THE NWT HEALTH STATUS REPORT 1999

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Northwest Territories Health and Social Services

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This report was prepared by the
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A Message from the Minister

It is my privilege to be able to present this first report on the health status of the population in the new Northwest Territories.

The *Northwest Territories Health Status Report* is intended to inform the public, policy-makers and health practitioners about the health and well being of the population in general. It is also intended to inform people about the major determinants of health in the Northwest Territories, and to highlight some of the challenges and opportunities that lie ahead.

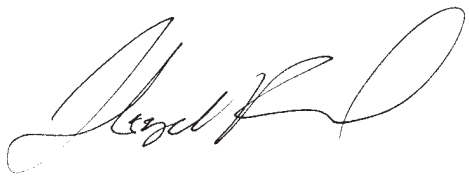
This report is also a way of publicly accounting for the results and outcomes of our health and social service system. It should serve, therefore, to assist in evaluating program effectiveness, in determining strategic priorities, and in developing healthy public policies.

The report comes at a time that is full of hope for the future, as expressed in the Government's *Agenda for a New North: Achieving Our Potential in the 21st Century*. This Agenda sets out a vision which includes, among other things, a healthier and more self-determined population with access to those basic necessities that are essential to health - good education, stable employment, adequate housing and modern healthcare. This is a unifying vision, one that everyone can share.

As the reader will see, in many respects the people of the Northwest Territories are at least as healthy as other Canadians. But there is still room for improvement.

Everyone has a vital role to play in determining the health status of the people of the Northwest Territories. The determinants of health extend well beyond the traditional boundaries of the health care system. Some health determinants are a matter of individual choice, and these highlight the role that each of us plays in contributing not just to our own health, but to the collective health of the population. Other major influences on our health take place at home and in community settings, and these highlight the role that family, friends and community leaders play in influencing the health of our people. Still others are linked to the physical and economic environments in which we live and work, and these draw attention to the roles of business, industry and government.

Improvements in the health of the population can never be achieved in isolation; it always results from all segments of society working in a spirit of partnership and co-operation toward a shared vision of the future.



Floyd K. Roland

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Executive Summary

This report on the health status of the residents of the Northwest Territories adopts a population health framework. In this approach, health is viewed as an outcome of many factors relating not only to the quality and quantity of health services, but also to a broad range of influences including social and economic factors, demographics, the environment, as well as personal characteristics, habits and behaviours.

This is the first report focused on the post-division Northwest Territories. It will therefore serve as a baseline to measure future progress and accomplishments.

The last report on health status in the Northwest Territories, published in 1990, had as its theme *Choosing Health*. That theme remains as relevant today as it was then. As the people of the Northwest Territories have moved closer toward self-determination over the past decade, their opportunities to make real choices have increased significantly, and will continue to increase in the future. The choices that people make about health need to be based on solid knowledge, experience and information.

Population Health Status

Life expectancy is generally accepted as a very good overall indicator of population health status. Today, the average baby boy in the Northwest Territories can expect to live to the age of 72, which is four years less than his Canadian counterpart. The average baby girl can expect to live to the age of 77, or five years less than her Canadian counterpart. But these comparisons do not reveal the full picture.

Looking just at the population within the Northwest Territories, life expectancy has been increasing steadily over the past two decades for all groups except non-Aboriginal women, whose life expectancy has been stable at 80 years for most of the last decade. Aboriginal women and non-Aboriginal men have seen their life expectancy increase from less than 70 years in 1980 to 75 years in 1997. Aboriginal men have also experienced an increase in life expectancy, from about 60 years in 1980 to almost 70 years in 1997.

Infant mortality, another good measure of population health, has been basically the same as the Canadian rate for the past ten years.

Overall, residents of the Northwest Territories rate their health as being good, very good or excellent. Only 9% say that their health is poor. These findings are consistent with the pattern in the rest of Canada. Where there is a difference, however, is with Northwest Territories elders, only 15% of whom reported excellent or very good health, compared to 40% nationally.

The Northwest Territories population is comparatively young. In 1996, 37% of the population was under the age of 20, compared to 27% nationally, while only 4% were 65 or older, compared to 12% nationally. The incidence of some diseases is tied to age (for example, whooping cough and measles tend to occur during childhood, injuries and sexually-transmitted diseases predominantly affect young people, while cancers and heart disease usually appear later in life), so the health picture that emerges in this report depends to some extent on the unique age make-up of the Northwest Territories population.

The major reasons for hospital (inpatient) visits by residents of the Northwest Territories in 1997 were, in order of frequency, childbirth, mental disorders (e.g., depression), respiratory diseases, injuries, and disorders of the digestive system. The major reasons for community health centre (outpatient) visits by residents of the Northwest Territories in 1997 were, in order of frequency, respiratory diseases, injuries, and diseases of the nervous system and sense organs (e.g., ear, nose and throat infections).

In the last half of this century many communicable diseases have been brought under control, and Northwest Territories communicable disease rates are now comparable to Canadian rates, with a few exceptions. The incidence of tuberculosis remains higher than the Canadian rate, as do the rates for some sexually-transmitted diseases.

Childhood immunization coverage in the Northwest Territories exceeds the estimates for other parts of Canada, with 90% of northern children reported immunized at preschool screening. In spite of this, the rates of some vaccine-preventable diseases, like whooping cough, continue to be higher than the Canadian rates. The reasons for this are not entirely clear, but likely are related to a combination of factors, including better reporting and the fact that these air-borne diseases spread easily in the closed and sometimes overcrowded living environments that many Northwest Territories children, and adults, experience during the long northern winters.

Major Causes of Mortality

In the Northwest Territories, the leading causes of death are cancers (25%), circulatory diseases (23%) and injuries (23%). To compare these numbers to Canada requires that the different age compositions of the Northwest Territories and Canadian populations be taken into account. When that is done, mortality due to injury is almost twice the Canadian rate, mortality due to cancer is about the same as the Canadian rate, and mortality due to circulatory diseases is lower than the Canadian rate. The death rate from respiratory diseases, which accounts for 9% of Northwest Territories deaths, is also higher than the Canadian rate.

Many of the deaths occurring in the Northwest Territories are premature and preventable. It is estimated that nearly one quarter of all deaths from cancer, circulatory and respiratory diseases are related to smoking. Further, many injury deaths could be avoided through safer practices, like careful boating, sober driving and fire prevention. On average, each person who dies prematurely (before age 70) in the Northwest Territories loses 27 years of potential life.

Social, Economic and Environmental Influences

As the population gets older, the health picture of Northwest Territories residents will change. Population projections suggest that by 2018, the number of elders in the Northwest Territories will more than double, while the number of people less than 20 years old will only increase by 15%.

This shifting age structure of the population is partially due to decreasing birth and fertility rates which have been declining for the past decade and are beginning to approach national levels. It is also partially due to the fact that life expectancy is increasing in the Northwest Territories.

World-wide, there is a clear relationship between income and health, or more specifically between income disparities and inequalities in health status. The same holds true in Canada, as stated in the Report on the Health of Canadians:

"Studies suggest that the distribution of income in a given society may be a more important determinant of health than the total amount of income earned by society members. Large gaps in income lead to increases in social problems and poorer health among the population as a whole." [1]

While the average income in the Northwest Territories is some $13,000 higher than for Canada as a whole, this figure hides some real disparities. In communities other than Yellowknife and the regional centres of the Northwest Territories, average incomes are $4,000 lower than the Canadian average, and $11,000 less than the Territorial average.

Income is positively related to employment, and employment is positively related to education. These three variables go a long way in determining socio-economic status. During the 10-year period between 1986 and 1996, the proportion of the population with less than grade nine in the Northwest Territories decreased from 24% to 15%. The same trend was observed in the smaller communities - from 44% to 32% with less than grade nine - but there is still a large gap to close.

There is a direct positive relationship between education and employment, but economic factors also play a vital role. In spite of generally increasing levels of education, unemployment in the Northwest Territories has risen from 7% in 1981 to 12% in 1996, about 2% above the national average.

Unemployed people tend to have a reduced life expectancy and to suffer more health problems than those who are employed. Since 1991, unemployment has declined somewhat for women in the Northwest Territories, and has increased slightly for men. Youth, ages 15 to 24, experience the greatest difficulty finding employment, having the lowest participation rates (60%) and the highest unemployment rates (20%).

There are significant differences between communities in unemployment levels, probably due mostly to labour market differences. As might be expected, labour market participation was highest (85%), and unemployment was lowest (6%), in Yellowknife. The labour market participation was lowest (65%), and unemployment was highest (22%), in the smaller communities.

All of these socio-economic factors are interrelated, in a complex and not easily understood play of forces. And each, individually and in combination with others, has an influence on the health of the population.

[1] *Second Report on the Health of Canadians, Health Canada, 1999, p.ix*

Personal Health Practices

Personal health practices also play a major role in determining health status. Compared to the amount of information available on other determinants of health, there is much less information available about the health practices of Northwest Territories residents. One positive attribute is that people in the Northwest Territories are more active than their counterparts across the country, with 31% reported being active enough to have cardiovascular benefits, compared to 19% for Canada.

The Northwest Territories has a much higher proportion of heavy drinkers than the rest of the country - 26% in the Northwest Territories compared to 9% for Canada. This pattern remains consistent regardless of age or gender. Further, nearly 25% of women surveyed reported consuming alcohol during their pregnancy.

The Northwest Territories also has a higher proportion of smokers than the rest of the country - more than 45% of Northwest Territories people 12 years of age or older identified themselves as being current smokers, compared to less than 30% for Canada. Further, 46% of women surveyed reported smoking during their pregnancy.

Social Well Being

A report on health status would not be complete without a consideration of social well being, since the two are so closely linked. As mentioned earlier, self-determination is also an important determinant of health. In the Northwest Territories context, with 50% of the population of Aboriginal descent, self-determination implies being able to maintain a strong cultural identity, including language and traditional practices and beliefs.

There is very little information collected that would allow for measurement of cultural identity, other than as it relates to language use. In the Northwest Territories, English is the language used at home by 90% of the population, while an Aboriginal language is used 8% of the time. The trend over time has been for English to be used more often, and Aboriginal language use in the home has been declining. The majority of people who use an Aboriginal language at home are elders.

People who have a supportive social network tend to enjoy better health than those without support. Marital status provides one measure of social support, and in the Northwest Territories almost 60% of the population over the age of 15 years is married or living common-law.

Compared to other Canadians, people in the Northwest Territories report a slightly higher level of social support - 81% compared to 78%. They also report roughly the same levels of social involvement (outside of home, family and friends) as do other Canadians, ranging from 17% being highly involved socially to 53% reporting low levels of social involvement.

Finally, social well being is closely tied to family and community life. This is another area where only a limited number indicators are readily available.

Single parent families typically face more challenges to their economic and social well being, and to their health status, than dual parent families. In the Northwest Territories, as in the rest of Canada, 20% of families are headed by a single parent, and this number has been increasing. The majority - 79% - are headed by women.

The teenage birth rate, considered to be a risk factor for social difficulties for the mother, and carrying some health risks for the infant, has been decreasing in the Northwest Territories over the past decade. However, it remains almost three times higher than in the rest of Canada, at 62 births/1,000, compared to 23 births/1,000 in 1996.

In the early part of the 1990s, there was an increase in the number of children being taken into care, but since 1995 the numbers have been decreasing. However, reports of suspected child abuse have been increasing steadily since 1993, standing at 12 reports/1,000 children in 1997, up from 5 reports/1,000 children in 1993.

Admissions to family violence shelters in the Northwest Territories were the second highest in the country in 1997/98 (Yukon had the highest). The Canadian rate for women entering shelters was 4/1,000, and for children it was 6/1,000. In the Northwest Territories, the rates were 20/1,000 for women, and 26/1,000 for children.

The Northwest Territories crime rate continues to be higher than in the rest of the country. It had declined in the early part of the decade, but has been on the rise in the past several years. In 1998, the Northwest Territories crime rate stood at 257 crimes per 1,000 residents, compared to 85 crimes per 1,000 residents for the rest of the country.

One final indicator of social well being, related to both health status and self esteem, is dependence on income support. Since reaching a high of 24% in 1995, the proportion of people relying on assistance has declined to 21% in 1998.

All in all, there is a mixed set of good and bad news in this report, with an overall trend toward better health but with serious concerns remaining with regard to some critical socio-economic and lifestyle health determinants.

The major health concerns at the present time are preventable injuries, and personal lifestyle choices surrounding the use of alcohol and tobacco, and unsafe sexual practices.

From the perspective of the broad social and economic health determinants, progress has been made in education, and the economic prospects are beginning to look more favourable. However, many people living in small communities are still at an economic disadvantage, and may be facing higher health risks as a result. The greatest challenge to population health in the forthcoming decade will likely be that of improving *social* conditions for the most disadvantaged communities, families and individuals.

Chapter 1

Introduction

1.1 Looking Back

The last report on health conditions in the Northwest Territories was published almost 10 years ago, in 1990. The theme of that report was *Choosing Health*. That theme remains as relevant today as it was then. At the time, the idea that individual and collective choices could affect health status was rather new, as the authors of the report acknowledged:

"The idea that people can actually make choices that will influence health takes some getting used to. It demands a different way of thinking about health." [2]

The 1990 report took a different approach to conventional thinking about health, an approach that was consistent with a holistic view of a healthy life:

"Health decisions are not simply decisions about medicine or medical practices. They are decisions in all those areas that affect our physical, mental, spiritual and social well-being." [3]

While this might have seemed to be a novel approach to some, this view of health was certainly not new to Aboriginal people, whose concepts of health and well being have been along these lines for centuries.

Contained within this way of thinking is the idea that health is strongly linked to self-determination. This presents a particular challenge for the people of the Northwest Territories, where economic disparities, social inequities and political constraints all impact on the abilities of individuals and communities to make real choices.

As the then Minister of Health, Ms. Nellie Cournoyea, recognized in the introduction to the 1990 report:

"This is a time of change and challenge. Our choices for health will be influenced by restraint, the settlement of land claims, constitutional development and division of the territories ... It is important for us all as individuals to work as partners in making the right choices for the health of all N.W.T. residents." [4]

1.2 Looking Forward

While these challenges still remain, significant progress has been made during the past decade. Two new territories have been created. Land claims and self-government are at various stages of development or implementation.

[2] *Northwest Territories Health Report, Department of Health, 1990, p.1*
[3] *Ibid, p.2*
[4] *Ibid, p.1*

These successes will foster greater self-determination, and with it will come increased opportunities for people to make real choices. With limited dollars to spend, growing demands for services, continuing social problems, and economic uncertainty as ever-present considerations, the choices will not always be easy. But the increased opportunities for decision-making by and for the people of the Northwest Territories should lead to positive changes in the health and well being of the population.

1.3 About the Report

This is a report about the health and well being of the people of the new Northwest Territories, and consequently information about Nunavut is not included.

The report is intended to serve several objectives: first, it is meant to inform people about the health and well being of the population in general; 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 provide a base against which to measure improvements in population health and well being as the Northwest Territories enters the second millennium.

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 is also a report about some of the *determinants* of population health. The health of a population is influenced by many factors, including demographic and socio-economic variables, aspects of the physical environment, personal habits, lifestyles and health practices, biology and genetics, and the availability and quality of health services. This report provides information on some of the key determinants of population health in the Northwest Territories, with particular emphasis on demographic, social, economic, physical and personal factors.

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.

This is not a report about health services and the costs of providing health care in the Northwest Territories, nor is it about particular individual, family, group or community needs in relation to health and well being. That is not to say that these are unimportant considerations, but they are beyond the scope of the present report.

It is intended that health status reports like this one will be prepared on a three-year cycle. In the second year of the cycle, a report on health services will be issued, and the third year will see special reports on particular health issues or concerns.

In some sections of this report the health status indicators are broken out by ethnicity. This should not be seen to suggest that ethnicity, on its own, acts as a health determinant. Rather, it is intended to highlight the fact that, in some aspects, ethnicity can be used as a marker for complex sets of socio-cultural, economic and other influences that impact on health status, sometimes positively (for example, lower risk of certain cancers) and sometimes not.

Ideally, this report would provide comparisons to the previous 1990 health report. This was not possible, due to the fact that the previous report combined data for both Nunavut and the Northwest Territories and it was not feasible to separate the data for each Territory in the 1990 report. However, where the data for the new Northwest Territories were available, changes over time have been provided. The reader should be aware that because of differing collection methods for the various health status indicators, the time frames are not always consistent. Further, for some indicators a time series was not available, and instead the data represent a "snapshot" at one particular time.

!! *A word of caution. The relatively small number of people in the Northwest Territories often creates problems for statistical analysis, leading to imprecise estimates that can sometimes result in the wrong conclusion. This caution sign will appear at times in the report, signaling to the reader that extreme caution is required at that point in the interpretation of the reported findings.*

Chapter 2 introduces the concept of population health, provides a description of health determinants and health outcomes, and introduces the reader to the measurement of population health.

Chapter 3 records the health status of the population. Results of the 1994/95 National Population Health Survey are reported here. Major illnesses and diseases are examined, as well as the major causes of hospitalization. The most frequent causes of health centre visits are also examined in this chapter. Information is also presented on communicable diseases and dental health.

Chapter 4 presents information on the major causes of death in the Northwest Territories.

Chapter 5 provides an analysis of some of the major social, economic and environmental influences on population health. Demographic variables, in particular age, gender, birth and fertility rates are examined. Measures of socio-economic status, such as education, income and employment are included in this chapter because of their known relationship to health status. Environmental factors, including information on housing, water supply and contaminants are also considered.

Chapter 6 highlights some of the personal practices and choices that people make that impact on their health. Included in this chapter is information on physical activity, diet and body weight. Also included is an analysis of alcohol and tobacco use by the people of the Northwest Territories.

Chapter 7 completes the health status report by providing information on social well being. The topics include aspects of culture and language, social involvement and support, and some important elements of family and community life.

Chapter 8 offers concluding comments on the health and well being of the people of the Northwest Territories.

Appendix 1 offers a glossary of terms used in the report. While every effort has been made to make this a plain-language report, the use of some technical words is unavoidable when talking about health and the conditions that influence it.

Appendix 2 provides an easy reference to the tables and charts contained within the report.

1.4 Acknowledgments

This report would not have been possible without the assistance of many people in the department who have offered good advice and many constructive suggestions. Special thanks are due to the staff at the Northwest Territories Bureau of Statistics, who met repeated requests for data in a very helpful and timely manner.

Chapter 2

Population Health

2.1 Population Health

In this report, "health" means more than just the absence of disease. The definition of health is adapted from one that was proposed by the World Health Organization:

Health is a complete state of physical, mental, social and emotional well being.

This definition is widely accepted around the world, and embraces the traditional concepts of health held by Aboriginal people, as expressed in the medicine wheel which further captures the spiritual dimension of health. Health is also not simply an objective in itself, but is also a resource for allowing individuals to achieve well being and contribute optimally to the life of their family, community and society.

For a long time, many people including health care professionals, policy makers and program administrators acted in the belief that good health depended on good medical care. 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 the notion that good health depends on good health services. To some extent it does, but most clinical services are there 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 in the first place.

Public health programs, such as pre-natal nutrition, well baby clinics and childhood immunization were developed to meet the need for illness prevention. These prevention activities were taken a step further in the early 1970s, with the introduction of large scale health promotion activities (e.g., alcohol awareness campaigns) and healthy public policy initiatives (e.g., seat belt legislation, prohibiting minors from purchasing tobacco). But even aggressive public health programs, far-reaching health promotion activities and healthy public policies can only go so far in preventing illness and achieving health.

In recent years, more and more attention has been focused on the role that social, economic, environmental and personal factors play in determining health status. What has emerged from this is called a *population health approach* - a way of meeting the challenge of achieving health for everyone that goes well beyond the conventional programs and services of public health, medical care and health promotion. The population health framework recognizes that environmental issues, social problems, economic factors, and personal habits and behaviours are all important determinants of the health and well being of the population. Addressing these issues is as important for population health as are good medical care, primary prevention, health promotion and sound public policy initiatives.

2.2 Health Determinants

The population health framework implies that health cannot be achieved in isolation. At the broadest level of analysis, the health status of a population is linked to progress in four other areas - environmental protection, social well being, economic prosperity and political self-determination. These are the cornerstones that sustain a healthy population (see Figure 2.2.1).

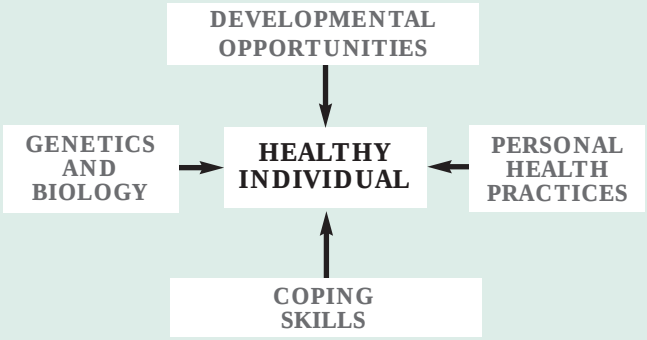
Figure 2.2.1

This broad view of health is only part of the complete picture. The health of the population also depends on the health of each individual within the population. At the finest level of analysis, individual factors must also be taken into account. These factors include such things as genetic make-up and biological functioning, early childhood development, and personal health practices and individual coping skills (see Figure 2.2.2).

Of all of these individual factors, attention has recently been drawn to developmental opportunities in childhood as one of the most powerful determinants of life-long health status. Research into childhood determinants of health was recently summarized in the *Early Years Study*:

"There is powerful new evidence from neuroscience that the early years of development from conception to age six, particularly the first three years, set the base for competence and coping skills that will affect learning, behaviour and health throughout life." [5]

Figure 2.2.2



[5] *Early Years Study, McCain, M.N. and Mustard, F., Government of Ontario, 1999, p.5*

2.3 Health Outcomes

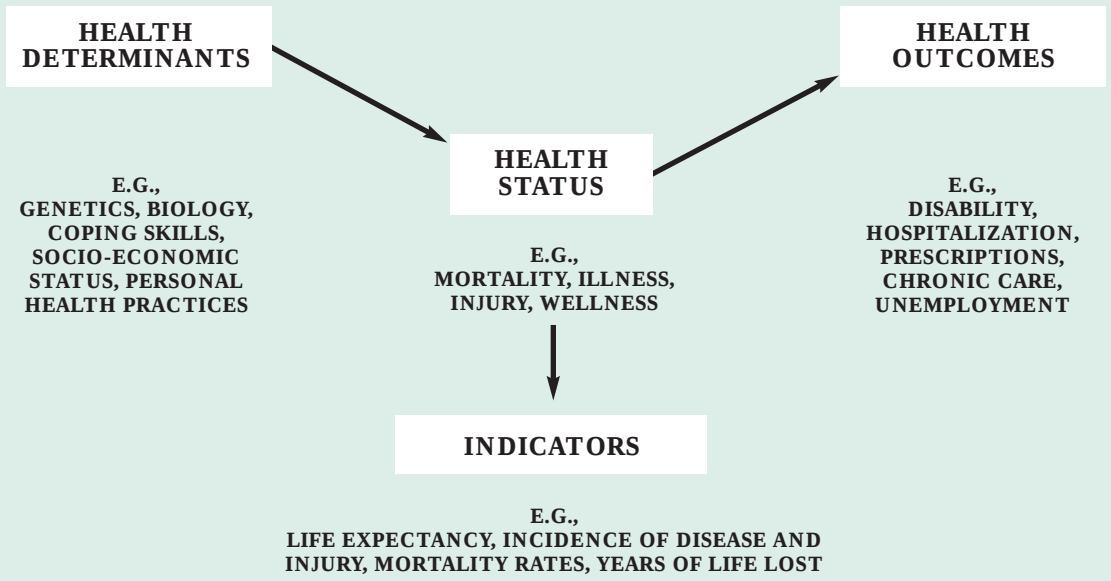
In a report like this one, it is important to distinguish between *health status* and *health outcomes*.

