

Chief Provincial Public Health Officer's Report on the
Health Status of Manitobans 2010

**Priorities for Prevention:
Everyone, Every Place, Every Day**



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The Honourable Theresa Oswald
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Room 302, Legislative Building
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Dear Minister Oswald:

Fulfilling the requirements of *The Public Health Act*, I have the privilege of presenting to you the first Chief Provincial Public Health Officer's Report on the Health Status of Manitobans entitled *Priorities for Prevention: Everyone, Every Place, Every Day*.

Respectfully submitted,

Joel Kettner, MD, MSc, FRCSC, FRCPC
Chief Provincial Public Health Officer



A personal message to all Manitobans

Writing this report has been a humbling learning experience. What should be included in a report on the health status of a million Manitobans?

Although most believe that there is nothing more important than our health, few agree on how to measure it or how to report on it. Most health reports, including this one, emphasize numeric descriptors of death, disease, illness, injuries and disabilities, and their risk factors and causes. What is more difficult to describe are the positive measures of health and wellness which need words, meaning, values, stories and other qualitative descriptors of flourishing and fulfillment. By focusing on objective measurements of health problems, inequalities, and those with the worst health outcomes, our "health status" may seem more like our "sickness status" and could lead towards negativity, discouragement, or, at the worst, hopelessness.

There are, however, many good reasons to be positive, encouraged and hopeful.

First, good health is something that everyone needs – and almost everyone wants – for themselves and their families, friends, neighbours, and communities.

Second, there is much that we have done, individually and collectively, to improve our health. Most of us consider ourselves to be in good or better health most of the time.

Third, rather than just worry about our health or depend too much on modern medicine to "fix" every health problem, there is much we can do to improve our living conditions, improve how we live, and prevent or delay illness and injury.

Fourth, improving our individual, family, and community health can feel good and be fulfilling; healthy living is not about denying ourselves the pleasures and meaningful activities of life – "all things in moderation, even moderation!"

Fifth, despite some very difficult and unfair circumstances that many Manitobans have lived in, there is compelling evidence of the determination and resilience of disadvantaged people to survive, function and flourish. Manitobans who have been advantaged in their lives also participate in building a fairer and healthier society, recognizing that the health of the whole community and the health of its individuals are linked.

I feel positive, encouraged and hopeful that we can meet the challenges of our shared opportunity and shared responsibility to make this world a better – and healthier – place, starting right here in Manitoba.

I am also hopeful that this report can be used towards this goal by stimulating thinking, discussion, understanding and engagement to inspire each other to do our part in promoting health for all – in every place and on every day.





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Thank you, all.

Joel Kettner

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Executive summary

Introduction

Health is a matter of concern for all of us; every Manitoban has a role to play in their own health and the health of others. It is also a matter of concern of all governments, private industry and non-government organizations. A healthy society promotes health for everyone, in every setting, every day. It is not just the business of the health system and its health care providers or facilities.

This report addresses a range of health issues that have been selected because of their major impact on health, their preventability and the availability of information about them. It attempts to present a composite picture of the health of Manitobans, emphasizing preventable priority health outcomes for Manitobans and the importance of addressing their suspected causes, such as health-related behaviours, environmental conditions and other determinants of health.

The report emphasizes prevention as one of the most promising ways to improve the health of Manitobans, to reduce inequalities of health among Manitobans and to sustain the publicly funded health system and other public programs and services that directly or indirectly prevent disease and injury (ex: Education, Family Services). Much progress has been made over the last decade in addressing issues described in this report. The recommendations found here are intended to build on and increase the coordination of initiatives and strategies already underway, whether being carried out at the federal, provincial or community levels of government, by health and other sectors, private industry and other non-government organizations, or by families and individuals.

This report is, ultimately, for all Manitobans. It is hoped that media and others can help to make the facts and opinions in this report accessible to everyone (ex: parents, community members, employers and teachers) all of whom share responsibility for how we live, grow, learn, work, and play. It is hoped that this report will stimulate thinking and dialogue and will be used for further action to improve the health of Manitobans, especially those who are most disadvantaged.

A general population perspective

Demography

Manitoba's population is diverse and growing, mostly because of a higher birth rate of Aboriginal Manitobans and increasing immigration. One in four Manitobans under the age of 15 are Aboriginal. As in the rest of Canada, our population is also aging and the proportion of our population over the age of 65 is increasing as a result of increasing life expectancy and the aging "baby-boomers". It is projected that by 2026, the proportion of Manitobans over the age of 65 will have increased from 14% to 20% of the population, nearly a 50% increase in relative size. These demographic realities and trends have significant implications for present and future health needs, challenges, and opportunities. The increasing numbers and proportion of Aboriginal Manitobans, the segment of our population with the worst living circumstances and health status, adds to the importance of addressing these issues with a greater engagement of Aboriginal Manitobans in solving these problems.

Compared to the rest of Canada, Manitoba has a higher proportion of people of Aboriginal identity but a lower proportion of "visible minorities". New immigrants and refugees – expected to reach 20,000 per year – bring with them language and cultural challenges for public health and primary care as well as opportunities to enrich Manitoba's already diverse culture.

Health outcomes

Like other Canadians, Manitobans are, by most measures, healthier than most people in the world and comparable to most developed and industrialized countries. Life expectancy continues to increase, on average, and some rates of disease and injury have decreased.

Good health, however, is not enjoyed equally by all Manitobans. This is demonstrated by differences in health outcomes that are associated with characteristics such as socio-economic status, race, place of residence and sex. These differences are observed for many health outcomes, including disease and injury rates, death rates and life expectancy, and their known causes and risk factors.

Death is inevitable, but premature death is not and can be prevented or delayed. Significant differences in life expectancy are observed among Manitobans. In rural areas, the difference in life expectancy for men between the highest and lowest-income areas is seven years; for women the difference is five years. In urban areas, the difference in life expectancy for men between the highest and lowest income areas is 10 years; for women, the difference is five years. These differences are also seen in geographic patterns, in which life expectancy varies between health regions in the north and south by as much as nine years for males and seven years for females. Aboriginal Manitobans have a life expectancy estimated to be at least five years less than non-Aboriginal Manitobans.

Consistent with the rest of Canada and the world, the leading causes of death in Manitoba are chronic diseases and injuries. Two-thirds of potential years of life lost due to premature death were from the following causes: cancer, heart disease and strokes, unintentional injuries, suicide, and deaths of newborns associated with pregnancy and childbirth, such as prematurity.

Although there continues to be improvement in some injury rates, intentional and unintentional injuries remain among the leading causes of death and hospitalization, especially for children and young adults.

Mental, emotional and spiritual well-being are increasingly recognized as important issues for Manitobans throughout the life course and have a significant impact on individuals, families, and communities. In addition, mental health (ex: self-esteem, motivation, hope and self-control) and illness are associated with behaviours and other risk factors that are linked with physical illness and injury.

Although the proportion of deaths from infectious diseases is much smaller than it was in the past, the impact of acute and chronic infectious illnesses is still significant. Rates of certain infectious diseases such as sexually transmitted infections and tuberculosis (TB) are relatively high in Manitoba.

Overall, most of the illness, disability and death which affects Manitobans can be prevented or delayed by addressing known or suspected risk factors and causes, including behaviours and other conditions of everyday life.

Risk factors, behaviours and other determinants of health

Everyday decisions, habits and behaviours – sometimes called lifestyles or health practices – have immediate and long-term effects on our health and safety. Our immediate risk for injury or death from a motor-vehicle collision is increased by alcohol consumption, driving speed, and an unfastened seatbelt. Longer term risks for premature death from cancer or heart disease are increased by smoking, unhealthy diet, excessive drinking, inadequate physical activity and obesity. Overall, Manitobans – like most Canadians – could add years to their lives and add quality of life to their years by improving their daily habits and activities.

These facts should not be new to most Manitobans, since widespread education efforts

have been in place for some time. However, it is not enough to only educate people about healthy living. Other factors influence our choices and our ability to make changes in our lives. These factors, often referred to as determinants of health – such as our early childhood experiences, education level, individual and neighbourhood income, physical and social environments, personal capacity and coping skills – all interact and affect our health “choices” and behaviours, which in turn affect our health outcomes and overall health status. Most of these factors are modifiable and can, over time, be changed.

Determinants of health can influence every stage of the life course, from pregnancy and the newborn to adulthood and seniors. These impacts may manifest themselves in the short term within the same life course stage, such as an injury, or may show up later as is the case when smoking in youth leads to lifelong adult smoking, leading to lung cancer in the senior years.

Pregnancy and the newborn

Most pregnancies in Manitoba result in a healthy newborn and a good start for a long and healthy life, but there are still many challenges and opportunities to achieve better starts.

Seeking and receiving prenatal care – whether by physicians or midwives – at the right times throughout pregnancy are important for achieving optimal birth outcomes. There are indications that many Manitoba women do not use prenatal care to the extent that is recommended during pregnancy – especially those at higher risk for problematic outcomes.

A significant and growing proportion of newborns is born prematurely, or is small or large for their gestational age. Some of the preventable

risk factors for these birth outcomes are known, such as teen pregnancy, exposure to harmful substances like tobacco, and health conditions of the mother such as Type 2 diabetes. Manitoba's rate of teen births is decreasing but is more than twice the national rate.

Exposure to alcohol during pregnancy is an important preventable risk which can have life-long consequences for the child, the family and society. It has been estimated that at least one per cent of Canadian births are affected by alcohol, but in Manitoba, one in seven women have reported drinking alcohol during pregnancy. Rates of tobacco and alcohol use in pregnancy appear to be significantly higher for Aboriginal women.

Evidence and expert opinion continue to support the many benefits of breastfeeding for at least the first six months of life, preferably exclusively. Most Manitoba women initiate breastfeeding, but it is estimated that only half continue for at least six months.

To prevent known risk factors for pregnancy problems, it will be important to improve identification of women at higher risk and be more effective in outreach and proactive care. This prevention starts as early as childhood when future parents begin to learn about relationships, sex, and how to prepare for adulthood and parenthood. A significant proportion of pregnancies in Manitoba end in therapeutic abortion, indicating the need for better understanding of the reasons for unwanted pregnancies and what further strategies should be considered to address them.

Children

One-quarter of Manitoba's population is under the age of 19. One in four children under 15 years of age is Aboriginal. In First Nations

communities, children under 15 years constitute 40% of the population.

Although more than 99% of newborns survive their first year of life, about one hundred infants under one year of age die each year; Manitoba's infant mortality rate is higher than the Canadian average. Infant mortality rates were higher among people living in lower-income neighbourhoods and in northern and Aboriginal populations. The most common cause has been "causes originating in the perinatal period," which includes low birth weights, short gestation (prematurity), and maternal complications during pregnancy. The second most common cause of death in this age group was congenital malformations, deformations and chromosomal abnormalities.

About 100 Manitoba children over the age of one year die each year. Injuries, (unintentional and intentional), were the leading causes of death for children over the age of one. In addition to being the most common cause of death in children, injuries are also the most preventable cause of death. Motor-vehicle collisions were the leading cause of injury-related deaths in children under 10 years of age; suicide was the leading cause of injury-related deaths in children over 10. Rates of injury among Manitoba children were associated with socio-economic status: rates were higher in the lowest-income neighbourhoods and among Aboriginal children.

It is believed that up to 80% of mental illnesses emerge in adolescence and most can be managed with early diagnosis and treatment. The proportion of Manitoba youth aged 15 to 19 years of age estimated to have been treated for at least one mental illness (including depression, anxiety, substance abuse, schizophrenia, personality disorders) has increased to 13% among males and 24% among females in the previous decade.

Most Manitoba children are adequately immunized to keep rates of vaccine preventable diseases low, but at least 20% of children are not considered up to date. The proportion of under-immunized children is estimated to be higher in many communities, including First Nations.

Rates of sexually transmitted infections are relatively high among 15 to 19 year olds, second only to young adults aged 20 to 24. In 2008, there were 2002 cases of chlamydia and 331 cases of gonorrhea reported to Manitoba Health among youth aged 15 to 19. Of the Manitoba teens surveyed who reported having been sexually active in the previous 12 months, 75% reported having used a condom the last time they had intercourse.

There are many health conditions and factors in childhood which have their effects in later stages of life. Health conditions in childhood – especially those that negatively influence behaviour and learning – can affect socio-economic and health status later in life, often resulting in persistent disadvantage for future generations.

Rates of overweight and obesity among Manitoba's children have increased and are of significant concern because of their impact on other health outcomes throughout the childhood period and later stages of life. One-third of all children up to age 17 are considered overweight or obese. Recent research indicates Manitoba children are too inactive, consume too much salt and do not eat sufficient fruits and vegetables.

Other research is increasingly showing that early childhood development sets the foundation for one's whole life. In addition to physical health, the social, emotional, language and cognitive development early in life can enhance or limit that child's potential for learning and development throughout their lives. In Manitoba, it has been

found that one-quarter of kindergarten children were not ready for grade one, a higher rate than the national average. A higher proportion of Aboriginal children were not ready for school. There is increasing evidence of correlations between readiness to learn, education achievement and health outcomes.

Twelve per cent of children live in families receiving services from Child and Family Services. Three per cent have been removed from their home and taken into care.

These observations point to the need to support positive and effective parenting in Manitoba homes – especially those at higher risk. We need to find more ways to break the cycles of inadequate early child development, lower education, and poorer health.

Other behaviours that affect health, both in childhood and in later stages of life, are tobacco and alcohol use. While rates of smoking among youth aged 12 to 19 have decreased over the past ten years from 20% to 12%, continued efforts towards further reduction in smoking rates among youth are warranted. An average of 35% of Manitoba youth aged 12 to 19 years reported that they drank five or more drinks on 12 or more occasions per year. This is concerning given the multiple short and long term health outcomes associated with this type of drinking behaviour, including unsafe and unwanted sexual activity, resulting in sexually transmitted infections and unwanted pregnancies; motor-vehicle collisions and other injuries; as well as unhealthy habits which can continue in later stages of life.

Many of the conditions associated with the leading causes of death are preventable, and there are many opportunities for progress. More improvements are needed in our social

and built environments – especially our homes, communities, daycares and schools to facilitate healthier and safer living. Every child has the right to grow and develop to their potential in an environment that meets their needs, including love, stimulation and security. Healthy children are the foundation for healthy adults and the key to improving the health status of Manitobans for generations to come.

Adults

The adult years bring unique opportunities and challenges for health. Most young adults prepare for and become established in the workforce, form partnerships, and have children. Most middle-aged adults raise children, take care of older parents or relatives, and prepare for retirement. Stresses related to work and family life are common; more severe stress related to significant changes in employment or personal relationships can have major impacts on personal health.

Although many aspects of our health are already determined by the time we reach adulthood, there is still much opportunity in our adult years to influence our health and future. The adult years are important in providing an opportunity to build on those positive aspects of our childhood foundations and also address those issues that we have carried into adulthood which require change or resolution. The social and physical environments in different settings affect the health of adults, especially the home, the workplace, and other community settings.

More than half of Manitoba's population are in the adult age range 20 to 64. Most adults live past age 65 and into their senior years. Of those adults who die, the leading causes of death vary by decade of life. For all adults under 65, cancer

is the leading cause of death, followed by heart disease and unintentional injury.

Chronic diseases are prominent causes of illness and death in the adult years. Although the prevalence of heart disease and the incidence of heart attacks have decreased in the past decade, certain risk factors for heart disease are on the rise, such as hypertension, overweight/obesity and physical inactivity. Type 2 diabetes is an ever-increasing problem facing many Manitobans, particularly First Nations people and those in lower-income neighbourhoods. The number of Manitobans requiring dialysis has more than doubled in the last decade. Although most adults rated their mental health as good or better, episodes of mental illness treatment are common – estimated at one in four adults.

Injuries, both intentional and unintentional, are a leading cause of hospitalization and death in adults. Groups more likely to die from injury are: men (three times more likely than women), younger adults, and Aboriginal people. The most common causes of unintentional injury in adults are motor-vehicle traffic injuries and falls. The rate of injury related to motor-vehicle causes has decreased in recent years. Among intentional injuries, suicide was the second leading cause of death among adults in their twenties. Injuries due to assault were also a contributor to the overall burden of injuries in this stage of life. Workplace injuries have declined in recent years in most sectors. The service sector had the highest number of time-loss injuries. Musculoskeletal injuries, including back pain, represent the major cause of injury rates and are the most common type of injury among workers in the health care sector.

Reported rates of sexually transmitted infections (ex: chlamydia and gonorrhoea) have increased and are higher in the north and among First

Nations. On average, about 100 new cases of TB have been diagnosed in Manitoba each year, with no recent trends in rates. The rate of TB among First Nations people is ten times that of non-First Nations people.

Most adults have at least one risk factor for chronic diseases. Approximately one in five adults is a smoker. Only one-third of Manitobans aged 12 and older reported they consumed fruits and vegetables five or more times a day. The majority of Manitobans exceed the recommended amount of sodium (salt) in their diets, a factor which contributes to hypertension and other adverse health effects. Over one-half of Manitoba adults are overweight or obese. One-third of Manitoba adults are physically inactive. Two-thirds of Manitoba adults are considered to be regular drinkers of alcohol and of these, one-quarter report being heavy drinkers, an important risk factor for many physical, mental and social health consequences.

Severity of some illnesses and death can be prevented or delayed by earlier diagnosis and treatment, including screening (ex: breast cancer, colorectal cancer). Other factors which can be modified in the short term and long term include stress management and mental wellness, social supports, and other determinants of health, such as employment, working conditions and income.

While many of these factors affecting poor health are more common among populations such as lower-income and/or Aboriginal Manitobans, all Manitoba populations are at risk. Many of the risk factors that are present in the adult years are established in childhood and may manifest themselves in disease or injury outcomes as late as the senior years. By the time most individuals reach the age of 65 they are entering a new phase of their lives, planning for or adjusting to retirement and the aging process.

Seniors

Like most of the developed world, Manitoba has an aging population – i.e. there are relatively more seniors than there were in the past, and they are living longer. Life expectancy for males and females that have just reached the age of 65 is now 86 for women and 83 for men. Age is a risk factor for many chronic conditions, so it is not surprising that the majority of seniors have at least one chronic disease or condition. Despite this, most seniors (three-quarters) self-rate their health as good, very good or excellent. More Manitoba seniors are living in the community longer as evidenced by decreasing per capita personal care home use rates.

The most common causes of death for seniors are cancer, heart disease, stroke, dementia, chronic lung disease, diabetes, unintentional injuries, influenza and pneumonia, kidney failure and aortic disease. Combining heart disease, stroke, and aortic disease makes cardiovascular diseases the leading cause of death of seniors. The leading causes of cancer deaths for seniors were lung, breast, colorectal and prostate, accounting for more than one-half of all cancer deaths in seniors.

Injuries are also a significant health issue for seniors. Although seniors make up one-seventh of Manitoba's population, they contribute one-third of all hospitalizations for injuries and one-third of all deaths resulting from injuries. Falls are the most common cause, followed by unspecified fractures, then by motor-vehicle collisions and suicide. Falls in seniors can be prevented by better mental and physical fitness, appropriate use of medications, and safer environmental conditions. Motor-vehicle collisions are the third leading cause of injury deaths. Driver and pedestrian safety are also issues for seniors, becoming more important with age. Suicide is the fourth leading cause of injury-related death

in seniors and appears to be increasing. Risk factors include social circumstances, depression, medical conditions and medications.

Over 95% of Manitoba seniors rate their own mental health as good, very good or excellent. Objectively, there is evidence that one in four Manitobans over the age of 55 have been treated for one or more significant mental disorders – women more than men. The presence of a mental illness increased the need for home care services (two-fold) and personal care home admission (seven-fold). Treatment for depression is common among seniors – one in four women and one in seven men.

It has been estimated that one in ten Manitobans over the age of 65 have been diagnosed with Alzheimer's disease or another type of dementia. This proportion increases from about one per cent at age 55 to 33% by age 90. These conditions have significant impact on seniors, their family and friends, and the health care system.

Chronic diseases are most common among seniors. Hypertension and arthritis are the two most common chronic conditions. Overweight and obesity are established risk factors for hypertension and osteoarthritis, which is the most common cause of back and joint problems for seniors. Two-thirds of Manitoba's hip or knee replacement surgeries were performed on seniors. Diabetes is diagnosed in one of seven seniors.

Every winter, seasonal influenza is responsible for yearly outbreaks in personal care homes, often resulting in death. To control these consequences, annual vaccine programs are delivered in Manitoba. Uptake is reported at almost two out of three seniors, but is lower among other age groups and health care workers who can transmit influenza to seniors and others at increased risk. There is room for improvements in uptake of this vaccine.

Risk for cardiovascular diseases and cancer are largely established before the seniors' stage of the life course. Despite that, it is not too late for seniors to maintain healthy lifestyles or to change behaviours. Immediate benefits from improved diet, increased physical and mental activity and reduced exposure to harmful substances like tobacco or too much alcohol can improve quality and length of life in the senior years.

One-half of Manitoba seniors do not consume the recommended level of fruits and vegetables. More than one-half of Manitoba seniors are considered inactive, a rate that increases with age. Seven per cent of Manitoba seniors smoke daily, which is less than younger adults and less than other Canadians. Between 11 and 14 per cent of Canadian seniors exceed low risk alcohol consumption guidelines. Although this is lower than their younger adult counterparts it can have significant negative impacts, particularly if this is mixed with prescription medications, which are common in the senior age group.

One-third of Manitoba seniors reported moderate or severe functional health problems. The need for assistance for mobility (canes, crutches or a wheelchair) increased three-fold from eight per cent for seniors 65 to 74 to 27% for seniors over the age of 75. With regard to daily activities such as preparing meals, shopping, housework and financial management, one-quarter of Manitoba seniors reported needing assistance in one or more activities. This has implications for the design of housing, transportation and public buildings to improve access and safety.

Just as there is wide variation in the health of seniors, there is wide variation in the conditions of living that affect the health of seniors. Less than two per cent of seniors live in low income, the second lowest province in Canada. The

rate of low income is twice as high for women than men and ten times as high for seniors living alone. It is important to note that many receive pensions or other financial benefits, and often are debt and mortgage-free in this stage of life, making comparisons complex. Almost one-quarter of seniors living in one-person households had housing costs that are considered “not affordable.” Transportation, access to resources and health care, as well as isolation and loneliness are significant issues affecting the mental and physical health of many seniors. Despite these facts, Manitoba seniors continue to live longer and healthier lives. One outcome of longer life is increased rates of age-related conditions. The challenge for seniors and those who care for them is to cope with and to manage these conditions so that quality as well as quantity of life can be optimized.

Helping seniors remain healthy and independent will not only improve their quality of life, but the lives of those around them, to whom they provide wisdom and leadership and from whom they receive support. Enabling seniors to remain healthy and independent in the community will facilitate their contributions to the community and serve the added benefit of reducing the strain on the health care system.

Conclusions and recommendations

Most of the causes of premature deaths, injuries and illness described in this report can be avoided or delayed. With better prevention, more Manitobans could live a fuller life and in better health – and need less health care. This should make more resources available for other important determinants of health, which, in turn, should further improve our health.

At one level, prevention comes down to how we live and how we take care of ourselves and others. At another level, how we live is influenced by several factors, many of which are beyond our own personal direct control or responsibility. In addition to the genes we have inherited, our health is influenced by our families and other relationships, the physical and social environments we have lived in, and our exposures to risk factors throughout the life course and other social determinants.

In Manitoba, as elsewhere, health outcomes are better, on average, for people who have been raised in healthy families in healthy homes and have had a happy and healthy childhood, for people with higher education and better jobs, for non-Aboriginal people, and for those who live in neighbourhoods with higher average incomes. These disparities are significant. They are, at once, a major challenge for public health and a major opportunity to improve the health of the public.

Although there has been improvement in many of these factors, there is still a need for much more progress. Our goals should be to improve the health of Manitobans while reducing health inequalities among us. These goals reflect basic values of fairness and social justice in addition to an understanding of where the need and opportunities for health improvements are greatest. Progress towards these goals should also create a healthier and more cohesive society with less need for health, justice and social services associated with the generational cycles of poverty, crime and illness.

In September, 2010, all federal, provincial and territorial ministers of health endorsed a declaration on prevention and promotion entitled *Creating a Healthier Canada: Making Prevention a Priority*. The vision for this declaration is:

A Canada in which governments work together and with private, non-profit, municipal, academic and community sectors, and with First Nations, Inuit and Metis peoples, to improve health and reduce health disparities and to build and influence the physical, social and economic conditions that will promote health and wellness, and prevent illness so that Canadians can enjoy good health for years to come.²⁵³

The recommendations in this report are consistent with the ministers' declaration and are based on the confidence that a more coordinated set of comprehensive prevention strategies, built on past and current efforts, can achieve faster progress. This can best be accomplished by starting with the identification of priority issues, stated goals, and measurable indicators. Comprehensive prevention strategies should be developed, in consultation and collaboration with appropriate stakeholders, to achieve reasonable and specified objectives or targets, based on evidence and the following approaches:

- 1) Consider the health and health equity impacts of all major decisions, legislation, policies and actions.
- 2) Engage all organizations and citizens in promoting health.
- 3) Recognize and support the important role of families and communities.
- 4) Achieve a more equitable distribution of the social determinants of health and improve the settings of everyday life to promote healthier behaviours.
- 5) Strengthen the capacity of the health system for prevention programs and services.

The first approach is based on the principle that all policies and actions of government or other sectors have a potential impact on health and health disparities. These include, for example,

marketing and pricing policies that influence consumer choices for foods. The affordability of healthy foods and other necessities for life are affected by economic policies such as the setting of the minimum wage and taxation that have an impact on poverty rates and the distribution of income and wealth. Health and health disparity impacts should be assessed and taken into consideration for all major policy and legislation decisions, using a health equity impact assessment method. To achieve health equity, it is important to sustain and strengthen the publicly funded and administered health system, our best way towards ensuring that all Manitobans get the services they need, regardless of their ability to pay.

The second approach is based on the principle that health is the shared responsibility of all – to take care of ourselves, our families and others in our communities. We have many opportunities to do this through the various roles and responsibilities we have at home, school, work, and in all of our community settings. Preventing disease and injury, and promoting health, need to be everybody's business, in every place, and every day. It is a cooperative effort and not something that can be left only to the health care system after we are sick or injured.

The third approach recognizes that the most important organization in every community for promoting health is the family. More than any other place, the home offers the first and most important setting for people to reach their potential in health and well-being. Promoting and supporting healthy families in healthy communities should be a basic approach in every disease and injury prevention strategy. This approach applies throughout the life course. It begins with supporting each mother for a healthy pregnancy and continues with providing a safe and nurturing environment for every child

and dependent person of all generations, ending with end-of-life care and support.

The fourth approach recognizes that the ability of people to live healthy lives depends on many factors, including a wide range of social determinants, such as education, employment and income. Also important are the social and built environments of our homes, schools, workplaces, neighbourhoods and other community settings. We must continue to develop and implement policies to address and improve these determinants and their distribution. It is important to promote, for example, healthy schools and healthy workplaces, in which everyday life embraces healthy living. These include healthy relationships and healthy physical and social environments that promote healthy living (ex: the availability and affordability of healthy food and opportunities for adequate and regular physical activity).

The fifth approach recognizes the importance of the formal health system and the need to further enhance the provision of effective and sustainable preventive programs and services in public health and primary care within one coordinated system. To reduce health inequalities, it is important for these services to be offered and used equitably. They should be based on the best available evidence and supplemented by more outreach and continuity of services for those with the highest need and least ability to access care, including access for emergency assistance and/or arrangements for follow-up on a 24/7 basis.

Much work has been done to achieve these goals and apply these approaches and principles. Too often, however, these initiatives have been part of stand-alone, targeted, temporary, or fragmented strategies or programs. These should be even more effective if they are part of an overall coordinated set of integrated strategies

that engage all levels and departments of governments, the private sector, non-government organizations and citizens.

The recommendations of this report are intended to build on and enhance work and efforts already in process. To achieve this, it is recommended that the priorities identified in this report be reviewed and affirmed. Coordination should be improved based on a shared vision, goals and objectives. Sustained change requires more comprehensive, integrated and continuous strategies with greater citizen engagement. In this way, we are more likely to achieve progressive change towards more norms of preventive behaviours and cultures of health promotion (ex: the de-normalization and intolerance of tobacco use in most settings). Much of the specific elements of these strategies will require more research, consultation and engagement with Manitobans using information in this report and many other valuable sources. It is for these reasons that the recommendations of this report are at a more general and strategic level, rather than spelling out specific policies, regulations or actions before engaging in broader consultation and collaboration.

Recommendations

The recommendations are organized according to the following outline:

1. recommended health goals for all of government
2. recommended priorities for prevention strategies that address:
 - 2.1 priority health outcomes
 - 2.2 priority health-related behaviours and activities
 - 2.3 priority issues for each determinant of health and the settings of everyday life
3. recommended approaches for prevention strategies

4. recommended structures and other elements to coordinate, develop, implement and evaluate prevention strategies
5. recommended actions to enhance the capacity of the health system to implement prevention strategies

Health goals

Recommendation 1.1

The government of Manitoba should adopt two goals to guide all major decisions, policies, legislation and other actions:

- improved health of Manitobans
- reduced inequalities of health among Manitobans

Priorities for prevention strategies

Recommendation 2.1

The Manitoba government should oversee the coordination and development of a set of integrated prevention strategies that address priorities for health outcomes, health-related behaviours and activities, determinants of health and settings of everyday living.

Recommendation 2.2

Comprehensive prevention strategies should be enhanced or developed to address the following priority health outcomes:

- unintentional injuries (transportation-related, falls)
- intentional injuries (self-injury, aggression, violence)
- chronic conditions and diseases (heart disease, stroke, cancers, lung disease, kidney disease, diabetes, liver conditions, musculoskeletal conditions, obesity)
- mental illness and addictions (depression, anxiety disorders, learning disorders, behaviour disorders, substance abuse)

- infectious diseases: communicable diseases (influenza, tuberculosis and other causes of pneumonia, causes of invasive infections, HIV/AIDS and other sexually transmitted and blood-borne infections, antimicrobial-resistant organisms) and environmentally-mediated infections (food-borne and animal-borne infections)

Recommendation 2.3

Comprehensive prevention strategies should address the following priority health-related behaviours:

- appropriate care and support for children and others who are in need at any stage of the life course
- healthy relationships at home, school, work and in all community settings (self-respectful, mutually respectful, caring, supportive, non-abusive; free from violence, intolerance, exploitation, sexism and racism)
- healthy sexuality (mutually respectful and consenting, using appropriate disease prevention and contraception)
- healthy hygiene practices (hand washing, cough etiquette, food handling)
- protection and sustainability of the natural environment (protection of our water, soil, air, ecology; sustainable management of non-renewable resources and greenhouse gases)
- safety and injury prevention (seatbelt use, other motor-vehicle safety, bicycle helmet use, falls prevention, workplace safety, safety in other settings)
- mental, emotional and spiritual well-being (lifelong learning, work-life balance, personal stress management), balancing active living (adequate and regular physical activity), sedentary endeavours (television, video games, computers), and adequate sleep

- healthy diet (recommended levels of adequate nutrients, fibre, vitamins, calories, saturated fats, refined carbohydrates, alcohol, salt), oral hygiene and dental hygiene
- avoidance of harmful substances (tobacco, illicit drugs) and addictions (including prescription drugs); safe levels of exposure to harmful environmental risks (radon, environmental tobacco smoke, asbestos, ultraviolet radiation)
- appropriate use of preventive health services (vaccinations, screening), harm reduction programs (safe use of injection drugs, sexually transmitted disease prevention), healthcare (primary care, prenatal care), and other services (ex: dental hygiene, dieticians, personal or family counselling)

Recommendation 2.4

Comprehensive prevention strategies should address priority issues of all health determinants:

- income and social status: poverty, income disparity, food insecurity
- education: literacy and health literacy, numeracy, school completion
- employment and working conditions: underemployment, regional unemployment, meaningful employment, working conditions, work safety, workplace stress
- environment:
 - natural environment: sustainable development, including climate change, ecological change, protection of air, water, soil
 - built environment: adequate housing without overcrowding, access to safe running water and sanitation, indoor air quality free from excess humidity and mould, fire safety; community and neighbourhood design with local access to active transportation, adequate green space and locally affordable nutritious food; especially for disadvantaged

communities (ex: isolated, northern, remote and urban core)

- social environment, gender and culture: promotion of respect, fairness, caring, tolerance; deterrence of bullying, racism, sexism, exploitation, intolerance of peoples sexual orientation or beliefs, and abuse of children, intimate partners and vulnerable persons
- healthy child development: early child development, positive parenting, preventing child neglect and abuse
- social support networks: supportive environments and social connectedness for all, with outreach for elderly, lonely, vulnerable, and disadvantaged people
- personal health practices, coping skills: see recommendation 2.3: priority health-related behaviours and activities
- biology and genetic endowment: genetic counselling and screening (when indicated and appropriate), surveillance for perinatal health and congenital abnormalities
- health services: primary prevention (ex: tobacco cessation) and secondary prevention (ex: breast screening)

Recommendation 2.5

Comprehensive prevention strategies should address the social and built environments of the priority settings of everyday living:

- neighbourhoods
- homes
- daycares and schools
- workplaces
- public places (restaurants, entertainment venues, grocery stores, retail stores, recreation facilities, spiritual settings)
- transportation settings (cars, buses, bicycle access)
- special community circumstances (ex: urban built environment, rural areas, isolated communities)

Approaches for prevention strategies

Recommendation 3.1

To achieve consistent progress towards the recommended goals and to enhance comprehensive prevention strategies, it is recommended that the Manitoba government, including all departments, relevant crown corporations and funded agencies use the following approaches:

- In collaboration with Manitoba Health and Manitoba Healthy Living, Youth and Seniors, adopt methods to assess the impact of all major decisions, policies, legislation and other actions on the health of Manitobans, and the inequalities of health among Manitobans
- Develop and implement ways to increase the engagement of all organizations and citizens in the shared opportunities and responsibilities to prevent disease and injury.
- Strengthen and support the vital role of families and communities in promoting the health of children and others throughout all stages of the life course.
- Achieve a more equitable distribution of the determinants of health and improve the settings of everyday living to promote healthier behaviours.
- Strengthen the capacity and co-ordination of preventive services and programs delivered by public health, primary care, and others with more outreach and follow-up for those with the highest need and least ability to access care.

Structures and processes for prevention strategies

Recommendation 4.1

The Manitoba government should create a multi-departmental oversight body supported

by a multi-stakeholder network that provides advice and participates in the development and implementation of prevention strategies.

Recommendation 4.2

Strategies should have stated goals, measurable indicators, objectives or targets (as appropriate), action plans and an evaluation component.

Recommendation 4.3

To ensure that strategies are developed on the best available evidence, the Manitoba government, in collaboration with academic and other organizations, should support an enhanced network of analysts and experts (including research and clinical epidemiologists, health economists, information technologists, subject experts and public health strategists) and augment the surveillance capacity and availability of information needed to facilitate their work.

Recommendation 4.4

Manitoba Health and Manitoba Healthy Living, Youth and Seniors should work with appropriate partners and stakeholders to make available to all Manitobans a set of clear, consistent and appropriate health guidelines which can be used to guide healthy living and other health-related behaviours and activities.

Recommendation 4.5

Manitoba Government's departments of Health and Healthy Living, Youth and Seniors should work with relevant partners and stakeholders to develop a framework to analyse and improve the conditions of the settings of everyday life, establish guidelines for healthy settings, and develop strategies to implement these guidelines.

Capacity of health system to implement prevention strategies

Recommendation 5.1

Enhance support for regional health authorities, health care professionals, and other health organizations and partners to develop and implement strategies to enhance prevention throughout the health system.

Recommendation 5.2

Strengthen the capacity in Manitoba Health to provide provincial leadership for standards and guidelines for public health practice by public health officials, including the establishment of a leadership function for public health nurses to complement the existing leadership roles for medical officers of health and public health inspectors.

Recommendation 5.3

Increase capacity in Manitoba Health and regional health authorities as well as collaborate with health care professionals, academics and others to select or develop, implement and monitor prevention guidelines for health practitioners in public health and primary care which will enhance appropriateness, quality and efficiency and further advance health system innovation, equity and sustainability.

Recommendation 5.4

Strengthen and improve integration of public health and primary care through better communication and collaboration using common guidelines and standards for prevention, shared electronic health records and enhanced information systems for surveillance.

Recommendation 5.5

To foster timely and efficient prevention and care and to avoid gaps and duplication of services, continue to develop a comprehensive primary

care and public health system that can provide, for all Manitobans, continuing and holistic care, including allied health, social and other programs and services within one coordinated system that includes primary care networks and 24/7 access to on-call emergency intake to facilitate immediate care or follow-up, as appropriate.

Recommendation 5.6

Resolve jurisdiction issues for public health inspectors in Winnipeg and other places, and strengthen the regional public health teams of medical officers of health, public health nurses, public health inspectors, and other practitioners.

Recommendation 5.7

In collaboration with First Nations and the federal government, resolve the jurisdiction issues for public health, health care and other services for First Nations' communities, as part of the development of a coordinated, comprehensive, and integrated province-wide public health and primary care system.

Recommendation 5.8

To complement guidelines for health care practitioners, develop and disseminate guidelines for the public on use of the public health and primary health care system in an appropriate and effective manner for primary and secondary prevention.

Recommendation 5.9

Increase outreach programs in public health and primary care to proactively engage individuals, families and populations at highest risk and greatest need who are least likely to seek care (ex: prenatal care, newborn assessment and follow-up, immunizations, screening, and mental health prevention and care).

Introduction

Purpose and scope

The Chief Provincial Public Health Officer (CPPHO) of Manitoba is required by *The Public Health Act* to give the minister of health a report on the health status of Manitobans at least once every five years. The minister is required to table the report in the Manitoba Legislature. Although the first recipient of this report is the minister of health, other audiences for this report include the rest of government, all members of the legislature and all Manitobans. The aim is to inform these audiences about priority public health issues. It is hoped that it will stimulate thinking and dialogue, and support the development and implementation of policies and action to further improve health for all Manitobans. To that end, it is not only a report for governments and politicians, or for people who work in the health field. Improving health is everybody's business. It is every day work, carried out in all settings. It is hoped that information in this report can be made accessible and understandable to all Manitobans – parents, employers, teachers – who play such important roles in how we live, grow, work and play.

As the inaugural report under the new Act, it includes a wide range of health issues selected to paint a broad picture of the health of Manitobans, but has not delved too deeply into causes and specific solutions. The report has used and summarized data and information acquired from many sources, most of which have been published previously. Although, the scope of the report is broader than it is deep, it does not include all health topics of interest and importance for all Manitobans and is not intended to be an

encyclopedic catalogue of all available health statistics for this province. Topics included in the report have been selected based on burden of illness, preventability and available information.

The report has identified and emphasized priority outcomes and issues, including known causes or risk factors for disease and injury. For readers already familiar with current health information and previous reports that are the source of this information, this information will be neither new nor surprising. However, by reviewing several aspects of health in one document, this report will paint a composite picture to help put the information into some perspective; to assist with prioritization of these matters; and to encourage building on the many efforts and activities that are already underway to address them.

What is health?

What determines our health?

Health is not the absence of disease. Health is having the physical, mental and social well-being to satisfy one's needs, realize one's aspirations and to cope with one's environment. It is a matter of having the personal and social resources, as well as the physical capacity, for everyday life.

Health outcomes can be measured in many ways. This report includes information about frequency and rates of selected diseases and injuries, especially those which are most common, most serious and most preventable. The most common causes of death – especially premature death – are described. Quality of life, whether measured by self-perceived health or more objective measures are also included.

Known behaviours, health practices and other risk factors of diseases and injuries are described. Where these risk factors are associated with known underlying determinants of health (the causes of the causes), these are also included.

Determinants of health are those biological, environmental, social, economic, cultural and other factors that influence our health. This report uses the list of determinants originally recommended by the Federal Provincial and Territorial Advisory Committee on Population Health, subsequently modified by Health Canada and currently endorsed by the Public Health Agency of Canada. These are: income and social status; social support networks; education; employment/working conditions; social environments; physical environments; personal health practices and coping skills; healthy child development; biology and genetic endowment; health services; gender; and culture.

How these determinants result in health outcomes is a complex matter and is the subject of much ongoing research. Some of the determinants of health noted above are considered, at this time in history, non-modifiable, such as biology and genetic endowment. Others, such as the physical environment, are affected by the natural or built environment. Those determinants which describe the social conditions in which people live (ex: socio-economic status) are known as the social determinants of health. Most of the variation in health status between and within countries is considered to be a result of inequality in the distribution of the social and other determinants of health. These are considered modifiable determinants and as such are given considerable attention in this report.

One way that these determinants influence our health is the way they are manifested in the

conditions of the settings of everyday life: our homes, schools, workplaces, neighbourhoods, and other places where people live, learn, work and play. The conditions of these settings can facilitate or inhibit healthy living and are therefore an important consideration and way forward.

In response to increasing concern about persisting and widening inequities, the World Health Organization (WHO) established the Commission on Social Determinants of Health (CSDH) in 2005. The commission's final report in 2008 contained three overarching recommendations:

1. improve daily living conditions
2. tackle the inequitable distribution of power, money and resources
3. measure and understand the problem and assess the impact of action

This report has considered the conclusions and recommendations of the WHO CSDH in the organization of the report, the selection of information and its recommendations.

Organization and approach

This report is based on the scope and principles of public health, describing the health status of Manitobans from a general population perspective and within each stage of the life course. In each chapter of the report, the burden of selected health outcomes is described, along with associated risk factors and behaviours and underlying determinants and conditions. Inequalities (ex: income, sex, race or geography) are described to increase our understanding of the distribution of health amongst Manitobans and to provoke thought, discussion and action to improve health status – especially for those Manitobans at highest risk. The settings of everyday life are considered as opportunities for

improvements in the factors considered to most affect our health.

The health status content of this report is organized as follows:

- General population
- Pregnancy and the newborn
- Children
- Adults
- Seniors

This report has not described or evaluated the many programs and services implemented by governments and other organizations to address health-related issues included here. This intentional omission is not meant to imply that the issues identified in this report have been previously unrecognized or unaddressed. The report is focussed on descriptions of the health status of Manitobans, identification of priority issues, and recommended strategic directions to address them. For most of these issues, sustaining or enhancing existing prevention-based programs is important and expected.

Principles, values and responsibility for health

Public health is concerned with the prevention of disease and injury and the promotion of health. Its goals are healthier people and healthier communities. The health of Manitobans is a collective responsibility, balancing individual needs and rights with what protects the health of the population as a whole.

One of the methods of public health is to recognize patterns and differences in health status among groups of people in order to better understand the causes of disease and to find ways to reduce those differences and improve the health of all. This approach is based on the value of fairness as well as the principle that the

overall health and well-being of a population is improved when there is less inequality among its members.

Although this report is for Manitoba's minister of health, it is recognized that our health is the shared responsibility of all governments and government departments as well as non-government organizations, the private sector, all communities, all families – and every individual. This recognition is not meant to diminish the important role of the health sector to provide health care for Manitobans and to be the champion for health needs including those that must be met outside of the formal health care system.

The vision of Manitoba Health is: healthy Manitobans through an appropriate balance of prevention and care.

The mission of Manitoba Health is: to meet the health needs of individuals, families and their communities by leading a sustainable, publicly administered health system that promotes well-being and provides the right care, in the right place, at the right time.

Manitoba Health's goals are to:

1. optimize the health status of all Manitobans through prevention and health promotion
2. improve quality, accessibility and accountability of the health system
3. achieve a sustainable health system

Much attention has been paid to the increasing costs of health care and the proportion of the provincial budget allocated to the department of health. Given that most of the causes of injury and illness that require care are avoidable or can be delayed by addressing their causes, increased prevention is one of the most promising ways to optimize health and achieve sustainability of a publicly funded health system. These goals

and this recognition have guided much of the report's content.

Information sources, limitations and cautions

Most of the information in this report has been published before in a variety of places and over several years. This report has attempted to collect, organize and present this information in a way that can help us to prioritize issues and to provide a stimulus to enhance the dialogue and action to improve the health status of all Manitobans that is already underway. Health is a complex matter. To provide a report on the health of a population of 1.2 million people is a humbling task, fraught with inevitable errors of omission and commission. Many relevant and newer reports will become available as this report is being printed, and afterwards. Newer information may support, supplement or contradict content in this report. This is inevitable and it is hoped that this report and other sources of information can all be used to achieve better understanding and better decision-making.

Many data sources have been used for this report. Efforts were made to use the most recent and comprehensive Manitoba data. For some topics, Canadian data has been used. For some specific populations, available information is incomplete or not readily available. Sources used for this report include: the *Canadian Community Health Survey* (CCHS), reports by the Manitoba government (ex: Manitoba Bureau of Statistics), the federal government (ex: Public Health Agency of Canada) and research centres such as the University of

Manitoba's Manitoba Centre for Health Policy (MCHP) and Centre on Aging, and the Canadian Institute of Health Research, among others.

In 2010, community health assessments were published by each regional health authority. These reports contain current and important regional health information and were reviewed during the preparation of this report. This report takes a provincial perspective on the health status of Manitobans, therefore the regional health assessments have not been specifically referenced here.

Each publication used to prepare this report has a more detailed explanation about its information than could be included in this report, such as limitations for the data sources, methodology used and interpretation of results. References are provided at the end of the report so that interested readers can access this information. To improve readability, numbers have been rounded off, where deemed appropriate.

Reflections, conclusions and recommendations: towards improving the health status of all Manitobans

Priority issues are summarized and reflected on at the end of each chapter as they pertain to the populations discussed in that chapter. The final chapter of the report further reflects on these priority issues and includes recommendations that suggest broad strategic approaches that build on previous and current efforts to achieve sustainable change and improvement in the health status of Manitobans.

General population

Priority points

- > Despite a low birth rate overall, the province's population continues to grow due to a higher birth rate among Aboriginal people and to increased immigration.
- > Our population is aging. By 2026 it is estimated that the proportion of Manitobans over 65 will have increased from 14% to 20% of the population.
- > The majority (89%) of Manitobans reported that their health was good or better.
- > While Manitobans are among the healthiest people in the world, there is significant variation in health status within certain populations based on place of residence, socio-economic status, race and other characteristics and determinants.
- > Aboriginal people experience a life expectancy at least five years less than non-Aboriginal people. The same is true of individuals living in low-income areas, with a difference ranging from five to 10 years between the highest and lowest income groups.
- > The main causes of potential years of life lost are cancer, heart disease and stroke, unintentional injuries, suicide, and deaths that are the result of birth defects or problems associated with the pregnancy or childbirth.
- > Suicide is a prominent cause of death for several age groups; rates are higher among First Nation people.
- > Injuries are an important cause of death and hospitalization. The leading cause of death from unintentional injury is still motor-vehicle collisions – speed, alcohol and failure to wear seat belts are common risk factors.
- > Family violence is of great concern because of its wide reaching health and mental health impacts; rates in Manitoba are higher than the rest of Canada for intimate partner abuse.
- > Up to one in three Manitobans over the age of 10 has been treated for at least one mental disorder.
- > Tuberculosis persists in Manitoba, particularly among Aboriginal, immigrant and other disadvantaged populations.
- > Many chronic diseases share common risk factors, including: tobacco use, excessive alcohol consumption, unhealthy diet, sedentary lifestyle and being overweight. Most Manitobans exhibit one or more of these risk factors.
- > The diets of most Manitobans are too low in fruits and vegetables and too high in salt and calories.
- > Most Manitobans are not achieving the recommended daily amounts of physical activity.
- > More than half the population of Manitobans over 17 years of age are overweight or obese.
- > Smoking rates have decreased but one in five Manitobans are smokers.

- > Alcohol and other substance abuse are associated with physical, mental and social well-being and pose significant threats to health and safety of Manitobans; as many as one in four Manitoba adults may be high risk drinkers.
- > The low-income rate for Manitobans overall has decreased to 8% but for Aboriginal people it is 14%.
- > Food insecurity is a growing concern in Manitoba, particularly for people on social assistance; Aboriginal people; families with children, especially female single parent families; and families who do not own their homes.
- > More than one in 10 Manitoba households, excluding those in First Nations communities, is in core housing need.
- > Safe and accessible water, an essential for health, is easily available to most Manitobans, but there are still too many communities, especial First Nations, in which it is not.
- > Manitoba has one of the lowest unemployment rates in the country; however, it is higher among Aboriginal people, newcomers and people with disabilities.
- > Improvement in education levels have been seen across most income groups in Manitoba with the exception of the lowest income groups. Health is associated with education levels, which are still in need of further improvement. One in five Manitoba adults have not achieved grade 12 certificate or other diploma of education and training. For Aboriginal people, that rate is twice as high.

Introduction

The purpose of this chapter is to provide an overview of the general health status of Manitobans from a population perspective and to introduce concepts and issues that are considered in subsequent chapters as they pertain to the life stages. This chapter also includes issues affecting the health of Manitobans that are relevant to the entire population but not specific to any one life stage.

Manitoba's population: Demographics

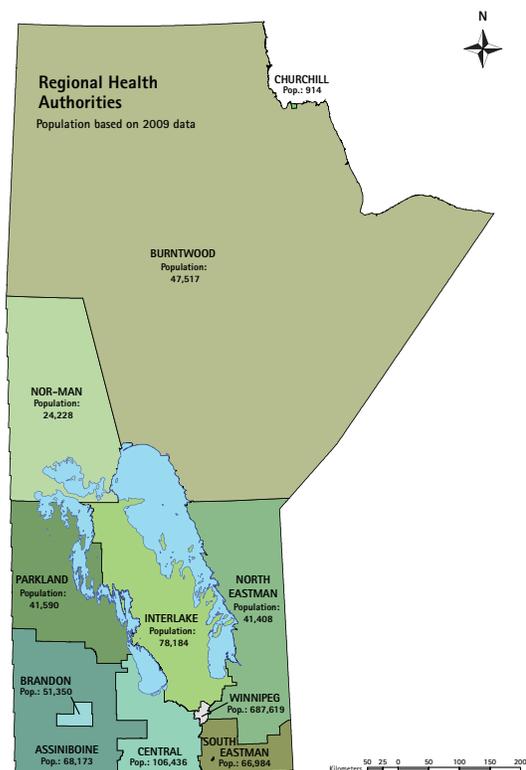
Manitoba's population is growing, changing and diversifying as a result of immigration and variations in birth rates among different segments of the population. Our population is also aging, a trend seen across Canada and the developed world. Within Manitoba, nearly 10% self-identify as a visible (racial) minority, and 16% of Manitobans self-identify as Aboriginal, a proportion that is about four times higher than the average for Canada.

Manitoba's population is largely urban, with three-quarters living in towns or cities with more than 1,000 residents.* Winnipeg accounts for more than half of Manitoba's residents. Within cities, populations vary from neighbourhood to neighbourhood. Members of visible minorities and Aboriginal people are concentrated in the inner-city neighbourhoods of Winnipeg. Population numbers also vary from north to south, with First Nations and Metis people making up larger proportions of the population in northern regions of Nor-Man, Burntwood and Churchill.

Geographic distribution

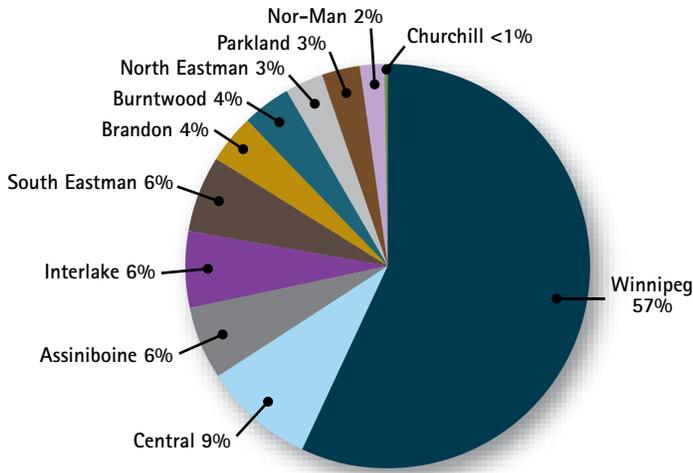
There are 11 regional health authorities (RHAs) in Manitoba (Figure 1.1). Manitoba's RHAs vary widely by population (Figure 1.2). In 2009, 687,619 Manitobans (57%) lived in Winnipeg and only 914 (0.1%) lived in Churchill.¹ The population of the other nine health regions ranged from two per cent (13,752) to nine per cent (61,886) of the provincial total. While the populations of many RHAs increased over the last five to 10 years, some regions saw their populations decrease over time (Figure 1.3). According to the 2006 Census, 72% of Manitobans lived in urban areas and 28% in rural areas. The distribution pattern has not changed substantially since 1981.

Figure 1.1: The Health Regions of Manitoba



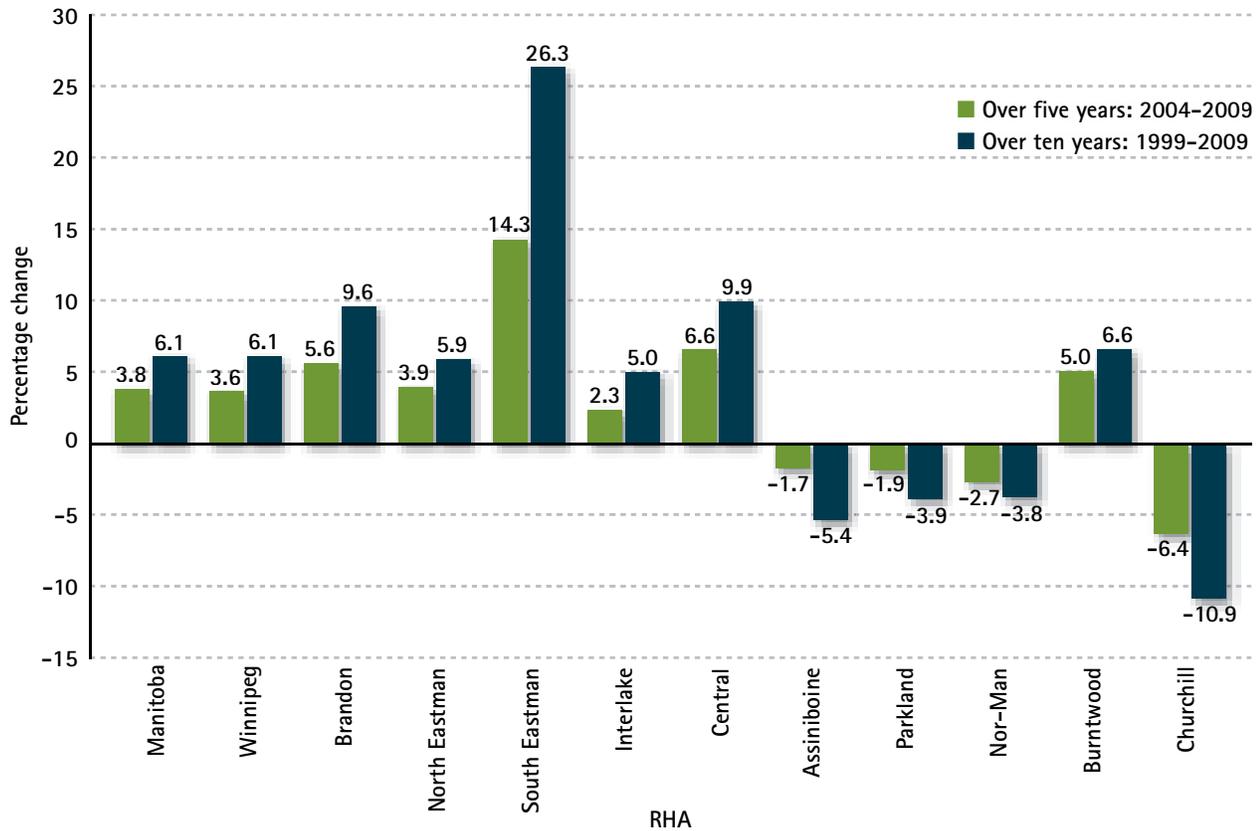
* Statistics Canada definition – Area with a population of at least 1,000 people and no fewer than 400 persons per square kilometre, excluding First Nations reserve communities.

Figure 1.2: Population distribution of Manitoba by RHA, 2009¹



N = 687,619

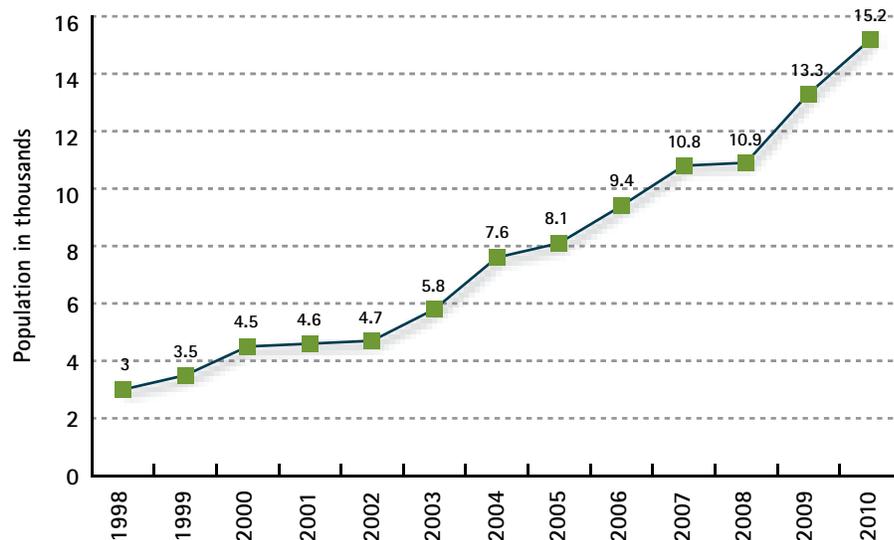
Figure 1.3: Population change by RHA in Manitoba: 2004 to 2009 and 1999 to 2009¹⁻³



Population growth

Manitoba's population was 1,214,403 on June 1, 2009. This represented a four per cent growth since 2004 and six per cent since 1999.¹⁻³ The average annual population increase from 1999 to 2004 was 0.4%. This rate doubled to an average of 0.8% per year from 2004 to 2009. Immigration was one of the leading contributors to Manitoba's population growth. Annual immigration has increased by more than 200% in the last decade (Figure 1.4).⁴

Figure 1.4: Annual immigration: Manitoba 1998-2010⁴



Between 1999 and 2009, Manitoba received 85,328 immigrants and refugees, an average of 7,757 per year.⁵ Newcomers are from a variety of countries, with a substantial proportion from Asia and the Pacific region.⁶ Permanent residents arrive as refugee class, economic class or family class immigrants. Temporary residents arrive as students, visitors or workers. The number of

temporary residents arriving in Manitoba (all categories of immigration) increased by 32% over the last decade, from 4,327 in 2000 to 5,715 in 2009.

These trends are expected to continue as a result of Manitoba's provincial action strategy *Growing Through Immigration*, which has set a target of 20,000 new arrivals per year.

Another source of population growth is Manitoba's Aboriginal population. In 2006, the total population of individuals identifying as Aboriginal was 175,395, accounting for 16% of the total population. Between 1996 and 2006, the Aboriginal population in Manitoba grew by 36%, compared to three per cent for the general Manitoba population.⁷

In the 2006 census, 100,645 (57%) Aboriginal people in Manitoba identified themselves as North American Indian; 71,805 (41%) self-identified as Metis; and less than one per cent self-identified as either Inuit (565) or as having multiple Aboriginal identities (685). An additional 1,695 people (one per cent) did not select one of these responses but did identify themselves as a band member or Registered Indian elsewhere in the survey.⁸

Race/ethnicity

As noted above, 16% of Manitobans identified themselves as having Aboriginal identity in 2006, which was four times higher than for Canada's four per cent (Figure 1.5). The proportion of the Manitoba population who self-identified as Aboriginal in 2006 was also higher than other provinces, except Saskatchewan. In 2006, 10% of Manitobans were members of visible minorities, a category that does not include Aboriginal people, which was much lower than the Canadian rate of 16%. Filipino, South Asian, Black and Chinese ethnicity comprised the largest part of the visible minority population in Manitoba (Figure 1.5).⁹

Figure 1.5: Per cent of total population, Aboriginal and visible minorities, Manitoba and Canada (2006)⁹

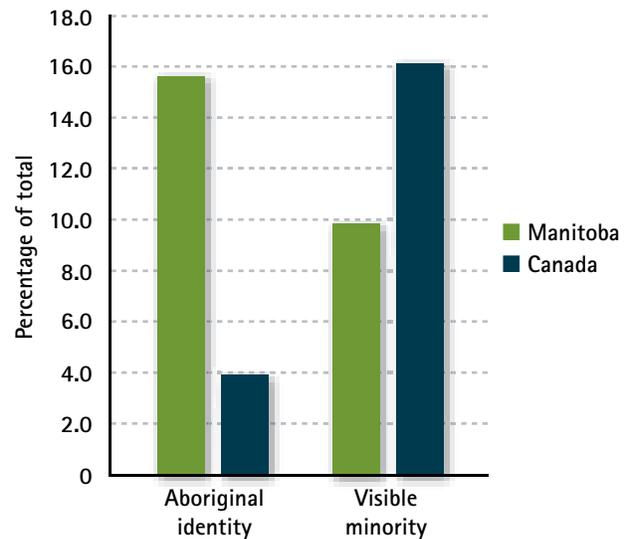


Table 1.1: Population by mother tongue¹⁰ (2006 Census, single responses)

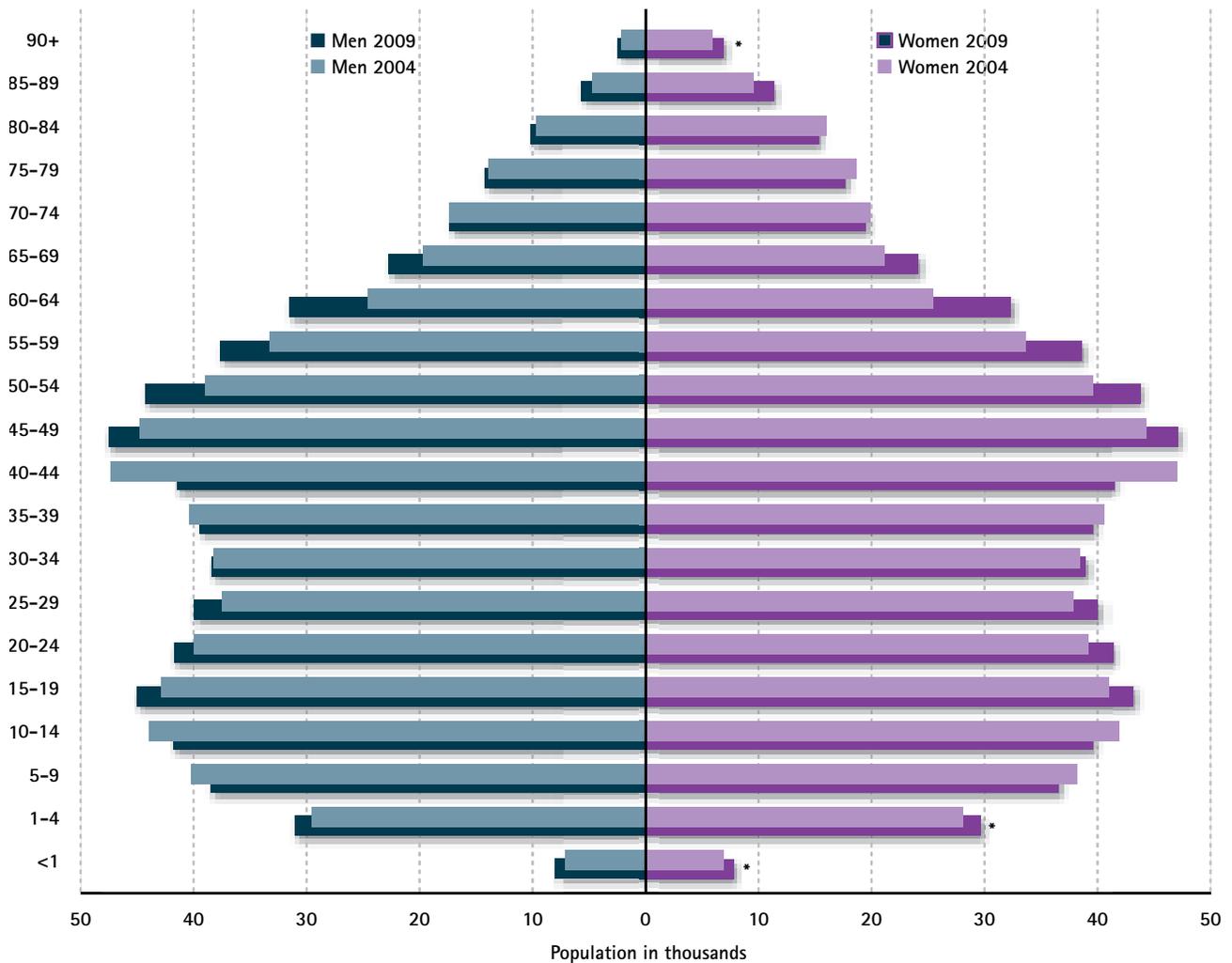
Language	Population	Language	Population
English	838,415	Punjabi	6,340
German	67,035	Portuguese	6,290
French	43,955	Oji-Cree	5,430
Tagalog (Filipino)	22,490	Italian	4,780
Ukrainian	21,950	Dutch	3,835
Cree	19,110	Russian	3,450
Chinese	11,045	Vietnamese	2,740
Ojibway	9,325	Arabic	2,125
Polish	8,870	Korean	1,950
Spanish	6,850	Other non-official languages	32,710

According to the 2006 Census, 248,500 Manitobans identified a language other than English or French as their mother tongue,¹⁰ and this number will likely be higher in the next census. Because it improves people's ability to comprehend the information necessary to be healthy, literacy is one of the determinants of health. Reading and understanding prescriptions and medical advice, communicating symptoms, and general health literacy can be hampered by language differences.

