

Participation in physical activity has been shown to reduce the risk of a number of illnesses, particularly coronary heart disease, but also diabetes and some forms of cancer. It also provides other health benefits such as controlling excess weight, moderating stress, reducing the risk of depression and promoting an overall sense of well-being.

Respondents to the 2003 CCHS were asked a series of questions about the frequency and duration of their participation in various types of leisure time physical activities such as sports, walking for exercise, gardening or yard work and jogging or running. Based on their responses the average daily energy expended during leisure time physical activities in the past three months was approximated. Based on these calculations people were grouped into three categories of activity: active, moderate and inactive.

Self-reported level of leisure physical activity is a crude measure of overall physical activity. Caution should be used when making comparisons between rural and urban areas. For example, people living in rural areas are more likely to work in jobs and/or engage in traditional activities that require them to be physically active. This measurement problem notwithstanding, self-reported level of physical activity during leisure time can provide some indication of the percentage of the NWT population engaged in this important part of a healthy lifestyle.

According to the 2003 CCHS, 34% of NWT residents 12 years of age and older were considered physically active, 21% were moderately active. This means that almost half (45%) of the territory's residents 12 years of age and older were regarded as inactive, about the same as the Canadian estimate of 48%.⁷ There is some evidence to suggest that the proportion of the NWT population engaged in leisure time physical activity increased between 1994/95 and 2003 (see Figure 7.3.1).⁸ However, the level of physical inactivity still presents a serious health issue for the population.



Sources: Statistics Canada, 2003 CCHS Share File & NWT Bureau of Statistics, 1994/95 NPHS

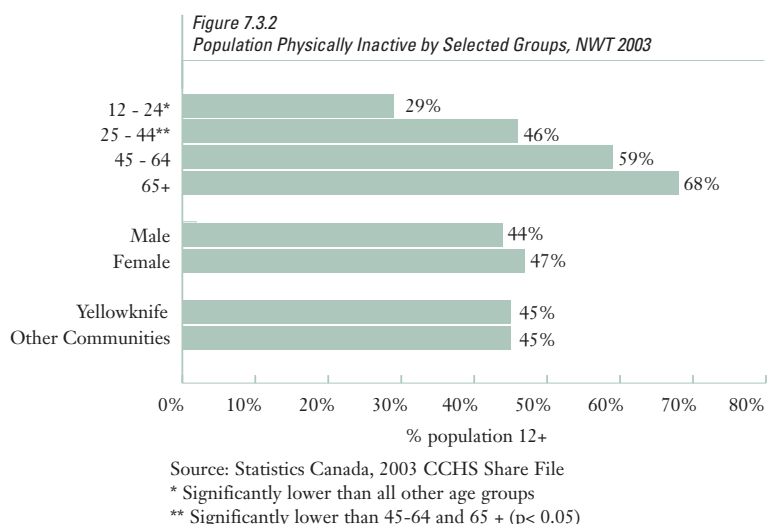
Note: The differences between 1994/95 and 2003 were nearly statistical significant ($p=0.07$).

⁷ Canadian source: 2003 CCHS Share File. The Canadian rate for inactivity was age standardized to the 2003 CCHS NWT population. The age-standardized estimate was 46%.

⁸ Physical activity and age are strongly correlated. If the 1994/95 estimates were age-standardized to the 2003 CCHS population the age-standardized proportion for inactive would become 52% and active would be 48%. The differences with 2003 then turn out to be statistically significant ($p < 0.05$).

NWT residents tend to become less physically active with age. An estimated 29% of residents between 12 and 24 were inactive, compared to 46% of those 25 to 44 years of age, 59% of those between 45 and 64, and 68% among seniors 65 years of age and older (see Figure 7.3.2). It seems that inactivity is especially high among individuals 45 years of age and older.

Overall, there was no significant difference in physical activity between males and females. In 2003, 44% of males and 47% of females indicated they were physically inactive. However, residents between 12 and 24 years of age were an exception to this general pattern. In this age group, females were significantly more likely to be inactive than males (36% vs. 22%). A dramatic increase in the level of inactivity among males 25 years of age and older is of particular note. Differences between males and females were not significant in the other age groups.



There were no significant variations in the levels of leisure-time physical activity among residents of Yellowknife and the other communities in the NWT. Overall, 45% of residents 12 years of age and older in both Yellowknife and the other communities in the NWT were physically inactive. No significant differences between Yellowknifers and residents of the other communities were noted in any of the age groups examined.

7.4 Tobacco Use

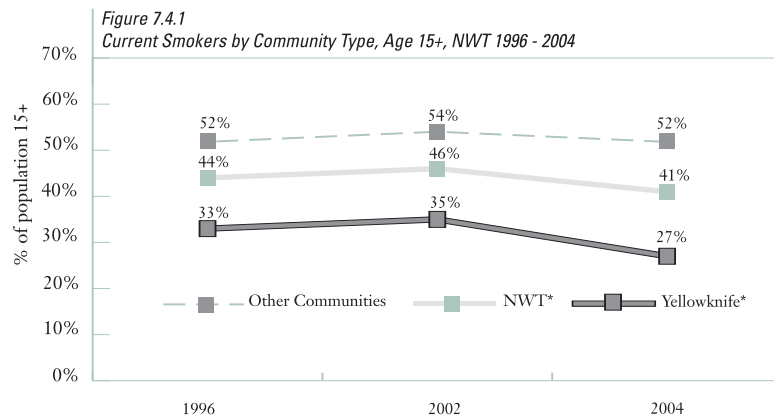
Tobacco is arguably the only consumer product that causes diseases, disability and death when used as intended. The health risks associated with tobacco use are numerous. Cigarette smoking is known to harm every system and function of the human body. It is the cause of most cases of lung cancer and a major cause of cancer of the mouth, throat, bladder, kidney, pancreas and cervix. Smoking is the leading cause of all pulmonary diseases including emphysema and chronic bronchitis. It also increases a person's risk for heart disease, stroke, peptic ulcers, back pain and various other diseases and conditions. Compared with non-smokers, people who start smoking when they are teenagers and continue to smoke are twice as likely to die prematurely.⁹

⁹ Napier K. 1996. *Cigarettes: What the Warning Label Doesn't Tell You*. American Council on Science and Health.

In 2004, an estimated 41% of territorial residents age 15 and older indicated they smoked cigarettes. This was two times higher than the Canadian rate of 20%.¹⁰ There is some evidence to suggest that smoking rates in the territory have started to decline in recent years. In 2002 the NWT smoking rate for individuals 15 years of age and older was estimated to be 46% (see Figure 7.4.1). For the most part, the drop in the territorial smoking rate was due to a significant decline in smoking prevalence in Yellowknife from 35% in 2002 to 27% in 2004. Rates in the other communities did not change during this time. In Yellowknife, the decrease in smoking rates occurred among residents between 15 and 44 years of age, from 38% in 2002 to 26% in 2004. There was no change among Yellowknifers 45 years of age and older. In the other communities, there was no significant change in smoking rates for any of the age groups examined.

Overall, young adults are more likely to smoke than older adults. In 2004, an estimated 49% of individuals between 20 and 29 indicated they smoke, compared to 38% of those between 40 and 54 years of age and 34% for residents 55 years of age and older. Despite the decline in smoking prevalence with age, the proportion of older residents who continue to smoke is still high. One third of adults between 55 years of age and older indicated they smoke cigarettes. This is the age group where many of the negative health effects of smoking become more apparent.

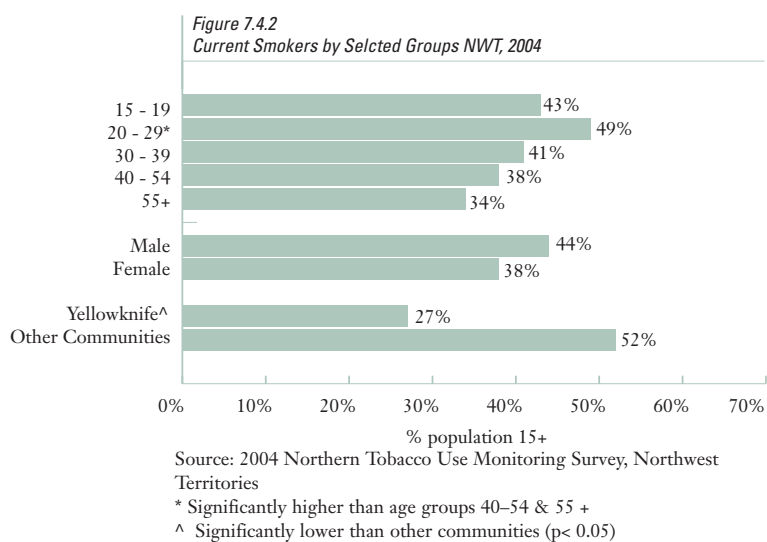
The smoking rates for males (44%) and females (38%) were not significantly different. This general pattern in smoking prevalence for males and females was observed for all age groups examined.



Sources: 1996 NWT Alcohol & Drug Survey, 2002 NWT Alcohol & Drug Survey, and 2004 Northern Tobacco Use Monitoring Survey, Northwest Territories
* Significant difference between 2002 and 2004.

¹⁰ Source: Health Canada. 2005. Canadian Tobacco Use Monitoring Survey. http://www.bccsc.gc.ca/bccscsc/tobacco/research/ctums/2004/summary_first_2004.html. The difference between the NWT and Canada decreased slightly when the Canadian smoking rate was age-standardized to the NWT population. The age-standardized Canadian rate was 22%.