Health status refers to particular conditions or states of "healthiness", as measured at some point in time. These measures can be either subjective (e.g., how well a person feels) or they can be objective (e.g., the presence of a diagnosed illness). Understanding the relationship between health status and health determinants is important for prevention purposes, and is the focus of this report.

Health outcomes refer to the consequences of health status, such as disabling conditions arising from disease, illness or injury, or the need for medical services, prescriptions or special types of care. Understanding the relationship between health status and health outcomes is important for program planning purposes, and will be the focus of a report on health and social services to be published next year.

The relationship between health determinants, health status and health outcomes is diagramed in Figure 2.3.1.

Figure 2.3.1



2.4 Measuring Population Health Status

There is no practical way to measure the health of an entire population, even one as small as that of the Northwest Territories. However, there are methods for *estimating* the health of the population. This involves selecting a set of *indicators* - things that are usually associated with good or poor health - and then taking *measures* of these in a sample of the whole population. A familiar example of this process happens when a parent, worried that her child may be ill, takes the child's temperature. In this case, the indicator is body temperature, and the measure is the actual reading taken from the thermometer.

It is important to realize that the child's temperature is not the child's health - it is simply one thing that points in the direction of the child's health status at one particular time. And, it is only one indicator. Of course the mother could choose to look at other indicators (poor appetite, runny nose, red eyes, bad cough) and, the more appropriate indicators she chooses, the better able she would be to estimate the child's health status.

Returning to the health of the population - What are the best indicators of population health and how do we measure them? There has been a lot of interest in this question, world-wide, over the past several decades. It is a complex question and experts do not all agree on how best to answer it. However, some conventions have emerged and there is a growing body of evidence to support a selection of *health status indicators* as reasonably good estimates of the health of a population.

The indicators contained within this report have been selected because they are either obviously related to health status (e.g., life expectancy, incidence of disease, mortality) or because they have been shown to be highly correlated with health status (e.g., education level, income, housing adequacy). These indicators have been drawn from a number of sources, including the 1996 census, the National Population Health Survey [6], vital statistics records, and a variety of departmental databases that record the incidence of illness and disease.

[6] *The National Population Health Survey is a longitudinal survey begun in 1994/95. In the Northwest Territories 450 people 12 years of age or older took part in the survey.*

Chapter 3

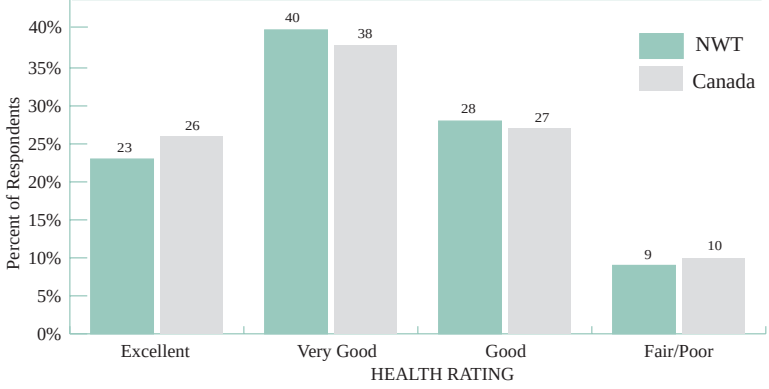
Population Health Status

3.1 Self-Rated Health Status

Participants in the National Population Health Survey were asked to rate their overall health as either "excellent," "very good," "good," "fair," or "poor." Research indicates that this type of self-rated health is a useful and surprisingly accurate indicator of population health status, as it correlates strongly with several "objective" measures of health status.[1]

Figure 3.1.1 shows that about 23% of the Northwest Territories residents indicated they had excellent health, about 40% rated their health as very good, another 28% said they had good health and about 9% described their health as fair or poor.

Figure 3.1.1
Self-Related Health Status



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

While Canadians on the whole were slightly more likely to rate their health as excellent, they were also more likely to rate their health as fair or poor. However, the differences between the Northwest Territories and Canada were very small.

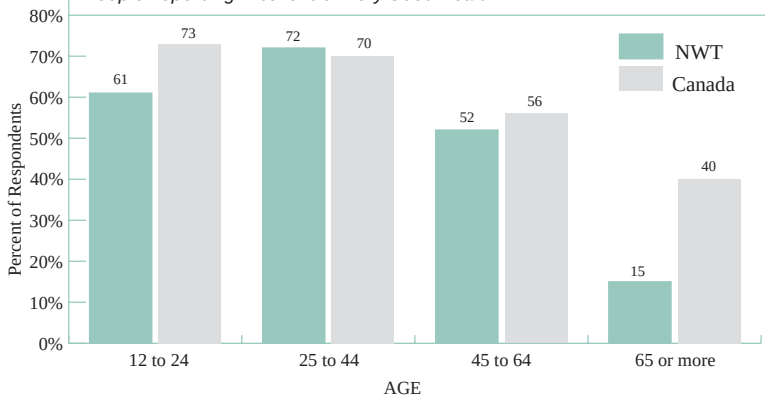
Men were more likely than women to rate their health as excellent, and women were slightly more likely to rate their health as fair or poor, but the differences between the two groups were small.

Figure 3.1.2 presents information on the proportion of individuals ratings themselves in excellent or very good health, by age groups.

[1] *Second Report on the Health of Canadians: Technical Appendix, Health Canada, 1999*

Individuals between 12 and 24 years of age in the Northwest Territories were less likely than people between 25 and 44 years of age to rate their health as excellent or very good (61% compared with 72%). This Northwest Territories finding differs from the national results where 73% of the 12-24 year old population rated their health as excellent or very good. The difference may indicate that young people in the Northwest Territories do not feel as healthy as their Canadian counterparts.

Figure 3.1.2
People Reporting Excellent or Very Good Health



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

!! *Given the small number of people 65 and older who were interviewed in the Northwest Territories, the estimates for this age group should be treated with caution.*

There was a significant drop in self-reported excellent or very good health status for those over the age of 45. This drop is particularly marked in the segment of the population 65 years and older. Only an estimated 15% of the Northwest Territories residents in this age group rated their health as excellent or very good, compared with 40% in Canada as a whole.

3.2 Psychological Well-Being

Psychological well-being is another measure of positive health. Well-being and life satisfaction are important elements in the overall concept of quality of life. 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. One measure that closely fits this conception of well-being is "sense of coherence", which is a view of the world that (a) events are comprehensible, (b) challenges are manageable, and (c) life is meaningful. There is ample evidence that a strong sense of coherence is conducive to coping successfully with stressors ... and maintaining good health." [2]

In the National Population Health Survey, people were asked a series of questions designed to measure this sense of coherence. The survey results indicated that in the Northwest Territories, an estimated 13% of those 18 years of age and older who answered the questions had a high sense of coherence, compared with 11% in Canada. As Figure 3.2.1 shows, there were no real differences in the percentage of men and women in the Northwest Territories who had a high sense of coherence.

[2] *Report on the Health of Canadians: Technical Appendix, Health Canada, 1996, p.238.*

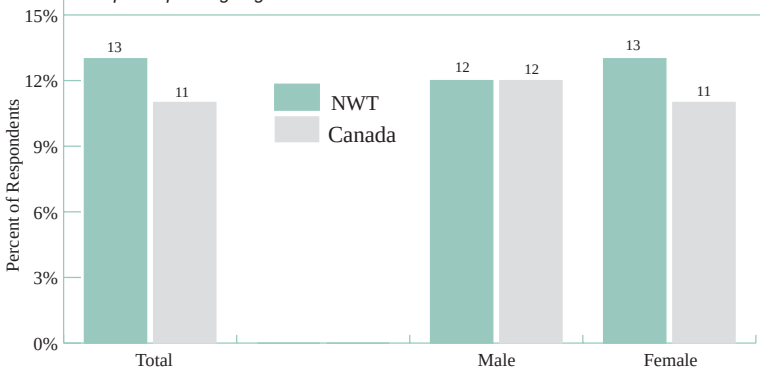
!! *Figures 3.2.1 and 3.2.2 should be treated with caution because 11% of those interviewed in the Northwest Territories did not respond to these questions. More critically, 27% of those 65 years of age and older did not respond, which means that for this group the estimates are based on a small number of individuals.*

People in the Northwest Territories were slightly more likely to report a high sense of coherence than people in Canada as a whole in all age categories except those 65 years of age or over.

As Figure 3.2.2 shows, this difference was particularly evident for those between 18 and 24 years of age, where the sense of coherence for youth in the Northwest Territories was higher than for their counterparts in the rest of the country.

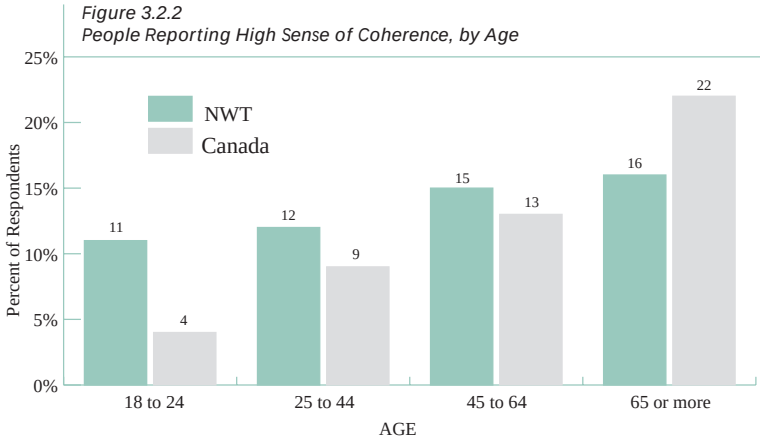
The picture was just the opposite for people 65 years and older in the Northwest Territories, who were less likely to report a high sense of coherence. An estimated 16% of those who answered the questions in this age group reported a high level of coherence, compared with 22% in Canada as a whole. However, apart from this age group it appears that the proportion of the population in the Northwest Territories who feel that life is meaningful, events are comprehensible and challenges are manageable, is as high as the proportion in the population in the country as a whole.

Figure 3.2.1
People Reporting High Sense of Coherence



Source: NWT Bureau of Statistics, National Population Health Survey

Figure 3.2.2
People Reporting High Sense of Coherence, by Age



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

3.3 Risk of Depression

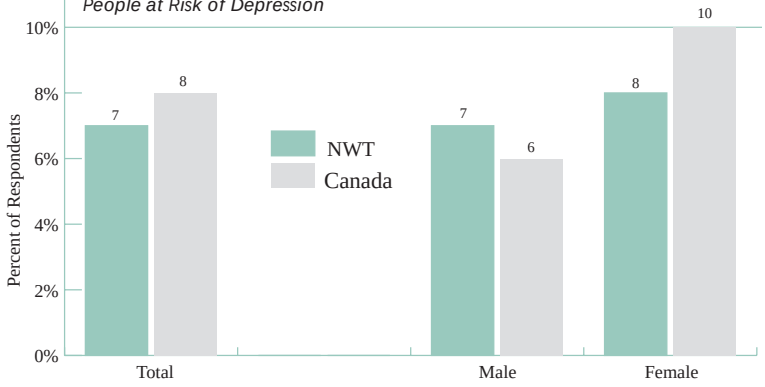
Depression is the most common form of mental illness and one of the major causes of suicide. It is often characterized by feelings of profound sadness and a sense of helplessness and hopelessness. The National Population Health Survey attempted to measure the extent of depression in the population by asking a series of questions that estimated the probability that a person would be diagnosed with depression if they were seen by a doctor.

!!

The following information should be treated with caution. About 10% of Northwest Territories residents did not respond to these questions when interviewed. Moreover, about 15% of all men, (20% of those between 45 and 64, and 20% of those 65 and older) did not answer the questions. This means that for the latter group the estimates are based on a small number of individuals.

According to the survey, an estimated 7% of the Northwest Territories population 12 years of age and older were considered to be at a risk of clinical depression. The national rate was estimated to be 8%. In the Northwest Territories, about the same percentage of men and women who answered the questions were considered to be at risk of depression (8% for women and 7% for men), as can be seen in Figure 3.3.1. In Canada, women (10%) were a little more likely to be at risk of depression than men (6%).

Figure 3.3.1
People at Risk of Depression



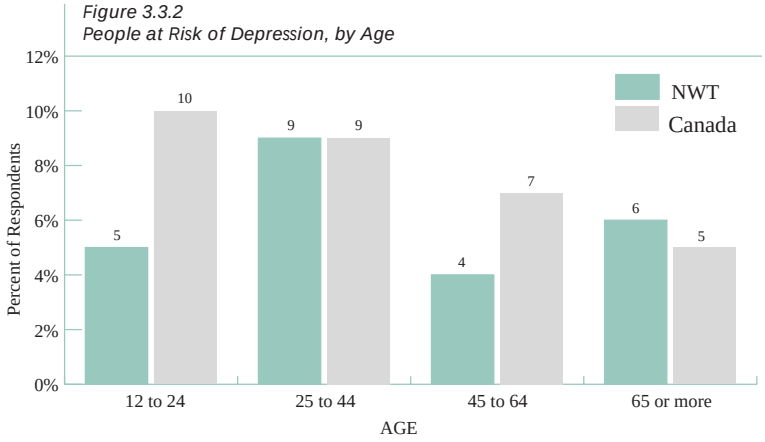
Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

Nationally, the risk of depression is higher among the young population and the probability of being depressed decreases with age. The situation in the Northwest Territories appears to be somewhat more complex.

As Figure 3.3.2 shows, the population between 12 and 24 years of age in the Northwest Territories was less likely to be at risk of depression than people in the same age group nationally.

In fact, young people reported less risk than older people. Meanwhile, research in other parts of the country indicates that young people are more likely to have mental health problems, including depression, than older people.[3]

Figure 3.3.2
People at Risk of Depression, by Age



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

[3] *Community Health Indicators: Definitions and Interpretations, Canadian Institute for Health Information, 1997.*

More research is required to determine if there is something about the youth population of the Northwest Territories that would result in such a difference.

At 4%, the population between 45 and 64 years of age in the Northwest Territories also reported a lower risk of depression than the national population in the same age category (7%). Meanwhile, those 65 years of age and older in the Northwest Territories indicated they had about the same risk of depression as people in this age group nationally.

3.4 Functional Health Status

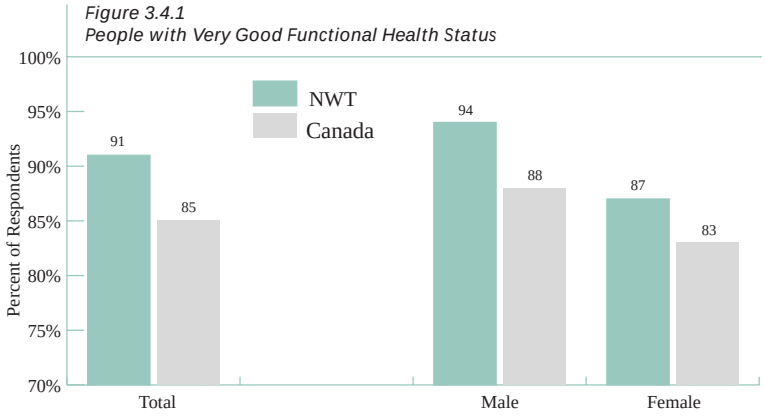
Functional health status is another indicator of overall health, based on eight attributes: vision, hearing, speech, mobility (ability to get around), dexterity (use of hands and fingers), cognition (memory and thinking), emotion (feelings), and pain and discomfort. Functional health status measures a person's overall ability to perform daily tasks.

According to the 1994-95 National Population Health Survey results, most individuals in the Northwest Territories have very good functional health status. In fact, about one quarter of the respondents had a perfect score on the functional health index. Another 64% scored at a level indicating very good functioning, with some ailments of a minor nature such as near sightedness.

As can be seen in Figure 3.4.1, men tended to have a slightly higher level of functional health status than did women. About 94% of men in the Northwest Territories reported at least very good functional health status, compared with 87% of women.

Figure 3.4.1 shows that functional health status was higher in the Northwest Territories than in Canada as a whole. An estimated 91% of the population 12 years and older in the Territories reported at least very good functional health status, compared with 85% in Canada.

Figure 3.4.1
People with Very Good Functional Health Status



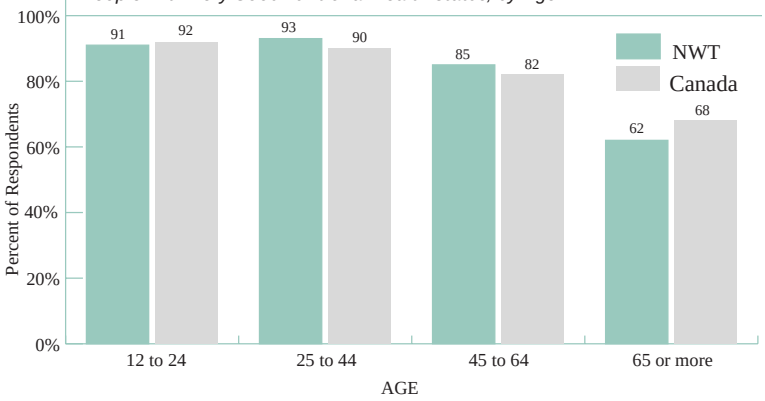
Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

Overall functional health status is related to age, with younger people normally having more functional abilities than older people. The population in the Northwest Territories is younger than the national population, and therefore it is not surprising that the overall functional health of the population would be higher.

!! *Given the small number of people 65 and older who were interviewed in the Northwest Territories, the estimates for this age group should be treated with caution.*

As Figure 3.4.2 shows, when the functional health of people in the same age categories is compared, differences between the Northwest Territories and Canada nearly disappear.

Figure 3.4.2
People with Very Good Funtional Health Status, by Age



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

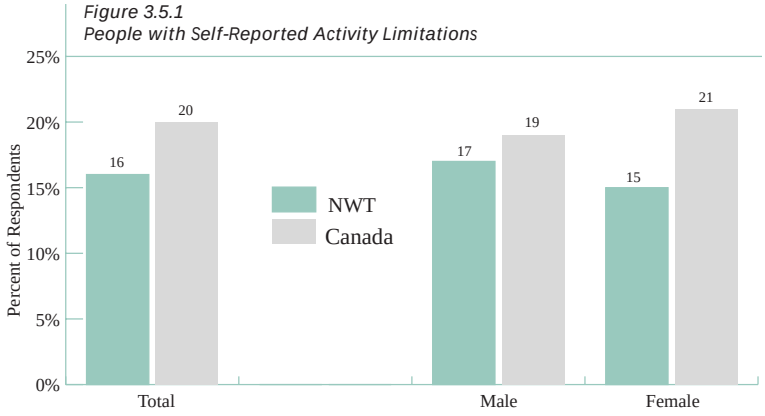
3.5 Self-Reported Long-Term Activity Limitations

The proportion of the population who are limited in the kind and amount of activities they can undertake due to long-term physical or mental conditions is another measure of health status, closely related to quality of life.

On the National Population Health Survey, an estimated 16% of the Northwest Territories population 12 years and older reported having a long-term disability or activity limitation, compared with 20% in Canada.

Figure 3.5.1 shows that men (17%) in the Northwest Territories were slightly more likely than women (15%) to report a long-term activity limitation due to a health problem. In Canada the reverse was true: women (21%) were a little more likely than men (19%) to report a disability or activity limitation.

Figure 3.5.1
People with Self-Reported Activity Limitations



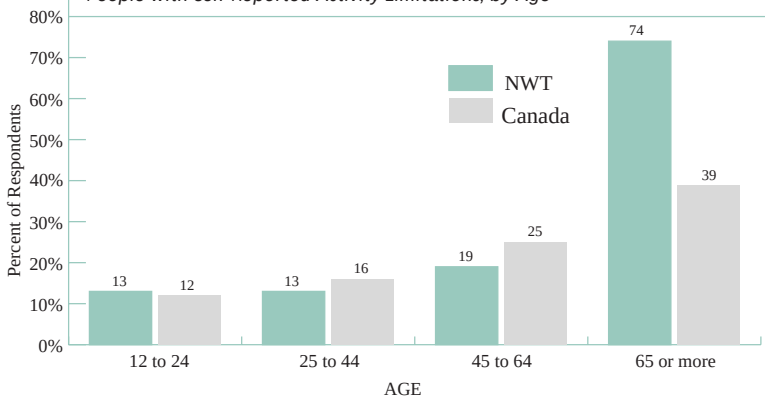
Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

Disabilities that interfere with activities for daily living are a major concern for older people. While life expectancy may be increasing, the quality of life may not be improving. The extent of disabilities is an important component in any calculation of life expectancy in good health.

!! *Given the small number of people 65 and older who were interviewed in the Northwest Territories, the estimates for this age group in the following section should be interpreted with caution.*

As Figure 3.5.2 shows, the percentage of the population who reported some form of long-term activity limitation or disability increased with age. This was not surprising given that the prevalence of many disabling chronic health problems such as arthritis and heart conditions increase as people get older. The percentage of the population reporting a long-term limitation increased from 13% for those between the age of 12 and 44 years to 19% for those between the age of 45 and 64 years. The rate then increased dramatically, with 74% of the population 65 years of age and older reported a long-term disability or activity limitation. This was almost twice the national rate of 39%.

Figure 3.5.2
People with Self-Reported Activity Limitations, by Age



Source: NWT Bureau of Statistics, National Population Health Survey, 1994-95

These findings may indicate that while more people in the Northwest Territories are living longer, a large percentage of elders are experiencing some health problems that limit their abilities to perform daily activities. More research is required to determine the severity of their disabilities in order to get a better indication of the quality of their lives.

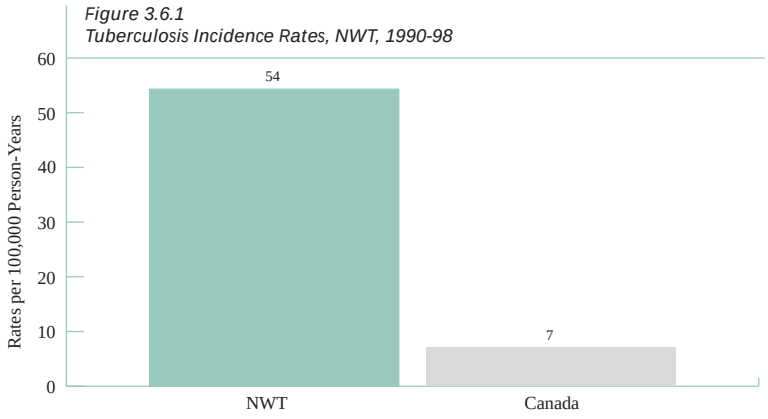
3.6 Communicable Diseases

Communicable diseases are those that 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 diseases in the population is a good indicator of population health, since they can highlight deficiencies in public health programs and are often correlated with socio-economic and environmental conditions. Generally speaking, the rates for communicable diseases in the Northwest Territories are roughly the same as for the rest of Canada, with some notable exceptions.

As can be seen in Figure 3.6.1, the tuberculosis rate in the Northwest Territories is higher than in the rest of the country.