Age and sex distribution

In 2009, the age distribution of Manitoba's population was as follows: 19% were children under 15 years of age; 67% were persons aged 15 to 64; and 14% were 65 years of age and older. The proportion of adults over 65 is expected to increase to 20% by the year 2026, representing a 50% relative increase. The age and sex distribution, including changes over five years, are shown in Figure 1.6.

Figure 1.6: Age profile of Manitoba population by sex, 2004 and 2009^{1,3}

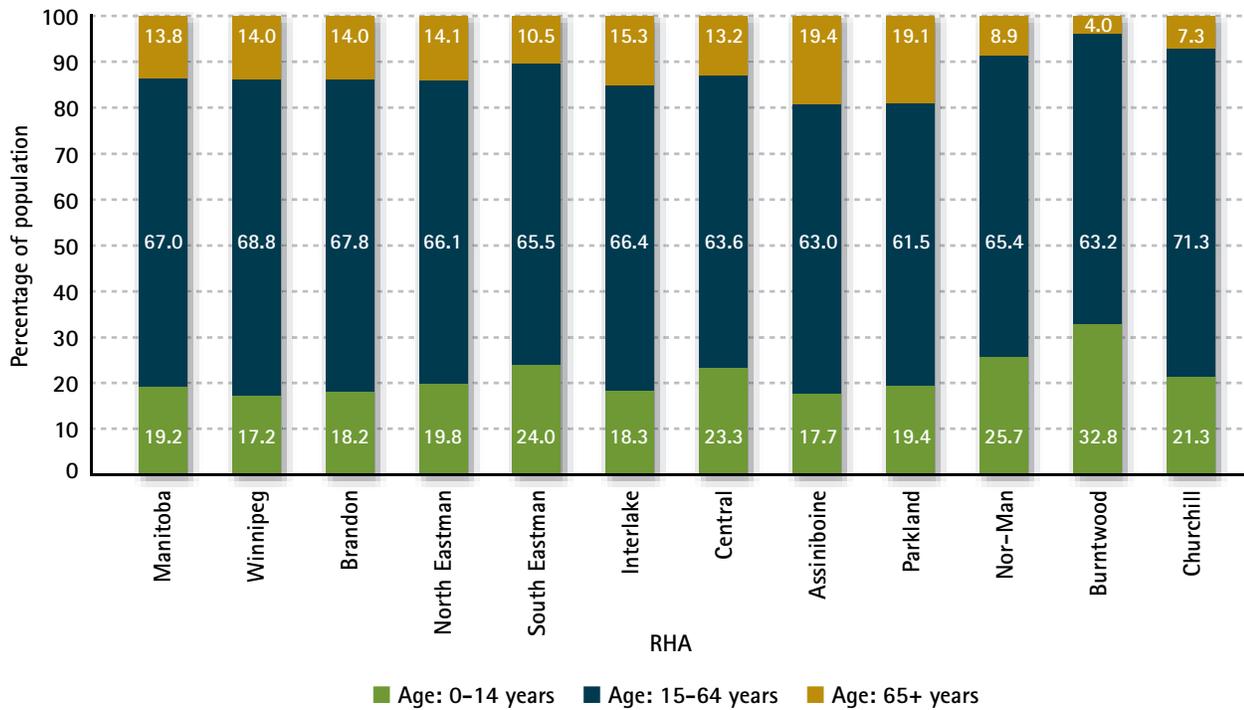


*All groups are five-year intervals except 0-4 and over 90.

The age distribution of the population of Manitoba's RHAs varies substantially. In 2009, Winnipeg, Assiniboine, Brandon and Interlake regions had proportions of children under age 15 that were below the provincial average. Burntwood and Nor-Man had the highest proportion of children among the 11 RHAs.

As shown in Figure 1.7 below, in 2009, the population aged 65 or over ranged from four per cent to 19% among the RHAs. Assiniboine and Parkland RHAs had the greatest proportion of seniors relative to the rest of their population, with nearly one in five residents being 65 years of age or older.

Figure 1.7: Population distribution by age and RHA, Manitoba, 2009¹



Manitoba’s Aboriginal population is significantly younger than the Manitoba average, with approximately one Aboriginal person in three under age 15 (36%).¹¹ The Aboriginal community has a lower median age (20 years old versus 38 years old) and proportionately fewer elderly adults. As a result, there is a significantly smaller proportion of residents over age 65 in those RHAs with a greater proportion of Aboriginal people (Nor-Man, Burntwood and Churchill) compared to other RHAs. Little change is expected in this trend over the next five to 10 years.

Health outcomes

The categories of outcomes described in this report are mortality, injury, mental health, chronic diseases and infectious diseases. Each outcome is briefly defined and information is presented on the burden of illness and death, trends and risk factors. The health outcomes included here are considered because of their impact on the health of the Manitoba population in the various stages of life, for their importance from a public health perspective and because of the availability of data.

Some health outcomes become apparent soon after an exposure to a known or suspected cause or associated risk factor, as is the case for injuries, acute conditions and many infectious diseases. Chronic conditions, on the other hand, often develop long after exposure or after long periods of exposure, as is the case with many cancers, cardiovascular disease and some infectious diseases. Such diseases and conditions may therefore show up in a later life stage than when the exposure actually occurred.

An “exposure” refers to a behaviour or an environmental substance or condition. Behaviours can include smoking and lack of physical activity. Environmental conditions include exposure to harmful substances like second-hand tobacco smoke, the physical conditions of the design of communities, and social conditions like poverty or crime. Most of these exposures are modifiable through interventions at the individual, family, community or population levels. Prevention strategies, therefore, need to address conditions and environments in the settings of everyday life to encourage choices that promote health. These factors, known as the determinants of health, are discussed later in this chapter.

A general description of some outcomes and their known causes or associated risk factors (exposures) is presented in this chapter to set the stage for conditions that appear in the life course chapters of this report. For example, while exposures associated with various cancers occur earlier in life, cancer is most frequently diagnosed in the adult and senior years. Therefore further details on various cancers and how they affect Manitobans is presented in the chapter on the senior stage of life.

Life expectancy

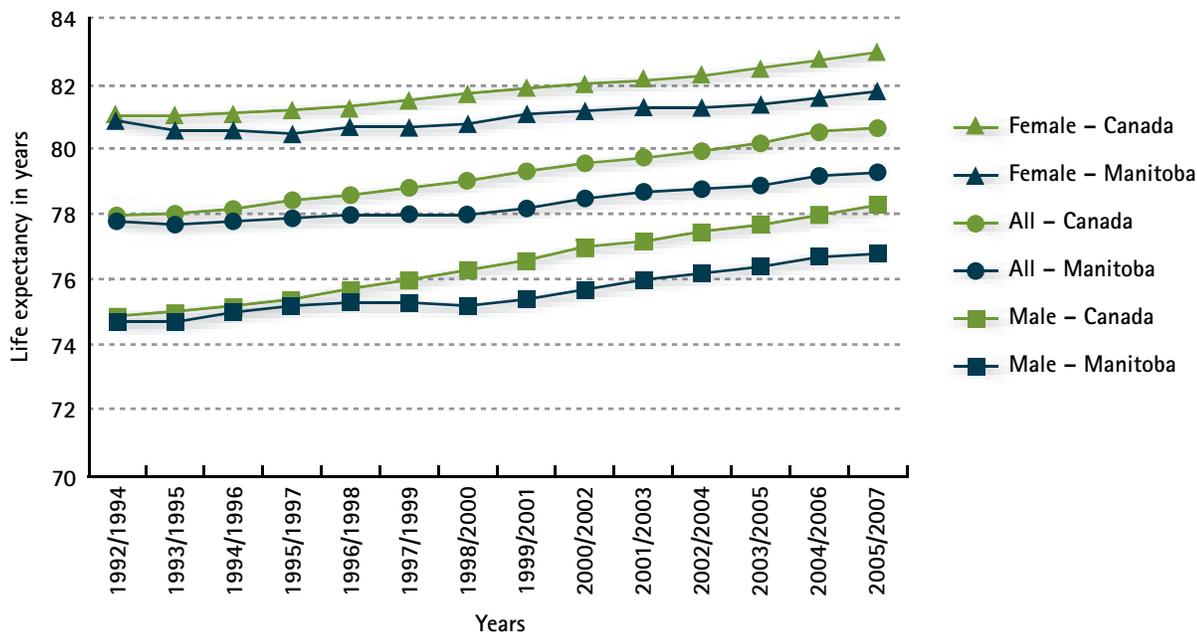
Life expectancy is the average number of years people are expected to live if current mortality rates continue to apply.¹² Life expectancy has been steadily increasing for both men and women in Manitoba and Canada, though Manitobans have experienced a shorter life expectancy than the Canadian average (Table 1.2).¹³ Women continue to outlive men, on average by about five years, a gap which may be narrowing.¹⁴

Table 1.2: Average life expectancy at birth in 2001 to 2005, Manitoba and Canada¹³

	Manitoba (years)	Canada (years)
Male	76.3	77.5
Female	81.5	82.4

Manitoba's increase in life expectancy for both men and women was lower than for Canada as a whole after 2003 (Figure 1.8). Among both men and women in urban and rural areas, those in lower income quintile areas* have a shorter life expectancy at birth, with life expectancy increasing as incomes rise (Figure 1.9).

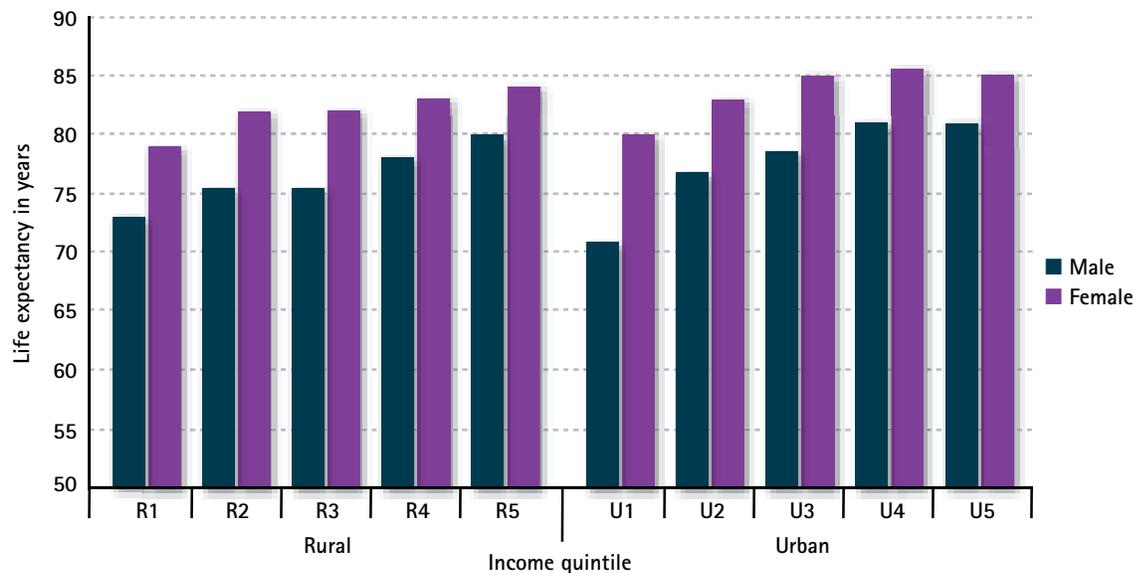
Figure 1.8: Average life expectancy at birth, Manitoba and Canada, 1992 to 2007¹³



Note: this is not a zero-based graph, so while it demonstrates increasing life expectancy at both the national and provincial levels, the proportionality of change is exaggerated in appearance.

* **Income quintiles:** Each quintile represents one fifth of the population, ranked by average household income. People are assigned to a specific income quintile by methods which link their postal code to census data and the average household income in that census area. The lowest income quintile is referred to as U1 for urban areas (Brandon and Winnipeg) and R1 for rural areas; the highest income quintile is referred to as U5 and R5 (*Manitoba Centre for Health Policy, 2010*).

Figure 1.9: Life expectancy at birth by income quintile area and sex, Manitoba 2001 to 2005¹⁴

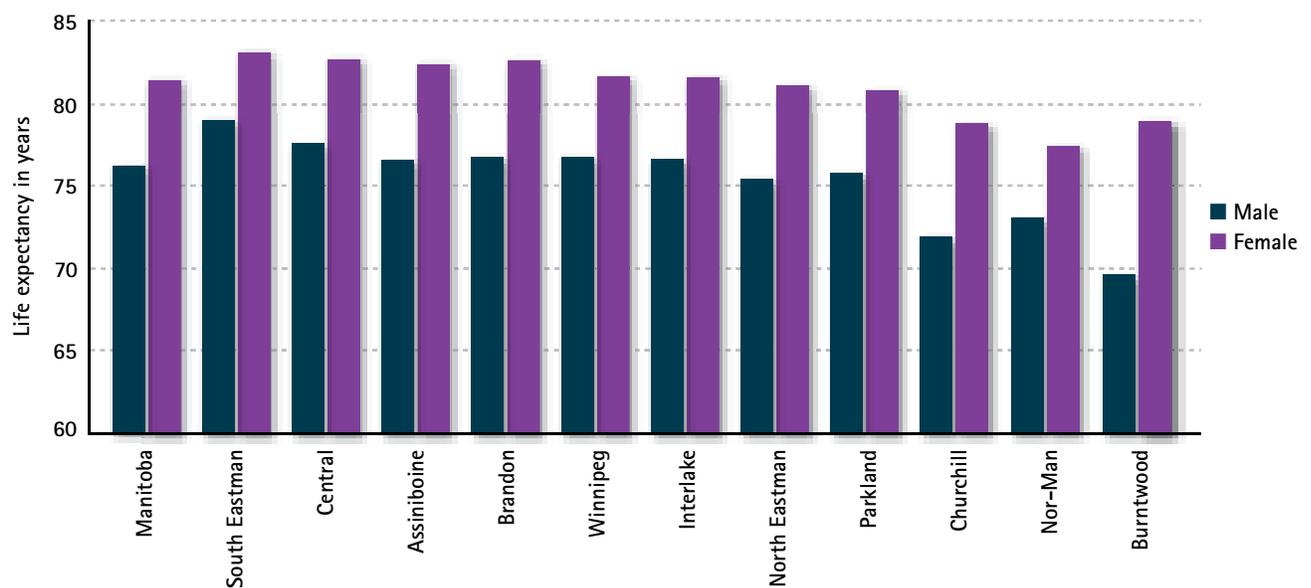


Note: this is not a zero-based graph, so while it demonstrates increasing life expectancy at both the national and provincial levels, the proportionality of change is exaggerated in appearance.

Average life expectancy by regional health authority (RHA)

From 2001 to 2005 there were differences in life expectancy at birth among Manitobans in different RHAs (Figure 1.10). Consistent with what has been observed elsewhere, women have experienced longer life expectancy than men in all RHAs.

Figure 1.10: Average life expectancy at birth by sex and RHA, Manitoba, 2001 to 2005¹⁴



Note: this is not a zero-based graph, so while it demonstrates increasing life expectancy at both the national and provincial levels, the proportionality of change is exaggerated in appearance.

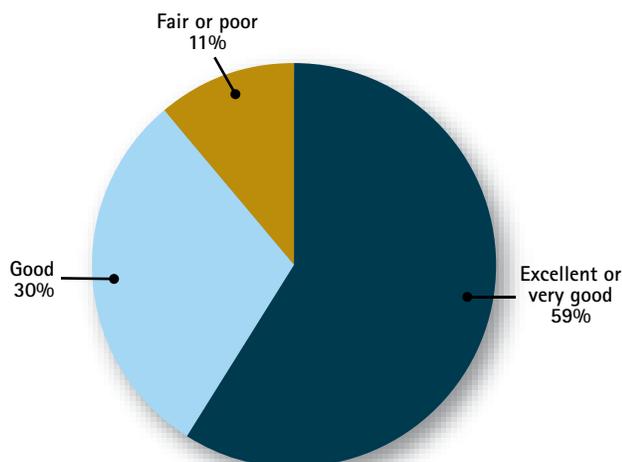
The longest and shortest life expectancy at birth were seen in South Eastman and Burntwood RHAs respectively. Men in the South Eastman RHA have a life expectancy nine years longer than men in Burntwood, while women in South Eastman have a life expectancy seven years longer than women in Burntwood. In general, northern RHAs had the lowest life expectancies in the province. In 2009, men and women in the Aboriginal population experienced a lower life expectancy compared to the non-Aboriginal population (Table 1.3).

Table 1.3: Average life expectancy at birth by Aboriginal group and sex, Manitoba^{15*}

Life expectancy at birth	1999	2009
Non-Aboriginal		
Male	75.9	76.9
Female	81.8	82.7
Aboriginal		
Male	70.0	71.9
Female	76.5	77.3

* Estimates based on Census 2006 and more recent Inter-Census data to create 2009 results.

Figure 1.11: Self-rated health, Manitobans age 12 and older¹⁶



Self-rated health

Self-rated health is a measure of how people describe their own health. It is measured on a four-point scale: excellent, very good, good, and fair or poor. Among Manitobans age 12 and older who participated in the *Canadian Community Health Survey (CCHS)* in 2003, most rated their health as excellent or very good (Figure 1.11).¹⁶ Manitobans' self-rated health is similar to that of other Canadians.

Mortality

Age-specific mortality rates are the basis of calculating life expectancy. The priority of public health is to reduce premature and preventable deaths while improving quality of life – adding years of life and life to years. Therefore, ranking causes of death by potential years of life lost (PYLL) helps establish priorities for preventive action.

Premature mortality rate (PMR)

Premature mortality rates (PMR) reflect those deaths that occur before the average life expectancy has been reached. The age- and sex-adjusted premature mortality rate (PMR) in Manitoba decreased from 4.2 to 3.3 deaths per 1,000 people when comparing the two time periods of 1984 to 1988 and 2004 to 2007. This reflects improvement in life expectancy. Approximately 40% of all deaths in Manitoba are considered premature by this definition.¹⁴

If there were no inequalities, premature deaths would be equally distributed throughout the population: the population in each income quintile, 20% of the total population, would each experience 20% of premature deaths.¹⁷ In reality, approximately one-third of premature deaths are experienced by those in the lowest-income quintile (33% in urban areas; 29% in rural areas), which comprises one-fifth of the population. A significantly smaller proportion of premature deaths occur among those in the highest-income quintile (12% for urban areas and 17% for rural areas).¹³ Premature mortality rates across income quintiles for both rural and urban areas were found to decrease as income increases.¹⁷ The socio-economic gap in premature mortality appears to have widened over time for both rural and urban Manitobans.¹⁷

PMRs are substantially higher among Aboriginal people in this province. Between 1995 and 1999, the PMR for First Nations people was seven deaths per 1,000 people, double the overall rate for Manitoba (3.33 per 1,000).¹⁷ From 2002 to 2006, the PMR for Metis people was four per 1,000. When comparing PMR by RHA, Parkland, Churchill and Burntwood RHAs experienced increases in PMR over time.* Parkland, Nor-Man, Churchill and Burntwood RHAs experienced PMRs higher than the provincial average from 2001 to 2005.¹⁷

Potential years of life lost (PYLL)

Potential years of life lost (PYLL) provides more information than premature mortality rate (PMR) because it provides a sum of the number of years of life lost due to premature deaths – defined as deaths occurring prior to age 75. For example, if someone dies at age 25, this contributes 50 PYLLs to the total. Premature mortality rate and PYLL can provide important perspectives on the impact of various health outcomes on the population. For example, the number of suicides per year and overall suicide rates (12 per 100,000) may seem low compared to other causes of death, but because suicide affects a younger population, it creates a high number of PYLLs. Therefore, when looking at PYLL, suicide appears as an important preventable outcome. From 2004 to 2008 in Manitoba, the greatest contributor to PYLL among the population as a whole was cancer, followed by unintentional injury, heart disease and suicide (Figure 1.13).

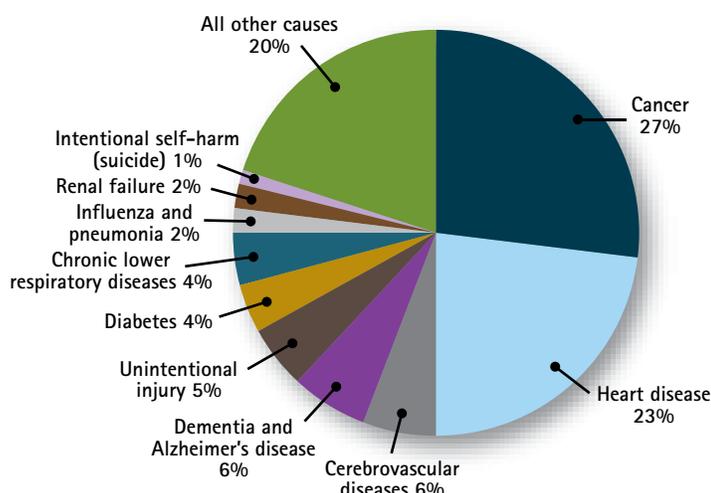
A widening of the socio-economic gap in PYLL has been seen for Manitobans in both rural and urban areas since the 1980s, but was

* Time period of 1996 to 2000 and 2001 to 2005.

more pronounced for those living in urban areas.* Whereas no improvement in PYLL was seen for Manitobans in the lowest-income quintile, all other income quintiles did show improvement. Between 2004 and 2007, urban Manitobans in the lowest-income areas experienced more than one-third of the PYLL, while constituting only one-fifth of the population.*

Aboriginal people in Manitoba have substantially higher rates of PYLL. For First Nations males the annual PYLL from 1995 to 1999 was 158.3 years per 1,000 people (2.5 times the rate for other Manitoba males), while the First Nations female PYLL rate was 103.3 years per 1,000, nearly three times the rate for other females. From 2002 to 2006, the Metis PYLL rate was 64.6 years per 1,000, compared to 54.6 years per 1,000 for other Manitobans.¹⁸

Figure 1.12: Leading causes of death among Manitoba population, 2004 to 2008¹⁹



N = 49,710 with an average of 9942 deaths per year in the five-year period.

Table 1.4: Leading causes of death, Manitoba, 2004 to 2008¹⁹

Cause of death	Average # deaths per year	% total deaths
Cancer	2660	26.8
Heart disease**	2276	22.9
Cerebrovascular disease, ex: stroke**	634	6.4
Dementia and Alzheimer's disease	582	5.9
Unintentional injury	465	4.7
Diabetes	412	4.1
Chronic lower respiratory diseases	406	4.1
Influenza and pneumonia	245	2.5
Renal failure	163	1.6
Intentional self-harm (suicide)	143	1.4
All other causes	1956	19.7
Total deaths	9942	100

Leading causes of death and PYLL

The leading causes of death in Manitoba, Figure 1.12 and Table 1.4, and top contributing causes of potential years of life lost to Manitobans are outlined in (Figure 1.13 and Table 1.5). The following section describes important causes of death in more detail. In the life course chapters, many of these outcomes are described as they pertain to each stage of life.

* Time periods studied: 1984 to 1988 and 2004 to 2007.

** Combining heart disease and cerebrovascular disease make cardiovascular disease the largest group of diseases causing death (22.9+6.4=29.3%) but the second leading cause of PYLL (12.8+2.3=15.1).

Figure 1.13: Potential years of life lost for causes of death, 2004 to 2008¹⁹

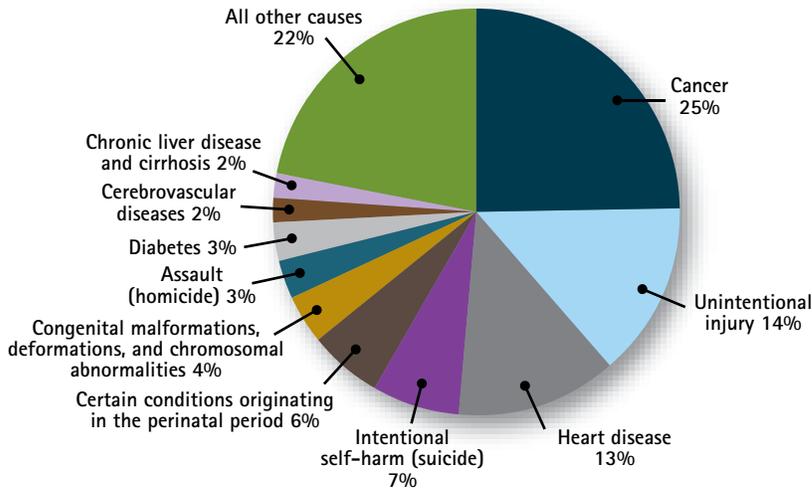


Table 1.5: Potential years of life lost for causes of death, 2004 to 2008¹⁹

Cause of death	% total PYLL
Cancer	24.9
Unintentional injury	13.7
Heart disease*	12.8
Intentional self-harm (suicide)	7.2
Certain conditions originating in the perinatal period	5.5
Congenital malformations, deformations and chromosomal abnormalities	4.3
Assault (homicide)	3.2
Diabetes	2.8
Cerebrovascular diseases, ex: stroke*	2.3
Chronic liver disease and cirrhosis	2.0
All other causes	21.5
Total PYLL	100

* Combining heart disease and cerebrovascular disease make cardiovascular disease the largest group of diseases causing death (22.9+6.4=29.3%) but the second leading cause of PYLL (12.8+2.3=15.1).

Injuries

Injuries are typically categorized according to whether they were considered to be intentional or unintentional. For example, suicide and homicide are considered intentional injuries. Injuries resulting from falls are considered unintentional.

Burden of injuries in Manitoba

- Injuries are among the four most common reasons for hospitalization as well as death.
- From 1992 to 2001:²⁰
 - an average of 570 deaths per year
 - an average of 12,100 per year*
 - Injuries represent eight per cent of all hospitalizations for Manitobans
- Between 1992 and 1999, deaths due to injuries accounted for an average of 28.4 years of potential life lost for each Manitoban who died as a result of an injury.²⁰ Of these:
 - 60% of years were lost due to unintentional injuries.
 - 28% of years were due to suicide
 - seven per cent of years were due to assault
 - five per cent of years were due to an undetermined cause
- Causes of injury deaths between 2001 and 2005 included:¹⁰
 - suicide (23%)
 - unintentional falls (20%)
 - motor-vehicle collisions (16%)
 - poisoning, including drug overdoses (9%) (all unintentional)
 - homicides (7%)
- Individuals who experience lower injury rates tend to:²¹
 - live in a higher-income neighbourhood, in South Eastman RHA and any Winnipeg community area, except Point Douglas and Downtown
 - be free of physical or mental health challenges
 - be younger, if female
 - and be older, if male

* Refers to episodes of hospitalization and not individuals because one person could be hospitalized multiple times in a year.

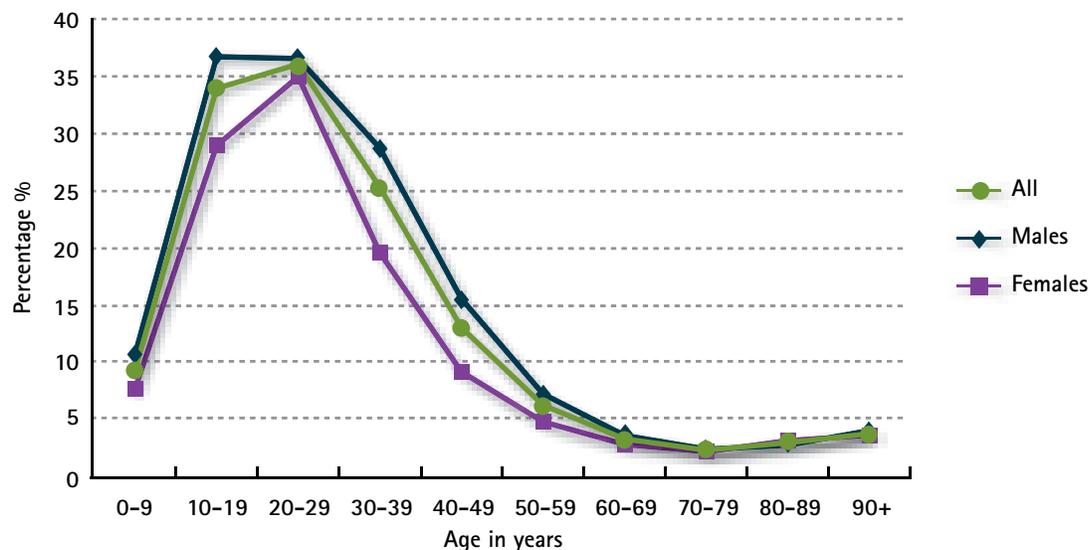
From 1992 to 2001, the leading causes of injury hospitalization in Manitoba were falls, motor-vehicle collisions, self-inflicted injuries, assaults and being struck by or against an object (unintentional).²⁰ During this period, the overall rate of injury-related hospitalization was one per 100 people per year. To put this in perspective, in 2001, hospitalizations due to external causes (injuries plus adverse effects of medical treatments) represented eight per cent of all hospitalizations in the province. It is important to note that this does not include those who had injuries that did not result in hospitalization but who were seen in an emergency room or physician's office, or those who had day procedures.

First Nations people were at increased risk of death and hospitalization due to injuries. The rate of hospitalization among First Nations was more than three times that of Manitobans overall (men four times, women three times).²⁰

Unintentional injuries

Unintentional injury is the most common type of injury death. Between 2004 and 2008, there was an average of 465 unintentional fatal injuries per year, contributing 14 per cent of all potential years of life lost.¹⁹ In the time period from 1992 to 1999, unintentional injury caused more than two-thirds (67%) of all injury deaths.²⁰ The death rate for unintentional injuries was 33 per 100,000 Manitobans. There was also a significant sex difference in unintentional injury death. The death rate for men (42/100,000) was almost double that of women (24/100,000).²⁰

Figure 1.14: Proportion of deaths due to unintentional injury by age in Manitoba, 2004 to 2008¹⁹



Unintentional injury is also the most common cause of injury-related hospitalization. In Manitoba, from 1992 to 2001, 84% of all injury-related hospitalizations were due to unintentional injury. The leading causes of unintentional injury deaths and injury hospitalizations were motor-vehicle collisions and falls.²⁰

Motor-vehicle collisions

- Between 2004 and 2008, deaths due to motor-vehicle collisions were among the top 10 causes of potential years of life lost in Manitoba, contributing three per cent of the total PYLL.¹⁹ There was an average of 91 traffic fatalities per year between 2005 and 2009, a 10% decrease from the previous five years.²²
- Between 2005 and 2009, there was an average of 6,154 traffic-related injuries, a 16% decrease compared to the previous five years.²²
- Young people remain the most likely group to be involved in a crash, particularly men between the ages 16 and 24.²²

Falls

- From 1992 to 1999, an average of 82 Manitobans died per year because of falls, with similar proportions among women and men.²⁰
- Falls were the most common cause of injury deaths for Manitobans 65 and older, a group that accounts for 86% of deaths due to falls.¹⁹
- From 1992 to 2001, there were an average of 5145 hospitalizations per year due to falls, approximately 14 per day, with a higher proportion among women (3153) than men (1992).²⁰
- Seniors accounted for almost two-thirds (64%) of hospitalizations related to falls.²⁰
- From 1999 to 2001 hospitalization rates due to falls were 432 per 100,000 per year.²⁰

Risk factors for falls²³

Children:

- Age (severity decreases with age)

- Sex (males twice as likely to be injured as females)
- First Nations (fall rates 1.3 times higher than non-First Nations)
- Mechanism of injury changes with age and impacts severity

Older Adults:

- Biological: advanced age (80+), chronic diseases, cognitive impairments, sex (female), muscle weakness, poor physical fitness, physical disability, sensory deficits, balance impairments
- Behavioural: alcohol abuse, fear of falling, inadequate diet, exercise, inappropriate footwear, carrying a handbag
- Environmental: community hazards, home hazards, and institutional hazards
- Socio-economic: inadequate housing, inadequate access to services, income inadequacy, lack of support networks, lower educational levels, social isolation

Intentional self-injury (suicide)

Table 1.6: Suicide in Manitoba

Annual number of deaths associated with suicide (from 2004 to 2008) ¹⁹	Average of 143 per year Females: 38 Males: 105
PYLL (from 2004 to 2008) ¹⁹	Average of 35 PYLL per death from suicide Suicide contributed seven per cent of all PYLL
Average age at death (from 2004 to 2008) ¹⁹	Both: 41 Females: 38 Males: 42
Highest rates ²⁴	Men age 85 and older (34 per 100,000) Men age 20–24 years of age (25 per 100,000)
Suicide rate ²⁴	12 per 100,000
Most common methods used in suicide completion ²⁵	Females: poisoning Males: hanging
Annual average of attempts ²⁵	Females: 535 Males: 297
Most common methods used to attempt suicide ²⁵	Females and males both use poisoning most often

Populations at highest risk for suicide

Suicide attempts are more common among people in low-income areas. Among Manitobans living in areas with the lowest average household income, rates among males were found to be twice as high and females four times as high compared to those living in areas with the highest average household income. Approximately 40% of all suicides and suicide attempts combined were experienced by the 20% of the population in the lowest income quintiles in both rural and urban areas from both 1984 to 1986 and 2005 to 2007. This socio-economic gap remained relatively stable over time. However, the incidence of suicide attempts and deaths among urban Manitobans in the lowest income areas increased sharply after 2002.¹⁷

In 2000, the national suicide rate among First Nations was twice that of the total Canadian population (24 vs. 12 per 100,000).²⁶ However, rates among First Nations communities vary widely. Although the personal or individual factors that influence suicide are complex regardless of ethnicity or culture, the prevalence and interaction of these factors may be different for Aboriginal people due to their history, from colonization to modern-day interactions with political and social institutions.²⁶ In Manitoba, suicide deaths are almost three times more common among First Nations people on-reserve than non-First Nations people.

Injury deaths by assaults, motor-vehicle collisions and poisoning are at least twice as common among on-reserve First Nations people as non-First Nations people.²⁶ Some experts believe that many injury deaths among First Nations people in Canada are actually suicides.²⁶ This

may apply to all Manitobans. Suicide attempts resulting in hospitalization are six times more common among First Nations people both on and off-reserve than among non-First Nations individuals. First Nations females attempt suicide more than twice as often as First Nations males, but males are almost three times more likely to die by suicide.²⁶

In 2002 and 2004, the Burntwood region of Manitoba had the highest crude suicide rates in the province at 31 and 38 per 100,000, respectively, compared to southern regions such as Brandon and Central, where suicide rates in these years were about two to four per 100,000.²⁷ Suicide rates in the Burntwood region are about three times the overall provincial rate (14 per 100,000 from 1994 to 2003).²⁸ Northern Manitoba has the highest percentage of Aboriginal people and the suicide rate in the region was higher among Aboriginal people than non-Aboriginal people.

Family violence

As defined by the Canadian Community Justice Statistics (CCJS), family violence includes the physical or sexual abuse of any member of a family unit.* The impact of violence on the health of victims is significant. In a statement released in 2005 by the Society of Obstetricians and Gynaecologists of Canada (SOGC), violence was identified as “a significant cause of mortality and morbidity” for women.²⁹ Women who experience violence have an increased risk for substance abuse, mental disorders, chronic physical disorders and sexual health complaints.²⁹ Sexual violence carries similar outcomes in addition to increased risk of suicide, depression,

* Family members include spouses, children, siblings, parents or other persons related to the victim by blood, marriage or another legal relationship (such as adoption). Spousal violence includes violence against legally married, common-law, separated and divorced partners.

sexually transmitted infections (STIs), physical injuries and long term emotional trauma for those of any age who experience it. Because abuse carries with it complex emotions, social stigma and social isolation, it is a crime that frequently goes unreported and therefore uninvestigated.

The Statistics Canada data below includes self-reported incidents and police data collected by the CCJS. It does not include emotional or psychological abuse or neglect. These data likely underestimate the true extent of family violence.³⁰

Spousal violence

- Six per cent of the 19 million Canadians who have current or former spouses reported being physically or sexually victimized by that person in the five years preceding the survey.³¹ This rate has been stable since the last survey in 2004.
- Manitoba's rate of spousal violence was 7.4% in 2009, and 7.3% in 2004.³⁰ Manitoba has the highest rate of male victims of spousal violence in the country at over 8% versus 6.5% for females.³⁰ Manitoba was also the only province in which reports by male victims were higher than among female victims.
- Female victims report more serious forms of violence than men, including sexual assault, being beaten, choked and threatened with a weapon.
- Rates of spousal violence are highest among young adults (aged 25 to 34), those in common-law relationships and those living in blended families.
- There has been a steady decline in police-reported spousal violence over the nine year period of 1998 to 2006. It is possible that this relates more to the number of cases actually reported to police rather than a decline in abuse itself.

- The socio-demographic risk factors for spousal violence include sexual orientation, presence of a physical or mental limitation or condition, Aboriginal identity, visible minority status and immigrant status.
- Those who self-identified as gay or lesbian were more than twice as likely as those who self-identified as heterosexual to report having experienced spousal violence, while those who self-identified as bisexual were four times more likely than those who self-identified as heterosexual to report spousal violence.³⁰

Violence against children/youth

- Nearly 55,000 which is approximately one per cent of all children and youth, were the victims of a reported sexual offence or physical assault in 2009. Parents were responsible for over half (59%) of all family-related violence against children.³⁰
- In 2009, the national rate of family-related sexual offences was more than four times higher for girls than for boys. The rate of physical assault was similar for girls and boys.

Seniors

- Reports of family violence occur more often among younger age groups than against older adults. The rate of reported violence against seniors in 2009 was two and a half times lower than the rate for 55 to 64 year olds, and about 15 times lower than the highest at-risk group (aged 15 to 24 year olds). However, over 24,000 police reported victims of violent family crime were seniors nation-wide in 2009.³⁰
- Reported violence against seniors in Canada has increased by 14% since 2004.

Family-related homicides

- Manitoba's rate of family-related homicide is almost twice the national rate.³⁰
- Spousal homicide rates were highest for youth 15- 24 years of age, and women are much more likely to be the victim than men (in self-identified heterosexual relationships). Homicides of children and youth represented nine per cent of all homicides in Canada in 2007. Of those, 41% were perpetrated by a family member.
- Data on the prevalence of violence against Aboriginal women varies; however, it appears that they experience higher levels than non-Aboriginal women. The Aboriginal Justice Inquiry (1991) stated at the time that violence and abuse in Aboriginal communities "has reached epidemic proportions" and estimates that one in three is abused by her partner while 80% have personally experienced family violence.³² A study of women attending an inner-city Winnipeg health clinic (44% of whom were Aboriginal) found that 21% of the subjects had been physically assaulted, 19% had been sexually abused before the age of 18, and 16% had been raped.³³

Mental health and well-being

The World Health Organization (WHO) defines mental health as "a state of well-being in which the individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to her or his own community."³⁴ Good mental health is an essential part of good overall health, contributing to quality of life and associated with better physical health, educational attainment, participation in the economy and social relationships.³⁴ The following tables shows that Manitobans' views of their own mental health and satisfaction with life is comparable to that of other Canadians.

Table 1.7: Self-rated mental health, ages 12 and older: Manitoba and Canada, 2005³⁵

Self-rating	Manitoba	Canada
Excellent	34%	37%
Very good	36%	36%
Good	24%	20%
Fair or Poor	5%	5%
Not stated	2%	2%

Table 1.8: Self-rated life satisfaction, ages 12 and older: Manitoba and Canada, 2009³⁶

Self-rating	Manitoba	Canada
Very satisfied or satisfied	91%	92%

Mental disorders

Characteristics of positive mental health include resiliency, a positive outlook, healthy relationships and inner strength. These characteristics may apply to those with and those without a mental disorder.³⁴ Mental illness and mental disorder are used interchangeably in this report. Mental illness is a diagnosable condition characterized by altered thinking, mood or behaviour associated with distress and/or impaired functioning.³⁷

A mental disorder, according to the Government of Canada's *The Human Face of Mental Health and Mental Illness in Canada*, is characterized by alterations in thinking, mood or behaviour, or a combination, associated with significant distress and impaired functioning. The symptoms of mental disorders vary from mild to severe, and are affected by the type of mental illness, the individual and family and the socio-economic environment. Mental disorders take many forms, including mood disorders, psychotic disorders, anxiety disorders, personality disorders, eating disorders and addictions such as substance dependence and gambling.³⁸ These can be chronic conditions, can adversely affect physical health and can be associated with addictions, poverty, homelessness and an increased need for health care services. Mental disorders are also a risk factor for suicide.²⁴

A study of the treatment prevalence* of mental illnesses in Manitoba found that 37% of Manitobans age 10 years and older were treated for one or more mental illnesses.**²⁵ Of these, 24% (one in four) were treated for one or more of five major mental disorders: depression,

anxiety disorder, substance abuse, personality disorder and schizophrenia in the period from 1997/98 to 2001/02.

Depression and anxiety disorder were the most common mental illnesses between 1996 and 2006 and increased slightly over that period. Overall prevalence rates vary geographically and with income.¹⁴ Overall, people with these five mental disorders visit physicians and are hospitalized for various health problems at more than twice the rate of those with no diagnosed mental disorders. Approximately one in 10 physician visits in Manitoba was for mental health reasons.¹⁴

Mental illness is complex and involves interactions of genetic, biological, personality and environmental factors; specific risk factors include:³⁸

- family history of mental illness
- age
- sex
- substance abuse
- chronic diseases
- family/workplace/life-event stresses.

Some risk factors can be modified and an early recognition of a mental disorder with an appropriate response can improve outcomes. Factors like good parenting, social support, meaningful employment, adequate income and physical activity all contribute to better mental health and can assist with recovery.³⁸ The association between lower income and mental illness is more strongly evident in data on urban areas than in rural areas, although because this

* "The treatment prevalence of "cumulative disorders" is an age-adjusted percentage of the population aged 10 or greater that have one or more of the [selected] mental illness diagnoses, as defined using our administrative database definitions in the five-year period from 1997/98 to 2001/02.... The numerator is the number of people in a five-year period, with the denominator being the entire cohort."

** This study defined mental illness as including: depression, anxiety disorders, substance abuse, schizophrenia, personality disorder, dementia, ADD or ADHD.

association represents treatment prevalence it may reflect a variation in availability and/or utilization of services rather than actual rates of mental illness.

Participants interviewed for the report *Out of the Shadows At Last: Transforming Mental Health, Mental Illness and Addictions Services in Canada* indicated that social supports can help people with mental disorders cope and recover. These include employment assistance, adequate housing, education, self-help, and peer support.

Depression

Major depression is the leading cause of years lived with disability worldwide.³⁹ Depression is the most common mood disorder, a category which also includes bipolar disorder (manic depressive disorder) and chronically depressed mood (dysthymia). Because of the stigma associated with depression and mental illness in general, many people with depression never seek treatment. Approximately 80% of those who do seek treatment will experience significant improvement.³⁹ Women experience hospitalization rates due to mood disorders at a rate one and a half times higher than men (general hospitals).³⁹

Anxiety disorders

Anxiety disorders are a group of disorders that affect behaviour, thoughts and emotions and can cause considerable distress. There are different types of anxiety disorders, including generalized anxiety disorder, panic disorder, and social anxiety disorder. People suffering from an anxiety disorder are subject to intense, prolonged feelings of fright and distress, often for no obvious reason. Individuals severely affected by anxiety disorders are also more likely to have either another type of anxiety disorder,

major depression or depressed mood, alcohol or substance abuse, or a personality disorder.³⁹

Substance use disorders

Defining substance use disorders is challenging and inconsistent in the literature, as the current trend is towards describing a spectrum of use (available in the appendix). The traditional definition of substance use disorder has been “a habitual pattern of alcohol or illicit drug use that results in significant problems related to aspects of life, such as work, relationships, physical health, financial well-being, etc.” There are two mutually exclusive sub-categories: substance *abuse* and substance *dependence*. In some cases, substance *use* (as distinct from abuse or dependence) has a negative impact on people with mental health problems.³⁹ (These terms are further described in the glossary.) The Manitoba Centre for Health Policy (MCHP) includes the following physician diagnoses in defining substance abuse: alcoholic psychoses, drug psychoses, alcohol dependence, drug dependence and nondependent abuse of drugs.

Personality disorders

The American Psychiatric Association (APA) defines personality disorders as an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the culture of the individual who exhibits it.⁴⁰ There are several forms of personality disorders and the social and personal disruption can range from mild to serious.

Schizophrenia

Schizophrenia is a complex disorder that is characterized by disturbances in thought, perception, affect, behaviour and communication. Symptoms include delusions and/or hallucinations,

Mental illness in Manitoba

Depression

- Almost one in five aged 10 and older had been treated for depression (18%) from 1997/98 to 2001/02.²⁵
- Five per cent of Manitobans ages 15 and older surveyed met all measured criteria for a major depressive episode in the 12 months prior to survey.⁴¹
- Women were twice as likely to be treated for depression and to be prescribed antidepressants as men (24% vs. 13%), with similar findings in all RHAs and most health districts.²⁵
- In Winnipeg and Brandon, treatment prevalence is strongly associated with neighbourhood income, with the highest prevalence in the lowest income areas.²⁵ This relationship is much less evident in rural Manitoba and there may be a slight gradient in the opposite direction, with higher treatment prevalence in higher income areas.²⁵

Anxiety disorders

- Anxiety disorders are among the most common of all mental health disorders; one in 10 people may be affected.
- They are more prevalent among women than among men.³⁹
- The five-year treatment prevalence for anxiety was seven per cent among Manitobans aged 10 years and older.²⁵

Substance abuse disorders

- The five-year treatment prevalence of substance abuse disorders for Manitobans aged 10 and up was six per cent.²⁵

Personality disorders

- The five-year treatment prevalence of personality disorders among Manitobans aged 10 years and older was 1.1%.²⁵

Schizophrenia

- The five year treatment prevalence for schizophrenia among Manitobans age 10 was 1.2%.

lack of motivation, social withdrawal, paranoia and disorganized thought, mood and speech.

Multiple mental disorders

People who have one mental illness often have a co-morbid mental illness at the same time. This is called a co-morbid mental illness. Of the 37% of Manitobans aged 10 and older who were treated for one or more condition:²⁵

- two-thirds were treated for only one condition.
- one-third were treated for more than one condition.
 - Of those diagnosed with depression, half had one or more co-morbid conditions.
 - Of those people with anxiety disorders, three-quarters also had at least one other condition.
 - Of those treated for substance abuse, half had at least one other diagnosis.
 - Of those treated for schizophrenia, three-quarters also had at least one other condition.
 - Of those treated for personality disorder, nearly all had at least one other condition.
 - Of those treated for dementia, two-thirds had at least one other condition.

Chronic diseases

Chronic diseases are those diseases which persist over time – usually years. They can be non-communicable or communicable, physical or mental.⁴² Four chronic diseases (heart disease and stroke, cancer, chronic obstructive pulmonary disease (COPD) and diabetes) account for 60% of global deaths.⁴³ In Manitoba, chronic diseases are among the leading causes of death and potential years of life lost, specifically: heart disease and stroke, cancer, diabetes and renal (kidney) failure. Six out of ten Manitobans have one of the following chronic conditions: arthritis, asthma/COPD, diabetes, coronary heart disease and stroke.⁴⁴ One in five Manitobans has two of these chronic conditions.⁴⁴

A Manitoba study reported additional costs for treating Manitobans with one of these conditions compared to Manitobans without that same condition as being from two and a half times higher for asthma/COPD, to as high as six and eight times higher for coronary heart disease and stroke.⁴⁴ While some risk factors for chronic disease are genetic, more than half of premature deaths due to chronic disease are considered preventable.⁴⁵

Key modifiable risk factors for major chronic diseases are:⁴⁶

- smoking
- physical inactivity
- diet
- excess weight

The total costs in Manitoba attributable to the health effects of these risk factors in 2008 have been estimated at \$1.62 billion, which includes an estimated \$492 million in direct costs and \$1.12 billion in indirect costs.⁴⁶

Cardiovascular diseases

Cardiovascular (CV) diseases include those diseases which affect the blood vessels to the heart (ex: heart attack), the structure of the heart (ex: valve defects), the blood vessels in the rest of the body (ex: peripheral vascular disease), and those supplying the brain (ex: stroke).⁴³ Atherosclerosis (hardening of the arteries) is an example of a disease of the blood vessels throughout the body and affects the organ or body system served by those blood vessels, such as the heart or kidneys.⁴³

Cardiovascular diseases were responsible for one-third (32%) of deaths in Canada in 2004. Cardiovascular diseases are considered to be a key health threat and an opportunity for health improvement because an estimated 80% of these diseases are preventable and we know how to prevent, manage and control them.⁴³ Risk factors for CV diseases are shared by other chronic diseases.

Rates of CV diseases in Manitoba

- In Manitoba, heart disease was the second leading cause of death between 2004 and 2008, causing an average of 2,276 deaths per year, 23% of all deaths.¹⁹
- Heart disease contributed an average of 8,832 PYLL per year and was the fourth leading cause of PYLL, contributing 13% during that time period.¹⁹
- Cerebrovascular diseases caused an average of 634 deaths per year (6% of all deaths), and was among the top 10 causes of PYLL (2%).¹⁹
- In 2006/07, the prevalence of diagnosed hypertension among Manitoba adults age 20 and older was 20%, the same as the Canadian average.⁴⁷

Some risk factors for CV diseases are:

- High blood pressure, high blood cholesterol, being overweight, and related major behavioural risk factors like an unhealthy diet, physical inactivity and tobacco use.⁴²
- Age (risk increases with age).⁴³
- Genetic and biological risk factors for CV disease include:⁴³
 - Sex (males are more likely to develop CV disease at a younger age but, recently, more women than men have died from CV disease).
 - Race/ethnicity:
 - being of South Asian descent (more likely than other Canadians to die from a heart attack when they are young).
 - being Aboriginal (1.5 to two times more likely to develop heart disease than the general Canadian population).
- Social determinants: socio-economic status and level of education (more risk among poorer and less educated people) and social inequalities.⁴³
- High levels of stress.⁴⁸

Heart disease

Heart disease is responsible for 4.5 years of lost life expectancy per person each year in Canada.⁴⁹ Heart disease caused by narrowed heart arteries, generally due to atherosclerosis, is called ischemic heart disease (IHD), coronary artery disease or coronary heart disease. It can ultimately lead to heart attack (acute myocardial infarction).¹⁴ The prevalence of ischemic heart disease in 2005/06 was 8.5%, a decrease from 2000/01 (9.0%).¹⁴ Heart disease was the second leading cause of death in Manitoba between 2004 and 2008, causing 23% of all deaths, a total of 2,276 deaths.

In Manitoba in 2009, of \$3.6 billion spent on health care, \$500 million (13%) was spent on coronary heart disease (CHD) alone.⁴⁴

Cerebrovascular diseases

Cerebrovascular diseases were the third leading cause of death for Manitobans between 2004 and 2008, causing 6% of all deaths, a total of 634 deaths per year.¹⁹ Stroke is the most common cerebrovascular disease. Strokes are caused by a blood clot which blocks blood flow to or within the brain. From 2004 to 2008, strokes caused 4.2% of all deaths and an average of 419 deaths per year.¹⁹ Cerebrovascular diseases have similar risk factors to other cardiovascular diseases.

Hypertension (high blood pressure)

Blood pressure refers to the pressures in blood vessels when the heart contracts and relaxes. High blood pressure is an outcome with its own causes and risk factors, as well as a risk factor for other outcomes, namely heart disease and heart attacks, strokes, kidney disease, blindness and aneurysms.⁵⁰ This is why efforts to prevent, screen for and control high blood pressure are important.⁵¹ Hypertension often co-exists with other cardiovascular disease risk factors such as obesity, high levels of fats or lipids in the blood and diabetes. Having multiple risk factors increases the risk of heart attack or stroke.⁴⁷

In 2006/2007, the prevalence of diagnosed hypertension in Manitoba was 24% (26% for women and 22% for men); this is the proportion of the population in that year who had ever been diagnosed with hypertension. In the same time period, the incidence rate (newly diagnosed cases) per 1,000 people was: 22/1,000 Manitobans; and was slightly higher among men: 23/1,000 vs. 22/1,000 among women.⁴⁷

Risk factors for hypertension include:

- high dietary sodium intake
- obesity
- high alcohol intake
- inactivity
- smoking

Recommendations for preventing hypertension include: exercise, maintaining a healthy weight, limiting alcohol intake to two or less standard drinks per day, stopping smoking; managing stress, and eating a healthy diet lower in salt.⁵²

High sodium intake is a key contributor to hypertension and most Canadians consume too much salt. Current guidelines recommend that the sodium consumption of Canadians should be about 1,500 milligrams or less per day, depending on age. An upper tolerable limit of 2,300 milligrams per day has been recommended. The average Canadian adult consumes an estimated 3,000 milligrams or more of sodium per day.⁴⁷

In Manitoba, cases of hypertension have increased since 1984/85. In 2008/09, there were 235,696 hypertension cases among adults age 20 years and older.* The prevalence of hypertension increases with age, with strongest increase between the ages of 50 and 70. By age 85, 80% of Manitobans have been diagnosed with hypertension. This is due, in part, to normal changes associated with aging, ex: arteries becoming less pliable, and also due to the cumulative effects of the modifiable risk factors described previously.⁴⁷

Cancer

CancerCare data for Manitoba shows that an average of 5,633 new cases of cancer were diagnosed per year between 2005 and 2007. The age-standardized rate was lower among women than among men in this time period (425 versus 509 per 100,000). Close to three-quarters of all cancers were diagnosed among Manitobans aged 60 and older. Less than one per cent of all cancers were diagnosed in Manitoba children (ages 0 to 19 years). Women between 30 and 49 years of age had a higher percentage of cancer than men (13% versus 7%) but this reversed for those aged 60 to 79 (44% versus 56%).

Leading cancers among Manitobans

In 2005 to 2007 ten types of cancer accounted for 73% of all diagnoses. The four most common types accounted for more than one-half (55%) of all cancers.

Table 1.9: Leading cancers

Type of cancer	Proportion of all cancers	Average number of cases annually
Lung and bronchus	15%	844
Breast	14%	806
Colorectal	14%	793
Prostate	12%	657
Non-Hodgkin's lymphoma	5%	252
Kidney	3%	185
Uterus	3%	178
Melanomas of the skin	3%	145
Pancreas	2%	130
Bladder	2%	128

* Based on administrative data and CCDSS hypertension case definition – either 2 physician diagnoses or one hospital diagnosis in two years.

Cancer-related deaths¹⁹

In Manitoba between 2004 and 2008, cancer accounted for:

- 27% of all deaths (an annual average of 2,660 deaths)
- 25% of all PYLL
- Three types were the leading causes of cancer-related death and PYLL:⁵⁴
 - Bronchus and lung:
 - Annual average of 644 deaths (7% of all deaths)
 - Annual average of 3,966 PYLL (6% of all PYLL)
 - Survival of five years from diagnosis for lung cancer: 19%
 - Breast:
 - Annual average of 206 deaths (2% of all deaths)
 - Annual average of 1,814 PYLL (3% of all PYLL)
 - Survival of five years from diagnosis: 84%
 - Colon:
 - Annual average of 206 deaths per year (2.1% of total)
 - Annual average of 1,175 PYLL per year (1.7% of total)
 - Survival of five years from diagnosis for colorectal cancer: 57%

In Manitoba, cancer is the leading cause of death and leading cause of potential years of life lost.

Rates of most types of cancer have been stabilizing and in some cases declining in Canada in recent years. Death rates for most major types of cancer have been declining with the exception of lung cancer among women.

In the 1960s only one in three people survived cancer. The Canadian Cancer Society reports that today 62% of people diagnosed with cancer survive, based on average five-year relative survival rates.⁵³ The probability of developing cancer in a lifetime is approaching 50% for both men and women. Breast cancer for women and prostate cancer for men are the most common. Details on the lifetime probability of developing and dying from specific cancers are provided in the appendix.

Modifiable risk factors for cancer

It is estimated that one-half of all cancers could be prevented based on current knowledge of causes. Risk factors for cancer include:

- tobacco use
- alcohol use
- unhealthy diet
- physical inactivity
- overweight and obesity

Screening

Screening programs are in place in Manitoba for breast, cervical and colorectal cancers. Breast cancer screening (mammography) is offered to Manitoba women 50 to 69 years of age every

two years. This screening can reduce breast cancer deaths by 25% in women in this age group. Cervical cancer screening (Pap test) is recommended for all women, beginning three years after the onset of sexual activity and every two years thereafter. Regular Pap tests can prevent up to 80% of cervical cancer. Screening for colorectal cancer with the Fecal Occult Blood Test is recommended every two years for individuals of average risk between the ages of 50 and 74. Screening with these tests has been shown to decrease mortality from colorectal cancer by 25%.⁵⁵

Diabetes

Diabetes is a chronic disease characterized by elevated levels of sugar in the blood. There are three types of diabetes: Type 1 (juvenile insulin-dependent diabetes), Type 2 (adult-onset, non-insulin dependent) and gestational diabetes (pregnancy-associated).

Between 2004 and 2008, diabetes was among the top 10 causes of death for Manitobans (4% of all deaths) and an important contributing cause of PYLL (3% of all PYLL).

Risk factors for Type 2 diabetes that are modifiable include being overweight and being physically inactive. Women who are overweight

also have a greater risk of developing gestational diabetes (see the pregnancy and the newborn chapter for more details).⁵⁶

Complications of diabetes include cardiovascular diseases (heart attacks, strokes, limb loss), kidney disease, nerve dysfunction and loss of vision.

Kidney disease

Kidney disease can lead to chronic kidney failure and eventually the need for dialysis and/or a kidney transplant.⁵⁹ The rate of chronic kidney disease in Manitoba is the highest in the country, at 2.5 times the national rate, with an estimated 100,000 Manitobans suffering from some degree of chronic kidney disease.⁵⁶ Kidney failure was the identified cause of an average of 163 deaths per year between 2004 and 2008 (2% of all deaths).¹⁹

In addition to diabetes, other risk factors for kidney disease include:⁵⁹

- high blood pressure
- urinary tract disorders
- auto-immune disease (such as lupus)
- family history of kidney disease
- cardiovascular disease
- excessive use of known kidney toxins (such as pain killers)

Complications of diabetes among Manitobans⁵⁷

Cardiovascular diseases

- People with diabetes were almost 3.5 times more likely to be hospitalized due to a cardiovascular disease than people without diabetes.
- Cardiovascular disease rates among people with diabetes have gradually decreased over the years, from an average of about 68 per 1,000 diabetes cases in 1988 to 1993; to 58 per 1,000 diabetes cases in 2000 to 2005. The rate of decrease was higher for women than for men.
- Cardiovascular disease rates among First Nations people with diabetes were more than 60% higher than in the overall Manitoba population with diabetes (average age-adjusted rates).
- Women with diabetes have an elevated risk of experiencing ischemic heart disease, heart attacks or heart failure. Although the risk is also elevated in men, the risk is significantly higher in women.

Chronic kidney disease

- Manitobans with diabetes were almost 10 times more likely to be diagnosed with chronic kidney disease than Manitobans without diabetes.
- Average age-adjusted rates of kidney disease in First Nations people with diabetes were more than twice as high as the rate for Manitobans overall.
- People with diabetes are more likely to be hospitalized for chronic kidney disease.
- On average 877 people with diabetes per year were in hospital in Manitoba with chronic kidney disease between 1999 and 2004.

Lower-limb amputations

- Lower-limb amputations associated with diabetes have gradually declined by about 35% since 1996/97.
- Between 1999 and 2004, there were 1,550 lower-limb amputations performed on Manitobans age 20 and older; an average of 310 per year. Of those, 1,186 had diabetes (77%).

The rate of amputation is higher among

- Males: lower limb amputations – twice as common in males as in females
- Aboriginal people: First Nations adults with diabetes – more than three times the rate of Manitobans with diabetes overall (average, aged adjusted)
- People living in lower income neighbourhoods¹⁷
- People living in the north

Chronic lower respiratory diseases

Chronic lower respiratory diseases such as chronic obstructive pulmonary disease (chronic bronchitis and emphysema) were among the leading causes of death for Manitobans from 2004 to 2008, with an average of 406 deaths per year. However, these diseases were not among the top 10 contributing causes of PYLL during this same time period, because death from chronic lower respiratory diseases tends to occur later in life.

Chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is a chronic and potentially life-threatening lung disease in which chronic obstruction of airflow in the lungs interferes with normal breathing. COPD can be treated and managed but is not fully reversible. The term COPD includes chronic bronchitis and emphysema.⁵⁸

In 80% to 90% of cases, cigarette smoking is the main underlying cause of COPD. However, several other modifiable risk factors are known to contribute to this disease including:

- exposure to second-hand smoke
- occupational exposure to certain types of dust, such as from coal and grain or fumes

These risks may be cumulative. Symptoms of COPD, such as shortness of breath, have been associated with outdoor air pollution. Decreased lung function, which may predispose a person to COPD, has been associated with repeated childhood respiratory tract infections and exposure to second-hand smoke during childhood.⁵⁶

Asthma

Asthma is a common chronic inflammatory disease of the airways, resulting in symptoms such as wheezing, shortness of breath and chest tightness due to constriction of the

airways. Some research suggests that the fetal development and early childhood periods are important determinants of susceptibility to childhood asthma. Suspected risk factors for asthma include:⁵⁶

- Family history of allergies and allergic disorders (including hay fever, asthma and eczema)
- High exposure of susceptible young children to airborne allergens (pets, house dust mites, cockroaches, mould)
- Exposure to tobacco smoke, including in utero
- Frequent respiratory infections early in life
- Low birth weight and respiratory distress syndrome (RDS)

Oral health

Oral health is important for quality of life, affecting physical, mental and social well-being. Pain, discomfort and malalignment of teeth can affect speech, enjoyment of healthy foods and an individual's self-image and self-confidence. Oral disease has been linked to several negative health outcomes, including diabetes, heart disease and stroke, as well as preterm and low birth weight babies. The nature of these associations is not yet fully understood, but enough is known to say that achieving and maintaining good oral health is an important component of overall health and well-being.⁶⁰

The Canadian Dental Association and the Federal/Provincial/Territorial Committee on Drinking Water support the fluoridation of municipal drinking water as an important public health measure to prevent cavities.⁶² In Manitoba, a total of 46 water treatment plants provide fluoridated water to approximately 89 communities. Approximately 95% of the population served by a public water system receives fluoridated water.

Canadian oral health statistics (2007 to 2009)

Preventive behaviours⁶¹

- 73% of Canadians brush twice a day.
- 28% floss at least five times a week.
- 32% of children aged six to 11 have one or more sealants.*

Treatment needs

- 34% of Canadians ages six to 79 years of age (who have teeth) had some sort of treatment need identified by the dentists.

Dental insurance

- 62% of Canadians have private dental insurance.
- 6% have public insurance.
- 32% have no dental insurance.

Self-rated oral health

- 12% of Canadians avoid certain foods because of problems with their teeth or mouth in the past year.
- 12% of Canadians report that they had ongoing pain in their mouth in the past year.

Visiting a dental professional

- 74% of Canadians have seen a dental professional in the last year.
- 17% of Canadians avoided going to a dental professional in the last year because of the cost.
- 16% of Canadians avoided having the full range of recommended treatment due to the cost in the last year.

* Sealants are plastic coverings placed on the chewing surfaces of back teeth to help keep teeth free from decay.

Infectious diseases

Infectious diseases are caused by microorganisms (i.e. bacteria, viruses, fungi and protozoa). From a public health perspective, they are usually categorized by their route of transmission, or how they are spread. Routes of transmission are explained in the appendix.

Effective vaccines are available for an increasing number of infectious diseases. Vaccine-preventable diseases are discussed primarily in the chapter on children, except for influenza and pneumococcal pneumonia, which are introduced below and discussed in further detail in the chapter on seniors.

Infectious disease rates show a strong relationship with behaviours and social determinants of health such as poverty, crowding, and geography of residence. For example, tuberculosis rates are substantially higher among First Nations people and among foreign-born Manitobans. Sexually transmitted infection rates are higher among people in low-income areas and among Aboriginal people, and are especially high among incarcerated populations.

Respiratory infections

There are many infectious diseases which are transmitted through contact with respiratory secretions, such as coughing and sneezing. Some of these have relatively mild effects, such as the common cold, and others can be more serious, causing pneumonia and sometimes resulting in death. Three important respiratory infectious diseases discussed in this report are: influenza, invasive pneumococcal disease and tuberculosis. Together, influenza and pneumonia were among the top 10 causes of death in Manitoba in 2004 to 2008, causing 245 deaths, 2.5% of all deaths.¹⁹

Influenza

Influenza is a respiratory disease caused by the influenza virus. It can cause a variety of symptoms, such as fever, cough, aches and physical exhaustion. Influenza can cause pneumonia. Influenza tends to be more severe in the very young, especially infants less than one year old, and in older seniors. A vaccine is available every fall for the influenza viruses expected to circulate in the annual flu season. Those at increased risk of complications of influenza are especially encouraged to get flu shots. The pandemic H1N1 influenza A virus of 2009 had a different pattern than usual with higher rates of severe illness among people less than 65 years old.

Most people do not seek care for influenza and of those who do, most are diagnosed based on their symptoms alone and are not tested. Therefore the reported rates of influenza underestimate the actual amount of influenza in the community. It is estimated that about one-third of the population are infected every year with influenza and more than 100 Manitobans die from complications of influenza.

Invasive pneumococcal disease

Invasive pneumococcal disease (IPD) is caused by streptococcus pneumoniae bacteria. In 2009, there were 138 reported cases of IPD in Manitoba.⁶² Pneumococcal disease can result in blood poisoning, meningitis (infection of the fluid surrounding the brain and spinal cord), and pneumonia.

IPD is of greater frequency and/or increased severity in the following individuals:⁶³

- those less than two years of age
- those 65 years of age and older
- Black and Aboriginal populations
- people without a spleen

- people with chronic medical conditions such as heart, lung or kidney disease and sickle-cell disease
- immune-compromising conditions such as HIV infection or those taking immune-suppressing therapies
- alcoholics
- diabetes
- organ or stem cell transplant recipients
- children with or receiving cochlear implants

Tuberculosis

Tuberculosis (TB) is a bacterial infection that usually affects the lungs but can also affect other areas of the body. TB can be cured with drug treatment, typically for six to nine months. A person with active, untreated TB can spread the disease to others through coughing or sneezing. TB usually spreads only through close, frequent and prolonged contact with someone who has untreated active pulmonary TB.