Smoking prevalence was significantly lower in Yellowknife than in the other NWT communities. Over half (52%) of residents 15 years of age and older living in the smaller communities indicated they smoked compared to 27% in Yellowknife. The difference in smoking rates between Yellowknife and the other communities was particularly evident among young adults. An estimated 63% of persons between 15 and 29 living in the smaller communities said they smoked cigarettes compared to 28% of persons in Yellowknife. The difference in smoking rates was also significant for individuals between 30 and 39 years of age, and those 40 to 54 years of age. On the other hand the smoking rates for adults 55 years of age and older was similar for Yellowknife and the other communities.



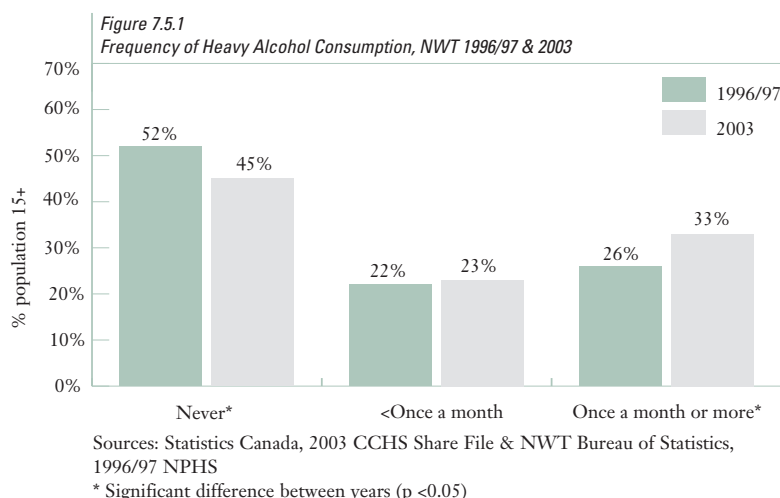
7.5 Alcohol Use

While the health impact of moderate drinking continues to be debated, there is no doubt that regular heavy drinking contributes to a large number of negative health outcomes. High alcohol consumption is a major risk factor for injury deaths in the Northwest Territories. A review of Northwest Territories Coroner's Reports for the years 1999 to 2001 found that alcohol was a contributing factor in 44% of all unintentional injury deaths and 39% of all suicides.¹¹ Long-term heavy alcohol use can also lead to a large number of physical and mental health problems including cirrhosis of the liver, diseases of the circulatory system, cancer, and depression. Moreover, heavy alcohol consumption is often a contributing factor to social problems including spousal abuse and family breakdown.

Individual risk due to drinking is a function of both the frequency and the amount one drinks. Those who drink large amounts of alcohol on a regular basis are more likely to experience negative health consequences than those who regularly consume moderate or small amounts of alcohol. The consumption of five or more drinks on one occasion is a fairly reliable indicator of heavy or binge drinking.

¹¹ Government of the Northwest Territories Office of the Chief Coroner. 1999, 2000, 2001. Northwest Territories Coroner's Service Annual Report. Yellowknife.

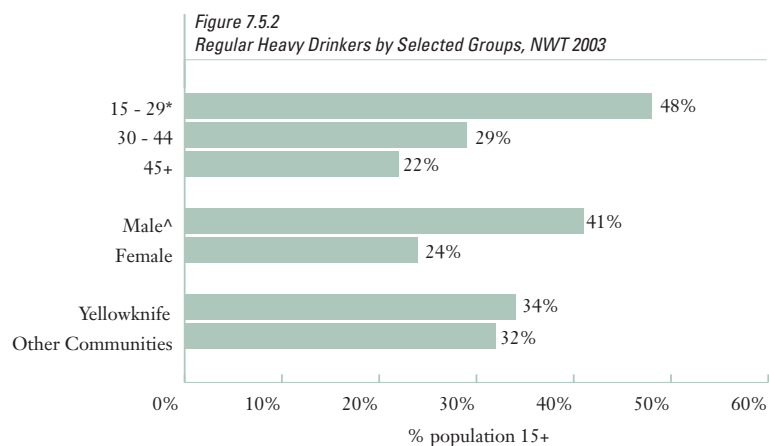
Figure 7.5.1 shows how often NWT residents 15 years of age and older indicated they had five or more drinks on one occasion in the previous year. According to the 2003 CCHS, an estimated 45% said they never consumed that much alcohol on one occasion during the past year, down from 52% in 1996/97. Meanwhile, 33% of all NWT residents 15 years of age and older indicated they drank heavily once a month or more in the previous year. This is a significant increase from 26% in 1996/97.¹²



Frequent heavy drinking was nearly two times higher in the NWT compared to Canada as a whole, where 17% of the population 15 years of age and older indicated they drank heavily at least once per month in the year prior to the survey.¹³

Compared to other age groups, regular heavy drinking was more common among youth and young adults. An estimated 48% of residents between 15 and 29 years of age indicated they drank heavily once per month or more in the previous year versus 29% of individuals between 30 and 44 years of age (see Figure 7.5.2).

Men are much more likely than women to report drinking heavily on a regular basis. The proportion of males classified as regular heavy drinkers was nearly two times higher than the proportion of females (41% vs. 24%). This difference between the sexes was observed for all age groups examined but more pronounced for individuals 45 years of age and older.



The proportion of regular heavy drinkers was similar in Yellowknife and the other communities in the NWT (34% vs. 32%). No significant differences were noted for any of the age groups examined.

¹² Age-standardizing the 1996/97 estimates using the 2003 NWT CCHS population as the standard had no impact on the proportions. They remained the same.

¹³ Canadian Source: 2003 CCHS Share File. When age-standardized using the 2003 NWT population as the standard, the Canadian estimate increased to 20%. The difference between the NWT and Canada was still significant.

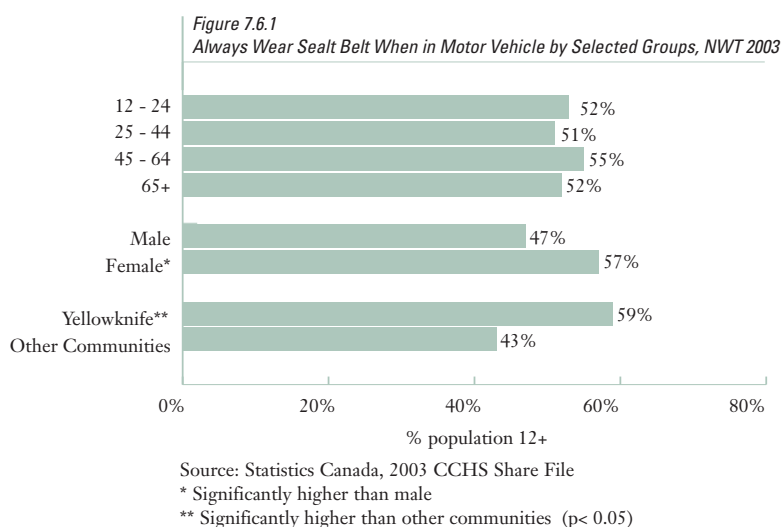
7.6 Use of Seat Belts

Motor vehicle traffic crashes are one of the leading causes of injury death and injury-related hospitalizations in the Northwest Territories.¹⁴ The role of seat belts in reducing fatalities and serious injury has been well established. To be effective, seat belts should be worn every time a person is in a moving vehicle. While a law requiring the use of seat belts does exist in the territory, compliance appears to be low. According to results from the 2003 CCHS, 52% of residents 12 years of age and older indicated they always fasten their seat belt when riding in a car, truck or van. However, studies that compared self-reported use from surveys such as the CCHS with results from observational studies have indicated that the rate of self-reported use tends to be higher than the observed use.¹⁵

Drivers are more likely to wear a seat belt, with 70% of drivers indicating they always wear a seatbelt when driving. However, 17% of drivers indicated they do not always wear a seat belt when they ride as a passenger, which means that 53% of drivers always wear a seat belt when in a motor vehicle. Not all individuals drive a car, truck or van, but almost everyone has been a passenger. In general, 56% of residents indicated they always wear a seat belt as a passenger. A small number (4%) indicated they always wear a seat belt as a passenger but not always when they drive. This latter group reduces the overall proportion of residents who always wear a seat belt to 52%.

Figure 7.6.1 shows rates of seat belt use for difference groups in the territory. No differences were observed for each of the age groups studied. However, females were significantly more likely than males to always wear a seat belt when in a car, truck or van (57% compared to 47%). While differences between males and females were observed for all age groups except 65 years of age and older, it was most pronounced for those between 25 and 44 years of age.

Yellowknife residents were significantly more likely than residents of the other NWT communities to always wear a seat belt when in a motor vehicle. A difference was noted for all age groups, but greatest for those less than 45 years of age.



¹⁴ NWT Department of Health and Social Services. 2004. *Injury in the Northwest Territories: A Descriptive Report*. http://www.hltss.gov.nt.ca/content/Publications/publication_index.htm

¹⁵ Robertson L.S. 1998. *Injury Epidemiology: Research and Control Strategies*.

7.7 High-Risk Sexual Practices

Sexual activity is a natural part of life but certain sexual behaviours carry higher risks of negative consequences. A high number of sexual partners and not using a condom are risk factors for such problems as sexually transmitted infections including HIV/AIDS (see section 3.1), unplanned pregnancies, and cancer of the genital tract. A number of questions about safe sex practices were asked in the 2003 CCHS. However, it is important to point out that surveys must rely on the accuracy of recall and truthfulness of the respondents.