However, as can be seen in Figure 3.6.2, the number of cases of tuberculosis varies significantly from year to year. The number of reported tuberculosis cases increased sharply in 1994, then decreased from 1995 to 1998. The same pattern held for both men and women. Since the actual

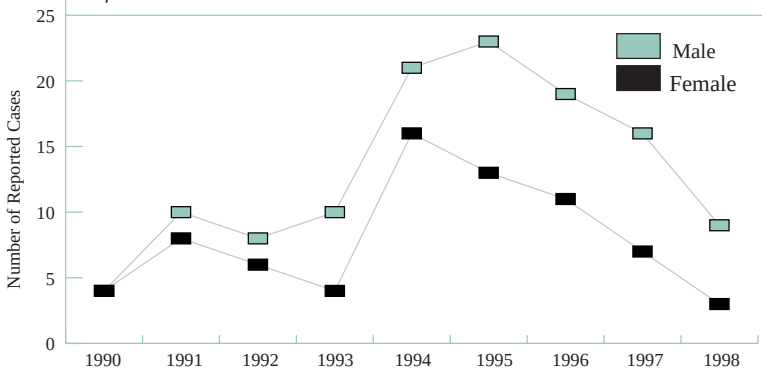
Figure 3.6.1
Tuberculosis Incidence Rates, NWT, 1990-98



number of cases in the Northwest Territories is relatively small, it is difficult to say whether the decrease since 1994 represents a trend. Generally speaking tuberculosis is associated with risk factors that include over-crowded housing, smoking, malnutrition, infections and chronic disease. As these conditions improve in the future, the number of cases should continue to go down. Active surveillance of high risk populations also plays an important role in preventing outbreaks of this disease.

Chlamydia and gonococcal infections are sexually-transmitted diseases. Figure 3.6.3 shows the number of reported cases of chlamydia and gonococcal infection in the NWT between 1989 and 1998. Based on these numbers, the average rates of infection in the NWT were 542 per 50,000 people and 104 per 50,000 people respectively. For comparison, the Canadian rates were 77 per 50,000 and 12 per 50,000 respectively.

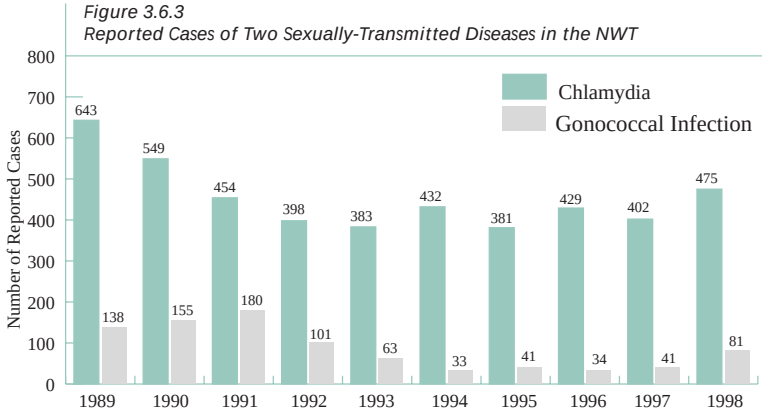
Figure 3.6.2
Reported Cases of Tuberculosis in the NWT



Source: NWT Communicable Disease Registries

The incidence of sexually transmitted disease is directly related to personal health practices, specifically with respect to practicing "safe" sex. The number of cases of sexually transmitted disease in the Northwest Territories suggests that many people are not taking precautions to protect themselves from the risk of infection. Twenty cases of HIV infection were reported in the Northwest Territories from 1987 to1998, and five deaths from AIDS were reported during this period.

Figure 3.6.3
Reported Cases of Two Sexually-Transmitted Diseases in the NWT



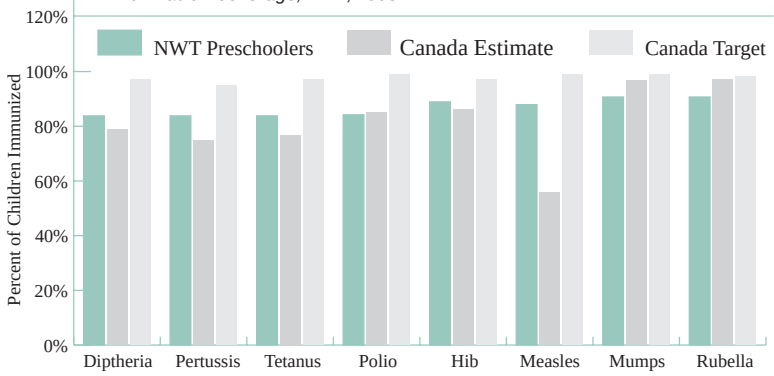
Source: NWT Communicable Disease Registries

For some communicable diseases, the risk of becoming infected can be decreased greatly by vaccination. Most often this is done through public health childhood immunization programs, or by special vaccination programs to protect older people from influenza. As a result of the success of immunization programs, some diseases have come to be known as "vaccine-preventable".

Health Canada has established "targets" for the proportion of the child population who should be immunized against the most common vaccine-preventable illnesses.

As can be seen from Figure 3.6.4, in 1998 the Northwest Territories was still somewhat short of the target. Nevertheless, a higher percentage of Northwest Territories children had been immunized for everything but mumps and rubella when compared to children elsewhere in Canada.

Figure 3.6.4
Immunization Coverage, NWT, 1998



Source: Department of Health and Social Services

Even though the vaccine coverage rates in general for the Northwest Territories are comparable with Canada, there are some vaccine-preventable diseases that continue to occur at higher rates in the Northwest Territories than in the rest of Canada between 1989 and 1998, as can be seen in Table 3.6.1.

However, over the next few years the situation should improve. An effective vaccine against haemophilus influenza B (Hib) was introduced in 1992, a new two-dose vaccine program against measles was introduced in 1996, and pertussis in 1998.

Although pertussis is usually a childhood illness, it occurs fairly often among the adult population in the Northwest Territories. This may explain why Northwest Territories pertussis rates are higher than Canada's. As was mentioned early, vaccination against mumps remains lower than the Canadian average. These diseases are air-borne, and part of the explanation for their relatively high rates in the Northwest Territories may have to do with closed living environments during the long and cold northern winters. (Also, better and more complete reporting in the Northwest Territories may be a factor in explaining the higher rates.)

Table 3.6.1
Reported Rates of Selected Vaccine-Preventable Diseases NWT, 1989-1998

	NWT Rate	Canada Rate
H. Influenza B	2.5	0.4
Measles	4.1	0.7
Mumps	3.8	1.2
Pertussis	68.2	25.7

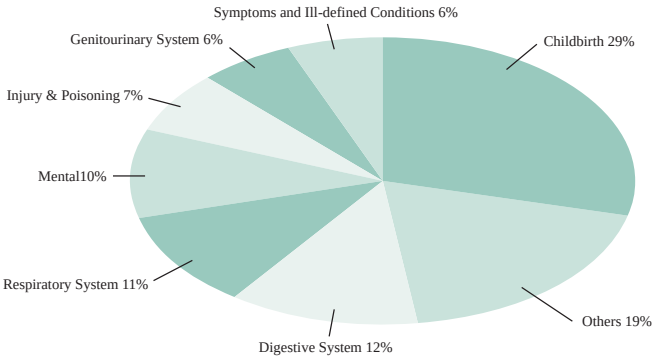
Note: Rates per 100,000 population per year.
The rates of the NWT were standardized to the Canadian population in 1996.
Source: NWT Communicable Diseases Registry and LCDC, Health Canada

3.7 Main Reasons for Visits to Hospitals and Health Clinics

This section describes the main reasons for inpatient hospital visits (in and out of territories) made by residents of the Northwest Territories. It also examines the main causes for hospital outpatient visits as well as visits to physicians' clinics and community health centers.

Figure 3.7.1 shows the major causes of hospitalization for women in the Northwest Territories in 1997.[4] Almost one third of all hospital admissions for women were due to pregnancy and childbirth. In fact this was the single, highest cause of hospitalizations in 1997.

Figure 3.7.1
Main Reasons for Hospitalization of Women, NWT, 1997

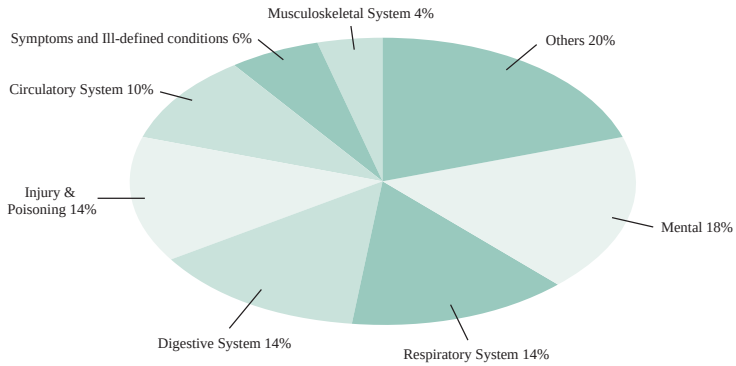


Source: Department of Health and Social Services, THIS Database

Women were also likely to be hospitalized due to diseases of the digestive system (12%) which include dental problems, the presence of gallstones, and inflammation of the stomach or intestines; diseases of the respiratory system (11%) such as pneumonia, asthma, and acute bronchitis; mental disorders (10%) which included chronic alcoholism, and major depression; injuries or poisoning (7%) such as overdosing on pain relievers, fractured ankles, arms and legs; and diseases of the genitourinary system (6%) such as infections of the kidneys, urinary tract infections, and inflammation of the ovaries and other genital organs.

In 1997, men were likely to be admitted to a hospital because of mental disorders, such as alcohol dependency and other drug abuse, and major depression. At 18%, this category was the single largest cause of inpatient hospital visits for men. Men were also likely to be hospitalized because of injuries or poisoning, which included head injuries and broken bones. This category was the reason for 14% of all male inpatient visits.

Figure 3.7.2
Main Reasons for Hospitalization of Men, NWT, 1997



Source: Department of Health and Social Services, THIS Database

[4] *The number of inpatient hospital visits does not include circumstances where a diagnosis was not made, for example, a new-born child or respite care for an elder.*

Figure 3.7.2 shows that other major causes of hospitalization for men included: diseases of the respiratory system (14%), such as pneumonia, asthma, and acute bronchitis; diseases of the digestive system (14%), which included dental problems, diseases of the stomach or intestines, and presence of gallstones; and diseases of the circulatory system (10%), such as an irregular heartbeat, blocked arteries in the heart, heart attacks, and strokes.

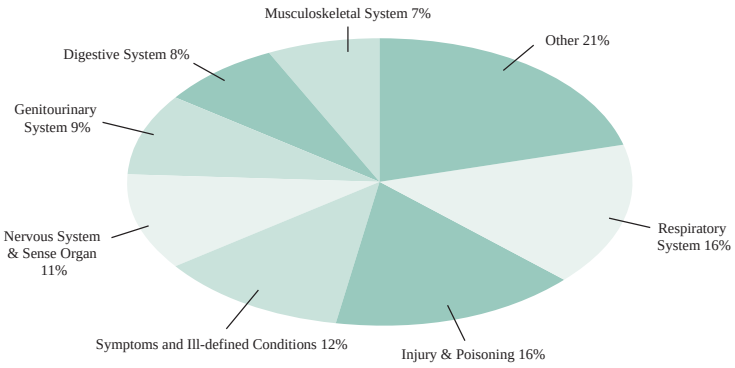
In 1997, 64% of all outpatient hospital visits in the Northwest Territories were due to a circumstance or problem which influenced the person's health status but was not in itself a current illness or injury and did not receive a diagnosis. About 51% of the outpatient hospital visits of this type were due to laboratory and other types of tests such as X-rays; 18% were due to rehabilitation procedures such as physical therapy, occupational therapy and speech therapy; 17% were for general medical examinations; 3% were due to supervision of pregnancy; and another 3% were due to consultation without complaint or sickness. Follow-up examinations and aftercare accounted for most of the remaining reasons for outpatient visits of this type.

Excluding the circumstances noted above, 21% of all visits to hospitals as outpatients were due to injuries or poisoning such as unspecified injuries to arms or legs, ankle and other types of sprains, and cuts and blows to the head; 16% were due to conditions in the respiratory system such as upper respiratory infection, asthma, and sore throats; 11% were due to conditions related the nervous system and sense organs such as ear and eye infections, and migraines; and 11% were due to ill-defined conditions which included abdominal and chest pains, coughs, and fevers.

Figures 3.7.3 and 3.7.4 provide a breakdown of the leading causes of outpatient hospital visits for men and women in the Northwest Territories in 1997.

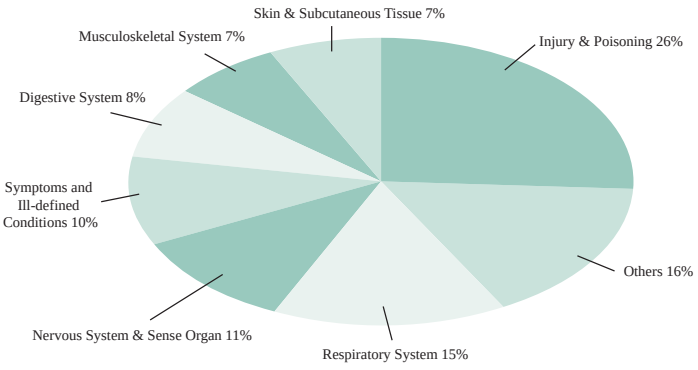
In 1997, 31% of all visits at doctors' clinics were due to a circumstance or problems which influenced the person's health status, but was not itself a current illness or injury. About 61% of these visits were for laboratory and other types of tests such as x-rays; 19% were for such things as reproductive counselling and supervision of pregnancy; 6% were due to consultation without complaint or sickness; and 3% were due to follow-up examinations.

Figure 3.7.3
Main Reasons for Outpatient Hospital Visits, Women, NWT, 1997



Source: Department of Health and Social Services, THIS Database

Figure 3.7.4
Main Reasons for Outpatient Hospital Visits, Men, NWT, 1997

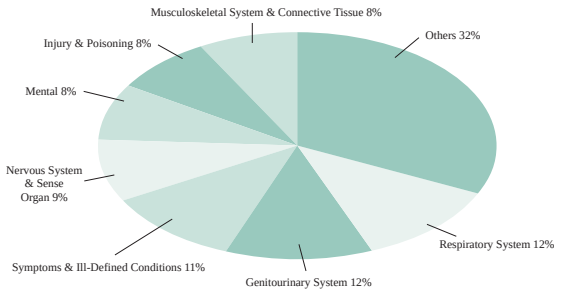


Source: Department of Health and Social Services, THIS Database

Excluding the circumstances noted above, 13% of all visits to doctors' clinics were due to respiratory diseases such as acute upper respiratory infections, asthma, pneumonia and bronchitis; 11% were due to ill-defined conditions such as abdominal pain; another 11% were due to conditions related to the nervous system such as ear infections and migraines; 10% were due to injuries such as open head injuries, fractures, and sprains; and 9% were due to mental disorders such as depression and alcohol associated syndromes.

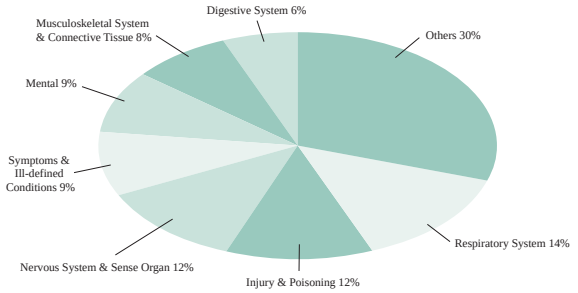
Figures 3.7.5 and 3.7.6 provide a breakdown of the leading causes of visits to doctors' clinics for men and women in 1997.

Figure 3.7.5
Main Reasons for Doctor's Clinic Visits,Women, NWT, 1997



Source: Department of Health and Social Services, Medicare Database

Figure 3.7.6
Main Reasons for Doctor's Clinic Visits, Men, NWT, 1997



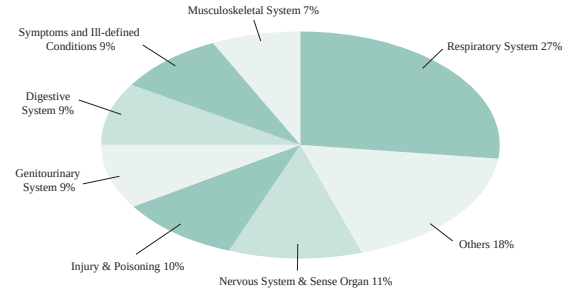
Source: Department of Health and Social Services, Medicare Database

In 1997, approximately 66% of all recorded visits to community health clinics were due to public health activities such as well baby clinics, health education and promotion, health assessments such as checking pregnancies, immunizations, and screening procedures such as testing for tuberculosis and pap smears. Activities such as changing dressings, monitoring high blood pressure, diabetes, and infectious diseases such as tuberculosis and hepatitis B, accounted for 5% of health centre visits.

Excluding the above public health and monitoring activities, diseases of the respiratory system were one of the main reasons for visits to community health clinics. Conditions such as upper respiratory infections, common colds, sore throats, and tonsillitis accounted for 27% of all visits. Another 13% of visits were made were due to injuries or poisoning which included various cuts, bruises and strains, and allergic reactions; 12% were due to conditions related to the nervous system and sense organs such as ear and eye infections, and migraines; and 10% were due to diseases of the digestive system such as inflammation of the stomach, constipation and dental problems.

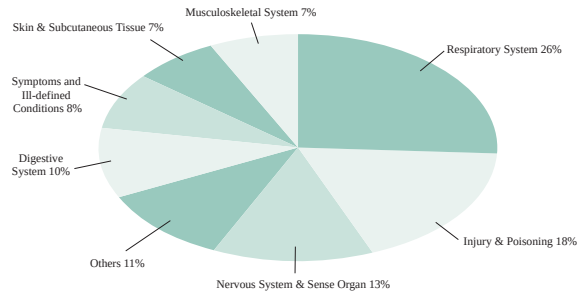
Figures 3.7.7 and 3.7.8 provide the leading causes of visits of community health clinics for males and females in 1997.

Figure 3.7.7
Main Reasons for Community Health Centre Visits, Women, NWT, 1997



Source: Department of Health and Social Services, CHMIS Database

Figure 3.7.8
Main Reasons for Community Health Centre Visits, Men, NWT, 1997



Source: Department of Health and Social Services, CHMIS Database

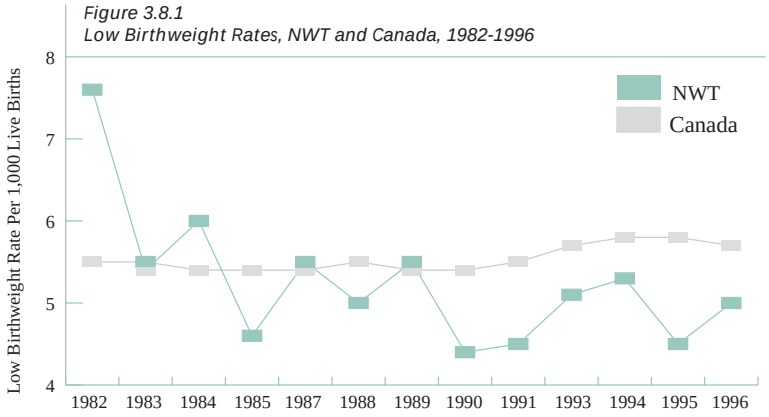
3.8 Low Birth Weight

Birth weight is a world-wide indicator of population health status. The World Health Organization considers the proportion of births of 2,500 grams or over in a population as an essential indicator for monitoring progress toward attaining a better state of health. Newborns weighing less than 2,500 grams at birth are considered to be of low birth weight.

Low birth weight is the main determinant of perinatal (28 weeks gestation to 7 days of life) and infant (under 1 year old) mortality, and is strongly associated with the risk of illness in infants. Low birth weight and prematurity have long-term consequences on health, quality of life, survival of children and the use of health services. The factors associated with low birth weight include smoking, poor diet during pregnancy, low weight prior to pregnancy, poverty and pregnancy at very early or late ages.

Figure 3.8.1 shows that the Northwest Territories's low birth weight rate is essentially similar to that for Canada.

Figure 3.8.1
Low Birthweight Rates, NWT and Canada, 1982-1996



Source: Statistics Canada and NWT Bureau of Statistics

3.9 Dental Health

In 1996/1997, the National School of Dental Therapy surveyed children in 18 Northwest Territories communities. To date, a report has not been published, but a preliminary analysis for 267 six year old Aboriginal children and 211 twelve year old Aboriginal children has been completed by the Department of Health and Social Services.

The children who were six years of age had on average seven decayed teeth. The teeth were categorized as decayed if they had been decayed, extracted or filled. The twelve year old children had on average four decayed teeth. For this age group the teeth were categorized as decayed if they were decayed, missing or filled teeth. Twelve year old children had fewer decayed teeth due to the fact the baby teeth had fallen out and permanent teeth had grown in.

The large numbers of decayed teeth for six year old children could be due to many reasons. These could include frequent exposure for long periods of time to liquids containing sugars, such as milk formula, fruit juice and other sugary drinks, a high sugar intake by the children (candy) and improper brushing of teeth.

The data from the survey were analyzed further to compare communities with and without fluoridation programs.

Compared to non-fluoridated communities, the fluoridated communities had lower dental decay by approximately 35% for 6 year old children, and 38% for 12 year old children.

However, there are factors other than the effect of fluoridation that may contribute to the difference in dental decay between fluoridated and non-fluoridated communities in this survey. For instance, many of the fluoridated communities are large enough to support full time dental clinics, have year-round road access, and have relatively good economies. Most of the non-fluoridated communities do not enjoy these benefits, and that may impact on dental health as it does on other measures of general health.

Chapter 4

Mortality in the Northwest Territories

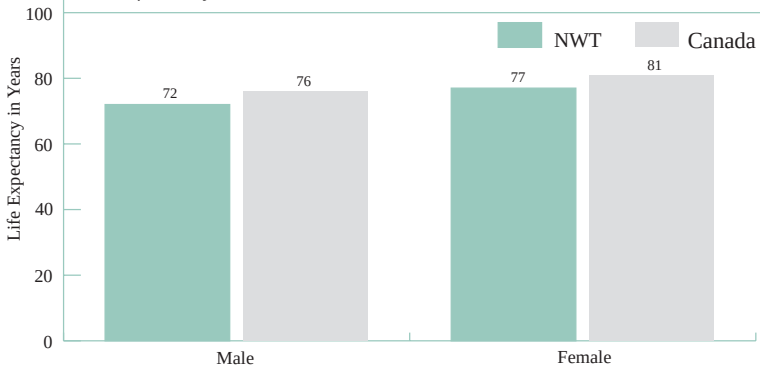
The previous chapter looked at patterns of illness and disease in the Northwest Territories. This chapter looks at causes of death. Understanding the causes of death is an important part of understanding the overall health of the population, since whatever causes death, especially premature death, provides 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 indicator of population health status. Life expectancy at birth refers to the average number of additional years a newborn baby can be expected to live if current mortality trends continue. Because it is partly dependent on mortality in the first year of life, life expectancy at birth is influenced by infant and child mortality rates, which are also key indicators of population health. If the infant mortality rates are the same in two populations, differences in life expectancy may then be linked to differences in various determinants of health, such as personal health practices, social and physical environments, and socioeconomic status.

Figure 4.1.1 shows that women have a longer life expectancy than men, and that people living in the Northwest Territories have a shorter life expectancy than the Canadian average. Based on current mortality patterns, a male born in the Northwest Territories in 1997 could expect to live to the age of 72 years, compared to the age of 76 years for Canadian males generally. Further, while the average Canadian female could expect to live to be 82 years old, the average female born in the Northwest Territories could expect to live to be 77 years old.