In the first half of the 20th century, tuberculosis was a major cause of illness and death in Canada, after which rates of disease and death rapidly declined. Improvements in general living conditions, public health measures to interrupt transmission and the availability of effective drug treatments are credited with this rapid decline.⁶⁴ While Manitoba has also shared in these improvements, TB continues to be a persistent threat in Manitoba, especially among Aboriginal people, immigrant and disadvantaged populations.

In Canada, the number of TB cases among Aboriginal people has declined recently, but the proportion of cases among Aboriginal people has not changed.⁶⁴ In 2008, the Manitoba rate of TB was nearly five times higher among Aboriginal people than in the general population (51 vs. 12 per 100,000 people); two-thirds of all TB cases occurred among Aboriginal people

and one-quarter of cases occurred among the foreign-born population.⁶⁵ Manitobans in the lowest-income quintiles in both rural and urban areas experienced the greatest proportion of hospitalizations due to TB, when comparing data over 20 years.* This socio-economic gap increased over time for rural areas and decreased slightly for urban areas. In rural areas, the proportion of TB hospitalizations attributed to the lowest-income group increased over time, with almost 60% of all hospitalizations due to TB among rural Manitobans in the lowest-income quintile. Similar inequality was found among those in the lowest income group in urban areas over the same time period who experienced about half of all hospitalizations due to TB among urban Manitobans.¹⁷

People at increased risk of getting TB include:⁶⁶

- those who have had close contact with known or suspected TB cases
- people with a history of active TB or a history of having been inadequately treated for TB
- people living in communities with high rates of TB, particularly when overcrowding conditions exist
- the urban homeless
- residents of long-term care and correctional facilities

Alcoholism, poor nutrition and drug abuse increase risk for TB. HIV infection is an important risk factor for developing active TB.⁶³

Sexually transmitted infections and blood-borne pathogens (STBBIs)

Sexually transmitted infections (STIs) and blood-borne pathogens (BBPs) are infectious diseases transmitted through direct contact with blood

and/or body fluids of infected individuals. The STIs and BBPs included in this report include chlamydia, gonorrhea, human papillomavirus (HPV), hepatitis B and C and human immunodeficiency virus (HIV). Hepatitis B and C, and HIV are considered to be both STIs and BBPs, while chlamydia, gonorrhea and HPV are sexually transmitted infections. Both STIs and BBPs are preventable through the use of safer personal practices such as safer sex, safer injection drug use and not sharing personal items such as toothbrushes and razors.

Transmission of BBPs is possible through the use of equipment for medical or personal services like tattooing and piercing that has been inappropriately re-used or inadequately sterilized. Canada's blood supply is effectively screened, significantly limiting the current risk of transfusion-related infections. Hepatitis B and HPV are the only STIs at this time for which an effective vaccine exists.

Avoiding unprotected sex requires the self-confidence, assertiveness and communication skills to negotiate safer sex with potential partners. The ability to negotiate safer sex can be hampered by alcohol and drugs as well as by power imbalances in relationships. Understanding and achieving safer sex practices depends on factors including health literacy, functional family relationships, communication skills, school-based sexual education, and having access to healthcare services.

Chlamydia

Chlamydia is the most commonly diagnosed bacterial sexually transmitted infection in Manitoba and in Canada. It is common for those infected to not know that they have chlamydia,

* 1984/85 to 1988/89 to 2004/05 to 2007/09.

and consequently spread it to others. In addition to increasing risk of infertility, untreated chlamydia in pregnant women can result in postpartum endometritis (inflammation of the inner lining of the uterus), premature rupture of membranes and preterm delivery. Chlamydia can also be passed on to infants during childbirth, which may result in neonatal conjunctivitis (pink eye) or pneumonia.

Less frequently, there may be complications in men, such as epididymo-orchitis (inflammation of the epididymis and/or testicle) and other less common conditions. Infection with chlamydia can increase the risk of contracting and transmitting human immunodeficiency virus (HIV).⁶⁷ Chlamydia is preventable with the use of safer sex practices.⁶⁸ Chlamydia is treatable with antibiotics, but repeated exposure can lead to re-infection.⁶⁸

Gonorrhoea

Gonorrhoea remains the second most commonly reported sexually transmitted infection in Manitoba and in Canada.⁶⁷ Untreated gonorrhoea in women can lead to pelvic inflammatory disease (PID), which can cause chronic abdominal pain, infertility and ectopic pregnancy. In men, untreated infections can result in epididymitis and rare cases of infertility. An uncommon complication of gonorrhoea is the spread of infection to the blood stream and the joints.⁶⁸ Infection with gonorrhoea can also increase the risk of contracting and transmitting human immunodeficiency virus (HIV).⁶⁷ Gonorrhoea is preventable with the use of safer sex practices. Gonorrhoea is treatable with single-dose oral or injectable antibiotics. Re-infection with gonorrhoea is common.

Human papillomavirus

The human papillomavirus (HPV) is a sexually transmitted infection and certain types of HPV have been identified as a cause of some cancers, most notably cervical cancer. HPV is considered one of the most common STIs in Canada and is spread through sexual contact. HPV can be prevented by practicing safer sex, using condoms, and through vaccination.

Since the 2008/09 school year, Manitoba has offered HPV vaccine to grade six girls to reduce the risk of HPV infection, pre-cancerous lesions and cervical cancer. Seventy per cent of cancers are associated with HPV types 16 and 18. These are among the types of HPV targeted by the HPV vaccine. Women are also encouraged to have regular Pap tests to reduce the risk of cervical cancer.⁶⁹ In Manitoba, about 45 women are diagnosed with cervical cancer each year and there are about 15 deaths from cervical cancer each year.⁶⁹

Human immunodeficiency virus

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS). HIV is transmitted through blood, semen, vaginal fluid or breast milk.⁷⁰ The Public Health Agency of Canada estimates that at the end of 2005 there were approximately 58,000 (48,000 to 68,000) people in Canada with HIV (including those with AIDS), of whom approximately one-quarter of those with HIV infection were undiagnosed.⁷¹

High-risk behaviours for HIV infection include unprotected sexual activity (both heterosexual and involving men having sex with men) and injection drug use. Other exposure risks include perinatal transmission, from mother to child in utero, during childbirth, or through breastfeeding;

occupational exposure; and receiving blood or blood products from infected individuals.⁶⁸

People with HIV may have no symptoms for many years, underscoring the importance of testing among those at particular risk. The prognosis for HIV-infected persons is improved with treatment using combination antiretroviral therapies and/or appropriate prophylaxis against infections. It is estimated that more than 90% of individuals who are HIV positive will eventually develop AIDS if untreated. Effective treatment can reduce the viral load and hence transmission risk, and slow the progression to end-stage disease (AIDS).⁷¹

Hepatitis B

Hepatitis B is a vaccine-preventable viral infection of the liver caused by the hepatitis B virus (HBV). In addition to sexual contact, HBV can be spread through exposure to blood or blood products from infected individuals or through occupational exposure to blood and body fluids on non-intact skin, such as a needle-stick injury. Within six months of becoming infected, about 90% of adults will clear the virus on their own (acute hepatitis B) and develop lifelong protection against it. The remaining 10% of people who are infected are unable to clear the virus and will become chronic carriers. Chronic hepatitis B can result in liver cancer.⁷²

Hepatitis C

Hepatitis C (HCV) is one of the major causes of chronic liver disease.⁷³ The hepatitis C virus is transmitted through blood contact with someone infected with HCV. In Canada the predominant risk factor continues to be injection drug use, which is associated with 70 to 80% of new cases. Recent national estimates indicate that as of December 2007, approximately

242,500 Canadians had been infected with HCV, corresponding to a prevalence rate of approximately 0.7% of the total population.⁷³ Some of these infections have been associated with receipt of contaminated blood products prior to April of 1992.

Environmentally mediated, zoonotic, parasitic and emerging infectious diseases

There is increasing knowledge and interest in the short and long term impact of the environment on our health. A broad definition of the environment is “all that which is external to the individual human host – and can be divided into physical, biological, social, cultural, etc., any or all of which can influence health status of populations.”¹² “The environment provides the food people eat, the water they drink, the air they breathe, the energy they command, the plagues and pests they combat and the mountains, seas, lakes, streams, plants and animals that they enjoy and depend upon.”⁷⁵

The importance of the physical environment around us that comprises the air we breathe, the soil we use for farming, the water we drink, the stratospheric ozone layer we rely on for protection against ultraviolet rays, and the standards we use for food preparation, recycling and disposal of waste, should not be understated.⁷⁶

Arboviruses

Environmental sources, rather than person to person, including insects and pests, can be the source of infectious diseases. These diseases can be transmitted through a bite and are known as arboviruses. Some of these diseases are associated exclusively with international travel, such as malaria. In recent years, there has been an increase in awareness of environmentally

mediated diseases in Manitoba as well as the number of cases of certain emerging diseases. For example, Lyme disease is spread by infected blacklegged ticks (deer ticks) and has been identified in Manitoba. West Nile virus (WNV) emerged in Manitoba in 2002, and is transmitted by infected *Culex tarsalis* mosquitoes. Lyme disease and WNV can be prevented through the use of personal protection and other methods during times of potential exposure.

Enteric diseases

Enteric diseases (diseases that affect gastrointestinal function) can be transmitted by contaminated food and water, from person to person or environmental sources such as sewage exposure. It is estimated that up to one-third of food-borne illness is associated with food preparation at home, another third with commercially prepared foods and the remainder associated with foods prepared in restaurants or other settings. Common enteric diseases include *E.coli*, campylobacter and salmonella. In 2009, 817 enteric illnesses were reported to Manitoba Health, 343 of which were associated with food

sources, and of these, 74 (22%) occurred in cases involving travel outside Manitoba. Ensuring access to safe, clean drinking water, safe food production, storage and handling and adequate hand washing are ways to prevent contracting these contamination.⁶²

Antibiotic-resistant organisms

Currently in Canada, and in Manitoba, antibiotic-resistant organisms (AROs) primarily affect hospitalized patients. However, in the case of Methicillin-Resistant *Staphylococcus Aureus* (MRSA), a recent increase has been seen in the number of community-associated cases. As in Manitoba, the prevalence of MRSA is rapidly increasing in Canada.⁷⁷ Current expert opinion on the control of antibiotic resistance is that it is a difficult task requiring the reduction of unnecessary antibiotic prescribing for both humans and animals; enhanced infection control and environmental hygiene; and surveillance to identify trends in resistance. Overuse of antibiotics in humans and agriculture is considered a major factor in the increase of antibiotic-resistant organisms.⁷⁷

Risk factors and behaviours influencing health

Nutrition

Canada's food guide for healthy eating recommends four to six servings of vegetables and fruit daily for children aged two to 13, seven to eight servings for teens aged 14 to 18 and seven to 10 servings for adults aged 19 and older.⁷⁸

The diets of most Manitobans are high in salt and low in fruit and vegetables. Males in Manitoba are less likely than females to meet guidelines for a healthy diet (see Table 1.10).

Maintaining a healthy diet can be a challenge for some because of the cost of food, access to grocery stores, particularly in remote and northern communities and in the inner-city, or difficulty with food preparation. People who live alone may feel less motivated to cook healthy meals. The easiest and least expensive foods are often high in salt, fat or sugar and low in nutrients.

Nutrition is associated with the risk of developing cancer, coronary heart disease, stroke, hypertension, diabetes and obesity.⁷⁹ The World Health Organization (WHO) estimates that diet is directly related to 30% to 40% of cancer cases in men and

up to 60% of cancer cases in women.⁵⁴ Several studies have established associations among nutrient intake, nutritional status and various systemic diseases, such as coronary heart disease and stroke.⁸⁰ High sodium intake is a risk factor for high blood pressure and may also be a risk factor for obesity because salty foods encourage some people to drink more beverages high in sugar and calories such as juice, pop or beer. Some experts estimate that 20% to 30% of excess calories consumed by children and adolescents are due to this.⁸¹

Table 1.10: Reported intake of selected nutrients/foods of Manitobans in 2004⁸²

Nutrient / food	Females	Males	Both
Fruits and vegetables* four or fewer times per day	56%	66%	67%
Exceeding recommended sodium levels [†]	71%	93%	82%
Total fat intake within acceptable range [†]	87%	78%	83%
Fibre – above adequate intake level [†]	Not available	Not available	6%
Vitamin D – above adequate intake level [†]	22% [†]	37%	30%

*ages 12 and older

[†]ages 19 and older

^{††}interpret with caution; possible ± 16.6% to 33.3%

Many factors impact a person's ability to access nutritious food and to make healthy food choices. Factors such as social support systems, physical environment, income, education, and culture are associated with diet. For example, if the social support network (family and friends [peers]) support and promote healthy

In 2010, Winnipeg was named the Slurpee® Capital of the World for the 11th year in a row, having sold the most Slurpee® beverages in a geographic market anywhere in the world. An average of almost 189,000 Slurpees® are sold across the city monthly. A 1.8 litre cola Slurpee® has approximately 570 calories.

food choices, then people are more likely to make healthier food choices.⁸³ If the physical environment where a person lives provides regular and timely access to fresh and healthy foods, people have better nutrition status.⁸³ Individual characteristics such as income and education level also impact food choices and food security.⁸⁴ In Manitoba, one in ten individuals deal with food insecurity due to financial challenges, higher than the national average.⁸⁵ In Canada, there is a difference in the nutrition levels between Aboriginal people (both on and off-reserve) and the remainder of the population; Aboriginal people generally have poorer nutritional status overall.⁸⁴ In Manitoba, diabetes incidence and prevalence rates for Aboriginals are approximately three times higher than for the total population⁸⁵ which can be directly linked to nutrition in that population. Higher rates of certain food

choices (ex: carbonated drinks and foods low in nutritional value) have been shown to be specific contributors to this trend.⁸⁶

Overweight and obesity

Overweight and obesity are commonly defined by the body mass index, a formula based on an individual's height and weight.* Although not applicable in all circumstances, a BMI of 18.5 to 24.9 is considered a normal weight; 25.0 to 29.9 is overweight; and 30.0 or more is obese. People who live in lower-income areas or the north, or are Metis or First Nations are more likely to have excess weight.⁸⁷ Excess weight is a known risk factor for Type 2 diabetes, cardiovascular disease, hypertension, osteoarthritis, some cancers and gallbladder disease.⁸⁸ Psycho-social problems, functional limitations and disabilities are associated with excess weight.⁸⁸

Table 1.11

Disease category	Best estimate of population attributable risk ⁴⁶			
	Overweight		Obesity	
	Male	Female	Male	Female
Hypertension	5%	9%	12%	19%
Type 2 diabetes	18%	24%	40%	50%
Coronary artery disease	5%	10%	11%	2%
Pulmonary embolism	21%	16%	27%	27%
Colorectal cancer	15%	10%	14%	10%
Endometrial cancer	-	11%	-	26%
Osteoarthritis	30%	16%	29%	14%
Kidney cancer	12%	15%	13%	20%
Pancreatic cancer	-	-	21%	11%
Congestive heart failure	-	-	14%	13%
Chronic back pain	16%	12%	22%	22%

* BMI = weight(kg)/height(m)²

The number of people who are overweight and obese is an increasing concern across Canada and especially in Manitoba, where adult rates of obesity are higher than the national average and the proportion of children who are overweight or obese is high. This trend and the associated negative health outcomes are an increasing public health concern.

The proportion of various chronic diseases which could be attributed to being overweight or obese was assessed in a recent Manitoba study. The population attributable risk (PAR) is a calculation that indicates the proportion of a disease or condition that could be prevented or eliminated from the burden of disease on the population, if the risk factors were removed. For example, 50% of Type 2 diabetes among women could be eliminated if there was no obesity. (Or 74% if overweight [including obesity] were eliminated.)

Obesity is associated with individual-level and social factors such as sex, education, income and culture. There is little difference in the obesity rates between men and women but there is a clear difference in the overweight rates: more men than women are overweight.⁸⁹ The general trend is that the highest obesity rates are found in the population with the lowest education levels (those who have not completed high school) and lowest obesity rates are found in the population with the highest education levels.⁸⁹ The relationship to income is not as pronounced. Across Canada, higher-income women have lower obesity rates than lower-income women, but this association is not seen among men.⁹⁰ There are distinct differences by culture with the national obesity rates being particularly high amongst Aboriginal people, both on and off-reserve.⁹⁰ Many factors such as marketing and advertising of food products, changes in food portion size and other consumption patterns influence food choices and thus an individual's weight.⁹¹

Physical activity

The multiple benefits of exercise are widely accepted. Numerous studies indicate a direct relationship between decreasing activity levels and increasing body weights. In addition, physical activity has been shown to help people cope with and manage anxiety and depression, and it can have a positive effect on self-esteem.⁹²

Being inactive is considered a primary risk factor for many poor health outcomes. Exercise lowers the risk of disability, chronic illness and early onset of diseases such as diabetes, arthritis, heart disease, hypertension, stroke, osteoporosis, and some cancers such as colon, breast, prostate and endometrial. Women and men are 1.6 times more likely to have osteoporosis if they are physically inactive. The same is true for the risk of stroke.⁴⁶ Table 1.12 outlines the proportion of health outcomes that could be eliminated if those who are currently inactive were active instead.

Health Canada recommends between 20 to 90 minutes of activity per day, depending on an individual's age and the intensity of the activity.⁹³ As will be noted when the determinants of health are reviewed, the built environment is an important determinant in how active people are. The design of communities and facilities affects opportunities to be active. This includes important factors such as street lighting, active transportation infrastructure, the design of roadways, accessibility of community centres, access to stairs in multi-level buildings and the safety of our neighbourhoods.

A number of determinants are associated with physical activity levels. Physical inactivity rates are higher in the lowest education and lowest income groups. Income inadequacy impacts physical activity opportunities when convenient public transportation, affordable coaching,

instruction and classes, appropriate spaces, and facility access are lacking.⁹⁴ Females consistently participate less frequently in physical activity than do males.⁹⁴ Other barriers include building and neighbourhood design and transportation options.⁹⁵

Table 1.12: Proportion of disease attributed to physical inactivity among Manitobans: (leisure time, work and travel related physical activity combined)⁴⁶

Disease	Male	Female
Type 2 diabetes	12%	18%
Stroke	14%	21%
Coronary artery disease	11%	17%
Hypertension	8%	12%
Colon cancer	10%	16%
Osteoporosis	14%	21%
Breast cancer	–	12%

Substance use

Tobacco

Tobacco smoke contains over 4,000 chemicals, and about 50 of them are known to cause cancer. Despite reductions in smoking rates in the past three decades, smoking is still considered to be the leading cause of preventable deaths in Canada.⁷⁹ Researchers have identified a connection between adults smoking in their home and their children growing up to become smokers.⁹⁶

In Manitoba, the number of current, daily and occasional smokers fell from over 226,000 in 2000 to 197,714 in 2009, a 13% reduction.⁹⁷ Major reductions were seen in the 12 to 19 year old age group, where in 2000 19% were smokers and in 2009 the percentage of smokers dropped to 11%.

In a recent analysis of key risk factors in Manitoba, the proportion of the burden of diseases which can be attributed to smoking was found to be substantial; examples are provided below in Table 1.13. This considers two factors: the increased relative risk associated with smoking and the proportion of the population that smoke. It answers the question: In Manitoba, what percentage of all cases (of the identified diseases) in the population can be attributed to smoking.

Table 1.13: Proportion of disease attributed to smoking among Manitobans⁴⁶

Disease	Male	Female
Cancer of the lung, trachea, bronchus	64%	52%
Cancer of the larynx	55%	50%
Cancer of the lip, oral cavity and pharynx	67%	41%
Ischemic heart disease (ages 35 to 64)	27%	26%
Ischemic heart disease (ages 65+)	9%	9%
Cerebrovascular disease	32%	33%
Bronchitis, emphysema	77%	65%
Chronic airways obstruction	64%	60%

Exposure to second-hand tobacco smoke

As we have seen with tobacco smoking, exposure to second-hand tobacco smoke is also a known contributor to adverse health outcomes. Second-hand smoke also contains toxic substances, which are carcinogens. The following summarizes our knowledge of the health effects of second-hand tobacco smoke:

Economic impact

In its 2010 economic analysis of risk factors in Manitoba, the Heart and Stroke Foundation found that the economic impact of three key risk factors was substantial.

The total direct costs in Manitoba attributable to the health effects of smoking, physical inactivity and excess weight in 2008 are estimated at \$492 million, while the indirect costs are estimated at \$1.12 billion, yielding total attributable costs of \$1.62 billion. If the proportion of the population with the risk factors is reduced by 2% per year starting in 2011, the annual economic burden in 2026 would decrease \$424 million from a projected \$2.13 billion (with no risk factor reduction) to \$1.70 billion. The cumulative reduction in economic burden between 2011 and 2026 would be \$3.58 billion.⁴⁶

Table 1.14: Some adverse health effects causally linked* to second-hand smoke⁹⁷

In adults	In children
• Heart disease	• Reduced lung function
• Lung cancer	• Bronchitis, pneumonia and other lower respiratory tract infections
• Nasal sinus cancer	• Exacerbation of asthma
• Non-malignant respiratory disease	• Adverse neurobehavioural effects
	• In utero: low birth weight and small for gestational age, stillbirth or miscarriage

* A causal link suggests that there is evidence that a cause and effect relationship between exposure and outcome exists.

Table 1.15: Adverse outcomes associated* with second-hand smoke⁹⁷

In adults	In children
• Stroke	• Sudden infant death syndrome (SIDS)
• Breast cancer	• Adverse impact on cognition and behaviour
• Cervical cancer	• Decreased lung function
• Miscarriages	• Asthma
	• Exacerbation of cystic fibrosis
	• Cancers and leukemias in childhood
	• Slower growth

* An association suggests that there is evidence showing a relationship between exposure and outcome, but the nature of the relationship is unknown.

The proportion of Manitobans, along with other Canadians who report being exposed to second-hand smoke has decreased over the past 10 years, but is still significant.

Exposure to second-hand smoke at home

In 2009, six per cent of Manitobans reported being non-smokers who were exposed to second-hand smoke at home. This is a 38% decrease since 2003, when 11% were exposed. In 2009 in Canada, six per cent of people were non-smokers exposed to second-hand smoke in their home, and the group most likely to report exposure was children aged 12 to 19 (15%).⁹⁷

Exposure to second-hand smoke in vehicles

In 2009, nine per cent of Manitobans reported exposure to second-hand smoke in vehicles, higher than the Canadian average of seven per cent. The number of people reporting exposure in vehicles has decreased since 2003 in Manitoba by about 25%, as has been the case nation-wide.⁹⁷

Exposure to second-hand smoke in public places

In 2009, nine per cent of Manitobans reported having been exposed to second-hand smoke in public places. This has decreased by 50% since 2003. Ten per cent of Canadians reported being exposed to second-hand smoke in public places, particularly youth aged 12 to 19 who were almost twice as likely at 18%.⁹⁷

A number of factors and determinants are associated with smoking rates. These include marital status, gender, education, income, culture and ethnicity. In Canada, the rates of single parents who smoke are twice that of married parents.⁹⁸ Smoking rates across Canada are similar between males and females in their youth, but by early adulthood, more males than females smoke.⁹⁸ As well, girls/women who live with their parents are much less likely to smoke than boys/men who live with their parents.⁹⁸ Education levels are also closely linked to smoking behaviour. As education levels increase, smoking rates decrease.⁹⁹ Income is also associated with smoking rates. In Manitoba, for example, approximately twice as many people in the lowest family income category smoke compared with the highest family income category.¹⁰⁰ Culture and ethnicity are also associated with smoking rates: smoking among First Nations people in Canada is approximately three times the rate for the general Canadian population.¹⁰¹

Alcohol

Alcohol use is associated with both benefit and harm for individuals and at a social level, though the potential harms outweigh the benefits. Low to moderate use of alcohol has been associated with health benefits in some people, such as lower cardiovascular risk.¹⁰² On the other hand, alcohol is a risk factor for chronic diseases, such as cirrhosis of the liver, hypertension and some cancers, and is a significant factor in motor-vehicle collisions, violence, and verbal and physical abuse.¹⁰² Vandalism, sexually transmitted infections, unplanned pregnancies and fetal alcohol spectrum disorder are among the physical and social harms caused by intoxication. Prenatal exposure to alcohol is now considered to be the leading cause of birth defects in North America.¹⁰³ In Manitoba between 2004 and 2008, alcoholic liver disease was among the top 25 causes of PYLL, contributing 1.2% of all PYLL between 2004 and 2008.

The Canadian Centre for Addiction and Mental Health defines low-risk drinking as no more than nine drinks in a week for women and 14 for men. The Canadian Addictions Survey found that engaging in heavy drinking (four or more drinks on a single occasion for women, five or more for men) monthly or more frequently was the strongest predictor that a person will experience alcohol-related harm.¹⁰² Youth, offenders, the homeless, the elderly, pregnant women, young adults, First Nations, Inuit and Metis are, in general, considered to be more vulnerable to acute and chronic alcohol-related health and social problems.¹⁰²

Physical dependence on alcohol has serious implications for health and wellness. It is also true, however, that there is a much larger population of non-dependent drinkers who engage in heavy single-occasion drinking

or episodic binge drinking. This drinking behaviour is associated with significant and far-reaching impacts on the well-being and safety of individuals and communities.¹⁰² It has been estimated that 14% of Canadians are high-risk drinkers meaning that their pattern of drinking is either currently harmful or significantly increases the likelihood of future harm.¹⁰² The Manitoba rate of high-risk drinkers, among adults, is higher at over 25%.³⁶

Gender, marital status, education, and income are all associated with alcohol use. In general, more women drink in moderation yet higher proportions of men report heavy frequent or heavy binge drinking patterns.¹⁰⁴ Separated, divorced or widowed women were more likely than married women to currently drink. Single people and divorced, separated or widowed men are also more likely to binge drink than their married counterparts.¹⁰⁴ As education increases, binge drinking levels tend to decrease.¹⁰⁵ In general the consumption trends for alcohol tend to be inversely associated with income levels.¹⁰⁵ Canadians with less formal education and lower available income tend to experience disproportionately more harm from alcohol consumption.¹⁰⁶

Other substances

Fewer Canadians die from the use of illegal drugs such as marijuana, cocaine and crack, methamphetamine and heroin than from alcohol or tobacco use. When measured in PYLL, though, the impact is significant, because these deaths generally involve younger people.¹⁰⁷ Use of illicit drugs has been identified as a leading health indicator due to its association with a variety of health outcomes: sexually transmitted infections, HIV, viral hepatitis, injuries, violence and numerous social problems.¹⁰⁸

Impact of illegal drugs in Canada, 2002:¹⁰⁷

- 1,695 Canadians died as a result of illegal drug use, accounting for 0.8% of all deaths.
- Leading causes of death linked to illegal drug use in 2002:
 - overdose (958)
 - drug-attributable suicide (295)
 - drug-attributable hepatitis C infection (165) and HIV infection (87)
- Deaths linked to illegal drugs resulted in 62,110 potential years of life lost.
- Illegal drug-attributed illness accounted for 352,121 days of acute care in hospital.

Determinants such as gender, education level, marital status, social support networks and social environments are all associated with illicit drug use in Canada. In general, men have higher rates of illicit drug use, and in the case of marijuana (cannabis), also use more often than do women.¹⁰⁴ Over the life course, both women and men in the highest income-adequacy categories are more likely to use marijuana.¹⁰⁴ Education level appears to be a determinant of illicit drug use for males; for example, men who had completed a university degree are less likely to use marijuana, in their lifetime.¹⁰⁴ Single, separated, divorced and widowed women as well as single men are more likely to use marijuana.¹⁰⁴

Significant predictors of injection drug use relate to determinants such as poor social support networks, social environments, and coping skills.¹⁰⁹ For example, many injection drug users are in the care of Child and Family Services (CFS), live in a group home or live permanently on the streets. It is not typical that injection drug users rely on family for emotional or social support and many users are involved in criminal behaviour.¹⁰⁹

Financial burden of substance abuse

There is a significant social and financial impact from the use or misuse of alcohol, tobacco and illegal drugs. The Canadian Centre on Substance Abuse (CCSA) calculated the health care costs of substance abuse at \$8.8 billion. Almost 90% of all deaths due to drug use or abuse are related to tobacco and alcohol use or abuse.¹⁰³

Table 1.16: Estimated cost of substance abuse* in Manitoba, 2002¹⁰⁷

All Substances
<ul style="list-style-type: none"> • cost of substance abuse: \$1.5 billion • per capita cost: \$1,273, compared to \$1,267 nationally
Tobacco
<ul style="list-style-type: none"> • cost of tobacco use: \$676 million • 1.6% GDP • \$588 per person (smoker or not) • 46% of all substance abuse costs
Alcohol
<ul style="list-style-type: none"> • \$518 million • 1.2% GDP • \$450 per person (drinker or not) • 35% of all substance abuse costs
Illegal drugs
<ul style="list-style-type: none"> • \$270 million • 0.6% GDP • \$235 per person (user or not) • 18% of all substance abuse costs

* Costs included in the study: Direct health care costs, direct law enforcement costs, direct costs for prevention and research, other direct costs, ex: fire damage, traffic accident damage; indirect costs (productivity losses).

The CCSA compared the 1992 financial burden of substance abuse to those incurred in 2002 and found that the cost from tobacco use has decreased by 2.2%, while those related to alcohol abuse have increased almost 20% (19.6%). Costs associated with illegal drug use have increased by 75% over the 10 year span, and the CCSA notes that enforcement and policing are the second largest direct cost of substance abuse.¹⁰⁷ There is also the indirect cost of lost productivity in both the workplace and the home due to premature death and disability, estimated at \$24.3 billion in 2002.¹⁰³

Some important statistics on risk factors, behaviours and practices affecting the health of Manitobans

Nutrition⁸²

- 67% of Manitobans are eating less than the recommended daily fruit and vegetable servings (women: 56% and men: 66%).
- 71% of adult women and 93% of adult men exceed the recommended sodium intake.
- 13% of women and 22% of men reported consuming more dietary fat than recommended.

Physical activity⁴⁶

- 47% of Manitobans aged 12 and older were physically inactive, with rates almost the same between the sexes.

Overweight and obesity

- 55% of Manitobans aged 18 and over were overweight or obese (48% of women and 61% of men).⁴⁶
- Aboriginal people:
 - 62% (women: 56%; men: 69%) were overweight or obese.¹¹⁰
 - 75% of First Nations adults aged 18 and older living on-reserve in Manitoba reported being overweight or obese.⁴⁶
 - 41% of First Nations youth aged 12-17 years living on-reserve in Manitoba reported being overweight or obese.⁴⁶
 - 65% of Metis were overweight or obese.¹¹¹

Smoking

- 24% of Manitobans reported being current smokers.*
- 62% of First Nations people over age 18 years living on-reserve in Manitoba reported being a current smoker.⁴⁶
- 42% of First Nations youth aged 12 to 17 years living on-reserve in Manitoba reported being a current smoker.⁴⁶

* Excluding FN people living on-reserve.

Determinants of health

This section will introduce the determinants of health that are referred to throughout the report, providing information on how they relate to the health of the population. Data are presented below for some of these determinants to provide an overview of how they are distributed throughout the Manitoba population.

Determinants of health are those biological, environmental, social, economic, cultural and other factors that influence our health. This report uses the list of determinants originally recommended by the Federal Provincial and Territorial Advisory Committee on Population Health, subsequently modified by Health Canada and currently endorsed by the Public Health Agency of Canada. These are:

- income and social status
- employment/working conditions
- healthy child development
- education and literacy
- physical environments
- social environments
- social support networks
- culture
- personal health practices and coping skills
- health services
- gender
- biology and genetic endowment

Each of these determinants is important on its own and also in combination with the others.¹⁰⁸

Income and social status

Better health is associated with having higher incomes, higher education and higher occupational status.¹¹² Poverty, broadly defined as the deprivation of basic resources necessary

for healthy living, is associated with lower life expectancy and higher rates of disability and acute and chronic conditions. However it is not just poverty that impacts health outcomes, but socio-economic status more broadly. The relationship between health and socio-economic status (SES) demonstrates a gradient effect. This refers to the gradual change in health outcomes across the range of socio-economic status (i.e. income, education, occupation), with better health outcomes associated with higher SES. Males born in low-income neighbourhoods of Winnipeg have an average life expectancy 10 years less than that of males born in high-income neighbourhoods.¹¹³

Poverty is considered to be a key indicator of inequality and one of the most reliable predictors of poor (physical and mental) health and chronic disease.⁴² Poverty affects health through an interaction of economic, political and social processes that result in people being socially and economically disadvantaged. The impacts of inequalities are felt by the entire population, not just those directly affected individuals living in a neighbourhood with a lower average household income.⁴² There is evidence that populations with less inequality have better overall average health status.¹¹⁴

Income measures

There are several ways to define and report on low-income, and each measure has advantages and disadvantages. This report uses the Market Basket Measure (MBM) as the measure to describe income and poverty in Manitoba at a population level; however other measures are noted where they were deemed relevant and useful, and so are introduced here.

Median income

The median income is the level of individual income at which half the population has a lower income and half the population has a higher income. The median income of Manitobans aged 15 years and over in 2006 for females was \$20,169 and \$29,919 for males. The median household income in that year was \$47,875.¹¹⁵

Income quintiles

Income quintiles are created by dividing the population into five groups based on income (from lowest income to highest income) so that approximately one fifth (20%) of the population is in each group. Income quintiles are based on average household income values of a defined census area.¹⁷

Market Basket Measure (MBM)

The MBM determines low-income based on the cost of a “basket of goods and services” that includes food, clothing and footwear, shelter, transportation and a range of things people need, such as personal care, household equipment and supplies, telephone services, educational and recreational items and reading materials.

Households with incomes that are lower than the cost of basic goods and services are considered to be in low-income.

The MBM is considered more appropriate than other low-income measures, because it can account for differences in prices across the country, particularly related to transportation and housing costs.

Using the MBM, low-income rates in Manitoba have decreased at a faster rate compared to the national rate. The MBM low-income rate for Aboriginal people is 14% while the rate for Manitobans overall is eight per cent.¹¹⁶

Table 1.17: Proportion of population with low income by sex (MBM)¹¹⁵

	2000	2008	2000-08 Change
Manitoba			
All persons	10.8%	7.8%	-27.8%
Males	10.7%	6.7%	-37.4%
Females	10.9%	8.9%	-18.3%
Canada			
All persons	11.9%	9.5%	-20.2%
Males	11.1%	9.0%	-18.9%
Females	12.6%	9.9%	-21.4%

Table 1.18: Percentage of low income in children under 18 years (MBM)¹¹⁵

	2000	2008	2000-08 Change
Canada	14.1%	10.3%	-27.0%
Manitoba	15.1%	8.5%	-43.7%

Table 1.19: Percentage of low income in single-parent families (MBM)¹¹⁵

	2000	2008	2000-08 Change
Canada	33.6%	22.9%	-31.8%
Manitoba	40.7%	13.4%	-67.1%

The national trend shows a reduction in the proportion of the population living in poverty. In the last decade, the child poverty rate has decreased by 40%.¹¹⁷ Manitoba experienced a 67% reduction of poverty among single parents between 2000 and 2008.¹¹⁵ Despite these inroads, there is some evidence that the gap is growing between Manitobans living in high-income and low-income neighbourhoods.¹⁷

Food security

Food security means that people have access to enough nutritious food to meet their dietary needs and food preferences to live a healthy active life.¹¹⁸ The CCHS gathers information from Canadians on their level of food security. A score for the household is determined based on responses to questions and matched with categories of food security/insecurity: food secure; food insecure without hunger (moderately insecure); and food insecure with hunger (severely insecure).

Employment and working conditions

Unemployment, underemployment, workplace stress and danger, and a lack of control over circumstances of work are all associated with negative health outcomes. For the past several years, Manitoba has consistently had one of the lowest unemployment rates in the country. Unemployment, however, is not evenly distributed among all populations or regions. The unemployment rate is higher among Manitoba's Aboriginal people, immigrants and refugees, and people with disabilities. Unemployment rates for Aboriginal people living on-reserve were even higher, but data collection was not complete enough to allow for comparisons.¹¹³

In general, unemployment rates among newcomers to Canada are higher than for other Canadians, especially in the first five years

The food security of Manitobans 2007¹¹⁹

- Most Manitobans (92%) were considered food secure.
- Six per cent were moderately food insecure (without hunger).
- Two per cent were severely food insecure (without hunger).
- The overall rate of food insecurity in Manitoba in 2004 was 9.4%, slightly higher than the Canadian rate of 9.2%.
- One-third of female single parents reported food insecurity; almost double the rate of male single parents.¹²⁰
- One-third (33%) of Aboriginal households indicated they were food insecure at some time in the previous year; and of these, 14% were "severely food insecure" compared to three per cent of non-Aboriginal households.*
- One local study of food security in northern communities found that 75% of households suffered from moderate (42%) to severe (33%) food insecurity.**¹¹³

Household food insecurity was higher among:

- People on social assistance
- Aboriginal people
- Families who do not own their own home
- Families with children, especially female lone parents with at least one child under 6 and those with 3 or more children

Access to nutritious food is not the same across the province, and is more expensive in some parts of Manitoba, such as northern communities. In inner-city Winnipeg, there are fewer large retail options for purchasing healthy foods than are found in the suburbs. This leaves citizens to rely on local convenience stores with higher prices and limited quality food choices.¹¹³

* Note: the CCHS is not conducted in First Nations reserve communities.

** Communities studied included Berens River, Garden Hill and South Indian Lake.

Employment in Manitoba

- Manitobans: 5.6% unemployment rate as of August 2010, second lowest only to Saskatchewan¹²¹
- Participation in the labour force: women: 62%; men: 73%⁹
- Manitobans with disabilities: 9% unemployment rate¹¹³
- Aboriginal people living off-reserve:
 - participation in the labour force: 59% overall; Women: 55%; Men: 64%
 - 15% unemployment rate; three times the provincial rate (14% among Aboriginal women; 17% among Aboriginal men)

after arrival. However, a greater proportion of immigrants to Manitoba are employed than immigrants to other parts of the country. Manitoba had the second lowest unemployment rate for immigrants in Canada, at seven per cent.¹¹³

Healthy child development

It is widely accepted that healthy child development is an important determinant of health, due to the short and long-term effect of experiences in this stage of life on brain development, school readiness and health. The development of a child's physical, social, mental, emotional and spiritual well-being is affected by all other determinants of health, such as family and neighbourhood income; health behaviours and coping skills of caregivers; housing; access to nutritious foods; and encouragement for physical activity and recreation. Even before birth, the environment in the womb can affect brain

development and health later in life, through exposures such as tobacco, alcohol or infections. A low birth weight can also negatively affect health later in life. Between birth and 18 months of age, the development of a secure attachment with parents or caregivers promotes a baby's brain development which in turn creates the ability to develop trust, self-esteem and emotional regulation and lays the foundation for positive relationships with others in later life.¹⁰⁸

According to data from the Early Development Instrument (EDI), in Manitoba 62% to 65% of children were assessed as "very ready for school" in one or more areas of development, and 43% to 46% in two or more areas. A smaller percentage of Aboriginal children were assessed as "very ready" in one or more areas (46%) than the overall Manitoba population (63%). Significant numbers of children were assessed as not ready for school: 28% to 29% in one or more areas of development and 14% to 15% in two or more areas. A greater percentage of Aboriginal children (46%) were assessed as "not ready" in one or more areas, compared to 29% for the Manitoba population as a whole.¹²² The EDI is discussed in further detail in the chapter on children.

Early childhood education

Early childhood education is an important determinant of future health and developmental outcomes and promotes social inclusion for children and families. Ensuring that more Manitoba children have a healthy start in life will help them become better educated, well adjusted and more healthy and productive in adulthood. Evidence suggests that investment in early childhood development can reduce individual health problems, increasing employment rates, decrease the number of people on social assistance, and reduce addictions and crime rates.¹¹²

Among Manitoba families with children under the age of six, 92% of Manitoba fathers and two-thirds of mothers participate in the labour force.¹²³ Early childhood education centres and programs are an important support for working families. Ensuring availability of affordable childcare is particularly important for women to be able to participate in the paid labour force or to seek further education which leads to higher-paying, more secure employment. This determinant will be discussed further in the child chapter.

Education and literacy

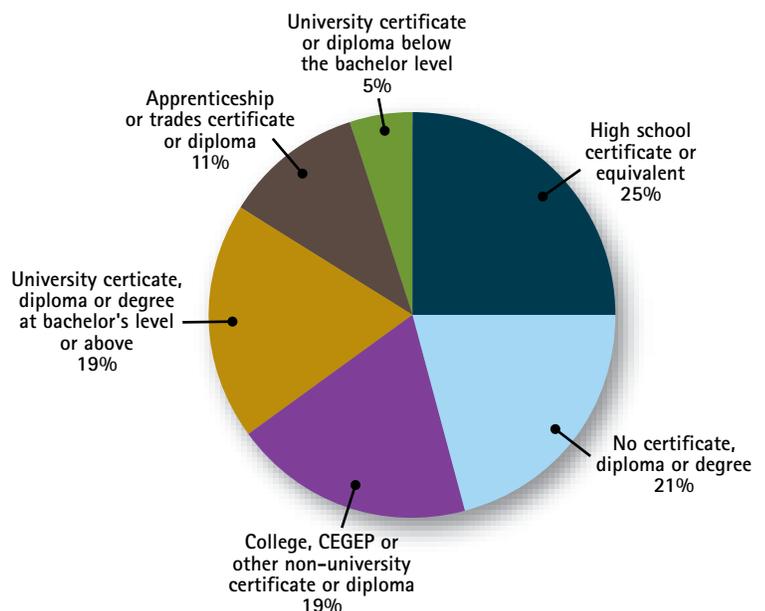
Higher levels of education are associated with improved health status, in part because Canadians with low literacy skills are more likely to be unemployed and have lower incomes. Days lost to personal illness, injury or disability are lower among people with higher levels of education. There is evidence of a link between poor school performance and poor health, low income and shorter life expectancy. Education has allowed many people born in poverty to improve their economic, physical, mental and spiritual well-being.¹⁰⁸

Higher levels of education are associated with higher levels of health behaviour. This is illustrated by smoking rates. In Canada overall, among those aged 15 and older, rates of smoking (current and daily) were inversely associated with higher levels of education: among those who had completed some post secondary education, an average of 12% reported being a current smoker compared to an average of 24% of those who had completed high school or less.⁹⁹

Educational attainment

The link between socio-economic status and education has been clearly demonstrated in many studies. One local study found that 92% of students living in high socio-economic status (SES) areas of Winnipeg graduated from high school on time, but only 56% of students living in low SES areas did so.¹²⁴ Education, in turn, is an important predictor of other outcomes: lack of a high school diploma is associated with poverty, unemployment, poorer health and higher rates of teen motherhood and reliance on social assistance.¹²⁴

Figure 1.15: Highest level of education attained for Manitobans aged 25 to 64, 2006⁹



According to the 2006 Census, 20% of Manitobans between 25 and 64 years of age did not complete high school, compared to 15% of Canadians. A slightly higher proportion of adult women had post-secondary education than adult men in the province.

Nearly half of Manitoba's Aboriginal people aged 15 and older have no diploma, certificate or degree, twice the proportion of all Manitobans. Just under three in 10 Aboriginal people (29%) have some form of post-secondary education, while six per cent have a university degree, roughly one-third the rate of the province as a whole (15%).⁸

Literacy

Literacy is a foundational component of the education determinant of health. According to Manitoba Advanced Education, "Literacy refers to the skill base that enables people to participate and adapt to change in the workplace, the home and community life. It provides a foundation for further learning and includes the following: written communication skills; reading text, document use, writing; numeracy; thinking skills to learn and solve problems; oral communication and interpersonal skills."¹²⁵ This rate is consistent with the national average. Forty per cent (285,000) of working-age adults had prose literacy scores below the level considered the minimum for full participation in a knowledge-based economy.¹²⁵

The physical environment

The physical environment we live in is comprised of the natural environment (ex: air, water, soil, climate and ecology) and the built environment (ex: community and neighbourhood design, roads and transportation systems, sewage systems, recreation facilities, consumer products and food).

Natural environment

Environmental burden of disease and pollutants in the environment

Exposure to certain levels of contaminants in the physical environment (air, water, soil, food) can have adverse effects on health. The World Health Organization (WHO) has estimated that environmental factors are responsible for 13% of Canada's overall disease burden.¹²⁶ The apparent increase in childhood asthma prevalence in the last 20 years is identified by the Public Health Agency of Canada as a possible environmental disease burden. Exposure to excessive amounts of ultraviolet rays from the sun can cause sunburn, skin cancer, reduced immune functioning and increase risk of cataract development.¹²⁷ Vulnerability to environmental hazards is affected by social environments and related determinants.

Food safety

The way our food is grown, produced, transported, stored and prepared determines its nutritional quality and safety. Increasingly, food is being mass produced in faster time frames and transported greater distances before reaching our plate. It has also become more highly processed than ever before, resulting in food products with higher levels of salt, calories and refined carbohydrates and less fibre and other healthy nutrients. This presents an ever increasing variety and choice of produce and products throughout the year to most Manitobans. However, this reality can also present opportunities for contamination of food products and increases the challenge in tracking it and managing food recalls.

Public health infrastructure, such as ensuring adequate coverage of agricultural and public health inspection services, is important to ensuring food safety for Manitobans. In 2010, a total of 143 food recalls were issued by the

Canadian Food Inspection Agency that related to Manitoba. Of these, 31 were Class I (high risk of serious health problems or death); 63 were Class II (moderate risk; short term health problems, not life threatening) and 49 were Class III (low/no risk; foods that did not follow federal food regulations).¹²⁸

Drinking water

Access to safe water is important to the health of individuals, families and communities. Providing safe drinking water for all Manitobans is a shared responsibility, involving residents, the private sector and different levels of government: municipal, provincial, First Nations and federal. Drinking-water systems in Manitoba are classified into three categories for regulatory and monitoring purposes: public water systems, private water systems and semi-public water systems. Approximately 80% of Manitobans are serviced by public water systems. Surface water (from rivers and lakes) is the source of drinking water for 85% of public water system customers.¹²⁹ The major population centers of the province rely on surface water sources.

Many Manitobans take safe drinking water for granted. In some small communities, and on reserves, some Manitobans live without access to running water or have drinking water that is unsafe without boiling it. Boil-water advisories are issued when water may be contaminated with microorganisms or has been put at risk of contamination related to events such as flooding. According to Manitoba's Office of Drinking Water, as of November 25, 2010:

- 88 communities in Manitoba had a boil-water advisory, some of which have been in place for years.
- Of the 88 communities, 33 were linked to public water systems; 29 to semi-public water systems; 25 to seasonal public water systems;

- and one to agricultural (public) water systems.
- There were eight boil-water advisories in communities and regions using private wells and septic fields.
- There were seven communities and regions with compromised/contaminated ground water advisories for the limited number of people who continue to use the groundwater source from private wells and septic fields in those areas.

New drinking water regulations were put in place in Manitoba in 2007, which establish clear water quality standards, including bacterial and microbial levels. The regulations describe the responsibilities for water system owners and operators and require mandatory testing and record keeping. Water suppliers need to be in full compliance with the new standards by March 1, 2012.¹³⁰

The built environment

The built environment (housing and workplaces, and the design of communities and transportation systems) can have a direct impact on physical and mental health. This may be caused by contaminants such as mould or unsafe building materials. It may also be caused by community design that discourages physical activity or facilitates social isolation. Improving our built environments to promote health can affect the health of the population where we live, play and work and change how we socialize. The built environment can contribute to the health of the population by promoting access to physical activity, improving the safety of streets and neighbourhoods, preventing and reducing the pollution of our natural environment, increasing access to affordable housing and creating opportunities for social support networks.¹³¹

The built environment also influences access to fresh nutritious foods. Some communities

in Manitoba must rely on winter ice-roads or other means to import food for their residents. The high cost of this transportation is passed on to the consumer and choices are much more limited than in major centres in the south. There are also neighbourhoods within Winnipeg where residents have challenges in accessing healthy affordable food.

Housing

Housing affects health in many ways. Reduced or poor health is associated with homes compromised by physical, chemical, biological and structural hazards; insects and rodents; toxins and toxic waste; and overcrowding. Poor housing can also contribute to respiratory

and chronic disease. Crowded conditions are associated with increased transmission of infectious diseases such as tuberculosis and can also contribute to increased risk for injuries, mental health problems, family tensions and violence.¹³⁴

Core housing need*

- In 2006, 11.3% of Manitoba households, excluding those in First Nations communities, were in core housing need.¹³² This was a total of 46,900 households, 1,500 more than in 2001.
- Wait times for public housing are at least six months to a year, and longer for applicants needing more than three bedrooms.¹³³
- Manitoba Housing Authority had 3,037 households on its wait list in 2003.
- Manitoba Urban Native Housing Authority reported 2,300 people on its waiting list in 2007.
- Nearly half of Aboriginal people living in inner-city Winnipeg were in core housing need, at least 2.5 times more than non-Aboriginal people.³³
- Crowded conditions:
 - First Nations people were five times more likely than other Manitobans to live in crowded conditions** (15% versus three per cent).
 - First Nations people living on-reserve in the prairie provinces were more likely than those elsewhere in Canada to live in crowded conditions: Manitoba, 37%; Saskatchewan, 36%; and Alberta, 31%.
 - 10% of Aboriginal people living off-reserve in Manitoba lived in crowded homes, compared to 2% of non-Aboriginal people.

Housing in Manitoba

Homes in need of major repairs

- In Canada, seven per cent of non-Aboriginal people reported that their home was in need of major repairs, compared to 28% of First Nations people.⁷
- In Manitoba, just over half of First Nations people living on-reserve (53%) lived in a home in need of major repairs, similar to Saskatchewan and Alberta.⁷
- In Western Canada, First Nations people living off-reserve were 2.5 times more likely than non-Aboriginal people to live in homes in need of major repairs.⁷

* Core housing need: households that are unable to afford shelter that meets adequacy, suitability and affordability norms. The norms have been adjusted over time to reflect the housing expectations of Canadians. Affordability, one of the elements used to determine core housing need, is recognized as a maximum of 30% of the household income spent on shelter.

** Statistics Canada defines crowded housing conditions as those dwellings which have more than one person per room.

Social environments

People live in social environments that influence their health in many ways. Institutions, organizations and informal networks help to share resources and build social support. Community values such as social stability, safety, recognition of diversity, good working relationships and a sense of community all help individuals to cope with change and stay healthy. Research has shown that communities with high levels of trust and group membership have lower mortality rates. In the immediate social environment of the family, abuse and violence have a significant effect on health in the short and long term.¹⁰⁸

Social exclusion is defined as the inability of certain groups or individuals to participate fully in life due to structural inequalities in access to social, economic, political and cultural resources. These inequalities arise out of discrimination and prejudice related to race, class, gender, disability, sexual orientation, immigrant status and religion. Social exclusion is considered to be a social determinant of health.¹⁰⁸ In many cases, the harm caused by poverty is a result of social exclusion and hopelessness, rather than economic or material deprivation.

Social support networks

People with support from a variety of sources such as families, friends and community members tend to have better health. Feeling and being supported, loved and cared for has a positive impact on health. Some experts believe that having social support may be as important to health as regular exercise, avoiding smoking or maintaining a healthy weight. Social connectedness is known to be very important for the senior population for a variety of reasons, including the direct emotional benefit and the fact that being involved socially encourages people to remain physically and

mentally active. For all age groups social support and connectedness is closely linked to better mental health.¹⁰⁸

Culture

Culture is connected to one's social environment and social support networks. As a system of meaning and way of living that is passed from generation to generation, culture is the foundation of individual and collective identity. The erosion or loss of culture can lead to depression, anxiety, substance abuse, and suicide.⁹⁹

It is becoming increasingly recognized that health and mental health can be influenced by spiritual wellness. In caring for the whole human being, there is a need to focus on each aspect of what makes a person human. The spiritual aspect of a human being is one that is beyond the physical. Many spiritual traditions teach that when one part of the self is weakened, sick or struggling, the person may experience a profound sense of emptiness that leads to emotional, mental or physical illness. Spirituality contributes to health, as it is how a person searches for meaning through religion and/or belief in a god, through relationships with family, or participation in naturalism, rationalism, humanism and the arts. This can affect how both patients and health care providers understand health and illness.¹³⁵

Socio-economic environments which create and perpetuate conditions such as marginalization, stigmatization, loss or devaluation of language and culture and lack of access to culturally appropriate health care and services pose additional health risks for those individuals and groups who experience them.¹⁰⁸

Various cultural groups have experienced these conditions in different ways. For example, immigrants and refugees often experience higher

rates of unemployment or underemployment. Aboriginal people have experienced these conditions through the process of colonization.¹³⁶ The experience of residential schools is an example of this.

Holistic health and indigenous peoples

It is important to note that there are many ways to define and describe what contributes to and determines our health. According to the National Collaborating Centre on Aboriginal Health (NCCAHA), indigenous peoples define health and well-being broadly, beyond physical health and the absence of disease. Living in balance extends beyond the individual realm such that good health and healing also require that an individual live in harmony with others, their community and the spirit worlds.¹³⁷ This holistic approach considers how issues such as poverty, a history of colonization, geographic location and connection to land, gender, food security, education and other factors intersect in the lives of individuals, families, communities, nations and peoples.¹³⁶

Personal health practices and coping skills

Lifestyle choices are known to have a major impact on health. Those choices are affected by the environment in which people live. People's choices can be affected by their life skills, stress, culture, social relationships, mental well-being and sense of control over their life.

Skills at coping with challenges and changes can help people deal with stress in a positive way without resorting to harmful stress relievers such as alcohol or drugs. Because these coping skills are learned from early childhood, efforts to encourage healthy lifestyles need to focus on creating supportive environments for healthy

choices, not just as behaviour change in the individual.¹⁰⁸ Behaviours and practices affecting health outcomes are discussed throughout this report, for each life stage.

Thirty-five per cent of Manitobans (from 2001 to 2005) reported low-stress lives, 44% medium, and 21% reported high-stress lives. A higher proportion of residents in the Nor-Man and Burntwood regions reported low-stress lives and a lower proportion reported high-stress lives.¹⁴ No relationship was found between income and life stress reported. Metis people reported similar stress levels as other Manitobans.¹⁴

Health services

The health of a population is also determined by the availability and accessibility of appropriate health services, including prevention and treatment. These interventions are important, contributing to longer life expectancy and better quality of life. It has become increasingly important to evaluate the effectiveness and cost-effectiveness of health services. New and more expensive technologies and drugs are introduced and marketed to health care professionals, administrators, and the public. These and other factors, such as patterns and efficiency of health care utilization, aging of the population, and disparities in health status contribute to the rising costs of health care and the increasing challenge of sustaining a publically funded health system. Non-insured health services such as vision care, dentistry, prescription drugs, counselling and other non-hospital allied care services are often beyond the financial capacity of many low- and moderate-income Canadians.¹⁰⁸ As more resources are spent on health care, fewer may be available to prevent illness by improving income, education and training, housing, social services and other determinants of health. It

is not the aim of this report to evaluate the efficiencies of the healthcare system. However, where appropriate, the use of preventive health services is considered and there are some recommendations in this report pertaining to public health and primary care in preventing disease and injury.

Gender

Gender refers to the socially constructed array of roles, personality traits, attitudes, behaviours, values, relative power and influence that society ascribes to men and women (as opposed to biologically determined sex of male/female). Sometimes these terms are used interchangeably in the language of this document, as they were in many of the sources used in the writing of this report. The distinction between sex and gender is not conveniently absolute, and sometimes their influences on our health are connected.

Through some of these socially prescribed differences, health inequalities arise. Integrating

gender perspectives into public health means that the different needs of women and men are considered at all stages of policy and program development. The ultimate goal is to achieve gender equality.¹³⁸

Biology and genetic endowment

While environmental (social, physical) and socio-economic factors have been shown to have a powerful influence on health, our genetic makeup (endowment) is also a determinant of health because it contributes an inherited predisposition to a wide range of individual factors that affect health status. Genetic research and technology advances have increased our ability to modify the impacts of this determinant of health (ex: genetic counselling and screening). Screening of newborns detects inherited conditions and enables earlier diagnosis and treatment.

Summary, reflections and conclusions

This chapter has provided an overview of Manitoba's demographics, health outcomes, health practices and other risk factors and the underlying determinants of health. It included general issues for the whole population as well as an introduction to some specific issues affecting the health status at specific stages of the life course.

Demography

Nearly three-quarters of Manitobans live in urban centres. Most Manitobans live in the southern portion of the province and more than half live in Winnipeg. Manitoba's population is growing, mostly because of a higher birth rate of Aboriginal Manitobans and because of increasing immigration. One in four Manitobans under the age of 15 are Aboriginal.

As in the rest of Canada, our population is aging and the proportion of our population over the age of 65 is increasing. These trends are the result of increasing life expectancy and because of the aging of the post-war baby boomer population born between the mid-1940s and the mid-1960s, the oldest of which have now reached 65 years of age. It is projected that by 2026, the proportion of Manitobans over the age of 65 will have increased from 14% to 20% of the population, nearly a 50% increase in relative size.

These demographic realities and trends have significant implications for present and future health status, needs and opportunities. The increasing numbers and proportion of Aboriginal Manitobans, the segment of our population with the worst living circumstances and health status, adds to the importance of addressing their health issues, while at the same time creating more opportunities for a greater engagement of

Aboriginal Manitobans to participate in solving these health problems.

Compared to the rest of Canada, Manitoba has a higher proportion of people of Aboriginal identity but a lower proportion of visible minorities. New immigrants and refugees – expected to reach 20,000 per year – bring with them challenges for public health and primary care as well as opportunities to enrich Manitoba's diverse cultural mosaic.

The increasing proportion of Manitoba seniors has significant implications for the importance of prevention and management of chronic diseases and the increased need and demand for medical, hospital, home care and personal care home services.

Health status outcomes

In general, Manitobans, like other Canadians, are, by most measures, among the healthiest people in the world – something we expect and sometimes take for granted. In fact, 89% of those who responded to the Canadian Community Health Survey rated their health as good or better. However, as indicated in this chapter and throughout the report, good health is not enjoyed equally by all Manitoba communities and populations.

There are many indications that, in general, our health continues to improve (ex: life expectancy), but there are some trends (ex: increasing overweight and obesity) that are of particular concern. Some have predicted that if the trend of increasing overweight and obesity is not reversed, we may experience a decrease in future generations' life expectancy.

Life expectancy

The average life expectancy of Manitobans is about one year less than that of other Canadians, an observation which can be explained by the higher proportion of Aboriginal people in Manitoba. Aboriginal Manitobans have a life expectancy that is estimated to be at least five years less than non-Aboriginal Manitobans, a difference that has lessened by one year for men but stayed constant for women over the past 10 years.

Significant differences in life expectancy are observed amongst Manitobans based on the average income of their neighbourhoods. In rural areas, the difference in life expectancy for men between the highest and lowest-income areas is seven years – for women the difference is five years. In urban areas, the difference in life expectancy for men between the highest and lowest income areas is 10 years – for women, the difference is five years. Differences are not just between the wealthiest and poorest neighbourhoods, but show a gradient across most of the five area groupings, indicating a step-wise correlation with levels of income. These differences are also seen in geographic patterns, in which life expectancy varies between health regions in the north and south by as much as nine years for men and seven years for women, and among the Aboriginal and non-Aboriginal population, with a difference of five years.

The reasons for these differences are complex and need further understanding. The observations, however, are compelling. We need to address these issues if we are going to improve the health of all Manitobans and reduce the inequalities of health amongst us. Although appropriate and equitable health care based on need will always be important, these health disparities suggest that factors related to income, education, and other

determinants of health must still be addressed to make further progress.

Causes of death

Age at death and cause of death are important measures and indicators of the health of a population. Although infectious diseases and acute outbreaks like a pandemic influenza and West Nile virus often capture the attention of media and the public, the leading causes of death in Manitoba, as in the rest of Canada and other developed countries are chronic diseases and injuries. Two-thirds of potential years of life lost (PYLLs) from deaths occurring before the age of 75 years are caused by cancer, heart disease and strokes, unintentional injuries, suicide, and deaths associated with pregnancy and childbirth, including prematurity. The inclusion of congenital abnormalities, homicide, diabetes and liver diseases completes the set of causes that account for 80% of PYLLs. Most of these deaths and their causes are preventable or can be delayed, whether by primary prevention (ex: tobacco avoidance), screening to allow earlier diagnosis and treatment (ex: mammography for breast cancer), or appropriate and timely care (ex: prompt treatment for heart attacks).

These leading causes of premature death, what is known about their causes and risk factors, and how they can be prevented, have been discussed in more detail within this general chapter and are addressed further in the specific life course chapters that follow.

Injuries

Overall, injuries are the cause of over 600 deaths per year in Manitoba, about 6% of all deaths. Because the average age of death from injury (47 years) is lower than most other causes of death,

injury-related deaths comprise about 25 % of all potential years of life lost (PYLLs) – similar to cancer and slightly more than cardiovascular disease. Over half of these PYLLs are the result of unintentional injuries, about one-third from suicide, and about one-tenth from assault (homicide). Injuries are the most common cause of death in children and young adults.

The causes and types of injuries are varied, as are their risk factors and prevention strategies.

The leading cause of unintentional injury deaths is motor-vehicle collisions (average 91 per year). Speed, alcohol and lack of seatbelt use are important risk factors. Deaths from motor-vehicle collisions have decreased by 10% during the past decade, indicating progress from the many educational and enforcement strategies that have been put in place.

The second leading cause of unintentional injury deaths is falls (average 82 per year – mostly seniors). Hospitalization rates from falls decreased by seven per cent during the previous decade. There are multiple risk factors for falls and these vary by age. Strategies for fall prevention should be multi-faceted, and should take note of biological factors, physical environments, and socio-economic factors.

Intentional injuries include suicide attempts and suicide, assaults (including family violence) and homicide. On average, there have been 143 suicides per year in Manitoba – almost three per week. Rates are twice as high in the lowest income areas and three times higher amongst First Nations people living on-reserve.

On average there have been 40 homicide deaths per year in Manitoba. Violence is a major health concern. Violence against children is of particular concern because of the immediate and long-term effects of physical injury and

mental anguish. In this chapter, an estimate of the rates of family violence between spouses is seven per cent and the rate of reported violence against children is about one per cent. Reports of violence against seniors have increased by 14% in recent years. Accurate estimates of the rates of family violence are difficult, and reporting of these crimes is typically incomplete. Risk appears higher in Aboriginal and low-income families. Breaking the cycles of generational violence is of high importance.

Mental health and well-being

Public health priorities have evolved over the past century from a focus on infectious diseases to include chronic diseases prevention and injury prevention. The importance of mental health as a public health issue is now being increasingly recognized for many reasons. Mental wellness, including self-esteem, resiliency, motivation, and hope, are important factors in the ability of an individual to take care of themselves and others. Most people would add spiritual health to this list.¹³⁵ Diet, physical activity, and substance use, for example, are behaviours that are influenced and affected by mental health. Poor mental health can lead to alcohol abuse and addiction, which in addition to their direct health impacts are also associated with motor-vehicle collisions, violence, and sexually transmitted infections.

More than 90% of Manitobans, like other Canadians, report having good, very good or excellent mental health and being satisfied or very satisfied with their lives. However, health care administrative data indicate that up to one in three Manitobans over age 10 have been treated for at least one mental illness. These data also indicate that people with a mental illness use more health services in general. These data only capture those seeking care and receiving

diagnosis and treatment, so the actual prevalence of mental illnesses in Manitoba may be higher. On the other hand, limitations in the collection of this type of data may result in this being an overestimate, with respect to accuracy of diagnosis and severity.

Regardless, this information indicates that mental illness is an issue for a significant number of Manitobans and that mental illness is associated with utilization of health services for other types of illnesses. Untreated mental illness can have a negative impact on one's ability to function in society and can affect how one is treated within their community. A critical part of destigmatizing mental illness involves efforts to create supportive home, work, and school environments, and to encourage those suffering from mental illnesses to seek care. This is increasingly recognized as essential to making progress in mental health, in addition to prevention strategies.

Chronic diseases

In addition to their impact on life expectancy and premature death, chronic diseases such as cancer, heart disease, diabetes, chronic lung disease, kidney disease, and arthritis are responsible for the largest proportion of illness, disability and health care. Furthermore, many of these conditions share common risk factors, such as tobacco, excessive alcohol use, unhealthy diet, inactivity, and overweight. Many of these behaviours and risk factors are associated with underlying determinants of health, such as socio-economic status, racial or ethnic status, sex and geographic area of residence.

While the number of cancer cases is expected to increase as the population ages, the risks and rates of most cancers, adjusted for age, have been relatively stable or decreasing. There is great

variety in the types, severity and causes of different cancers. Tobacco-related cancers, such as lung and oral cancers, diet-related cancers such as colorectal cancer, alcohol-related cancers such as liver cancer, sunlight-related cancers such as melanoma, and sex-related cancers such as cervical cancer are, to varying degrees, preventable by healthier living. Screening programs are available in Manitoba for breast, cervix and colorectal cancer; earlier diagnosis can reduce mortality of these by at least 25%. Improved uptake of screening programs is an opportunity to reduce the mortality from these cancers. Two causes of cancer – human papillomavirus (cervix) and Hepatitis B (liver cancer) are now potentially preventable by vaccination.

Heart disease mortality has decreased over the past two decades, but there is still much room for improvement. Most Manitobans have one or more risk factors for heart disease, such as smoking, overweight, or high blood pressure. Risk factors are similar for other diseases of the cardiovascular system such as stroke and other problems with circulation. Reducing these risk factors in the population should further delay or prevent cardiovascular diseases. In addition, more consistent implementation of current prevention and treatment guidelines across the province should reduce further the incidence and mortality of cardiovascular disease.