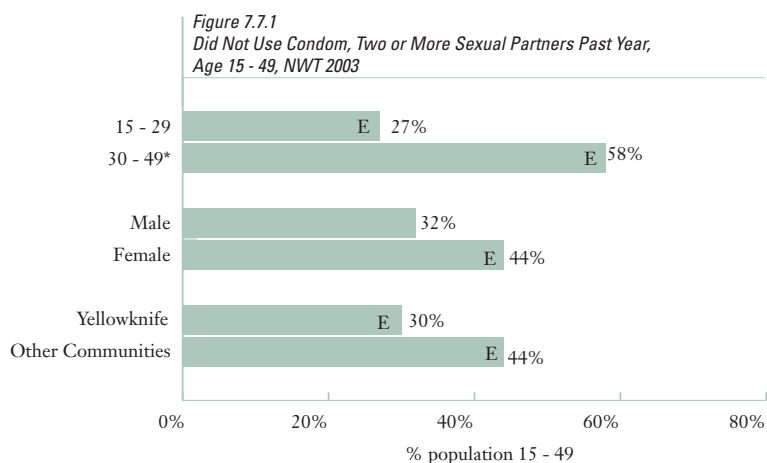
According to results from the 2003 CCHS, an estimated 93% of NWT residents between 15 and 49 years of age indicated they had sexual intercourse the previous year. Having multiple sexual partners increases the risk of the spread of sexually transmitted infections. Of those who indicated they had sexual intercourse in the past year, an estimated 17% (approximately 4,200 individuals) reported having more than one sexual partner during that time, and 8% (approximately 2,000 individuals) indicated they had three or more sexual partners.

Residents between 15 and 29 were significantly more likely than those between 30 and 49 to report multiple sex partners in the past year (30% vs. 9%). Males were more likely than females to have had two or more sexual partners in the last year (21% vs. 14%). Males between 15 and 29 had the highest rate (37%) while females between 30 and 49 had the lowest rate (6%). No significant differences between Yellowknife and the other NWT communities were noted (20% compared to 15% respectively).

The regular use of condoms, particularly in short-term relationships, can reduce the risk of sexually transmitted infections. An estimated 37% of individuals age 15 to 49 who had more than one sexual partner the previous year indicated they did not use a condom the last time they had sexual intercourse. While young adults were more likely to have more than one sexual partner in the past year, they were more likely than older adults to use a condom (see Figure 7.7.1). An estimated 27% of residents between 15 and 29 years of age who had more than one sexual partner the past year reported they did not use a condom the last time they had sexual intercourse, compared to 58% of those between 30 and 49.

It appears that males with more than one sexual partner were more likely than females to use a condom, however, the sampling variability for this indicator is high and the difference was not statistically significant. Any difference between males and females may reflect more than personal choice. It may also signal inequalities in power in a relationship if a woman must negotiate condom use with her partner.

While it appears that residents of Yellowknife who had more than one sexual partner the previous year were more likely than residents of the other NWT communities to use a condom, the difference was not statistically significant. Therefore it is not possible to determine if this observed difference is real or is the result of sampling error.



Source: Statistics Canada, 2003 CCHS Share File

* Significantly higher than 15 - 29 ($p < 0.05$)

E: High sampling variability, interpret with caution.

Chapter 8

Healthy Child Development

The effects of prenatal and early childhood experiences are critical to subsequent health, well-being, coping skills, ability to learn and competence. While healthy child development is an important determinant of subsequent health status, it is also important to note that early experiences are influenced by a number of factors including a healthy family environment, good childcare, family income, parent's education and a supportive social environment.

8.1 Low and High Birth Weight

Birth weight is an indicator of the health status of newborns. Moreover, birth weight can have long-term consequences on later adult health status. Low birth weight (less than 2,500 grams) is the main determinant of perinatal and infant mortality, and is strongly associated with the risk of illness in infants. Low birth weight babies are also more likely to have developmental delays, learning and behavioural problems, and other long-term health problems including physical disabilities. Factors associated with low birth weight include maternal smoking, poor diet during pregnancy, low weight prior to pregnancy, poverty, low levels of education, pregnancy at very early or late ages, multiple births (e.g. twins, triplets, etc) and genetic factors.

High birth weight (greater than 4,000 grams) is associated with higher neonatal mortality, a higher incidence of birth injuries and with intellectual and developmental problems later in life.¹ High birth weight is also associated with gestational diabetes in mothers and in turn, gestational diabetes is a significant risk factor for the later development of non-insulin dependent diabetes mellitus in a woman's children.² High birth weights have been reported to be more common among some Aboriginal women.³

Low birth weight babies accounted for 4% of all live births in the Northwest Territories during 2000-02. In the majority of these cases (83%) the infant was also preterm – birth before the 37th week of gestation. By comparison, 6% of all births in Canada were low birth weight during 2001.⁴

High birth weight babies accounted for 20% of all births in the territory during 2000-02, compared to 15% for Canada as a whole in 2001.⁵ Figure 8.1.1 shows the number of low and high birth weights per 100 live births in the NWT from 1990-92 to 2000-02. In addition to having more newborns with high birth weights than low birth weights, the percentage of high birth weights increased significantly during that time. The percentage of low birth weights was constant throughout the time period.

¹ MacMillian H., Walsh C., Jamieson E. et. al. "Children's Health." *First Nations and Inuit Regional Health Survey: National Report* 1999.

² Pettit DJ, Aleck KA, Baird HR, Carraber MJ, Bennett PH, Knowler WC. Congenital susceptibility to NIDDM. Role of intrauterine environment. *Diabetes* 1988;37(5):622-88.

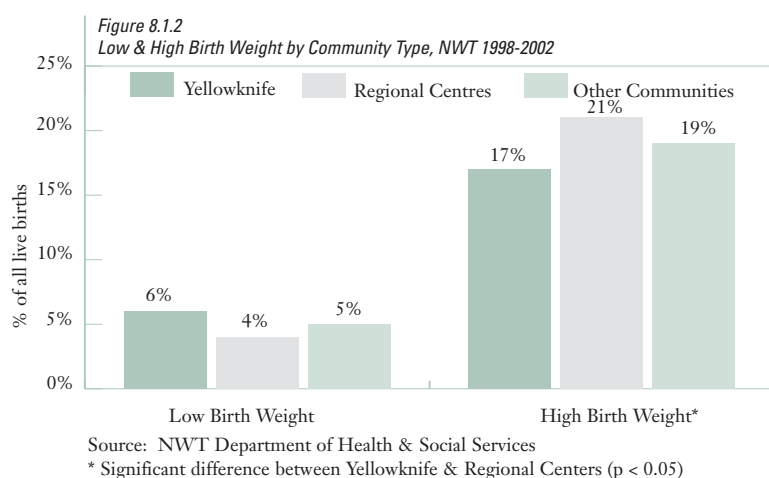
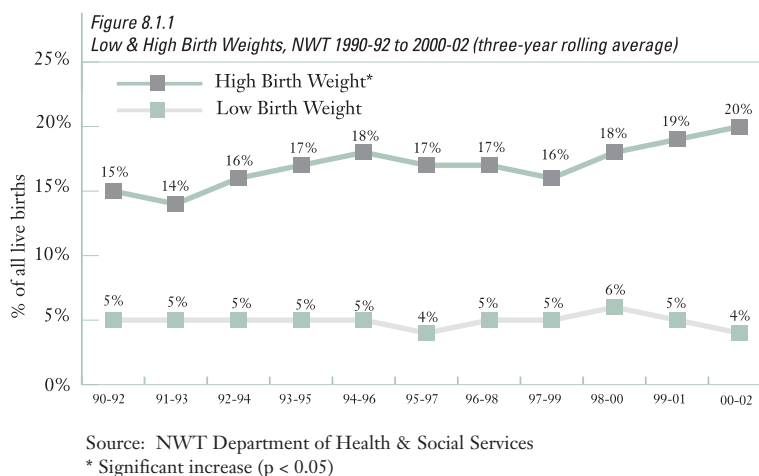
³ Thomson M. Heavy birth weight in native Indians of British Columbia. *Canadian Journal of Public Health*. 1990; 81: 443-6.

⁴ Canadian source: Statistics Canada. Cansim. <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>.

⁵ Canadian source: Statistics Canada. Cansim. <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>.

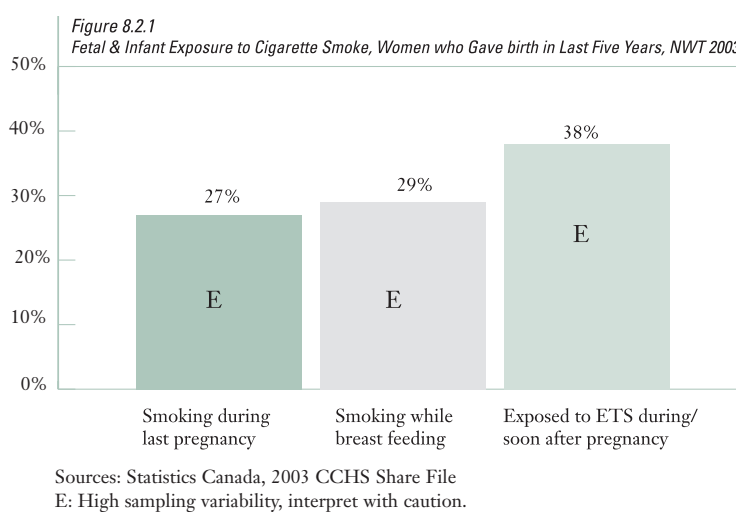
Figure 8.1.2 shows that between 1998 and 2002, the average annual rate of low birth weight for mothers living in Yellowknife was similar to the rate for mothers living in the regional centers and in the smaller communities.

When high birth weights were examined, one significant difference was noted. Between 1998 and 2002, 21% of all live births in the regional centers were considered to be high birth weight, compared to 17% in Yellowknife. The smaller communities fell in the middle (19%), not significantly different from the other two community types.