Figure 4.1.1
Life Expectancy at Birth, NWT and Canada, 1997



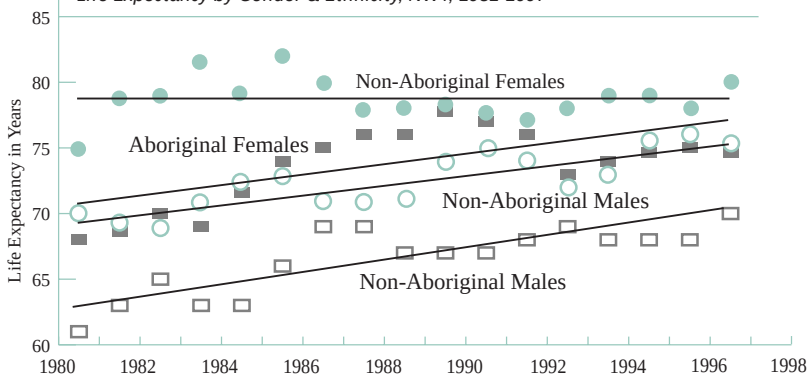
Source: Statistics Canada and NWT Bureau of Statistics

The differences in life expectancy between the Northwest Territories and Canada can be attributed in large part to the lower life expectancy of Aboriginal people. In 1997, the life expectancy at birth for non-Aboriginal women in the Northwest Territories was 80 years, compared to 75 years for Aboriginal women. However, due to an increase in the life expectancy at birth of Aboriginal women, the gap between Aboriginal and non-Aboriginal women narrowed between 1981 and 1997.

In 1997, non-Aboriginal men could expect to live to 75 years of age, while Aboriginal men could expect to live to 70 years of age.

Figure 4.1.2 shows that the life expectancy at birth of non-Aboriginal women remained constant between 1981 and 1997 while there was an upward trend in life expectancy for Aboriginal women during this time. It also appears that the gap between men and women is narrowing.

Figure 4.1.2
Life Expectancy by Gender & Ethnicity, NWT, 1981-1997



Source: NWT Bureau of Statistics

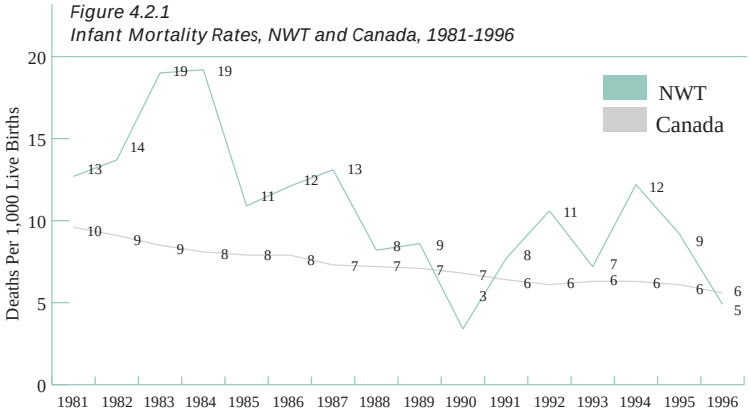
While there was some fluctuation around the trend lines, there was a clear upward trend for both Aboriginal and non-Aboriginal males indicating that their life expectancy at birth increased during this period. The life expectancy at birth for the general male population in the Northwest Territories increased from 67 years in 1981 to 72 years in 1997. Meanwhile, the overall Canadian life expectancy for males increased from 72 years in 1981 to 76 years in 1997.

4.2 Infant Mortality

Infant mortality refers to the death of children less than one year of age. The infant mortality rate is recognized internationally as one of the most important measures of the health of a nation and its children. It is also an important indicator of the effectiveness of preventive care and the attention paid to the health of the mother and her child.[1] The infant mortality rate has been decreasing in the Northwest Territories for the past 20 years and has been at similar levels to Canada's rate since 1988 (see Figure 4.2.1).

The rates for the Northwest Territories fluctuate more than Canada's rates due to the fact that the Northwest Territories has a smaller population of infants less than one year of age, and therefore one or two additional infant deaths in a year can change the rate substantially.

Figure 4.2.1
Infant Mortality Rates, NWT and Canada, 1981-1996



Source: Statistics Canada and NWT Bureau of Statistics

One aspect of infant mortality that is of special concern is *sudden infant death syndrome*, commonly called SIDS. SIDS refers to the sudden and unexpected death of an apparently healthy infant less than one year of age, which remains unexplained even after a full investigation.

[1] *Community Health Indicators, Canadian Institute for Health Information, 1997*

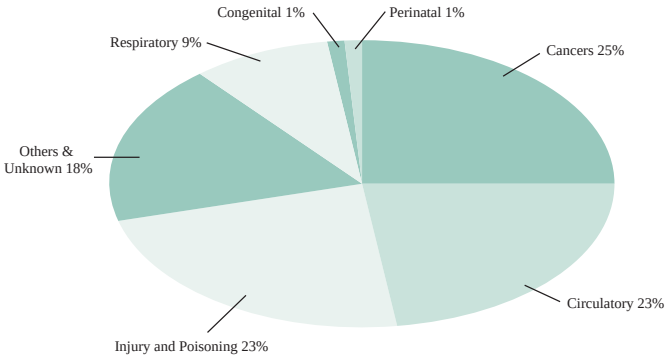
Between 1991 and 1996, four SIDS deaths were recorded in the Northwest Territories. A SIDS rate cannot be calculated for the Northwest Territories due to the low number of live births. The rate of SIDS deaths for Canada in 1996 was 0.6 per 1,000 live births.

4.3 Major Causes of Mortality

As can be seen in Figure 4.3.1, between 1991 and 1996 the leading causes of death in the Northwest Territories were cancers (25%), injuries and poisoning (23%), and circulatory disease (23%). Together, these three major causes accounted for almost 3/4 of all deaths.

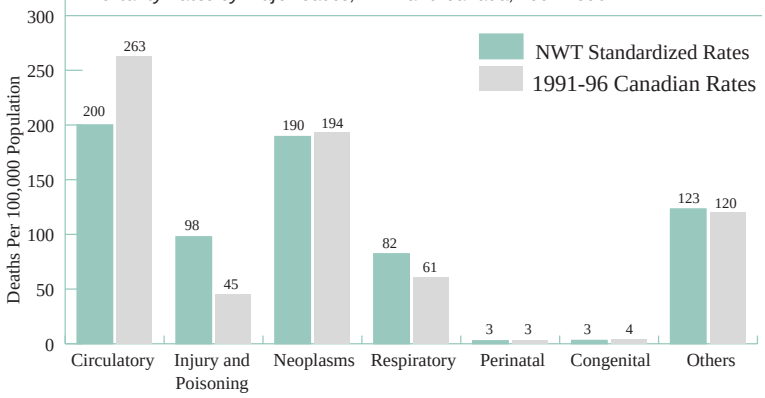
To some extent, the age structure of a population has an effect on leading causes of death (because younger people tend to die for different reasons than older people). Therefore, to compare the leading causes of death in the Northwest Territories to those for the rest of Canada requires an adjustment for the differing age structures of the two populations. This adjustment was made for Figure 4.3.2, which shows the age-adjusted mortality rates for the most common illnesses in the Northwest Territories, compared to Canada.

Figure 4.3.1
Causes of Death, NWT, 1991-1996 (n=831)



Source: Statistics Canada and NWT Bureau of Statistics

Figure 4.3.2
Mortality Rates by Major Cause, NWT and Canada, 1991-1996



Source: Statistics Canada and NWT Bureau of Statistics

When adjusted for age of the population, mortality due to cancer in the Northwest Territories was about the same rate as for the rest of Canada, mortality due to circulatory disease was closer to, although still lower than the rest of Canada, and mortality due to respiratory disease was higher than the rest of the country.

However, the rate of mortality due to injuries in the Northwest Territories was more than twice the rate for the rest of Canada.

Figures 4.3.3 and 4.3.4 compare the major cause of death for men and women. The major differences are that men tended to die more often as a result of injuries, 27% compared to 15% for women, while women tended to die more often from cancer, 29% compared to 23% for men.

Figure 4.3.3
Causes of Death, Males, NWT, 1991-1996

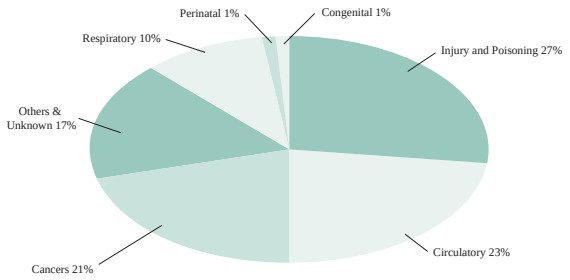
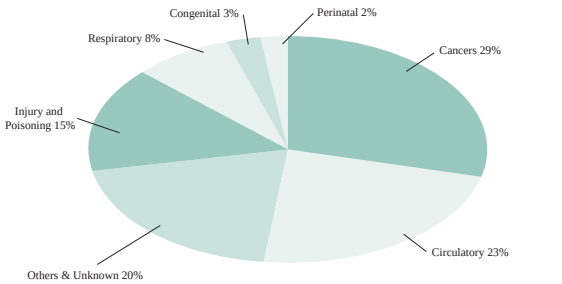


Figure 4.3.4
Causes of Death, Female, NWT, 1991-1996



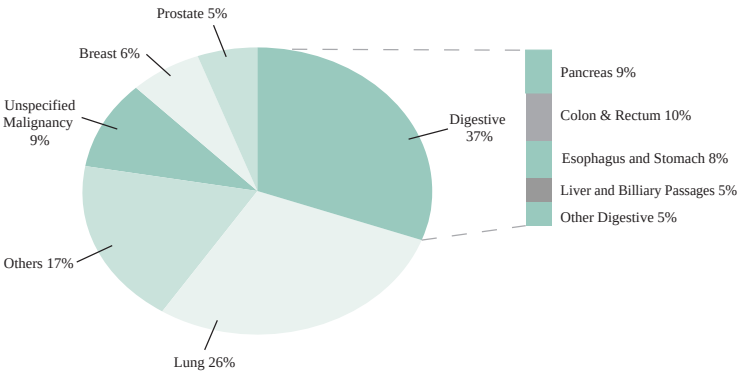
As was seen in Figure 4.3.1, chronic diseases - cancers, circulatory diseases and respiratory diseases - accounted for over half of the deaths in the Northwest Territories. Figure 4.3.5 provides more information about the type of cancers leading to death in the Northwest Territories.

The major cancers leading to death were lung cancer and digestive cancer, which accounted for more than half of the cancer deaths. As can been seen in Figure 4.3.5, lung cancers accounted for 26% of all cancer deaths.

Heart attacks and strokes were the two major components of cardiovascular diseases, consisting of 44% and 17% of all circulatory deaths.

It is well known that tobacco use is a preventable factor associated with a wide range of diseases of both adults and children. Based upon territorial prevalence of smoking by age and sex, tobacco was estimated to be the source of nearly one quarter of all deaths from cancer, circulatory diseases, respiratory diseases, and perinatal conditions.

Figure 4.3.5
Cancer by Type, NWT, 1991-1996

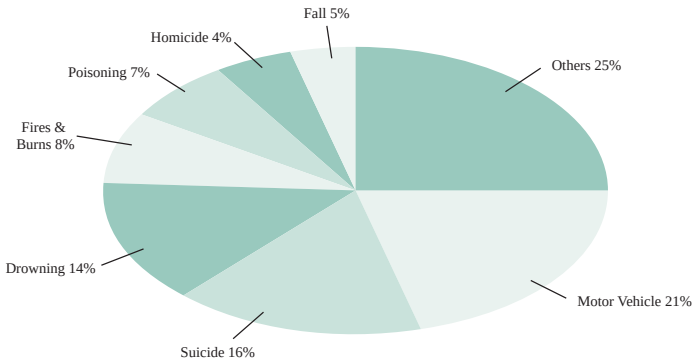


Source: Statistics Canada

4.4 Injury Mortality

As was seen in Figure 4.3.1, approximately one out of four deaths in the Northwest Territories between 1991 and 1996 was due to injuries. Figure 4.5.1 shows the most common causes of injury deaths in the Northwest Territories.

Figure 4.4.1
Injury Deaths by External Cause, NWT, 1991-1996 (n=192)



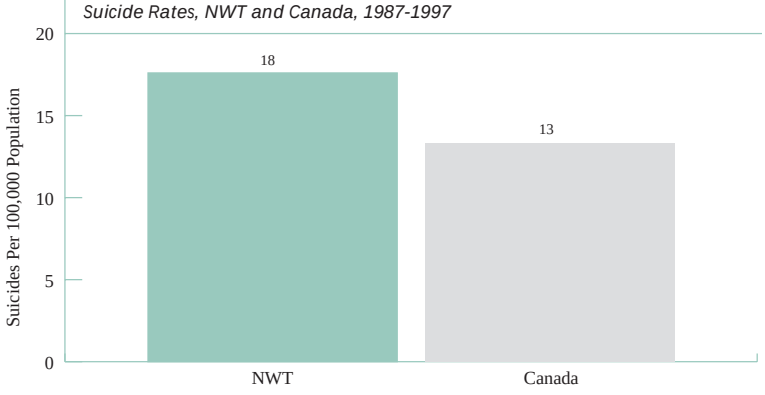
Source: Statistics Canada

As can be seen in Figure 4.4.1, the leading sources of injury mortality for the Northwest Territories were motor vehicle accident 21%, suicide (16%) and drowning (14%). Of all the motor vehicle injury deaths, 37% involved motor vehicle collisions, 17% involved loss of control of a vehicle, and 10% involved snowmobiles.

Suicides accounted for the second-most common form of injury death (even though suicide is a deliberate act, it is still classified as a self-inflicted, or intentional, injury death).

The prevention of intentional injuries such as suicide is more a matter of improving social well being or psychological intervention than it is a matter of medical intervention. Studies have shown that recent family or relationship break-up was reported in 36% of suicide cases and 21% of those who followed through with suicide were facing criminal proceedings[2]. Other groups at risk of suicide include people with depression, substance abuse problems and those who have experienced childhood sexual abuse.

Figure 4.4.2
Suicide Rates, NWT and Canada, 1987-1997



Source: Statistics Canada

Drowning was the third most frequent cause of injury death. Travel by boat and by snowmobile were the main activities associated with drowning. Studies have shown that victims of boating drownings in the North were often not wearing a personal flotation device (PFD)[3]. Moreover, given the environment in the North, additional protection against hypothermia would increase the chances of surviving immersion in the cold water. Yet, boaters who travel over extremely cold water and snowmobile users who travel over ice rarely wear flotation hypothermia suits. Finally, alcohol consumption is often implicated as an additional risk factor with drowning accidents.

[2] *Suicide in Canada: Update of the Task Force on Suicide in Canada, Health Canada, 1995*
[3] *National Drowning Report, Canadian Red Cross Society, 1999*

Most injury deaths are predictable and preventable events rather than acts of fate or bad luck. Better awareness of personal, equipment, and environmental risk factors and appropriate use of safety equipment have great potential to reduce risk. For example, increases in seatbelt usage and reductions in impaired driving would reduce motor vehicle fatalities significantly.

4.5 Potential Years of Life Lost (PYLL)

PYLL is a widely used population health measure as it provides a good estimate of the overall level of premature death in the population. PYLL is calculated by assuming that an average productive life span is 70 years, and by subtracting the age at which a person dies from 70. For example, if a person dies at age 50, then the potential years of life lost by premature death is 20 years. The PYLL for an entire population is simply the sum of all the years of life lost by those who died prior to reaching the age of 70.

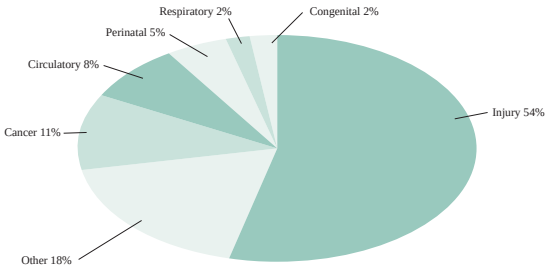
Between 1991 and 1996, there was a total of 14,165 years of life lost through premature death in the Northwest Territories. Of all the premature deaths in the Northwest Territories between 1991 and 1996, each of 529 people who died before the age of 70 lost an average of 27 years of life.

Injuries accounted for nearly half of all premature deaths. The average age at death of injury victims was 38 years, as compared with 57 years for all causes. The average ages at death from cancer, circulatory diseases and respiratory diseases were 63, 71 and 75 years respectively. The fact that injury victims died at younger ages helps to explain why injuries were responsible for so many PYLL, even though more than 50% of all deaths resulted from the other three major causes of death. Injury prevention should be the top priority in the prevention of premature death and is particularly important in a young population like the Northwest Territories.

Figures 4.5.1 and 4.5.2 compare PYLL in the Northwest Territories for both men and women. As can be seen from these Figures, the PYLL for men is almost double that for women, and over 50% of PYLL for men is due to deaths from injury. Injury death is also the leading cause of PYLL for women, but it only accounts for 27%. The other leading cause of PYLL for women is cancer, at 21%.

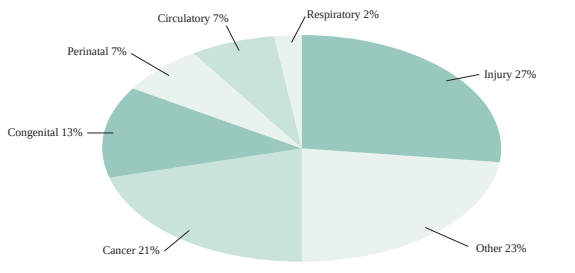
Overall, the leading causes of premature mortality in the Northwest Territories underscore the importance of prevention programs, and highlight the impact that personal health practices have on population health status.

Figure 4.5.1
Potential Years of Life Lost (PYLL) Before Age 70, Male, NWT, 1991-96



Source: Statistics Canada

Figure 4.5.2
Potential Years of Life Lost (PYLL) Before Age 70, Female, NWT, 1991-96



Source: Statistics Canada

Chapter 5

Social, Economic and Environmental Influences on Health

Demographics - the structure and composition of the population - has a marked influence on population health. Age is an important factor, since the older a population is, the higher the incidence of chronic disease. Socioeconomic status is also an important determinant of health. In Canada (as in other parts of the world), there appears to be a positive correlation between education, income and employment, and health status. Simply put: those who are poor and are struggling through a lack of education and/or employment tend to be less well, and have greater needs for health care and social services. Low socioeconomic status may result in ill health due to associated deprivation and stress, and to a narrower degree of control over life circumstances and, hence, the ability to take action.[1]

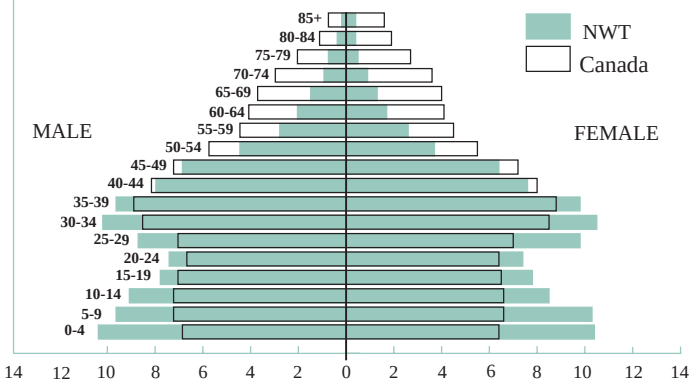
A person's level of education, employment and income are indicators of his or her living and working conditions. These indicators are closely related, because on average, people with higher levels of education are more likely to be employed, to have jobs with higher social status, and to have stable incomes.

5.1 Demographics

Figure 5.1.1 shows the age structures of the Northwest Territories and Canadian populations in 1996. Differences in the shapes of the population pyramids points to differences in age structure. The base of the Northwest Territories pyramid is wider than the Canadian pyramid, indicating a younger population in the Territories.

According to the 1996 census, approximately 30% of the Northwest Territories population was less than 15 years of age, compared with about 20% nationally. Meanwhile, due to the larger percentage of older people, the Canadian pyramid is wider at the top than the Northwest Territories pyramid. In 1996, about 4 % of the Northwest Territories population were 65 years of age and older, while this age group made up just over 12 % of the national population.

Figure 5.1.1
Population Age - Gender Structure, NWT and Canada, 1996



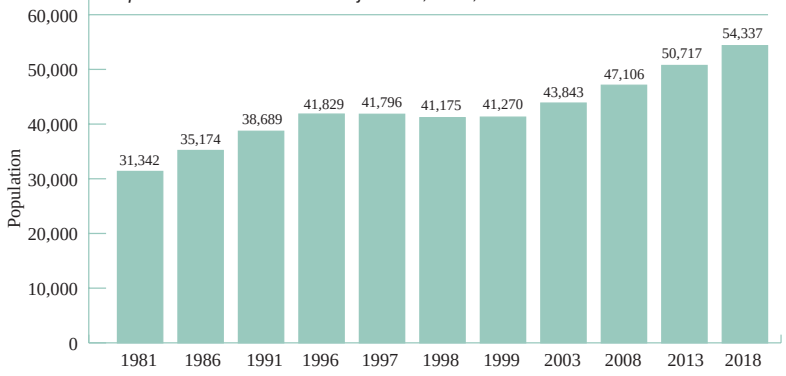
Source: Statistics Canada; Provided by NWT Bureau of Statistics

[1] *Population Health: Concepts and Methods, Young, T. Kue, New York: Oxford University Press, 1998*

In 1996, men slightly outnumbered women (52% compared with 48%) in the Northwest Territories. This was especially the case among those 40 to 54 years of age. Meanwhile, there were more women than men in the two oldest age groups (80 to 84 years, and 85 years and over) due to the longer life expectancy of women.

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). Between 1981 and 1996, the population of the Northwest Territories increased by 33%, compared with the national growth rate of 19%. This high rate of population growth can be attributed to net in-migration and to the high birth rate in the Territories. Historically, fluctuations in the population growth rate have tended to occur in response to in- and out-migration. For example, the population estimates declined (a negative growth rate) between 1997 and 1998 due in large part to net out-migration resulting from government downsizing and a slowdown in the gold mining sector.[2] It is estimated that the population now stands at about 41,300 people and is expected to enter a period of steady increase. By 2018, the population is projected to be just over 54,300.

Figure 5.1.2
Population Estimates and Projections, NWT, 1981-2018

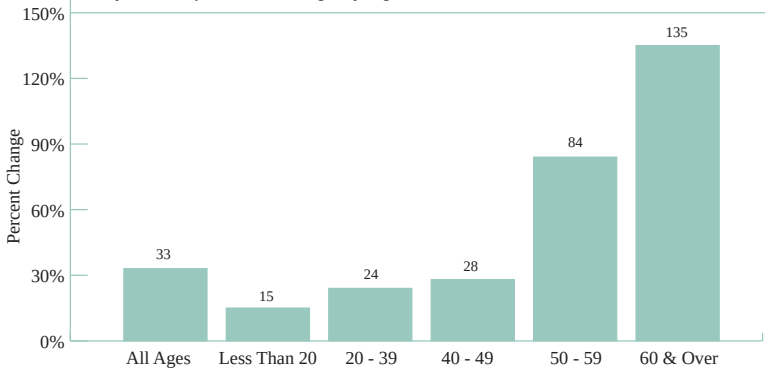


Source: Statistics Canada and NWT Bureau of Statistics

While the Northwest Territories population is and will continue in the near future to be young compared to the rest of the nation, it is aging. As can be seen in Figure 5.1.3, the number of people 60 years of age and older is anticipated to increase from about 2,400 to over 5,600 in the year 2018 (a 135% change). The number of people less than 20 years of age is expected to increase from just over 14,700 to about 16,900 individuals in the year 2018 (a 15% change).

If the population continues to change in this way, the population age structure in the Northwest Territories would be expected to look different in the future, as older people make up a larger percentage of the overall population. In effect, the shape of the population pyramid would alter with the base becoming narrower and the middle and top becoming wider.