It is estimated that one in five adults have high blood pressure, an important risk factor for heart disease, stroke and kidney disease. Prescription drugs are the most common method of controlling blood pressure, although there are many preventable risk factors such as salt intake, tobacco, alcohol excess, and being overweight. Efforts to change our eating habits and to reduce sodium content of foods – especially processed and restaurant foods – are an important way to reduce the incidence

of high blood pressure and reduce the need for taking drugs, thereby improving quality of life and reducing the need for treatment.

Type 2 diabetes has increased in frequency, and is occurring at younger ages, including children. The cause of this increase is considered to be a direct result of the increasing rate of overweight and obesity – indicating the need for more successful prevention strategies that change the way we eat and exercise. Complications of diabetes make it a risk factor for other chronic diseases such as heart disease, kidney disease and circulation problems. This indicates the importance of appropriate care and management by a team of health providers. Although all populations are at risk, diabetes is more common among our Aboriginal population who also suffer a higher rate of complications. More efforts are needed to reverse this trend and to improve the prevention and management of this disease for Aboriginal people and all Manitobans.

Infectious diseases

Although the rates of death and severe illness from infectious diseases have decreased significantly over the past century, communicable and environmental infectious diseases still pose a significant threat to Manitobans.

Our experience with the pandemic influenza of 2009 showed that although most Manitobans did not have a life-threatening illness, risk of severe illness was higher for some people, such as Aboriginal people, people with chronic conditions including obesity, pregnant women, and those that experienced delays in seeking or getting care. These risk factors have been observed before for seasonal influenza as well as many other infectious diseases like pneumonia (the most common cause of infectious disease deaths).

Our experience with the pandemic influenza of 2009 also demonstrated significant success of the shared responsibility to prevent and control a public health threat. Each individual had an important role to play in caring for themselves and each other, whether by more frequent hand washing, getting vaccinated, staying home when ill, or getting prompt care when indicated. In addition to those efforts, our experience also demonstrated the longer term importance of addressing pre-existing and chronic conditions, such as crowded housing, poverty, access to primary care, and the prevention and management of chronic diseases through healthier living and appropriate care.

These principles and practices apply to all of the infectious diseases that continue to threaten the health and well-being of Manitobans. Tuberculosis, although the cause of much less illness and death than occurred in the previous century, continues to be a persistent threat in Manitoba, especially amongst our Aboriginal, immigrant and other disadvantaged populations. Its prevention and control, in addition to earlier diagnosis and treatment of active cases, will depend on long term improvements in living conditions and lifestyles.

Progress in the prevention and control of sexually transmitted infections, such as gonorrhoea and chlamydia, will require, in addition to earlier diagnosis and treatment, continued advancement of sexual health education, increased self-respect and mutual respect, reduced alcohol and drug use, and safer and healthier sexuality. In addition to sexual transmission, infections such as HIV/AIDS and hepatitis B and C are transmitted by the blood, most commonly through the sharing of intravenous needles used for illicit drug injection. More harm reduction strategies to complement the existing criminal justice

strategies are needed to reduce the serious health consequences of illicit drug use. Creating more opportunities for people afflicted with addiction to get timely and appropriate treatment and rehabilitation should be a priority.

In addition to communicable diseases that are transmitted from person to person, environmentally-mediated infections described in this chapter can be prevented and controlled by continuing to make our water and food safer and by taking other precautions indoors and out, such as protection from mosquitoes and ticks. These are the shared responsibilities of all, including municipal and other levels of government, the food industry, and every individual.

Finally, the issue of antibiotic-resistance (so-called superbugs) that have adapted in their evolution to an environment of natural and synthetic antibiotics, is a complex issue. It requires an all-of-society and all-of-government approach to many practices, including prescribing of antibiotics, marketing of the pharmaceutical industry, expectations of the public and use of antibiotics in agriculture.

Risk factors and behaviours

Dietary surveys indicate that there is much room for improvement in the eating habits of most Manitobans, especially with respect to fruit and vegetable consumption, salt and calorie intake. Excess calorie intake is especially concerning as most Manitobans are not achieving the recommended daily amount of physical activity. The effects of these health behaviours are reflected in the increasing rates of overweight and obesity as well as chronic diseases such as Type 2 diabetes and cardiovascular disease.

Although much progress has been made in reducing exposure to tobacco, too many Manitobans are still smoking or are exposed to

smoke, especially in certain population groups. For too many, alcohol and other harmful substances pose a significant threat to their health and to others around them.

The prevention of many illnesses and injuries – and the promotion of mental and physical well-being are bound up with factors that are considered important, even if difficult to measure or prove. Some of these are listed below and include self-respect, healthy relationships, stress management and life balance, spiritual lifelong learning, mutual respect and caring for others. In addition to these, appropriate use of health care services – including prevention and screening programs – will result in reduced illness and better outcomes.

The following behaviours and health practices are considered the most important for preventing, delaying and controlling negative health outcomes:

- caring for children and others who are dependent or vulnerable throughout the life course
- healthy relationships based on self-respect, mutual respect, caring, and free from intolerance, sexism or racism, abuse or violence
- personal stress management, life-work balance, and lifelong learning, balancing active living (adequate and regular physical activity), sedentary endeavours (television, video games and computers) and adequate sleep
- healthy diet adequate in nutrients, fibre and vitamins without excessive calories, refined carbohydrates, alcohol, or salt
- healthy sexuality including mutual respect and consent, and using appropriate disease prevention and family planning
- healthy hygiene practices like hand washing, food handling, oral and dental care
- avoidance of harmful substances (tobacco, illicit drugs) and addictions (alcohol, prescription drugs)

- safety and injury prevention (seatbelts, bicycle helmets, fall prevention strategies for seniors, workplace safety)
- appropriate use of preventive health services (prenatal care, vaccinations, screening), harm reduction programs (safe use of injection drugs, disease prevention in sex trade), healthcare (primary care, emergency rooms, prescription drugs,) other services (counselling)
- avoidance or moderate exposure to harmful environmental exposures (ultraviolet radiation, unsafe drinking water, asbestos, radon)
- protection and sustainability of the natural environment (water, soil, air, ecology and management of non-renewable resources, greenhouse gas emission control)

It is not enough, however, to make a list of personal practices and behaviours that promote health and wellness and prevent diseases and injuries. Nor is it adequate to educate or encourage people to live healthy lives without reducing the barriers or increasing the opportunities for healthy living.

For example, merely admonishing parents to feed their children more fresh fruit and vegetables will be unsuccessful if such food is unaffordable or unavailable, as is often the case in isolated and remote communities in Northern Manitoba. We cannot expect an adolescent girl who was abused as a child and is now addicted to street drugs and being sexually exploited to prioritize the future and long term benefits of avoiding tobacco or eating a healthy diet. It is not easy for parents to encourage their children to eat healthy foods when television advertising promotes high sugar, low fibre cereals, soft drinks and high calorie fast foods. The promotion of respectful and healthy attitudes toward relationships between people is not helped by the portrayal of women as sex objects, the promotion of alcohol to

enhance relations by reducing inhibition, and the promotion of violence in multiple media.

There is increasing evidence that these behaviours are associated with other factors and determinants which influence the conditions and settings of everyday life, the environments we live in and the culture we are part of.

Determinants of health and the settings of everyday life

As described in this chapter and in the life course chapters that follow, health outcomes and risk factors are associated with many underlying factors, including personal determinants (ex: personal health practices), social determinants (ex: income, education, culture), the physical environment (ex: housing), health care services and biological determinants (ex: sex). The causes and effects of these associations are complex and not fully understood. Furthermore, they are not unidirectional. There is little doubt, and increasing evidence, for example, that improved health in early childhood leads to better outcomes in education, just as higher levels of education are associated with better health outcomes in later life. Although poor health status can result in lower incomes, health outcomes are better – in general – for people raised in families with higher incomes or in neighbourhoods with higher average incomes.

This report demonstrates that health status is better for Manitobans living in higher income areas and southern parts of the province, and for those of non-Aboriginal status. Many of these differences are of large magnitude such as life expectancy, in which there is a 10-year difference for men born in the highest and lowest income areas. This difference is likely the result of many other determinants as well, including healthy child development, education, social supports, culture

and social environments, personal health practices, and employment and working conditions.

Some of these differences are observed on a gradient, such as income, in which better outcomes are observed at every step and level. In other words, although people living in poverty have the worst health status, people in the highest income bracket have better health status than those in the next highest, and so forth. There is also evidence that those societies with less inequality and range of income and more equitable distribution of other social determinants have better overall average health status indicators than societies with wider differentials and more disparity.

At least three important questions are raised by these observations. First, what is the explanation for the relationship between these determinants and the health outcomes? Second, what is the explanation for why these determinants are distributed the way that they are? Third, what can be done to improve the distribution of these determinants as a strategy to improve the health status of Manitobans?

The first question is clearly within the domain of the health sector and its academic partners. The second and third questions go beyond the

expertise, responsibility and accountability of the health sector which require all government and all society engagement.

One way of understanding and addressing these questions is to have a better understanding of how the settings of everyday life affect our health status and how we can influence these settings to improve our health. Settings are the places where people live, work and play and take part in other activities of everyday life. They are not only physical environments. While settings include the natural environment like local soil and water, they are also the built environment, architecture or community construction, and the social environment, like social relationships or cultural influences.

From here, the focus of this report shifts to a closer look at each of the stages of the life course. As noted in the introduction, each chapter explores health outcomes first, followed by behaviours and practices affecting health in that stage of life. At first glance, the terms behaviours and practices may seem to imply a full degree of control over one's lifestyle at the individual level. As noted above, however, there are modifiable and non-modifiable factors at play, and these determinants work in combinations and cycles.

Pregnancy and the newborn

Priority points

- > The number of births in Manitoba per year has increased, going from a provincial total of 14,582 in 2005/06, to 16,365 in 2009/10.
- > About five per cent of Manitoba teens get pregnant, more commonly among Aboriginal and northern Manitobans and women living in low-income areas in Winnipeg.
- > Nearly one-quarter of all births in the First Nations population are to teen mothers, and 90% of these births are to single women.
- > The rate of teen births in Manitoba is more than twice the Canadian rate.
- > The proportion of births among older Manitoba women (over 35) increased from nine per cent (1994) to 13% (2003).
- > There are 3,670 therapeutic abortions per year, which is about 20% of the estimated total 18,000 pregnancies per year.
- > Pre term births, the leading cause of death in newborns and infants, have increased in Manitoba, and now comprise eight per cent of all births. The rates are higher in low-income areas in Winnipeg and among Aboriginal populations.
- > Babies that are small for gestational age have decreased and now comprise 10% of all births.
- > Babies that are large for gestational age have increased and now comprise 15% of all births.
- > The prevalence of gestational diabetes among First Nations women in Manitoba is three times higher than for non-First Nations women.
- > Modifiable risks associated with adverse birth outcomes include pregnancy at very young ages, diabetes and other illness during pregnancy, exposure to alcohol or smoking, and inadequate prenatal care.
- > Adequate primary prenatal care can be important to improve outcomes for the mother and the baby, but too many Manitoba women do not use prenatal care to the extent that is recommended during pregnancy. These women tend to be those at higher risk of adverse health outcomes, such as very young mothers, Aboriginal women and others living in poverty or marginalized populations.
- > As many as one in seven women have acknowledged to drinking some alcohol during pregnancy, and about one in three among Aboriginal women. Seven per cent of all pregnant women have acknowledged binge drinking.

- > Smoking during pregnancy is more common among Aboriginal women and younger, unmarried, less educated and lower-income women. As many as 60% of Aboriginal women and 12% of non-Aboriginal women have acknowledged to smoking during their pregnancy.
- > On average, four out of five (80%) Manitoba women initiate breastfeeding. However, only about half are still breastfeeding their infants at six months old.
- > Breastfeeding rates are lower in the north and in low-income areas.

Introduction

This chapter focuses on pregnancy, childbirth and early infancy and includes a selection of available information on some of the important factors related primarily to the health of the newborn. These stages are defined as prenatal (from conception to birth), perinatal (immediately before and after birth) and postnatal periods (from birth to six weeks of age). Emphasis has been placed on preventable risk factors and associated determinants, where information was available.

Pregnancy and birth in Manitoba: Demographics

- Approximately 18,000 Manitoba women become pregnant each year. In 2003, Manitoba had the highest pregnancy rate in the country, at six per cent (64 per 1,000), compared to the national average of 5.5% (55 per 1,000).³³
- The number of births in Manitoba per year has been on the rise, going from a provincial total of 14,582 in 2005 to 16,365 in 2009.¹³⁹
- The average number of births per Manitoba woman has decreased over the past several decades and is now 1.8 births per woman, below the population replacement rate of 2.1 births per woman.³³
- Among Aboriginal women, the average national fertility rate has declined steadily since 1970, and as of 1995 it was 2.6 births per woman, almost twice that of the non-Aboriginal population.¹¹
- Birth rates are highest in the north in the Burntwood, Nor-Man and Churchill regions.¹²⁶
- South Eastman RHA has reported a 50% increase in births between 1999 and 2009.¹⁴⁰

Many of the same trends in pre, peri and postnatal health that have been observed in the rest of Canada have also been identified here in Manitoba. One major trend is a decline in the total fertility rate since the 1960s, that is, a decline in the average number of live children born to each woman in her lifetime.*¹⁴¹ A fertility rate of 2.1 births per woman is required to replace our current population (a replacement rate maintains a population at the same size when accounting for births and deaths alone). The total fertility rate in Canada has decreased from an average of 2.6 births per woman in 1967 to 1.5 births per woman in the last decade. While Canada's fertility rate is similar to other developed nations it is significantly lower than underdeveloped nations.¹⁴²

Decreases in fertility rates in Canada have been explained by factors such as progress towards gender equality, more women in higher education and jobs, changes in family roles, improved options for and access to contraception, and increases in the average age at pregnancy. In 2003, 13% of pregnancies occurred in women 35 and older, compared to nine per cent in the previous decade.³³ Pregnancy rates have declined gradually in Manitoba and throughout Canada during the past four decades.

It is estimated that in 2003, 20% of all pregnancies ended in therapeutic abortions. Manitoba's birth rate that same year was second only to Saskatchewan.³³

Health outcomes

Most pregnancies in Manitoba result in a mature healthy newborn. Usual indicators of adverse outcomes of pregnancy include measures of mortality, an abnormality, prematurity (born too early) and babies considered too small or too large for their gestational age. Outcomes can have immediate impacts during the pregnancy (ex: stillbirth), during the birth period (ex: sexually transmitted infections), during the neonatal period of infancy (ex: respiratory distress of the newborn) and/or can have an impact on health in later life (ex: fetal alcohol spectrum disorder).

Preterm birth

Preterm – or premature – births are defined as those that occur prior to 37 weeks gestation (i.e. three weeks early). In industrialized countries, preterm birth is the leading cause of neonatal and infant mortality (60% to 80% of infant deaths without congenital anomalies are related to preterm birth). Neonatal and infant illness associated with preterm birth includes neurodevelopmental handicaps, chronic respiratory problems, intraventricular (brain) hemorrhage, infection, retrolental fibroplasias (eye problems) and necrotizing enterocolitis (bowel

* Total fertility rate (TFR): An estimate of the average number of live births a woman can be expected to have in her lifetime, based on the age-specific fertility rates (ASFR) of a given year. The total fertility rate (TFR) = SUM of single year of age-specific fertility rate. A TFR of 2.1 is considered to be the replacement rate for the population, i.e., the rate necessary to maintain the current population size.

problems). Among preterm survivors, long-term rates of impairment, disability and handicap are several times higher than among term infants. Preterm birth is associated with cerebral palsy and other long-term health issues.¹⁴³

- In Manitoba, preterm births have increased from 7.2% (1996 to 2001) to 7.7% (2001 to 2006).¹²⁴
- National rates of preterm births have also increased from 6.6% in 1991 to 8.1% in 2006/07.^{144,145}
- According to Families First screening data, 6.5% of births to non-Aboriginal women were preterm, compared to the 10.9% of births to Aboriginal women who experienced preterm births.¹⁴⁶
- Manitoba First Nations women living on-reserve were found to have 18% lower risk of having a preterm birth than their off-reserve counterparts.¹⁴⁷
- Residents of the Downtown and Point Douglas community areas had preterm birth rates significantly higher than the Manitoba average.¹²⁴

Many factors contribute to preterm births. Research has shown associations between preterm births and factors at the individual and the community level. Individual factors include behavioural and psycho-social factors, environmental exposures, medical conditions, infertility treatments, biological factors and genetics. Community factors include neighbourhood characteristics such as average income level. Specific risk factors include:¹⁴³

- being single
- younger or older maternal age
- smoking
- low pre-pregnancy weight
- infection
- previous preterm delivery
- multiple gestation

- race/ethnicity
- diabetes
- hypertension
- inadequate prenatal care
- poor weight gain during pregnancy
- high levels of perceived stress

Inadequate prenatal care is associated with a two-fold increase in preterm births.^{148,149}

While some research has found that Aboriginal women use less prenatal care than do non-Aboriginal women, one study found that First Nations mothers living on-reserve in Manitoba (in four communities studied) received more prenatal care than their urban counterparts.¹³¹

Birth weights

A baby's birth weight is associated with its gestational age (the length of time in the womb) and the rate of fetal growth. Birth weight is considered to be the most important indicator of early problems for the newborn.¹⁵⁰

Technically, babies are described as small for gestational age (SGA) if their birth weight, length or head circumference are below the 10th percentile (lowest 10%) for their gestational age and sex. SGA and preterm birth are risk factors for low birth weight and its complications.¹²⁴ Outcomes associated with SGA include increased fetal or infant mortality and risk of future disease, such as diabetes and heart disease later in life.

- In Manitoba, SGA births have declined from 8.4% from 1996/97 to 2000/01 to 7.5% from 2001/02 to 2005/06.¹²⁴
- Winnipeg was the only regional health authority with SGA rates higher than the Manitoba average, though Winnipeg's rate of SGA births did decrease between 1996/97 to 2000/01 and 2001/02 to 2005/06.¹²⁴

- Within Winnipeg, the community areas of Seven Oaks, Inkster, Downtown and Point Douglas had rates significantly higher than the Manitoba average in both of those same study periods.¹²⁴

This is consistent with Canadian Institute for Health Information (CIHI) findings that mothers living in urban areas were 1.3 times or 30% more likely to have an SGA birth.

Mothers living in low income neighbourhoods were also at increased risk (1.5 times or 50% more likely compared to mothers living in high income areas).¹⁴⁴

Identified risk factors for SGA births include:

- Smoking during pregnancy: accounting for 30% to 40% of all SGA births. (After adjusting for factors such as maternal age, household income and receipt of prenatal care, the risk of having an SGA birth was three times higher for smokers compared to non-smokers.)¹⁵¹
- Maternal education: the risk of having an SGA baby is twice as high among women who did not graduate from high school compared to those who completed some university education.¹⁵⁰
- Hypertension: women with hypertension are almost twice as likely to deliver an SGA baby.¹⁴³

Other risks include:¹⁴³

- genetically related factors (20% to 30% of SGA births)
 - history of SGA pregnancies
 - short maternal status
 - maternal race
- nutritional factors (10% to 15% of SGA births)
 - pre-pregnancy weight
 - weight gain
 - anemia (most common in teenage mothers)
 - low-caloric intake

- parity (number of previous pregnancies) and general maternal morbidity (five per cent to 10% of SGA births)

Large for gestational age (LGA) babies are those with a weight, length or head circumference above the 90th percentile (largest 10%) for gestational age. Childbirth can be complicated by the size of the baby and often results in caesarean sections. LGA babies can suffer fetal and neonatal illness and death, impaired cognitive development and chronic conditions such as diabetes and heart disease later in life.¹⁵²

- LGA births have increased slightly in Manitoba, going from 13.4% (1996 to 2001) to 14.6% (2001 to 2006).¹²⁴
- The Regional Health Survey in Manitoba indicates that 12% of First Nations women in Manitoba living on-reserve were diagnosed with gestational diabetes in at least one pregnancy and three per cent had already been diagnosed with Type 2 diabetes.¹⁰¹ These are both risk factors associated with LGA births. The prevalence of gestational diabetes among First Nations women in Manitoba was found to be three times higher than for non-First Nations women during the period from 1985 to 2004 (6.9% versus 2.4%).¹⁵³

Identified risk factors for LGA births include:¹²⁹

- maternal diabetes
- genetic predisposition
- maternal race

As noted above, LGA babies are more common among First Nations women, particularly those with gestational diabetes. It has been suggested that efforts aimed at improving birth weights may contribute to reducing rates of Type 2 diabetes in future generations of First Nations people and other Canadians.¹⁴³

Risk factors, behaviours and other determinants of health

Prenatal care

Appropriate and timely care and support of pregnant women in the prenatal period improves outcomes for pregnant women and their babies. It does this through the timely diagnosis and treatment of complications or by contributing to the elimination or reduction of modifiable maternal risk factors.¹⁵⁴ Inadequate care has been linked to preterm birth, low birth weight and increased risk of fetal and infant death. Prenatal care allows for problems to be detected early in pregnancy, such as HIV infection or Rh incompatibility, so interventions or treatments can be more effective. A variety of methods have been used to assess whether pregnant women are receiving adequate prenatal care. In this context, adequacy refers to the number and timing of visits to a primary care provider.

One recent study found that most Manitoba women received adequate prenatal care;* seven per cent received inadequate care. However, the study did find significant variations in the distribution of rates of inadequate care, ranging from one to 22% throughout the province based on 230 Winnipeg neighbourhoods and 268 municipalities outside Winnipeg.¹⁵⁵

Another local study identified that an average of 1% (between 2003 and 2009) of non-Aboriginal women received no prenatal care prior to six months gestation compared to an average of nine per cent of Aboriginal women who received no prenatal care prior to six months gestation.¹⁴⁶

Identified factors associated with adequate and inadequate prenatal care include:

- Women who receive early and regular prenatal care also tend to have higher incomes, which have also been linked to better health outcomes.
- Higher rates of inadequate prenatal care were geographically concentrated in neighbourhoods with:¹⁵⁵
 - low household incomes
 - high rates of unemployment
 - high rates of recent immigrants
 - high proportions of Aboriginal people
 - more single-parent families
 - lower levels of education and high rates of smoking during pregnancy

Women living in such areas were found to have two to three times higher rates of inadequate prenatal care than those in other areas of the province considered to be more advantaged.¹⁵⁵ Significant predictors of inadequate use of prenatal care were:¹⁴⁹

- low income
- education of less than high school level
- having had more than one baby
- high levels of perceived stress
- smoking during pregnancy
- using alcohol during pregnancy
- Aboriginal ethnicity
- being a teenager

Among non-Aboriginal women, significant predictors of inadequate care were:¹⁵⁵

* Inadequate prenatal care in the study was defined as: “receiving no prenatal care, initiating care after the first trimester, or receiving fewer than the recommended number of visits if care begins in the first trimester.”

- single marital status
- physical abuse
- having moved two or more times in the preceding year
- low self-esteem
- low levels of support from partner

Having a paid job was found to reduce the rate of inadequate prenatal care.¹⁵⁵ Of women who identified themselves as being Aboriginal, 16 % received inadequate care, compared to four per cent for other Manitoba women.

- Aboriginal women were more likely to access prenatal primary care beginning after their first trimester.¹⁴⁹
- In Winnipeg, eight neighbourhood clusters had rates of inadequate prenatal care, based on data from 1991 to 2000:
 - Point Douglas B (21.4%)
 - Downtown B (11.5%)
 - Point Douglas A (8.6%)
 - Inkster B (8.5%)
 - Downtown A (7.4%)
 - River Heights B (5.2%)
 - River East A (4.8%)
 - Seven Oaks A (4.3%)

Note: A map showing these neighbourhood clusters has been included in the appendix.

Teen pregnancy and births

Teen pregnancy is associated with a higher risk of problems. The potential impact on the life of the young mother, especially very young mothers in their early teens is significant. Teen mothers tend not to gain enough weight and are more likely than adult mothers to suffer from anemia (both risks for underweight and/or premature babies).

Becoming pregnant often delays or ends a teen's formal education. Almost half of teen mothers are in the lowest socio-economic groups to begin with, a situation further challenged by the need for childcare.¹⁷ Teen mothers are more likely to experience social deprivation, inadequate prenatal care, physical and sexual abuse, drug use and smoking.¹²⁴ However, it should also be noted and respected that some cultures in Manitoba do not discourage teenage pregnancy.

Teen pregnancy:

- The rate of teen pregnancy in Manitoba dropped from 63 per 1,000 (1996 to 2001) to 50 per 1,000 (2001 to 2006). Despite this drop, Manitoba continues to have a higher rate than the national average. This means that about one in 20 Manitoba teens aged 15 to 19 got pregnant each year.¹²⁴
- Among Metis youth, the teen pregnancy rate is 50% higher than in the general teen population (7%) – or one in 15.¹¹¹
- Nearly one-quarter of all births in the First Nations population are to teen mothers, and 90% of these births are to single women.¹¹
- Within Winnipeg, although there was a decrease in teen pregnancy, the highest rates were seen in the community areas with the poorest overall health status: Inkster (70 per 1,000), Downtown (103 per 1,000) and Point Douglas (124 per 1,000).¹²⁴

Forty-five per cent of all teenage pregnancies occurred among the 20% of the population living in the lowest-income areas.¹⁷ The gap in teen pregnancy rates between low and high-income levels has widened over time in urban and rural areas, but is larger in urban areas.¹⁷ Pregnancy rates are higher among teenagers who:²¹

* MCHP rates overall health status in the province of Manitoba based on premature mortality rate (PMR), where regions, community areas and neighbourhoods are considered to be healthier if their PMR is lower.

Manitoba teen birth rates

Higher teen birth rates do not necessarily indicate a lack of access to or use of birth control. The teen birth rate reported here includes births occurring to mothers between the ages of 15 and 19:

- The teen birth rate in Manitoba (30 per 1,000 per year) indicates that one in seven Manitoba girls aged 15 to 19 had a baby in this five-year period.¹²⁴
- Within Winnipeg, Downtown (58 per 1,000) and Point Douglas (80 per 1,000) both had significantly higher rates than the Manitoba rate.¹²⁴
- In rural and urban areas, teen birth rates are higher where average incomes are lower, with neighbourhoods in the lowest-income quintile representing the highest number of births to teen mothers.¹²⁴
- In 2003, nine per cent of all Manitoba births were to females under 20, compared to 4.5% in Canada.

- live in areas that have the poorest overall health status* both in Winnipeg and in the rest of the province
- are in their late teens
- have mothers who were younger at the birth of their first child
- are living in neighbourhoods with lower average household incomes
- have physical or mental health difficulties
- are Aboriginal

*The figures presented on smoking come from the Canadian Community Health Survey, and do not include residents of First Nations reserves or military bases.

Births to older mothers

A woman giving birth after age 35 is considered to be an older mother. In Canada and other industrialized countries, more women are having children when they are older.³³ Although there may be advantages to having children later in life, older mothers have some disadvantages, including greater risks of genetic abnormalities in the baby, such as Down Syndrome.

Almost 13% of Manitoba women who gave birth in 2003 were 35 or older. This is up from 9% in 1993. Older maternal age increases the risk of preterm birth and SGA babies by 50% to 100%.¹⁴³ The risk of these outcomes is highest among older first-time mothers.¹⁵⁶ There is also an increased rate of multiple births with mothers over age 35, associated with fertility treatments.

Increased risks of maternal complications are also associated with increasing maternal age, such as: increased risks for early pregnancy loss, bleeding during pregnancy, gestational diabetes, hypertension and other complications of the pregnancy and labour.¹⁴³

Maternal smoking and exposure to environmental tobacco smoke

Smoking during pregnancy and exposure to second-hand smoke can have adverse health effects on the fetus.³³

- One in five Manitoba women reported smoking during pregnancy, comprising one in two Aboriginal women and one in nine non-Aboriginal women, with both groups showing reductions over time.¹⁴⁶

- In Canada,* self-reported maternal smoking rates have been declining. In 2005, 13% of women who had given birth in the previous five years reported having smoked during pregnancy, down from 18% in 2000/01. Rates of heavy smoking (10 or more cigarettes a day) have also declined, from five per cent in 2000/01 to 1.7% in 2005.
- National data indicate that teen mothers were more likely to report smoking (37%) than were mothers age 40 or older (9%).

Smoking has been associated with increased risk of:³³

- low birth weight
- preterm birth
- miscarriage
- stillbirth
- sudden infant death syndrome (SIDS) and other illnesses

According to one Canadian study, rates of smoking during pregnancy were found to be higher among women who are:³³

- younger
- unmarried
- less educated
- lower income (as with smoking in the general population)

Decreases in the proportion of pregnant women reporting exposure to second-hand smoke during pregnancy have also been noted over time, with 14% of women reporting this in 2005 compared to 22% in 2000/2001. As with smoking, younger mothers were more likely to report this exposure than were older mothers (42% versus 10%).

Maternal alcohol consumption, fetal alcohol spectrum disorder (FASD) and fetal alcohol syndrome (FAS)

To date, no specific amount of alcohol consumed during pregnancy and breastfeeding has been determined safe, so most experts continue to recommend that women avoid drinking if they may be pregnant. Maternal consumption of alcohol during pregnancy and breastfeeding has been associated with health consequences for both the mother and fetus, most notably fetal alcohol spectrum disorder (FASD).¹⁵²

FASD is a preventable disorder causing life-long physical, learning and behavioural impairments. People with FASD can have significant difficulties with memory, attention, self-care, decision-making, impulse control, social skills and the ability to function independently. They are at increased risk of having disrupted school experiences, joblessness, homelessness, mental health problems, addictions and being exploited, victimized, or engaging in criminal behaviour. It is likely that the rate of cases of FASD is underreported, partly because of the challenges of confirming a diagnosis in its varying degrees of severity. It is also likely that the rate of alcohol consumption is underreported, partly because of the social stigma now associated with maternal drinking during pregnancy and breastfeeding.

- Available Manitoba data indicate that approximately 15% of Manitoba women acknowledge drinking alcohol during pregnancy. The rate is higher (30%) among Aboriginal women and lower (10%) among non-Aboriginal women, with both groups showing minimal change over time.¹⁴⁶
- In 2007/08 nearly seven per cent of pregnant women acknowledged binge drinking during their pregnancy.¹⁵⁷

- The Public Health Agency of Canada has estimated that about 1% of the approximately 300,000 babies born annually across Canada are affected by maternal drinking.
- Estimates of the prevalence of FASD in small populations indicate that the rate varies significantly. For example, one study found that in north-eastern Manitoba, there is a prevalence of FASD of about one per 140 births. Another Manitoba study in a First Nations community, found that the prevalence of FAS and partial FAS was estimated to be one to two per 20 births (five per cent to 10%).¹⁵⁸

Public awareness of the link between maternal alcohol consumption and FASD is increasing. A majority of Canadians (76%) are aware that any alcohol use during pregnancy may be harmful.¹⁵⁹ Women were more likely to lower their alcohol consumption while pregnant if they were supported by their spouse or partner to do so.¹⁵⁹

Initiation rates of breastfeeding

Breastfeeding helps with bonding between mother and baby and promotes the infant's psycho-social development and physical health. The World Health Organization and the Canadian Paediatric Society are among many bodies that recommend that babies be exclusively breastfed for the first six months of life.^{160,161} The baby benefits from the nutritional value of the milk, which meets all his or her nutritional needs, and the emotional bonding between mother and baby that occurs during breastfeeding. After birth, the mother's first milk, called colostrum, offers early immune system protection. This early protection is even more important if the baby is born prematurely. Breastfeeding has been found to decrease the risk of infections and eczema in the first year of life.¹⁶ It has also been associated with a decrease in

sudden infant death syndrome¹⁶¹ and a reduction in Type 2 diabetes in Aboriginal children.¹⁶³

Mothers who breastfeed often have a faster return to their pre-pregnant physical condition, including weight loss, pre-pregnancy size of the uterus and less postpartum bleeding. Long-term benefits for the mother may include reduced risk of breast and ovarian cancers later in life and protection against osteoporosis and hip fractures. The decision to breastfeed or not is influenced by many factors, including personal beliefs, family and social support, and the health of the mother.

Hospitals collect data on the initiation of breastfeeding (the rate at which mothers begin breastfeeding) but little data has been collected in Manitoba on breastfeeding during the baby's first year of life beyond the initial hospital stay.

- 82% of Manitoba mothers initiate breastfeeding.¹¹⁵
- Burntwood (65%), Nor-Man (70%), Parkland (71%) and North Eastman (72%) had lower rates of breastfeeding initiation than the provincial average (82%).¹¹⁵
- The South Eastman (91%), Central (86%), Brandon (84%) and Winnipeg (84%) regions had higher breastfeeding initiation rates than the provincial average from 2001 to 2006.¹²⁴
- Within Winnipeg, all community areas had higher rates than the provincial average except Inkster (78%), Downtown (78%) and Point Douglas (73%), from 2001 to 2006.¹²⁴
- In both urban and rural areas, breastfeeding initiation rates were higher among women living in neighbourhoods with higher incomes. This gap was found to be decreasing over time in urban areas but growing in rural areas. The widest gap was noted in the period from 2005/06 to 2007/08. In the lowest income rural areas, 26 fewer babies per 100 were being

breastfed compared to the highest income rural areas.¹²⁴

- Older mothers are more likely than younger mothers to breastfeed.¹²⁴
- Initiation rates of breastfeeding have increased over time. In 2003, 85% of women in Canada initiated breastfeeding, according to Canadian Community Health Survey (CCHS) data.²¹
- Self-reported data from the Canadian Community Health Survey indicate that 45% of those babies who were initially breastfed were still being breastfed at six months.³⁶
- Of First Nations women surveyed, 54% breastfed their babies. Among those, 57% breastfed for up to six months and 34% breastfed beyond six months.¹⁰¹

Historically, when women experience difficulties with breastfeeding or breast milk production,

they could turn to donor breast milk banks. Canada had more than 20 milk banks until the late 1970s, but during the 1980s all but one closed due to fears over the transmission of disease, HIV in particular. Today, the Canadian Paediatric Society (CPS) recommends the use of donor breast milk as an alternative feeding choice when the mother's milk is unavailable for hospitalized newborns.¹⁶⁴ To prevent transmission of disease through breast milk, strict screening processes are in place for donors and all milk received is tested and pasteurized. A human milk bank has been recommended by the Baby Friendly Manitoba Hospital Working Group to support maternity units in the province as they strive to attain Baby Friendly certification and increase breastfeeding rates.

Summary, reflections and conclusions

The importance of a good start for every newborn has been addressed in this chapter. An ideal start includes parental readiness, healthy parents, a healthy pregnancy and a safe and positive newborn environment. While most pregnancies in Manitoba result in healthy newborns, there is much room for improvement in planning and timing of pregnancies, the health of the pregnancy and the utilization of prenatal care. It has been shown that, in general, those Manitobans already at highest health and social risk, such as Aboriginal women and women living in lower average income neighbourhoods, also have the highest risk factors for problematic outcomes from pregnancy, and are less likely to seek or get adequate prenatal care.

A planned pregnancy has several potential advantages, including choosing the best timing for the parents in order to reduce the impact on education, training and income, especially for the mother. Planning also allows the option to prepare prior to conceiving (nutritious diet, avoidance of alcohol). In Manitoba, about one in five pregnancies ends in a therapeutic abortion; our rate of teen births, although declining, is twice the Canadian rate. These facts indicate the need for better understanding of the reasons for these events and what further strategies should be considered to address them.

A healthy pregnancy improves the chances for a healthy baby. About eight per cent of babies are born prematurely and a similar number are small

or large for their gestational age. Preventable factors associated with higher rates of problem births include teen pregnancy, exposure to harmful substances (tobacco, alcohol, drugs), and conditions such as Type 2 diabetes.

Alcohol and tobacco exposure during pregnancy are important examples of preventable risk factors. It has been estimated that one in 15 pregnant women report alcohol use during pregnancy, half of whom have engaged in binge drinking. These rates are three times as high for Aboriginal women. Estimates of tobacco use during pregnancy demonstrate a range from one in seven non-Aboriginal women to one in two Aboriginal women.

Availability and use of adequate prenatal and childbirth care is important, especially for higher-risk pregnancies. It appears that too many Manitoba women are not getting adequate prenatal care. Addressing these issues should remain a high priority. There continues to be a need to support and enhance programs that target at-risk mothers like Families First and Positive Parenting Programs and other innovative and equitable ways to address underlying issues while at the same time reaching out to those with the highest need and at highest risk.

Most of the recommendations of this report are relevant to the issues of this chapter, such as supporting the role of the family, addressing underlying determinants of health, and increasing preventive care and outreach,

especially for those at highest risk. More surveillance, research and analysis related to prevention and effective programs are needed. Clear guidelines to help Manitobans plan for and have a healthy pregnancy would be helpful, especially if they were promoted and reinforced by strategies and actions to achieve measurable objectives. Four out of five Manitoba women initiate breastfeeding, only about half are still breastfeeding their infants at six months. Increasing support for breastfeeding initiation and continuation in institutional and other settings remains an important challenge.

Work that is underway to achieve better coordination between public health, primary care and social service programs and services (supported by clear provincial leadership in maternal and child health) should continue. Progress in risk factors and outcomes for pregnancy, childbirth and the newborn should be monitored by a selected set of relevant indicators.

There are multiple barriers to good child health, making it all the more important to promote a good start by a healthy pregnancy and infancy. However children can demonstrate remarkable resilience. With safe, nurturing, stable homes, with nutritious foods and active lives, children whose early days were less than optimal can nonetheless thrive. Some of the priority factors and outcomes that are associated with child health are described in the next chapter.

Children

Priority points

- > Infant and child mortality have decreased and are relatively low in Manitoba compared to most countries, but rates vary significantly within Manitoba and are higher than the Canadian average.
- > Almost all (> 99%) infants survive their first year of life. Infant mortality is most commonly caused by complications in the perinatal period (mostly preterm births), unintentional injuries and congenital malformations.
- > Infant mortality follows a gradient based on neighbourhood income in both urban and rural Manitoba up to a ratio of 2.5 times.
- > Infant mortality rates for First Nations people have been estimated at more than two times higher than the rate for other Manitobans.
- > Most child deaths (aged 1 to 19) are caused by unintentional injury, followed by suicide and assault.
- > Motor-vehicle collisions are the leading cause of injury deaths in children under 10; suicide is the leading cause of injury deaths in children 10 and over.
- > Eight per cent of children aged 10 to 14 and 13% of children aged 15-19 have been treated for depression (girls more than boys)
- > Three per cent of children aged 10 to 14 and six per cent of children aged 15 to 19 have been treated for substance abuse
- > Less than one-half of children are consuming the recommended levels of fruits and vegetables, and most children consume more than the recommended levels of salt.
- > An increasing number of children and youth, particularly Aboriginal children, are being diagnosed with Type 2 diabetes.
- > Asthma is the most common chronic disease of childhood; the prevalence of asthma among children age five to 19 in Manitoba is estimated at 14% and considered stable.
- > Vaccination rates need to be improved especially amongst higher risk populations with low income and poor living conditions.
- > More than one in four children are not considered ready for school in one or more of the following domains: physical health and well-being, social competence, emotional maturity, language and thinking skills, and communication skills and general knowledge. This rate is higher than the Canadian average; a higher proportion of Aboriginal children and children of lower socio-economic status are not considered ready for school in one or more domains.

- > Healthy children can develop nearer to their potential with the benefit of safe, nurturing, and positive parenting. Children who are neglected, disciplined inappropriately and grow up feeling unloved, are less likely to develop self-esteem and self-confidence and more likely to turn to gangs, drugs or sex to establish a sense of belonging.
- > Of all children in Manitoba, 12% live in families receiving services from Child and Family Services and 3% have been removed from their home and taken into care.
- > An increasing number of infants are breastfed; about 85% of women initiate breastfeed and about one-half of them are still breastfeeding at six months. Breastfeeding rates are lower for Aboriginal mothers.
- > Of children aged two to 17, 31% are overweight or obese, higher than the national average of 26%.
- > Only 56% of the males and 55% of the females in grades 9 to 12 perceive their body weight as healthy, however 67% of males and 79% of females had BMIs in the healthy range, in Manitoba.
- > Only 13% of children and youth are reaching the recommended amount of physical activity, similar to the Canadian average of 12%.
- > More than 90% of children begin watching TV before the age of two, earlier than recommended. One-third of children from ages two to five are watching more than two hours of TV per day, more than double the recommended limit.
- > Between 2000 and 2009, the smoking rate among youth aged 12 to 19 dropped from 20% to 12%, in Manitoba.
- > An average of 35% of Manitoba youth aged 12 to 19 reported drinking five or more drinks on 12 or more occasions per year.
- > When asked about illegal drug use, 20% of students in Grade 9 to Grade 12 responded that they had used street drugs such as cannabis, cocaine, heroin, ecstasy or illegal steroids at least once in the previous 30 days.
- > Close to 42% of Manitoba teens aged 15 to 19 reported having had sexual intercourse, similar to the national rate of 43%.
- > Overall, 75% of Manitoba teens overall who reported having sex in the previous 12 months said that they used a condom the last time they had sexual intercourse, consistent with the national average.
- > Manitoba continues to have the highest teen pregnancy rate in Canada, and high STI rates among young people.
- > Over 2000 children and youth under age 20 were diagnosed with chlamydia and over 300 were diagnosed with gonorrhoea in 2008.

Introduction

The first three years of a child's mental, physical and social developments set the foundations for the rest of his or her life. Transitions during the first 18 years of life include infancy (the first year), early childhood (preschool), childhood (pre-puberty), youth (post-puberty) and early adulthood. In this report, "child" is most often a person under the age of 20 years. In some cases, where it is specified, "child" may refer to people under the age of 18. This variation occurs in order to fully reflect the sources relied upon for the writing of this report. This chapter explores some aspects of each of these stages. A selected set of health outcomes, including causes of death, injuries, mental health conditions, behaviour disorders, some chronic conditions and some infectious diseases are included. This chapter considers important influences and behaviours associated with these and other outcomes, including parenting, breastfeeding, immunization and daily living habits. Associated factors, such as socio-economic status, and geographic variation, have been discussed where information was available.

Manitoba's children: Demographics

- In 2009, 26% of Manitoba's total population was comprised of children and young adults under 20. The ratio of boys to girls was nearly one to one (1:1), with slightly more boys than girls (164,363 versus 156,800).¹
- There are about 15,000 births per year.¹²⁴
- In 2001, Aboriginal children accounted for one in four of all Manitoba children under 15 years of age. On Manitoba reserves 40% of residents are under the age of 15.¹²⁴
- The greatest proportion of children was in the Burntwood region, where almost 43% of the population is under age 20.¹
- The smallest proportion of children was in the Winnipeg region, where almost 24% of the population is under age 20.¹

Health outcomes

Mortality

Although the risk of death in childhood is relatively low, every death of a child is untimely and usually tragic for the family and community. Causes of death vary as children age and grow. In the first year of life, causes originating in the perinatal period are the leading cause of death, followed by congenital malformations, deformations and chromosomal abnormalities.

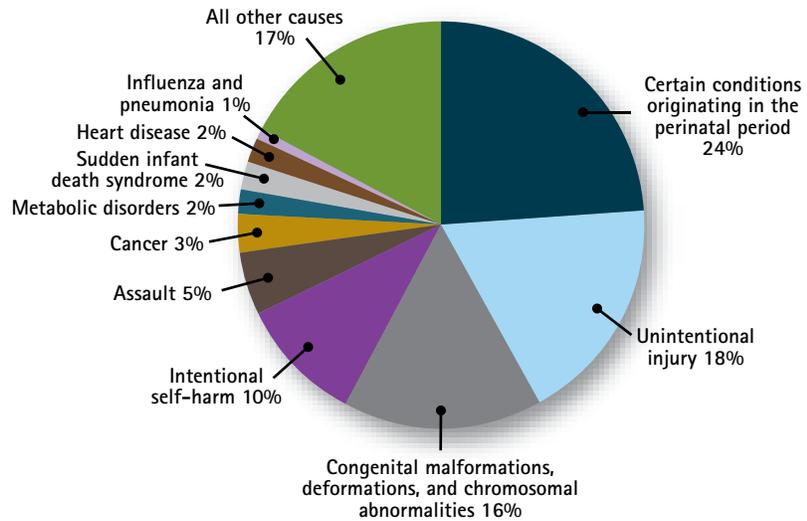
As children age, unintentional injuries become the most common cause of death. In the teen years, suicide becomes a major cause. Most deaths during childhood are considered preventable. Because causes vary during this period, mortality breakdowns are described for infancy (under one year), pre school (ages one to four) and school-aged (five to 19) periods.¹⁹

- On average, 214 deaths occurred annually among children and youth (0 to 19) in Manitoba during the five-year period of 2004 to 2008 (Figure 3.1). Conditions originating in the perinatal period (most common causes being disorders related to short gestation and low birth weight; maternal complications of pregnancy; complications of the placenta, cord and membranes) accounted for nearly one-quarter of all deaths. Injuries and congenital malformations, deformations and chromosomal abnormalities (including Edward, Patau and Down syndromes) are ranked second and third, respectively.
- Overall, male deaths outnumbered female deaths (about 125 versus 88 per year) during this period and of all the causes, only cancer caused more female than male deaths.

Infant mortality

Infant mortality is the death rate of infants under one year of age. Sometimes this rate includes *fragile infants*, those whose birth weight was less than 500 grams, or those with a gestational age of less than 22 weeks, resulting in higher

Figure 3.1: Leading causes of death for children and youth aged birth to 19 in Manitoba, 2004 to 2008¹⁹



N = 1069 with an average of 214 deaths per year in the five-year period.

infant mortality rates. Infant mortality is widely considered an important indicator of population health and is influenced by many factors in addition to health care. Canada, once ranked sixth in the world for low infant mortality, has slipped to 24th place. Some of this drop is due to differing ways in which nations define infant mortality. Other trends that contribute to this drop include fertility treatments and increasingly premature multiple births and more aggressive resuscitation of *fragile infants*, which at one time would have died at or before birth (stillbirths), but are now classified as live births.

In Manitoba, about half of deaths in the first year of life are associated with premature birth and other conditions associated with the pregnancy or birth. One-quarter are the result of congenital malformations and other genetic abnormalities (Figure 3.2).

The infant mortality rate in Canada is about five per 1,000 live births* (about one in every 200 live births). Manitoba's infant mortality rate is higher than the Canadian rate. Within Manitoba, there are important differences between and within health regions, income levels and Aboriginal and non-Aboriginal people.

* Excluding fragile infants – those with a birth weight less than 500 grams and those with a gestational age of less than 22 weeks.

- Between 2001 and 2005, the average infant mortality rate was 5.3 per 1,000 live births (which does not include fragile infants). This is higher than the 2003 national rate of 3.7 per 1000.¹⁵³ Including fragile infants, the infant mortality rate was 6.7 per 1,000 births, while the Canadian rate in 2005 was 5.4 per 1,000 births.
- The rate of infant mortality in Manitoba has decreased in the past 10 years, from 5.8 per 1,000 from 1996 to 2000 to 5.3 per 1,000 from 2001 to 2005.
- From 2004 to 2008, an annual average of 107 infants (birth to one year) died in Manitoba. Three-quarters of these infants died due to conditions originating in the perinatal period such as disorders related to short gestation, maternal complications of pregnancy, low birth weight or congenital malformations. (See Figure 3.2)
- Cases of Sudden Infant Death Syndrome (SIDS) have decreased over time. There was an average of five cases annually between 2004 and 2008.¹⁹
- Data collected from 2001 to 2005 show that infant mortality follows a gradient based on neighbourhood income in both urban and rural Manitoba. For example, in urban Manitoba, the lowest income quintile (the fifth of the population living in areas with the lowest average incomes) had an infant mortality rate about 2.5 times higher than the highest quintile (7.6 per 1,000 compared to 2.8 per 1,000).¹²⁴

- Metis infant mortality rates are similar to those of the general population: 5.7 per 1,000.¹¹¹
- Infant mortality rates for First Nations people have been estimated at 2.1 to 2.9 times higher than the rate for other Manitobans.¹⁶⁵

Child mortality

In the time from 2001 to 2005, Manitoba's average child mortality rate among children aged one to 19 years was 34 per 100,000.¹²⁴ This rate varied across the province. In Winnipeg, for example, the average child mortality rate was 20 per 100,000 during this period, lower than the provincial average. Burntwood and North Eastman regions had much higher average rates than the provincial average: 106 per 100,000 and 60 per 100,000 respectively. The most common causes of death, by age groups are shown below.

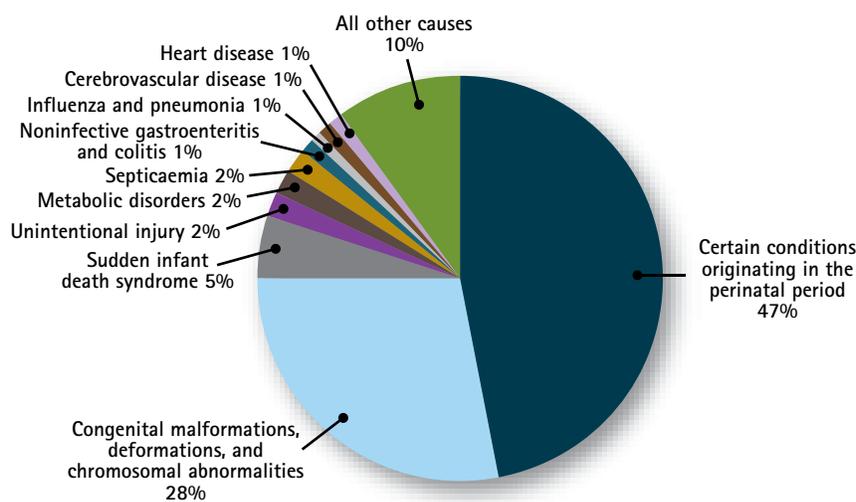
The leading causes of death among children, by age group

Preschool

(one to four years of age)

Between 2004 and 2008 there were on average 17 deaths per year among Manitoba preschoolers. Male deaths outnumbered female deaths

Figure 3.2: Leading causes of death for infants from birth to one year in Manitoba, 2004 to 2008¹⁹



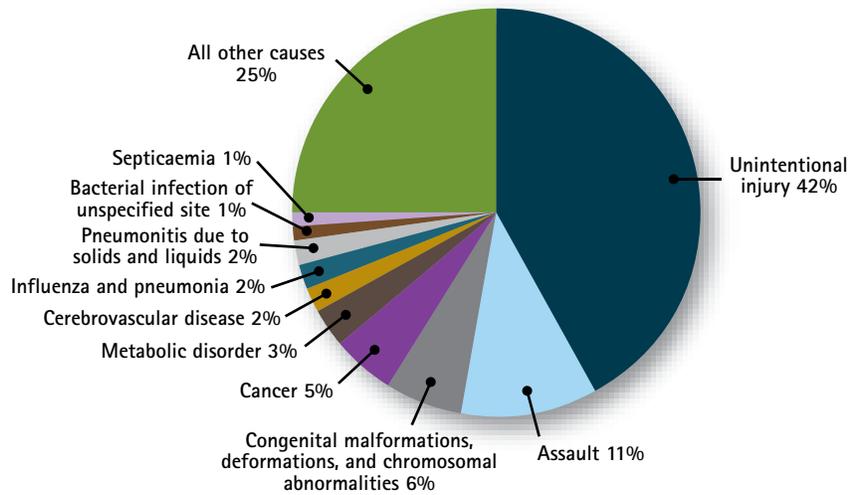
N = 535 with an average of 107 deaths per year in the five-year period.

(10 versus seven). One-half of these deaths were caused by injuries, of which one in five were caused by assault. Other causes of death in this age group are shown in Figure 3.3.

School aged (five to 19 years of age)

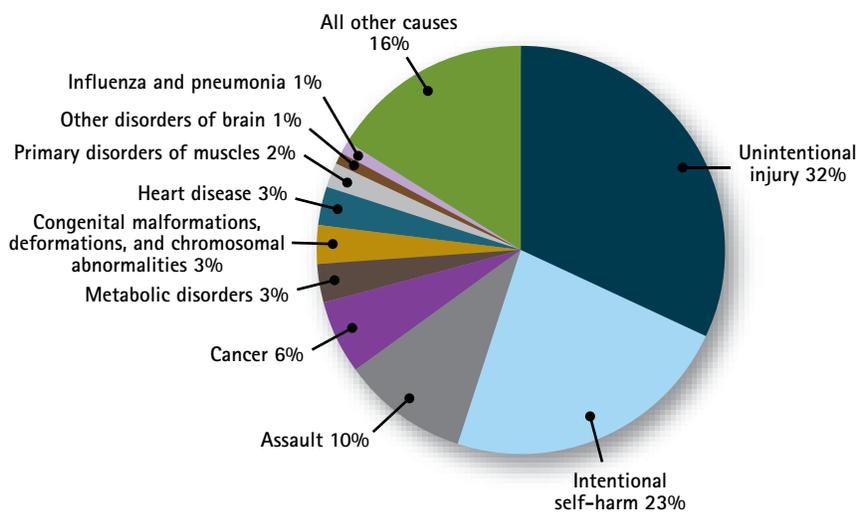
Between 2004 and 2008 there were an average of 89 deaths per year in this age group. During the school age years, injury was the leading cause of death among both females and males, constituting nearly two-thirds (65%) of all deaths. One-third (32%) of all deaths in this age group were due to unintentional injury. One-third (33%) of all deaths were intentional-suicide (23%) and assault (10%). Other causes of death, and how they vary by sex, in this age group are shown in Figures 3.4, 3.5 and 3.6.

Figure 3.3: Leading causes of death for children aged one to four years in Manitoba, 2004 to 2008¹⁹



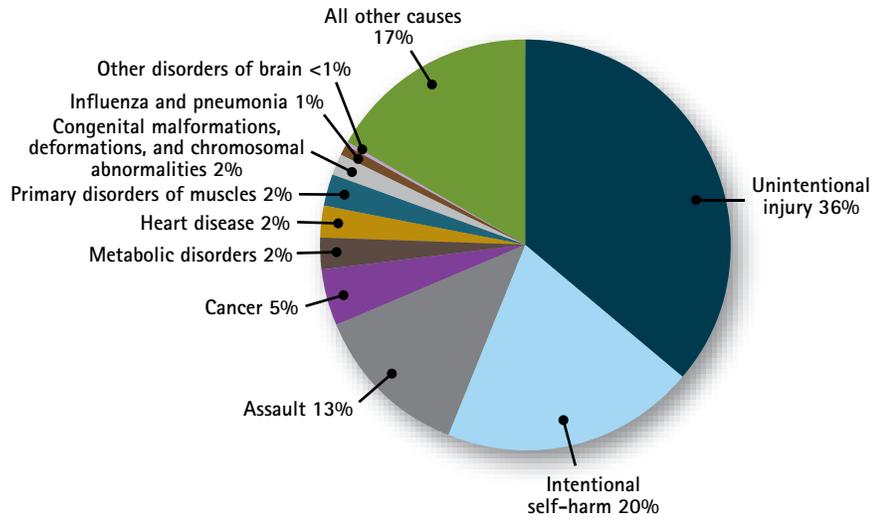
N = 85 with an average of 17 deaths per year in the five-year period.

Figure 3.4: Leading causes of death for youth aged five to 19 years in Manitoba (2004 to 2008)¹⁹



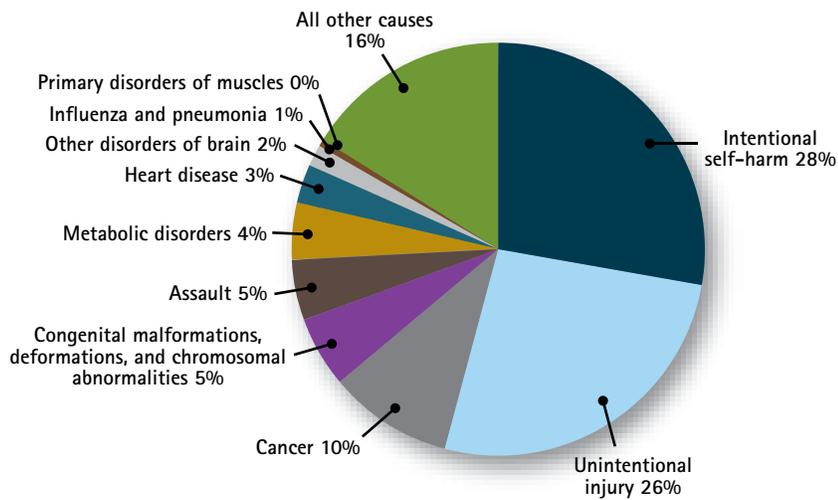
N = 449 with an average of 89 deaths per year in the five-year period.

Figure 3.5: Leading causes of death for males aged five to 19 in Manitoba, 2004 to 2008¹⁹



N = 285 with an average of 57 deaths per year in the five-year period.

Figure 3.6: Leading causes of death for females aged five to 19 in Manitoba, 2004 to 2008¹⁹



N = 164 with an average of 33 deaths per year in the five-year period.

Injuries

Injuries are the most common causes of death in the zero to 19 age group (Table 3.1).

- The rates of unintentional and intentional injury are much higher among males than females, with male suicide rates more than three times those of females.²⁰
- Between 2004 and 2008, 33% of deaths among children were caused by intentional injuries, either suicide or assault.¹⁹

Injury-related deaths¹²⁴

Injuries, including both intentional and unintentional, were the leading causes of death for children. The most common injury-related deaths between 2001 and 2005 were as follows (from first to fifth most common):

- <1: suffocation and choking, violence by others, drowning
- one to four: motor-vehicle collisions, suffocation and choking, drowning, fire and flames, violence by others
- five to nine years of age: motor-vehicle collisions, drowning, suffocation and choking, falls, suicide
- 10 to 14 years of age: suicide, motor-vehicle collisions, suffocation and choking, violence by others, drowning, fire
- 15 to 19 years of age: suicide, motor-vehicle collision, violence by others, suffocation and choking, and drowning

Injury mortality rates are associated with income indicators. In urban areas injury mortality rates for children living in the lowest-income quintile neighbourhoods were almost five times higher than in the wealthiest neighbourhoods. In rural areas, the injury mortality rate was almost four times higher among children in the lowest-income quintile neighbourhoods than the highest-income quintile neighbourhoods.¹²⁴

Table 3.1:
Leading causes of hospitalization for injury among children by age group¹²⁴

<1	<ol style="list-style-type: none"> 1. Falls 2. Fires and burns 3. Assault~ 4. Suffocation and choking 5. Poisoning
1-4	<ol style="list-style-type: none"> 1. Falls 2. Poisoning 3. Fires and burns 4. Motor-vehicle traffic 5. Natural and environmental
5-9	<ol style="list-style-type: none"> 1. Falls 2. Motor-vehicle traffic 3. Struck by or against 4. Pedal cyclist* 5. Cut/pierce
10-14	<ol style="list-style-type: none"> 1. Falls 2. Struck by or against 3. Self-inflicted injuries~ 4. Motor-vehicle traffic 5. Transport, other**
15-19	<ol style="list-style-type: none"> 1. Self inflicted injuries~ 2. Motor-vehicle traffic 3. Assault 4. Falls 5. Struck by or against

~indicates intentional injuries

*This includes all cycling injuries that do not involve a motor-vehicle.

**This includes snowmobiles, off road vehicles, air travel, animal drawn vehicles, and boats – but not drowning.

Suicide

Reasons for suicide are complex. There are some established risk factors for suicide, as well as protective factors to prevent it. The risk factors include mental illness or addiction, history of childhood trauma, and access to the means to end one's life. Protective factors that can offset these risks include having social support and good coping skills, strong spiritual values and early and sustained treatment of depression.²⁴ Youth are one of the groups at highest risk for suicide, particularly Aboriginal youth and youth struggling with issues related to sexual orientation.

First Nations youth

Among youth with First Nations' status aged 15 to 24, suicide rates are five times the national average for males and seven times for females.¹¹ Over half (56%) of the total number of youth suicides are First Nations youth.²⁴ The *Manitoba First Nations Regional Longitudinal Health Survey* found that in 2002 and 2003 almost one in five (19%) of First Nations youth respondents aged 12 to 17 living on-reserve had contemplated suicide. A further one in ten (10%) had attempted suicide at least once.¹⁰¹ From 1998 to 2008, an annual average of 84 First Nations youth ages 18 and under required hospitalization after an attempted suicide, compared to 95 per year on average among non-First Nations youth in Manitoba. Given that the percentage of the provincial population of First Nations youth was about 19% from 2004 to 2008, this indicates that First Nations youth attempt suicide about five times more often than non-First Nations youth.

Mental health and well-being

It has been estimated that 80% of all psychiatric disorders first emerge in adolescence.¹⁶⁶ It is also believed that most of the disorders occurring in childhood or adolescence can be helped with early diagnosis and timely interventions. Mental health is an issue where stigma, inadequate screening, and a lack of health human resources exacerbate problems for children and youth.¹⁶⁶

There is limited population-based data in Manitoba on mental illness, specifically among children and youth. However data on the prevalence of treatment for specific mental illnesses among Manitobans is presented below.

Between 1997 and 2001, the treatment prevalence of at least one disorder (depression, anxiety, substance abuse, schizophrenia or personality disorder) for children aged 10 to 14 was 7.5% for boys and 12% for girls. Treatment prevalence for at least one mental disorder among older teens, aged 15 to 19, was 13% for boys and 24% for girls.²⁵

Mental disorders

Depression

It is a challenge to obtain an accurate measure of the incidence and prevalence of depression in any population, and that is also true for children.

One method used in Manitoba is to consider the rate at which antidepressants are prescribed.

- A range of rates of antidepressant prescriptions were observed across the regions, but data indicates that one per cent of children and youth were prescribed anti-depressants.²⁵
- Rates of children up to 19 years of age with one or more antidepressant prescriptions per year dropped from 13 per 1,000 to 10.9 per 1,000 over the five-year period from 2000/01 to 2005/06.¹²⁴
- Based on treatment prevalence, depression was more common in youth (15-19) than children (10-14), and more common among girls than boys.²⁵
- For females aged 10 to 14, the treatment prevalence of depression was 10%.²⁵
- For males aged 10 to 14, the treatment prevalence of depression was 6%.²⁵
- For females aged 15 to 19, the treatment prevalence of depression was 18%.²⁵
- For males aged 15 to 19, the treatment prevalence of depression was 8%.²⁵

Anxiety

Anxiety disorders are among the most common psychological conditions in childhood; prescriptions for them are on the rise.¹²⁴

- There has been a 20% relative increase (from 5 per 1,000 in 2000/01; to 6 per 1,000 in 2005/06) observed in the proportion of children five to 19 years old with at least one prescription for anxiety disorders and insomnia (anxiolytic medication).¹²⁴
- Significant increases were experienced in South Eastman, Brandon, Winnipeg and North Eastman regions. Rates in Parkland were significantly higher than the provincial average in both periods.¹⁰⁹

- Three per cent of girls aged 10 to 14 were treated with a prescription for anxiety disorder; compared to two per cent of boys.²⁵
- Seven per cent of girls aged 15 to 19 were treated with a prescription for anxiety disorder, compared to three per cent of boys.²⁵
- Prescription rates were also higher among females: 7 per 1,000 in 2005/06 versus 5 per 1,000 for males.²⁵

Substance abuse

- For youth aged 10 to 14, the substance abuse rate was 2.1% for boys and 2.6% for girls.²⁵
- For youth aged 15-19, substance abuse rate was between five and six per cent, specifically for boys 5.2% and girls 5.9%.²⁵

Personality disorder

- Based on treatment prevalence data, personality disorders were treated in one boy in 233 aged 10-14.²⁵
- The treatment rate of personality disorders was more common among girls. One in 172 was treated (aged 10 to 14).²⁵
- Based on treatment prevalence data, personality disorders were treated in one boy in 110 aged 15 to 19.²⁵
- The treatment rate of personality disorders was more common among girls. One in 81 was treated in the 15 to 19 age group.²⁵

Schizophrenia

Symptoms of schizophrenia typically begin between the ages of 16 and 30.³⁷

- Among boys aged 10 to 14, one in 526 was treated for the disorder of schizophrenia.²⁵
- One girl, aged 10 to 14, in 714 was treated for schizophrenia.²⁵

- Among boys aged 15 to 19, one in 132 was treated for the disorder of schizophrenia.²⁵
- One girl, aged 15 to 19, in 263 was treated for schizophrenia.²⁵

Eating disorders

Eating disorders involve a serious disturbance in eating behaviour (either eating too much or too little) in addition to great concern over body size and shape.³⁹ They include anorexia, bulimia and binge eating disorder. It is estimated that three per cent of Canadian women will be affected by an eating disorder in their lifetime, compared to one per cent of men affected.³⁹

Disordered eating is most likely to occur as youth transition into young adulthood. Although they are associated with other mental illnesses such as mood, personality and anxiety disorders, certain populations also have a greater risk of developing disordered eating, primarily adolescent girls.¹⁶⁷ Athletes, particularly those competing in weight-class and endurance sports, or aesthetic sports like gymnastics, are also at elevated risk for disordered eating.¹⁶⁸

Eating disorders can have very serious health consequences; anorexia nervosa has the highest mortality of any psychiatric illness. It is estimated that 10% of those with anorexia nervosa will die within 10 years of the onset of the disorder.¹⁶⁸ Regardless of a child's actual weight, dissatisfaction with his or her body image is a predictor of emotional problems, unhealthy nutrition habits and in extreme cases, eating disorders. In Manitoba, only 56% of the males and 55% of the females in Grade 9 to Grade 12 who were surveyed for the 2009 Youth Health Survey indicated they perceive their body weight as healthy.¹⁶⁹ In the same study, 67% of males and 79% of females had BMIs in the healthy range.

Chronic diseases

Although, in general, chronic diseases are not typically thought of as an affliction of children, there are several conditions that are on the rise. Due to increases in children who are overweight or obese, diabetes rates have increased. Asthma and allergies also appear to be increasing. The conditions described below were selected based on important trends and/or preventability.