8.2 Cigarette Smoke and Pregnancy

Smoking during pregnancy is an important risk factor for low birth weight babies.⁶ Exposure to second-hand smoke can also lead to negative effects on the health of a non-smoking mother and her newborn.



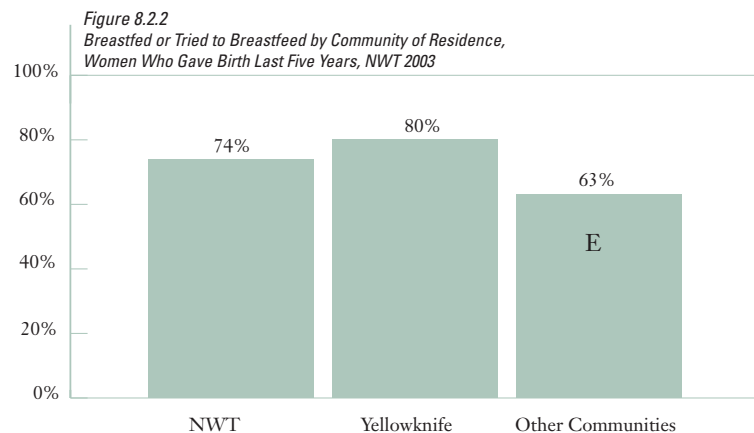
⁶ The data related to drinking alcohol during pregnancy was suppressed in this report due to extremely high sampling variability.

The 2003 CCHS provides data on recent mother's smoking while pregnant or breastfeeding, as well as their exposure to second hand smoke. Figure 8.2.1 presents the results for NWT women (aged 15-55 years old) who gave birth in the last five years. Of these women, 27% indicated they smoked during their last pregnancy. An estimated 29% of women who breastfed indicated they smoked while breastfeeding. Meanwhile, 38% of women who gave birth in the previous five years indicated that someone regularly smoked in their presence during or about six months after they gave birth.⁷

Maternal and infant health is not only a matter of avoiding unhealthy behaviours, but also of engaging in healthy behaviours such as taking folic acid and breastfeeding. Many experts recommend that women capable of becoming pregnant take 0.4 mg of folic acid daily for at least three months before pregnancy and in the first three months of pregnancy to reduce the risk of neural tube defects (such as spina bifida), stillbirths and other serious health problems in newborns. Folic acid is naturally found in foods like broccoli, spinach, peas, corn, beans, lentils, and oranges. Forty percent of NWT women who had given birth in the last five years had taken folic acid before pregnancy.⁸

Breastfeeding is beneficial to healthy child development. Breastfeeding provides infants with optimal nutrition, protects against infectious diseases, and promotes maternal-infant attachment. It may also provide some protection against sudden infant death syndrome.

The 2003 CCHS is the only recent source of information on breastfeeding in the Northwest Territories.⁹ According to this survey, an estimated 74% of NWT women age 15 to 55 who gave birth in the last five years, breastfed or attempted to breastfeed their last child. This was not significantly different from the Canadian proportion of 85%. There was also no significant difference between recent mothers living in Yellowknife and those living in the other NWT communities (see Figure 8.2.2).



Source: Statistics Canada, 2003 CCHS Share File
E: High sampling variability, interpret with caution.

The Canadian Paediatric Society, and the Dietitians of Canada recommend exclusive breastfeeding for at least the first 4 months of life.¹⁰ Nearly half (47%) of recent mothers in the NWT reported they exclusively breastfed their last baby for at least four months.¹¹

⁷ Due to the sample size for this particular group, estimates cannot be provided for Yellowknife and the other communities.

⁸ It was not possible to compare Yellowknife with the other communities due to high sampling variability.

⁹ The NWT Health Status Report, 1999 included results from the 1993 NWT Breastfeeding Survey. The 1993 data is not directly comparable to the CCHS data.

¹⁰ The Canadian Paediatric Society: <http://www.caringforkids.cps.ca/babies/Breastfeeding.htm>

¹¹ Since this is a measure of the final duration of exclusive breastfeeding, mothers who were still breastfeeding and who have not yet added any other liquid or solid foods to the baby's feeds were excluded.

Improving breastfeeding initiation and duration rates is a major public health initiative. The Department of Health and Social Services is currently administering the Breastfeeding and Infant Nutrition Survey, which collects data through all health centres and public health units on information related to breastfeeding, such as initiation and duration rates and infant feeding practices.

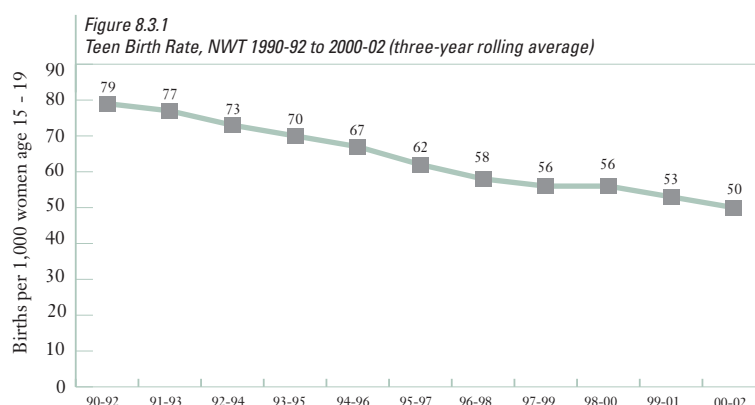
8.3 Teen Births

Teenage birth rates provide an indication of the number of children who may experience some difficulties. Teen births expose both mother and child to a certain number of risks including physical complications such as prematurity and low birth weight, as well as psychological stress. The demands of raising a child at a young age may make it more difficult to pursue an education, thereby potentially affecting future income. These factors may end up negatively affecting the well-being of both child and mother. Moreover, families begun by teens are at a higher risk of becoming lone parent families, than those begun by older parents.

However, it is important to note that a rich culture of extended families exists in the Northwest Territories. Such family structures may provide young mothers and infants with more support compared to nuclear family structures. Teen mothers with extended family supports may also have greater opportunities to pursue educational and employment opportunities.

Figure 8.3.1 shows a steady and significant decrease in the territory's teen birth rate throughout the 1990s, from 79 births per 1,000 women age 15 – 19 in 1990-92 to 50 per 1,000 in 2000-02.¹² The latter rate was still 3 times higher than the overall 2001 Canadian rate of 16 per 1,000 women 15 to 19 years of age.¹³

For the most part, the decline occurred in the communities outside of Yellowknife. The teen birth rate dropped 49% in the regional centres (93 to 48 births per 1,000 women age 15 to 19) and 47% in the smaller communities (140 to 74 births per 1,000). Both trends were significant. In contrast, the teen birth rate for Yellowknife decreased marginally from 45 to 39 births per 1,000 females 15 to 18 years of age. The drop in the teen birth rate for Yellowknife was not significant (see Figure 8.3.2).

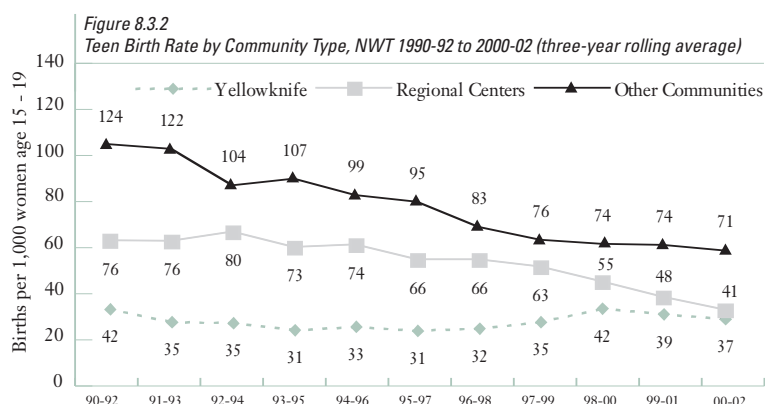


Source: NWT Department of Health & Social Services
Note: Significant decrease ($p < 0.05$)

¹² Includes all live birth to mother's less than 20 years of age.

¹³ Canadian Source - Statistics Canada: <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>

Figure 8.3.2 also shows the teen birth rates in the smaller communities were significantly higher than those in Yellowknife and the regional centers. The average annual teen birth rate in the smaller communities during the period 2000–2002 was 71 per 1,000 females between 15 and 19 years of age, compared to 41 per 1,000 in the regional centers and 37 per 1,000 in Yellowknife. Also of note, the rates in the regional centers and Yellowknife were no longer significantly different after 1997–99.



Source: NWT Department of Health & Social Services

Notes: Other communities significantly higher than Yellowknife & Regional centers, all years.

Regional centers significantly higher than Yellowknife up to 1997/99 ($p < 0.05$)

Significant decrease for other communities and regional centers ($p < 0.05$)

8.4 Immunizations

Immunization is one of the most cost-effective public health interventions available.¹⁴ Immunization of children protects them against various serious diseases. Children in the NWT are routinely vaccinated against the following: diphtheria, pertussis, tetanus, polio, chicken pox, *Haemophilus influenzae* type B (Hib), measles, mumps, rubella, hepatitis B, and tuberculosis. If an individual in a community happens to acquire any one of these diseases, transmission to others can be interrupted as long as high vaccination rates are maintained within the population. Immunizations are thus crucial for preventing disease outbreaks in the population.

When specific types of vaccinations are examined, it appears the NWT coverage rates are similar to the rates observed in Canada as a whole. For example, the coverage rates for diphtheria, pertussis and tetanus were about 72% in the NWT, compared to about 75% in Canada. The immunization rates for mumps and rubella were the same (94%) in both jurisdictions. Vaccinations for a number of other diseases are routinely given in the NWT but not necessarily in Canada (see Figure 8.4.1).