Figure 5.1.3
Projected Population Change by Age, NWT, 1998-2018



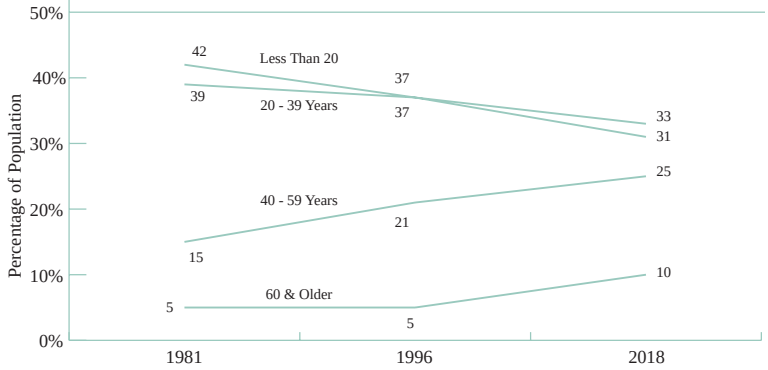
Source: NWT Bureau of Statistics

[2] *Community Population Estimates, Northwest Territories Bureau of Statistics, Government of the Northwest Territories, 1999*

As Figure 5.1.4 shows, the proportion of the population less than 20 years of age declined between 1981 and 1996 and is expected to continue to decline. In 1981, this age group made up 42% of the population; they are projected to represent 31% of the population in 2018. Meanwhile, people 40 to 59 years of age made up 15% of the population in 1981 and are expected to make up 25% in the 2018.

As noted earlier, an excess of births over deaths is one of the major reasons why the size of a population increases. Several indicators are used to measure the fertility of a population. The crude birth rate is the ratio of the number of live births during a given period of time, normally one year, to the total population at that time. The general fertility rate is a more refined measure of fertility in which the number of births are divided by the number of women of childbearing age in the population.

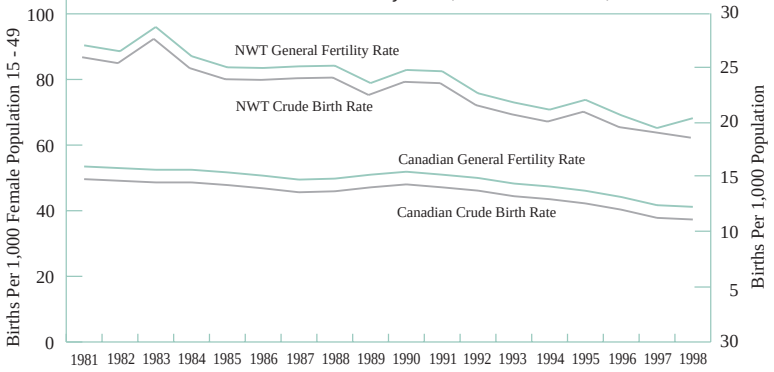
Figure 5.1.4
Population by Age, NWT, 1981, 1996 and 2018 Projections



Source: Statistics Canada and NWT Bureau of Statistics

In 1998, there were 772 live births recorded in the Northwest Territories, which translates into a crude birth rate of 18 per 1,000 population and a general fertility rate of 68 per 1,000 women (age 15 to 49). The national crude birth rate for that same year was 11 per 1,000 population and the national fertility rate was 44 per 1,000 women. The crude birth rate and general fertility rate in the Northwest Territories have historically been higher than the Canadian rates, which accounts for the younger population in the Territories. During the 1980s and early 1990s, Canada's crude birth rate was around 14 per 1,000 population, while the rate in the Territories was around 24 per 1,000 population.

Figure 5.1.5
Crude Birth Rates and General Fertility Rates, NWT and Canada, 1981-1998

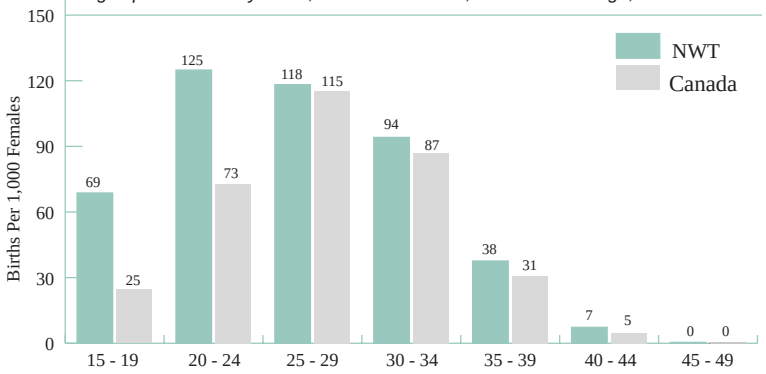


Source: Statistics Canada; Provided by NWT Bureau of Statistics

The number of births fluctuates from year to year in the Northwest Territories. However, there has been a general downward trend in birth rates since the mid 1980s, as can be seen in Figure 5.1.5. Between 1985 and 1995, there was an average of approximately 850 births per year compared to an average of about 780 for 1996 to 1998. This reduction was reflected in the crude birth rate which went from around 25 per 1,000 population during the 1980s to around 18 per 1,000 in 1997 and 1998.

Figure 5.1.6 provides the age specific average fertility rates for 1992 to 1996 for Canada and the Northwest Territories. It is evident that women having children, both in southern Canada and the Northwest Territories, were mainly between the ages of 20 to 34. About three quarters of all babies were born to women within this 15 year age range. However, women in the Northwest Territories tended to have children at a younger age - the fertility rates for women 15 to 19, and 20 to 24 years of age were considerably higher than the Canadian rates.

Figure 5.1.6
Age Specific Fertility Rates, Canada and NWT, Five Year Average, 1992-1996



Source: Statistics Canada; Provided by NWT Bureau of Statistics

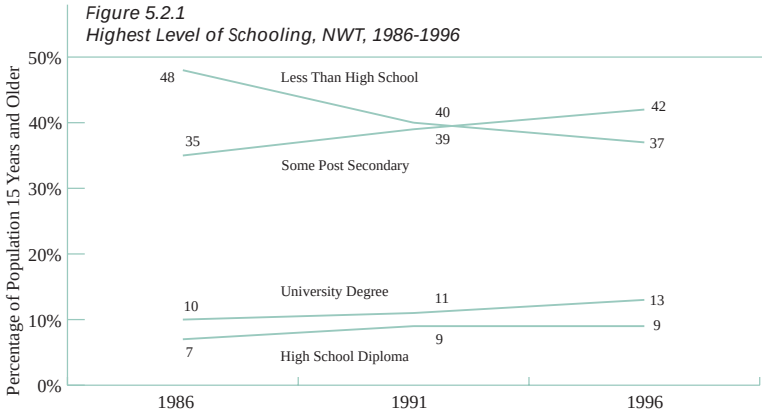
Between 1992 and 1996, there was an average of 69 births per 1,000 women between 15 and 19 in the Northwest Territories, compared with an average of 25 per 1,000 in Canada. Also, there was an average of 125 births per 1,000 women between 20 and 24 years of age, compared with an average of 73 in Canada. This ten-year age group accounted for 37% of all births in the Territories and 25% in Canada during this period.

5.2 Education

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. As noted earlier, a person with a high level of education is more likely to be employed and earning a higher income then 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 life style choices.[3] While they are not the same, there is a direct link between educational attainment and literacy levels. 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.

As Figure 5.2.1. shows, the educational attainment of Northwest Territories residents improved between 1986 and 1996.

Figure 5.2.1
Highest Level of Schooling, NWT, 1986-1996



Source: Statistics Canada; Provided by NWT Bureau of Statistics

[3] *Report on the Health of Canadians, Health Canada, 1996*

The percentage of the population with less than high school decreased from 48% to 37%. Meanwhile, the percentage of the population with some post secondary increased from 35% to 42% and the percentage with a university degree increased from 10% to 13%.

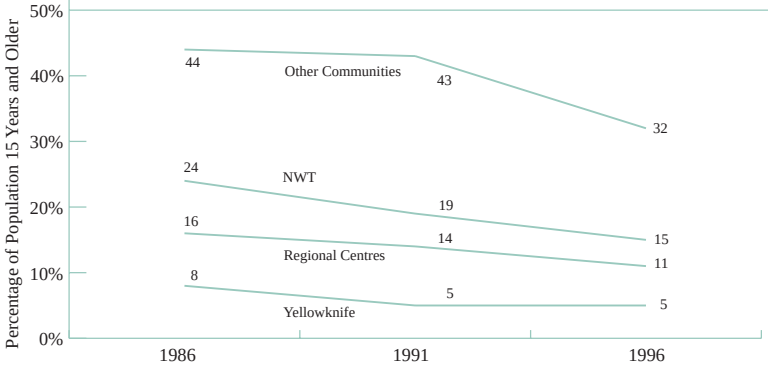
The increase in the proportion of the population with some post-secondary schooling may be due in part to an increase in the number of people taking certificate programs offered by Arctic College in various communities throughout the Northwest Territories. However, notwithstanding this possibility, education attainment did increase in the Territories during the 1980s and 1990s, and at a territorial level in 1996 it was similar to the education level of the population in Canada as a whole.

Within the Northwest Territories, people in different types of communities are found to have very different levels of educational attainment. While the education levels in small communities has improved, with people having less than grade nine dropping from 44% in 1986 to 32% in 1996, the educational attainment is still lower in these communities than in larger centres in the Territories and in the nation as a whole.

Figure 5.2.2 shows that in 1996, only 5% of the population 15 years of age and older in Yellowknife and 11% in the regional centres of Hay River, Fort Smith and Inuvik had less than grade nine.

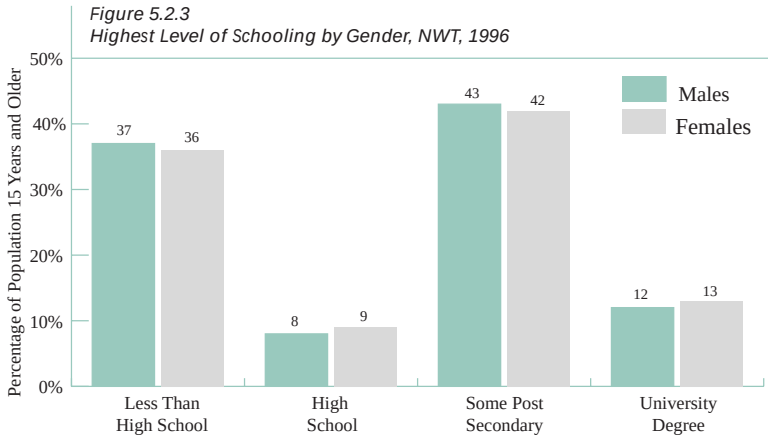
There are few differences in the educational attainment of males and females, as can be seen in Figure 5.2.3. In 1996, approximately 35% of both men and women 15 years and older had less than a high school certificate. Women were somewhat more likely to have a high school certificate, but men were more likely to have a trades certificate or have attended a non-university program. About the same percentage of men and women had a university degree in 1996.

Figure 5.2.2
Population with Less Than Grade Nine, by Community Type, 1986-1996



Source: Statistics Canada; Provided by NWT Bureau of Statistics

Figure 5.2.3
Highest Level of Schooling by Gender, NWT, 1996



Source: Statistics Canada; Provided by NWT Bureau of Statistics

While there was no relationship between gender and education, there was a very strong inverse relationship between age and education in the Northwest Territories. According to the 1996 census, older people tended to have less education. Approximately 72% of all individuals 65 years of age and older had less than grade nine. This was more than twice the proportion in the national population for the same age category. It is important to point out that while there was a strong association between age and education levels, the relationship between education and health status exists independently of age.[4]

5.3 Employment

Meaningful work is another key element in the social and economic environment that affects health. Unemployed people tend to have a reduced life expectancy and to suffer more health problems than those who are employed. 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.[5] While education levels have improved in the Northwest Territories, between 1981 and 1996 the number of unemployed individuals increased. The overall unemployment rate rose from 7% in 1981 to 12% in 1996. According to the census, the national rate stood at 10% in 1996.

As Figure 5.3.1 shows, men and women experienced unemployment somewhat differently. The unemployment rate for men increased from about 7% in 1981 to 13% in 1996. Meanwhile, the unemployment rate for women increased from about 7% in 1981 to 10% in 1996. The difference may be due in part to the fact that fewer women than men participated in the labour force. (Individuals not in the labour force are not counted among the unemployed.) The difference was also likely due to the changing nature of work in the Northwest Territories. The percentage of the population employed in health, education, sales and service occupations increased while the percentage of the population employed in trades, transportation and primary occupations decreased between 1991 and 1996.[6]

Figure 5.3.1
Unemployment Rates by Gender, NWT, 1981-1996

Source: Statistics Canada; Provided by NWT Bureau of Statistics

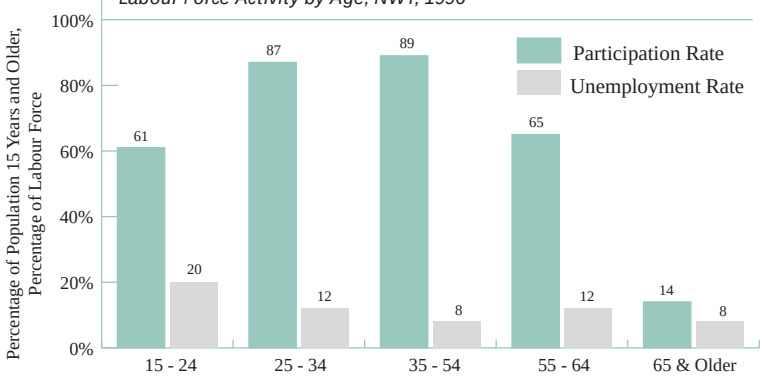
While men participated in the labour force to a greater degree than women, the gap has narrowed. One of the most significant features of labour market activity in the Northwest Territories was the significant influx of women into the paid labour force. The number of women in the labour force

[4] *Report on the Health of Canadians, Health Canada, 1996*
[5] *Ibid*
[6] *Labour Force - 1996 Census Results - Northwest Territories, Northwest Territories Bureau of Statistics, Government of the Northwest Territories, 1998*

nearly doubled between 1981 and 1996. During this period, women's participation rate increased from 59% to 73%. Meanwhile, men's participation rate increased slightly from 77% to 81% between 1981 and 1996.

At the time of the survey, young people 15 to 24 years of age were having difficulties finding work. At 20%, the unemployment rate for this age group was almost twice as high as other age groups in 1996. 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.

Figure 5.3.2
Labour Force Activity by Age, NWT, 1996

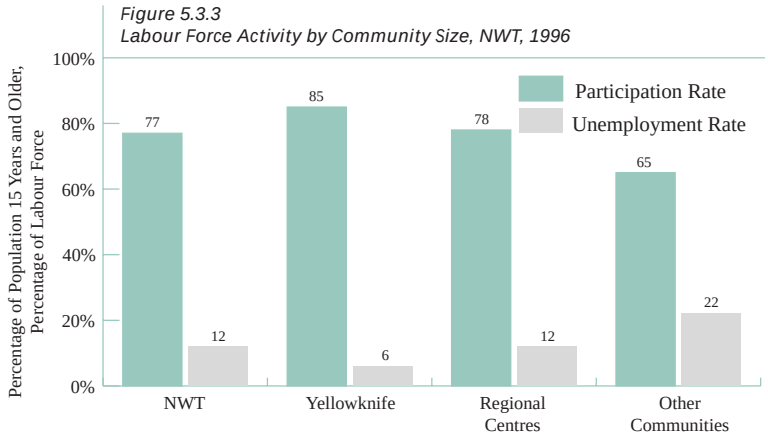


Source: Statistics Canada; Provided by NWT Bureau of Statistics

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 all other communities. In turn, the labour markets were stronger in the regional centres of Hay River, Fort Smith and Inuvik than in the smaller communities.

In 1996, the unemployment rate in Yellowknife was estimated to be 6% compared with 12% in the regional centres and 22% in the other communities, as can be seen in Figure 5.3.3. At 65%, the participation rate in the smaller communities was much lower than the rate in Yellowknife (85%) and the regional centres (78%). The ratio of the population 15 years and older who were employed was also much higher in Yellowknife than in the other communities.

Figure 5.3.3
Labour Force Activity by Community Size, NWT, 1996



Source: Statistics Canada; Provided by NWT Bureau of Statistics

Labour force participation rates tend to increase and unemployment rates tend to decrease with higher education levels. As noted earlier, people living in Yellowknife and the regional centres tended to have higher levels of education than the population in other communities in the Territories. With higher education and steady employment, people in Yellowknife and the regional centres also tended to have higher incomes than residents in the smaller communities.

5.4 Income

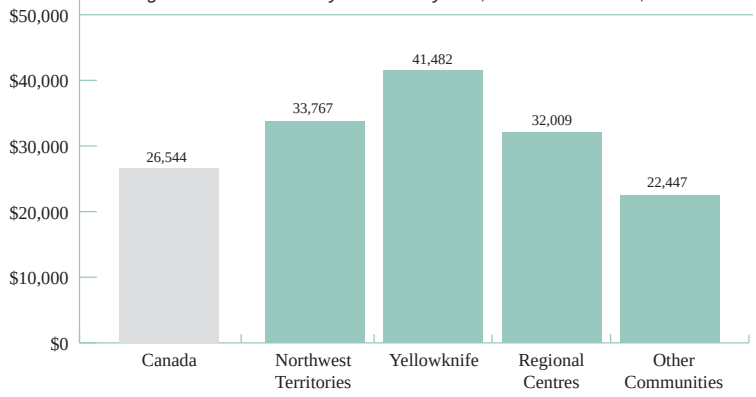
The 1996 Report on the Health of Canadians stated that:

"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." [7]

The Report made the point that people in the highest income brackets live longer than those in the bottom bracket and that 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 hierarchy in income. 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, according to the Report. In other words, the poor do not suffer from particular types of diseases but are generally more susceptible to becoming sick and dying.

The proportion of the population living below the low income cut-off point (LICO) is the most commonly used measure of the proportion of the population with low incomes in Canada, but Statistics Canada does not calculate LICOs for the Northwest Territories. So, instead of using LICOs, Figure 5.4.1 provides information on the average, before tax, income of individuals who received income in 1996.

Figure 5.4.1
Average Personal Income by Community Size, NWT and Canada, 1996



Source: Revenue Canada Taxation; Provided by NWT Bureau of Statistics

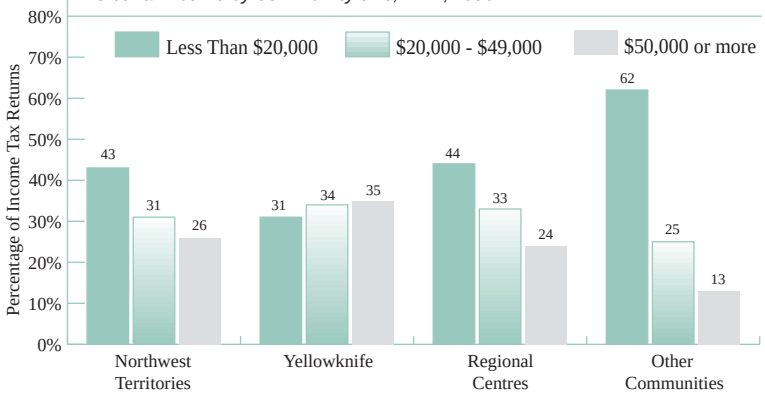
As Figure 5.4.1 shows, there was considerable variation in income between communities. The average personal income for all of the Northwest Territories was $33,767 in 1996, which was significantly higher than the Canadian average of $26,554. Meanwhile, the average income in Yellowknife was $41,482, the average income in the regional centres was $32,009 and the average income in all other communities was $22,447.

Average incomes only provide part of the picture. It is also important to look at the way income is distributed throughout the population. Figure 5.4.2 showed that a much larger percentage of the population in small communities (62%) received less than $20,000 in 1996 than did the population in Yellowknife (31%) or the regional centres (44%).

[7] *Report on the Health of Canadians, Health Canada, 1996, p.28*

There were also differences between men and women in terms of earned income. Men tend to earn more than women in the Northwest Territories. According to the 1996 census, men had an average income of $37,701 in 1995 while women had an average income of $26,737. A larger percentage of women (35%) than men (30%) earned less than $20,000 and a much large percentage of men (29%) than women (14%) earned $50,000 or more.

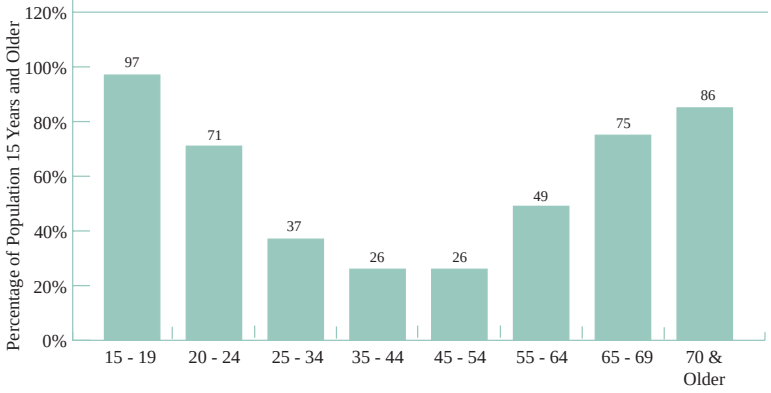
Figure 5.4.2
Personal Income by Community Size, NWT, 1996



Source: Revenue Canada Taxation; Provided by NWT Bureau of Statistics

Income is also strongly associated with age, as can be seen in Figure 5.4.3. The young and the old tend to have lower incomes than people between 30 and 65. According to the 1996 census, 71% of the population between 20 and 24, 76% of the population between 65 and 69, and 86% of the population 70 years and older had incomes less than $20,000 in 1995.

Figure 5.4.3
Population with Income Less Than $20,000 by Age, NWT, 1995



Source: Statistics Canada; Provided by NWT Bureau of Statistics

Again, it is important to point out that income influences health status independently of age.[8]

5.5 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 can be divided into two types: factors related to household living conditions associated with unsafe drinking water, inadequate refuse disposal, 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 the unsustainable consumption of natural resources.[9]

Good quality water and food are essential for a healthy life, but 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 the blood and transported

[8] *Report on the Health of Canadians, Health Canada, 1996*
[9] *The World Health Report 1998: Life in the 21st Century A Vision for All, World Health Organization, 1998*

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, skin cancer and immune system damage. At this point, however, it is hard to determine what, if any, effects global warming and climate change may have on the health status of northern residents.

5.5.1 Climate

As Figure 5.5.1 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 would also mean that the risk of injury or death due to exposure would be higher in the north than in southern Canada. 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" or cabin fever, and in some cases actual clinical depression. Meanwhile, long hours of sunshine during the summer, could mean higher rates of exposure to ultraviolet radiation which would increase the risk of skin cancer and cataracts if precautions are not taken.