Diabetes

Previously called adult-onset diabetes, Type 2 diabetes in children under 19 is of increasing concern in Manitoba. More cases of Type 2 diabetes are being identified in childhood, particularly among Aboriginal children, which has been associated with increases in obesity in this population. There is much morbidity associated with Type 2 diabetes in youth, including early-onset diabetic complications and high-risk pregnancies.¹⁷⁰

Underlying factors include lifestyle and a possible genetic predisposition. In a study looking at children diagnosed with Type 2 diabetes, the average age of diagnosis was 14 years of age. Of those, 58% were female, 25% Caucasian, 44% Aboriginal.¹⁷⁰ Another study of Type 2 diabetes among Aboriginal children in northern Canada noted a prevalence of four per cent among Aboriginal girls aged 10 to 19.¹⁷¹

Asthma

Asthma is the most common chronic condition in children and accounts for considerable illness and health care use.¹²⁴ Its reported prevalence has increased substantially over the past few decades in the Western world.¹²⁴ Although family history is considered predictive of asthma, most

cases of asthma occur in children without a family history.¹⁷²

- The recent prevalence of asthma among children aged five to 19 in Manitoba is stable at 14%, with regional variation.¹²⁴
- Between 2004/05 and 2005/06, childhood asthma prevalence rates ranged from six per cent in Nor-Man and Burntwood, to 16% in Winnipeg.¹²⁴
- Expert opinion is that up to three-quarters of the increase in asthma prevalence is due to actual increases in disease and the remainder may be associated with increases in physician referrals.¹²⁴

Longitudinal studies suggest that susceptibility to childhood asthma is determined during fetal development and in the first three to five years of life. A number of possible risk factors have been suggested for the development of asthma. They include the following:¹⁷³

- family history of allergy and allergic disorders (including hay fever, asthma and eczema)
- high exposure of susceptible children to airborne allergens (pets, house dust mites, cockroaches, mould) in the first years of life
- exposure to tobacco smoke, including in utero exposure
- frequent respiratory infections early in life
- low birth weight and respiratory distress syndrome (RDS)

A recent Manitoba study hypothesized the following additional risk factors:¹⁷²

- antibiotic use
- maternal distress
- being overweight
- low milk consumption and
- exclusive breastfeeding for less than four months

Allergies

Allergic reactions occur when the body's immune system reacts to a particular substance. These reactions may be caused by food, insect stings, latex, medications or other substances.

The most commonly reported type of allergy among Manitoba children is inhalant allergies, followed by food allergies and drug allergies. Requests for consultation for food allergies have continued to increase in recent years, with allergists in Manitoba reporting larger numbers of children with food allergies.¹⁷⁴ In Canada, the nine priority food allergens are peanuts, tree nuts, sesame seeds, milk, eggs, seafood (fish, crustaceans and shellfish), soy, wheat and sulphites (a food additive).¹⁷⁵

- Approximately one-third of children have allergies. Of these, 30% are allergic to inhaled allergens, five per cent have food allergies, and less than five per cent have a confirmed drug allergy.
- The most common inhalant allergies are: cats, mould (cereal grain crops), and snow mould. House dust mites are also important contributors to inhalant allergies.¹⁷⁴
- In childhood, allergy prevalence varies with age. In the first few years of life food allergies are more common. Asthma prevalence is approximately 14% by school age and associated with inhalant allergies in 75% of the children with asthma. In the teens, asthma prevalence falls as hay fever allergies increase, affecting 25% of teens and adults in some areas.

Recommendations to reduce the risk of food allergy include exclusive breastfeeding for the first six months of life and gradual or delayed introduction of foods, especially the more allergenic foods such as egg whites, nuts, and shellfish.¹⁷⁶

Cancer

Although cancer is considered an uncommon disease in children, it is the leading cause of non-injury death in children over the age of one year. Between 2004 and 2007, an annual average of 105 new cancer diagnoses were made among children and youth in Manitoba. An average of eight children and youth died of cancer-related causes per year, from 2004 to 2008. The most common cancer-related deaths in this time period were caused by cancers of the brain (two deaths), blood (two deaths) and adrenal gland (one death).¹⁹ Cancer of the blood includes leukemia and lymphoma.

Unlike many cancers in adults, childhood cancers are not associated with known modifiable risk factors such as tobacco smoke, obesity and diet.¹⁷⁷

Attention deficit hyperactivity disorder

Attention deficit hyperactivity disorder (ADHD) is defined as persistent and developmental problems with inattention and/or impulsivity and hyperactivity that commence prior to the age of seven.¹⁷⁸ ADHD is the most common behavioural disorder identified in school aged children, affecting approximately three per cent to seven per cent.¹²⁴ Although typically diagnosed in childhood, ADHD is considered a chronic condition which often persists into adulthood.

The cause of ADHD is not known. Children with ADHD are more likely to have learning disabilities, school failures, difficulties with peer relationships and conflicts with family. Children affected by ADHD are prone to anxiety, depression and bipolar disorder.¹⁷⁹

- The prevalence of ADHD in Manitoba children appears to have increased across the province. Between 2000/01 and 2005/06 there

was an observed increase in diagnosis from two per cent to three per cent.¹²⁴

- ADHD observed prevalence among Metis children and youth was higher than that among children and youth overall (4% versus 3%).¹¹¹
- Overall provincial rates appear to have been driven by rate increases in urban areas: Winnipeg (3% to 4%) and Brandon (3% to 5%).

Autism spectrum disorders

Autism spectrum disorders (ASDs) range in severity across a continuum and include social, communicative and behavioural impairments. There is no genetic or biological marker for diagnosis and thus the reporting and tracking of these disorders is complex and challenging.¹²⁴

Although ASDs were thought to be rare, studies indicate that their diagnosis (including Asperger's, pervasive developmental disorder not otherwise specified, Rett syndrome and Childhood Disintegrative Disorder) is on the rise.¹²⁴

- Prevalence rates for Manitoba, which include several data sources (medical claims and educational records), show an increase from 0.49% to 0.88% comparing 1996/97 to 2000/01 with 2001/02 to 2005/06.

That ASD rates have increased over time in Manitoba is consistent with many North American research studies that have found similar results over the last one to three years. It is not yet clear how much of this reported increase is due to increased diagnosis or actual rates of the disorder.¹⁸⁰

The cause of autism is not known. Genetics are believed to play a role. Research is investigating other potential causes such as pre and postnatal development, environmental factors and immune deficiencies. Parental behaviour or parenting style are not considered to be causes.¹⁸⁰

Oral health

As previously discussed in the general population chapter, healthy teeth and gums are important to overall health and well-being at all ages. Dental health can affect self-esteem for people of all ages. Children's speech development can be negatively affected by dental health problems. The rates of in hospital surgical dental extraction (see below) indicate the prevalence of severe childhood tooth decay, though these data only include extractions done in a hospital.

Among children from birth to age five, over two time periods (1996 to 2001, compared with 2001 to 2006), the following was observed:

- Overall in Manitoba, the number of dental surgeries increased from 10.2 per 1,000 a year to 14.2 per 1,000 a year.¹²⁴
- Significant increases were seen in the Central, Interlake, North Eastman, Churchill, Nor-Man and Burntwood regions.¹²⁴ In South Eastman, Winnipeg and Brandon, the number of in hospital extractions for children under six was significantly lower than the provincial average.¹²⁴
- The peak age for in-hospital extractions in early childhood is three.¹²⁴ Higher rates of extraction are associated with lower-income areas.
- Between 2001 and 2005, the rate of in-hospital dental extractions in this age group in urban areas was almost 11 times higher among children in the lowest income quintile compared to those in the highest. In rural areas the rate was almost seven times higher in the lowest income compared to the highest income neighbourhoods.¹²⁴
- Between April 1, 2009, and March 31, 2010, 4,393 children underwent pediatric dental anaesthesia (in-hospital surgical dental extractions) in Manitoba. These included all children under six years of age and those

between six and 16 who had serious pre-existing medical conditions.¹²⁴

Manitoba survey data was not obtained for this Report; the following data is Canadian.¹⁸¹

- Of children aged 6–11 years of age, 57% have or have had a cavity. The average number of teeth that are decayed, missing or filled is 2.5.
- Of adolescents (aged 12 to 19 years old), 59% have or had at least one tooth that has been decayed, missing or filled. The average number of decayed, missing or filled teeth in adolescents is 2.49.
- Over the last several decades, it appears that oral health of Canadians has improved. This improvement can be attributed, in part, to the increase in the use of fluorides and an increase in the overall access to professional oral health care.

Risk factors for severe tooth decay are:¹⁸²

- putting a baby to bed with a bottle of anything but water
- drinking from a bottle or sipping cup past one year of age
- carrying a bottle or sipping cup around all day
- not removing the baby from the breast before they fall asleep after the baby develops teeth
- lack of or poor flossing and brushing
- snacking on sweet foods and drinks
- lack of access to dental care and prevention
- poverty

Gum disease and tooth decay are preventable with proper oral hygiene and diet. Fluoridation is also considered to be a preventive dental health measure. Approximately 20% of Manitobans are not on public water systems that are typically fluoridated. Some children do not have health coverage that includes dental care, which may be a significant barrier for some families.

Infectious diseases

This section provides an overview of some of the important infectious diseases in childhood with a focus on those that are communicable and preventable.

Vaccine-preventable diseases

Immunization is often considered to be one of the most effective and cost effective health interventions of our time.¹⁸³ In the childhood period from two months to 18 years of age, vaccinations are routinely recommended and provided at no charge, based on schedules recommended in the Canadian Immunization Guide for the following infectious diseases: diphtheria, tetanus, pertussis (whooping cough); poliomyelitis (polio), haemophilus influenzae B, pneumococcal pneumonia, measles, mumps, rubella, varicella (chicken pox), hepatitis B, invasive meningococcal disease (meningococcus C), human papillomavirus (HPV) and influenza.

Rates of hospitalization among Manitoba children from birth to 19 years of age for vaccine-preventable diseases (VPD):¹²⁴

- Hospitalizations decreased from an average of 0.19 per 1,000 children (1996 to 2001) to 0.08 per 1,000 children (2001 to 2006).
- The majority (60%) of children hospitalized for vaccine-preventable disease (VPD) are infants, and 80% of children hospitalized for VPDs are under five years old.
- About half of the hospitalizations due to VPDs were caused by pertussis, from 1996/97 to 2005/06.
- Higher rates of these hospitalizations were found for children living in lower income areas.
- Regions with lower immunization rates had higher rates of hospitalizations for VPDs.

Immunization coverage:

Proportion of children complete for age

The 2009 Manitoba Immunization Monitoring System (MIMS) report indicates that the percentage of all Manitoba children receiving all the recommended doses of all routine immunizations from birth is 76% at age one; 61% at age two; 68% at age seven; 54% at age 11 and 45% at age 17.¹⁸⁴ While it is noted that the percentages decrease somewhat from one to 17 years, it is important to note that the numerator for these rates include only children who have received all the recommended immunizations from birth. Children who may be considered up to date in their immunizations for their age but received fewer doses than the full schedule, are not captured in these rates. This is because if an immunization series is started later than recommended, fewer doses are required to catch up and so the individual may be complete for age but not have received all doses recommended from birth. It is also important to note that the overall rates have remained stable since 2004. Regional and district rates vary throughout the province.

Vaccine-specific coverage

One combination vaccine protects against diphtheria, pertussis (whooping cough), tetanus, polio, and haemophilus influenza B (Hib). Although the combined vaccine is part of the recommended immunization schedule for children, vaccine for individual diseases can also be given, which is reflected in some of the rates referred to below.

All five of these diseases can cause serious infection and can sometimes be fatal. According to the 2009 MIMS report, rates for children receiving all the recommended vaccine doses for diseases in this group range from 90% for polio at age one to 58% for pertussis at age 17.¹⁸⁴

Mumps, measles, and rubella (MMR)

One vaccine protects against measles, mumps, and rubella (MMR). Measles (red measles) is a highly contagious viral infection, which when severe can cause serious complications. Mumps is a highly contagious but milder. Rubella (German measles) is an important viral infectious disease to avoid during pregnancy because it can cause damage to the fetus.

- The proportion of Manitoba two year olds who are completely immunized for MMR for their age in 2009 was 87%.¹⁸⁴
- By age 17, mumps and rubella coverage rates increase to 91% and measles coverage rates drop to 83%.¹⁸⁴

Varicella (chicken pox)

Outbreaks of chicken pox are reportable in Manitoba, but individual cases are not, so the actual number of cases per year is not known. Chicken pox is a contagious viral infection and its complications can be serious, particularly among newborns and for those after puberty with weakened immune systems. The varicella vaccine was introduced in Manitoba in 2004, as part of the routine schedule for children at age 12 months, with another opportunity to receive the dose as part of a school based program at age four to six years or in Grade 4.

- In 2009, an 80% coverage at two years of age was reported.¹⁸⁴

Invasive meningococcal disease (IMD)

Infection of the spinal fluid, blood or other internal body site by the meningococcal bacteria is defined as invasive meningococcal disease. This is usually a severe life-threatening illness. There are several types of this bacteria – A, B, C, Y, and w-135. Manitoba introduced the meningococcal

Type C vaccine in the school-age population (Grade 4) in 2004 and in 2009 introduced this vaccine to one year olds. At age 11, vaccine coverage was at 79% in 2009.

In the past decade:⁶²

- there was a peak of 12 reported invasive Meningococcal type C disease cases in 2001;
- From 2002–2009 there has been an average of one reported confirmed case of invasive Meningococcal type C disease per year.
- Other reported confirmed types (not prevented by the meningococcal type C vaccine) of invasive meningococcal disease averaged about 4 cases per year during 2000–2009.

Invasive pneumococcal disease (IPD)

Pneumococcal disease is a vaccine-preventable bacterial disease. Like IMD, invasive pneumococcal disease usually manifests as blood infections or meningitis. Most illness from pneumococcal disease is non-invasive, causing ear infections, pneumonia and sinusitis. In Manitoba, routine immunization is recommended for children, seniors aged 65 and older and all children and adults with certain chronic health conditions and risk factors. The universal pneumococcal conjugate vaccine program was introduced in Manitoba in 2004. Pneumococcal pneumonia vaccine coverage rates, in 2009, were 77% at age one and 69% at age two.¹⁸⁴

- The incidence of IPD in Manitoba has been gradually increasing (from seven per 100,000 in 2000, to 11 per 100,000 in 2009). The number of cases among children from birth to 19 has increased from 28 in 2000, to 35 in 2009, with an annual average of 102 cases per year for all age groups.⁶²
- The 10-year cumulative incidence of IPD was highest among children under one year (48.4 per 100,000), and among the elderly.⁶²

- The 10-year cumulative incidence of IPD is highest among northern regions (37.5 per 1,000 cases in Burntwood and Churchill; 18.3 per 100,000 in Nor-Man; and 4 per 100,000 in North Eastman).⁶²

Human papillomavirus (HPV)

When the HPV vaccine is given before being exposed to HPV, it is effective in preventing infection from the main types of cancer-causing HPV. By preventing HPV infections that can cause cancerous changes in the cervix, it is expected that the vaccine will reduce the rate of abnormal Pap smears and the rate of cancer of the cervix. The National Advisory Committee on Immunization currently recommends the vaccine for females from the ages of nine to 26 years. Manitoba Health introduced a voluntary, publicly funded vaccine program for Grade 6 girls starting in the 2008/2009 school year.⁶⁹

HPV vaccination rate in Manitoba schools based on Manitoba Immunization Monitoring System (MIMS) for the 2009/10 school year was 61% for the first dose. The uptake dropped to 54% on the 2nd dose and to 41% on the 3rd dose. First Nations children have lower vaccination rates compared with non-First Nations children. The difference is more evident on the 2nd (14%) and 3rd doses (18%). Twenty-five per cent of First Nations children completed the required three doses compared to 43% of non-First Nations children.¹⁸⁴

Hepatitis B (HBV)

HBV is a viral, sexually transmitted and blood-borne infectious disease. HBV can be spread from mother to child. After acute infection occurs, most healthy individuals can clear the virus from their system. In some individuals, chronic infection can occur which can result in chronic liver conditions.

The Hepatitis B vaccine has been offered to Grade 4 students in Manitoba since the late 1990s. It is also recommended for health care workers, emergency responders and others at high risk of occupational exposure, international travellers and infants born to HBV-positive mothers, among others. Because the program in Manitoba is universal, it is expected that, over time, a larger proportion of the Manitoba population will have been immunized and protected against HBV.

Completed hepatitis B vaccination rate in 11 and 17 year old school children are comparable at 74%. First Nations children have lower uptake than non-First Nations children. At age 11, only 53% of First Nations children were completely vaccinated compared with 77% of non-First Nations children. Complete vaccination rate for 17 year olds for First Nations and non-First Nations are at 61% and 76% respectively. There are few cases of younger children being vaccinated; this is to provide them with protection from living with people with hepatitis B or from being born to mothers with the disease.¹⁸⁴

Sexually transmitted infections and blood-borne pathogens

Some sexually transmitted infections (STIs) are caused by bacteria and some are caused by viruses. Those that are caused by bacteria (ex: gonorrhea, chlamydia, syphilis) can be treated and cured with antibiotics. Those STIs caused by viruses (ex: HIV/AIDS, hepatitis B, HPV) cannot be cured with antibiotics, though treatments do exist to manage symptoms and improve long term outcomes. This is the case for HIV, where highly active anti-virus treatments can delay progression to AIDS and decrease transmissibility.

Bacterial STIs are preventable, they tend to affect younger people, including young women during

childbearing years, and can have significant consequences for reproductive health. They also increase the risk of contracting and transmitting HIV. It is important that prevention initiatives begin in this stage of life and are continued into adulthood.

Chlamydia and gonorrhoea

In the past decade, reported rates of chlamydia and gonorrhoea in Manitoba have increased. The peak incidence has shifted from the 15 to 19 year olds to 20 to 24 year olds, although rates in the younger age group remain high.

Table 3.2: Chlamydia in young Manitobans, 2008⁶²

Age group	Females		Males		All	
	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
<10	0	0	1	1.3	1	0.7
10-14	32	80	6	14	38	46
15-19	1560	3640	442	998	2002	2297

In Manitoba, 30% of all cases of chlamydia in 2008 occurred among those under the age of 20.⁶² More girls than boys have tested positive for chlamydia and gonorrhoea, and that gender gap increased with age.

Table 3.3: Gonorrhoea in young Manitobans, 2008⁶²

Age group	Females		Males		All	
	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
<10	1	1.4	0	0	1	0.7
10-14	3	7.5	4	9.4	7	8.5
15-19	230	537	101	228	331	380

In Manitoba, in 2008, 25% of gonorrhoea cases occurred among those under age 20.⁶² Most cases of gonorrhoea occurred among females in the 20 to 24 age group, although girls aged 15 to 19 followed closely. In the 15 to 19 age group, more than twice as many girls had gonorrhoea than boys, although that gap decreases with age.

Human immunodeficiency virus (HIV) and Acquired immune deficiency syndrome (AIDS)

HIV has been more commonly diagnosed in girls than boys in this province.

HIV data reveals that:⁶²

- In 2009, among Manitobans aged 15 to 19, seven tested positive for HIV of which six were female. No children under the age of 15 tested positive.
- Between 1999 and 2008, there were 23 positive tests among 15 to 19 year olds (about two per year), most of whom were girls (18). Of those under the age of 15, seven girls and two boys tested positive for the virus.
- The proportion of positive HIV test results among Canadian younger adults, aged 15 to 39, has been declining for some time and this trend is continuing.

Street involved youth and high risk behaviours

A 1999 study¹⁸⁵ of 320 street involved youth aged 14 to 24 in Winnipeg found that:

- More than half of the participants were not in school and two-thirds had spent at least one night in a detention facility.
- 92% of females and 81% of males had at least one sex partner in the three months prior to the study; the average number of sex partners was four; many reported having concurrent regular and casual sex partners.
- 21% of females and five per cent of males had been involved in the sex trade in the previous three months.
- Seven per cent had injected drugs in the previous two months, 21% of whom injected with a used needle.
- Only 15% of youth reported consistent condom use with any sexual partner. Condom use was less consistent among sex trade workers, with only five per cent always using condoms. Reported condom use was highest for casual sex partners (31% always used condoms).
- Higher self-esteem scores were associated with greater condom use and fewer sexual partners.
- A good relationship with at least one parent was associated with fewer sexual partners.
- Higher alcohol consumption was associated with lower condom usage, higher numbers of sexual partners and greater frequency of injecting with used needles. Almost half of the study population reported consuming alcohol on a weekly basis and 38% reported binge drinking on a weekly basis.
- 45% reported having experienced sexual, physical or emotional abuse. This was associated with lower condom usage and a higher number of sexual partners.
- 16% of the study population tested positive for at least one of chlamydia (12%) gonorrhoea (2%) or hepatitis B (4%).
- Of the study population, 53% self-identified as Aboriginal. This population had lower self-esteem scores than non-Aboriginal youth, reported greater and more frequent alcohol consumption, more sex partners and greater involvement in the sex trade than non-Aboriginal youth. However, Aboriginal youth reported less injection drug use, and less use of used needles compared to non-Aboriginal youth.

Risk factors, behaviours and other determinants of health

The health of children is affected by many factors, often in combination. Diet and nutrition, physical activity and attachment to parents or caregivers are examples of factors known to influence children's mental and physical health. Childhood experiences influence their susceptibility later on to alcohol or drug use. Overweight and obesity can have serious health consequences in childhood and adult life. Physical consequences of obesity include diabetes and high blood pressure. Psycho-social consequences include low self-esteem, bullying and being bullied, poor academic performance and depression.

Parenting largely influences what resiliency, confidence and self-respect a child develops. Children can develop nearer to their potential with the benefit of safe, nurturing, and positive parenting. Children who are neglected, disciplined inappropriately and grow up feeling unloved, are less likely to develop self-esteem and self-confidence and more likely to turn to gangs, drugs or sex to establish a sense of belonging.¹⁸⁶

Nutrition

In addition to its positive influence on physical health, breastfeeding helps with bonding between mother and baby and promotes the infant's psycho-social development. Breastfeeding may reduce susceptibility to diabetes and reduces the risk of infections and other conditions, as well as obesity later in life.¹²⁴ According to the World Health Organization, breastfeeding leads to improved health outcomes in young children that have long-lasting health effects throughout life.

- In 2003, 85% of women in Canada and 87% of women in Manitoba initiated breastfeeding, according to Canadian Community Health Survey (CCHS) data.²¹
- Self-reported data from the CCHS indicate that 45% of those babies who were initially breastfed were still being breastfed at six months, the recommended minimum for exclusive breastfeeding.³⁶
- 54% of First Nations women surveyed breastfed their babies; of those women, 57% breastfed for up to six months and 34% breastfed beyond six months.¹⁰¹
- The proportion of Canadian women reporting that they breastfed or tried to breastfeed rose from 82% in 2001 to 88% in 2008.¹⁸⁷

Appropriate nutrition in the early years supports the rapid physical and mental development that occurs as infants develop into children and then youth. Habits formed in childhood can be life-long and children who eat well and are physically active from an early age tend to maintain those behaviours into adulthood. Fruit and vegetable consumption is commonly used as an indicator of diet quality, and is associated with healthy body weight. Canada's Food Guide recommends that children eat four to six servings of fruit and vegetables per day and that teens consume seven to eight servings of fruit and vegetables.

- The Canadian Community Health Survey reveals that, among Manitobans 12 to 19, 32% reported eating fruit and vegetables five times or more per day on average, while 68% reported eating them four times or fewer per day.¹²⁴

- Across Canada, 46% of youths aged 12 to 19 ate fruit and vegetables five or more times in a day.¹²⁴
- Children and youth who ate fruit and vegetables fewer than five times per day were more likely to be overweight or obese (31% boys and 34% girls) than those who ate them five or more times daily (27% boys and 25% girls).⁸⁷

Sodium

As noted in the general population health chapter, high sodium intake may also be a risk factor for obesity in addition to high blood pressure, as salty foods encourage people to drink more beverages such as high-calorie pop or sport drinks that are high in calories and refined sugars. One study estimated that 20% to 30% of excess calories consumed by children and adolescents are related to such beverages.⁸¹

Children and nutrition¹⁸⁸

Key findings for Canadian children aged one to eight

- One in five Canadian children has energy intakes that exceed their energy needs.
- Of Canadian children aged one to three, 77% exceed the recommended Tolerable Upper Intake Level for sodium consumption (the maximum believed to be safe, UL), and for children aged four to eight, 93% had intakes exceeding UL.
- The diets of children provide adequate amounts of most vitamins and minerals.
- A notable proportion (47%) of the diets of one to three-year-old children contain total fat in quantities below the recommended range.
- Canadian children may not be meeting their needs for potassium and fibre.

Key findings for adolescents aged nine to 18

- Three in 10 adolescents have energy intakes that exceed their energy needs.
- The saturated fat intakes of Canadian adolescents should be further decreased.
- Canadian teens consume far too much salt: 97% of boys exceed the UL and 82% of girls are consuming above the recommended maximum.
- Many adolescents have inadequate intakes of magnesium, vitamin A and phosphorus.
- Adolescents may not be meeting their needs for potassium, calcium and fibre.

Overweight and obesity

About one-third of Manitoba children and youth consume more calories than they require, resulting in faster weight gain than is considered healthy. This is more common for Manitoba children who live in the north or in lower socio-economic neighbourhoods, and for those whose parents have a low level of education.⁸⁷ Canadian research using 1998/99 data found that 25% of children aged two to 11 living in households with incomes below the low income cut-off were obese, as compared to 16% of those in families living above the low income cut-off.¹⁸⁹

The Public Health Agency of Canada emphasizes the important role parents play in childhood healthy weights. Heavier mothers tend to have heavier babies; children are more likely to be overweight or obese if their parents are. Over-nutrition in early childhood can have a life long effect on obesity.¹⁹⁰ However, there is also a genetic component to weight status. Genetics establish how a body deals with food, and how efficiently it expends calories. The causes are complex; many factors are involved.

Definitions for the weight categories referred to in this section are based on the Body Mass Index (BMI) which was previously described in the general population perspective chapter and is further defined in the glossary.

According to the Report on the Weight Status of Manitoba Children:¹²⁴

- Of children aged two to 17, 31% were overweight or obese, a higher rate than the national average of 26%.

- Rates of overweight or obesity increase with age: 23% of children aged two to five, 30% of children aged six to 11, and 36% of children 12 to 17 years old.
- The prevalence of overweight/obese adolescents was highest in northern Manitoba, at about 43% boys and 45% girls, while the rate in Winnipeg was 37% and in south-western Manitoba was 33%. These data exclude reserves.
- More off-reserve Aboriginal boys (40%) and girls (43%) were overweight or obese when compared to non-Aboriginal boys (29%) and girls (30%), although it should be noted that there was a small sample size of off-reserve Aboriginal children in this study.

Body image

While obesity is a serious health issue, some children who are at a healthy weight believe themselves to be overweight. Body image can negatively affect self-confidence and can contribute to unhealthy behaviours such as disordered eating.* This demonstrates the importance of stressing health, healthy activity and healthy eating in addition to healthy weights with everyone, but particularly with children and youth. It also indicates the effects of idealized body images portrayed in the media and advertising.

- While 67% of male and 79% of female respondents were assessed to be in the healthy weight category, only 56% of males and 55% of females perceived themselves to be at a healthy weight.
- Girls were more likely than boys (35% versus 23%) to perceive themselves to be overweight, whereas in fact 17% of girls and 28% of boys were actually assessed to be overweight.¹⁶⁹

*The Youth Health Survey was self-reported data and has some limitations.

Physical activity

The multiple benefits of physical activity are widely accepted. Too many Canadian children and youth are not active enough.¹⁹¹ Health Canada and the Canadian Society for Exercise Physiology now recommend that children from ages five to 17 should participate in at least 60 minutes of moderate-to-vigorous intensity physical activity (skating, cycling) daily; with bone and muscle strengthening activities (climbing, gymnastics) three times weekly; and high-intensity activities (running, rollerblading) three times weekly.¹⁹²

The 2010 *Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth** found that in Manitoba:¹⁹¹

- Only 13% of youth and children are reaching the recommended amount of physical activity, similar to the Canadian average of 12%.
- 34% of children were moderately to vigorously active for 60 minutes per day, higher than the 31% national average.
- 31% of children were overweight or obese, significantly higher than the Canadian average of 26%.

The level of sedentary behaviour is associated with the prevalence of overweight and obesity, as the CCHS revealed in 2004. The rate of overweight or obesity was greater than 50% among youth spending more than 30 hours per week being sedentary. Cause and effect are probably bi-directional.¹⁹³

Screen time

Screen time refers to time children spend using computers, watching televisions and playing gaming devices. Screen time now occupies much of children's lives and begins at a much earlier age than it has in the past. According to the CANPLAY study by the Canadian Fitness and Lifestyle Research Institute, 90% of Canadian children and youth are not meeting the Physical Activity Guides for Children and Youth. In Manitoba:

- Boys aged six to 11 who spend two or more hours a day outside of school in sedentary activities (video gaming or watching TV) were nearly twice as likely to be overweight or obese as boys who spend less than two hours outside of school in sedentary activities (43% versus 23%).⁸⁷
- For girls six to 11 years old there did not appear to be a close association between daily sedentary activity and the rate of overweight/obesity.⁸⁷

What are children doing with their free time?

- In 1971, the average age at which children began to watch TV was four years, today it is five months. More than 90% of children begin watching TV before the age of two.¹⁹¹
- The Canadian Paediatric Society (CPS) recommends that children under two should have zero screen time, and children two to five be limited to one hour daily. The CPS states that Canadian children watch too much television, which contributes to increased childhood obesity and negatively affects learning and academic performance.^{194**}

Continued next page

* It should be noted that this report data was analysed based on the old physical activity guidelines which are somewhat different than those released in January of 2011 described above.

Screen time *(continued)*

- The National Longitudinal Survey of Children and Youth (NLSCY) indicates that 27% of children aged two to three years old, and 22% of children aged four to five, are watching more than two hours of TV per day. Researchers caution that the flashing lights, quick edits and auditory cuts used in TV shows may overstimulate developing brains and therefore negatively affect language development, attention span and cognitive development. When infants are put in front of a TV at an early age and thereby not encouraged to explore and learn from their own environment, there could be long term consequences in development.¹⁹¹
- The average child sees more than 20,000 commercials each year,¹⁹⁴ and Manitoba children aged two to 11 watch an average of 15.5 hours of TV per week.¹⁹⁵ According to some research, more than 60% of commercials during programs aimed at children promote sugared cereals, candy, fatty foods and toys.¹⁹⁴ Quebec has had in place a ban on all food advertising aimed at children since 1978, and remains the only province with such restrictions.

** This statement goes on to say that, "The fat content of advertised products exceeds the current average Canadian diet and nutritional recommendations, and most food advertising is for high calorie foods such as fast foods, candy and presweetened cereals. Commercials for healthy food make up only 4% of the food advertisements shown during children's viewing time."

Early childhood development

There is increasing evidence that healthy early childhood development sets the foundation for the whole life course. What happens to a child's physical, social, emotional, language and cognitive development early in life can limit or enhance that child's potential for development throughout their lives.¹⁹⁶

As described earlier, the pre and perinatal periods affect health in the childhood period. For example, alcohol consumption during pregnancy can result in persistent physical and mental effects throughout the child's life. Excessive maternal weight gain during pregnancy, gestational diabetes and not breastfeeding may increase the risk for Type 2 diabetes in childhood and later life. In the same way, parenting, to a large degree, influences the future health and well-being of each child.

Attachment, nurturing and positive parenting

Attachment is a term used to describe a baby's instinctive need for a relationship with his or her immediate (primary) caregiver who provides comfort and protection.¹⁹⁷ Appropriate and secure attachment is an important start to form healthy emotional relationships throughout life, and this capacity is shaped during infancy and early childhood. Infants need this safe and secure relationship as a secure base from which they can feel safe to explore and develop.

Babies who experience a secure attachment throughout their young lives demonstrate increased empathy, greater self-esteem and better relationships with parents than those who did not. Families with conflict and stress, relationship breakdown and disorganized attachment through inappropriate parenting can negatively influence the development of children.¹⁹⁷ Lack of such

a nurturing environment can increase a child's risk of developing behavioural and emotional problems, potentially leading to harmful substance use, criminal activity and other antisocial behaviours.

Child protection

Although parents play a pivotal role in nurturing their children, there are times where additional supports are required to protect a child's health or emotional well-being. These supports are often provided by Child and Family Services (CFS) agencies. In Manitoba from 1998/99 to 2000/01 and 2003/04:¹²⁴

- An average of 12% of Manitoba children lived in families receiving services from CFS.
- In both rural and urban areas, there was a strong relationship between living in an area with lower income level and receiving services from Child and Family Services. Those in lower income level areas received more services than families in higher income level areas.
- The number of families in urban areas receiving CFS services was eight times higher in lower income areas compared to those in the highest income areas (30% compared to 4%).
- Eleven per cent of families in rural areas living in lower income areas received CFS services compared to seven per cent among those living in the highest income areas.

Children in care refers to children who have been removed from the care of a parent or other adult due to serious concerns about the provision of care that they are receiving. This can include incidents of abuse and neglect, illness or death. The number of children in care in Manitoba is tracked by the Child and Family Services Information System. The inclusion of information from Aboriginal agencies on children in care began in 2000.¹²⁴

- The prevalence of Manitoba children in care increased from 3.0% in 1998/99 to 2000/01 to 3.3% in 2001/02 to 2003/04.¹²⁴
- All regions of the province saw an increase of children in care except for Churchill, which decreased from nine per cent to seven per cent.¹²⁴
- The prevalence of children in care was higher than the provincial average in the regions of North Eastman, Churchill, Nor-Man and Burntwood.¹²⁴
- It is possible that the overall increase in prevalence is a reflection of a more complete database following the inclusion of Aboriginal agencies than an actual increase in the number of children in care.¹²⁴
- Aboriginal children are over-represented among children in CFS and the percentage of Aboriginal children in care has been steadily rising. In 2001, 81% of children in care were Aboriginal; in 2010 that figure was 87%. Of the 9,120 children in care in 2010, 6,354 children were Status Indian (70%), 873 were Métis (10%), 32 were Inuit (0.4%), 656 were non-Status (7%), and 1,205 were non-Aboriginal (13%). While the number of Aboriginal children in care has increased by 78%, the number of non-Aboriginal children has increased by 15%.¹¹⁶

Measuring school readiness

Early Development Instrument (EDI)

First implemented in Manitoba in 2003, the EDI is a measure of early childhood development and school readiness. Kindergarten teachers from all Manitoba school divisions complete the EDI on all kindergarten-aged children. Readiness for school is a baseline measurement of a child's readiness to begin Grade 1. It takes into account

the family and community factors that influence and shape a child's early development.

The Early Development Instrument (EDI) is used for a population level assessment (not an individual assessment tool) to show what proportion of children are ready to start school. The EDI measures five areas of early childhood development:¹³²

- physical health and well-being
- social competence
- emotional maturity
- language and thinking skills
- communication skills and general knowledge

EDI and other school readiness measures have been shown to forecast later health and learning outcomes through the school years and into early adulthood.

The EDI data shows that in Manitoba, 65% of children are very ready for school in 1 or more areas of development, and 46% in two or more areas. However, significant numbers of children are not considered ready for school: 29% in one or more areas of development (Table 3.4), and 15% in two or more areas.¹³²

Table 3.4: School-readiness in Manitoba and Canada (2005/06 to 2008/09)¹³²

Areas of early development	2005-2006		2006-2007		2008-2009	
	MB	Canada	MB	Canada	MB	Canada
Not ready in one or more areas	28	26	28	29	29	26

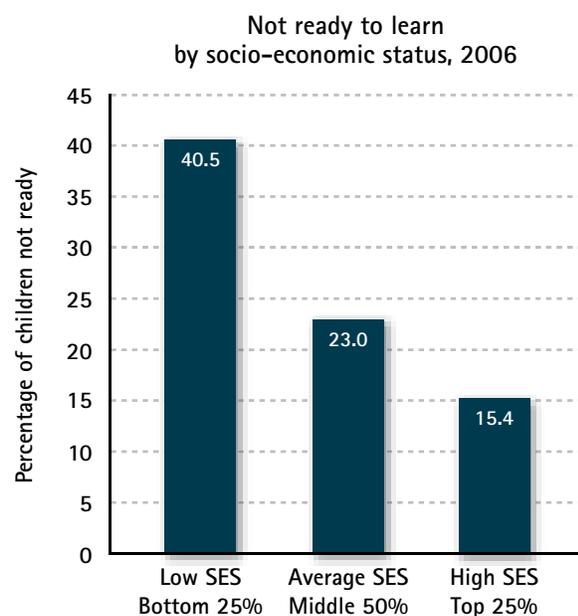
Note: data collected every two years as of 2006/07

Further analyses show that in 2008/09 a greater percentage of Aboriginal children, 45%, were not ready in one or more areas, compared to 25% for the non-Aboriginal child population. A smaller percentage of Aboriginal children were very ready in one or more areas (47%) compared to the non-Aboriginal population (67%).¹³²

It should be noted that a larger proportion of Aboriginal children live in lower socio-economic conditions. When comparisons are made to non-Aboriginal populations living in the same average socio-economic conditions, the differences between non-Aboriginal children and Aboriginal children were no longer statistically significant.¹³² Figure 3.7 shows the association between socio-economic status and readiness to learn.

These observations demonstrate the importance of the interaction between the social determinants

Figure 3.7: Lack of readiness by socio-economic level in Manitoba children¹³²



of health and other factors that need to be understood, monitored and improved to reduce health inequalities. They also demonstrate the potential value of early outreach programs to support families and children at higher risk, in order to improve readiness to learn and increase hope and progress for the next generations.¹³²

Harmful substances

Tobacco

More than 80% of adult smokers begin tobacco consumption before the age of 18. According to the Canadian Pediatric Society, young smokers typically go through an exploratory phase when they begin, but most who continue to smoke have an established addiction within three years. Health effects of adolescent smoking are not all delayed until later in life. Adolescents who smoke have increased rates of respiratory illness compared to non-smokers.¹⁹⁸

- In Manitoba between 2000 and 2009, the smoking rate among youth aged 12 to 19 decreased from 20% to 12%.
- Based on the 2001 and 2005 CCHS, adolescent smoking rates among Metis youth are higher than among other young Manitobans (26% vs. 14%).¹¹¹ However, 26% is significantly lower than the finding in the Aboriginal People's Survey of 1991, which revealed that 56% of Metis youth aged 15 to 24 were smokers.¹¹¹
- Between 1994 and 2003, the percentage of Canadians 12 and older who smoked daily fell from 29% to 23%, with some of the largest declines seen among teens. For example, girls aged 15 to 19 who reported smoking daily fell from 19% to 14% between 2000 and 2003.¹²⁴

Alcohol

Boys have higher rates of alcohol consumption than girls, which explains in part their higher rates of motor-vehicle injury or death, suicide, assault and other health consequences. Chronic alcohol abuse leads to a number of acute and chronic disease conditions. These health consequences are worsened when harmful drinking patterns begun in youth continue into adult life.¹⁶⁹

- According to 2005 CCHS data, an average of 35% (ranging from 18% to 52% for each year) of Manitoba youth aged 12 to 19 reported drinking five or more drinks on 12 or more occasions per year.
- 24% of Manitoba teens aged 12 to 15 consumed alcohol in the 12 months prior to the survey data described in the 2008 Manitoba Child Health Atlas.¹²⁴ For teens 16 to 19 years of age, 78% of respondents indicated that they had consumed alcohol in the 12 months prior to the survey, with 23% saying they consumed alcohol once per week or more.¹²⁴
- According to self-reported survey data, 36% of respondents in grades nine to twelve (typically aged 14 to 18) had consumed alcohol within five days of the survey while another 16% had consumed alcohol within six to 30 days prior to the survey.¹⁶⁹
- Girls report consuming alcohol less frequently than boys.¹²⁴
- Among Aboriginal youth aged 12 to 17, 37% reported drinking in the 12 months prior to the longitudinal survey.¹⁰¹

Fetal alcohol spectrum disorder (FASD)

There is no known safe amount of alcohol that can be consumed while pregnant. It has been estimated that 15% of pregnant women consume alcohol in Manitoba.¹⁵⁷ National estimates suggest that one per cent of babies born in Canada every year have FASD, which means 130 babies born annually in Manitoba. It is widely acknowledged, however, that the true number could be much higher specifically in some communities and populations.¹⁵⁷

Fetal alcohol spectrum disorder is an “umbrella” diagnostic category for a range of syndromes caused by fetal exposure to alcohol and resulting in variable degrees of facial and other physical features, growth retardation, and neurodevelopmental, cognitive and behavioural abnormalities.

Children with FASD are less able to control impulses and other negative behaviours. They also may have difficulty with arithmetic and handling money, reasoning, learning from experience, understanding consequences of their actions, memory, and getting along with others. Affected children are more likely to develop mental health problems, have trouble with the law, drop out of school (or be disruptive in a classroom), be unemployed and develop alcohol and drug problems.

There is a wide range of negative and positive characteristics. They are often loving, affectionate, friendly, artistic, musical, work well with animals and plants, loyal and show a great determination to succeed in life.¹⁹⁹

People with FASD usually require life long support.¹⁵⁷ Children with FASD in care are more likely to become permanent wards and are more likely to spend a greater proportion of their lives in care than are children not affected by FASD. Children and youth living with FASD are over-represented in the child welfare and correctional systems and are likely to require more health, education and social services throughout their lives. In one study, at least 17% of all children in care had been diagnosed with FASD or were in the process of being medically assessed.²⁰⁰ Another study found that 10% of inmates at Stony Mountain had FASD and a further 18% fell into the category of possible FASD.²⁰¹

Impaired driving and youth

Large numbers of Manitoba youth reported having either driven after drinking (or smoking cannabis), or been a passenger in a car driven by somebody who had been drinking.²⁰²

- Approximately 16% of females and 30% of males in Grade 12 had driven within an hour of having two or more drinks.
- Many students reported having ridden in a car driven by somebody who had been drinking: nearly half of Grade 11 and Grade 12 students, nearly 40% in grade nine and 10 and more than 25% in Grade 7 and Grade 8.
- More than 22% of students said they had been a passenger in a vehicle driven by someone who had been smoking cannabis. Fewer than 6% of students said they had driven within an hour or two of smoking cannabis (marijuana).

Illegal drug use

When surveyed about illegal drug use, 20% of students in Grade 9 to Grade 12 responded that they had used street drugs such as cannabis (marijuana), cocaine, heroin, ecstasy or steroids at least once in the previous 30 days.¹⁶⁹

- Of students in grade nine, 14% reported having used drugs
- Of Grade 12 students, 26% reported using drugs
- Of males, 11% admitted using drugs 10 or more times (in the previous 30 days) compared to six per cent of females

Marijuana is the most commonly used drug, excluding alcohol, in Manitoba.²⁰² Average age in Canada of first use is about 14 years, according to the Canadian Public Health Association.²⁰³

- Over one-quarter of students in Grade 7 to Grade 12 surveyed by the AFM in 2007 indicated they had used it in the past year, and 35% said they could get cannabis easily.²⁰²
- Almost half of senior-year students surveyed had tried cannabis (46% in Grade 11 and 45% in Grade 12) and by Grade 12, 10% of students smoke cannabis more than once per week.²⁰²

Sexual and reproductive health

Rates of teen pregnancy and sexually transmitted infections are associated with determinants of health such as racial status, socio-economic status, and education. While rates of sexual activity and unprotected sex among Manitoba youth are approximately the same as the national average, early sexual intercourse is more commonly reported by youth living in the north and by Aboriginal populations.

Close to 42% of Manitoba teens aged 15 to 19 reported having had sexual intercourse, in keeping with the national rate of 43%.¹²⁴ The rate was higher in the north (55%), which also had a lower average age of first intercourse, 15 years old versus 16 years old.¹²⁴ According to the Regional Health Survey, 27% of Aboriginal youth (12 to 17) reported being sexually active.¹⁰¹

Condom use

- Of the 27% of Aboriginal youth who reported being sexually active, 83% indicated that they used condoms.¹⁰¹
- Of Manitoba teens overall who reported having sex in the previous 12 months, 75% said that they used a condom the last time they had sexual intercourse, consistent with the national average.¹²⁴
- Among Metis youth between 12 and 19, a significantly higher percentage reported having had sexual intercourse (63% versus 40% all others) but rates of condom use and recent sexual intercourse were similar to those of the other population.¹¹¹

It is important to note that this is self-reported data; it is possible that some respondents over or under-reported their behaviour.

Oral contraceptive pill (birth control pill) use

- Of sexually active teens (15 to 19), 79% reported that the birth control pill was their usual method of contraception.¹²⁴
- The Central region showed significantly higher rates of birth control use compared to other regions.¹²⁴
- According to the Regional Health Survey, 22% of Aboriginal youth respondents who are sexually active reported using (or that their partner used) the birth control pill; 11% used Depo Provera (long acting contraception injections every three months).¹⁰¹

Summary, reflections and conclusions

Although the overall birth rate in Manitoba is below the threshold to sustain Manitoba's population, two trends that have resulted in population growth are the higher birth rate among Aboriginal Manitobans and increased immigration. As a result, the demographics of Manitoba children continue to change, with expected increasing proportions of Aboriginal and new immigrant children.

Overall, the health of Manitoba's children is good and compares favourably with most countries. This good health, however, is not shared or distributed equally throughout Manitoba's populations or regions. Furthermore, in many instances, our health measurements do not compare favourably with the rest of Canada or other countries. While the health of Manitoba's children has improved over time, there are some areas for concern where trends are going in the wrong direction, such as increasing childhood obesity. In other words, there is much room for improvement.

This is a particularly important public health priority for two main reasons. The first is that the health of children has a lifelong effect on health throughout the whole life course. The second reason is that many improvements can be achieved through better prevention of disease and injury. One example of this is our infant mortality rate. Although our overall average infant mortality rate is similar to those in other developed countries, it is higher in northern, lower income and Aboriginal populations. Preterm births, problems at childbirth and congenital abnormalities are the most common causes. Some of these are preventable or treatable. Opportunities for improvement include better planning for parenthood, better prenatal healthy living and care, improvements in early parenting and the home setting and appropriate access

and use of childbirth and infant health care. Longer term strategies must address underlying factors such as poverty, education and the social environment – all of which have been shown to be associated with infant health.

Today more than 99% of Manitoba newborns survive their first year of life. For them, the issue is the quality of growth and development during the early years. Aside from the less common but very important extreme circumstances of abuse and neglect, many infants and very young children could benefit from improved attachment, stimulation and care. For example, indicators of readiness for learning show that more than one in four Manitoba children are not considered ready to start school in one or more of the five basic areas of early childhood development.

This indicator of delayed early child development is higher than the Canadian average and is higher in families with low socio-economic status, many of whom are Aboriginal. This observation points to the need to further strengthen parenting and family life in Manitoba, identify those families and children at increased risk, and to continue to increase the provision of effective programs to break the cycles of lower education, poverty and poorer health. Further integration and enhancement of social and family services, education, public health and primary care can improve our ability to identify and support families most in need, while continuing to address underlying factors such as poverty.

In addition to improving stimulation and care of infants and very young children, two specific examples of preventive health measures that could be improved are breastfeeding and immunizations. It is problematic that those children at highest risk for other reasons are more often those that

do not gain the benefits of these practices. More effort is needed to understand the barriers to these beneficial health practices and to find innovative and effective ways to address them, including more outreach and follow-up.

Injuries, both intentional and unintentional, are the most common causes of death in children, accounting for more than one-half of all deaths over the age of one year. The most common non-injury causes of death are cancer, metabolic disorders, heart disease and infections.

Injuries are not only the most common cause of death in children, but are also, the most preventable. Most deaths of children from cancer, metabolic disorders and heart disease do not have known preventable causes. Therefore, improvements in childhood mortality rates will most likely come from more successful strategies to prevent suicide, assault and non-intentional injuries. Although some progress has been achieved, there is still a need to enhance our injury prevention strategies in Manitoba. Changing our norms and our culture to a more safety conscious one, for both children and adults, will take consistent efforts through a combination of education, incentives and enforcement. For example, head injuries associated with bicycle falls can be prevented by helmet use, yet most Manitoba children (and adults) do not wear them.

Similar to infant mortality, the variation in rates for childhood mortality indicate the opportunities for prevention and the need to address underlying social and other determinants. For example, childhood mortality rates (aged one to 19) in the Burntwood RHA region were more than three times higher than the provincial rate and five times higher than Winnipeg's rate.

Only a small proportion of illnesses and injuries in children results in death. There are many other conditions of concern and interest that are rarely

fatal but have a significant impact on health and health care. Asthma and allergies, for example, are considered the most common chronic childhood conditions, and appear to be on the increase for reasons not yet understood. Oral health remains a significant issue for many Manitobans and is increasingly recognized as important for its impact on physical and mental health throughout the life course. Many children do not have access to insured dental benefits, another factor contributing to differences in health status.

Conditions like obesity and Type 2 diabetes are increasing, a trend of great concern and consequence for child and adult health. Reversing this trend is a high priority and will take significant change in the conditions of the built and social environment, which in their present state too often result in unhealthy eating and inadequate physical activity.

There is increasing recognition of the importance of mental health – as an outcome itself and as a cause of other illness and injury.

Of increasing concern are behavioural disorders such as attention deficit hyperactivity disorder (ADHD), autism and fetal alcohol spectrum disorder. All three of these conditions can occur on a spectrum from very mild to severe, and may overlap with each other or other mental and physical health conditions. They can have a significant impact on education, social development and other health outcomes. More research is needed to understand the prevalence, risk factors and opportunities for prevention.

In childhood and youth, personality is formed and habits are established for many health related behaviours such as diet, physical activity and social relationships. Sexual maturation and hormonal changes during the teen years combine with normal impulsive behaviour, common peer pressures and societal influences to have a

substantial impact on behaviour. This is evident for example, in the experimental use of alcohol and other substances and their impact on unsafe sex and injury risk.

An examination of the health status of children and youth in Manitoba reveals the noteworthy influences that social determinants of health can have upon this age group. Many significant causes of death, injury and illness show a correlation with lower income, education, place of residence, racial status and other factors. Suicide, unintentional injury and many communicable diseases are more common in our relatively deprived northern, rural and urban areas.

This chapter has outlined some of the major outcomes, risk factors and determinants of health from birth to early adulthood. In the first year of life, risk of death is related to congenital abnormalities or complications of pregnancy and childbirth. Motor-vehicle collision injuries become a more significant cause of death or hospitalization for children both as passengers in vehicles and as pedestrians and cyclists. Later in youth, suicide and homicide are more common.

The consequences of child abuse and neglect, often associated with substance abuse and other factors in dysfunctional families, can be life-long. Neighbourhood and community safety is a significant health challenge for children living in areas where gangs are active, or for children affected by bullying in many of its forms. During the teen years, pregnancy, sexually transmitted infections, sexual orientation, substance use and mental health become increasingly significant issues.

While social determinants of health such as poverty can profoundly affect a child's health, there are increasing numbers of children and

youth across the socio-economic gradient who are overweight and obese, and at risk for other health problems. Increasing amounts of screen time in front of a TV, computer or gaming device rather than in more active mental and physical activity is a growing concern for all children and all families. In addition to the effects of these influences on physical health, it is important to understand and address the effects of influences such as TV content, advertising, and video games on attitudes towards violence, sex, respect, tolerance and cooperation.

Some of the most important factors for health are difficult to measure or survey. Growing up in a safe, stimulating and loving family and home environment is probably the single most important determinant of health outcomes – and is connected with many other determinants and factors. Positive effective parenting not only creates a safe and non-threatening environment but also promotes the development of a physically, mentally, and emotionally healthy child and creates a readiness for life-long learning and health, good relationships, high self-esteem and hopes for the future.

Promoting healthy families is the best investment we can make in our future health. Further integration and enhancement of social and family services, education, public health and primary care can improve our ability to identify, reach out and support families most in need. At the same time, it is important to continue to address underlying causes of persistent health inequalities such as poverty, discrimination and prejudice; whether based on race, gender or other characteristics. Every child has the right to grow and develop to their potential in an environment that meets their needs, including love, stimulation and security. Healthy children are the foundation for healthy adults.

Adults

Priority points

- > Most adults considered themselves to be in good health or better and more than 90% live into their senior years.
- > Cancer is the leading cause of death among adults, followed by heart disease and unintentional injury.
- > The leading causes of cancer-related deaths in adults are breast, lung, ovary and colon.
- > It is estimated that about two-thirds of Manitoba women have been screened for breast cancer and/or cervical cancer at the recommended intervals.
- > The prevalence of heart disease has decreased by almost six per cent since 2000, and heart attacks among Manitoba adults have decreased by just over 13% in the past decade.
- > The leading causes of injury-related deaths in adults are suicide, motor-vehicle collisions and assaults.
- > Rates of diabetes have been increasing; one in 14 Manitoba adults aged 45 to 64 have been diagnosed with Type 2 diabetes; the rate is three times higher amongst First Nations adults; people in low income areas have been diagnosed at twice the rate of those in high income areas.
- > The number of new patients needing dialysis has more than doubled between 2001 and 2010; 45% of people with end-stage kidney disease have been diagnosed with diabetes.
- > Workplace injuries have declined in the past decade with the exception of the service sector.
- > The total number serious injuries due to motor-vehicle collisions decreased by 23% from 2003 to 2009.
- > Most adults (93%) self-rated their mental health as good or better.
- > More than one-third of Manitobans aged 10 and older have been treated for a mental illness: one in three women and one in four men.
- > About 5% of Manitoban adults have been treated for substance abuse; these rates are higher among northern Manitobans and those living in lower income neighbourhoods in Winnipeg and Brandon.
- > Reported rates of sexually transmitted infections chlamydia and gonorrhoea have continued to increase. Reported HIV rates have been stable.
- > About one-third of cases of HIV were reported as the result of heterosexual exposures compared with 15% among men having sex with men; one-fourth of all HIV cases were in Aboriginal people and one fifth were in African or African-American people; 45% of new cases were women.
- > Rates of tuberculosis have remained stable since 1995 but are 10 times higher among First Nations people.
- > Over 80% of all Manitoba adults are estimated to have one or more avoidable risk factors for chronic disease. Those living in lower income households had more exposure to these risk factors than did those with higher incomes.

- > By age 65, one-half of Manitobans have been diagnosed with high blood pressure.
- > Over half of Manitoba adults are overweight or obese.
- > Based on reported physical activity during work and leisure time combined, 29% of Manitobans aged 15 to 74 are considered active, 34% moderately active and 37% inactive.
- > One-third of Manitoba adults report consuming fruits or vegetables five times or more per day, the recommended minimum.
- > More than 90% of men and 70% of women reported exceeding the recommended amount of salt in their diet.
- > One in four adults under 45 years of age is a smoker; one in six adults over 45 years is a smoker. The rates are higher among Aboriginal people and other sub-populations.
- > Over one in four adults are considered heavy drinkers – men (one in three) twice the rate of women (one in six).
- > Since 2006 beer consumption has gone from 83.5 litres per adult to over 88 litres per adult, and wine increased from 8.7 litres to 10 litres in the same time frame.

Introduction

The adult years, from ages 18 to 64, comprise important phases which bring unique opportunities and challenges to physical and mental health. Most young adults prepare for and become established in the workforce, form partnerships and have children. Most middle-aged adults raise children, take care of older parents or relatives and prepare for retirement. Stresses related to work and family life are common; more severe stress related to significant changes in employment (loss or change of job) or personal relationships (ex: separation, divorce, re-marriage) can have significant impacts on personal health and other significant relationships.

Although many aspects of our health are already determined by the time we reach adulthood, there is still great opportunity in our adult years to influence our health and future. As described in previous chapters, genetic and early childhood influences are of great importance in shaping our lives forever. A healthy pregnancy and effective parenting establish the foundations for childhood health, education, self-esteem and self-confidence – all important conditions for a fulfilling and healthy adult life. The adult years are important in providing an opportunity to build on those positive aspects of our childhood foundations and also address those issues that we have carried into adulthood which require change or resolution. Social and physical influences in many different settings affect the health of adults, including the home, the workplace, spiritual settings, retail stores and restaurants, and locations related to children, such as schools and venues of children's activities (ex: day-cares, community centres).

This chapter, like other parts of this report has not attempted to include the full spectrum of health outcomes or their causes. The main considerations for inclusion were burden of illness, preventability and availability of information.

Manitoba's adults: Demographics

Manitoba's adult population continues to grow, in large part due to immigration from various parts of the world and migration from within Canada. In 2009, almost 60% (725,528) of Manitoba's total population was comprised of adults aged 20 to 64.¹

- In 2009, approximately 13% of the Manitoba adult population were Aboriginal. In the Winnipeg and Brandon RHAs 62% and 61%, respectively, of the population were 20 to 64 years old.
- The Nor-Man RHA had the smallest proportion of adults aged 20 to 64, at 53%.
- Sex distribution among adults 20 to 64 is essentially equal.

Health outcomes

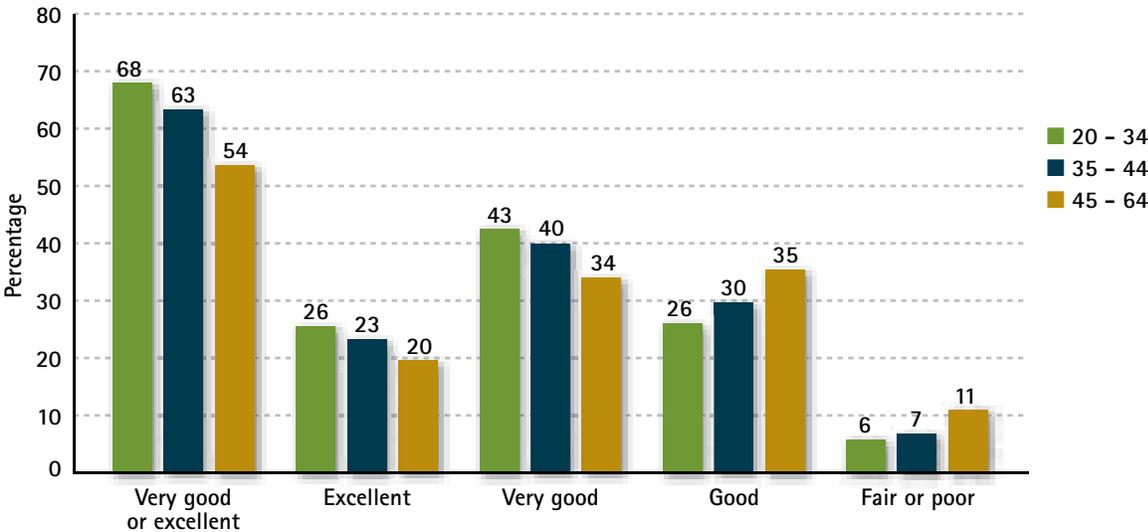
Self-rated health

Self-rated health is a subjective measure of how people describe their own health. It is measured on a four-point scale: excellent, very good, good, and fair or poor. According to the 2005 Canadian Community Health Survey (CCHS), most of the Manitoba respondents described their health as excellent or very good. Self-rated

health status tended to decline with age, and varied by sex.³⁶

- Of respondents aged 20 to 34, 68% reported their health as excellent or very good compared to 54% of those aged 45 to 64.
- “Fair or poor” health status was reported by 11% of respondents aged 45 to 64 which was almost twice as high as those aged 20 to 34 (6%).

Figure 4.1: Self-rated health of Manitoba adults

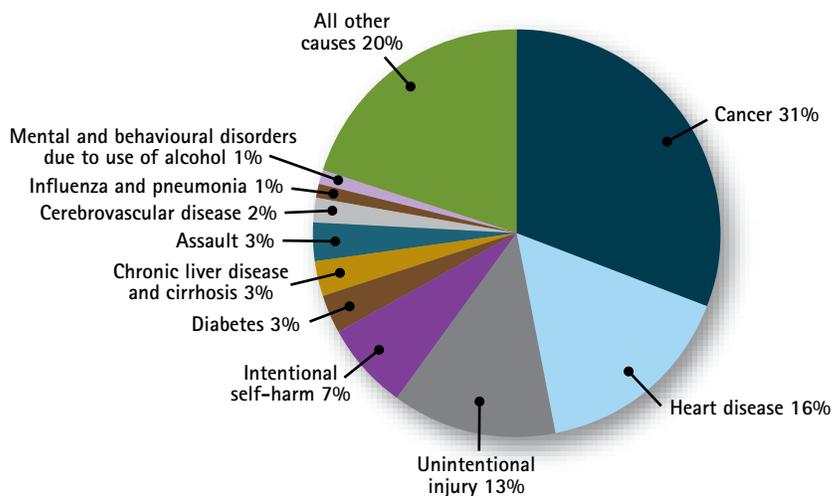


Mortality

From 2004 to 2008 an average of 1,446 adults died each year. This is approximately 0.2% of the total adult population of Manitoba.¹⁹

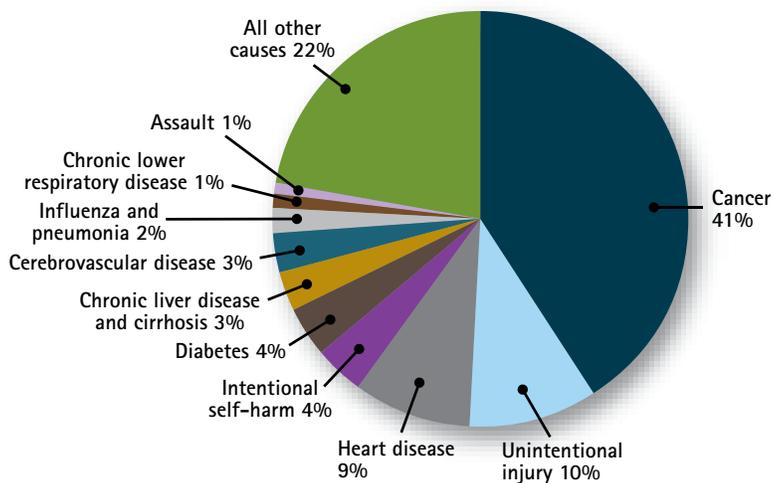
- More men die than women in the 20 to 59 age group, on average 885 versus 561 per year.
- Overall, cancer is the number one cause of death (31%), followed by heart disease (16%) and unintentional injuries (13%).
- Men experience more deaths than women due to heart disease, unintentional injuries, suicide, diabetes and other causes, while women are more likely than men to die from cancer.

Figure 4.2: Leading causes of death for all adults aged 20 to 59 in Manitoba, 2004 – 2008¹⁹



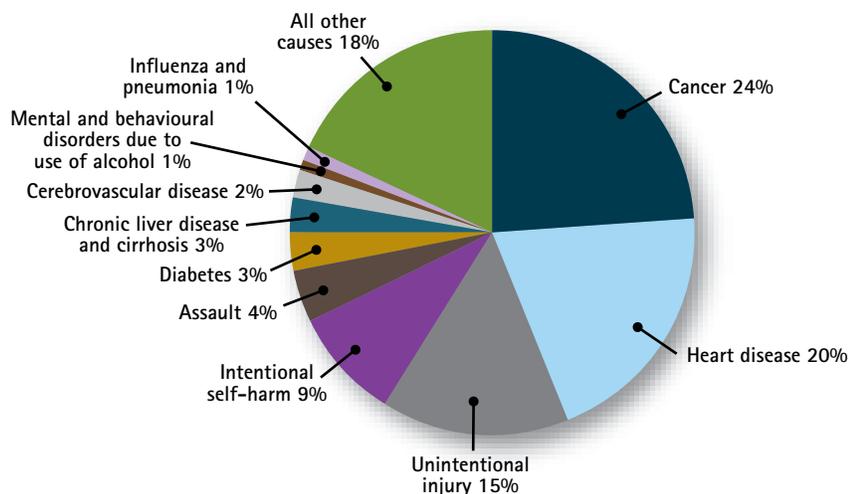
N = 7,230 with an average of 1,446 death per year in this period.

Figure 4.3: Leading causes of death for female aged 20 to 59 in Manitoba, 2004 to 2008¹⁹



N = 2,806 with an average of 561 deaths per year in this period.

Figure 4.4: Leading causes of death for males aged 20 to 59 in Manitoba, 2004 to 2008¹⁹



N = 4,426 with an average of 885 deaths per year in this time period.

Causes of death by decile

Breaking down the adult age group by decile shows how the most common causes of death vary with age. Among younger adults, unintentional injuries and intentional injuries (suicide and assault) are much more common causes of death. While cancer is always a prominent cause of death, it becomes more so as adults age, similar to other chronic diseases. Further details about causes of death in Manitoba by age decile are available in the appendix.

Table 4.1

Age group	Average annual number of deaths and proportion of all deaths ¹⁹	Leading causes of death ¹⁹
20 to 29	126 (9%)	Unintentional injuries Intentional self-harm Assault
30 to 39	170 (12%)	Unintentional Injuries Cancer Intentional self-harm
40 to 49	397 (27%)	Cancer Heart disease Unintentional injuries
50 to 59	754 (52%)	Cancer Heart disease Unintentional injuries

Injuries

Injuries are the leading cause of death and hospitalization among younger adults.²⁰ Injury deaths are more common among men than women, and among Aboriginal people than non-Aboriginal people.

Injury-related hospitalizations

From 1992 to 2001, there were on average 5413 injury-related hospitalizations per year among Manitobans aged 20 to 64, which represents 45% of all hospitalizations for injuries in all ages. Leading causes of injury-related hospitalizations for adults were: falls (23%); self-inflicted injuries (12%); assault (11%); and motor-vehicle collisions (11%). Men were almost twice as likely as women to be hospitalized for injuries of all types; however the gender gap decreases with increasing age.²⁰ Injury-related hospitalizations were more common in younger age groups. Leading causes of hospitalizations due to injury varied by age groups as well.²⁰

- Age 20 to 34: There were, on average, 2,374 hospitalizations for injuries in this age group per year. Leading causes of injury-related hospitalizations were assault, self-inflicted injury, falls and motor-vehicle collisions. Men were almost twice as likely as women to be hospitalized for injuries.
- Age 35 to 44: There were, on average, 1,305 injury-related hospitalizations per year in this age group. Leading causes of injury-related hospitalizations were falls, self-inflicted injuries, motor-vehicle collisions, assault and overexertion. Men were hospitalized over 1.5 times more often than women due to injuries.