In all, approximately 70% of NWT children born in 2000 were fully immunized at age two according to the recommended schedule for the territory. By excluding hepatitis B and tuberculosis vaccines from the analysis, this proportion increases to 72% and allows for comparison with the national estimate of 58%.¹⁵

Draft national immunization targets were developed in 1996 for the proportion of 2 year olds who should be immunized against the most common vaccine-preventable illnesses. However, these targets were not endorsed by all provinces and territories. The targets are currently under review to assess the feasibility of achieving the stipulated coverage rates. After examining immunizations given to children born in 2000, the coverage rates for children by the second birthday, in the NWT and in the rest of Canada, did not meet the draft national targets (see Figure 8.4.1).

¹⁴ Rf Romanow, *Building on values: the future of health care in Canada*. 2002.
URL: < http://www.bc-sc.gc.ca/english/pdf/romanow/pdfs/HCC_Final_Report.pdf >.

¹⁵ The national estimate includes doses of diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and Hib

Figure 8.4.1
Immunization Coverage by the Second Birthday

Immunization	Doses	NWT Coverage 2000 Birth Cohort	National Estimates for 1999-2000 Birth Cohort	National Targets (developed in 1996)
Diphtheria	4	72%	77%	97%
Pertussis	4	72%	75%	95%
Tetanus	4	72%	74%	97%
Polio	>3	90%	88%	97%
Hib	4	72%	64%	97%
Measles	2	66%	76% ¹	
Measles	>1	94%	95%	97%
Measles (excluding Inuvik RHA)	2	77%	n/a	n/a
Mumps	1	94%	94%	97%
Rubella	1	94%	94%	97%
Tuberculosis ³	1	56%	n/a	n/a
Hepatitis B ⁴	3	79%	n/a	95%
Hepatitis B ⁴	2	90%	n/a	n/a
Fully vaccinated ⁵				
(at least 2 doses of hepatitis B)	25	70%	n/a	
(excluding Hepatitis B and BCG)	23	72%	58%	

Sources: NWT Department of Health & Social Services & Health Canada, Measuring Up: Results from the National Immunization Coverage Survey, 2002 <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/04vol30/dr3005ea.html>

¹ This estimate is based on a two-dose coverage by the 7th birthday.

² Excludes Inuvik RHA, which gives 2nd dose MMR at age 3

⁴ The first dose for hepatitis B vaccine is often given at the hospital after birth. In this situation, it is possible that this immunization dose was not captured by the Department's database. Business processes have recently changed to collect this information. Thus two estimates are provided for determining the proportion of children fully vaccinated for hepatitis B. The first estimate includes the first dose and the second estimate only accounts for two doses.

⁵ A child is fully vaccinated if he/she receives all immunization doses by the second birthday according to the NWT vaccination schedule. The BCG vaccine for tuberculosis was not considered as a necessary requirement for full vaccination since it is not provided universally. Two estimates for full vaccination are provided based on whether or not the hepatitis B vaccine was included in the analysis.

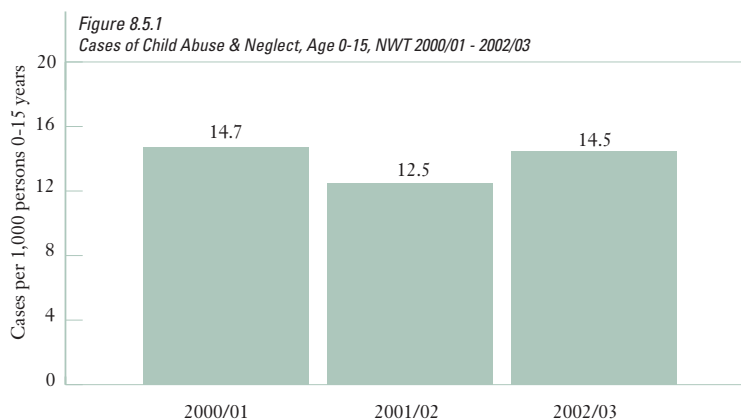
8.5 Child Abuse and Neglect

Abuse and neglect has enormous negative effects on children's healthy development. The abusers are often family members, or someone already known to the child and trusted by the parents. Children who are abandoned and/or do not have their basic needs met are also put at a major disadvantage.

In cases of both abuse and neglect, not every incident is reported to social workers. Moreover, upon investigation not all reported cases are found to be true cases of abuse or neglect. However, the reported incidents that are confirmed to be abuse or neglect provide some indication of the level of this social problem when examined over a number of years.

The rate of reported child abuse and neglect was 14.7 cases per 1,000 children between 0 and 15 years of age in 2000/01, and 14.5 per 1,000 in 2002/03 (see Figure 8.5.1). On average, the rate was 13.9 per 1,000 children 0 – 15 years of age over the three-year period.

When the type of abuse was examined in more detail, neglect and abandonment represented the largest number of cases over this three-year period. The average annual rate of neglect and abandonment cases was 9.8 per 1,000 children 0 to 15 years of age. Meanwhile, the average annual rate of physical abuse between 2000/01 and 2002/03 was 2.0 per 1,000, and the rate for sexual abuse was 2.1 per 1,000 children 0 to 15 years of age.



Source: NWT Department of Health & Social Services

8.6 Children Receiving Child Welfare Services

While it is difficult to quantify the number of children growing up in circumstances that put them at serious risk, the number of children either removed from their parents or guardians, or in families receiving child protection services in their own homes may be used as one indicator to measure this problem.¹⁶ The responsibility to protect and nurture children rests with parents. However, child protection agencies are responsible to investigate allegations of maltreatment and intervene if necessary.

Children often receive child protection services because they were abused or neglected. Other children may come into care and/or receive services because they have behavioural problems resulting from development delays or Fetal Alcohol Spectrum Disorders. Still others may come into care or receive services because their parents required some assistance. Some children who require protection services live in circumstances that may have a negative impact on their healthy development.

The introduction of the Child and Family Services Act in 1998 created a new way of approaching children at risk. Under the previous Child Welfare Act, upon investigation of an alleged case of child abuse, neglect or behavioural problems, a child protection worker had two options: apprehend the child or not apprehend the child. Under the new Act, a third option was added: plan of care agreement. Simply put, the plan of care option allows child protection workers to encourage parents/guardians to receive services for themselves and/or their child, with or without the removal of the child from the home.

Under the previous legislation, when a child protection worker investigated, he or she may have seen problems with a child's situation but not have had sufficient evidence to apprehend the child. In these marginal cases, the child and the family were unlikely to receive any significant assistance. Now, in such situations, a child protection worker can work with the child and the family in the child's home. Initially, the expectation with the plan of care option was that the number of children receiving services would increase as the effects of the new Act were felt across NWT communities.

¹⁶ Children receiving services is a broader term that includes both children who are receiving services in their home or outside of the home (i.e., foster care).

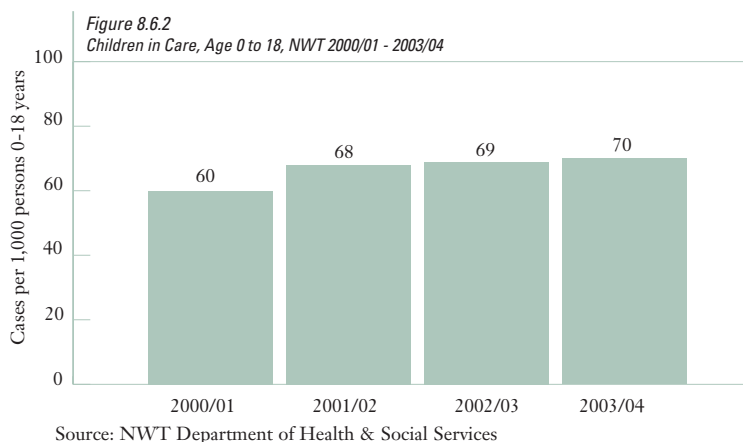
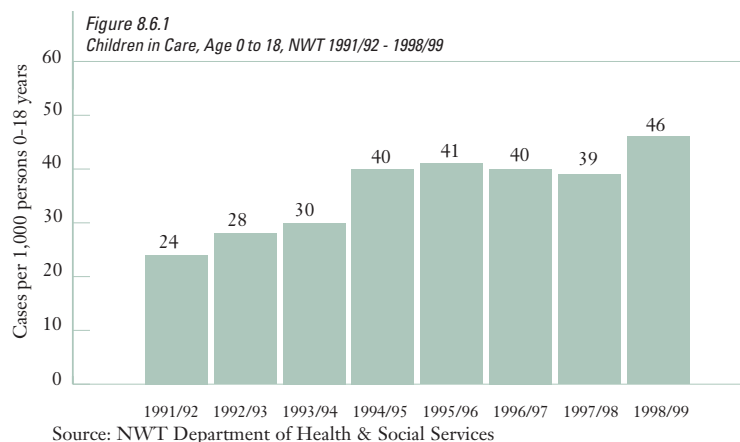
Because of this legislative change, the rate of children receiving services is presented across two time periods: 1991/92 to 1998/99 and then between 2000/01 and 2003/04. The first period reflects the proportion of children known to be at risk (mainly taken into care) under the old legislation, while the second period reflects the children known to be at risk under the new legislation.

Between 1991/92 and 1998/99, the rate of children in care increased by 90%, from 24 per 1,000 children less than 19 years of age, to 46 per 1,000. As seen in Figure 8.6.1, most of the increase occurred between 1993/94 and 1994/95.