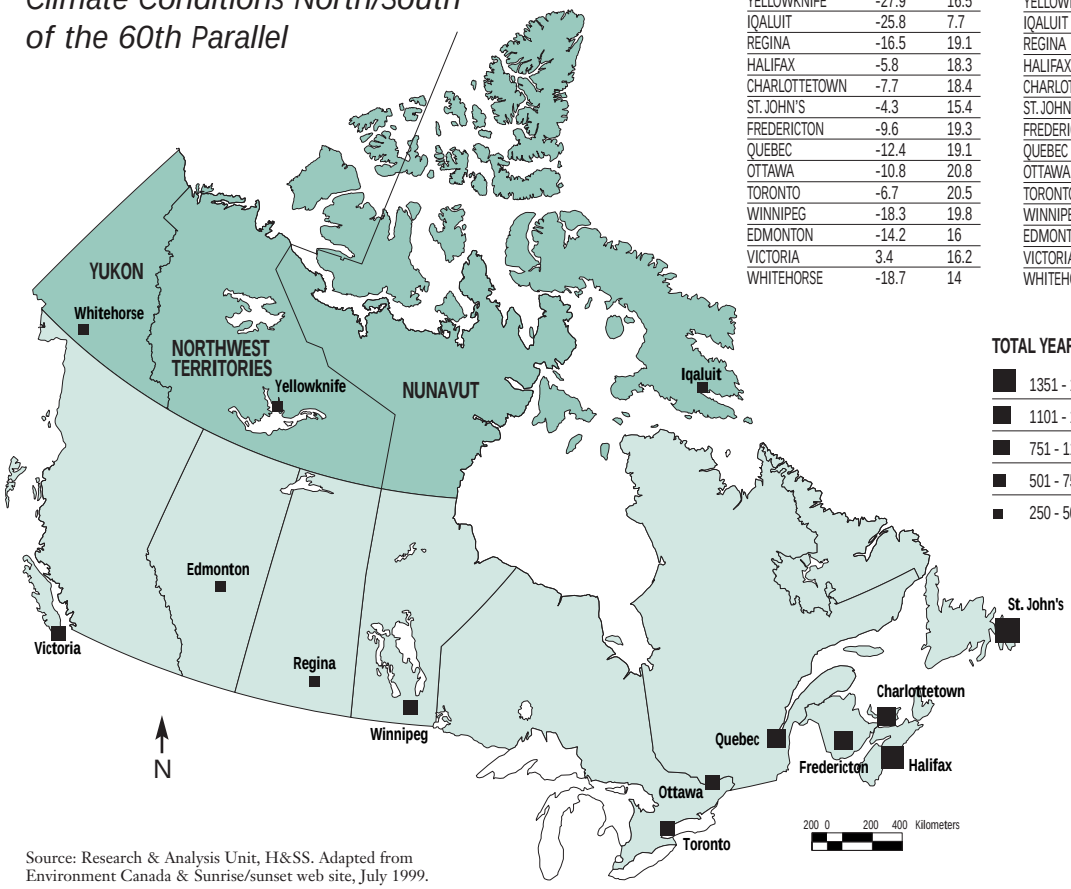
Figure 5.5.1
Climate Conditions North/South of the 60th Parallel

AVERAGE TEMPERTATURE

	JAN.	JULY
YELLOWKNIFE	-27.9	16.5
IQALUIT	-25.8	7.7
REGINA	-16.5	19.1
HALIFAX	-5.8	18.3
CHARLOTTETOWN	-7.7	18.4
ST. JOHN'S	-4.3	15.4
FREDERICTON	-9.6	19.3
QUEBEC	-12.4	19.1
OTTAWA	-10.8	20.8
TORONTO	-6.7	20.5
WINNIPEG	-18.3	19.8
EDMONTON	-14.2	16
VICTORIA	3.4	16.2
WHITEHORSE	-18.7	14

DAYLIGHT (HRS/MINUTES PER DAY)

	DEC. 15	JUNE 15
YELLOWKNIFE	5/2	19/55
IQALUIT	4/26	20/44
REGINA	8/3	16/24
HALIFAX	8/49	15/35
CHARLOTTETOWN	8/38	15/46
ST. JOHN'S	8/28	15/57
FREDERICTON	8/41	15/43
QUEBEC	8/34	15/50
OTTAWA	8/46	15/38
TORONTO	8/57	15/25
WINNIPEG	8/8	16/19
EDMONTON	7/33	16/57
VICTORIA	8/19	16/07
WHITEHORSE	5/43	19/04



TOTAL YEARLY PRECIPITATION

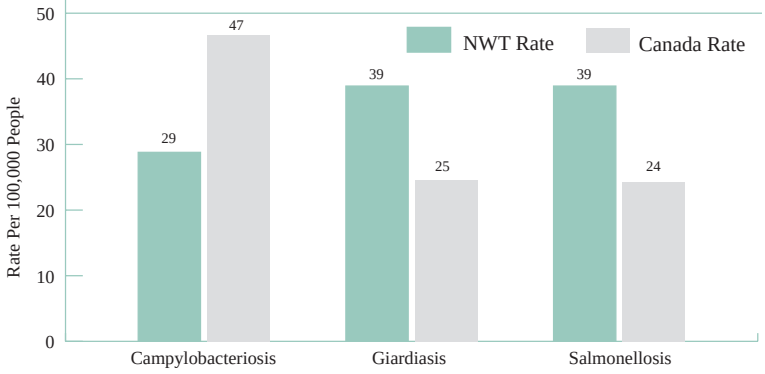
1351 - 1500	mm/YR (HIGH)
1101 - 1350	mm/YR (MEDIUM HIGH)
751 - 1100	mm/YR (MEDIUM)
501 - 750	mm/YR (MEDIUM LOW)
250 - 500	mm/YR (LOW)

Source: Research & Analysis Unit, H&SS. Adapted from Environment Canada & Sunrise/sunset web site, July 1999.

5.5.2 Food and 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 illnesses that are transmitted through the food and water supply. Figure 5.5.2 shows the rates of a sample of food and water borne illnesses in the Northwest Territories compared to Canada.

Figure 5.5.2
Selected Food & Water-Borne Disease Rates, NWT and Canada, 1989-1998



Source: NWT Communicable Disease Registries,
Health Canada Laboratory Centres for Disease Control

As can be seen in Figure 5.5.2, some food and water borne diseases occur at a higher rate in the Northwest Territories than in the rest of Canada, others at a lower rate. The actual number of cases in any given year is relatively low - between 30 and 40 annually - without any noticeable upward or downward trend over the past ten years.

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 from eating raw, poorly cooked or unpasteurized foods. Giardia is picked up from drinking contaminated, untreated water.

5.5.3 Water Consumption

The availability of an adequate supply of fresh water for drinking and hygiene makes an important contribution to population health. Health Canada has suggested that 65 litres of water per person, per day should be the minimum standard for health and hygiene. While there is no territories-wide information collected on the availability of fresh water, a survey conducted by the Northwest Territories Housing Corporation in 1997[10] provides some estimates.

As can be seen in Table 5.5.3, there are a few communities in the Northwest Territories where the water consumption in public housing units is below the recommended guideline. Whether this applies to the whole community remains unanswered, but even if this finding is restricted to public housing, it still means that for a number of people water consumption remains lower than what is deemed sufficient for hygiene purposes.

[10] *Analysis of the Utility Costs in Public Housing, Northwest Territories Housing Corporation, 1997*

Table 5.5.3
Water Consumption in Public Housing by Community
NWT, 1995-96

COMMUNITY	AVERAGE CONSUMPTION PER PERSON PER DAY (LT/C/D)
Inuvik	362
Yellowknife	344
Norman Wells	198
Fort Resolution	176
Fort Simpson/Wrigley	173
Hay River	166
Fort Smith	157
Hay River Reserve	90
Aklavik	89
Rae/Edzo	83
Fort Good Hope	82
Fort Providence	69
Fort McPherson	66
Tsiigehtchic	66
Tuktoyaktuk	65
Wha Ti	65
Health Canada Guideline 65 LT/C/D	
Deline	61
Sachs Harbour	54
Fort Norman	49
Lutsel K'e	48
Paulatuk	34
Ndilo/Dettah	29

Source: Analysis of Utility Costs in Public Housing, Northwest Territories Housing Corporation, 1997

Notes:
1. MACA has established a standard of 90 lt/c/d and for trucked delivery and 265 lt/c/d for piped delivery
2. Health Canada suggests 65 lt/c/d is the minimum to health and hygiene standard

5.5.4 Environmental Contaminants

Another factor in the physical environment that can influence population health status is 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, such as mines, DEW Line sites, garbage dumps, and lead shot. However, the majority of contaminants found in the food chain arrive in the Northwest Territories from far away, travelling on ocean and wind currents.

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 first report from this program, Canadian Arctic Contaminants Assessment Report[11], was published in 1997.

The information in that report is too extensive to summarize here, but the report did conclude:

"Contaminants in the food chain are not thought to pose a direct threat to the health of adult humans. Contaminant levels in traditional/country food are low enough that a single serving, or even many servings, will not make someone sick. However, lifetime stores of contaminants in people may be at a level where the unborn child may be at risk of subtle effects related to learning ability, memory and resistance to infection." [12]

5.6 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 household accidents and increased transmission of airborne infections such as acute respiratory infectious diseases; proper disposal of refuse; indoor air quality.[13] 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 needs surveys to monitor housing conditions and needs. The latest one was carried out in 1996, and a new survey will be conducted in winter of 1999. The survey identified three types of housing problems: suitability, which refers to the problem of overcrowding; adequacy, which refers to the physical condition of the dwelling; and, affordability, which refers to the extent that the household pays an excessive amount for shelter.

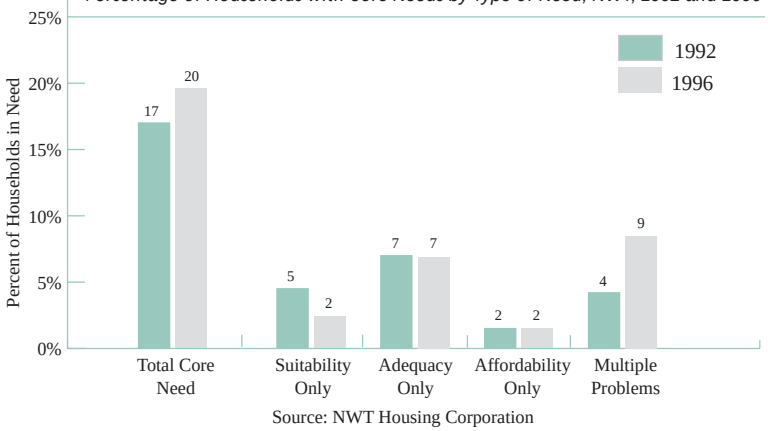
Households with one or more of these problems and a total income below a community specific threshold were considered to be in core need. Due to this income threshold, a large number of households with housing problems were not included in the number with core need, because they had sufficient income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

According to the 1996 survey, there were an estimated 2,486 households in core need, representing about 20% of all households in the Territories. The Northwest Territories Housing Corporation estimated this level to be about twice the national rate.[14]

[11] *Department of Indian Affairs and Northern Development (DIAND), 1997*
[12] *Highlights of the Canadian Arctic Contaminants Report, DIAND, 1997, p(iv).*
[13] *The World Health Report 1998: Life in the 21st Century A Vision for All, World Health Organization, 1998*
[14] *Report on Housing, Yellowknife, NWT Housing Corporation, Government of the Northwest Territories, 1998*

As can be seen in Figure 5.6.1, approximately 17% of all households were considered to be in core need in 1992. The increase was attributed to population growth, a reduction in funding for social housing by the federal government and fiscal constraints faced by the territorial government. The number and percentage of households with adequacy problems and multiple problems increased between 1992 and 1996. In fact the number of households with more than one of the listed housing problems increased from 4% to about 9% of all households surveyed.

Figure 5.6.1
Percentage of Households with Core Needs by Type of Need, NWT, 1992 and 1996

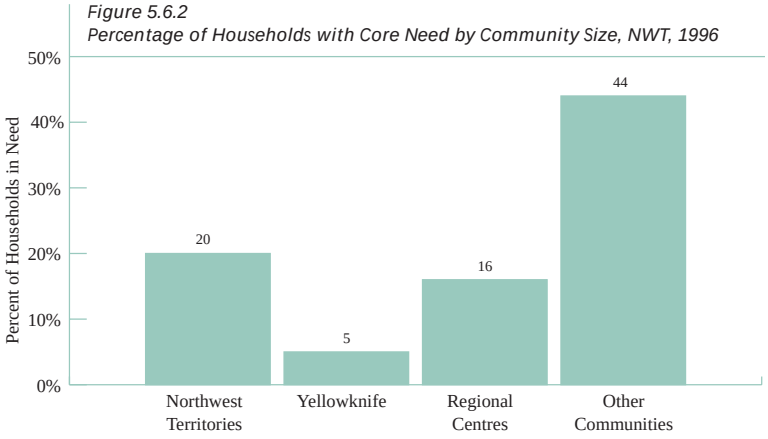


Source: NWT Housing Corporation

Within the Northwest Territories there were differences between communities with the percentage of households in core need.

As can be seen in Figure 5.6.2, according to the 1996 housing survey, an estimated 5% of the households in Yellowknife and 16% of the households in the regional centres of Hay River, Fort Smith and Inuvik had core needs. Meanwhile, an estimated 44% of the households in the smaller communities had core needs. An estimated 19% of the houses in these communities had multiple problems, and another 17% had structural problems which raised some health and safety concerns.[15]

Figure 5.6.2
Percentage of Households with Core Need by Community Size, NWT, 1996



Source: NWT Housing Corporation

[15] *Special Tabulations, NWT Housing Corporation, Government of the Northwest Territories, 1998*

Chapter 6

Personal Health Practices

Personal health practices play a major role in determining physical health and general well-being. People who exercise regularly, eat well-balanced meals and do not smoke or abuse alcohol are generally healthier than those who do the opposite. While these are personal choices, for the most part, it is important to keep in mind that people are subject to many pressures including parental, peer, media and other social influences.

The themes presented in this chapter are fundamental to personal health, yet touch upon the health of the population as a whole. The impact of physical activity, body weight, alcohol and tobacco use and breast feeding are examined. A special focus is also put on the behaviours of women during and shortly after pregnancy. The intention is not to single out expectant mothers, but rather to demonstrate the importance of healthy pregnancies for children and society, as a whole.

6.1 Physical Activity and Body Weight

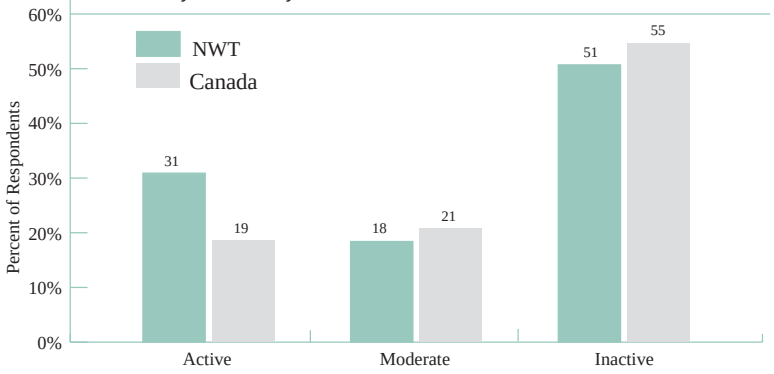
The National Population Health Survey provides an extensive examination of physical activity. People surveyed were asked about the types of activities they participated in, and the frequency of that participation. The activities examined ranged from gardening to golf, fishing to hockey, and aerobics to cross-country skiing. From the responses, Statistics Canada was able to approximate the amount of calories of energy per day a person expended. People were then grouped into three categories of activity: active, moderate, and inactive.

Physical activity is an important measure because it links to obesity, diabetes, heart disease, hypertension, osteoporosis and mental health.

Active people were those who exercised enough to receive cardiovascular benefits. People whose activity was considered moderate might experience some health benefits but little cardiovascular benefit. Inactive people would on the other hand would be more likely to suffer from adverse health effects over the long term.

As can be seen in Figure 6.1.1, the Northwest Territories scored significantly higher than Canada with regard to the proportion of active people. Thirty-one percent of Northwest Territories residents were considered to be active, compared to 19% nationally. However, 51% of Northwest Territories residents were

Figure 6.1.1
Level of Physical Activity



Source: 1994/95 Population Health Survey, GNWT Bureau of Statistics

considered inactive, which is close to the national average of 55%. This indicated that half the population in the Northwest Territories is putting their health at risk because of inactivity.

One might expect the differences in physical activity to be related to the differences in age structure between the Northwest Territories and Canada. However, when examined across age groups, the differences are consistent.

As can be seen in Table 6.1.1, almost half of the population age 12 to 24, were considered active in the Northwest Territories, compared to 31% for Canada. For older persons, age 65 years and over, 21% were active in the Northwest Territories, compared to 14% nationally.

Table 6.1.1
Physical Activity Levels by Age Group

	AGE	ACTIVE	MODERATE	INACTIVE
NWT	12 to 24	48.0%	16.1%	36.0%
	25 to 44	23.7%	20.4%	55.9%
	45 to 64	23.5%	19.2%	57.3%
	65 & Up	20.8%	5.3%	73.9%
	Total	**30.9%**	**18.4%**	**50.7%**
CANADA	12 to 24	31.0%	22.2%	37.4%
	25 to 44	15.6%	21.0%	59.0%
	45 to 64	15.3%	20.7%	59.1%
	65 & Up	13.8%	18.4%	60.6%
	Total	**18.6%**	**20.8%**	**54.6%**

Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics.

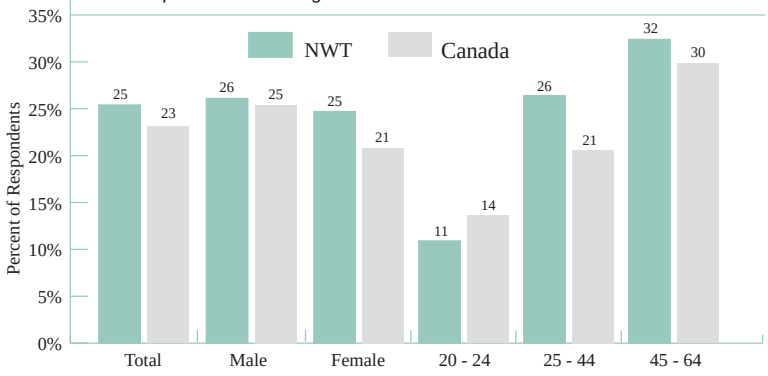
In terms of inactivity, however, there were some differences. In all age categories but one, the Northwest Territories scored lower on the proportion of the population considered inactive. However, a greater percentage of territorial residents, age 65 and over, were inactive, than those nationally. This may well be related to the fact that elders in the Northwest Territories reported much higher levels of activities limitations (see page 21).

In summary, these numbers suggest that relative to their neighbours to the south, Territorial residents take advantage of the recreational opportunities in the North, outdoor and indoor, summer and winter. Maintaining traditional activities, like hunting, trapping, fishing, and berry picking would also lead to a more active lifestyle.

The number of inactive people remains high, and may be rising, and this may be a dark cloud on the horizon. For example, when examining Northwest Territories residents by their body weight, the results of the National Population Health Survey were not encouraging (see Figure 6.1.2).

Slightly more territorial residents were overweight compared to the national average, as can be seen in Figure 6.1.2. This difference was consistent across gender and age groups, with exception of those age 20 to 24. Here only 11% of Northwest Territories residents were considered overweight compared to 14% nationally.

Figure 6.1.2
Adult Population Overweight



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

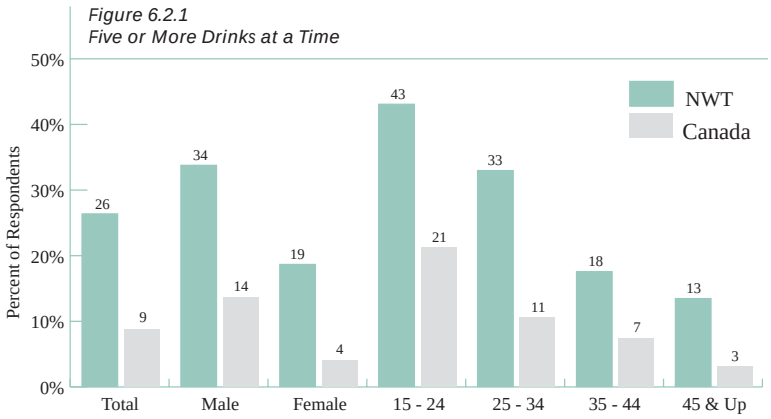
It is of interest to note that the Northwest Territories had a smaller proportion of its population, 5.6%, considered to be underweight than the national average of 8.3%.

6.2 Alcohol Use

The abuse of alcohol in general, as well as the use of alcohol by pregnant women, can lead to a number of social and health problems. For the general population, short term abuse of alcohol can lead to injury and death through violence and accidents. Long term abuse of alcohol can lead to a number of health problems, as well as premature death. The greater the consumption of alcohol over time, the greater the chance of developing cirrhosis of the liver. There have also been connections made between the overuse of alcohol and diseases of the circulatory system as well as cancer. Other negative effects of alcohol abuse include its role in employee absenteeism and as a contributing factor to spousal abuse and family breakdown[1].

The consumption of five or more drinks at one time is a fairly reliable indicator of heavy or binge drinking. A 1996 survey[2] asked respondents how many drinks they usually consumed when they drank. As can be seen in Figure 6.2.1, almost three times the proportion of Northwest Territories residents, compared to Canadians as a whole, reported drinking five or more drinks on one occasion. The highest consumption was by young men age 15 to 24 in both the Northwest Territories and Canada. However, proportionately across gender and age groups, two to four times as many territorial residents consumed five or more drinks at a time compared to national averages.

Figure 6.2.1
Five or More Drinks at a Time



Source: 1996 Alcohol and Drug Survey and 1994/95 National Population Health Survey, GNWT Bureau of Statistics

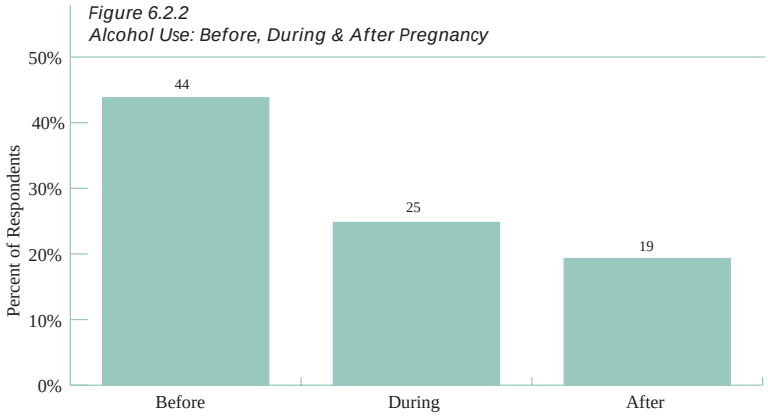
[1] *Alcohol is just one of many factors in domestic violence. Holly Johnson, Canadian Centre for Justice Statistics, Statistics Canada, Dangerous Domains: Violence Against Women in Canada (Toronto: Nelson Canada, 1996), pp. 155 to 158*
[2] *Northwest Territories Alcohol and Drug Survey, Government of the Northwest Territories Bureau of Statistics, 1996*

The use of alcohol by pregnant mothers can lead to a number of social and health problems. Drinking during pregnancy places the fetus at risk of developing Fetal Alcohol Syndrome (FAS) or Fetal Alcohol Effects (FAE).

FAS is a medical diagnosis which refers to developmental abnormalities of the fetus that can occur when alcohol is consumed during pregnancy. Some of the indications of FAS include brain damage, developmental delays, behavioural problems and learning difficulties. FAE is used to describe cases where some of the characteristics of FAS, but not all, are present in a child or fetus that was exposed to alcohol during gestation.[1] National estimates on the incidence of FAS or FAS in Canada and not available, nor are there any records for the Northwest Territories. However, there are some indications of the potential numbers through surveys of the habits of expecting mothers.

In 1993, a survey on breast feeding[3] was conducted throughout the Northwest Territories. The survey asked women whether they consumed alcohol before, during and after their pregnancy. The results are presented in Figure 6.2.2.

Figure 6.2.2
Alcohol Use: Before, During & After Pregnancy



Source: 1993 Breast Feeding Survey, Department of Health and Social Services

Nearly 25% of women surveyed reported drinking while they were pregnant. These survey results did not detail the amount of alcohol consumed, nor do they indicate the number of infants born with FAS or FAE. However, the results do indicate that a high proportion of pregnancies are at risk for an FAS/FAE outcome, given that research has yet to show that there is a safe level of alcohol that can be consumed while pregnant.