- Age 45 to 54: There were, on average, 955 injury-related hospitalizations in this age group per year. Leading causes of injury hospitalizations were falls, motor-vehicle collisions, self-inflicted injuries, assault and overexertion. Men were hospitalized for injuries about 1.5 times as often as women.
- Age 55 to 64: There were, on average, 779 injury-related hospitalizations per year in this age group. Leading causes of injury hospitalizations were: falls, motor-vehicle collisions, overexertion (for example musculoskeletal strains), self-inflicted injuries, and environmental injuries. Men were hospitalized for injuries only slightly more often than women in this age group.

Injury-related deaths

- From 1992 to 1999, there was an average of 294 deaths per year in Manitoba aged 20 to 64 per year as a result of injuries. This represents 53% of all injury-related deaths in all ages, and approximately 19% of all causes of death in adults. Leading causes of injury deaths in this age group were suicide (33%), motor-vehicle collision (21%), assault (6%), drowning and submersion (5%), and poisoning, including drug overdose (4%). In this age group men were approximately three times more likely than women to die as the result of injury.²⁰
- Injury-related deaths were more common in younger adults. Leading causes of injury-related deaths varied by age groups as well.²⁰

Table 4.2

Age group	Average number of injury-related deaths and proportion of all injury-related deaths per year ²⁰	Leading causes of injury-related deaths ²⁰
20 to 34	128 (43%)	Suicide Motor-vehicle traffic Assault
35 to 44	73 (25%)	Suicide Motor-vehicle traffic Poisoning
45 to 54	53 (18%)	Suicide Motor-vehicle traffic Falls
55 to 64	41 (14%)	Suicide Motor-vehicle traffic Falls

Unintentional injuries

Deaths

From 1992 to 1999, there were on average 158 deaths per year among Manitobans aged 20 to 64 because of unintentional injuries, accounting for just over half of all injury-related deaths in all ages (54%)²⁰, and approximately 12% of all deaths among adults. Motor-vehicle collisions, drowning and submersion, poisoning (including drug overdose), suffocation and choking, and falls were the leading causes of death due to unintentional injury. Deaths due to unintentional injuries were three times higher among adult men than women.

Table 4.3: Leading causes of unintentional injuries by cause among Manitoba adults aged 20 to 64, 1992 to 1999²⁰

Cause of death	Average annual number of deaths	Proportion of deaths due to unintentional injury
Motor-vehicle traffic	62 (Men 43; Women 19)	41%
Drowning and submersion	15 (Men 14; Women 1)	10%
Poisoning	13 (Men 8; Women 5)	8%
Suffocation	12 (Men 10; Women 2)	8%
Other	51 (Men 44; Women 7)	34%

Motor-vehicle statistics

Based on 2009 traffic collision statistics from Manitoba Public Insurance (MPI), the injury rate from motor-vehicle collisions has decreased in Manitoba, as has the number of drivers convicted of impaired driving. Males are more frequently involved in collisions causing death or serious injury than females. Males are more likely to have their licences suspended for impaired driving.²²

- The total number serious injuries due to motor-vehicle collisions has decreased by 23% from 499 in 2003 to 384 in 2009 (210 males, 174 females).²²
- Fatalities from traffic collisions have decreased by 24% from 113 in 1999 to 86 in 2009 (63 males, 23 females).²²
- Drivers aged 25 to 44 account for the highest proportion (47%) of all alcohol-related Criminal Code convictions, but only comprised one-third (34%) of all active drivers in 2008. The number of convictions in this age category has been declining. In 1998, there were 1,715 convictions in this age category; in 2003 there were 1,056; and, in 2008 there were 954.²²
- Of a total of almost 13,000 youth aged 18 to 19 years of age, 341 males had their licences suspended compared to 76 women in 2009.²²

Those aged 25-44 accounted for the highest proportion of motor-vehicle-related casualties, injuries or death. While women account for just over half (54%) of all casualties in traffic collisions, men account for a higher proportion of victims killed (73%) or seriously injured (55%).²²

Young drivers (aged 16-24) have a higher relative rate of involvement in traffic collisions than older drivers.

Factors associated with motor-vehicle collisions and related injury can be grouped in order of importance as follows:²⁰⁴

- Human factors: driver error; inattention and age; speeding; seatbelt use; use of alcohol or drugs
- Roadway-environment factors: lane width; shoulders; signage and curves; roadside hazards; driving conditions or weather
- Vehicle factors: rollover risk of vehicle types, like sport utility vehicles; vehicle size; crumple zones and airbags

Workplace injuries

Most adults aged 20 to 64 spend a considerable proportion of their day working. Adults are exposed to various work-related conditions and situations, some of which are potentially harmful. Protecting workers from hazards in the workplace requires efforts on the part of the employer (policies, education and training, work design and assignment, provision of safety equipment and supervision), the employee (following safety procedures, safe use of equipment and proper use of safety gear) and government policy, laws and enforcement.

Since 2000, there has been a declining trend in both the rate of all injuries and the rate of time-loss injuries in Manitoba.²⁰⁵ (See Figures 4.5 and 4.6) Younger workers, males and people in the service sector, are most at risk. Most workplace injuries are musculoskeletal injuries – most commonly back injuries.

During the period between 2000 and 2009:²⁰⁵

- The overall rate of workplace injuries declined from 12 injuries per 100 full time workers per year to seven injuries per 100, probably due to the SAFE Work campaign, financial incentives for employers to prevent injuries and improved inspection and enforcement.²¹
- Injuries that resulted in missed time from work declined from six injuries per 100 per year to four injuries per 100, a decline of 38% in the time-loss injury rate over 10 years.
- In 2009, the highest rate of injury occurred among males aged 20 to 24, at five injuries per 100 per year, but it has declined by 53% since 2000.
- In 2009, women experienced fewer workplace injuries than males, three injuries per 100 full-time equivalent (FTE) workers per year compared to four injuries per 100.

Trends in workplace injuries

The service sector had the highest number of time-loss injuries.²⁰⁵ Musculoskeletal injuries (MSI) represent the major cause of injury rates, as they are common among workers in the health

Figure 4.5: Rate of workplace injuries (all-injury rate, 2000 to 2009)²⁰⁵

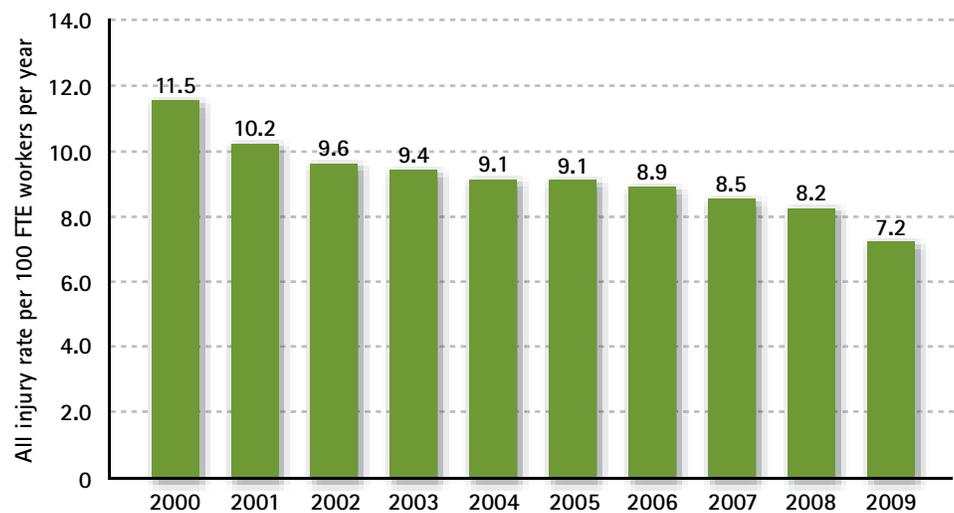
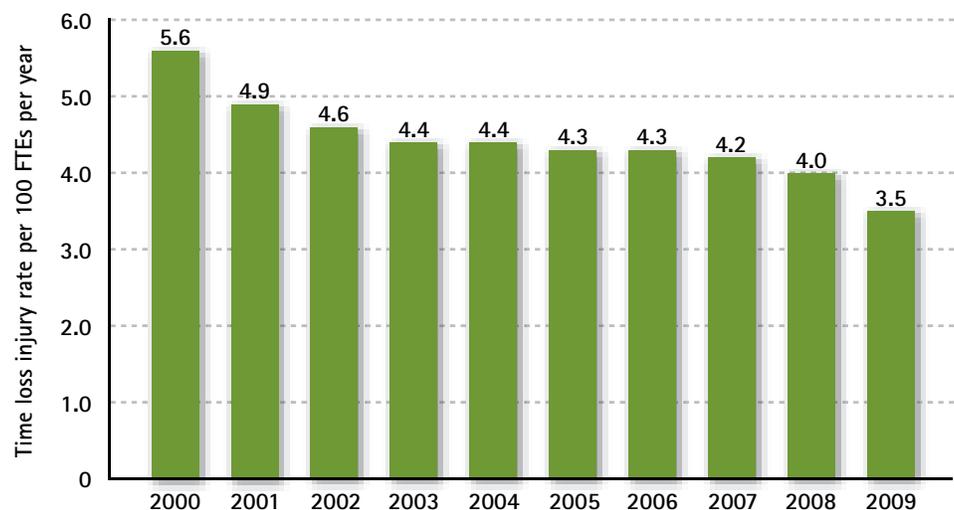


Figure 4.6: Time-loss injury rate²⁰⁵



care sector.²⁰⁵ In 2009, 76% of time loss injuries in health care were musculoskeletal.²⁰⁵ The majority of these are back injuries, many of which occur as a result of patient care activities.²⁰⁵ Workers over the age of 45 have historically had the lowest reported rates of workplace injuries.²⁰⁵ While this fact continues to hold true, the injury rates for workers in this age group has not been dropping as steadily as it has for other groups and hence the gap between these rates has been declining.²⁰⁵

Work-related fatalities

Work-related fatalities can be classified as either acute-hazard fatalities or occupational disease fatalities. Acute-hazard fatalities are largely caused by injuries in the workplace where death occurs immediately or soon after the incident. Occupational disease deaths are a result of exposure to various hazards that result in illnesses such as a respiratory disease or cancer. Occupational disease deaths usually occur years following the exposure. In 2009 there were 18 acute-hazard deaths and 19 occupational disease deaths.²⁰⁵

While the rates of fatalities tend to vary from year to year, the causes and related industries remain fairly constant. For acute-hazard injuries, motor-vehicle-related injuries remain a leading cause.²⁰⁵ For occupational disease, asbestos-related disease and other forms of cancers predominate.²⁰⁵

Figure 4.7: Acute-hazard and occupational-disease fatalities,* 2000 to 2009 by cause²⁰⁵

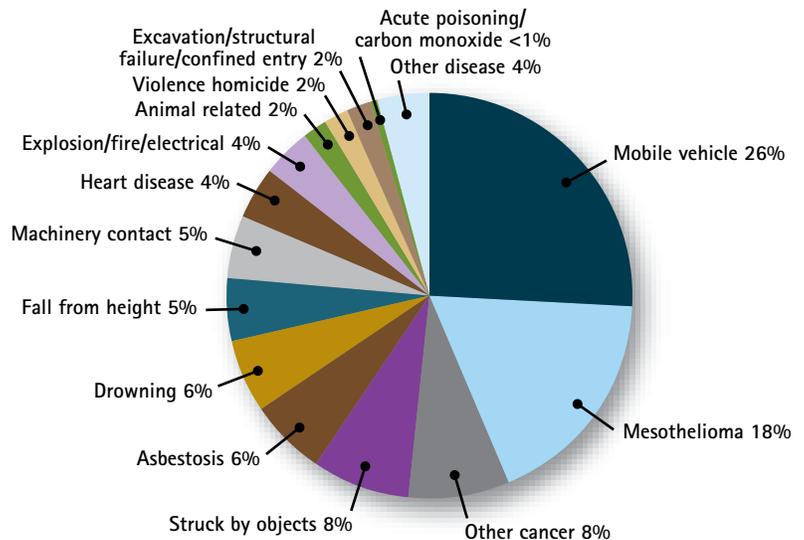
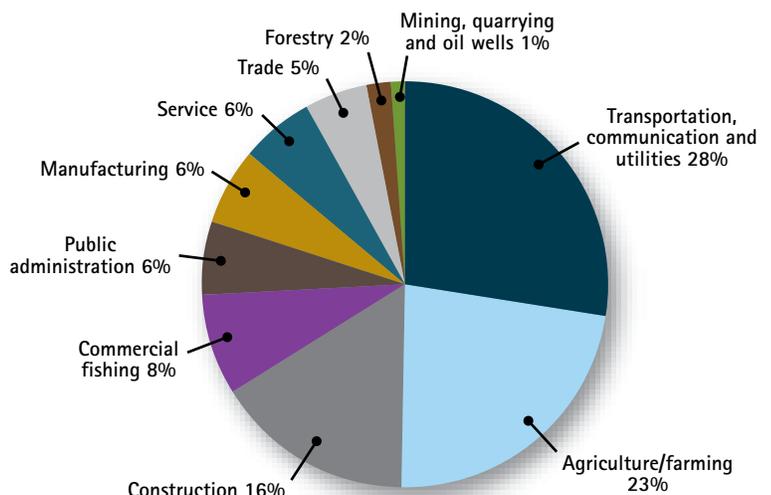


Figure 4.8: Percentage of acute-hazard fatalities* by industry sector, 2000 to 2009²⁰⁵



*Please note that the 'Occupational Disease Fatalities' category contains only those fatalities which have been accepted by the Workers Compensation Board as a claim. Therefore this number understates the actual reality of work-related deaths due to occupational disease. However we have no other data base or reporting system to consult.

- 28% of work-related fatalities occurred in the transport, communication and utilities sectors which constitute seven per cent of the workforce.
- 23% of work-related fatalities occurred in the agriculture/farming sector which constitutes five per cent of the workforce.
- 16% of work-related fatalities occurred in the construction sector which constitutes six per cent of the workforce.
- Five per cent of work-related fatalities occurred in the trade sector which constitutes 15% of the workforce.

Intentional self-injury (suicide)

Suicide is the second leading cause of death for adults in their 20s and the fourth leading cause of death for adults aged 20 to 59. Suicide occurs due to a combination of biological, psychological, and social causes and may be associated with mental illness and/or addictions, history of trauma, situational reactions, ill health and loss. Suicide attempts are more common among people in low income areas, and a significant gradient with average household income has been found, with rates among males twice as high and females four times as high in the lowest income areas compared to the highest income areas²⁵. Protective factors include healthy individual coping strategies and family, social and community supports.²⁴

Suicide attempts

Data for suicide attempts only include individuals who were documented by a physician or who were hospitalized. Among Manitoba residents aged 10 and older the documented suicide attempt rate is eight per year per 10,000 residents.²⁵ From 1997 to 2001 in Manitoba, there were an average of 832 suicide attempts per year carried out by 726

individuals. Data from the Canadian Community Health Survey (CCHS) indicate that there are approximately four times more suicide attempts by Manitobans than are documented in medical and hospital records.

- The suicide attempt rates were highest in Burntwood, Nor-Man, North Eastman and Brandon. South Eastman, Central and Interlake had lower than average attempt rates.
- The rate of documented suicide attempts was nearly twice as high among women as it was with men: 10.4 per 10,000 versus 5.7 per 10,000, respectively.²⁵
- Each year on average, 89% (649 people) were first-time attempts, nine per cent were second-time attempts (65) and one per cent were third-time attempters (8).
- Rates are higher among people in lower-income rural and urban areas, with over 40% of suicide deaths or attempts occurring in the 20% of the populations in the lowest income areas in 2005 to 2007. This socio-economic gap in the rates of suicide or attempts has widened over time in rural areas.¹⁷
- In 2002/03, almost one-third (28%) of First Nations on-reserve adult respondents (18 and over) had thought about ending their own life compared to 13% in the general Canadian population.²⁰⁶
- Fifteen per cent of First Nations on-reserve adults surveyed in Manitoba had attempted suicide, which is five times higher than the overall Canadian population (3%).²⁵
- The most important risk factors for predicting suicide attempts are: being diagnosed with a mental illness in the previous year; being of poor health; being young; being female; and living in a low income area.²⁵

Suicide deaths

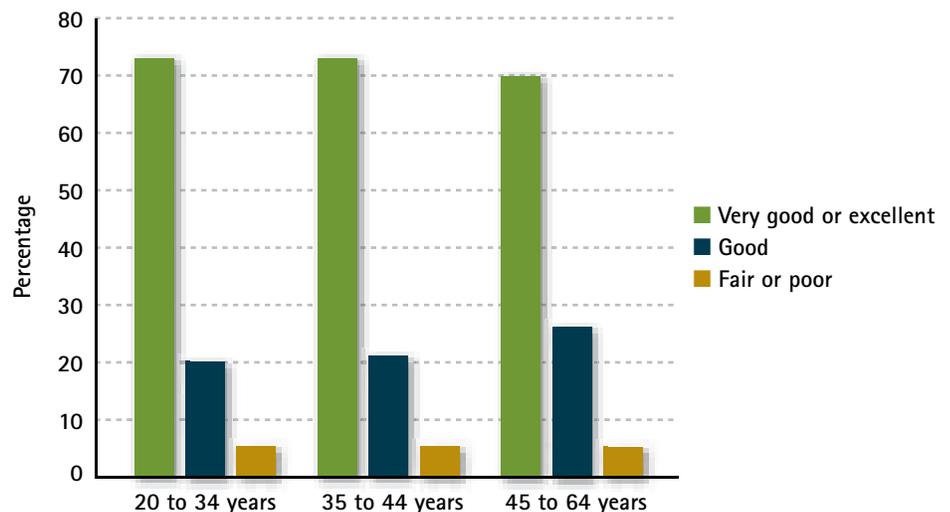
- From 2004 to 2008, an annual average of 101 Manitobans aged 20 to 59 died by suicide. Men were three times more likely to die by suicide than women.
- Because suicide is not always easily confirmed, statistics probably underestimate the rate of suicide.
- The most common suicide method for males was hanging (37% of all suicides) and for females was poisoning, usually through a drug overdose (51% of all suicides).
- From 1992 to 1999 there was an annual average of eight suicides among First Nations people of all ages in Manitoba¹¹
- Key risk factors for suicide among Manitoba adults are: male sex; being diagnosed with a mental illness in the previous year; being young; being Aboriginal; and having poor health.²⁵
- Region of residence and neighbourhood income do not appear to be significant predictive factors for suicide deaths.²⁵

Mental health and well-being

Self-rated mental health

Most Manitoba adults rated their mental health as very good or excellent in the 2005 Canadian Community Health Survey (CCHS).³⁶

Figure 4.9



*Age 35 to 44, fair or poor self-rated mental health – five per cent; interpret with caution

Mental disorders

For the adult population in Manitoba, women are more likely than men to be treated for at least one of the following: depression, anxiety disorder, substance abuse, schizophrenia and personality disorder. Based on five-year treatment prevalence, the highest treatment prevalence was among women aged 40 to 49 (34%), and for men 35 to 54 (about 22%). Overall, treatment prevalence for males and females combined increases with age between 20 and 49, and then decreases. Treatment prevalence reflects those who sought treatment, not actual prevalence of mental disorder.

Depression

Based on treatment prevalence studied between 1997 and 2001:²⁵

- Treatment for depression among women was 22% in the 20 to 24 age group and 10% among men of the same age.

- The highest prevalence of depression was found in ages 40 to 49. In this age group, about 28% of women and 15% of men were being treated for depression. Among adults, prevalence increased with age up to age 49, then decreased.
- In Winnipeg and Brandon, treatment prevalence was highest in the lowest-income neighbourhoods. This relationship was not observed in rural Manitoba. This may be influenced by service availability.
- Women were almost twice as likely to have been prescribed antidepressants as men.
- Among all people with at least one diagnosis of depression, half had one or more co-morbid conditions: 25% anxiety disorder, 14% abuse, five per cent dementia, four per cent personality disorder and four per cent schizophrenia.

Anxiety disorders

Based on treatment prevalence for anxiety disorders between 1997 and 2001:²⁵

- Anxiety disorder in the 20–24 age group was eight per cent – equal for women and men.
- 10% of women and 6% of men aged 30 to 64 were treated for anxiety disorder.
- Prevalence of anxiety disorder increased with age among younger adults ages 20 to 34 and then prevalence stabilized after age 35. As with depression, in urban areas prevalence of anxiety disorders was higher in lower income neighbourhoods. This was less evident in rural areas.

Substance abuse

Substance abuse and addictions are associated with many factors. According to a recent federal report on mental illness and addictions, 30% of people diagnosed with a mental illness will also have a substance–abuse problem in their lifetime. Thirty-seven per cent of people who abuse

alcohol and 53% who abuse drugs also have a mental illness.¹⁰³ People with major depression are two to three times more likely to have lifetime alcohol abuse or dependence, and three to 12 times more likely to have lifetime drug abuse or dependence.²⁵

Data in this section reflect the treatment prevalence, and not necessarily the actual prevalence of addictions in the province or treatment for specific drugs. This includes treatment for the abuse of alcohol, legal (ex: prescription drugs such as oxycodone) and illegal substances (ex: methamphetamine, crack cocaine, marijuana). Treatment prevalence for substance abuse shows that:²⁵

- Substance abuse treatment prevalence is approximately three times higher in the north than the Manitoba average (15% in the north, compared with six per cent provincially).
- The highest prevalence of substance abuse occurred among females aged 25 to 39 and males aged 30 to 44. Eight per cent of women and men were treated for substance abuse in these age groups.
- Younger adults aged 20 to 40 years old had higher substance abuse treatment prevalence than older adults (8% versus 6%).
- People living in lower-income quintiles in Brandon and Winnipeg had a higher treatment prevalence than higher-income quintiles for substance abuse for both females and males (8% versus 3% for females; 10% versus 4% for males). In rural areas, the pattern was inconsistent.
- Treatment prevalence of substance abuse was higher among Metis people at 7.2%.¹¹¹
- The same type of data is not available for First Nations people. Of First Nations adults, 35% reported that drinking was a problem in their household and the same was true for 42% of First Nations youth.¹⁰¹

Schizophrenia

Based on treatment prevalence for schizophrenia between 1997 and 2001:²⁵

- The treatment prevalence of schizophrenia was approximately one per cent aged 20–34 and 1.5% aged 50 to 54.
- The five-year treatment prevalence for schizophrenia was higher in Manitoba's urban centres (Brandon and Winnipeg) compared to the rest of the province.
- For females, prevalence increases steadily with age, reaching a high of about three per cent among those aged 80 and older.
- The highest treatment prevalence of schizophrenia for males occurs around age 35 and it remains at about two per cent for ages 35 and up.

Chronic diseases

The diseases and conditions in this section are a selection of chronic diseases of importance in the adult life stage because of their frequency, severity and preventability.

In a recent study on the costs of chronic disease, it was found that individuals living with one of five common chronic diseases (arthritis, asthma/COPD, coronary heart disease, diabetes, stroke) used a range of three to eight times more health care dollars than those without those conditions.⁴⁶ Therefore, efforts to prevent and mitigate the effects of chronic conditions are not only important for improving health status and quality of life for Manitobans living with such conditions, but are also important for the sustainability of the health care system.

Cancer

Cancer was the cause of 31% of deaths among adults ages 20 to 59 in Manitoba from 2004 to 2008.¹⁹ The leading causes of cancer-related deaths in this age group were breast (21%), bronchus and lung (18%), ovary (6%) and colon (5%). As cancer-related deaths are more common among seniors aged 60 and over, most cancers are described in the seniors chapter. Breast and cervical cancers are included in this age group due to their relative importance in younger adults and their long established screening programs.

Breast cancer (all ages)

Among adults aged 20 to 59, breast cancer was most common among 50 to 59 year olds, although the overall incidence rates for breast cancer were highest among seniors (aged 60 and older). Mortality rates increased with age, with peak rates ranging from 135 to 174 per 100,000.²⁰⁷⁻²⁰⁹

- The incidence of breast cancer from 2005 to 2007 is 65 per 100,000. Male cases represent 0.6 per 100,000, while female cases represent 121 per 100,000.²¹⁰
- The age-standardized five year relative survival proportion is 84%.²¹⁰

Non-modifiable risk factors for breast cancer include:²¹¹

- family history of breast cancer
- family history of ovarian cancer
- dense breast tissue
- early onset of menstruation
- later onset of menopause

Modifiable risk factors include:²¹¹

- obesity
- drinking more than one alcoholic beverage daily
- taking birth control pills

- never having given birth or having the first child after age 30
- having taken hormone replacement therapy

Mammograms are used to screen for breast cancer. In the last two years, 63% of women aged 50 to 69 had mammograms.⁵⁴ Breast cancer screening (mammography) is offered to Manitoba women 50 to 69 years of age, every two years.²¹² Screening rates are lower in the Burntwood region; and in parts of Winnipeg such as Inkster and Point Douglas.¹⁴ Screening rates are somewhat lower among Metis people.¹¹¹

Cervical cancer

In Manitoba, approximately 45 women are diagnosed with cervical cancer each year and approximately 15 deaths are reported each year.²¹³ According to CancerCare Manitoba, cancer of the cervix ranks third in cancer incidence between the ages of 20 and 34, and second among women between age 35 and 49.²¹³

Cervical cancer usually develops gradually, beginning with intraepithelial neoplasm (abnormal cells) which can be detected by regular Pap tests and treated, depending on the degree of abnormality. Human papillomavirus (HPV) is now considered a causal factor in most cases of cervical cancer. Other risk factors include:²¹³

- becoming sexually active at a young age
- having many sexual partners or a sexual partner who has had many partners
- smoking
- using birth control pills
- giving birth to many children

HPV vaccine is now offered to girls in grade six in Manitoba. Longer-term research will provide

better evidence of the effectiveness of this vaccine in preventing cancer. Until then, there has been no change in the recommendations for screening for cervical cancer and its earlier stages.⁶⁹

Routine screening (Pap test) is credited for low rates of cervical cancer, as it allows for early detection and treatment of abnormal tissue changes. Cervical cancer screening is recommended for all women, beginning three years after the onset of sexually activity and at least every two years thereafter.²¹¹

- Approximately 70% of women in Manitoba reported having been screened within the previous three years.
- Screening rates are lower in the north and among women who live in low income areas in both rural and urban areas.
- Screening rates are similar among Metis women, except in the Parkland, Churchill, Nor-Man and Burntwood regions where rates are lower among Metis.

Cardiovascular disease

- The prevalence of ischemic heart disease (IHD) in Manitoba in 2005/06 was 8.5%, down from 9% in 2000/01.¹⁴
- From 2000/01 to 2005/06, an average 15,183 Manitobans were diagnosed with IHD each year.¹⁴
- The annual rate* of heart attack among Manitoba adults aged 40 and older in 2005/06 was 4.6 per 1,000 people, a 13% decrease since 2000/01, when the rate was 5.3 per 1,000 for people over the age of 40.¹⁴
- The rate of stroke decreased over the same period, decreasing from 4.1 to 3.1 per 1,000 people, a relative decrease of 24%.¹⁴ In Canada,

* For some indicators, rates per 1000 people are used rather than percentages, because these events can happen to a person more than once.

mortality rates associated with heart attack have decreased over time.¹⁴

- According to the Canadian Community Health Survey (CCHS) 2007/08, the prevalence of self-reported IHD among Manitobans aged 19 and over was nine per cent. It was higher among Metis (12%), lower income groups, and males.

The following risk factors have been associated with cardiovascular disease:⁷⁹

- smoking
- sedentary lifestyle
- a diet high in saturated fats and sodium
- high cholesterol
- high blood pressure
- stress

Approximately 80% of the adult population has at least one modifiable risk factor for cardiovascular disease.²¹⁴

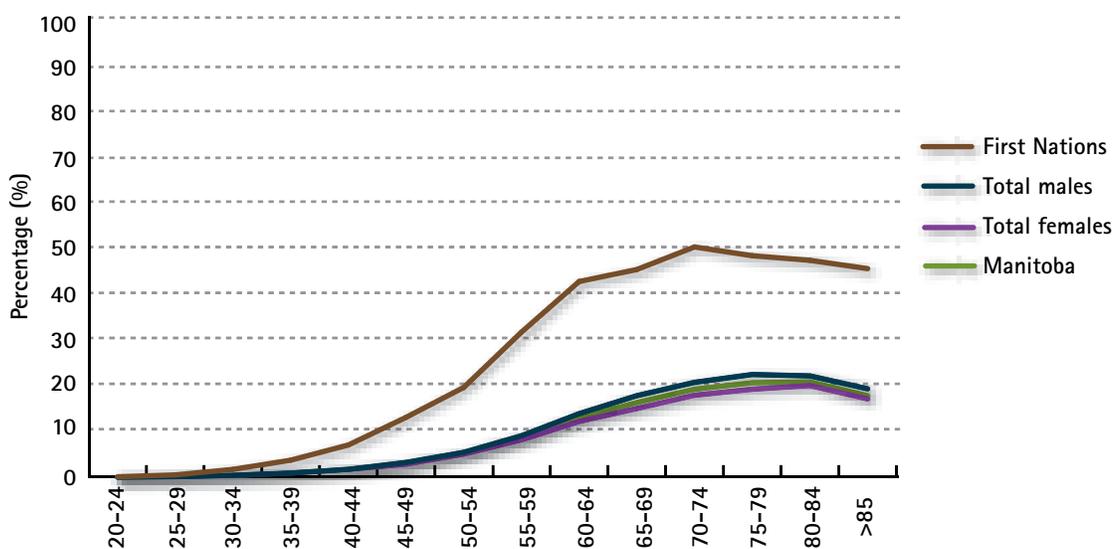
Hypertension (high blood pressure)

In Manitoba, cases of hypertension have increased since 1984/85. In 2008/09 there were 235,696 hypertension cases among adults age 20 and older.* The prevalence of hypertension increases with age, with the largest increase between the ages of 50 and 70. By age 85, 80% of Manitobans have been diagnosed with hypertension. Among Manitobans under age 50 age-specific rates are slightly higher for men than for women. After age 65, female age-specific rates are considerably higher than male rates.

Rates of hypertension among First Nations people in Manitoba are higher for most age groups.

Because high blood pressure usually has no symptoms, periodic screening is recommended. Appropriate treatment can reduce complications such as heart disease, strokes and kidney disease.

Figure 4.10: Manitoba age specific hypertension prevalence rates 2008/09⁵¹



* Based on administrative data and CCDSS hypertension case definition – either 2 physician diagnoses or one hospital diagnosis in two years.

Risk factors for hypertension include:²¹⁵

- age
- family history
- being overweight or obese
- not being physically active
- using tobacco
- consuming too much salt (sodium)
- consuming too little potassium
- drinking too much alcohol
- stress
- the presence of certain chronic conditions such as kidney disease and sleep apnea

There are many effective ways to reduce the risk of getting high blood pressure which include:

- smoking cessation
- being physically active for 30 to 60 minutes most days of the week
- selecting foods such as vegetables, fruit, low-fat dairy products, foods low in saturated and trans fat
- foods low in salt (sodium), whole grains, and lean meat, fish and poultry more often, eating less salt by avoiding or limiting the amount of fast food, canned foods, and prepared/processed foods, and by avoiding or reducing the amount of salt added to food
- if overweight, losing weight and reducing weight to within a healthy range
- limiting the amount of alcohol to one to two standard drinks a day or less
- reducing stress by making changes to lifestyle or by practicing relaxation techniques.²¹⁵

Diabetes

Improvements in diabetes prevention and treatment have contributed to a decrease in the annual rate of deaths associated with diabetes.²¹⁶ The number of Manitobans living with diabetes more than doubled between 1989 and 2006,

to approximately 76,000 identified cases in 2005/06. This increased prevalence is the result of an increased rate of new cases (incidence) and longer survival because of improved treatment and management. Approximately 96% of these cases were Type 2 diabetes.²¹⁶

The following data combine both Type 1 and Type 2 diabetes. Where data is from the Canadian Community Health Survey, it is important to note that the study population is limited and does not include individuals living on-reserve.

- In 2007, two per cent of 20 to 44 year olds and seven per cent of 45 to 64 year olds reported having diabetes.³⁶
- In 2002/03, 25% of First Nations adults reported having been diagnosed with diabetes.¹⁰¹
- First Nations people tend to be diagnosed with diabetes at a younger age than other Manitobans.²¹⁷
- The prevalence of diabetes is higher in low-income groups in Manitoba: nine per cent had diabetes compared to four per cent of individuals in the highest income groups.³⁶ This disparity appears to be increasing.¹⁷
- Across the province, adult women aged 45 and older were less likely than men to have been diagnosed with diabetes in 2006 although among those 20 to 44, women were more likely to have been diagnosed with it.³³ In the north, were observed among women compared to men.²¹⁸
- Diabetes prevalence among Manitobans aged 19 and older has increased over time, to nine per cent in 2003/04 to 2005/06, from seven per cent in 1998/99 to 2000/01.
- Aboriginal people in Manitoba are three and a half times more likely to develop diabetes than non-Aboriginals.⁵⁹ Diabetes is also higher among Metis people (11.8% versus 8.8% non-Metis).¹¹¹

Chronic kidney disease

Every year more than 275 Manitobans start dialysis therapy to treat chronic kidney disease.⁵⁹

- There are approximately 2,750 patients in the early stages of kidney disease seeking care in Manitoba and approximately 1,220 patients identified in the most severe stages of renal disease which ultimately results in the need for dialysis or kidney transplant.
- Of the patients in the most severe stages of renal disease, approximately 40% (495) are between the ages of 20 and 64.²¹⁹
- The Manitoba Renal Program reported 1,238 patients on either peritoneal or hemodialysis as of November 12, 2010.
- The number of new patients needing dialysis has risen steadily from an average of 45 patients per year between 2001 and 2008, to 66 in 2008/09, to 82 in 2009/10, and 106 in 2010/11.
- Of people with end-stage renal disease, 45% have diabetes.

Asthma

- More women report having asthma than men (10% versus 7%). In 2007 the rate was higher in urban areas than rural areas (9% versus 7%).
- In 2007, 10% of Manitobans aged 20 to 44 and seven per cent of adults aged 45 to 64 reported having asthma.³⁶

Chronic obstructive pulmonary disease (COPD)

COPD refers to chronic bronchitis and emphysema. Based on self-reporting, it is estimated that 6% of Manitobans have COPD.³⁶

- COPD prevalence increases with age (2.4% aged 20 to 44; 4.3% aged 45-64; 10% 65 and older in 2007).

- There were no differences noted in COPD by education level or by urban/rural residence.
- The main risk factor for COPD is cigarette smoking. Occupational exposures and poor ambient-air quality are also risk factors.

A related indicator – total respiratory morbidity – combining illness due to asthma, chronic or acute bronchitis, emphysema and chronic airway obstruction was used to show that respiratory health problems are more prevalent in urban areas and among people with lower incomes. The trend of more respiratory problems with lower incomes was more pronounced in urban than rural areas.¹⁴

Arthritis

Arthritis, inflammation of the of joints, is an umbrella term for many types of arthritis, including rheumatoid arthritis and osteoarthritis.²²⁰ Although arthritis is more likely to affect seniors, and is further discussed in that chapter, younger adults are also affected by this common chronic condition. For Manitobans aged 20 to 44, in 2007 the proportion of self-reported arthritis (type not specified) was six per cent, and for ages 45 to 64, it was 23%.³⁶

Infectious diseases

Tuberculosis

On average there are about 100 new cases of Tuberculosis (TB) each year, although this varies year to year.

- In 2008 there were 141 new cases of TB in Manitoba for all ages, with a rate of 12 per 100,000. More than 73% of these occurred in adults aged 20 to 59.⁶²

- Between 1998 and 2008 Manitoba's rate of active cases of TB was greater than the national rate. In 2008, the national rate was 5 per 100,000, while the Manitoba rate was more than double, at 12 per 100,000.⁶⁵
- In Manitoba in 2008 for all ages, 118 TB cases (87% of the total) were respiratory, 23 were non-respiratory.⁶²
- Of the respiratory cases, 89/118 (75%) occurred among First Nations people and 21/118 (18%) occurred among the foreign-born population.⁶²
- Of the total non-respiratory cases, most occurred among the foreign-born population (57%) and only 17% among the First Nations population.⁶²
- In 2008, most cases of TB (66%) occurred in First Nations people,* among whom the rate of TB was 10 times higher than the general population at 107 per 100,000.⁶²
- Most cases of TB occurred in Winnipeg (46%) and Burntwood (43%), with First Nations accounting for 100% of the cases in Burntwood and 31% of the cases in Winnipeg.⁶²
- Foreign-born Manitobans accounted for almost 25% of cases in 2008.⁶²
- All of the foreign-born cases were residents of Winnipeg, accounting for 52% of cases in Winnipeg.⁶²
- TB is associated with many factors, including income. In rural areas, 58% of hospitalizations for TB occurred among the 20% of the population in the lowest income quintile and in urban areas 52% of hospitalizations occurred in the 20% of the population in the lowest income quintile.¹⁷

Sexually transmitted infections (STIs) and blood-borne pathogens (BBPs)

Chlamydia and gonorrhoea

The overall incidence of chlamydia in 2008 was 576 per 100,000, with women nearly twice as likely to be diagnosed (females: 752 per 100,000, males: 395 per 100,000).⁶²

The overall incidence of gonorrhoea in 2008 was 114 per 100,000 with women slightly more likely to be diagnosed (females: 122 per 100,000, males: 104 per 100,000).⁶²

- The peak incidence for both chlamydia and gonorrhoea has shifted from the 15 to 19 age group to the 20 to 24 group, though case numbers and rates for both of these age groups are similarly high. For both females and males, the majority of cases of chlamydia (82%) and gonorrhoea (76%) occurred among those under 30.
- In the past decade, there has been a substantial increase in reported rates of chlamydia and gonorrhoea, particularly chlamydia.
- Between 1999 and 2008, Manitoba had the highest percentage increase in the number of chlamydia cases per 100,000 people in Canada (122% versus 80.2% for Canada overall).

The prevalence of chlamydia is higher among incarcerated individuals: 6% compared to 0.3% in the general population.**

*The data in this section pertaining to First Nations people includes only status First Nations people.

**The epidemiology of sexually transmitted infections and blood-borne pathogens in a random sample of inmates in Manitoba Correctional Centres.

Table 4.4: Incidence of chlamydia in Manitoba aged 20 and older⁶²

Age group	Females		Males		Total	
	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
20-24	1558	3819	829	2018	2387	2915
25-29	736	1883	524	1348	1260	1616
30-39	524	674	360	467	884	571
40-49	122	137	135	151	257	144
50-59	33	41	27	34	60	37
60+	5	4	12	12	17	8
Total	2978	659	1887	441	4865	553

Table 4.5: Incidence of gonorrhoea in Manitoba aged 20 and older⁶²

Age group	Females		Males		Total	
	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
20-24	232	569	196	477	428	523
25-29	143	366	115	296	258	331
30-39	101	130	130	169	231	149
40-49	24	27	45	50	69	39
50-59	8	10	14	18	22	14
60+	1	0.8	7	7	8	4
Total	509	113	507	118	1016	115

HIV/AIDS

The average annual rate of newly reported HIV cases in Manitoba was 7.0 per 100 000 (1999–2008). Actual numbers of HIV cases vary from year-to-year. Most recently, 106 new HIV cases were reported across all ages, in 2009, a rate of 9 per 100,000.

A total of 277 AIDS cases have been reported to MB Health since reporting began in 1985, an average of 11 per year. However, reporting of AIDS cases is dependent on healthcare provider reporting and it is believed that AIDS cases may be underreported in recent years.⁷⁰ Manitoba has a lower proportion of people with HIV/AIDS than the Canadian average.

Table 4.6: Age-specific number of positive HIV tests, Manitoba 2009⁷⁰

Age group	Female Cases	Male Cases	Total Cases
20-29	11	11	22
30-39	21	16	37
40-49	5	22	27
50+	5	8	13
Total	42	57	99

- The highest number of newly reported positive HIV tests in 2009 was among men aged 40 to 49 (22 cases), followed by women aged 30 to 39 (21 cases).

- The majority of positive HIV cases (82%) were reported in residents of the Winnipeg Regional Health Authority.
- Of the 2009 positive HIV cases, 27% identified as Aboriginal, 19% as Caucasian and 18% as African/African-American.
- Of the 2009 positive HIV cases, 30% were reported as being exposed through heterosexual relations; 15% in relationships of men having sex with men; and 14% resulting from having lived in an endemic country (nature of exposure not specified).
- Men have had consistently higher HIV incidence rates than women in Manitoba since 1999; however in 2009, 45% of reported positive HIV cases in Manitoba were among women, the highest proportion recorded since 1999. Most cases in the age group of 30 and up occurred in men, whereas the majority of positive HIV cases under the age of 30 occurred in women.

Hepatitis B & C

Hepatitis B (HBV)

- Between 2000 and 2009, a total of 1,608 positive tests for acute and chronic Hepatitis B (HBV) were reported to Manitoba Health. The annual number of cases during this time more than doubled, from 97 in 2000 to 161 in 2009.⁷⁴
- The average annual crude rate of HBV infection was 13.7 per 100,000 in Manitoba.
- Manitobans aged 20 to 54 accounted for 76% of all Hepatitis B cases in this period. The age group with the highest number of HBV cases was 25-34 year olds, followed by 35 to 44 year olds, 45 to 54 year olds and 20 to 24 year olds.⁷⁴
- Rates of Hepatitis B have been decreasing in Canada over the past decade.

Surveillance data collected between 2000 and 2009 indicates that the number of Hepatitis B cases (both chronic and acute) has increased. In fact, they have more than doubled over that time period: from 97 reported cases in 2000 to 227 reported cases in 2009. In this reporting period, females were consistently and slightly less affected than were males. It is unclear from the data what the causes are for the increase in Hepatitis B rates in Manitoba. Further analysis is required to better understand the reasons for these changes in the frequency of diagnosis of Hepatitis B.⁷⁴

Hepatitis C (HCV)

- Between 2000 and 2009, there was an annual average of 452 positive Hepatitis C virus tests reported to Manitoba Health.
- In 2009, the Manitoba rate was 28 per 100,000, lower than the national rate of 34 per 100,000.²²¹
- Males had on average twice as many cases as females in Manitoba; similar to the national pattern.

Condom use

The CCHS asked about the frequency of condom use among those respondents who were sexually active in the previous year and who were single, or if married or living common-law, identified themselves as having more than one sexual partner in the year prior to the survey. In Manitoba:

- 34% of women and 43% of men report using a condom during the last time they had intercourse.³³
- Condom use decreases with age among both high-risk females and males, and in every age group females were less likely to report condom use than males.

Risk factors, behaviours and other determinants of health

Many chronic diseases share common risk factors and are associated with underlying determinants of health that were considered in more detail in the chapter on general population health. Important and modifiable risk factors are: smoking, heavy drinking, low fruit and vegetable consumption, inactivity and obesity. No risk factors were reported by 14% of Canadians aged 20 to 44 years and 17% of those in the 45 to 64 year-old group. However, 57% of the younger adults reported two or more risk factors, while 52% of the middle-aged adults reported two or more risk factors.⁷⁹

Whereas over 80% of Manitoba adults aged 20 to 59 were found to have one or more of these risk factors.⁴⁴

Nutrition

The Canada Food Guide recommends seven to eight servings of fruit and vegetables daily for adult women, and eight to 10 servings for adult men. Women should consume six to seven servings of grain products, two servings of dairy and alternatives and two servings of protein per day. Men should consume eight servings of grain products, two servings of dairy and alternatives and three servings of meat or alternatives.²²²

Between 1991 and 2002 energy intake from food had increased 18%, with fat consumption increasing the most of all elements measured (22%).³⁶

In 2003, fruit and vegetable intake in Manitoba was five to 10% lower than the national average.⁵⁴

- One-third of Manitobans 12 and older report consuming fruit or vegetables five or more times per day; two-thirds report doing so four or fewer times per day.

- Women ate more fruit and vegetables daily than men overall. The age group eating the lowest amount of fruit and vegetables were Manitobans aged 35 to 44, although that rate had increased over the previous five years.
- Fewer Metis people report eating fruits and vegetables five or more times per day (21%).
- North Eastman had the highest rate of fruit and vegetable consumption five or more times per day at 40%.
- The lowest rate of fruit and vegetable consumption was in South Eastman, where only 26% reached five times or more per day.

Salt consumption

Health Canada has recently indicated that 1,500 milligrams per day of sodium is sufficient to promote good health in adults and to avoid health risks, and has recommended that adults should not exceed the upper limit of 2,300 milligrams per day. In our province:

- The vast majority of men (93%) and most women (71%) over 19 years old reported they exceed the recommended amount of salt in their diet.
- Most people consume two to three times the recommended amount of salt. In addition to added salt in cooking at the table, this is largely due to the packaged and prepared foods many people rely on, such as restaurant food, canned soup, fast food, luncheon meats and condiments.²²³
- Excess sodium intake is a preventable cause of high blood pressure.

Overweight and obesity

Overweight and obesity contribute to the development and worsening of major chronic diseases, including heart disease and diabetes, some cancers and osteoarthritis. They can also lead to social stigma and are associated with mental health conditions. The majority of Manitobans over the age of 18 are overweight or obese as defined by the body mass index. Excessive weight is more common among men than women, in lower-income areas, in the north and among Aboriginal people. Of respondents to the CCHS, 44% were categorized in the underweight or normal groups, 35% were in the overweight group and 21% were considered obese.¹³ Obesity rates have been increasing over time nationally and within Manitoba and vary geographically in Manitoba, as follows:

- The national prevalence of obesity has nearly doubled in adults over the past 25 years.⁷⁹
- The highest prevalence of obesity is in the north, at 28% (in the Burntwood region 30%) and the lowest is in Winnipeg at 18% among people aged 18 and over.¹⁴

Some risk factors for overweight and obesity are:

- family history
- low socio-economic status
- low education level
- built environment
- sedentary lifestyle
- high-calorie diet

Physical activity

Health Canada recommends that adults accumulate at least 150 minutes per week of moderate to vigorous aerobic physical activity in sessions of at least 10 minutes. Health Canada

also recommends strengthening exercises twice weekly in addition to aerobic activity.

- Based on reported physical activity during work and leisure time combined, 29% of Manitobans aged 15 to 74 are considered active, 34% moderately active and 37% inactive.^{*14}
- Winnipeg had a lower proportion of residents in the active group and a higher proportion in the inactive group than other regions.¹⁴
- The proportion of Metis people who are considered active is higher than that of other Manitobans at 37%.¹¹¹

Substance use

Tobacco

Smoking is a cause of cancer, cardiovascular disease and COPD. Quitting smoking at any age is beneficial, but the earlier one quits, the greater the benefit. The incidence and mortality rate of lung cancer decreases 30% to 50% within 10 years of quitting.⁵⁴ Among Manitobans 15 and older, 16% were daily smokers in 2008. Smoking rates tend to decrease as education levels increase. In 2008, 21% of Canadians who had not completed secondary education were smokers while 19% of college graduates and 10% of university graduates smoked.²²⁴

- Smoking prevalence decreased among Canadians from 1994 to 2005.
- During the years 2004 to 2008 in Manitoba, the average smoking rate among 20 to 24 year olds was 29%. For 24 to 44 year olds the average rate was 24% and for those 45 and older it was 17%.²²⁴
- Northern Manitoba has a higher rate of current smokers, although smoking prevalence

*These categories are defined in the glossary.

in the Burntwood and Churchill regions have declined slightly over the past five years.⁵⁴

- One-third of Metis are current smokers.
- Smoking prevalence is highest among Manitobans aged 20 to 24.

Nationally, in 2004 60% of on-reserve First Nations people between the ages of 18 and 34 were current smokers.²²⁵

Alcohol

There are a variety of ways to quantify the amount of alcohol Manitobans consume. One way is to look at alcohol sales in the province. In 2008, the Manitoba Liquor Control Commission (MLCC) posted net revenue from sales of alcohol at \$220,756,000 and sales increased by 4.5% in 2009 to \$230,652,000.²²⁶ By comparison, Saskatchewan went from \$173,630 in 2008 to \$197,150 in 2009.

In 2010, the MLCC reported having sold 82 million litres of beer, 6.9 million litres of spirits and over 9 million litres of wine in 2010. This translates to 88 litres of beer, 7.4 litres of spirits, and 10 litres of wine for every person in Manitoba over 17 years of age for that year alone.²²⁷ These per capita consumption rates have been increasing. For example, since 2006 beer consumption has gone from 83.5 litres per adult to over 88 litres per adult, and wine increased from 8.7 litres to 10 litres in the same time frame. The increases were seen for all categories of alcohol between 2006 and 2010.

The low-risk drinking guidelines from the Centre for Addiction and Mental Health (CAMH) state that adults should consume no more than two standard drinks per day. Men should not exceed a weekly limit of 14 drinks and women (who are not pregnant or

breastfeeding) have a weekly maximum of nine per week.²²⁸ The CAMH also suggests that individuals avoid drunkenness, wait for an hour between drinks, and eat when consuming alcohol. Heavy drinking, or binge drinking, is defined as drinking five or more *alcoholic beverages* on one occasion or more in the past 12 months. These guidelines are intended to help adults avoid addiction and prevent chronic diseases and injuries.

- About two-thirds (66%) of Manitobans aged 20 to 64 reported that they drank alcoholic beverages at least once a month in the 12 months prior to the survey.³⁶
- Approximately one-quarter of Manitobans in this age group (27%) reported being heavy drinkers (consuming 5 or more drinks at one sitting monthly, or regular consumption of more than 12 drinks a week)³⁶ and men were almost twice as likely (36%) as women (18%) to drink excessively as women.⁵⁸
- Among adults aged 20 to 64, regular and heavy drinking behaviours remained fairly stable over the period from 2001 to 2007.³⁶
- Individuals aged 20 to 44 had a higher prevalence of heavy drinking than those aged 45 to 64 from 2001 to 2007. In 2007 heavy drinking was 32% and 19%, respectively.³⁶
- Among Metis people over 12 years old, 21% report having five drinks or more on 12 or more occasions per year.¹¹¹
- Excessive drinking is most common among adults aged 20 to 34.⁵⁴

Most alcohol-related disease, social problems, injuries and deaths are caused by problem drinking.²²⁸ Problem drinking is four times as common as severe alcohol dependence. Physical dependence involves tolerance to alcohol's effects and the withdrawal symptoms can be quite severe.²²⁸

Alcohol and health in Canada

- Alcohol is a popular, legal and socially sanctioned psycho-active drug which is a contributing factor in over 65 different medical conditions, ranging from injuries to long term health conditions such as cancer, cardiovascular disease and multiple mental illnesses.²²⁹
- Canadian research indicates that rates of chronic disease rise in the population as overall alcohol consumption rates increase.¹⁰²
- Two per cent (4,258) of all deaths in 2002 were directly connected to alcohol, including cirrhosis (1,246); motor-vehicle collisions (909); and alcohol-attributed suicides (603).*
- The estimated alcohol-attributed cost to the national economy is \$14.6 billion, nearly double those related to illicit drugs (\$8.2 billion including health care and law enforcement).¹⁰²
- The harm from alcohol use and misuse affects a circle of people around the drinkers such as their families, children in particular, and the neighbourhoods in which they live.
- Alcohol is a contributing factor in impaired driving, injuries, assaults, homicides, fires and other events that threaten public safety.
- In a five-year follow-up study of birth mothers of children with full fetal alcohol syndrome (AS), researchers found the group of women was diverse in many ways but they were often challenged by untreated or under-treated mental health concerns, were socially isolated, were victims of abuse and had histories of severe childhood sexual abuse.¹⁵⁸

According to the Canadian Association of Mental health, for middle-aged and older adults, as little as one drink of alcohol every other day can help protect against heart disease. On the other hand, having three or more drinks per day increases the risk of high blood pressure, stroke and heart problems.

* This does not include alcohol-related deaths from fire, choking, drowning and assault. Nor does it include deaths from alcohol-related cancers and other medical conditions.

Summary, reflections and conclusions

Most Manitoba adults consider themselves to be in good, very good or excellent health (greater than 90%) and good, very good, or excellent mental health (93%). Most are satisfied or very satisfied with their lives (87%). These proportions are similar to other Canadians.

The majority (greater than 90%) of Manitoba adults live long enough to become seniors (65 years). Every year, 0.2% (one in 500) Manitobans between the ages of 20 to 60 die. Cancer, heart disease and injuries are the leading causes of death for this population.

Most of these deaths have preventable causes and risk factors. The main preventable direct causes and risk factors include tobacco, alcohol, unhealthy diets, inactivity and being overweight. Severity of illness and death can, in many cases, be prevented or delayed by earlier diagnosis and treatment, including screening (ex: breast cancer, colorectal cancer). Other important but less direct factors include stress and mental health. Underlying determinants include income, education, work conditions and unemployment.

Injuries are preventable. Some risk factors are more general (ex: alcohol) and other are specific to the cause of the injury.

Suicides are amongst the most tragic of deaths, usually resulting in premature death for the person and immeasurable grief for family and friends. For adults, suicide is the leading cause of injury-related deaths; risk factors associated with suicide include male sex, recent diagnosis of mental illness, young age, poor health, living in a low income area and Aboriginal identity. The causes of suicide and their implications for prevention are complex. Suicide prevention strategies and mental health promotion for adults

need to address a wide range of issues including social and economic problems, stigma of mental illness and appropriate identification, care, follow-up and outreach for those at increased risk.

Motor-vehicle collisions remain the second leading cause of injury-related deaths in adults, even though the rate of deaths from this cause has decreased. Human factors such as driver impairment, speed, and lack of seatbelt use remain as leading causes motor-vehicle collision deaths. Education and enforcement strategies are needed to achieve further reductions in injury rates and death.

Drowning, unintentional poisoning, and suffocation rank as the second, third and fourth cause of unintentional injury deaths in adults and are associated with many causes, which have not been analysed in depth for the purpose of this report. The role of alcohol and other substances (ex: oxycodone) as well as other risk factors need to be better researched and understood to guide innovative strategies to address these important and preventable causes of adult injury and deaths.

The adult years are characterized by a significant amount of time spent at work, a setting that has additional risk factors for injuries. The highest risk occupations for work-related deaths in Manitoba are transportation, communication and utilities, agriculture and farming and construction.

The continuing decrease in injury rates and time loss injury rates in the workplace over the first decade of this century has been significant. However, increasing rates of injury in the service sector are of concern. Back injuries resulting from patient care are considered to be a leading cause. Attention to this issue continues to be a priority.

The recognition of the importance of mental and spiritual wellness and of the frequency and consequences of mental illness has been increasing. Better data, many reports and an increasing openness and reduction of stigma have contributed to this. One in three adult women and one in four adult men are treated for a mental disorder (one or more of depression, anxiety, substance abuse, schizophrenia, personality disorder). The associations between mental health, physical illness and injury and the utilization of health care are being increasingly recognized and understood. This subject is emerging as one of the most important health issues for adults today and in the foreseeable future and needs to continue to be prioritized for research, surveillance and program and service development.

Chronic diseases usually develop slowly and once diagnosed, exist for a long time (at least several months or years), may recur or, more often, persist for life. Many chronic diseases share common risk factors. Important adult (non-infectious, non-mental) chronic diseases include diabetes (mostly Type 2), high blood pressure, heart disease, kidney disease, liver disease, asthma, chronic obstructive pulmonary disease, arthritis, breast cancer and cervical cancer. Of these, at least three have indicators of increased incidence and prevalence – asthma, diabetes, and kidney disease requiring dialysis.

Most of these conditions are associated with known risk factors (ex: tobacco for chronic lung disease and heart disease, diet and activity for diabetes) and many can be detected through screening (ex: high blood pressure, breast cancer, cervical cancer, colorectal cancer) before symptoms begin, which can result in better outcomes of care. Many of these risk factors and health practices are associated with underlying determinants such as socio-economic status, sex,

race and region of residence. Most Manitoba adults have one or more risk factors for one or more of these chronic conditions, demonstrating the need and opportunities for strategies that can improve health and reduce the need for health care. Some of these behaviours and conditions will be dealt with later in this conclusion.

The infectious diseases included in this section were selected because of their frequency, impact and preventability.

Tuberculosis persists as an important challenge for Manitoba – especially for the Aboriginal and immigrant population. Increased efforts and resources have been invested in programs for the diagnosis, observed treatment and follow-up of active cases as well as tracing and treatment of contacts. These efforts have maintained a fairly stable rate of tuberculosis, but have not yet achieved reduction in the rate of new cases or outbreaks, especially in First Nations people in Winnipeg and northern Manitoba. Innovative ways to improve access of appropriate care are needed, while addressing underlying causes such as poverty, malnutrition, alcoholism and inadequate housing are needed to achieve faster progress against this disease.

Sexually transmitted and blood-borne infections (STBBIs) are a group of infectious diseases that continue to be problematic in Manitoba. We have relatively high rates of gonorrhea and chlamydia compared to other provinces; these rates have increased, particularly in the past decade. It is not yet clear whether these higher rates are the result of better testing and contact tracing or a higher frequency of infection in Manitobans. Regardless, more effort is needed by all concerned to reduce the spread of these diseases through safer sex and appropriate health care and public health follow-up. Overall, rates of lab-confirmed HIV/AIDS in Manitoba have been relatively stable

for many years, but it is acknowledged that there may be many Manitobans with this infection that have not been tested.

The patterns of HIV/AIDS in Manitoba, like elsewhere, have changed over the past two decades. Although results of treatment and care have improved significantly this remains a serious and important public health priority for Manitobans, especially those at higher risk for exposure through unprotected sex and unsafe use of intravenous drug use equipment. These are also risk factors for Hepatitis B and C, serious and preventable infections that are each diagnosed in more than 400 Manitobans every year. Aboriginal people in Manitoba are at higher risk for these and other STBBIs, so our strategies need to address many issues, especially the underlying reasons and determinants for unsafe sex and illicit drug use.

Most of the leading causes of illness and death for adults and seniors are associated with health practices, behaviours or lifestyles. We are still learning more about these risk factors – how they impact on health and how we can promote healthy living and behaviour change. This chapter has included information about diet, physical activity, tobacco and alcohol use, but there are other important factors such as stress management and other injury prevention and safety methods that are important as well.

It is clear that Manitoba adults have a lot of room for improvement to optimize their health, prevent or delay disease or injury, extend life expectancy and reduce their need for health care. One of the most important problems at this time in history in Manitoba, like elsewhere in the world, is the trend of increasing overweight and obesity. More than one-half of Manitoba adults are considered overweight or obese and one in five (20%) of Manitobans are obese. This trend

is of great concern; the national rate of obesity in adults has doubled in the past 25 years (one generation).

There is increasing evidence that most Manitoba adults do not eat enough fruit and vegetables and consume too much salt and calories. Although physical exercise can offset the consumption of calories and is an important factor in achieving and maintaining a healthy weight, most Manitobans who control their weight successfully do so by eating a healthy balanced diet with a caloric intake appropriate to their age and activity level.

Changes in the settings of everyday life and the nature of work and transportation have resulted in decreasing physical activity for most Manitoban adults. Although definitions and measures of adequate physical activity continue to change as research continues, it is probably reasonable to estimate that less than one-third of adult Manitobans achieve recommended levels of physical activity to optimize physical and mental health, including combating overweight.

Despite several decades of reduction of smoking as a result of education and many other strategies, there are still a very significant proportion of Manitoba adults that still smoke, ranging from about one in four younger adults (younger than 45) to about one in six older adults (older than 45). These rates are significantly higher among Metis and First Nations people of Manitoba and in some sub-populations more prone to addictions.

Getting an accurate picture of the frequency and severity of substance abuse has been a challenge for this report, but there is increasing recognition of the growing importance of this problem for adult physical and mental health. The associations of alcohol and other prescription

(ex: oxycodone) and non-prescription substances (ex: cocaine) with injuries, mental illness and acute and chronic infectious and non-infectious diseases are significant. In addition, the impact on families and society are immeasurable. Substance abuse that is severe enough to result in health care appears to affect at least five per cent of Manitoba's adults; when the impacts of this on family, friends, and coworkers are considered, the burden of this problem is significant. This is a high priority public health issue that requires continued attention and innovation.

During the adult years, causes of illness and death vary with age. For younger adults, unintentional injuries, especially those caused by motor-vehicle collisions, suicide and assault, are leading causes of death. As adults age, chronic disease becomes an increasingly common cause of illness or death, with cancer the overall leading cause. Many of these chronic diseases are associated with risk factors that are modifiable in this stage of life.

These risk factors can greatly influence the onset of chronic disease.

While many of the factors affecting poor health are more common among populations such as lower-income and/or Aboriginal Manitobans, (ex: inactivity, obesity and high salt and low fruit and vegetable diets) all Manitoba populations are affected by these risks and trends.

Many of the risk factors, behaviours and chronic conditions that are present in the adult years are established prior to adulthood and may manifest themselves in disease or injury outcomes during the adult years or later in the senior years.

By the time most Manitobans reach the age of 65, they are preparing or entering a new phase of their lives, approaching or having retired from work, usually without children in the home and adjusting to the aging process as the incidence and prevalence of chronic conditions increases. The next chapter of the life course is seniors.



Seniors

Priority points

- > Seniors comprise 14% of Manitoba's population. This proportion is expected to increase to 20% within 15 years.
- > In Manitoba's aboriginal population, four per cent are aged 65 or older.
- > Three fourths of Manitoba seniors rate their overall health as good or better despite the fact that approximately one-third of seniors report having moderate to severe functional health problems.
- > The majority (97%) of seniors rated their mental health as good or better, despite the fact that one in four was diagnosed with at least one mental health disorder.
- > Depression is the most common mental disorder in seniors – about 20% of women and 15% of men.
- > Average life expectancy at 65 years of age has gradually increased and is currently 86 years for women and 83 years for men.
- > The leading causes of death among Manitoba seniors between 2004 and 2008 were cancer and heart disease, which accounted for over half of all deaths in this age group, followed by cerebrovascular disease, and dementia and Alzheimer's Disease.
- > 70% of all cancer diagnoses are made during this life stage.
- > The three leading cancers resulting in death among women over 60 were: bronchus and lung (56%); breast (18%) and colon (9%).
- > The three leading cancers causing death among men over 60 were: bronchus and lung (60%); colorectal (19%); and prostate (12%)
- > One-third of all hospitalizations due to injury occur among seniors and one-third of all injury-related deaths occur among seniors; falls are the leading cause.
- > More than one-third of all seniors residing in the community fall once or more per year.
- > One in five seniors report having no known chronic disease; one-half of all seniors report having one or two chronic diseases.
- > About 10% of seniors are diagnosed with dementia or Alzheimer's disease; by the age of 80, about 25% of men and 30% of women have a diagnosis of dementia.
- > High blood pressure was one of the most commonly diagnosed chronic conditions (48%) among seniors aged 65 and older.
- > Arthritis affects 44% of seniors, the second most common chronic condition after hypertension. Two-thirds of all hip and knee replacements are performed on seniors. Obesity is a risk factor for arthritis and the need for surgery.
- > One in seven seniors are diagnosed with Type 2 diabetes.

- > Immunization rates for influenza have increased for seniors; 57% received the vaccine in 2008.
- > 50% of Manitoba seniors are either overweight or obese.
- > Over one-third of senior Manitobans have diets lacking in essential nutrients and diets that are not balanced.
- > More than 50% of seniors are considered to be inactive.
- > Seven per cent of seniors are smokers.
- > Between 10% and 15% of seniors are estimated to exceed the low risk drinking guidelines.
- > 23% of seniors under 75 years and 42% of seniors over 75 years reported moderate to severe functional health problems in the domains of vision, hearing, speech, mobility, dexterity, feelings, cognition and pain.
- > 13% of Manitoba seniors receive some government-funded home care; about 1% of Manitoba seniors are living in a personal care home.
- > For seniors aged 85 and over, one in three women and one in five men live in personal care homes.
- > One-third of seniors saw relatives at least once a week; one-half of seniors communicated with relatives at least once a week, and one-third of seniors reported feelings of loneliness.
- > The proportion of senior households in core housing need decreased from 1991 (17%) to 2006 (10%).
- > Based on the market basket measure, 1.6% of seniors were considered to be low income during the period 2004–2008.

Introduction

As discussed in the previous chapter, adults emerge from their childhood and youth carrying with them their genetic and environmental influences on health. This is also true for adults transitioning into their senior years. Their likelihood of surviving till age 65 or having been injured, ill or disabled during their adult years has been influenced by many factors. These risk factors and determinants continue to be associated with health outcomes in the next life course stage.

Immoderate alcohol consumption during earlier adulthood may result in later chronic conditions such as cirrhosis of the liver or liver cancer. Continuation of alcohol abuse, however, may not only worsen chronic liver conditions and its complications, but also increase the risks of acute disease or injury (ex: pancreatitis, falls). Healthy living during the senior years continues to contribute to adding life to years as well as adding years to life.

Health Canada has defined healthy aging as a lifelong process of optimizing opportunities for improving and preserving health, physical, social and mental wellness, independence, quality of life and enhancing successful life course transitions.²³⁰

Seniors in good health can enjoy their later years and continue their contributions to their family and community. In addition, healthy seniors can contribute to the sustainability of the health care system through the delay or prevention of chronic diseases and disability, which are key drivers in health care spending at all stages of life. Investing in healthy aging is an important part of the life-course approach starting in prenatal and early childhood stages.

This chapter includes information on health outcomes, risk factors and associated determinants of health that are of significant importance to Manitoba seniors.

Manitoba's seniors: Demographics

Manitoba, like other parts of the developed world, has an aging population. Longer life spans, an aging post-war baby boom population and lower current birth rates indicate that within about 15 years, one Manitoban in five will be aged 65 or older.