Between 2000/01 and 2003/04, the rate of children in care increased from 60 cases per 1,000 children less than 19 years of age to 70 cases per 1,000 (see Figure 8.6.2). Most of the change occurred between 2000/01 and 2001/02. As social workers and families became more accustomed to the new directions in child protection, the numbers of children receiving services increased.¹⁷

This initial increase can be seen in a positive light as it indicates that more children at risk have been identified and they and their families subsequently received services.

In addition to the impacts of legislative changes, it is important to understand that the annual rates presented in both Figures 8.6.1 and 8.6.2 include a range of children who may be in care for as little as 72 hours to children who may be receiving services for the entire year.



¹⁷ An additional factor in the increase in number of children receiving services is the introduction of the Child and Family Information System (CFIS) in 2000/01. CFIS allowed for the comprehensive collection of administrative information on child welfare related cases (investigations, caseloads etc) across the NWT. No such system previously existed.

8.7 Young Smokers¹⁸

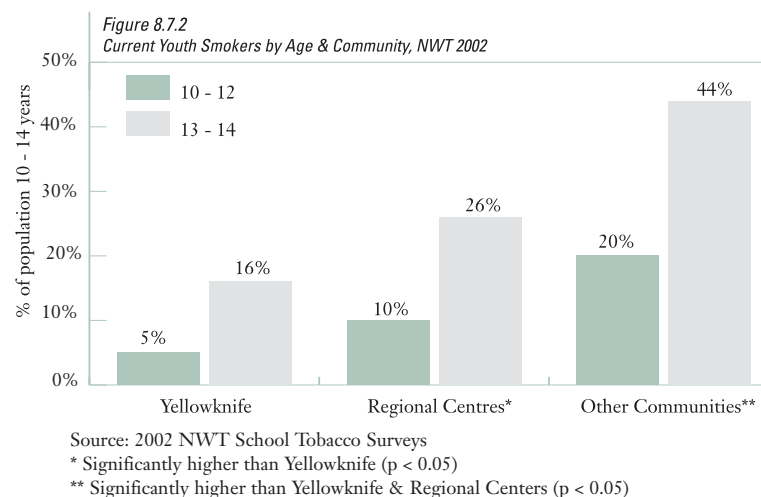
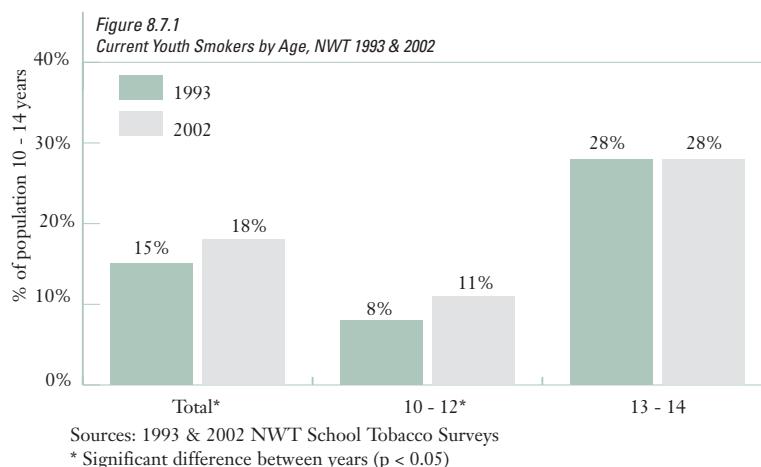
There are a number of complex and interacting reasons why children begin to smoke cigarettes. Adolescence is a period of rapid emotional and psychological transition and for some smoking is seen as a means of coping with this transition. They often equate smoking with a sense of independence. However, what starts as an act of independence rapidly becomes an addictive dependence on tobacco. Children's social environments also influence their smoking behaviour. The likelihood of becoming a smoker is higher if friends, parents and/or siblings also smoke. If smoking is a common and accepted practice among adults, children are more likely to use tobacco at a young age.

Evidence suggests that youth smoking is a major public health problem in the Northwest Territories. Results from the 2002 school tobacco survey indicated that nearly one in five children (18%) between 10 and 14 years of age were smokers, about three times higher than the Canadian rate. Moreover, it appears that the situation is not improving. The proportion of children who reported smoking increased slightly during the 1990s.

In 1993, an estimated 15% indicated they smoked (see Figure 8.7.1).

It is also evident that the risk of smoking initiation climbs sharply between ages 12 and 14 years. At ages 10 to 12 about 11% of children smoke, by the ages 13 to 14, an estimated 28% smoke. It appears that many children in the Northwest Territories move from experimentation to regular smoking before the age of 15, making this a critical period for prevention efforts.

The smoking prevalence among children 10 to 14 years of age living in the smaller communities was nearly two times higher than the rate in the regional centers of Hay River, Fort Smith and Inuvik, and over three times higher than the rate for Yellowknife (30%, 17%, and 9% respectively). This difference was observed for both age groups. The difference between community types was particularly evident among individuals between 10 and 12 years of age. In the smaller communities an estimated 20% indicated they smoke, compared to 10% in the regional centers and 5% in Yellowknife (see Figure 8.7.2).



¹⁸ In this section, the term children refer to persons between 10 and 14 years of age.

The continuing high rates of smoking and the early age of smoking initiation present a large public health challenge. There are a number of very good reasons to prevent smoking uptake among children. People who do not regularly smoke before the age of 18 are unlikely to start. Moreover, the probability of quitting is associated with the age at which people become smokers. Those who begin to smoke at an early age are less likely to quit later in life.¹⁹ The younger someone begins to smoke, the greater their chances of developing lung cancer or other chronic smoking related diseases.²⁰ Smoking during adolescence also has more immediate impacts on health. Young smokers are likely to be less physically active than their non-smoking peers and are more susceptible to respiratory tract infections.

¹⁹ Chen J, Millar W.J. *Age of smoking initiation: implications for quitting. Health Reports* 1998; 9, 4: 39-46.

²⁰ Villeneuve P, Morrison H. *Health Consequences of Smoking in Canada: An Update*

Chapter 9

Preventative Health Services

Prevention is critical not only to reducing disease and injury in a population, but also to maintaining a healthy population. There are several ways to approach prevention. Primary prevention focuses on eliminating risk factors and preventing disease before it develops. Examples include the promotion of healthy eating, physical fitness, smoking cessation and emotional well-being, and making the environment safe. These types of activities are often part of a process of health promotion.¹ Immunization programs can also be considered an important primary prevention service. Childhood immunization was discussed in section 8.4.

Secondary prevention refers to measures concerned with the early detection and treatment of disease among individuals who have no symptoms. Examples include blood pressure monitoring, breast cancer screening, and cervical cancer screening. The following section takes a look at utilization of these programs. It is important to point out that the level of use is not only a reflection of the accessibility of preventative health services but also of people's decisions to utilize these services.

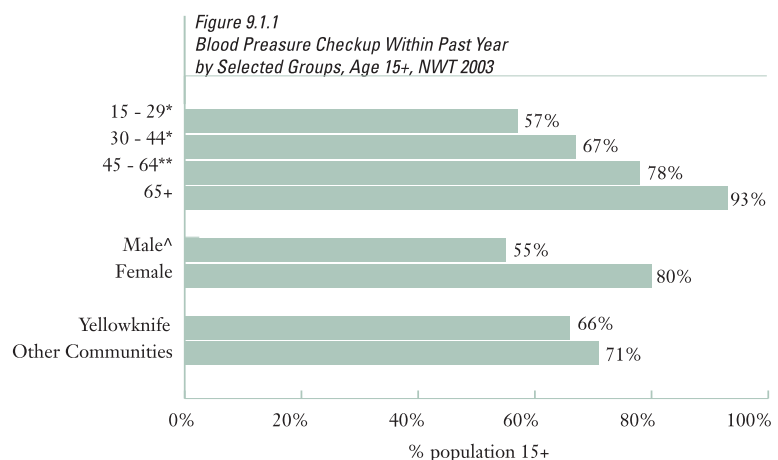
9.1 Blood Pressure Checkup

High blood pressure (also called hypertension) is known as the "silent killer" because it does not usually make those who have it feel ill. Many are not aware of the problem. However, if left untreated, high blood pressure can lead to kidney failure, heart attack or stroke. The latter two are major causes of death in the Northwest Territories. A regular blood pressure checkup is the most reliable means of detecting high blood pressure.

In 2003, an estimated 68% of NWT residents 15 years of age and older reported they had their blood pressure checked within the previous year. Another 15% had a test between one and two years, and 12% two or more years prior to the survey. Meanwhile, five percent reported they never had their blood pressure checked, almost all of whom were between the ages of 15 and 29.

Figure 9.1.1 provides information on the proportion of the population who reported receiving a blood pressure check within the past year.

Hypertension is usually discovered at a regular medical check-up when a doctor or nurse takes a blood pressure reading. Differences between groups highlighted in Figure 9.1.1 likely reflect differences in people's decisions to obtain an annual medical check-up. With each older age group, there were a higher proportion of residents who had a blood pressure checkup within the past year, from 57% for those between 15 and 29 years of age to 93% for those 65 and older.²



Source: Statistics Canada, 2003 CCHS Share File

*Significantly lower than 45 - 64 & 65 +; ** Significantly lower than 65 +;

^ Significantly lower than female ($p < 0.05$).

¹ The social determinants of health are also extremely important to population health status but improving the socio-economic circumstances of individuals and groups is often viewed to be outside of the role of the health sector.

² The differences were statistically significant for all age groups except 15-29 and 40-44. The difference between age groups 15-29 and 40-44 was nearing statistical significance ($p = 0.06$).