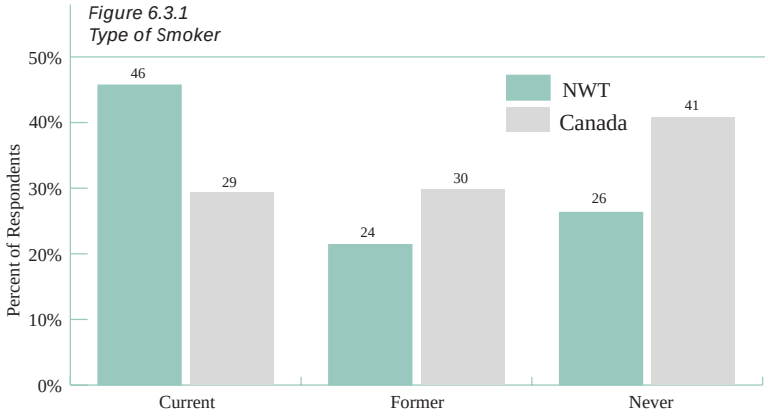
[3] *Database on Breastfeeding: Survey of Infant Feeding Practices from Birth to Twelve Months, Department of Health and Social Services. 1996*

6.3 Tobacco Use

Tobacco use is directly related to health status, as it is a major cause of illness and death. The effects of tobacco smoke, directly inhaled or second-hand, have been linked to cancer, cardiovascular disease and respiratory problems. Smoking is considered the most important preventable cause of death in the developed world, and is the number one preventable cause of death in Canada.[4]

According to the 1994/95 National Population Health Survey, the Northwest Territories has a rate of smoking much higher than that of Canada, as can be seen in Figure 6.3.1. More than 45% of Northwest Territories residents, 12 years of age and older, reported being current smokers compared to less than 30% nationally. Only 26% of Northwest Territories residents reported never smoking, compared to more than 40% nationally.

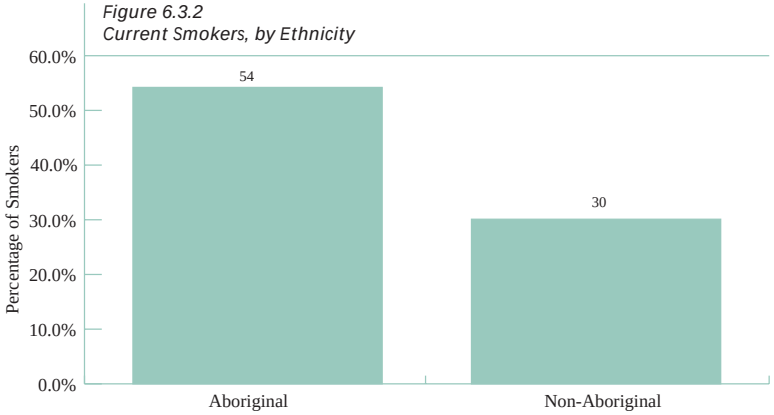
Figure 6.3.1
Type of Smoker



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

According to the 1999 Labour Force Survey, a higher percentage of Aboriginal people over the age of 15 years reported being current smokers than non-Aboriginal people over the age of 15 years, as can be seen in Figure 6.3.2

Figure 6.3.2
Current Smokers, by Ethnicity



PEOPLE OVER 15 YEARS OF AGE

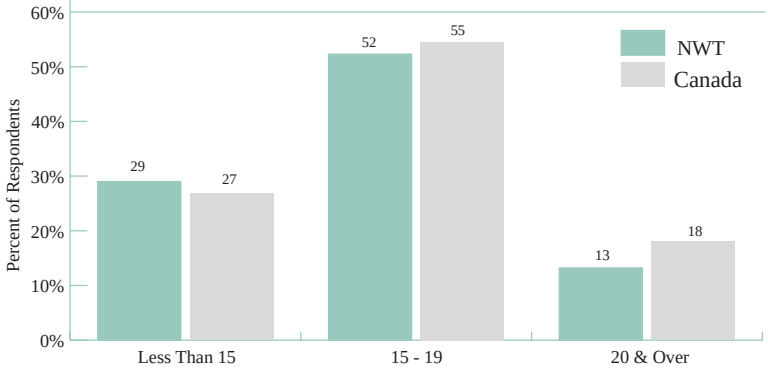
Source: NWT Bureau of Statistics, 1999 Labour Force Survey

As can be seen in Figure 6.3.3, Northwest Territories residents start smoking at a younger age, with 29% reporting that they started smoking before they were 15 years old. Conversely, only 13% of Northwest Territories smokers, compared to 18% nationally, reported starting to smoke when they were more than 19 years of age.

[4] *Report on the Health of Canadians, Health Canada, 1996*

More than half of Northwest Territories residents 50 years of age and over began smoking between the ages of 15 and 19 years, compared to 44% in Canada. This survey shows that smoking is an addiction that starts at an early age. If children and youth can be protected and resist starting smoking throughout their teen years, then it is less likely that they will ever become smokers in their adult years.

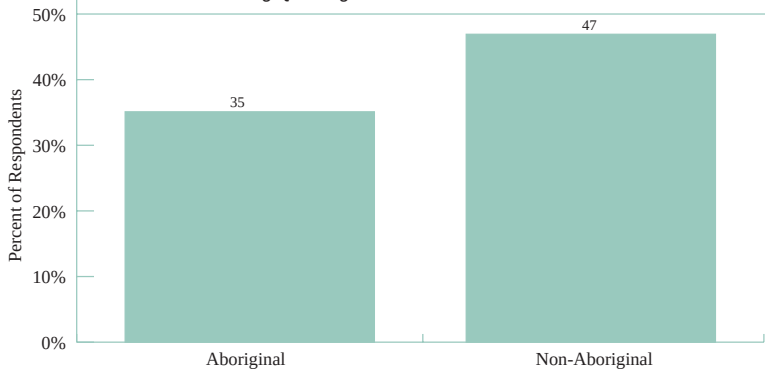
Figure 6.3.3
Age Started Smoking



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

Smoking is also a behaviour which has a direct effect on the non-smoking population. People living with people who smoke inside their house, or working with people who smoke in the workplace, run the risk of having the same health problems as do smokers.

Figure 6.3.4
Smokers Considering Quitting



PEOPLE OVER 15 YEARS OF AGE
Source: NWT Bureau of Statistics, 1999 Labour Force Survey

However, over 1/3 of Aboriginal current smokers and almost 1/2 of non-Aboriginal current smokers in the Northwest Territories indicated early in 1999 that they planed on stopping smoking within the next six months, as can be seen in Figure 6.3.4.

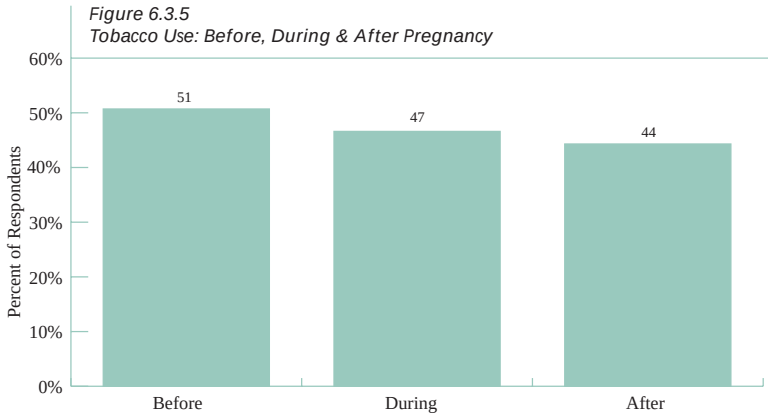
Women who smoke while pregnant increase the risk of damaging the developing fetus. Some of the complications include increased risk of low birth weight; increased chance of premature birth and higher risk of perinatal death. Moreover, smoking during pregnancy creates the risk of further potential problems during childhood, including attention deficit and hyperactivity disorder and other childhood behavioural or learning disorders[5].

[5] *Manitoba Nursing Research Institute, "A Report on Demographic and Childbirth Characteristics and Smoking During Pregnancy within Regional Health Authorities in Manitoba" September 1997; S Milberger et al., "Further evidence of an association between maternal smoking during pregnancy and attention deficit hyperactivity disorder: findings from a high-risk sample of siblings" in Journal of Clinical Child Psychology, Oct 1998, Vol. 27, No. 3, pp. 352-358; DM Fergusson et al., "Smoking during pregnancy and its effects on child cognitive ability from the ages of 8 to 12 years" in Paediatric Perinatal Epidemiology April 1991, Vol . 5, No. 2, pp 189-200; and DM Fergusson et al., "Maternal smoking before and after pregnancy: effects on behavioural outcomes in middle childhood" in Pediatrics December 1993, Vol. 92, No. 6, pp. 815-822.*

The 1993 Northwest Territories Breast Feeding Survey shows that nearly 47% of all mothers smoked during their pregnancies, as can be seen in Figure 6.3.5.

Smoking in the family home also places newborns at risk of death and illness. Exposure to second-hand tobacco smoke has been linked to sudden infant death syndrome (SIDS), as well as ear infections and lung problems.

Figure 6.3.5
Tobacco Use: Before, During & After Pregnancy

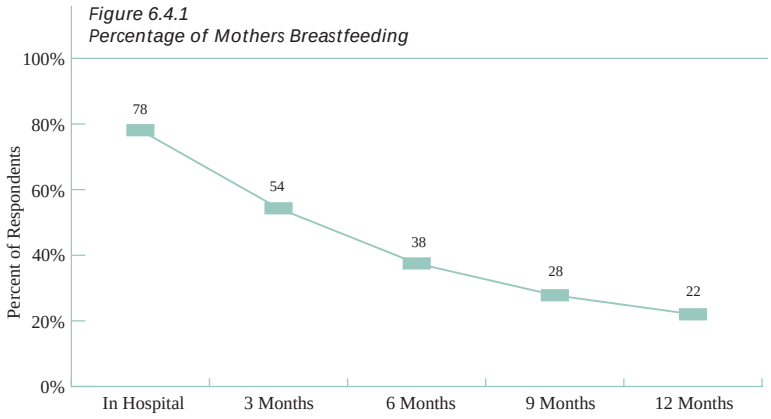


Source: 1993 Breast Feeding Survey, Department of Health and Social Services

6.4 Breastfeeding

While also beneficial to the mother, breastfeeding provides significant nutritional, immunological and psychological benefits to the infant. Breastfed infants experience less gastrointestinal and respiratory illness and infections. Also, breastfeeding may help protect against SIDS.

Figure 6.4.1
Percentage of Mothers Breastfeeding



Source: 1993 Breastfeeding Survey, Department of Health and Social Services

The World Health Organization (WHO) recommends that for the first four to six months infants ideallyshould only receive breast milk. Moreover, after six months of age, and up to two years or more, children benefit from continued breastfeeding as a supplement with other foods. The Northwest Territories falls short of the WHO ideal for breastfeeding.

As can be seen in Figure 6.4.1, almost 80% of Northwest Territories mothers surveyed reported breastfeeding initially while still in the hospital. By three months, the rate of breast feeding had declined to 54% and to less than 40% by six months.

Chapter 7

Social Well Being

There are a number of different aspects to social well being, just a few of which are discussed in this chapter - culture and language, social supports, and family and community life.

Culture and language are important in helping to determine a sense of identity and belonging to groups with similar identities and histories. They are especially relevant in the North, with its rich and diverse set of Aboriginal and European cultures. The links between social supports and well being are also important. Companionship, a sense of being loved, and involvement in a wider community are key aspects of well-being. Other factors, like family security and integrity, and community spirit also have an influence on well being, especially for children.

7.1 Culture and Language

The Northwest Territories is culturally unique compared to most of Canada. Much of what makes it unique is the proportionately larger population of Aboriginal people compared to southern Canada. More than 50% of the Northwest Territories population is Aboriginal according to 1998 population estimates[1]. Moreover, the Aboriginal population, in and of itself, is diverse with significant representation from the Dene, the Metis and the Inuit.

It is difficult to measure culture, given that it is something that cannot always be seen or counted. Linking culture to health status is even more difficult.

The cultural makeup of the Northwest Territories is changing. No longer is it a place inhabited by people whose backgrounds are either Aboriginal or Western European. As with the rest of Canada, immigration is increasing from Asia and Africa and declining from Western Europe. As the number of immigrants increases, it may change the nature of health problems as immigrants present different mortality and lifestyle characteristics than Canadian-born citizens.

Table 7.1.1
Change in the Place of Birth
NWT, 1986 to 1996

PLACE OF BIRTH	1986	1996	CHANGE 86 TO 96
NWT	16,125	20,175	25.1%
OTHER-CANADA	15,055	16,795	11.6%
AMERICAS	375	375	0.0%
EUROPE	1,480	1,240	-16.2%
ASIA	480	760	55.2%
AFRICA	80	175	118.8%
OTHER	35	45	28.6%
TOTAL	**33,630**	**39,565**	**16.0%**

Source: 1986-96 Census, GNWT Bureau of Statistics.
Note: These numbers only included permanent residents of the NWT.

[1] *Population Estimates, Northwest Territories Bureau of Statistics, 1999*

Between 1986 and 1996, residents of the Northwest Territories who were born in Africa increased by 119% and those born in Asia increased by 55% (See Table 7.1.1). However, the total numbers of new Canadians living in the Northwest Territories is relatively small. The overwhelming majority, 93% of the population, was born either in the Northwest Territories or somewhere else in Canada.

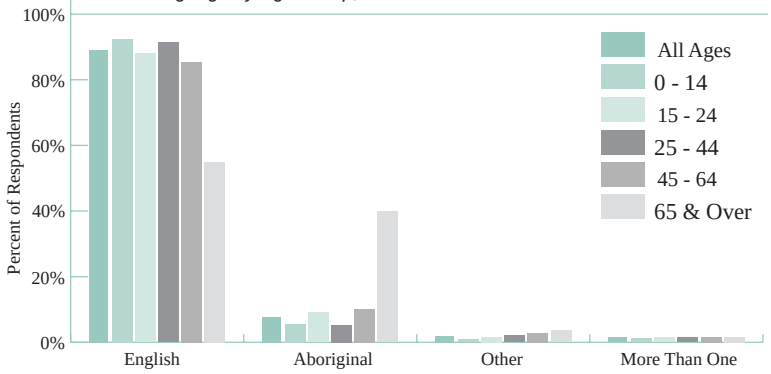
Language use in the home is closely tied to culture, and it may be a useful indicator in determining which language people are most comfortable with.

English is the most common home language in the Northwest Territories, with almost 90% of the population reporting it as their home language in the last census. Native languages, as a whole, were the next most common, with almost 8% reporting Dogrib, South Slavey, Inuktituk, or Gwich'in as their home language. French and several Asian languages made up most of the remaining home languages.

As with cultural background, home language preference has changed over the last ten years. English as the primary language has increased while the use of most other languages has decreased. Also, as a proportion of languages spoken, English has increased, while most others have decreased significantly, as can be seen in Figure 7.1.1.

When language use in the home is examined by age, an interesting pattern occurs. As can be seen in Figure 7.1.2, the use of Native languages is highest amongst elders 65 years of age and older. Over the next 15 to 20 years, English may well become the language choice for almost all Northwest Territory's residents.

Figure 7.1.2
Home Language by Age Group, 1996



Source: 1996 Census, Statistics Canada

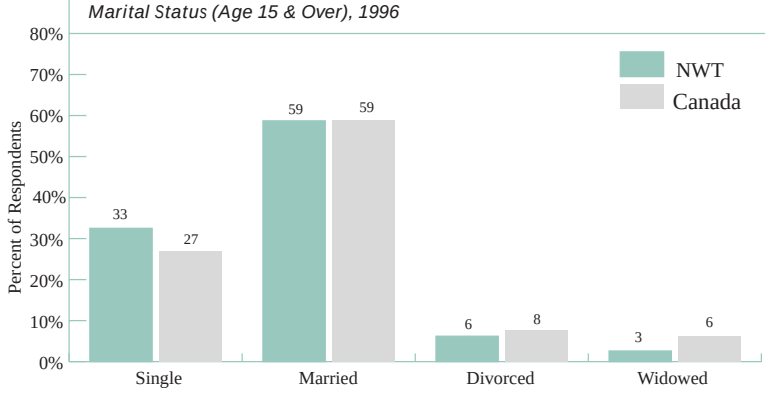
7.2 Social Supports

Those people with a supportive social network enjoy better health than those without. Social support can mean a number of things to people, but it usually includes having a partner, friends or family nearby, or being involved in community activities and organizations.

A simple indicator linked to social support is marital status. People who are married or who are living common-law tend to exhibit higher levels of psychological and emotional well-being than those who are single, separated, divorced or widowed[2]. However, it is important to realize that the connection between marital status and health status is not absolute. People can fulfill their needs for social contact and support in other ways.

As can be seen in Figure 7.2.1, the Northwest Territories and Canada share the same percentage of the population married and living common law, but differ in the percentage of the population single, divorced or widowed. Given that the population of Northwest Territories is relatively young compared to Canada, it not surprising that such differences exist.

Figure 7.2.1
Marital Status (Age 15 & Over), 1996

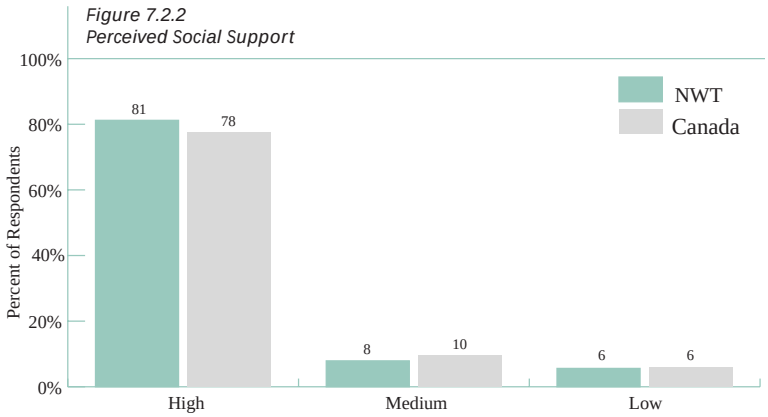


Source: 1996 Census, Statistics Canada

Another indication of social support is the proportion of the population who report having a strong social support network. "Perceived social support" is composed of four items which reflect whether feel that they have someone they can confide in, someone they can count on, someone who can give them advice and someone who makes them feel loved.

Survey results for the Northwest Territories and Canada show little difference in the level of perceived social support, as can be seen in Figure 7.2.2. Northwest Territories residents reported only slightly greater levels of high social support, compared to other Canadians.

Figure 7.2.2
Perceived Social Support

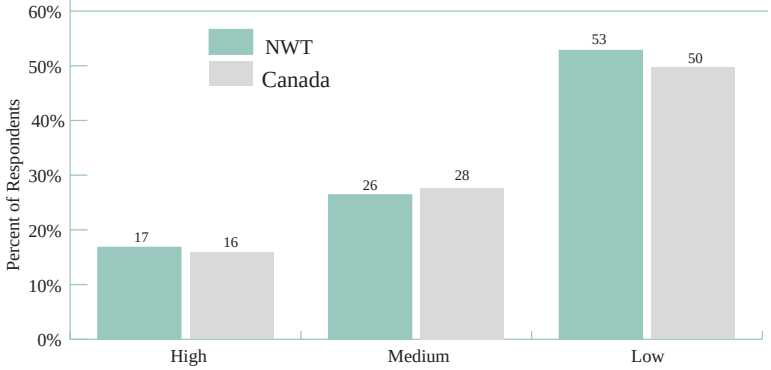


Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

[2] *Berman, Mathew, and Lisa, Linda, "Violent Death in Alaska: Who is Most Likely to Die?" in Alaska: Review of Social and Economic Conditions, February 1994, Vol. XXIX, No. 1. Statistics Canada, Health Status of Canadians (Catalogue 11-612E, No. 8), ch. 4.*

The next level of support outside of the circle of intimate relationships, family and friends, is the level of a person's social involvement in the community at large. The National Population Health Survey, asked people a series of questions about their involvement in voluntary organizations and attendance at religious meetings. As with social support, the Northwest Territories and Canada yielded similar results, as can be seen in Figure 7.2.3.

Figure 7.2.3
Level of Social Involvement



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

However, both the Northwest Territories and Canada have low levels of social involvement with less than 20% of people reporting a high level of social involvement compared to more than 50% reporting a low level.

7.3 Family and Community Life

The final section in this chapter provides an examination of some of the problems affecting family and community life in the north. While the section deals with northerners of all ages, much of the focus is on the well-being of children. Each sub-section outlines an indicator related to risk factors of a child growing up at a disadvantage. Children who are raised in lone parent families, born to teenage mothers, taken into government care, are direct or indirect victims of abuse, and/or are raised in families dependent on social assistance face greater challenges in life than other children. This is not to say that such children will be any less healthy or productive as adults, but it does however call attention to certain risks to their health and well being.

7.3.1 Lone Parent Families

The proportion of families which are heading by single parents is an indicator of well being for a number of reasons, including: on average lone parent families tend to be lower social and economic status than two parent families; the level of psychological stress is higher in children coming from lone parent families compared to two parent families; and people who are lone parents often have a more negative view of their own health status.

Table 7.3.1.1
Family Type with Children (under 18), NWT and Canada, 1996

	FAMILY TYPE	#	%
NWT	Total Families	5,340	100.0%
	Lone Parent	1,045	19.6%
	Male Parent	220	21.1%
	Female Parent	825	78.9%
CANADA	Total Families	3,248,100	100.0%
	Lone Parent	650,085	20.0%
	Male Parent	96,775	14.9%
	Female Parent	553,305	85.1%

Source: 1986 and 1996 Census, Statistics Canada and GNWT Bureau of Statistics

In 1996, the Northwest Territories and Canada had the same ratio of single parent families to total families, as can be seen in Table 7.3.1.1. In both cases, single female parents vastly out-numbered male single parents.

Between 1986 and 1996, the number of single parent families grew faster than two-parent families. Single parent families headed by women have increased by 42% compared to 23% for two parent families. The level of growth of single parent families is almost identical in the Northwest Territories and in Canada.

7.3.2 Teen Births

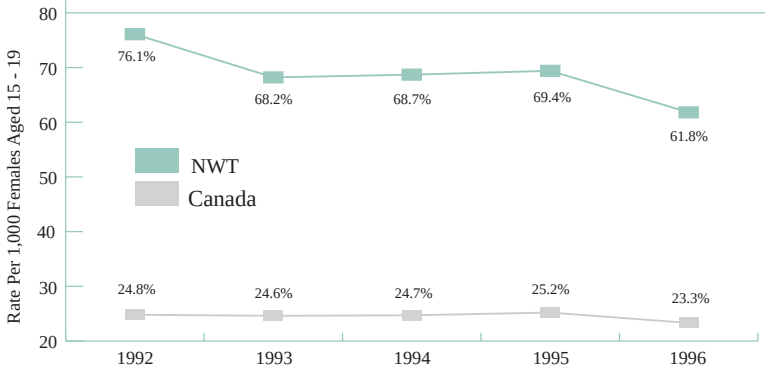
Teenage birth is an indicator of risk to well-being for a number of reasons. It provides an indication of the number of children who are likely to grow up in households with a lower socioeconomic status. Teenagers have lower incomes than those in their 20s and 30s, and are more likely to be unemployed. With education having a direct link to employability and higher incomes, the demands from raising a child at a young age may make it more difficult to finish high school or pursue a post-secondary education. Moreover, families begun by teens are at higher risk of becoming lone parent families, than those begun by older parents.

Teenage births may also provide some indication of mothers who are in stressful situations, due to pregnancies that may not have been planned. Some teen mothers may not be mature enough for the demands of raising a child. The stress and lack maturity may end up negatively affecting the well-being of both the child and mother.

However, it is important to note that the Northwest Territories is different from the rest of Canada. Half of the population is Aboriginal with a rich culture of extended families. Such family structures can allow young mothers more freedom and support compared to the family structures of non-Aboriginal mothers. Mothers with extended family supports may have greater freedom to pursue educational and employment opportunities. Therefore, the risk of teen mothers ending up as single parents may not be as great in the Northwest Territories as it is south of the 60th parallel.