- In 2009, Manitoba's seniors 65 and older represented 14% of the total population. This is expected to increase to 20% by the year 2026.¹
- Four per cent of the Aboriginal population is 65 or older and the majority of those live off-reserve. The number of Aboriginal seniors is projected to increase to 5.5% of the Aboriginal population by 2017.
- Among Manitoba's senior population, women outnumber men at a ratio of about 1.3 to one, respectively, although the gap is narrowing.
- Among Manitoba's seniors 75 and older women outnumber men at a ratio of about 1.6 to one.
- Among Manitoba's senior population 85 and older women outnumber men at a ratio of two to one.
- Life expectancy at age 65 continues to increase and is still higher for women than men (86 versus 83).

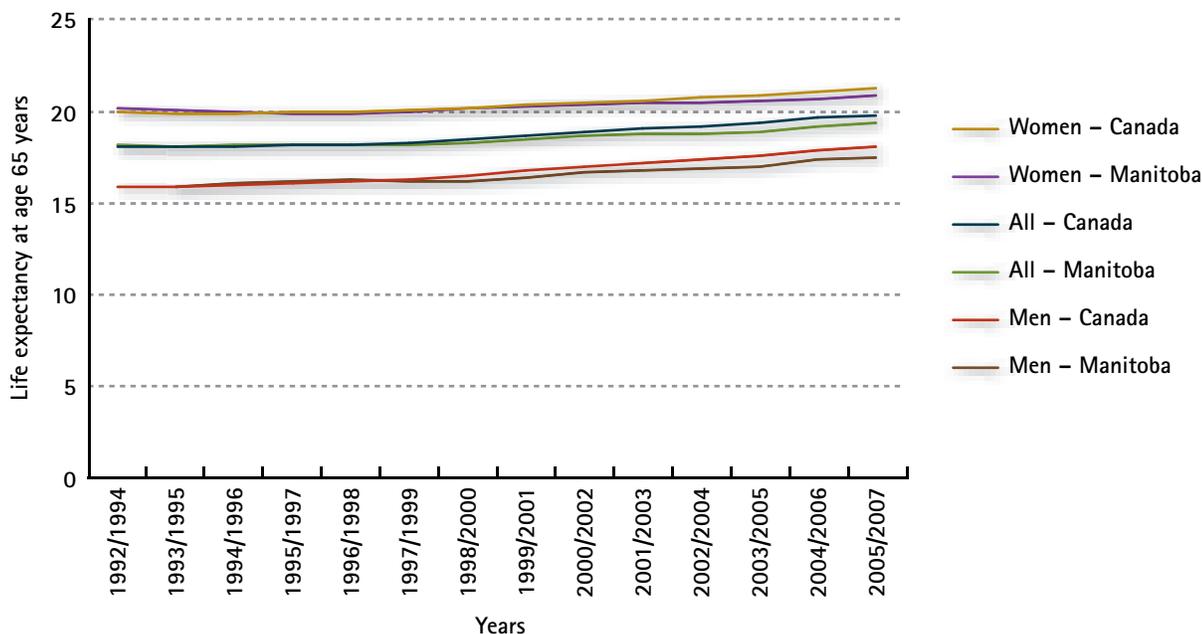
Health outcomes

Both objective facts and self-reported assessments of health indicate that Manitoba's seniors are living longer than previous generations and that more of them are doing so in good health. At the same time, analysis of major causes of illness and death shows that many seniors are affected by preventable diseases and injuries.

Life expectancy

Life expectancy is the estimated number of years of life remaining at a given age, based on current mortality rates. Life expectancy has been steadily increasing for both men and women. In 2006, life expectancy for Manitoba women at age 65 was 20.9 years in 2006, up from 19.9 years in 1996. Life expectancy for Manitoba men at age 65 was 17.5 years, up from 16.3 years in 1996.¹³ These improvements are the result of many factors, including living conditions, life styles and health care. The life expectancy of Manitoba seniors is similar, but slightly less than the national average (Figure 5.1).

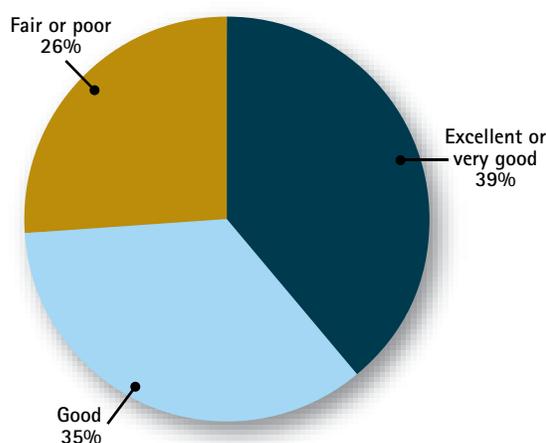
Figure 5.1: Life expectancy at age 65 years¹³



Self-rated health

Three-quarters of Manitoba seniors rated their own health as good or better. Increased age of seniors was associated with poorer self-rated health status.²³¹

Figure 5.2: Self-rated health status of Manitoba seniors, 2007³⁶



Mortality

In Manitoba there were on average 8282 deaths of people aged 60 and older per year for the period of 2004 to 2008,¹⁹ comprising 83% of all annual deaths.

The 10 leading causes of death for Manitobans 60 and older are presented in Figure 5.3 below in descending order. Table 5.1 also includes leading causes of death by gender. Further information is available in the appendix.

- Cancer (malignant neoplasm) and heart disease were the leading causes of death among senior Manitobans. Cancer (2,207 per year) and heart

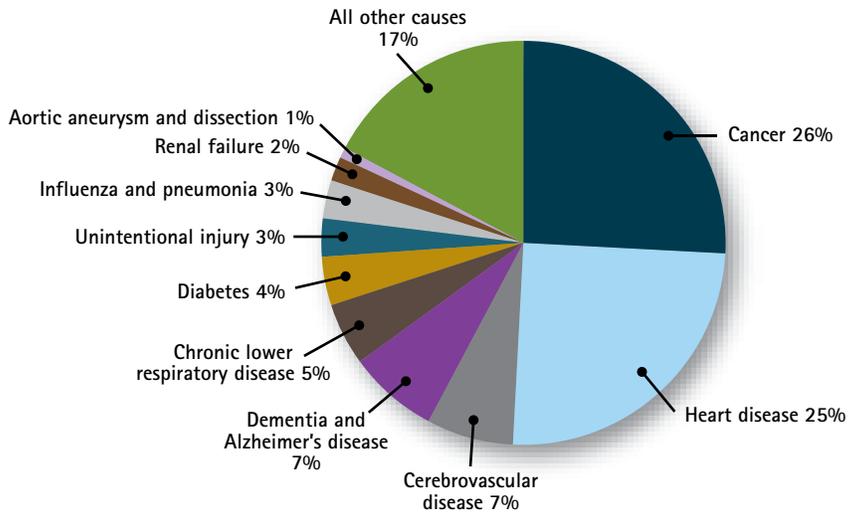
disease (2,045 per year) together caused more than half of all deaths. Significant numbers of deaths were caused by cerebrovascular disease, dementia and Alzheimer's disease, chronic lower respiratory disease and diabetes as well.

- There are some sex differences in the ranking of leading causes of death among senior Manitobans. Dementia and Alzheimer's disease is ranked third among women but fifth among men (399 versus 182 per year). Although cancer caused less deaths among senior women than men (1,046 versus 1,161 per year), the opposite was true for cerebrovascular disease (363 for women versus 233 for men, per year) for the time period of 2004 to 2008.

Table 5.1: Leading five causes of death among Manitoba seniors, 2004 to 2008 by decile¹⁹

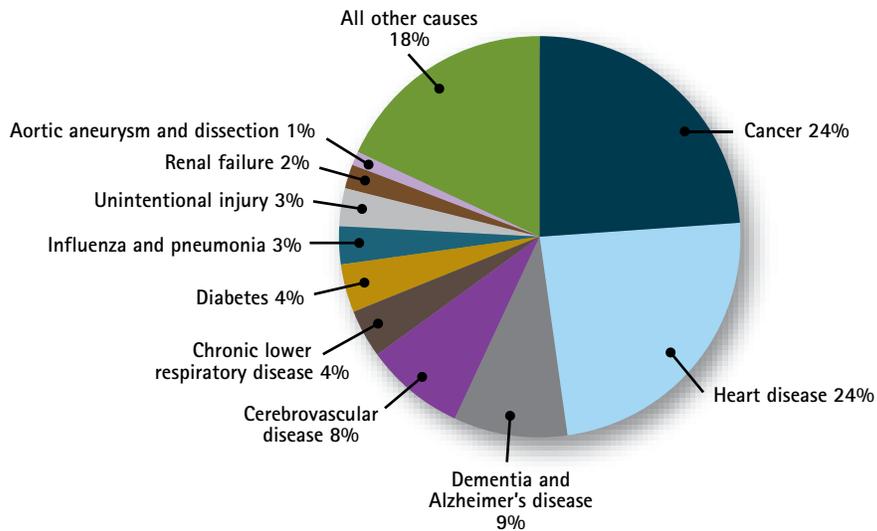
60-69	Cancer (43%) Heart disease (21%) Diabetes (4%) Cerebrovascular disease (4%) Unintentional injury (3%)
70-79	Cancer (36%) Heart disease (23%) Cerebrovascular disease (6%) Diabetes (5%) Chronic lower respiratory disease (5%)
80-89	Heart disease (25%) Cancer (23%) Dementia and Alzheimer's disease (8%) Chronic lower respiratory disease (6%)
90 and older	Heart disease (28%) Dementia and Alzheimer's disease (14%) Cancer (11%) Cerebrovascular disease (9%) Influenza and pneumonia (5%)

Figure 5.3: Leading causes of death for Manitobans 60 and older, 2004 to 2008¹⁹



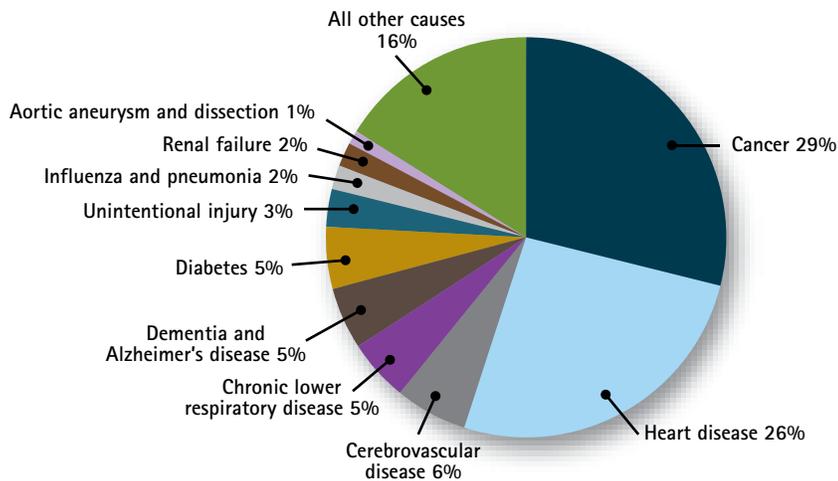
N = 41,409 with an average of 8,282 deaths per year in this period.

Figure 5.4: Leading causes of death for Manitoba women 60 and older, 2004 to 2008¹⁹



N = 21,644 with an average of 4,329 deaths per year in this period.

Figure 5.5: Leading causes of death for Manitoba men 60 and older, 2004 to 2008¹⁹



N = 19,765 with an average of 3,953 deaths per year in this time period.

Injuries

Unintentional injuries

Unintentional injuries were the cause of 248 deaths per year, comprising three per cent of all deaths. The leading causes were falls, motor-vehicle collisions and choking.

Falls

Falls are the leading cause of injury-related deaths and hospitalizations in seniors.^{230,232} The leading cause of falls requiring hospitalization among the elderly is slipping, tripping or stumbling on the same level. One fall triples the risk of having another fall.²³⁰

In addition, many seniors do not fully recover from injuries and experience chronic pain and overall reduction in quality of life. Even in the absence of a resulting injury, a fall can contribute to ongoing fear of falling and as a result, reduced physical activity, which in turn has other negative health consequences. Independent living, autonomy, mobility, functional ability and health status are all threatened by injuries due to falls.

Injuries among Manitoba seniors (ages 65 and older), 1992 to 2001²⁰

Injury-related hospitalizations

- Of all injury hospitalizations among Manitobans (all ages), 35% occurred among seniors, an average of 4,187 hospitalizations per year.

Injury-related deaths

- One-third of all injury deaths among Manitobans (of all ages) occurred among seniors, an average of 147 injury deaths per year.
- The leading causes of injury death for seniors were: falls, fractures (cause unspecified), motor-vehicle collisions, suicide, and suffocation and choking (see Figure 5.6).

Falls prevention strategies require co-ordinated action from many sectors and different levels of government. Reducing the risks and causes of falls involves continued action in areas beyond health care such as housing, transportation, snow-clearing and neighbourhood design.

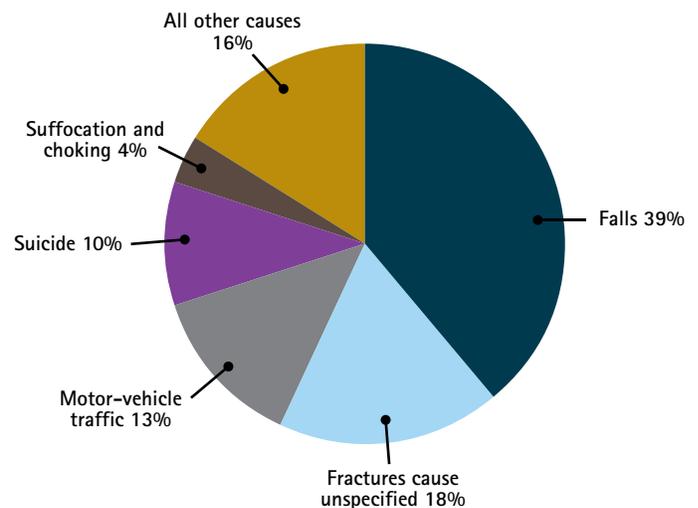
- From 1992 to 1999, falls were the number one cause of injury-related deaths among Manitobans 75 and over (490 deaths), and were the number two cause of injury-related deaths among Manitobans 65 to 74 (77 deaths).²³³
- Over half of the injury deaths in women aged 65 and over, and one-third in men, were due to falls.²³
- Falls were the leading cause of injury-related hospitalization (1992 to 2001).
- Seniors accounted for 58% of all fall admissions to Canadian hospitals.²³
- Each year over one-third of all seniors residing in the community fall at least once.
- The fall-related injury rate is nine times higher among seniors than in those under 65.²³
- Hospitalization rates for falls were about 50% higher among senior women than men.²³

Risk factors and determinants associated with injuries due to falls are complex and interrelated. Biological and medical risk factors include age, chronic or acute diseases, physical disability, muscle weakness and poor physical fitness levels. Behavioural risk factors include medication use (including multiple medication use and alcohol) and inadequate diet and exercise.

Environmental risk factors can include injury hazards in the home such as throw-rugs or poorly placed furniture. Half of falls among older adults happen in the bathroom or on the stairs.²³⁴ Outside the home, hazards such as uneven sidewalks and roads, ice and snow, poor lighting and poorly designed buildings pose risks for falls.

Low income can affect access to safe housing and access to information on preventing falls. Food insecurity can affect nutritional status, which can increase susceptibility to falls or poor outcomes. Women are at higher risk of fractures due to falls, in part due to decreases in bone density after menopause and higher rates of osteoporosis.²³⁰

Figure 5.6: Leading causes of injury-related deaths, Manitobans 65 and over, 1992 to 1999²⁰



Motor-vehicle collisions

Older people fear losing their independence.²³⁵ To many seniors, as with other Manitobans, independence comes with driving a vehicle. Driving is particularly important for seniors in rural areas who often have greater distances between friends and family, and for appointments and shopping.²³⁵ However as we age, most conditions that eventually influence driving – such as hearing or vision problems and impaired mobility – can begin prior to becoming a senior and continue to progress after that.²²³ Healthy seniors can be safe drivers, given their

experience and less risk-taking behaviour. Further, seniors tend to drive outside rush-hour periods, during daylight hours and under good conditions. Seniors are generally more susceptible to sustaining serious injuries or dying from collisions than younger people. Further, even when accounting for kilometres driven, there is evidence that older drivers were involved in approximately the same number of accidents as drivers aged 16 to 24.²³⁵

According to the Traffic Collision Statistics Report 2009, as age increases, relative involvement* in collisions decreases. Manitoba's senior drivers have the lowest relative rate of involvement in traffic collisions compared to those in younger age groups, this is likely a result of the decreased number of kilometers driven by seniors. In 2009, there were 18 seniors killed in traffic collisions, comprising 21% of the 86 people killed in traffic collisions in that year and compared to 15% of the population.

Intentional self-injury (suicide)

From 2004 to 2008 there were on average 21 suicides per year among Manitobans age 60 and older. A common contributing factor is depression, as it is in other age groups. Suicide rates have been rising among older seniors, especially for men. A study in British Columbia reported that socio-economic status, depression/psychosis, neurosis, stroke, cancer, liver disease, benzodiazepine use, narcotic pain killer use and diuretic use are risk factors (markers) for suicide among seniors.²³⁶

Intentional self-injury among Manitoba seniors²³¹

- Among seniors in their 60s, the suicide rate in Manitoba has increased from 8 per 100,000 in 2005 to 16 per 100,000 in 2008 (from one in 13,333 to one in 6,250).
- Among seniors aged 70 and older, suicide rates increased from seven per 100,000 in 2006 to 13 per 100,000 in 2008 (from one in 14,351 to one in 7,685).
- The majority of the suicide deaths were among men.
- Among men aged 70 and older, the rate of suicide per 100,000 was 10 in 2006, 12 in 2007, and 28 in 2008 (from one in 9,757 to one in 3,485).

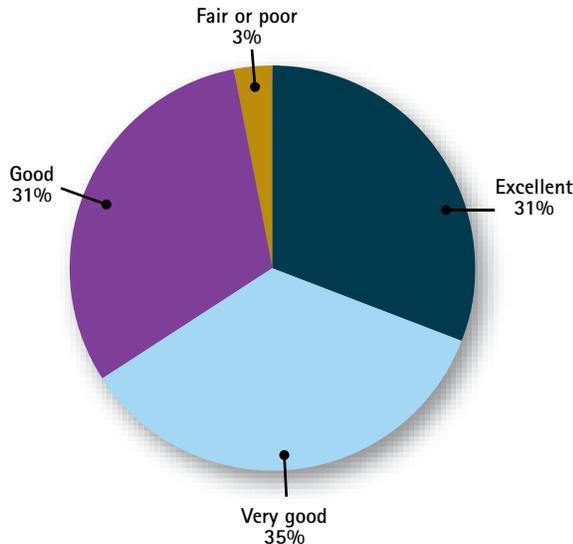
Mental health and well-being

Self-rated mental health

As the following diagram shows, 97% of Manitobans rated their mental health positively; excellent, very good, or good; 3% rated their mental health as fair or poor. Senior men were slightly more likely than women to rate their mental health as excellent (35% versus 28%).²³¹

* A calculation of the number of collisions per 100,000 licensed drivers or registered vehicles.

Figure 5.7: Self-rated mental health of Manitobans 65 and over³⁶



Mental disorders

During a five-year time period (1997/98 to 2001/02), one in four individuals aged 55 and older was treated for at least one of the following mental illnesses: depression, anxiety disorder, schizophrenia, substance abuse or personality disorder. A higher proportion of women (29%) were treated for at least one mental illness than men (20%) in this study period.²³⁷ Depression, anxiety disorder and schizophrenia are more prevalent among senior women than among men. Substance abuse is slightly more common among senior men than women.

- A Manitoba Centre for Health Policy report on mental illness stated that Manitobans aged 55 and over had a lower prevalence of having at least one mental disorder compared to adults 30 to 50 years old.²³⁷
- Manitobans aged 55 and older with at least one mental illness have a much higher prevalence of home care services than those without a mental

illness (about 19% versus nine per cent for women and 16% versus six per cent for men).

- The presence of a mental illness is associated with the use of personal care homes (PCH): seniors aged 75 and older with at least one mental illness are five times more likely to live in a PCH than those without (35% versus seven per cent).

For the senior population in Manitoba, the five-year (1997 to 2001) treatment prevalence of at least one disorder (depression, anxiety, substance abuse, schizophrenia and personality disorder) was higher among women than men with the largest difference in the age group of 65-69 (28% versus 20%). The highest treatment prevalence was seen among women aged 70 to 79 (29%) and among men aged 75 to 84 (22%). On the other hand, the lowest treatment prevalence was found among seniors aged 90 and older (women 21% and men 16%).²⁵

Depression

- The treatment prevalence of depression was higher among senior women than men from 1997 to 2001 – 23% for women versus 15% for men.²⁵

Anxiety disorder

Anxiety disorder was more common among women than men. The treatment prevalence of anxiety disorder was highest among seniors aged 65 to 69, with twice the rate among women compared to men (one in 10 versus one in 20). The lowest treatment prevalence was found in the oldest age group, 80 years and older (women 4% and men 2%).²⁵

Substance abuse

Senior men had higher treatment prevalence of substance abuse disorder than senior women with

the highest prevalence in the age group of 65–69. Six per cent of men and three per cent of women were treated for substance abuse disorder during the study period. The prevalence was decreasing with age, with the lowest treatment prevalence in the oldest age group of 90 and older (1%).²⁵

Schizophrenia

Schizophrenia was slightly higher among women than men. The treatment prevalence was higher in older age groups, with three per cent of women and two per cent of men in the age group of 90 and older; whereas two per cent of women and one per cent of men in the age group of 65 to 69.²⁵

Personality disorder

Personality disorder among senior women and men was similar in terms of its treatment prevalence. The treatment prevalence was slightly higher in older age groups compared to younger; about one per cent of seniors aged 80 and older but less than one per cent of seniors of other ages.²⁵

Cognitive function

Cognitive function includes memory, reasoning and communication. Factors such as aging and disease affect cognitive function over time.²³¹ Cognitive function is considered below independently of dementia and Alzheimer's disease, which are severe types of impaired cognitive functioning.

Cognitive function among Manitoba seniors:²³¹

- Self-rated cognitive functioning in Manitoba's senior population was assessed by the 2007 General Social Survey using questions about ability to remember, think and solve day-to-day problems.

- The results of this survey as reported by the Profile of Manitoba Seniors, indicate that over two-thirds (70%) of Manitobans 65 and over reported no cognitive problems or little difficulty in thinking or solving day-to-day problems.
- Results were similar between men and women. More men and women over 75 reported cognitive problems than those aged 65 to 74 (34% versus 25%).

Dementia and Alzheimer's disease

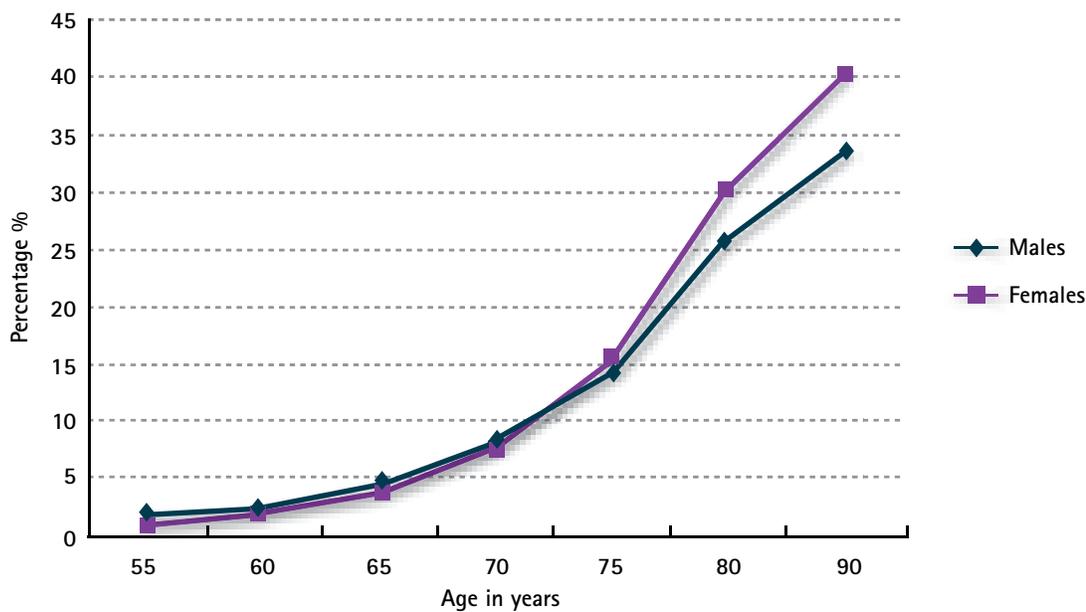
Dementia is the term for a significant loss of cognitive function that is severe enough to interfere with social or occupational functioning. Dementia is a leading cause of disability among Canadian seniors. While dementia can also be associated with alcoholism, brain injury, and other illnesses, the most common cause is Alzheimer's disease. The causes of Alzheimer's are not yet understood, but genetics and environmental factors are being researched. Age is an important risk factor for Alzheimer's disease as well as other dementias. The prevalence of dementia has increased slightly in Manitoba and, combined with a growing senior population, the number of Manitobans with dementia is expected to increase.

Dementia and Alzheimer's disease in Manitoba and Canada:

- The prevalence of dementia among people 55 and older tends to increase with age,²⁵ from about 1% at age 55 to 59, through to over one-third of the population aged 90 and older.
- In the five-year period 1996/97 to 2000/01, the overall prevalence of dementia among Manitobans 55 and older was 10%. This increased to 10.8% by 2001/02 to 2005/06.¹³

- According to the Alzheimer Society of Canada, 1 in 11 Canadian seniors has Alzheimer’s disease or related dementia. Women make up 72% of Canadians with Alzheimer’s disease.
- It has been estimated there will be 1,125,200 Canadians with dementia in 2038, more than double the current number (480,600 in 2008). Extrapolated to the Manitoba population, it is estimated that approximately 41,600 Manitobans could be living with dementia in 2038 compared to 16,000 now.²³⁸

Figure 5.8: Manitoba treatment prevalence of dementia by age and sex (1997/98 to 2001/02)²⁵



Chronic diseases

Manitoba seniors, overall, are living longer and healthier lives.²³² About one in five (18%) seniors in Manitoba do not report having any chronic health conditions. One-half (47%) of seniors in Manitoba reported having either one or two diagnosed chronic health conditions (ex: high blood pressure, diabetes or arthritis) and about 35% reported having three or more chronic health conditions.²³¹

Increasing age is associated with a greater rate of chronic conditions. Among seniors, chronic conditions are the major causes of illness, disability and health care utilization.²³² In 2007, the most commonly self-reported diagnosed chronic conditions among Manitobans 65 and over were high blood pressure (48%) and arthritis/rheumatism (44%), with women slightly more likely than men to be affected.*²³¹ In the senior years, the focus shifts from preventing the occurrence of chronic diseases to managing them with appropriate care to reduce complications and improve quality of life.

*The other conditions are: back problems (29%); heart disease (17%); and diabetes (14%).

Cancer

Most cancer diagnoses are made in the senior years. It is the most common cause of death in this age group, responsible for 27% of deaths. According to CancerCare Manitoba:²¹⁰

- 71% of all cancer was diagnosed in those 60 and over – 50% among people 60–79 and 21% among those age 80 and over.
- The leading three cancers resulting in death among women over 60 between 2004 and 2008 were: bronchus and lung (56%); breast (18%) and colon (9%).
- The three leading cancers causing death among men over 60 between 2004 and 2008 were: bronchus and lung (60%); colorectal (19%); and prostate (12%).

Colon and/or colorectal cancer

The incidence of colorectal cancer in Manitoba in 2005 to 2007 was 64 per 100,000 people per year.²¹⁰ The five-year survival rate is about 60%; it is the second leading cause of cancer deaths and accounts for 2% of all deaths among seniors. Risk factors for colon and colorectal cancer include:²³⁹

- being 50 and over
- family history
- inflammatory bowel disease
- obesity
- a diet high in red or processed meat and low in fiber
- sedentary lifestyle
- alcohol and tobacco use

Treatment of colorectal cancer is most effective if detected early. The fecal occult blood test (FOBT) is a self-administered screening test used to detect colon and/or colorectal cancers, as well as other conditions. Along with recommended follow-up, the FOBT can reduce the chance of dying from colorectal cancer by 25%.²⁴⁰ Since

the start of the colorectal screening program in 2008, 24% of Manitoba men and women aged 50 to 74 have had a FOBT.²⁴¹

Lung cancer

The incidence of lung and bronchus (major airways in the lungs) cancer in Manitoba was 69 per 100,000 per year in 2005 to 2007. Manitobans 70 and older had the highest incidence rates for lung cancer compared to other age groups. The annual average rate from 2005–2008 was 402/100,000. The mortality rate associated with lung cancer increases with age. Among Manitobans 60 and older, the mortality rate ranged from 155 to 363 per 100,000 people between 2005 and 2007.²¹² Lung cancer accounts for seven per cent of all deaths among seniors.¹⁹ Trends in lung cancer rates in men and women reflect smoking rates in youth and adult years.

Lung cancer has a low survival rate (14%). There is no screening test program for lung cancer; however, it is considered the most preventable type of cancer. Risk factors include:²⁴²

- smoking
- exposure to second-hand smoking
- exposure to radon gas
- exposure to asbestos
- occupational exposure to chemical carcinogens (arsenic, chromium and nickel)
- family history
- air pollution, indoor burning of coal
- drinking water that contains high levels of arsenic

Prostate cancer

The incidence rate of prostate cancer among Manitoba men was 118 per 100,000 in 2005 to 2007. Although the survival rate for prostate cancer is 83%, it accounts for two per cent of all deaths among seniors. Mortality rates associated with prostate cancer increase with age, with the

highest rates among those 80 and older, ranging from 476 to 613 per 100,000.²⁰⁷⁻²⁰⁹ Risk factors for prostate cancer include:²⁴³

- age 65 and over
- family history
- African ancestry
- high-fat diet, especially animal fat

Cardiovascular diseases

Cardiovascular disease is the second highest cause of death among Manitoba seniors. Though a heart attack or stroke may occur suddenly in the senior years, it often follows decades of developing atherosclerosis (hardening of the arteries) as a result of many factors such as smoking, inactivity, unhealthy diet, obesity, and aging. Five hundred million dollars were spent in 2009 on people of all ages with coronary heart disease alone, representing approximately 10% of the total provincial health budget.⁴⁴

- Of Manitoba seniors, 17% were diagnosed with heart disease in 2007, affecting men and women equally.²³¹ Prevalence increased over the period from 1984/86 to 1997/99 for men aged 65 to 74 and 75 to 84; it decreased among women of all ages.²³¹
- High blood pressure (hypertension) was the most commonly diagnosed chronic condition among Manitoba's seniors aged 65 and older (48%) in 2007. Higher proportions of women were diagnosed with this condition than men (50% versus 44%).²³¹ The prevalence increased over the period from 1984/86 to 1997/99.²³¹

Diabetes

The number of new cases (incidence) of Type 2 diabetes per year in Manitoba increases with age among both men and women. The rate of accumulated cases of diabetes is high among

seniors, with more than 13% of Manitobans over 55 and 15% over 65 having been diagnosed with diabetes.²⁴⁴

- Among seniors, 14% have diabetes, with a higher proportion of men than women (19% versus 10%). The prevalence increased for all seniors from 108 per 1000, from 1984 to 1986, to 148 per 1000, from 1997 to 1999.²³²
- Risk factors for Type 2 diabetes are:²⁴⁴
 - being overweight or obese
 - advanced age
 - physical inactivity
 - family history
 - belonging to high-risk ethnic populations (such as Aboriginal, African)
 - a history of gestational diabetes

Risk factors for complications of diabetes include:²³¹

- poor control of diabetes
- smoking
- high blood pressure

Four out of five people with diabetes die from heart disease.²⁴⁵ The main additional contributing factors are:²⁴⁵

- poor diabetes management
- high blood pressure
- smoking
- being overweight
- high cholesterol levels.

Musculoskeletal conditions: conditions affecting mobility

Musculoskeletal conditions such as arthritis and back problems cause pain, physical disability and an overall reduction in quality of life. The mobility of Manitoba seniors, especially women, is affected by these chronic conditions. One fifth of all Manitoban seniors reported mobility

problems; those over 75 were 3.4 times more likely to report mobility problems than their younger counterparts aged 65 to 74.²³¹

Arthritis

In Manitoba, arthritis was the second most common chronic condition among seniors (44%). Women were more likely than men to be affected by this condition (53% versus 34%).²³¹ People with arthritis are more likely to have difficulty with mobility and daily activities and are more likely to request assistance. Being overweight or obese increases the risk of osteoarthritis, which is the most common diagnosis in people receiving joint replacement surgery.²⁴⁶

Osteoporosis

Osteoporosis prevalence increased in Manitoba from 10% (1998 to 2001) to 13% (2003 to 2005) of the population aged 50 and older. Comparing two three-year time periods (1998/99 to 2000/01 and 2003/04 to 2005/06, it was found that:¹⁴

- Among Manitobans age 50 and older, the prevalence of osteoporosis increased from 10.3% to 12.7%.
- Women have a higher prevalence of osteoporosis than men.
- In both rural and urban areas no significant relationship was found between income and osteoporosis prevalence.

Hip and knee surgery

Canadian seniors accounted for two-thirds of those who underwent hip and knee replacement surgeries.²⁴⁶ Canadians who were obese were three times more likely – and people who were overweight were found to be twice as likely – to get hip or knee joint replacements compared to those people who were of normal weight. Obesity and being overweight can

Overweight/obesity and joint replacement surgery, Canada, Manitoba

- In 2007, 18% of the senior Manitoba population was obese; 35% were overweight, and 40% had a BMI in the “acceptable” (normal) range.³⁶
- In Canada from 2003 to 2004, nearly nine in 10 knee replacement patients and seven in 10 patients who underwent a hip replacement were overweight or obese.²⁴⁶
- BMI data were known for 17,000 Canadian patients, accounting for 65% of hip and knee replacements. Of these, 46% were obese and 35% were overweight.²⁴⁶
- Only 18% of those who underwent joint replacement surgery had a body mass index (BMI) considered normal (BMI 18.5 to 24.9).²⁴⁶
- Manitoba, along with Nova Scotia, reported the highest age-standardized rates of knee replacements, at 98 per 100,000 people. The national rate was 75.4 per 100,000.²⁴⁶
- In the 2009 to 2010 fiscal year (April to March), 3,237 hip and knee surgeries, combined, were performed in Manitoba.²⁴⁷

also delay recovery, extend hospitalization and increase the rate of repeat surgeries.

Chronic back pain

One-third of seniors reported having back problems. The term “back problems” is a catch-all phrase for many causes of chronic back pain. Arthritis and fibromyalgia are not included

in that definition. Back problems can affect overall functional health, mobility and ability to complete activities of daily living. Women were slightly more likely than men to report back problems (32% versus 24%).

Oral health

Though most Manitoba seniors report excellent or good oral health, this decreases with age.

Of Manitobans 65 and over, 84% described the health of their teeth and gums as good or better (36% good, 31% very good, and 17% excellent). The majority of Manitoba seniors reported being able to chew firm foods (95%) and boiled vegetables (99%). The ability to bite off and chew a piece of fresh apple was higher among men (87% versus 81%). For both sexes combined, this ability decreased with age; 88% of seniors 65 to 74 could do this, compared to 78% of those 75 and older.²³¹

Infectious diseases

Influenza and pneumonia

Influenza and other causes of pneumonia are the most common infectious cause of death in seniors (5% of all deaths).¹⁹ For many seniors and others with debilitating or other end of life conditions, pneumonia and other types of serious infections are factors in the final deterioration or death but are not considered as the underlying cause of death.

Two specific and important pneumonia-causing infections are preventable by vaccination – influenza and pneumococcal disease. Whereas the vaccine for pneumococcal infections need be taken only once in adulthood, influenza vaccines are only effective for one season and need to be given every year.

Influenza causes much illness amongst seniors, especially those living in personal care homes and other group residences where influenza outbreaks are common every fall and winter.

Influenza vaccination is recommended for all seniors, for Manitobans with other risk factors for complications, and for others that care for those at risk. Influenza vaccination is offered free of charge every autumn in Manitoba. In 2008, 57% of Manitoba seniors received the seasonal influenza vaccine.⁶² Immunization rates among First Nations seniors (31%) were considerably lower than among non-First Nations seniors (58%).²⁴⁸

Pneumococcal pneumonia immunization for adults is usually only required once for lifetime protection and is free of charge for high risk groups including all seniors. As of 2008, 63% of Manitoba seniors had been immunized against pneumococcal pneumonia (cumulative).²⁴⁸ This rate increased to 64% in 2009.¹⁸⁴ Rates among First Nations seniors were lower, at 46% compared to non-First Nations seniors, 63%.²⁴⁸

Risk factors, behaviours and other determinants of health

Nutrition

Healthy eating is a key component of healthy aging, contributing to independence and quality of life. Older adults need fewer calories but still need as many nutrients.

Research has shown that a diet high in fruits and vegetables is associated with protection against vision loss, cataracts, respiratory disease and certain cancers.²⁴⁹ Inadequate vitamin B intake is associated with decreased cognitive function.²⁵⁰ Seniors who have decreased health and functional status are more likely to have poor nutrition.²³⁰ Declines in immune and sensory functions such as macular degeneration (causing loss of vision) are worsened by poor nutrition.²³⁰ Symptoms related to chronic diseases such as cardiovascular disease, diabetes, osteoporosis and cancer are also worsened by poor nutritional status.²⁵¹ Inadequate nutrition can contribute to falls and associated injuries that can lead to loss of independence.^{252, 253}

Maintaining a healthy diet can be a challenge for some seniors because of a range of inter-related factors at the individual and societal level. Underlying factors and determinants influencing nutrition include: income, transportation, support networks, the cost of food, access to grocery stores and difficulty with food preparation. Older adults living in the community tend to have poorer nutrition than their institutionalized counterparts, particularly when they live alone.²³⁰

Gender, income, education and marital status significantly influence diets such as fruit and vegetable intake in Canadian seniors.²³⁰

The diet of Manitoba seniors²⁵⁴

- Of seniors, 48% consumed fruit and vegetables fewer than five times per day, similar to the Canadian rate of 45%.
- Women were more likely than men to consume at least five fruit or vegetables daily, at 39% versus 26%.

Overweight and obesity

In 2007, 35% of seniors in Manitoba had a BMI classification of overweight, and 18% were classified as obese. These rates were higher among men than women, with 41% of men versus 29% of women in the overweight category and 20% versus 16% classified as obese.³⁶

Physical activity

It has been suggested that regular physical activity such as walking or gardening is the most important thing seniors can do to maintain mobility and prevent disability.²⁵⁴ Despite this, seniors who are physically active are in the minority. The leisure physical activity index was calculated by using the number of times an individual participates in an activity and the duration of participation. The index scores were then grouped based on the number of calories expended during leisure activity into three categories: active (at least 3 calories per kilogram per day), moderately active (1.5 to 2.99 calories per kilogram per day), and inactive (0-1.49 calories per kilogram per day). The activity rate

was similar amongst those aged 55 to 64 and 65 to 74, at 23% and 24%, respectively, but dropped to 10% for those 75 and older.³⁶ The inactivity rate increased with age, ranging from 51% of those 55 to 64 and 65 to 74, to 69% of those 75 and older.³⁶

Table 5.2: Activity-index levels of Manitoba men and women 65 and over³⁶

	Active	Moderately active	Inactive
Seniors (65+)	18%	24%	58%
Men	20%	26%	53%
Women	16%	22%	63%

Substance use

Tobacco

Smoking and exposure to second hand tobacco smoke are associated with the development and progression of chronic diseases and conditions which can decrease physical functioning and mobility.²¹⁸ Among Canadian adults 65 and older, previous and/or current smoking are implicated in eight of the leading 14 causes of death.²³⁰ Seniors with chronic conditions such as heart disease and asthma are particularly vulnerable to the effects of second-hand smoke.²³⁰

According to the Canadian Community Health Survey (2007), seven per cent of Manitoba seniors smoke cigarettes daily, with similar rates for men and women.²³¹

The sooner one stops smoking, the better the long-term benefits; this phenomenon carries into

older adulthood.²³⁰ Older adults are considered less responsive to health messages about smoking, but there is evidence that if cessation programs are tailored to older smokers, they can work.²³⁰

Alcohol

While heavy drinking is known to adversely affect health, moderate alcohol consumption is believed to have some beneficial effects, such as reducing the risk of heart disease. The Centre for Addictions and Mental Health recommends a maximum of nine standard drinks per week for women and 15 for men. Problem drinking and binge drinking is more common among youth and young adults, although there is a segment of the Canadian senior population that consumes alcohol in an unhealthy manner.

- Moderate drinkers were most likely to rate their health positively: 62% of occasional or weekly drinkers reported their health as good. Heavy weekly drinkers were far less likely (43%) to report being in good health, as were abstainers, whether they were former regular drinkers, former occasional drinkers, or lifetime abstainers.²⁵⁴
- Of those seniors aged 65 to 74, 22% were considered former drinkers, and 70% had consumed alcohol within the year of the survey. A further eight per cent were lifetime abstainers.*
- In the 75 and older age group, 19% were former drinkers, 64% had consumed alcohol in the past year and 17% were lifetime abstainers.²⁵⁵
- Seven per cent of those who had consumed alcohol within the past year reported drinking four or more times weekly. Of those who were past-year drinkers, 62% typically consumed one to three drinks on a typical drinking day.²⁵⁵

* Definitions were divided into three types of drinkers: “past-year drinkers” are those who consumed alcohol in the 12 months prior to the survey; “former drinkers” are those who had not consumed alcohol in the 12 months prior to the survey, but who had consumed in their life; and “abstainers” are those who never had an alcoholic beverage in their life.

- Nation-wide, 11% of those drinkers surveyed exceeded the low-risk drinking guidelines in the 65 to 74 year old age group, and 14% of those aged 75 or older drank in excess of the guidelines.²⁵⁶ (Among adults aged 25 to 34, 38% exceeded the guidelines).

Functional health

Overall functional health is often measured by the Health Utility Index (HUI), developed by McMaster University. This index provides a measure of general health status and health-related quality of life. The index reflects self-assessed functioning in eight dimensions of health: vision, hearing, speech, mobility, dexterity, feelings, cognition and pain.²⁵⁷

The HUI was used in the 2007 General Social Survey, a Statistics Canada survey focused on the living conditions and well-being of Canadians. As expected, functional health decreases among older seniors. Overall, 68% of Manitoba seniors had no or mild functional health problems. Seniors over 75 were almost twice as likely as younger seniors to report moderate to severe functional health problems (42% versus 23%).²³¹

Mobility

Mobility is an indicator of a person's ability to be independent. The proportion of Manitoba's seniors who felt affected by mobility limitations was assessed in the 2007 General Social Survey. Seniors were asked about their ability to walk around their neighbourhood without difficulty, the degree of assistance they required in getting around, and other mobility questions. As expected, increasing age is associated with increasing need for assistance with mobility. Less than one fifth of seniors 65 and older reported

having mobility issues or requiring assistance. Manitobans 75 and over were more than three times more likely to report mobility problems, requiring the assistance of canes, crutches or a wheelchair. Specifically, 27% of Manitobans over 75 reported mobility problems compared to 8% of younger seniors aged 65 to 74. Among people aged 65 to 74, similar proportions of men and women reported mobility problems; however, women over age 75 were almost twice as likely to report mobility problems as their male counterparts (32% versus 18%).²³¹

Assistance with daily activities

Self-reported need for assistance with daily activities such as preparing meals, getting to appointments, shopping, housework, personal care or looking after personal finances is another indicator of functional health.

Assistance with daily activities among Manitoba seniors²³¹

- One-quarter (26%) of Manitoba seniors reported needing assistance with at least one daily activity.
- Nearly twice as many women as men required assistance (32% versus 18%).
- Older seniors were more likely to require assistance (15% for ages 65 to 74 and 39% for ages 75 and older) for getting to appointments, running errands and housework.

Social connectedness

Social connectedness has been used as an umbrella term for social support, social networks, social engagement and supportive social environments.²⁵⁸

There is increasing evidence that social connectedness is associated with better physical and mental health and well-being. Like many determinants of health, the direction of cause and effect are not always one-way. In other words, while there is no doubt about the importance of social engagement and social support networks to promote health, people in better mental and physical health are also more likely to pursue and respond to opportunities for social connection.

- One-third (36%) of seniors saw their relatives and half of seniors communicated with their

relatives at least weekly in the month prior to being surveyed. More than 40% of seniors saw their friends and 56% communicated with their friends at least weekly.²³¹

- In 2007, 36% of seniors reported feelings of loneliness. Seniors 75 and older were 1.5 times more likely than those aged 65 to 74 to report feelings of loneliness.

Compared to their younger counterparts, older adults have smaller social networks, characterized by greater emotional closeness and associated increased vulnerability due to fewer people to call on and higher risk of loss. Physical changes associated with aging and the changes in social networks related to retirement contribute to fewer opportunities to build and maintain social

Volunteerism and charitable donations among Manitoba seniors

- Of Manitoba's senior population, 36% (61,295 people) participated in unpaid volunteer activities in 2007.
- Seniors who volunteered contributed 14 million hours in 2007, an average of 228 hours per volunteer per year, or 4.4 hours per volunteer per week, with men volunteering slightly more than women (4.6 versus 4.2 hours per week).²³¹
- About half of volunteer activity was for religious entities, for both senior men and women.
- The most frequent volunteer activity for men was being an unpaid member of a board or committee (53%) and for women was canvassing/fundraising (55%).²⁶⁰
- The majority of Manitoba seniors (93% of women and 86% men) cited making a contribution to the community as their reason for volunteering.²⁶⁰
- In 2006, almost one fifth of Manitoba seniors were involved in taking care of others (18% or 27,165 seniors).
- Of those who volunteered time to care for others, a smaller proportion (3,700) contributed 20 hours or more per week. An additional 14% of seniors (21,070) also took care of children, with over one-thousand (1,030) seniors contributing 60 hours or more per week doing so.²⁶⁰
- In 2004, per capita, Manitoba seniors gave more money to charity than any other age group in the province. The vast majority of Manitoba seniors donated money (90%, or 130,990 seniors), contributing a total of almost \$80 million dollars.²⁶⁰

networks in later years. Environmental barriers can compound these issues, including poor access to transportation and services, geographic isolation and language barriers.

Research has linked social connectedness with the term “social capital”, which has been defined as “resources that emerge from the networks of social interactions based on norms of trust and reciprocity”.²⁵⁸ Social capital contributes to collective outcomes such as health and well-being and safety. Intergenerational activities can contribute positively to the lives of both younger people and older adults.²³⁰ Enabling environments and family and community supports are needed to facilitate social engagement of older adults and participation in their communities.²³⁰ Barriers to social engagement include: ageism, social isolation, marginalization and exclusion, loneliness, poor access to health and social services, low income and decreased health status.

Volunteer behaviour

Volunteering can help to increase social connectedness and decrease isolation. Recent research has shown lower rates of heart disease, diabetes, cardiovascular disease and improved mental health among those who volunteered.²⁵⁹ Manitoba seniors contribute significantly to their communities through volunteer activities.

Income

The association between income and health is well established elsewhere in this report. Seniors

are more likely to have lower incomes than adults 45 to 64 years old, although in general seniors are less likely to live in poverty than are younger Manitobans. Older women tend to have lower incomes because their wages were lower when employed or because they worked unpaid in the home and do not have their own pensions.

- According to a Market Basket Measure analysis 1.6% of seniors were considered to live in low-income in 2008.¹¹⁶
- In 2005, the average annual income* for seniors (at the individual level) was \$28,365.
- In 2006, approximately 14,300 Manitoba seniors (nine per cent) were employed and over half (55%) were working full time. Two-thirds of employed seniors were men.²³¹
- Almost half (48%) of seniors had income below \$20,000, compared to 29% of those aged 45 to 54 and 37% of those aged 55 to 64.²³¹
- In 2005, senior women had lower annual average incomes than senior men (\$23,337 versus \$34,784). Moreover, women were about twice as likely as men to have annual incomes of less than \$15,000 (33% versus 16%).²⁴⁷
- In 2005, 34% of Manitoba seniors lived alone. Among seniors who lived alone, men had a higher average annual income than women (\$31,690 versus \$26,099). Furthermore, two fifths of senior men who lived alone had incomes less than \$20,000, compared to half of senior women who lived alone.
- Seniors living alone had a low-income rate approximately 10 times higher than seniors living in families** (17% versus 2%).

* Average income is the weighted mean total income of individuals in the age group.

** Economic families are defined as a group of two or more persons in the same dwelling that are related to each other by blood, marriage, common-law relationship or adoption.

Housing

Housing conditions can affect mental and physical health. Although housing conditions continue to improve, this is still a concern for many of Manitoba's seniors.

- Of Manitoba seniors' households 52% were one-person households, while 48% were multiple-person households.
- One-quarter of seniors living in one-person households had housing costs that were considered unaffordable, i.e. when shelter costs are 30% or more of their total household income.
- More senior women than men lived in one-person households that were not affordable (26% versus 20%).
- One in 10 seniors lived in multiple-person households that were "not affordable."
- Senior women were more likely to have shelter costs that were not affordable than senior men (16% versus 6%).
- Among Manitoba seniors, 9,640 households were in core housing need.^{*261} Of those households, there was a higher proportion of renters than those owning their homes (56% versus 44%).
- The proportion of senior households in core housing need have steadily decreased over the period from 1991 (17%) to 2006 (10%).

Supports for community living

Preserving the ability for Manitobans to live as independently as possible and participate in the community for as long as possible are important priorities for healthy aging. These goals are of benefit to the individual, their family and the larger community and society. At an individual

level, supported living in the community (as distinct from living in a personal care home) preserves dignity and choice and can provide increased opportunities for physical activity, social support and participation in cultural and other community activities. This improves the potential for optimal physical, mental and spiritual health. At the community level, participation of seniors in community activities is beneficial from many perspectives, including volunteer capacity, sharing experience and knowledge and supporting families.

Most seniors will need some support (formal or informal) to live to their potential in the community. These supports include general support with daily activities such as shopping and meal preparation, as well as specialized health and personal care services.

Co-ordinated home-care services play a key role in supporting independent living in the community for Manitobans of all ages, but mostly for seniors. In 2007, each month on average 22,985 clients received coordinated home care services, mostly for seniors. Almost two-thirds (61%) of clients were in Winnipeg, consistent with the distribution of the senior population in Manitoba.²³¹

Physical health problems were the most common reasons that seniors required care (76%). Of those Manitoba seniors who had received assistance in the previous 12 months, 21% received unpaid (informal) care such as care from family and friends; 29% received paid (formal) care only, such as home care; and 50% received both paid and unpaid care. Approximately one fifth of Manitobans over 45 reported having provided help to a senior due to a long-term health

* Core housing need is defined in terms of those individuals currently residing in housing that is either in need of major repair, does not have enough bedrooms for the size and makeup of the household, or costs 30 per cent or more of their total income, and who are unable to rent an alternative housing unit that meets these standards without paying 30 per cent or more of their income.

condition or physical limitation. Almost three-quarters of the helpers were between the ages of 45 and 64.²³¹

According to the 2005 Canadian Community Health Survey, most Manitoba seniors (82%) had not received any home care services in the previous year. Nine per cent of Manitoba seniors received government home-care services only; six per cent received non-government (private) home care services, and four per cent received a mix of the two.²³¹ Those receiving government funded home care were provided meal services (51%), housework services like cleaning and laundry (41%), nursing care (31%), shopping (19%) and all other (15%).²³¹

Among older Manitobans, those who were not married were more likely to receive home care. Among seniors 85 and over, 29% of those who were married and 40% of those who were not married received some services in 1998/99.²⁶² This effect is seen across all age groups and is consistent with more recent national research, suggesting this is likely still the case.²⁶³ The majority (93%) of Manitobans who entered a nursing home in that year had been home care clients prior to admission.²⁶² Manitoba seniors are living in the community longer than ever before, with admission to PCHs occurring later in life and those who are admitted require higher levels of care.

PCH use among Manitoba seniors

- The proportion of Manitoba seniors living in PCHs has remained relatively stable since 1999, at around one per cent.²³²
- The proportion of PCH residents who were 85 years of age and older increased between 1985 (39%) and 1999 (49%).²³²
- In 2007/2008, 60% of all PCH residents were 85 and older (46% women and 14% men).²⁶⁴
- One in three Manitoba women age 85 and older lived in a PCH in 2007/2008, compared to one in five Manitoba men of the same age.²⁶⁴
- Per capita PCH use rates among older Manitoba seniors have decreased from 1985/1986 to 2007/2008: among males aged 85 years and older, from 305 users per 1,000 to 209 per 1,000, a 31% relative decrease; among females aged 75 to 84 from 95 to 68 users per 1,000, a 29% relative decrease; and, among females aged 85 years and older, from 419 to 307 users per 1,000, a relative decrease of 27%.²⁶⁴
- Between 1999 and 2004, close to 70% of Manitobans in PCHs required level three or four care, the highest levels of care.²⁶⁵
- Between 1999 and 2004, approximately 65% of PCH residents had been diagnosed with dementia and 70% with two or more chronic diseases.

Summary, reflections and conclusions

Like most of the developed world, Manitoba has an aging population. Two major factors contribute to this trend. The first is that the generation of baby boomers born after World War II between 1945 and 1955 have begun to reach age 65 and constitute a significant proportion of the population. The second is that Manitobans continue to live longer. As a result of these two phenomena, the proportion of Manitobans over the age of 65 is projected to increase from 14% to 20% in the next 15 years.

In Canada, older adults are living longer and with fewer disabilities than was the case with previous generations. Life expectancy for males and females that have reached the age of 65 is now 86 for women and 83 for men. Age is a risk factor for many chronic conditions, so it is not surprising that the majority of seniors have at least one chronic disease or condition. Exposure to other risk factors and health behaviours in earlier life stages are often cumulative and the impact on health is often observed during the senior years. Despite this, most Manitoba seniors (three-fourths) report their health as good, very good, or excellent. More Manitoba seniors are living in the community longer as evidenced by decreasing per capita PCH use rates.

The most common causes of deaths for seniors are, in descending order, cancer, heart disease, stroke, dementia, chronic lung disease, diabetes, unintentional injuries, influenza and pneumonia, kidney failure and aortic disease. Combining heart disease, stroke, and aortic disease makes cardiovascular diseases the leading cause of death of seniors. This becomes more true for older seniors (over 80 years of age) who are more likely to die from heart disease than cancer. The leading causes of cancer deaths for seniors are

lung, breast, colorectal, and prostate, accounting for more than one-half of cancer deaths in seniors.

Although seniors make up one-seventh of Manitoba's population, they constitute one-third of all hospitalizations for injuries and one-third of all deaths resulting from injuries. Falls are the commonest cause, followed by motor-vehicle collisions and suicide.

It has been identified that falls in seniors are associated with many factors including mental and physical fitness, appropriate use of medications and environmental conditions. Falls are a risk of independence and mobility of seniors, so prevention strategies need to strike a balance between taking precautions and eliminating risk completely by too much restriction of activity. There has been much progress in the understanding of the causes of falls in seniors and the implementation of strategies and actions to address them.

Motor-vehicle collisions are the second leading cause of injury deaths. Driver and pedestrian safety are important issues for seniors, which increase in importance as age increases.

Suicide is the third leading cause of injury-related death in seniors and appears to be increasing. Many risk factors have been identified, including social circumstances, depression, medical conditions and medications.

Most Manitoba seniors (97%) rate their own mental health as good, very good or excellent. Objectively, there is evidence that one in four Manitobans over the age of 55 have been diagnosed with one or more significant mental disorders – women more than men. The presence of a mental illness increased the need for home care services (more than doubling

it) and personal care home admission (seven-fold). Treatment for depression is common among seniors – one in four women and one in seven men.

Self-reported survey information indicated that two-thirds of seniors over the age of 65 reported little or no difficulty in thinking or solving day-to-day problems. It has been estimated that one in 10 Manitobans over the age of 65 have been diagnosed with Alzheimer's disease or another type of dementia. This proportion increases from about one per cent at age 55 to one in three by age 90. Much research is underway to better understand the causes and treatment for this condition of increasing importance which has significant impact on the individual, family and friends, as well as the health care system.

Manitoba seniors continue to live longer and healthier lives. One outcome of longer life is increased rates of age-related chronic conditions and diseases such as high blood pressure and arthritis. One in five seniors report having no known chronic conditions while one in two report two or less chronic conditions. Over the age of 65, one in two Manitobans self-reported the presence of high blood pressure and one in two reported the presence of arthritis ("rheumatism"). These reports do not provide objective information about presence or severity but they do indicate perception about their prevalence. The challenge for seniors and those that care for them are to cope with and to manage these conditions so that quality, and quantity, of life can be optimized.

Three-fourths of all cancer diagnoses are made after the age of 60. Four cancers are responsible for more than one-half of cancer diagnoses in seniors – lung, breast, colorectal, and prostate. Cancer is the cause of one-fourth of deaths in seniors. By the senior years, most

of the exposure-based risk for cancer has been established (ex: smoking for lung cancer, diet for colorectal cancer). Despite that, it is not too late for seniors to maintain healthy lifestyles or to change behaviours. Immediate benefits from improved diet, increased physical and mental activity and reduced exposure to harmful substances like tobacco or too much alcohol can improve quality and length of life in the senior years. Screening for colorectal cancer and breast cancer can result in earlier detection at a stage of illness where survival is better and less treatment may be required.

Illness and death rates from heart disease continue to improve. Despite that progressive trend, combined cardiovascular diseases such as heart disease, stroke and other vascular conditions (ex: aortic aneurysms) are the leading cause of death in seniors, responsible for one-third of deaths. As for cancer, many of the risks for atherosclerosis (hardening of the arteries) have accumulated over a lifetime (ex: dietary factors, inactivity, overweight, smoking, stress, diabetes). Acute events related to this chronic condition such as a myocardial infarction (heart attack) or cerebrovascular event (stroke) may have occurred during the earlier adult years but are more likely to occur during the senior years. Again, improved lifestyle in the senior years, combined with appropriate medical care and chronic disease management can reduce the risk for premature death or illness.

Diabetes in seniors, as with other life course populations, is of increasing concern. One in seven seniors has been diagnosed with Type 2 diabetes, a preventable condition with serious complications such as heart attacks, kidney failure, vision loss and amputations. Fortunately, diabetes can be prevented or controlled by diet, physical activity and appropriate medical care.

Hypertension and arthritis are the two most common chronic conditions of seniors, each affecting about half of seniors. Overweight and obesity are established risk factors for hypertension and osteoarthritis, the most common cause of joint problems for seniors. Two-thirds of Manitoba's hip or knee replacement surgeries were performed on seniors.

This chapter has included information on only two infectious diseases – influenza and pneumococcal disease – because of their impact on seniors. Serious complications and death occur more frequently in seniors, especially older seniors and those with chronic conditions such as heart or lung disease. Every winter, seasonal influenza is responsible for yearly outbreaks in personal care homes. It contributes to an estimated one hundred or more deaths, mostly in seniors. To control these consequences, annual vaccine programs are delivered in Manitoba, with reported uptake rates approaching two out of three seniors. The uptake is much less amongst other age groups and health care workers that can transmit influenza to seniors and others at increased risk. There is room for improvements in uptake of influenza vaccine, a shared opportunity and responsibility for all Manitobans.

Health practices and behaviours have significant impact on the leading causes of illness and death. One-half of Manitoba seniors do not consume the recommended level of fruits and vegetables, indicating that they may be at nutritional risk. Many diseases and conditions of seniors such as diabetes and hypertension can be affected by nutrition. Nutrition, in turn can be affected by conditions such as oral health. Good nutrition is associated with many other factors such as income, transportation, and support networks.

More than one-half of Manitoba seniors are considered inactive, a rate that increases with

age. Physical activity has important benefits for physical and mental health. Efforts need to be made to find innovative ways to create environments and conditions that enable seniors to be more active even though some may have physical limitations.

Seven per cent of Manitoba seniors smoke, which is less than younger adults and less than other Canadians. More than one-half of the causes of death of seniors are conditions that are associated with smoking. Benefits from quitting smoking can occur at any time, including the senior years, especially for those with chronic cardiac and respiratory disease.

Between 11 and 14 per cent of seniors exceed low risk alcohol consumption guidelines. Although this is lower than their younger adult counterparts it can have significant negative impacts, particularly if this is mixed with prescription medications, which are common in the senior age group.

Based on the health utility index described in this section, one-third of Manitoba seniors reported moderate or severe functional health problems. These two categories apply to almost one-half of seniors over 75 years and about one-quarter of seniors aged 65 to 75. The need for assistance for mobility (with canes, crutches or wheelchair) increased three-fold from 8% for seniors 65 to 74 to 28% for seniors over the age of 75. With regard to daily activities such as preparing meals, shopping, housework and financial management, one-quarter of Manitoba seniors reported needing assistance in one or more activities. This has implications for the design of housing, transportation and public buildings to improve access and safety.

There is increasing recognition of the importance and impact of social support throughout the life

course, including seniors. One-third of Manitoba seniors live alone. About one-third of seniors communicate with relatives at least once per week and about one-half communicated with friends at least once per week. One-third of seniors reported feelings of loneliness – higher for seniors over 75 years. Ensuring that our seniors are not isolated from social supports is the shared responsibility of family, friends, neighbours and others in the community. Volunteering is an excellent way to achieve social connectedness and to contribute positively to one's community. One-third of Manitoban's seniors indicated that they participated in unpaid volunteer activities.

Less than two per cent of seniors live in low income, the second lowest province in Canada. The rate of low income is twice as high for women than men and ten times as high for seniors living alone. The rate of poverty by this definition is tenfold higher for seniors living alone than for seniors living with families. Solutions are needed to improve the financial circumstances of this segment of our senior population.

Although there is evidence of improving trends, obtaining affordable, good quality housing is a challenge for too many senior citizens, according to survey data. One-fourth of seniors living on their own had housing that was not affordable based on their housing costs exceeding 30% of their income. The rate of seniors' housing that has been newly classified to be in core housing need has decreased significantly, but in 2006 10% of senior housing was classified as such and in need of improvement. This was higher for senior women than for men.

Just as there is wide variation in the health of seniors, there is wide variation in the conditions of living that affect the health of seniors. In Manitoba, almost one-quarter of seniors living in one-person households had housing costs that

are considered "not affordable." Transportation, access to resources and health care, and isolation and loneliness are significant issues affecting the health of many seniors. Mental health and overall health are closely connected. Seniors with mental disorders such as depression, anxiety disorders and schizophrenia have higher rates of physician visits and are more likely to live in personal care homes. Promoting good mental health is increasingly recognized as a priority in policy and program development for seniors. More attention to the links between mental health and other health issues will be necessary to improve healthy aging.

While there are many programs at the provincial, regional and local level focused on health promotion for seniors, most seniors remain physically inactive and many have difficulty eating a healthy, nutritious diet. Regular to heavy drinking, smoking and multiple medication use create other challenges in maintaining health for a substantial number of seniors.

In recognition of the evidence supporting healthy aging policies, in 2005, the federal, provincial and territorial ministers responsible for seniors endorsed the need for action on five key issues related to healthy aging: social connectedness, physical activity, healthy eating, fall prevention and tobacco control. This approach is supported by the World Health Organization.

Helping seniors remain healthy and independent will not only improve their quality of life, but the lives of those around them, to whom they provide support and from whom they receive support. Enabling seniors to remain healthy and independent in the community will also facilitate ongoing contributions to the community and serve the added benefit of reducing the strain on the health care system by decreasing the impact of chronic conditions and disability.



Conclusions and recommendations

Most of the causes of premature deaths, injuries and illness described in this report can be avoided or delayed. With better prevention, more Manitobans could live a fuller life in better health – and need less health care. This could make more resources available for other important determinants of health, such as early child development and education, which, in turn, should further improve our health.

At one level, prevention comes down to how we live and how we take care of ourselves and others. We have known for a long time that tobacco, unhealthy diets, inadequate exercise, obesity and excessive alcohol consumption are important causes of many of our health problems.

At another level, how we live is influenced by several factors, many of which are beyond our own personal direct control or responsibility. In addition to the genes we have inherited, our health is influenced by our families and other relationships, the physical and social environments we live in, exposures to risk factors throughout the life course and other social determinants.

In Manitoba, as elsewhere, health outcomes are better, on average, for people who have been raised in healthy families in healthy homes, for people with higher education and better jobs, for non-Aboriginal people and for people who live in neighbourhoods with higher average incomes. These differences – often referred to as health disparities – are significant. They are a major challenge and opportunity to improve the health of the public.

Although there has been improvement in many of these factors, there is still a need for much more progress. Our goals should be to improve the health of Manitobans while reducing health inequalities among us. These goals reflect basic values of fairness and social justice in addition to an understanding of where the need and opportunities for health improvements are greatest. Progress towards these goals should also create a healthier and more cohesive society with less need for health, justice and social services. This can be achieved by breaking the generational cycles of poorer health that are associated with poverty, discrimination, crime and other social and economic inequities of disadvantaged communities and populations.

In September, 2010, all federal, provincial and territorial ministers of health endorsed a declaration on prevention and promotion entitled *Creating a Healthier Canada: Making Prevention a Priority*. The vision for this declaration is:

A Canada in which governments work together and with private, non-profit, municipal, academic and community sectors, and with First Nations, Inuit and Metis peoples, to improve health and reduce health disparities and to build and influence the physical, social and economic conditions that will promote health and wellness, and prevent illness so that Canadians can enjoy good health for years to come.²⁵³

The recommendations in this report are consistent with the ministers' declaration and are based on the confidence that a more coordinated

set of comprehensive prevention strategies, built on past and current efforts, can achieve faster progress. This can best be achieved by starting with the identification of priority issues, stated goals, and measurable indicators. Comprehensive prevention strategies should be developed, in consultation and collaboration with appropriate stakeholders, to achieve reasonable and specified objectives or targets, based on evidence and the following approaches:

1. Consider the health and health equity impacts of all major decisions, legislation, policies and actions.
2. Engage all organizations and citizens in promoting health.
3. Recognize and support the important role of families and communities.
4. Achieve a more equitable distribution of the social determinants of health and improve the settings of everyday life to promote healthier behaviours.
5. Strengthen the capacity of the health system for prevention programs and services.