Women were significantly more likely than men to have had their blood pressure checked within the past year (80% vs. 55%). This difference was noted for each age group but was greatest for those less than 45 years of age. For example, 39% of males between 15 and 29 reported they received a blood pressure check in the past year compared to 74% of females in this age group. Meanwhile, 70% of men between 45 and 64 indicated they had their blood pressure checked in the past year compared to 87% of women. This pattern may be due in part to younger women seeing a health care professional more often than men in the same age group because of reproductive health issues. The proportion of Yellowknife residents 15 years of age and older who had their blood pressure checked within the past year was similar to the proportion of residents living in the other NWT communities (66% vs. 71%).

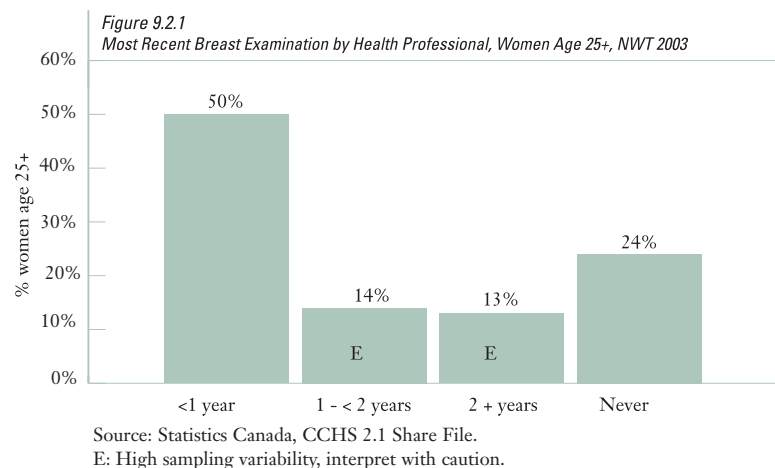
9.2 Breast Cancer Screening

Deaths from breast cancer have been reduced significantly due to improvements in cancer treatment and the development of screening programs – mammography and clinical breast examinations – which can detect breast cancer in its earliest stages. Studies have shown that early detection of breast cancer using mammograms can reduce cancer mortality in women between the ages of 50 to 69. Currently mammography is recommended every two years for women in this age group.³

In 2003, an estimated 67% of NWT women between 50 and 69 reported they had received a mammogram within the past two years, compared to 73% in Canada.⁴ Meanwhile, 77% of NWT women indicated they had received a mammogram within the previous five years. An estimated 58% of Yellowknife women in this age group reported they had a mammogram in the last

two years, compared to 79% in the other communities. While this difference was not statistically significant, it was close ($p = 0.07$). The evidence is therefore inconclusive and the difference between Yellowknife and the other communities may be due to high sampling variability created by the relatively small number of women 50 to 69 years of age in the 2003 CCHS sample.⁵

The training of health professionals to use appropriate standards and guidelines for clinical breast examinations are equally important as mammography for detecting cancer. Current NWT guidelines for breast cancer screening in the general population recommends an annual clinical breast examination by a trained health professional for all women in their mid-20s and older.



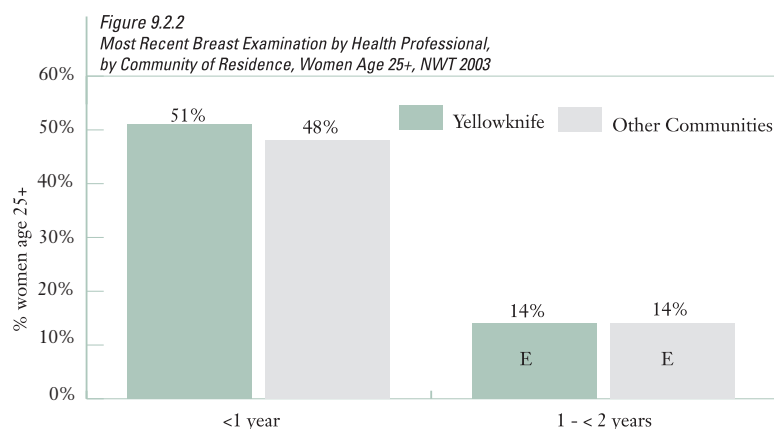
³ There are still discussions concerning the benefits of screening women between 40 and 49 years of age.

⁴ Canadian Source: 2003 CCHS Share File. The difference was not statistically significant.

⁵ For more detailed discussion of breast cancer screening in the NWT see *Cancer in the Northwest Territories 1990 – 2000: A Descriptive Report*. NWT Health and Social Services, December 2003.

In 2003, 76% of women 25 years of age and older indicated they had received a clinical breast examination from a health professional at least once in their lifetime. Approximately 50% had received a clinical breast examination within the previous year and another 14% within two years. Meanwhile, 13% of women 25 years of age and older reported that two or more years had passed since their last exam, and almost one-quarter of NWT women in this age group (24%) indicated they have never had a clinical breast examination.

There were no notable differences between residents of Yellowknife and residents of the other NWT communities in their experience with clinical breast examinations by a health professional (see Figure 9.2.2). An estimated 51% of Yellowknife women 25 years of age and older indicated they had an exam within the previous year, compared to 48% of women living in the other communities. An additional 14% of women in both Yellowknife and the other communities had a clinical exam between one and two years prior to the survey.



Source: Statistics Canada, CCHS 2.1 Share File.

E: High sampling variability, interpret with caution.

9.3 Cervical Cancer Screening

Pap smear tests involve sampling cervical cells for abnormalities. Pap smears are designed to detect pre-cancerous and cancerous conditions early so as to facilitate treatment. The test is effective in reducing 60% of cases and deaths from cervical cancer.⁶ It is recommended that annual screening begin following the initiation of sexual activity. Following three normal tests, the Pap smear can then be done every two years until age 69.

In 2003, 83% of women in the NWT between 18 and 69 years of age indicated they received a Pap smear in the last three years - about the same as the rate for Canadian women (76%).⁷ The 2003 NWT proportion was unchanged from 1994/95 when 81% of women 18 to 69 years of age said they received a pap test in the previous three years.⁸ Meanwhile, in the NWT women between 18 and 44 years of age were significantly more likely than those between 45 and 69 to report receiving a pap smear in the previous three years (89% vs. 67%).

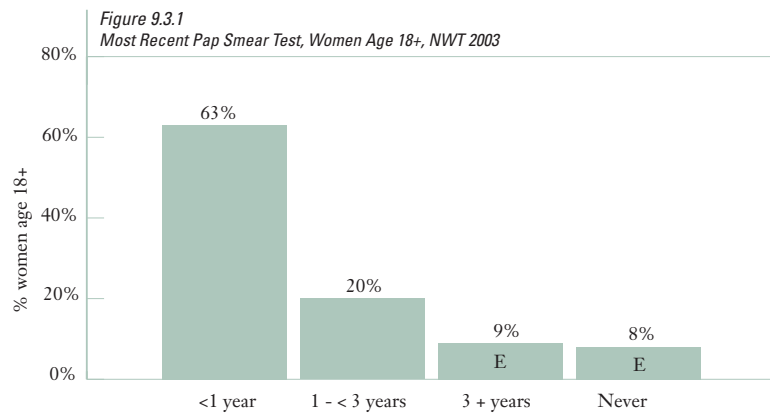
⁶ A.B. Miller; *The Brave New World - What can We Realistically Expect to Achieve Through Cancer Control Early in the New Millennium? Chronic Disease in Canada, Vol. 20, No. 4, (1999): 139-150.*

⁷ Age standardized to the 2003 NWT population, the Canadian rate would increase slightly to 77%. Canadian source: 2003 CCHS Share File.

⁸ Source: NWT Bureau of Statistics; 1994/95 NPHS

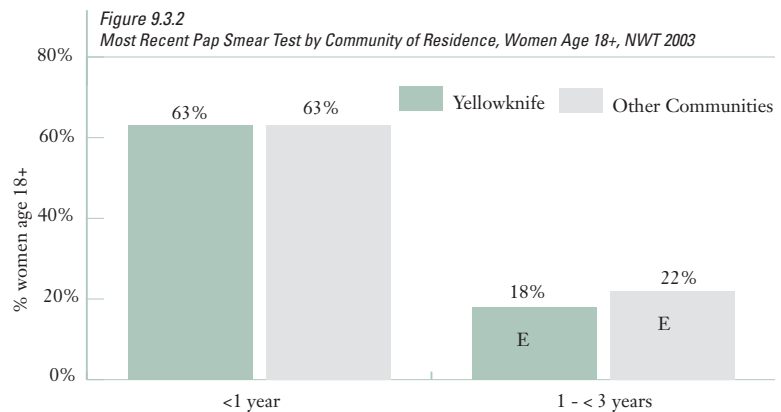
Figure 9.3.1 takes a closer look at the frequency of cervical screening among NWT women between 18 and 69. It shows that 63% reported receiving a pap smear in the previous year and 20% had a test between one and three years. Another 9% had their last test three or more years before and 8% had never received a test.

Figure 9.3.2 indicates that women residing in Yellowknife were just as likely to receive a Pap smear in the last three years as those living in other NWT communities (81% vs. 85%). However, an earlier study examining women 15 years and older found that screening rates in regional centers (75%) and smaller communities (72%) were significantly lower than rates in Yellowknife (87%)⁹



Source: Statistics Canada, CCHS 2.1 Share File.

E: High sampling variability, interpret with caution.



Source: Statistics Canada, CCHS 2.1 Share File.

E: High sampling variability, interpret with caution.

⁹ S. McDermott, *Cervical Cancer Screening in the NWT*, *EpiNorth*, 14(1), (Winter 2002): 1, 14-18.