As can be seen in Figure 7.3.2.1, between 1992 and 1996, the average teen birth rate (birth mothers 15 to 19 years old) for the Northwest Territories was double that for Canada. However, the Northwest Territories rate has declined over the five years, going from 76.1 births per 1,000 in 1992, to 61.8 births per 1,000 in 1996.

Figure 7.3.2.1
Teen Birth Rate



Source: Statistics Canada and GNWT Bureau of Statistics

The average birth rate for very young mothers, 15 to 17 years old, in the Northwest Territories is triple the national rate. Once again, that rate is also declining. In 1992, the rate was 46.8 births per 1,000 compared to 39.8 births per 1,000 in 1996.

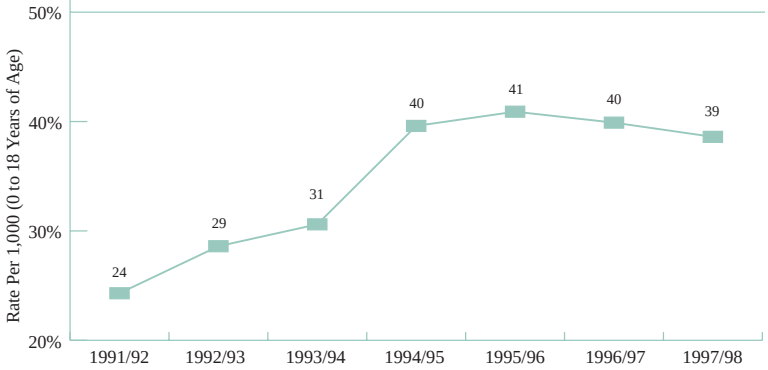
7.3.3 Children in Care

It is often said that what happens to children in the first six years of life has the greatest impact on how they will turn out as adults. Children who live in poverty or are abused as they grow up are at a disadvantage to those who have their needs fulfilled in safe environments. Children with emotional and/or behavioural problems resulting from parental abuse or neglect are also disadvantaged. While it is difficult to quantify the number of children growing up with such disadvantages in the North, the number of children removed from their parents or guardians may be used as one indicator.

Between 1991/92 and 1997/98 the rate of children coming into care has increased dramatically, by nearly 60%, as can be seen in Figure 7.3.3.1. Most of the increase occurred between 1993/94 and 1994/95. However, in recent years the rate has declined slightly.

It is important to understand these annual rates include children who may be in care for as short as 48 hours to as long as 365 days during the year.

Figure 7.3.3.1
Children in Care



Source: Department of Health and Social Services and GNWT Bureau of Statistics

It is difficult to generalize about why children come in into care. Many of these children have behavioural problems which may be the result of developmental delays, FAS/FAE, poor parenting skills or general neglect. Other children may come into care because they are being abused. Others may come into care because their parents are receiving alcohol or drug treatment.

It is even more difficult to pinpoint why the number of children entering care has increased dramatically in recent years. It may be due to changes in the economy, or an increase in apprehension efforts by child protection workers. A greater awareness on the part of children of their rights may also be an added factor.

7.3.4 Family Violence

Victims of family violence are likely to suffer from psychological as well as direct or indirect physical harm[3]. 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, an examination of federal inmate files revealed that half of the inmates had suffered from abuse or had witnessed family violence as a child[4].

[3] *Working Group on Community Health Information Systems and S. Chevalier et al, Community Health Indicators: Definitions and Interpretations, Ottawa, Ontario: Canadian Institute for Health Information, June 1995, pp. 108 and 109.*
[4] *Offender Profiles: Prevention and Children Committee, National Crime Prevention Council of Canada, 1995*

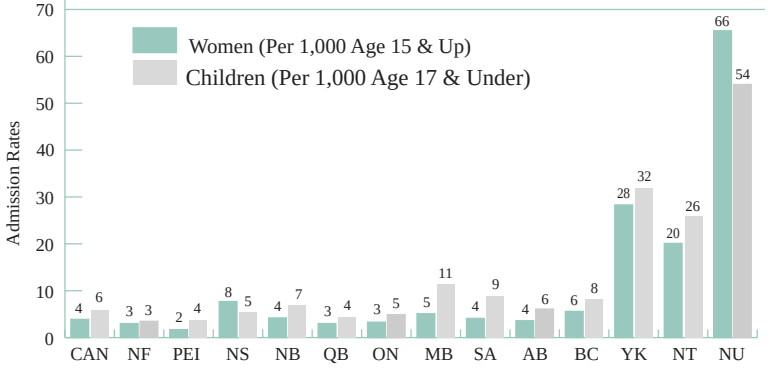
The reasons for family violence are complex and numerous. Studies have demonstrated that "factors such as the stresses and pressures associated with male unemployment and poor financial status, age, type of marital union, emotional abuse, alcohol use and early childhood exposure to violence all play a role in the complex dynamics of wife assault."[5]

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 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.

A national survey done by the Canadian Centre for Justice Statistics[6], has provided some statistics on the use of shelters. As can be seen in Figure 7.3.4.1, the Northwest Territories had the third highest use of shelters in the country by women and children.

When one examines the use of shelters in one year, the rates for women are five times higher in the Northwest Territories than Canada. The 1997-98 Transition Home Survey recorded a rate of 20 women per 1,000 women age 15 years and over in the Northwest Territories, compared to 4 per 1,000 nationally. For children, the rates are four times higher in the Northwest Territories. The survey recorded a rate of 26 children per 1,000 age 18 years and under compared to a national rate of 6 per 1,000. These numbers include women and children who have been admitted more than once during the year.

Figure 7.3.4.1
Shelter Admission Rates - Women & Children



Source: Transition Home Survey, 1997-1998, Canadian Centre for Justice Statistics, Statistics Canada, GNWT Bureau of Statistics

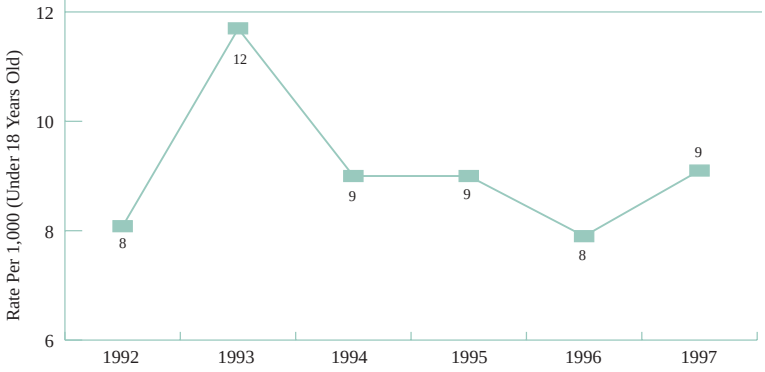
In addition to the negative physical, emotional, and mental health effects experienced by women who are abused, the children who witness abuse suffer as well. The national shelter survey also demonstrated that children are often admitted with their mothers. In 1997, children made up 55% of total shelter admissions in the Northwest Territories and 47% nationally.

[5] *Bunge, Valerie Pattie, and Levett, Andrea, Family Violence in Canada: A Statistical Profile 1998 Statistics Canada, May 1998, Cat. No. 85-224-XPE, p. 13.*
[6] *1997-1998 Transition Home Survey, Canadian Centre for Justice Statistics, Statistics Canada, 1998*

7.3.5 Child Abuse

Child abuse, both physical and sexual, provides another indication of the level of violence in a society. The abusers are often someone already known to the child and trusted by the parents, although many incidents of child abuse are not perpetrated by relatives of the victim. As well, it is likely that not every incident is reported to social workers. However, the incidents which are reported provide an indication of the level of child abuse when examined over a number of years.

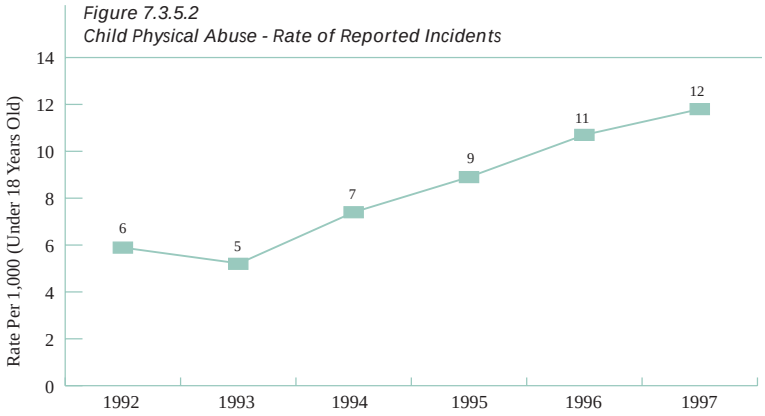
Figure 7.3.5.1
Child Sexual Abuse - Rate of Reported Incidents



Source: Department of Health and Social Services & GNWT Bureau of Statistics

Between 1992 and 1997, the rate of reported incidents of sexual abuse per 1,000 children increased by 12%. The average rate over the six year period was 9 incidents per 1,000 children.

Figure 7.3.5.2
Child Physical Abuse - Rate of Reported Incidents



Source: Department of Health and Social Services & GNWT Bureau of Statistics

As can be seen in Figure 7.3.5.2, between 1992 and 1997, the rate of reported incidents of physical abuse per 1,000 children increased by 88%, from 6 to 11 reports per 1,000 children. However, the average rate over the six year period was 8 incidents per 1,000 children.

It may well be the increases in the reporting of physical and sexual abuse do not necessarily equal an increase in the actual occurrence of child abuse in the Northwest Territories. The growth of public awareness of abuse may be encouraging people (including children) to come forth to inform adults of abuse. Also the development and use of abuse awareness and reporting protocol programs in the schools may also be having an effect in increasing the rate of reported incidents.

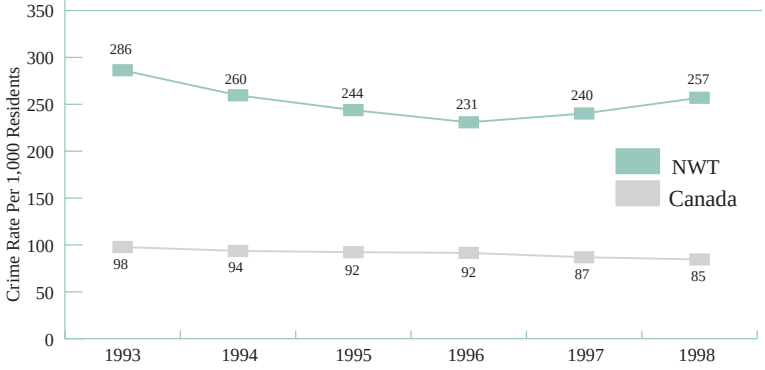
While victims of child abuse come from all backgrounds, poverty and unemployment are risk factors for physical abuse and general neglect.

7.3.6 Crime and Delinquency

The crime rate is an important factor in determining the level of safety and well being in the community. Victims of crime are affected negatively, and their health may suffer through injury and stress caused from insecurity and fear. The people convicted of crimes are often removed from their home communities, and in cases of sentences over two years, the Northwest Territories itself. Often this absence is very hard on their children, families and friends.

Crime, as is the case with the other indicators of well-being, is difficult to place in the cycle of cause and effect. Extreme changes in the territorial or 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. For example, many property and narcotic related crimes are perpetrated by youth and younger adults. Thus, overall crime rates may decline as a population ages, as is occurring in parts of southern Canada.

Figure 7.3.6.1
Crime Rate



Source: Canadian Centre for Justice Statistics, Statistics Canada & GNWT Bureau of Statistics

As can be seen in Figure 7.3.6.1, the Northwest Territories has a crime rate nearly three times the national average. The higher territorial crime rate may be in part due to differences in the age structure of the population of the Northwest Territories compared to that nationally. The Northwest Territories has a younger population than Canada as a whole. However, between 1993 and 1998 the overall crime rate has dropped by 10% in the Northwest Territories compared to a 14% drop nationally. The decline in crime rates, both in the Northwest Territories and Canada, may be due to the aging of both populations.

The rate of sexual assaults has decreased by 5% between 1993 and 1998. The rate of non-sexual assaults has decreased by approximately 15% over the same period (see Table 7.3.6.1). In both types of assault, males make up the vast majority of offenders.

Assault and property crimes provide an indication of the level of insecurity and fear that individuals within the community may feel.

Property crimes are disproportionately perpetrated by youth (age 12 to 17). Between 1993 and 1998, more than 45% of property crimes (where charges were laid) were committed by youth. Moreover, most of these crimes were committed by males.

However, the proportion of female youth charged for property crimes has more than doubled from 1993 to 1998. Furthermore, over the six year period, youth crime perpetrated by females, as a whole, has increased by 98% compared to a 15% decrease for males. It is important to keep in mind that these numbers reflect when a person has been charged (not necessarily convicted), and are not necessarily an indication of who is responsible for all criminal incidents.

Table 7.3.6.1
Crime Rates by Type of Offence (Per 1000 Residents), NWT and Canada, 1993 to 1998

	CRIME	1993	1994	1995	1996	1997	1998	CHANGE 93 TO 98
NWT	Total Assault	57.9	47.5	46.0	44.9	51.9	49.8	-14.0%
	Assault	52.4	40.9	41.6	40.6	44.7	44.5	-14.9%
	Sexual Assault	5.6	6.6	4.3	4.3	7.2	5.3	-5.4%
	Property-Related	81.5	73.7	75.9	75.3	67.3	70.2	-13.9%
	Other	146.8	138.4	121.9	110.6	121.1	137.0	-6.7%
	Total	**286.3**	**259.6**	**243.8**	**230.8**	**240.2**	**257.0**	**-10.2%**
CANADA	Total Assault	9.5	9.2	8.8	8.7	8.7	8.6	-9.7%
	Assault	8.3	8.1	7.9	7.8	7.8	7.8	-6.5%
	Sexual Assault	1.2	1.1	1.0	0.9	0.9	0.8	-30.5%
	Property-Related	55.7	52.5	52.8	52.6	48.6	45.4	-18.5%
	Other	32.5	32.9	31.6	31.1	30.5	30.5	-6.2%
	Total	**97.8**	**93.6**	**92.3**	**91.5**	**86.9**	**84.5**	**-13.6%**

Note: Property Crime includes: Break and Enters, Thefts, Possession of Stolen Goods, and Fraud.
Source: Uniform Crime Reporting Survey, Statistics Canada, and GNWT Bureau of Statistics

7.3.7 Social Assistance

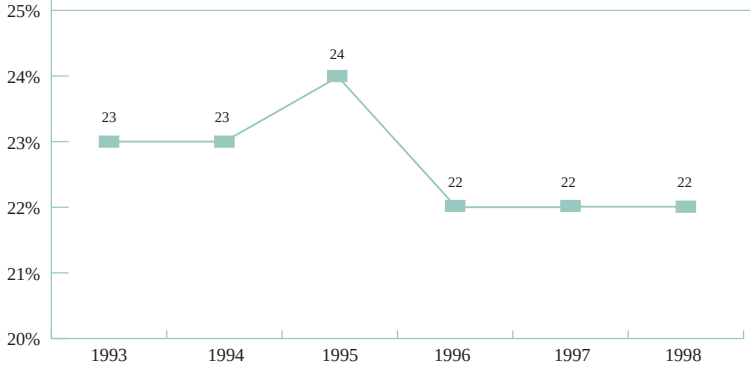
Social assistance is an important indicator of well-being because those on social assistance are more likely to experience more health-related problems than those who are working, and those on social assistance are likely to suffer more from low self-esteem than those who are employed[7].

Unemployment levels and social assistance levels are related. As employment opportunities increase, people have a greater chance to move back into the workforce. However, some of the people may be on social assistance because of a disability that makes it impossible for them to work or earn an adequate income. Nonetheless, the rate of social assistance use may be an indication of the level of poverty in a society.

Social assistance rates have declined in recent years, as can be seen in Figure 7.3.7.1.

Between 1993 and 1998, the percentage of the population relying on some level of social assistance decreased by 7%. On average, in the last six years, 23% of the population was reliant on social assistance at one time during the year. It is important to remember that these rates include people who are on social assistance for periods of time as short as a month.

Figure 7.3.7.1
Proportion of Population Relying on Social Assistance



Source: Department of Education, Culture & Employment & GNWT Bureau of Statistics

[7] *Deanna L. Williamson and Janet E. Fast, "Poverty Status, Health Behaviours and Health: Implications for Social Assistance and Health Care Policy" in Canadian Public Policy Vol. XXIV, No. 1, March 1998, pp. 1-25. See also Working Group on Community Health Information Systems and S. Chevalier et al, Community Health Indicators: Definitions and Interpretations, Ottawa, Ontario: Canadian Institute for Health Information, June 1995, pp. 82 and 83.*

Chapter 8

Concluding Remarks

This report presents a broad look at the health of the people of the Northwest Territories at the end of the 20th Century. What emerges is a picture of a population whose health has been steadily improving over the past decade. Life expectancy has increased, infant mortality has decreased, a large portion of the population give themselves good to excellent health ratings, and the functional health status of the population is as good as, if not better than the Canadian average. With some noticeable exceptions, illness and disease in the Northwest Territories have declined significantly over the last several decades. In many respects the health of people in the Northwest Territories compares reasonably well with that of other Canadians.

Since the population in the Northwest Territories is relatively young compared to Canada, this is not altogether surprising. Our young population also provides the opportunity for further and rapid improvements in health status, if we can deal successfully with major health determinants. Traditional active lifestyles and diets, which improve health, can be preserved and strengthened. Land claim settlements and sustainable economic development, combined with progress in educational attainment can secure a more prosperous future conducive to greater community wellness.

Nonetheless, this report has highlighted some major issues and health outcomes that challenge us at present and that could threaten our ability to move forward as a progressive northern society.

People in the Northwest Territories die far more often from accidental death than do their counterparts in the rest of the country. Preventable injury is the leading cause of premature death, leading to an average of 27 years of life lost. For this, the Northwest Territories pays a high price in the burden of pain and suffering which premature death brings for the surviving spouses, children and loved ones, not to mention the loss of a most valuable resource - people in the prime of their lives. Too many accidental deaths in the Northwest Territories occur because of high risk behaviours such as drinking and driving, snowmobiling on thin ice, unsafe boating practices, poor handling of flammable materials and careless use of dangerous weapons.

Arguably, the North is a risky place to maintain an active lifestyle. By its very nature, life on the land (and water) is full of natural hazards. The challenge is for people to find ways to reduce the risks without impeding their way of life and the very reason why so many of us find the North such a great place to live.

Many people need to take a closer look at their personal health practices, particularly in relation to smoking, drinking and sexual activity.

Around 25% of all disease-related deaths in the Northwest Territories can be linked to tobacco use. Yet, in spite of this, many adults persist in smoking, and teenagers are still taking up smoking in large numbers. This is not just a challenge for the Northwest Territories. The incidence of tobacco-related deaths has become one of the greatest challenges to population health in countries around the world.

High levels of alcohol consumption carries a risk of cancer and heart disease. The rate of heavy drinking in the Northwest Territories is three times the Canadian average.

Given the rates for sexually transmitted disease in the Northwest Territories, compared to the rest of the country, it also appears that many people have not yet taken up safer sexual practices. This places the Northwest Territories at great risk of rapid spread of HIV (AIDS) despite apparently low rates of infection at present.

Although the information gathered from the National Population Health Survey has to be treated cautiously, because of the small number of people surveyed in the Northwest Territories, it does suggest that the health of many elders may need closer attention. Their psychological well being may lower than it is for elders in the rest of the country, and almost 3/4 of the elders who completed the survey reported that their activities were restricted by disability. Although the people of the Northwest Territories are living longer, this raises questions about the quality of life for our elders.

The population health framework adopted in the report highlights the important role that demographic, social and economic factors play as determinants of health. The population of the Northwest Territories is relatively young, and this affects the pattern of illness and disease of the people. But the population is also ageing, and this will lead to a natural change in the pattern of sickness and health over the next several decades.

The point was made in the *Second Report on the Health of Canadians*[1] that income disparity - the income gap between the rich and the poor - is strongly associated with inequalities in health status. That same point is underscored in this report. Although the average income in the Northwest Territories is higher than the Canadian average, incomes in the smaller communities of the Northwest Territories are significantly lower than the Canadian average. This implies that there are important disparities in incomes within the Northwest Territories. Although reliable community-level health information is difficult to obtain, it follows that people in smaller communities likely face greater challenges to their health than those living in larger centres in the Northwest Territories.

Income is tied to employment, and employment is tied to education. Here again a positive trend is emerging for the Northwest Territories. Fewer people have less than a grade nine education, and more people are getting more than a high school education than a decade ago. Again, however, the challenges to education and employment are most apparent for people living in small communities.

As a large number of Aboriginal people in the Northwest Territories live in smaller communities and are affected by lower education and higher unemployment, it is not surprising to find that they have higher health risks than the non-Aboriginal population.

Overall, employment does not appear to be keeping pace with increased education, and the unemployment rate has risen above the national average in recent years. Young people are particularly challenged in finding employment, and given their rising levels of education, the challenges lie in the nature of the labour market in the Northwest Territories today.

[1] *Toward a Healthy Future: Second Report on the Health of Canadians, Public Works and Services Canada, 1999*

There are challenges ahead, as there are still political and economic uncertainties to be overcome. However, the greatest challenge to population health in the coming years may well prove to be that of improving social conditions for the most disadvantaged communities, families and individuals.

Appendix 1

Glossary

Cardiovascular: Having to do with the heart and/or blood vessels. The major cardiovascular disorders are heart problems and high blood pressure.

Census: Counting and recorded certain details about every individual in the population; in Canada the government conducts a census every six years.

Communicable Disease: Any disease that can be transmitted from one person to another, most commonly through body contact or through germs in the air.

Chronic Disease: A disease that lasts a relatively long time, from at least three months to an entire lifetime.

Circulatory: A general term referring to those parts of the body involved in the circulation of the blood - heart, arteries, veins and other blood vessels.

Cirrhosis (of the liver): A chronic disease in which the liver cells become hardened and stop functioning, often due to alcoholism.

Crude Birth Rate: The number of live births over a period of time, usually expressed as the total number of births in one year per 1,000 population.

Demographics: The characteristics of the population in terms of size, distribution, composition and vital statistics.

Digestive: A general term referring to those parts of the body involved in digesting food - mouth, throat, stomach and intestines.

Fertility Rate (age-specific): The number of live births over a period of time for women in various age groups, expressed as the number of births per1,000women

Fluoridated: Having fluoride, which is a chemical that helps in the prevention of tooth decay, added to the water supply.

Hypothermia: A potentially life-threatening condition in which the temperature of the body drops below normal, usually because of exposure to cold.

Immunization: Protection against disease, by way of vaccination or through the body's own natural defenses

Incidence (of a disease): The number of new cases of a disease appearing in the population over a given period of time, usually one year

Infant Mortality: The death of a child under the age of one year, not including stillbirths.

Labour Market: A general term referring to the pool of jobs available to all members of the population.

Labour Force: A general term referring to all the people over the age of 15 years, who are either working, or available to work.

Life Expectancy (at birth): The number of years a newborn infant can expect to live, based on the average age at which people are dying when the child is born.

Low Income Cut-Off: A level of family income, measured in dollars, below which the family is considered to be living in poverty.

Mortality: Death.

Ozone Layer: A part of the upper atmosphere containing the gas ozone, which blocks some of the dangerous ultra-violet radiation of the Sun.

Prevalence (of disease): The number of cases of a disease at one point in time, usually expressed as the number of cases per 100,000 people.

Respiratory: A general term referring to the parts of the body involved in the process of breathing - nose, throat and lungs.

Socio-Economic Status: Position in society based on social standing and wealth.

Surveillance: The process of observing and monitoring.

Ultra-Violet Radiation: Invisible energy given off by the Sun that travels all the way to Earth and can cause sunburn and skin cancer.

Vital Statistics: Information about events in a person's life, such as birth, marriage and death.

Appendix 2

List of Tables and Figures