Chapter 10

Concluding Remarks

This report presents a broad look at the health of the people of the Northwest Territories at the turn of the 20th Century and the beginning of the 21st. What emerges is a picture of a population that has experienced some improvements in a number of areas, deterioration in some others, but overall, little change in most health indicators during the past ten to fifteen years.

Data prior to the 1990s were not available for a large number of indicators. Where pre-1990 data was accessible, for example life expectancy at birth, infant mortality rates, premature mortality rates and mortality rates by major cause, evidence suggested that improvements did occur during the 1980s but little change occurred during the 1990s. Moreover, the proportion of the population who perceived themselves in good or better health did not change between 1994/95 and 2003. The prevalence of a number of chronic conditions such as arthritis, asthma and depression was also unchanged during this period. After taking the changing age structure of the population into account, the incidence of cancer has also remained unchanged since the early 1990s.

There were some improvements in the incidence of tuberculosis and in a number of vaccine preventable diseases such as whooping cough and chickenpox during the 1990s. These successes are both testament to strong vaccination and tuberculosis awareness programs.

On the other hand, the incidence of sexually transmitted infections increased between 1997 and 2003. Hepatitis C infections have also increased. While the infection rates of HIV/AIDs remain apparently low, the evidence of unsafe sex greatly increases the risk of the spread of this disease. The incidence of suicide increased during the mid 1990s and has remained steady since then. The prevalence of diabetes is increasing. There is also some evidence, although somewhat inconclusive, that the overall functional health of youth and young adults has declined since the mid 1990s.

The report also indicates that significant differences in the health status of NWT residents do exist, depending on age, gender and community of residence. Overall, population health status tends to decline as the population grows older. Older people are more likely to suffer from chronic conditions and reduced functional health status. It is noteworthy that many young people also appear to be struggling. Indicators such as depression and suicidal behaviour show that the emotional health of young people in the NWT may be a cause for concern.

On average, women live longer than men. In recent years, however, this gap has been closing. The difference in longevity between men and women is due in part to the higher injury mortality rates among men. Meanwhile, on measures such as self-rated health and functional health status, women do not score as well as men, on average.

By many measures, residents of Yellowknife are healthier than residents of the smaller communities in the territory. On average, they score higher on self-reported health status, and some measures of psychological well-being. They tend to have lower levels of activity limitations, communicable diseases such as tuberculosis and STIs. Infant mortality, premature mortality and suicide rates are also higher in the smaller communities. Many of these differences may be related to differences in living and working conditions, personal health practices and early childhood experiences. These determinants of health affect health directly and also indirectly by interaction with other factors.

The population health framework adopted in this report highlights the important influence that demographics, social and economic factors, and early childhood development have on health status. Compared to residents of Yellowknife, individuals who live in the smaller NWT communities tend to have lower levels of education, lower incomes and lower employment rates. They were also less likely to indicate they enjoy high levels of social support, participate in volunteer organizations and live in suitable housing. Meanwhile they were more likely than Yellowknife residents to smoke, drink alcohol heavily on a regular basis and be exposed to environmental tobacco smoke. It is not surprising, therefore, to find that many residents of the smaller NWT communities have higher health risks than those who live in the larger center. However, it should be noted that not all residents in smaller communities have higher health risks, just like not all residents of Yellowknife have lower health risks.

Evidence suggests that a large number of NWT residents across the NWT are still making unhealthy lifestyle choices. The majority of residents 12 years of age and older do not consume the recommended number of servings of fruits and vegetables per day. Almost half are physically inactive, 41% smoke cigarettes, 21% drink heavily on a regular basis and nearly half do not always wear a seat belt when riding in a car, truck or van. About one quarter of adults between 20 and 64 are obese. And about 40% of individuals between 15 and 49 who had more than one sexual partner the past year did not use a condom.

High-risk behaviours do not occur in isolation. There are complex interactions between these factors and the other major determinants of health. For example, individuals with lower socioeconomic status (lower education and income) are more likely than those with higher status to smoke, be physically inactive and drink alcohol heavily. It is these interactions that influence health status. In other words behaviours need to be examined within the context of people's socio-economic situation. Policies that promote healthy socio-economic environments will also have a positive impact on people's health behaviours.

A number of the indicators that measure the determinants of health have shown some progress. Education levels have increased in many communities. Employment rates have also shown some signs of improvement. These socioeconomic improvements may lead to better health and well-being of the population if changes spread evenly in a manner that does not cause major social disruption, fosters greater self-determination and increases opportunities for people to make real healthy choices.

Challenges to maintaining and improving the health status of the territory's population lie ahead. Given the many factors that influence health, meeting these challenges will require the involvement of numerous agencies in the development of healthy public policies along with the active support of the public. Creating a sustainable economy with a fair distribution of meaningful work and income, encouraging educational opportunities and life-long learning, fostering social support networks in families and communities, ensuring adequate housing, encouraging healthy lifestyle decisions, cultivating healthy child development, promoting a healthy and sustainable environment, and providing appropriate and accessible health services are all challenges that require everyone's attention.

“Creating an environment that supports healthy people is truly a shared responsibility and requires each of us to do our part. This means that governments must deliver effective public policies and adequate resources to support social programs. It means that communities should support individual members to achieve healthy lifestyles and behaviour. It also means that families and individuals must make healthy lifestyle choices – good prenatal care, staying in school, healthy eating, active living and no smoking, drinking, drugs or violence.”

*Self-reliant People, Communities and Northwest Territories – A Shared Responsibility:
Government of the Northwest Territories Strategic Plan,
GNWT, June 2004, p.5*

Appendix A

Data Sources and Limitations

In this section each data source is described along with a discussion of some of its limitations. Both surveys and administrative sources of data have been used. The following is a brief discussion of each major data source and some limitations.

The Canadian Community Health Survey (CCHS) is the major source of health-related survey data for the Northwest Territories. It includes information on both health status indicators, such as self-rated health and selected chronic conditions, and health determinants, such as physical activity and healthy eating. This report uses results from the 2003 CCHS Share File 2.1, which contains a sample size of 993 individuals 12 years of age and older.

The National Population Health Survey (NPHS) is another major source of survey data. The 1994/95 NPHS contained some of the same questions as the CCHS but had a smaller sample size - 447 individuals 12 years of age and older. As a result of the sample size, many estimates from this survey must be treated with caution. Moreover, because the methodology for each survey was different, comparisons between the NPHS and the CCHS should also be interpreted with caution. In other words it is not always clear whether trends were due to changes in methodology between the two surveys or real societal changes, or both.

Other general limitations of health surveys include possible recall bias and underreporting of some behaviours that may be considered socially unacceptable such as frequent heavy alcohol consumption, drinking and driving. Sample sizes often mean analysis can be presented only for major geographical regions and for more common conditions.

The census, conducted by Statistics Canada every five years, provides a great deal of information about the demographic, social and economic characteristics of the territory's population. Levels of education, income and employment were taken from this source. The latest census was conducted in 2001.

Data for a number of diseases including tuberculosis, sexually transmitted infections, vaccine preventable diseases, and cancer are based on disease registries and represent the most complete and consistent source of information about health conditions at the person level. These sources also allow the calculation of incidence rates, or the number of new cases of a disease in a population over a period of time.

Vital statistics is another major source of information about the health of a population. Vital statistics refers to data collected from ongoing registration of all vital events. The vital statistics database was the data source for a number of health indicators including: infant mortality, leading causes of death, low birth weights, and fertility rates.

A number of indicators including hospitalizations due to mental illness were obtained from discharge abstracts submitted to the Canadian Institute of Health Information (CIHI) by all NWT hospitals. The data provides the number of hospital separations recorded in the fiscal year by the main medical diagnosis. (The diagnosis determined to be the one most responsible for the length of stay in the hospital). This data source only provides an indirect inference of the disease since it is based on the number of events (hospital separations) rather than on the number of individuals. As a result, it does not provide an accurate estimate of prevalence or incidence rates. For example, individuals may enter and leave hospital more than once in a given year for the same health problem.

Various indicators were obtained from a number of other administrative sources and topic-specific surveys. For example, diabetes prevalence was obtained from Health Canada's National Diabetes Surveillance System and crime statistics from the Canadian Centre for Justice Statistics. Information regarding tobacco use was obtained from the 2004 Northern Tobacco Use Monitoring Survey. The NWT Bureau of Statistics provided population estimates used to calculate rates for all administrative data.

Throughout the report, where comparisons are made between groups the reader is given an indication of when any difference is statistically significant. This is important in the case of survey data because the sample used in any survey may not accurately represent the entire population. In other words, because of sampling there may be differences between results obtained from the survey and those that would have resulted if the entire population had been interviewed. This is known as sampling error, and it tends to increase as sample sizes decrease. Statistical tests are used to provide an indication of whether differences between estimates obtained from a sample were possibly due to sampling error. Where estimates are based on small samples, apparently large differences may not be statistically significant. This does not mean that the observed difference is not "real." Rather it means that using the statistical tests we were unable to conclude with a high degree of confidence that the observed difference was not due to sampling error.

Administrative data sources like disease registries and vital statistics tend to capture all or nearly all of the occurrences of the particular health-related event in the population. Unlike survey data, they are not subject to sampling error. However, given the relatively small number of people living in the NWT and the relatively small number of events recorded each year, annual rates may vary a great deal due to chance or random variation. Statistical tests provide a means of measuring the degree to which possible random variation needs to be taken into account when comparing rates. Again where the number of cases for a particular indicator is small what may appear to be large differences between groups may be due to random variation at that particular time. Efforts were made to reduce this type of variability by aggregating multiple years of data.