The first approach is based on the principle that all policies and actions of government or other sectors have a potential impact on health and health disparities. These include, for example, marketing and pricing policies that influence consumer choices for foods. The affordability of healthy foods and other necessities for life are affected by economic policies such as the setting of the minimum wage and taxation that have an effect on poverty rates and the distribution of income and wealth. Health and health disparity impacts should be assessed and taken into consideration for all major policy and legislation decisions, using a health equity impact assessment method. To achieve health equity, it is important to sustain and strengthen the publicly funded and

administered health system, our best way towards ensuring that all Manitobans get the services they need, regardless of their ability to pay.

The second approach is based on the principle that health is the shared responsibility of all – to take care of ourselves, our families and others in our communities. We have many opportunities to do this through the various roles and responsibilities we have at home, school, work, and in all of our community settings. Preventing disease and injury, and promoting health, need to be everybody's business, in every place, and every day. It is a cooperative effort and not something that can be left only to the health care system after we are sick or injured.

The third approach recognizes that the most important organization in every community for promoting health is the family. More than any other place, the home offers the first and most important setting for people to reach their potential in health and well-being. Promoting and supporting healthy families in healthy communities should be a basic approach in every disease and injury prevention strategy. This approach applies throughout the life course. It begins with supporting each mother for a healthy pregnancy and continues with providing a safe and nurturing environment for every child and dependent person of all generations, ending with end-of-life care and support.

The fourth approach recognizes that the ability of people to live healthy lives depends on many factors, including a wide range of social determinants, such as education, employment and income. Also important are the social and built environments of our homes, schools, workplaces, neighbourhoods and other community settings. We must continue to develop and implement policies to address and improve these determinants

and their distribution. It is important to promote, for example, healthy schools and healthy workplaces, in which everyday life embraces healthy living. These include healthy relationships and healthy physical and social environments that promote healthy living (ex: the availability and affordability of healthy food and opportunities for adequate and regular physical activity).

The fifth approach recognizes the importance of the formal health system and the need to further enhance the provision of effective and sustainable preventive programs and services in public health and primary care within one coordinated system. To reduce health inequalities, it is important for these services to be offered and used equitably. They should be based on the best available evidence and supplemented by more outreach and continuity of services for those with the highest need and least ability to access care, including access for emergency assistance and/or arrangements for follow-up on a 24/7 basis.

Much work has been done to achieve these goals and apply these approaches and principles. Too often, however, these initiatives have been part of stand-alone, targeted, temporary or fragmented strategies or programs. These should be even more effective if they are part of an overall coordinated set of integrated strategies that engage all levels and departments of governments, the private sector, non-government organizations and citizens.

The recommendations of this report are intended to build on and enhance work and efforts already in process. To achieve this, it is recommended that the priorities identified in this report be reviewed and affirmed.

Coordination should be improved based on a shared vision, goals and objectives. Sustained change requires more comprehensive, integrated and continuous strategies with greater citizen engagement. In this way, we are more likely to achieve progressive change towards more norms of preventive behaviours and cultures of health promotion (ex: the de-normalization and intolerance of tobacco use in most settings). Much of the specific elements of these strategies will require more research, consultation and engagement with Manitobans using information in this report and many other valuable sources. It is for these reasons that the recommendations of this report are at a more general and strategic level, rather than spelling out specific policies, regulations or actions before engaging in broader consultation and collaboration.

The recommendations are organized according to the following outline:

1. recommended health goals for all of government
2. recommended priorities for prevention strategies that address:
 - 2.1 priority health outcomes
 - 2.2 priority health-related behaviours and activities
 - 2.3 priority issues for each determinant of health and the settings of everyday life
3. recommended approaches for prevention strategies.
4. recommended structures and other elements to coordinate, develop, implement and evaluate prevention strategies
5. recommended actions to enhance the capacity of the health system to implement prevention strategies

1. Goals

Government's responsibility for the health of Manitobans spans all departments, and does not reside only with Manitoba Health and Manitoba Healthy Living, Youth and Seniors. Because of the paramount importance of health and wellness – at the individual, family and community levels – and because of the wide range of factors that affect and are affected by our health, all major decisions, policies, legislation and actions should be assessed for and guided by their potential impact on health and health disparities. In this context, health is defined broadly, to include physical, mental, and social well-being. To achieve these goals requires an all-of-society effort that engages all sectors and all settings, not only the formal health system. However, in aiming for these goals, it is also important to sustain an affordable publicly funded and administered health system. This is necessary for two main reasons – 1) to enable people to get the services they need, regardless of their ability to pay and 2) to maintain a balance of government investment to achieve more equitable access to the determinants of health and well-being (other than health care), such as healthy living, early child development, education, good jobs, housing, community development, and social and family services. In this way, prevention of disease and injury can be enhanced, health and wellness can be promoted, and the need for health care and other services reduced. If we do not reverse current trends, and if there is not sufficient revenue for governments, the continued pressure to increase expenditure in health care could result in fewer resources available to support and invest in other social programs and determinants of health.

Recommendation 1.1

The government of Manitoba should adopt two goals to guide all major decisions, policies, legislation and other actions:

- **improved health of Manitobans**
- **reduced inequalities of health among Manitobans**

2. Priorities for integrated prevention strategies

Because of the importance and complexity of comprehensive prevention strategies, leadership and oversight for their coordination should reside with the one provincial body that has the mandate to serve the broad needs of all Manitobans – the Manitoba government. The determination of priorities for health outcomes, behaviours, determinants and settings is part of the process of strategy development. To that end, this report has provided an initial list of recommended priorities that should be considered.

Recommendation 2.1

The Manitoba government should oversee the coordination and development of a set of integrated prevention strategies that address priorities for health outcomes, health-related behaviours and activities, determinants of health and settings of everyday living.

Priority health outcomes

The priority health outcomes have been selected based on their preventability, their impact on the health of the population, and their impact on the health system. Although prevention strategies should be aimed at these priorities, all other diseases and conditions that share common risk factors and determinants would also be positively affected.

Recommendation 2.2

Comprehensive prevention strategies should be enhanced or developed to address the following priority health outcomes:

- **unintentional injuries (transportation-related, falls)**
- **intentional injuries (self-injury, aggression, violence)**
- **chronic conditions and diseases (heart disease, stroke, cancers, lung disease, kidney disease, diabetes, liver conditions, musculoskeletal conditions, obesity)**
- **mental illness and addictions (depression, anxiety disorders, learning disorders, behaviour disorders, substance abuse)**
- **infectious diseases: communicable diseases (influenza, tuberculosis and other causes of pneumonia, causes of invasive infections, HIV/AIDS and other sexually transmitted and blood-borne infections, antimicrobial-resistant organisms) and environmentally-mediated infections (food-borne and animal-borne infections)**

Priority health-related behaviours and activities

The following behaviours and activities have been prioritized because of their known or suspected association with the priority health outcomes and other preventable conditions. This list provides a framework for health-related behaviours as well as important priorities and examples of behaviours that should be considered for any prevention strategy. The first one (in combination with all of the others) addresses the health needs of children and others. The next five address important behaviours and activities that impact directly or indirectly on others as well as the individual. The last four are personal health practices of more relevance to the individual.

Recommendation 2.3

Comprehensive prevention strategies should address the following priority health-related behaviours:

- **appropriate care and support for children and others who are in need at any stage of the life course**
- **healthy relationships at home, school, work and in all community settings** (self-respectful, mutually respectful, caring, and supportive; free from abuse, violence, intolerance, exploitation, sexism, and racism)
- **healthy sexuality** (mutually respectful and consenting, using appropriate disease prevention and contraception)

- **healthy hygiene practices** (hand washing, cough etiquette, food handling)
- **protection and sustainability of the natural environment** (protection of our water, soil, air, ecology; sustainable management of non-renewable resources and greenhouse gases)
- **safety and injury prevention** (seatbelt use, other motor-vehicle safety, bicycle helmet use, falls prevention, workplace safety, safety in other settings)
- **mental, emotional and spiritual well-being** (lifelong learning, work-life balance, personal stress management), **balancing active living** (adequate and regular physical activity), **sedentary activities** (television, video games, computers), **and adequate relaxation and sleep**
- **healthy diet** (recommended levels of adequate nutrients, fibre, vitamins, calories, saturated fats, refined carbohydrates, alcohol, and salt); **oral and dental hygiene**
- **avoidance of harmful substances** (tobacco, illicit drugs) **and addictions** (including alcohol, prescription drugs); **safe levels of exposure to harmful environmental risks** (radon, asbestos, ultraviolet radiation)
- **appropriate use of preventive health services** (vaccinations, screening); **harm reduction programs** (safe use of injection drugs, sexually transmitted disease prevention); **healthcare** (primary care, prenatal care); **and other services** (addictions treatment, dental care, dieticians, personal and family counselling, other allied health services)

Priority issues for determinants and settings

Recognizing that health-related behaviours and activities are associated with many factors and determinants that are beyond the control of the individual and that making healthy choices on a day-to-day basis is facilitated by the social and physical environments of the settings of our everyday lives, it is important to address the priority issues for each of these determinants and settings.

Recommendation 2.4

Comprehensive prevention strategies should address priority issues of all health determinants:

- **income and social status: poverty, income disparity, food insecurity**
- **education: literacy and health literacy, numeracy, school completion**
- **employment and working conditions: underemployment, regional unemployment, meaningful employment, working conditions, work safety, workplace stress**
- **environment:**
 - natural environment: sustainable development, including climate change, ecological change, protection of air, water, soil
 - built environment: adequate housing without overcrowding, access to safe running water and sanitation, indoor air quality free from excess humidity and mould, fire safety; community and neighbourhood design with local access to active transportation, adequate green space and locally affordable nutritious food; especially for disadvantaged communities (ex: needs of isolated, northern, remote communities and urban core)

- **social environment, gender and culture:** promotion of respect, fairness, caring, tolerance; deterrence of bullying, racism, sexism, exploitation, intolerance of people’s sexual orientation or beliefs, and abuse of children, intimate partners and vulnerable persons
- **healthy child development:** early child development, positive parenting, preventing child neglect and abuse
- **social support networks:** supportive environments and social connectedness for all, with outreach for elderly, lonely, vulnerable, and disadvantaged people
- **personal health practices, coping skills:** see recommendation 2.3: priority health-related behaviours, activities
- **biology and genetic endowment:** genetic counselling and screening (when indicated and appropriate), surveillance for perinatal health and congenital abnormalities
- **health services:** primary prevention (ex: tobacco cessation) and secondary prevention (ex: breast screening)

Recommendation 2.5

Comprehensive prevention strategies should address the social and built environments of the priority settings of everyday living:

- **neighbourhoods**
- **homes**
- **daycares and schools**
- **workplaces**
- **public places** (restaurants, entertainment venues, grocery stores, retail stores, recreation facilities, spiritual settings)
- **transportation settings** (cars, buses, bicycle access)
- **special community circumstances** (urban built environment, rural areas, isolated communities)

3. Approaches for prevention strategies

Comprehensive, integrated and coordinated prevention strategies should share common approaches to be more effective. Through the adoption of these common approaches, government can better provide leadership to its funded agencies, non-government organizations and the private sector to facilitate their participation in prevention strategies.

Recommendation 3.1

To achieve consistent progress towards the recommended goals and to enhance comprehensive prevention strategies, it is recommended that the Manitoba government, including all departments, relevant crown corporations and funded agencies use the following approaches:

- **In collaboration with Manitoba Health and Manitoba Healthy Living, Youth and Seniors, adopt methods to assess the impact of all major decisions, policies, legislation and other actions on the health of Manitobans and the inequalities of health among Manitobans.**

- **Develop and implement ways to increase the engagement of all organizations and citizens in the shared opportunities and responsibilities to prevent disease and injury.**
 - **Strengthen and support the vital role of families and communities in promoting the health of children and others throughout all stages of the life course.**
 - **Achieve a more equitable distribution of the determinants of health and improve the settings of everyday living to promote healthier behaviours.**
 - **Strengthen the capacity and coordination of preventive services and programs delivered by public health, primary care and others with more outreach and follow-up for those with the highest need and least ability to access care.**
-

4. Strategy development, coordination and implementation

The following organizations, structures, processes and other elements are recommended to support the development and implementation of integrated prevention strategies.

These strategies should be most effective if they are overseen by a multi-departmental structure (body) of the Manitoba government, similar to the Healthy Child Committee of Cabinet, but with a broader mandate and membership of departments. To support this body, a collaborative network should be established comprised of individuals and organizations, including academic centres, government and non-government organizations, the private sector and other partners and stakeholders. The role of this multi-stakeholder network is to provide advice to the oversight body, and, under the leadership of the oversight body, to participate in the development, coordination and implementation of prevention strategies.

Recommendation 4.1

The Manitoba government should create a multi-departmental oversight body supported by a multi-stakeholder network that provides advice and participates in the development and implementation of prevention strategies.

The oversight body, in consultation with the network, should develop goals and a set of measurable indicators (with a preferred direction of change), and as appropriate, objectives and targets (specific, measurable, achievable, reasonable, and time-defined), to guide the development and implementation of prevention strategies. These strategies should be supported by appropriate information resources, analytic capacity, evidence, periodic critical review, and evaluation.

Recommendation 4.2

Strategies should have stated goals, measurable indicators, objectives or targets (as appropriate), action plans and an evaluation component.

Strategies should be developed and implemented based on the analysis of best evidence that is relevant in the Manitoba context and evaluated for effectiveness and cost-effectiveness.

Recommendation 4.3

To ensure that strategies are developed on the best available evidence, the Manitoba government, in collaboration with academic and other organizations, should support an enhanced network of analysts and experts (including research and clinical epidemiologists, health economists, information technologists, subject experts, and public health strategists) and augment the surveillance capacity and availability of information needed to facilitate their work.

There can be much confusion and controversy around what constitutes healthy living, such as a healthy diet (ex: what types of fats?, what is a healthy use of alcohol?) or adequate physical activity (ex: what type?, how often?). Clear, understandable guidelines for the public would help inform personal choices, in addition to achieving consistency in policy development and implementation in all settings. Subsequent recommendations in this report address the need for guidelines for health care providers (recommendation 5.4) and for use of the health system (recommendation 5.8). All guidelines should be complementary and consistent.

Recommendation 4.4

Manitoba Health and Manitoba Healthy Living, Youth and Seniors should work with appropriate partners and stakeholders to make available to all Manitobans a set of clear, consistent and appropriate health guidelines which can be used to guide healthy living and other health-related behaviours and activities.

Just knowing how to live a healthier life is not usually sufficient to sustain or change behaviour, especially if there are significant barriers that are difficult to overcome. These may be personal or psychological such as low motivation, low self-esteem or loss of hope for the future. This knowledge and these attitudes, in turn, are often associated with or shaped by, past or present social circumstances. Regardless of how advantaged or disadvantaged we may be, sustaining a life of healthy living, even if one has sufficient knowledge and motivation, can be a challenge. Supportive environments are essential.

The physical and social environment in the settings of one's community – home, school, work – can play a large role in encouraging or discouraging healthy behaviour. It can make healthy choices easier or more difficult, such as opportunities for active living, healthy eating and positive social relationships. The design of our built environments (ex: access to clean and safe stairways without getting locked out), the availability of affordable and appetizing healthy food, and positive social environments free from harassment or bullying are all major factors in the ability of making healthy living choices in the everyday settings of everyday life.

To support the following recommendation to develop and implement strategies to improve these settings, a Manitoba-based framework should be developed. This framework should include the natural, built and social environments of all settings. It should also include the policies, laws, and other influences on each setting and the barriers and opportunities to promote healthier living. This framework and the specific guidelines for each type of setting could provide a consistent approach to promoting healthier behaviours in all places. These guidelines (ex: The Manitoba School Nutrition Handbook) can be used by people with responsibility or influence on the conditions of such settings (ex: school principal, teachers, students) or by government or private industry whose policies and practices may influence these settings (ex: architects, vending machine suppliers). Striving for a province with healthy settings (ex: healthy homes, healthy schools, healthy workplaces) could be an effective way to make these policies more concrete and implementable in every community, using a consistent framework and set of guidelines, but allowing for local adoption and control.

4.5 Recommendation

Manitoba Government's departments of Health and Healthy Living, Youth and Seniors should work with relevant partners and stakeholders to develop a framework to analyse and improve the conditions of the settings of everyday life, establish guidelines for healthy settings, and develop strategies to implement these guidelines.

5. Recommendations to enhance the capacity of the health system to implement prevention strategies

The focus of this report and its recommendations is on the prevention of disease and injury by emphasizing the importance of healthy living and the determinants of health. One of the key determinants of health is the formal health system, which, in addition to providing care for people with acute illness or injury, plays a large role in primary prevention (ex: vaccination, tobacco cessation therapy) or secondary prevention (ex: screening for high blood pressure or colorectal cancer). It is therefore important to recognize and strengthen these prevention roles of the formal health system which include, primarily, public health and primary care.

Recommendation 5.1

Enhance support for regional health authorities, health care professionals, and other health organizations and partners to develop and implement strategies to enhance prevention throughout the health system.

Recommendation 5.2

Strengthen the capacity in Manitoba Health to provide provincial leadership for standards and guidelines for public health practice by public health officials, including the establishment of a leadership function for public health nurses to complement the existing leadership roles for medical officers of health and public health inspectors.

Recommendation 5.3

Increase capacity in Manitoba Health and regional health authorities as well as collaborate with health care professionals, academics and others to select or develop, implement, and monitor prevention guidelines for health practitioners in public health and primary care which will enhance appropriateness, quality, and efficiency and further advance health system innovation, equity and sustainability.

Recommendation 5.4

Strengthen and improve integration of public health and primary care through better communication and collaboration, using common guidelines and standards for prevention, shared electronic health records and enhanced information systems for surveillance.

Recommendation 5.5

To foster timely and efficient prevention and care and to avoid gaps and duplication of services, continue to develop a comprehensive primary care and public health system that can provide, for all Manitobans, continuing and holistic care, including allied health, social and other programs and services within one coordinated system that includes primary care networks and 24/7 access to on-call emergency intake to facilitate immediate care or follow-up, as appropriate.

Recommendation 5.6

Resolve jurisdiction issues for public health inspectors in Winnipeg and other places, and strengthen the regional public health teams of medical officers of health, public health nurses, public health inspectors, and other practitioners.

Recommendation 5.7

In collaboration with First Nations and the federal government, resolve the jurisdiction issues for public health, health care and other services for First Nations' communities, as part of the development of a coordinated, comprehensive, and integrated province-wide public health and primary care system.

Recommendation 5.8

To complement guidelines for health care practitioners, develop and disseminate guidelines for the public on use of the public health and primary health care system in an appropriate, effective, and efficient manner for primary and secondary prevention.

Recommendation 5.9

Increase outreach programs in public health and primary care to proactively engage individuals, families and populations at highest risk and greatest need who are least likely to seek care (ex: prenatal care; newborn assessment and follow-up; immunizations; screening; and mental health promotion and care)

This report has provided a broad look at the population of Manitoba, including demographics, health outcomes, and factors that are associated with those health outcomes across the life course. Emphasis has been placed on the influence of the determinants of health and on how the settings of everyday life influence health-related behaviours. Improving health status and reducing health inequalities is the shared opportunity and responsibility of all Manitobans. It is hoped that the information in this report and the recommendations presented here will be the impetus for dialogue and action leading to accelerated sustainable change and improved health for all Manitobans – especially for those that have been disadvantaged.

Appendix

Acronyms

ADHD	– Attention Deficit Hyperactivity Disorder	LCL	– Lower Confidence Limits
AIDS	– Acquired Immunodeficiency Syndrome	LGA	– Large for Gestational Age
APA	– American Psychiatric Association	MBM	– Market Basket Measure
ARO	– Antibiotic-resistant Organism	MCHP	– Manitoba Centre for Health Policy
ASD	– Autism Spectrum Disorder	MIMS	– Manitoba Immunization Monitoring System
ASFR	– Age-specific Fertility Rate	MLCC	– Manitoba Liquor Control Commission
BBP	– Blood-borne Pathogen	MMR	– Mumps, Measles, Rubella
BMI	– Body Mass Index	MPI	– Manitoba Public Insurance
CAMH	– Centre for Addiction and Mental Health	MRSA	– Methicillin-resistant Staphylococcus Aureus
CCHS	– Canadian Community Health Survey	MSI	– Musculoskeletal Injuries
CCJS	– Canadian Community Justice Statistics	NCCAHA	– National Collaborating Centre on Aboriginal Health
CCSA	– Canadian Centre on Substance Abuse	NLYS	– National Longitudinal Survey of Children and Youth
CEGEP	– Collège d’enseignement général et professionnel	PAR	– Population Attributable Risk
CFS	– Child and Family Services	PCH	– Personal Care Home
CHD	– Coronary Heart Disease	PHAC	– Public Health Agency of Canada
CIHI	– Canadian Institute for Health Information	PID	– Pelvic Inflammatory Disease
COPD	– Chronic Obstructive Pulmonary Disease	PMR	– Premature Mortality Rate
CPPHO	– Chief Provincial Public Health Officer	PYLL	– Potential Years of Life Lost
CPS	– Canadian Paediatric Society	RDS	– Respiratory Distress Syndrome
CSDH	– Commission on Social Determinants of Health	RHA	– Regional Health Authority
CV	– Cardiovascular	SAFE	– Spot the hazard, Assess the risk, Find a safer way, Everyday
EDI	– Early Development Instrument	SES	– Socio-economic Status
FASD	– Fetal Alcohol Spectrum Disorder	SGA	– Small for Gestational Age
FAS	– Fetal Alcohol Syndrome	SIDS	– Sudden Infant Death Syndrome
FN	– First Nation	SOGC	– Society of Gynaecologists of Canada
FOBT	– Fecal Occult Blood Test	STBBI	– Sexually Transmitted and Blood-borne Infection
FTE	– Full-time Equivalent	STI	– Sexually Transmitted Infection
GDP	– Gross Domestic Product	TB	– Tuberculosis
HIV	– Human Immunodeficiency Virus	TFR	– Total Fertility Rate
HBV	– Hepatitis B Virus	UCL	– Upper Confidence Limits
HCV	– Hepatitis C Virus	UL	– Upper Level
Hib	– Haemophilus Influenza B	VPD	– Vaccine-preventable Disease
HPV	– Human Papillomavirus	WHO	– World Health Organization
HUI	– Health Utility Index	WNV	– West Nile Virus
IHD	– Ischemic Heart Disease		
IMD	– Invasive Meningococcal Disease		
IPD	– Invasive Pneumococcal Disease		

Supplementary data and resources

General population

Table 1: Population of Manitoba by decile and sex from 2004 to 2008²⁶⁷

Population of Manitoba																		
Age Groups	0-9		1-19		20-29		30-39		40-49		50-59		60-69		70+		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2008																		
Total	149,340	12.46%	169,604	14.15%	159,851	13.33%	154,760	12.91%	178,769	14.91%	160,760	13.41%	106,011	8.84%	119,886	10.00%	1,198,981	100.00%
Female	72,809	48.80%	82,944	48.90%	79,885	50%	77,694	50.20%	89,330	50%	80,708	50.20%	54,048	51%	70,516	58.80%	607,934	50.70%
Male	76,531	51.20%	86,660	51.10%	79,966	50%	77,066	49.80%	89,439	50%	80,052	49.80%	51,963	49%	49,370	41.20%	591,047	49.30%
2007																		
Total	147,246	12.41%	169,606	14.30%	157,750	13.30%	153,516	12.94%	180,660	15.23%	157,574	13.28%	101,074	8.52%	118,960	10.03%	1,186,386	100.00%
Female	71,745	48.70%	83,016	48.90%	78,756	50%	76,944	50.10%	90,285	50%	79,183	50.20%	51,487	50.90%	70,177	59%	601,593	50.70%
Male	75,501	51.30%	86,590	51.10%	78,994	50%	76,572	49.90%	90,375	50%	78,391	49.80%	49,587	49.10%	48,783	41%	584,793	49.30%
2006																		
Total	146,629	12.44%	170,098	14.43%	156,147	13.25%	153,493	13.02%	182,840	15.52%	154,885	13.14%	95,679	8.12%	118,686	10.07%	1,178,457	100.00%
Female	71,387	48.70%	83,239	48.90%	77,932	50%	76,896	50.10%	91,256	49.90%	77,786	50.20%	48,858	51.10%	70,114	59.10%	597,468	50.70%
Male	75,242	51.30%	86,859	51.10%	78,215	50%	76,597	49.90%	91,584	50.10%	77,099	49.80%	46,821	48.90%	48,572	40.90%	580,989	49.30%
2005																		
Total	147,948	12.60%	170,356	12.51%	155,185	13.22%	154,998	13.20%	183,781	15.66%	150,534	12.82%	93,061	7.93%	117,942	10.05%	1,173,815	100.00%
Female	72,102	48.70%	83,256	48.90%	77,443	50%	77,667	50.10%	91,624	49.80%	75,845	50.40%	47,497	51.00%	69,928	59.30%	595,362	50.80%
Male	75,846	51.30%	87,100	51.10%	77,742	50%	77,331	49.90%	92,157	50.20%	74,689	49.60%	45,564	49.00%	48,014	40.70%	578,453	49.20%
2004																		
Total	150,082	12.83%	169,751	14.51%	154,446	13.20%	157,708	13.48%	183,502	15.69%	145,455	12.44%	90,888	7.77%	117,835	10.07%	1,169,667	100.00%
Female	73,209	48.80%	82,905	48.80%	77,025	49.10%	79,076	50.20%	91,353	49.80%	73,193	50.30%	46,569	51.20%	70,059	59.50%	593,389	50.70%
Male	76,873	51.20%	86,846	51.20%	77,421	50.10%	78,632	49.80%	92,149	50.20%	72,262	49.70%	44,319	48.80%	47,776	40.50%	576,278	49.30%

Table 2: Population of First Nations people on and off reserve in Manitoba by decile and sex from 2004 to 2008²⁶⁷

Population of Manitoba: First Nations On / Off Reserve by Age Group																		
Age Groups	0-9		1-19		20-29		30-39		40-49		50-59		60-69		70+		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2008																		
Total	21,108	25.18%	19,113	22.80%	13,181	15.72%	10,880	12.98%	9,510	11.34%	5,457	6.51%	2,870	3.42%	1,708	2.04%	83,827	100.00%
On Reserve	11,891	56.30%	10,917	57.10%	7,105	53.90%	6,200	57%	5,656	59.50%	3,458	63.40%	1,963	68.40%	1,211	70.90%	48,401	57.70%
Off Reserve	9,217	43.70%	8,196	42.90%	6,076	46.10%	4,680	43%	3,854	40.50%	1,999	36.60%	907	31.60%	497	29.10%	35,426	42.30%
2007																		
Total	20,311	24.96%	28,569	35.11%	19,291	23.71%	16,524	20.31%	14,239	17.50%	8,077	9.93%	4,481	5.51%	2,684	3.30%	81,377	100.00%
On Reserve	10,799	53.20%	10,106	54.70%	6,475	50.50%	5,666	52.20%	4,927	52.90%	2,899	61.50%	1,706	61.30%	1,020	61.30%	47,471	58.30%
Off Reserve	9,512	46.80%	18,463	45.30%	12,816	49.50%	10,858	47.80%	9,312	47.10%	5,178	38.50%	2,775	38.70%	1,664	38.70%	33,906	41.70%
2006																		
Total	19,726	24.77%	18,217	22.87%	12,513	15.71%	10,983	13.79%	8,989	11.29%	4,991	6.27%	2,607	3.27%	1,622	2.04%	79,648	100.00%
On Reserve	10,567	53.60%	10,017	55%	6,405	51.20%	5,737	52.20%	4,768	53%	2,844	57%	1,622	62.20%	983	60.60%	46,913	58.90%
Off Reserve	9,159	46.40%	8,200	45%	6,108	48.80%	5,246	47.80%	4,221	47%	2,147	43%	985	37.80%	639	39.40%	32,735	41.10%
2005																		
Total	19,538	24.95%	17,865	22.81%	12,379	15.81%	11,073	14.14%	8,636	11.03%	4,718	6.02%	2,538	3.24%	1,570	2.00%	78,317	100.00%
On Reserve	10,313	52.80%	9,705	54.30%	6,271	50.70%	5,641	50.90%	4,582	53.10%	2,650	56.20%	1,569	61.80%	956	60.90%	45,711	58.40%
Off Reserve	9,225	47.20%	8,160	45.70%	6,108	49.30%	5,432	49.10%	4,054	46.90%	2,068	43.80%	969	38.20%	614	39.10%	32,606	41.60%
2004																		
Total	19,570	25.37%	17,498	22.68%	12,142	15.74%	11,145	14.45%	8,272	10.72%	4,550	5.90%	2,411	3.13%	1,557	2.02%	77,145	100.00%
On Reserve	10,379	53%	9,607	54.90%	6,200	51.10%	5,743	51.50%	4,425	53.50%	2,564	56.40%	1,506	62.50%	974	62.60%	45,457	58.90%
Off Reserve	9,191	47%	7,891	45.10%	5,942	48.90%	5,402	48.50%	3,847	46.50%	1,986	43.60%	905	37.50%	583	37.40%	31,688	41.10%

Table 3: Ten leading causes of death based on number of deaths for population in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Cancer	13302	26.76	2660.4	6405	25.73	6897	27.79
Heart disease	11382	22.90	2276.4	5353	21.50	6029	24.29
Cerebrovascular diseases	3171	6.38	634.2	1900	7.63	1271	5.12
Dementia and Alzheimer's disease	2911	5.86	582.2	1999	8.03	912	3.67
Unintentional injury	2325	4.68	465.0	968	3.89	1357	5.47
Diabetes	2058	4.14	411.6	1010	4.06	1048	4.22
Chronic lower respiratory diseases	2030	4.08	406.0	972	3.90	1058	4.26
Influenza and pneumonia	1224	2.46	244.8	683	2.74	541	2.18
Renal failure	814	1.64	162.8	418	1.68	396	1.60
Intentional self-harm	713	1.43	142.6	189	0.76	524	2.11
All other causes	9780	19.67	1956.0	4995	20.07	4785	19.28
Total death	49710	100.00	9942.0	24892	100.00	24818	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 4: Ten leading causes of death based on potential years of life lost for population in Manitoba, 2004–2008¹⁹

Cause of death	Total # of PYLL	% of total PYLL	Average PYLL/year	Female PYLL	% of total female PYLL	Male PYLL	% of total male PYLL
Cancer	13302	26.76	2660.4	6405	25.73	6897	27.79
Cancer	86039.0	24.89	17207.8	42998.5	31.75	43040.5	20.47
Unintentional injury	47424.0	13.72	9484.8	14371.0	10.61	33053.0	15.72
Heart disease	44158.0	12.77	8831.6	11055.0	8.16	33103.0	15.74
Intentional self-harm	24786.5	7.17	4957.3	7142.0	5.27	17644.5	8.39
Certain conditions originating in the perinatal period	18931.0	5.48	3786.2	8412.0	6.21	10519.0	5.00
Congenital malformations, deformations, and chromosomal abnormalities	14791.0	4.28	2958.2	6936.5	5.12	7854.5	3.74
Assault	11067.5	3.20	2213.5	2180.0	1.61	8887.5	4.23
Diabetes	9726.0	2.81	1945.2	4029.5	2.98	5696.5	2.71
Cerebrovascular diseases	7824.5	2.26	1564.9	3401.5	2.51	4423.0	2.10
Chronic liver disease and cirrhosis	6786.5	1.96	1357.3	2703.5	2.00	4083.0	1.94
All other causes	74153.5	21.45	14830.7	32208.5	23.78	41945	19.95
Total PYLL	345687.5	100.00	69137.5	135438	100.00	210249.5	100.00

PYLL: Potential years of life lost.

Table 5: 25 leading causes of death based on number of deaths for population in Manitoba, 2004–2008¹⁹

ICD Code	Cause of death	Total # deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
I25	Chronic ischaemic heart disease	5081	10.22	1016.2	2232	8.97	2849	11.48
C34	Malignant neoplasm of bronchus and lung	3221	6.48	644.2	1489	5.98	1732	6.98
I21	Acute myocardial infarction	3040	6.12	608.0	1322	5.31	1718	6.92
I64	Stroke not specified as haemorrhage or infarction	2093	4.21	418.6	1313	5.27	780	3.14
F03	Unspecified dementia	1913	3.85	382.6	1301	5.23	612	2.47
J44	Other chronic obstructive pulmonary disease	1831	3.68	366.2	859	3.45	972	3.92
E14	Unspecified diabetes mellitus	1395	2.81	279.0	708	2.84	687	2.77
J18	Pneumonia, organism unspecified	1170	2.35	234.0	651	2.62	519	2.09
I50	Heart failure	1109	2.23	221.8	680	2.73	429	1.73
C50	Malignant neoplasm of breast	1036	2.08	207.2	1026	4.12	10	0.04
C18	Malignant neoplasm of colon	1031	2.07	206.2	493	1.98	538	2.17
C61	Malignant neoplasm of prostate	877	1.76	175.4	0	0.00	877	3.53
G30	Alzheimer's disease	869	1.75	173.8	622	2.50	247	1.00
C80	Malignant neoplasm without site specification	708	1.42	141.6	373	1.50	335	1.35
C25	Malignant neoplasm of pancreas	667	1.34	133.4	337	1.35	330	1.33
E11	Type 2 diabetes mellitus	585	1.18	117.0	263	1.06	322	1.30
C85	Other and unspecified non-Hodgkin's lymphoma	503	1.01	100.6	258	1.04	245	0.99
I71	Aortic aneurysm and dissection	441	0.89	88.2	173	0.70	268	1.08
I48	Atrial fibrillation and flutter	399	0.80	79.8	247	0.99	152	0.61
W19	Unspecified fall	393	0.79	78.6	243	0.98	150	0.60
N19	Unspecified renal failure	382	0.77	76.4	200	0.80	182	0.73
G20	Parkinson's disease	380	0.76	76.0	165	0.66	215	0.87
C16	Malignant neoplasm of stomach	373	0.75	74.6	144	0.58	229	0.92
J84	Other interstitial pulmonary diseases	370	0.74	74.0	166	0.67	204	0.82
X70	Intentional self-harm by hanging, strangulation and suffocation	361	0.73	72.2	101	0.41	260	1.05
	All other causes	19482	39.19	3896.4	9526	38.27	9956	40.12
	All causes	49710	100.00	9942.0	24892	100.00	24818	100.00

Table 6: 25 leading causes of death based on number of deaths for population age < 75 years in Manitoba, 2004–2008¹⁹

ICD Code	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
C34	Malignant neoplasm of bronchus and lung	2337	9.37	467.4	1069	10.50	1268	8.59
I25	Chronic ischaemic heart disease	2323	9.31	464.6	656	6.44	1667	11.30
I21	Acute myocardial infarction	1369	5.49	273.8	420	4.12	949	6.43
E14	Unspecified diabetes mellitus	748	3.00	149.6	322	3.16	426	2.89
C50	Malignant neoplasm of breast	666	2.67	133.2	658	6.46	8	0.05
J44	Other chronic obstructive pulmonary disease	658	2.64	131.6	287	2.82	371	2.51
C18	Malignant neoplasm of colon	625	2.51	125.0	257	2.52	368	2.49
I64	Stroke not specified as haemorrhage or infarction	486	1.95	97.2	208	2.04	278	1.88
C80	Malignant neoplasm without site specification	457	1.83	91.4	228	2.24	229	1.55
C25	Malignant neoplasm of pancreas	457	1.83	91.4	201	1.97	256	1.73
C61	Malignant neoplasm of prostate	366	1.47	73.2	0	0.00	366	2.48
X70	Intentional self-harm by hanging, strangulation and suffocation	357	1.43	71.4	98	0.96	259	1.75
C85	Other and unspecified non-Hodgkin's lymphoma	314	1.26	62.8	141	1.38	173	1.17
J18	Pneumonia, organism unspecified	302	1.21	60.4	136	1.34	166	1.12
E11	Type 2 diabetes mellitus	300	1.20	60.0	119	1.17	181	1.23
C56	Malignant neoplasm of ovary	265	1.06	53.0	265	2.60	0	0.00
F03	Unspecified dementia	238	0.95	47.6	132	1.30	106	0.72
K70	Alcoholic liver disease	236	0.95	47.2	84	0.82	152	1.03
C15	Malignant neoplasm of oesophagus	236	0.95	47.2	30	0.29	206	1.40
V89	Motor or non motor-vehicle accident type of vehicle unspecified	233	0.93	46.6	61	0.60	172	1.17
I71	Aortic aneurysm and dissection	233	0.93	46.6	66	0.65	167	1.13
C16	Malignant neoplasm of stomach	231	0.93	46.2	84	0.82	147	1.00
I42	Cardiomyopathy	229	0.92	45.8	74	0.73	155	1.05
C71	Malignant neoplasm of brain	225	0.90	45.0	95	0.93	130	0.88
C64	Malignant neoplasm of kidney except renal pelvis	225	0.90	45.0	68	0.67	157	1.06
	All other causes	10824	43.40	2164.8	4423	43.44	6401	43.37
	All causes	24940	100.00	4988.0	10182	100.00	14758	100.00

Table 7: 25 leading causes of death based on potential years of life lost for population age < 75 years in Manitoba, 2004–2008¹⁹

ICD Code	Cause of death	Total # of PYII	% of total PYLL	Average PYLL/ year	Female PYLL	% of total female PYLL	Male PYLL	% of total male PYLL
I25	Chronic ischaemic heart disease	21665.5	6.27	4333.1	4438.0	3.28	17227.5	8.19
C34	Malignant neoplasm of bronchus and lung	19828.5	5.74	3965.7	9354.5	6.91	10474.0	4.98
X70	Intentional self-harm by hanging, strangulation and suffocation	14766.0	4.27	2953.2	4729.0	3.49	10037.0	4.77
I21	Acute myocardial infarction	10674.5	3.09	2134.9	2630.0	1.94	8044.5	3.83
C50	Malignant neoplasm of breast	9073.0	2.62	1814.6	8989.0	6.64	84.0	0.04
V89	Motor or non motor-vehicle accident type of vehicle unspecified	8746.5	2.53	1749.3	2380.5	1.76	6366.0	3.03
E14	Unspecified diabetes mellitus	6814.0	1.97	1362.8	2881.0	2.13	3933.0	1.87
C18	Malignant neoplasm of colon	5872.5	1.70	1174.5	2258.5	1.67	3614.0	1.72
P07	Disorders related to short gestation and low birth weight, not elsewhere classified	4991.5	1.44	998.3	2458.5	1.82	2533.0	1.20
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	4362.5	1.26	872.5	1792.0	1.32	2570.5	1.22
K70	Alcoholic liver disease	4268.0	1.23	853.6	1652.0	1.22	2616.0	1.24
C80	Malignant neoplasm without site specification	4188.5	1.21	837.7	2084.0	1.54	2104.5	1.00
C25	Malignant neoplasm of pancreas	4148.5	1.20	829.7	1720.5	1.27	2428.0	1.15
C71	Malignant neoplasm of brain	3862.0	1.12	772.4	1525.0	1.13	2337.0	1.11
X99	Assault by sharp object	3511.5	1.02	702.3	668.5	0.49	2843.0	1.35
J18	Pneumonia, organism unspecified	3288.5	0.95	657.7	1498.0	1.11	1790.5	0.85
Y09	Assault by unspecified means	3209.5	0.93	641.9	805.0	0.59	2404.5	1.14
V87	Traffic accident of specified type but victim's mode of transport unknown	3200.5	0.93	640.1	1747.5	1.29	1453.0	0.69
C56	Malignant neoplasm of ovary	3142.5	0.91	628.5	3142.5	2.32	0.0	0.00
I42	Cardiomyopathy	3136.0	0.91	627.2	997.0	0.74	2139.0	1.02
P01	Fetus and newborn affected by maternal complications of pregnancy	3129.0	0.91	625.8	1192.0	0.88	1937.0	0.92
J44	Other chronic obstructive pulmonary disease	2849.0	0.82	569.8	1243.5	0.92	1605.5	0.76
C85	Other and unspecified non-Hodgkin's lymphoma	2827.0	0.82	565.4	1280.5	0.95	1546.5	0.74
P02	Fetus and newborn affected by complications of placenta, cord and membranes	2756.5	0.80	551.3	1266.5	0.94	1490.0	0.71
C15	Malignant neoplasm of oesophagus	2608.0	0.75	521.6	205.0	0.15	2403.0	1.14
	All other causes	188768.0	54.61	37753.6	72499.5	53.53	116268.5	55.30
	All causes	345687.5	100.00	69137.5	135438.0	100.00	210249.5	100.00

Table 8: Proportion of deaths due to unintentional injury by age in Manitoba, 2004–2008¹⁹

Age in years	Total (%)	Men (%)	Women (%)
0–9	9.25	10.61	7.57
10–19	34.02	36.80	28.99
20–29	36.15	36.64	35.05
30–39	25.32	28.76	19.56
40–49	12.98	15.51	9.09
50–59	6.16	7.14	4.69
60–69	3.18	3.49	2.70
70–79	2.19	2.28	2.06
80–89	2.85	2.63	3.03
90+	3.64	3.92	3.51

Table 9: Lifetime probability of developing or dying from leading causes of cancer for cases diagnosed from 2005–2007 in Manitoba²¹⁰

	Male		Female	
	Developing (%)	Dying (%)	Developing (%)	Dying (%)
Total - All invasive	47.9	27.1	45.3	23.0
Lung and bronchus	8.4	6.7	7.0	5.1
Breast	–	–	12.6	3.8
Colorectal (excl. anus)	7.8	3.4	6.5	3.1
Prostate	12.3	4.3	–	–
Non-Hodgkin's lymphoma	2.4	1.1	2.0	1.0
Kidney	2.0	0.8	1.1	0.5
Uterus (corpus uteri)	–	–	2.8	0.3
Melanomas of the skin	1.3	0.2	1.0	0.2
Pancreas	1.3	1.2	1.2	1.1
Bladder	1.8	1.0	0.7	0.4
Cervix	–	–	0.7	0.2

Table 10: Number of cancer cases and age standardized incidence rates per 100,000 population by ten leading cancer sites (+ invasive cervical cancer) and sex, Manitoba, 2005–2007²¹⁰

	Total				Male				Female			
	# of cases	Rate	95% LCL*	95% UCL*	# of cases	Rate	95% LCL*	95% UCL*	# of cases	Rate	95% LCL*	95% UCL*
Total - All invasive	16900	457.77	450.87	464.75	8389	509.17	498.21	520.31	8511	424.83	415.77	434.03
Lung and bronchus	2533	68.79	66.13	71.54	1337	82.22	77.82	86.80	1196	59.31	55.97	62.79
Breast	2417	64.76	62.20	67.41	10	0.62	0.30	1.15	2407	121.25	116.42	126.22
Colorectal (excl. anus)	2379	64.39	61.82	67.04	1275	78.17	73.89	82.63	1104	53.37	50.24	56.65
Prostate	1970	117.92	112.71	123.30	1970	117.92	112.71	123.30	-	-	-	-
Non-Hodgkin's lymphoma	755	20.56	19.11	22.08	412	24.68	22.33	27.21	343	17.03	15.26	18.95
Kidney	555	15.05	13.82	16.36	348	20.58	18.45	22.88	207	10.41	9.03	11.94
Corpus uteri	533	27.07	24.81	29.48	-	-	-	-	533	27.07	24.81	29.48
Melanomas of the skin	436	11.78	10.70	12.95	233	13.81	12.08	15.73	203	10.47	9.07	12.03
Pancreas	391	10.63	9.60	11.74	200	12.39	10.71	14.25	191	9.12	7.86	10.52
Bladder	384	10.53	9.50	11.65	272	17.44	15.41	19.66	112	5.31	4.37	6.41
Cervix (invasive)	154	8.31	7.04	9.73	-	-	-	-	154	8.31	7.04	9.73

*LCL: Lower Confidence Limits

*UCL: Upper Confidence Limits

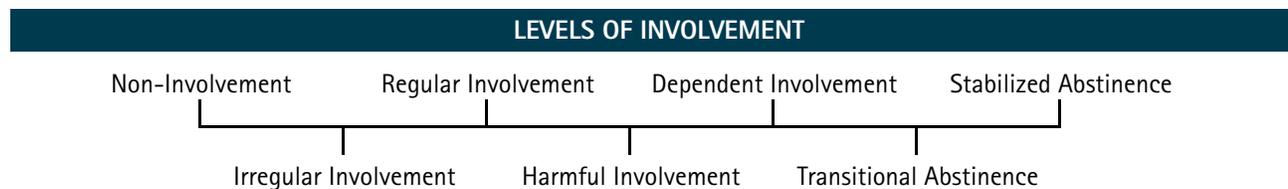
Table 11: Mortality rate per 1,000 population by age and sex, Manitoba, 2008^{268,269}

Age in years	Total	Male	Female
Under 1	7.4	7.7	7.1
1-4	0.2	0.3	0.2
5-14	0.2	0.2	0.1
15-24	0.7	1.1	0.4
25-44	1.2	1.4	0.9
45-64	5.2	6.3	4.1
65-79	24.2	30.4	18.7
80+	98.5	114.8	89.6
Total	8.4	8.6	8.3

Table 12: Categories of infectious diseases: Mechanism of transmission

Disease category	Disease type	Mechanism of transmission	Examples
Person to Person	Respiratory	Spread by coughing, sneezing or talking, exchanging oral fluids (directly or indirectly)	Influenza, Pneumococcal Pneumonia, Meningitis, Pertussis, Tuberculosis.
	Sexually Transmitted and Blood-Borne Pathogens	Sexually transmitted infections (STIs) are transmitted through sexual contact (oral, vaginal or anal) with an infected individual.	Chlamydia, Gonorrhea, Syphilis, HIV, Hepatitis B, Human Papillomavirus.
		Blood-borne infections are transmitted by direct contact with blood or blood products from an infected individual, such as through sharing needles.	HIV, Hepatitis C.
		Some infections can be transmitted through both sexual and blood-borne transmission routes.	HIV, Hepatitis B.
		Sexually transmitted and some blood-borne infections can be transmitted from mother to baby either in the womb or through childbirth.	HIV, Syphilis, Chlamydia, Hepatitis B.
Gastrointestinal (fecal-oral)	Direct or indirect contact of fecal material with the mouth (ex: via unwashed hands, food handling)	Hepatitis A, E. coli, Norwalk-type virus.	
Environmentally Mediated	Skin to skin contact	Direct or indirect contact	Staphylococcus aureus, Streptococcus pyogenes, Pseudomonas.
	Respiratory	Inhalation from water or soil source.	Legionella, Blastomycosis.
	Enteric Diseases	Spread through ingestion of contaminated food and/or water or through person-to-person contact (fecal-oral transmission).	Clostridium perfringens, Listeria, Salmonella, Hepatitis A, E.coli, Shigella.
	Zoonotic Diseases	Spread through contact with infected insects or animals, such as: bites from infected insects; contact with infectious bat saliva; inhalation of aerosolized virus from rodent droppings; direct contact with infected animals.	West Nile Virus, Lyme Disease, Rabies, Hantavirus, Avian Influenza, Psittacosis.

Table 13: Substance use: Levels of involvement as defined by the Addictions Foundation of Manitoba²⁷⁰



Level of Involvement	Definitions
Non-Involvement	Where a person: <ul style="list-style-type: none"> • has never used alcohol or other mood/mind altering drugs. • has chosen a non-involved lifestyle following some involvement.
Irregular Involvement	<ul style="list-style-type: none"> • Random or infrequent involvement, usually confined to specific occasions or situations. • Little or no evidence of any harmful or adverse consequences. • Includes experimental involvement, defined as trying a substance one or two times.
Regular Involvement	<ul style="list-style-type: none"> • Regularly recurring involvement (patterns evident). • Some evidence of adverse, related consequences (typically minor or isolated) may be apparent. • Often characterized by individuals who actively seek involvement, or where involvement has become a regular feature of their lifestyle.
Harmful Involvement	Evidence of recurring adverse consequences is apparent. For example: <ul style="list-style-type: none"> • Involvement resulting in recurring failure to fulfill major role obligations at home, school or work; • Involvement resulting in recurring financial or legal problems; • Continuing involvement despite repeated or persistent problems, in one or more life areas, which are caused by or made worse as a result of the involvement.
Dependent Involvement	In addition to the characteristics of <i>Harmful Involvement</i> , at this level, involvement tends to be patterned and is characterized by particular features. Most notably: <ul style="list-style-type: none"> • The individual experiences a physiological and/or psychological need for continued involvement; and, • The individual experiences some loss of control over his/her involvement. • Evidence of dependent involvement may include: <p>Impaired Control</p> <ul style="list-style-type: none"> • Levels of involvement frequently exceed original intentions. • Several unsuccessful efforts have been made to cut down or otherwise control involvement. • The individual experiences a compelling need to continue involvement. <p>Preoccupation</p> <ul style="list-style-type: none"> • Increasing amounts of time, money and energy are devoted to activities related to maintaining involvement or recovering from it. • The individual has given up or has significantly reduced involvement in other previously valued activities. <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Involvement is continued despite the individual's knowledge that the persistent physical, mental, social or financial problems they experience likely have been caused by or made worse as a result of the involvement. • The individual attempts to cope with losses through continued involvement.

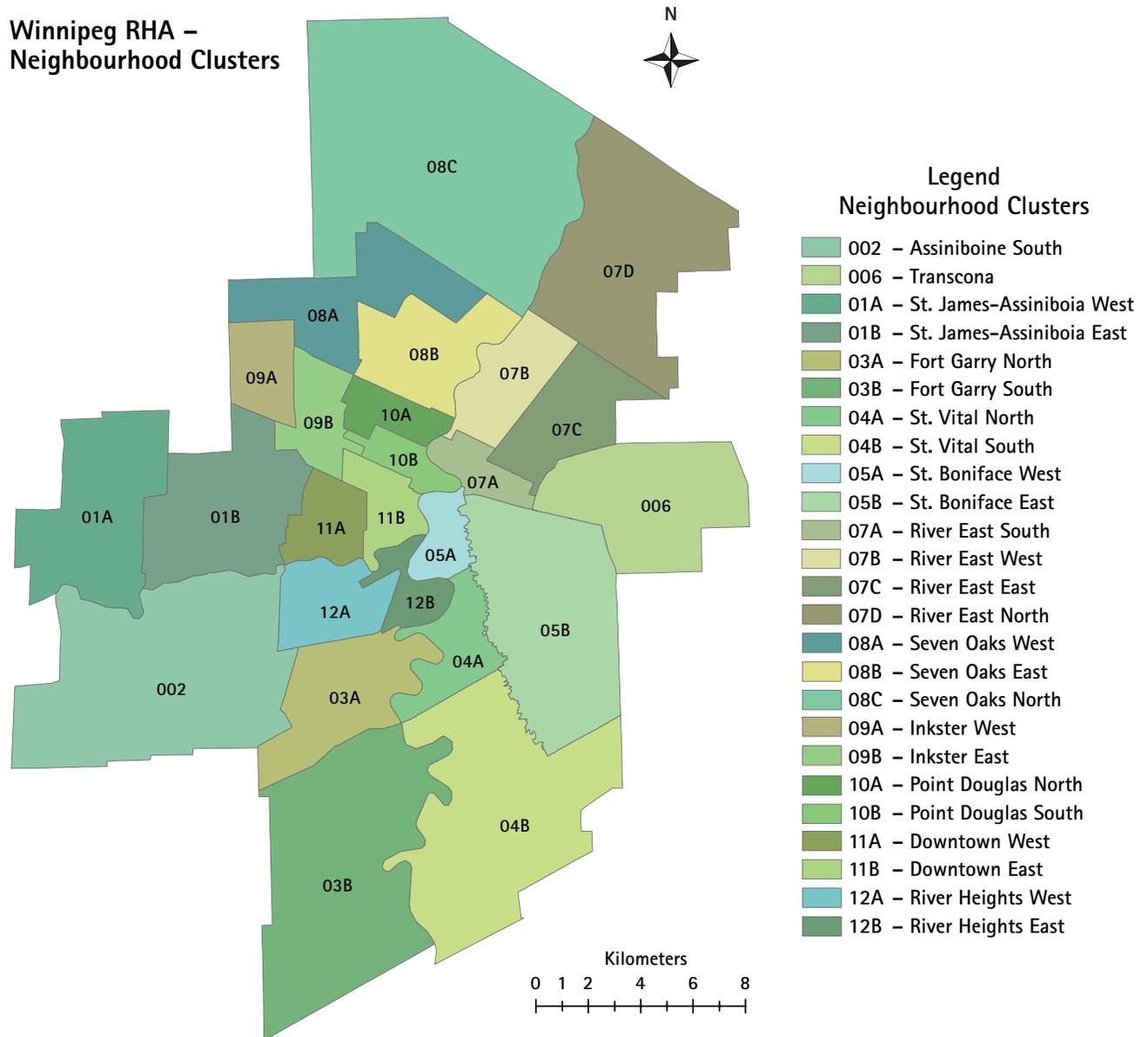
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Table 13: Substance use: Levels of involvement as defined by the Addictions Foundation of Manitoba²⁷⁰ (continued)

Level of Involvement	Definitions
Dependent Involvement (continued)	<p>Withdrawal Distress</p> <ul style="list-style-type: none"> • The individual experiences physical or mental distress as a result of abstaining from involvement. <p>Progression</p> <ul style="list-style-type: none"> • Increased levels of involvement (frequency, quantity, or duration) are required over time to achieve or maintain the desired effects
Transitional Abstinence	<p>Where an individual with past involvement at harmful or dependent levels has chosen to abstain from substances but has yet to achieve a sense of comfort with or confidence in that decision.</p> <ul style="list-style-type: none"> • Although usually regarded as a positive step toward personal growth and development, it is often characterized by some apprehension, anxiety, ambivalence or uncertainty. • It should be noted that although a transitional abstinence may occur as an initial period of abstinence prior to the achievement of a more stabilized abstinence, periods or episodes will also occur in conjunction with harmful or dependent levels of involvement. One of the characteristic features of dependent involvement is the occurrence of repeated unsuccessful attempts to abstain.
Stabilized Abstinence	<p>Where an individual with past experience at harmful or dependent levels has chosen to abstain from substances and has achieved a sense of comfort with the decision, or a measure of confidence in their ability to maintain an abstinent lifestyle.</p>

Pregnancy and the newborn

Figure 1: Winnipeg neighbourhood clusters²⁷¹



Children

Table 14: Ten leading causes of death for children and youth aged 0–19 years in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Certain conditions originating in the perinatal period	254	23.76	50.8	113	25.57	141	22.49
Unintentional injury	195	18.24	39.0	63	14.25	132	21.05
Congenital malformations, deformations, and chromosomal abnormalities	169	15.81	33.8	81	18.33	88	14.04
Suicide	103	9.64	20.6	46	10.41	57	9.09
Assault	55	5.14	11.0	13	2.94	42	6.70
Cancer	33	3.09	6.6	19	4.30	14	2.23
Metabolic disorders	27	2.53	5.4	11	2.49	16	2.55
Sudden infant death syndrome	24	2.25	4.8	8	1.81	16	2.55
Heart disease	17	1.59	3.4	8	1.81	9	1.44
Influenza and pneumonia	12	1.12	2.4	5	1.13	7	1.12
All other causes	180	16.84	36.0	75	16.97	105	16.75
Total for all causes	1069	100.00	213.8	442	100.00	627	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 15: Ten leading causes of death for infants aged 0–1 year in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Certain conditions originating in the perinatal period	251	46.92	50.2	112	46.09	139	47.60
Congenital malformations, deformations, and chromosomal abnormalities	150	28.04	30.0	70	28.81	80	27.40
Sudden infant death syndrome	24	4.49	4.8	8	3.29	16	5.48
Unintentional injury	13	2.43	2.6	6	2.47	7	2.40
Metabolic disorders	11	2.06	2.2	4	1.65	7	2.40
Septicaemia	9	1.68	1.8	4	1.65	5	1.71
Non-infective gastroenteritis and colitis	7	1.31	1.4	5	2.06	2	0.68
Influenza and pneumonia	7	1.31	1.4	3	1.23	4	1.37
Cerebrovascular disease	4	0.75	0.8	2	0.82	2	0.68
Heart disease	4	0.75	0.8	2	0.82	2	0.68
All other causes	55	10.28	11.0	27	11.11	28	9.59
Total for all causes	535	100.00	107.0	243	100.00	292	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 16: Ten leading causes of death for children aged 1–4 years in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Unintentional injury	36	42.35	7.2	14	40.00	22	44.00
Assault	9	10.59	1.8	5	14.29	4	8.00
Congenital malformations, deformations, and chromosomal abnormalities	5	5.88	1.0	2	5.71	3	6.00
Cancer	4	4.71	0.8	3	8.57	1	2.00
Metabolic disorder	2	2.35	0.4	0	0.00	2	4.00
Cerebrovascular disease	2	2.35	0.4	0	0.00	2	4.00
Influenza and pneumonia	2	2.35	0.4	1	2.86	1	2.00
Pneumonitis due to solids and liquids	2	2.35	0.4	2	5.71	0	0.00
Bacterial infection of unspecified site	1	1.18	0.2	0	0.00	1	2.00
Septicaemia	1	1.18	0.2	0	0.00	1	2.00
All other causes	21	24.71	4.2	8	22.86	13	26.00
Total for all causes	85	100.00	17.0	35	100.00	50	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 17: Ten leading causes of death for youth aged 5–19 years in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Unintentional injury	146	32.52	29.2	43	26.22	103	36.14
Intentional self-harm	103	22.94	20.6	46	28.05	57	20.00
Assault	44	9.80	8.8	8	4.88	36	12.63
Cancer	29	6.46	5.8	16	9.76	13	4.56
Metabolic disorders	14	3.12	2.8	7	4.27	7	2.46
Congenital malformations, deformations, and chromosomal abnormalities	14	3.12	2.8	9	5.49	5	1.75
Heart disease	12	2.67	2.4	5	3.05	7	2.46
Primary disorders of muscles	7	1.56	1.4	0	0.00	7	2.46
Other disorders of brain	4	0.89	0.8	3	1.83	1	0.35
Influenza and pneumonia	3	0.67	0.6	1	0.61	2	0.70
All other causes	73	16.26	14.6	26	15.85	47	16.49
Total for all causes	449	100.00	89.8	164	100.00	285	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Adults

Table 18: Ten leading causes of deaths for adult aged 20–59 in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Cancer	2233	30.88	446.6	1155	41.16	1078	24.36
Heart disease	1138	15.74	227.6	255	9.09	883	19.95
Unintentional injury	932	12.89	186.4	272	9.69	660	14.91
Intentional self-harm	505	6.98	101.0	116	4.13	389	8.79
Diabetes	246	3.40	49.2	105	3.74	141	3.19
Chronic liver disease and cirrhosis	212	2.93	42.4	90	3.21	122	2.76
Assault	187	2.59	37.4	32	1.14	155	3.50
Cerebrovascular disease	184	2.54	36.8	84	2.99	100	2.26
Influenza and pneumonia	80	1.11	16.0	38	1.35	42	0.95
Mental and behavioural disorders due to use of alcohol	76	1.05	15.2	19	0.68	57	1.29
All other causes	1439	19.90	287.8	640	22.81	799	18.05
Total for all causes	7232	100.00	1446.4	2806	100.00	4426	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 19: Ten leading causes of death for adult aged 20–59 by decile of age in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 20–29							
Unintentional injury	227	36.15	45.4	68	35.05	159	36.64
Intentional self-harm	125	19.90	25.0	27	13.92	98	22.58
Assault	68	10.83	13.6	12	6.186	56	12.90
Cancer	39	6.21	7.8	18	9.278	21	4.84
Heart disease	26	4.14	5.2	5	2.577	21	4.84
Congenital malformations, deformations, and chromosomal abnormalities	18	2.87	3.6	8	4.124	10	2.30
Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent	9	1.43	1.8	4	2.062	5	1.15
Diabetes mellitus	6	0.96	1.2	4	2.062	2	0.46
Renal failure	6	0.96	1.2	4	2.062	2	0.46
Cystic fibrosis	5	0.80	1.0	1	0.515	4	0.92
All other causes	99	15.76	19.8	43	22.16	56	12.90
Total for all causes	628	100.00	125.6	194	100	434	100.00
Age 30–39							
Unintentional injury	215	25.32	43.0	62	19.56	153	28.76
Cancer	125	14.72	25.0	64	20.19	61	11.47
Intentional self-harm	113	13.31	22.6	33	10.41	80	15.04
Heart disease	69	8.13	13.8	17	5.36	52	9.77
Assault	57	6.71	11.4	12	3.79	45	8.46
Diabetes mellitus	21	2.47	4.2	11	3.47	10	1.88
Chronic liver disease and cirrhosis	17	2.00	3.4	8	2.52	9	1.69
Cerebrovascular diseases	13	1.53	2.6	6	1.89	7	1.32
Congenital malformations, deformations, and chromosomal abnormalities	11	1.30	2.2	5	1.58	6	1.13
Mental and behavioural disorders due to use of alcohol	9	1.06	1.8	4	1.26	5	0.94
All other causes	199	23.44	39.8	95	29.97	104	19.55
Total for all causes	849	100.00	169.8	317	100.00	532	100.00

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Table 19: Ten leading causes of death for adult aged 20–59 by decile of age in Manitoba, 2004–2008¹⁹ (continued)

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 40–49							
Cancer	540	27.18	108.0	297	38.03	243	20.15
Heart disease	307	15.45	61.4	75	9.60	232	19.24
Unintentional injury	258	12.98	51.6	71	9.09	187	15.51
Intentional self-harm	162	8.15	32.4	34	4.35	128	10.61
Diabetes mellitus	66	3.32	13.2	28	3.59	38	3.15
Cerebrovascular diseases	61	3.07	12.2	29	3.71	32	2.65
Chronic liver disease and cirrhosis	59	2.97	11.8	26	3.33	33	2.74
Assault	44	2.21	8.8	5	0.64	39	3.23
Mental and behavioural disorders due to use of alcohol	25	1.26	5.0	7	0.90	18	1.49
Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent	24	1.21	4.8	15	1.92	9	0.75
All other causes	441	22.19	88.2	194	24.84	247	20.48
Total for all causes	1987	100.00	397.4	781	100.00	1206	100.00
Age 50–59							
Cancer	1529	40.58	305.8	776	51.25	753	33.41
Heart disease	736	19.53	147.2	158	10.44	578	25.64
Unintentional injury	232	6.16	46.4	71	4.69	161	7.14
Diabetes mellitus	153	4.06	30.6	62	4.10	91	4.04
Chronic liver disease and cirrhosis	134	3.56	26.8	55	3.63	79	3.50
Cerebrovascular diseases	108	2.87	21.6	47	3.10	61	2.71
Intentional self-harm	105	2.79	21.0	22	1.45	83	3.68
Chronic lower respiratory diseases	56	1.49	11.2	23	1.52	33	1.46
Influenza and pneumonia	46	1.22	9.2	24	1.59	22	0.98
Mental and behavioural disorders due to use of alcohol	39	1.04	7.8	8	0.53	31	1.38
All other causes	630	16.72	126.0	268	17.70	362	16.06
Total for all causes	3768	100.00	753.6	1514	100.00	2254	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 20: Ten leading causes of death for adult aged 20–59 by decile of age for individual causes in Manitoba, 2004–2008¹⁹

ICD	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 20–29								
X70	Intentional self-harm by hanging, strangulation and suffocation	80	12.74	16.0	17	8.76	63	14.52
V89	Motor or non motor-vehicle accident, type of vehicle unspecified	63	10.03	12.6	16	8.25	47	10.83
X99	Assault by sharp object	22	3.50	4.4	2	1.03	20	4.61
V87	Traffic accident of specified type but victim's mode of transport unknown	19	3.03	3.8	9	4.64	10	2.30
X95	Assault by other and unspecified firearm discharge	18	2.87	3.6	2	1.03	16	3.69
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	17	2.71	3.4	7	3.61	10	2.30
Y09	Assault by unspecified means	15	2.39	3.0	3	1.55	12	2.76
X74	Intentional self-harm by other and unspecified firearm discharge	12	1.91	2.4		0.00	12	2.76
R99	Other ill-defined and unspecified cause of mortality	11	1.75	2.2	7	3.61	4	0.92
V86	Occupant of special all-terrain or other motor-vehicle designed primarily for off-road use, injured in transport accident	10	1.59	2.0	3	1.55	7	1.61
	Total for all causes	628	100.00	125.6	194	100.00	434	100.00

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Table 20: Ten leading causes of death for adult aged 20–59 by decile of age for individual causes in Manitoba, 2004–2008¹⁹ (continued)

ICD	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 30–39								
X70	Intentional self-harm by hanging, strangulation and suffocation	59	6.95	11.8	18	5.68	41	7.71
V89	Motor or non motor-vehicle accident, type of vehicle unspecified	35	4.12	7.0	10	3.15	25	4.70
Unk	Unknown	27	3.18	5.4	14	4.42	13	2.44
I25	Chronic ischaemic heart disease	25	2.94	5.0	4	1.26	21	3.95
R99	Other ill-defined and unspecified cause of mortality	25	2.94	5.0	9	2.84	16	3.01
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	25	2.94	5.0	10	3.15	15	2.82
C50	Malignant neoplasm of breast	22	2.59	4.4	22	6.94		0.00
V87	Traffic accident of specified type but victim's mode of transport unknown	22	2.59	4.4	12	3.79	10	1.88
X99	Assault by sharp object	21	2.47	4.2	4	1.26	17	3.20
X42	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	18	2.12	3.6	3	0.95	15	2.82
	Total for all causes	849	100.00	169.8	317	100.00	532	100.00

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Table 20: Ten leading causes of death for adult aged 20–59 by decile of age for individual causes in Manitoba, 2004–2008¹⁹ (continued)

ICD	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 40–49								
I25	Chronic ischaemic heart disease	160	8.05	32.0	30	3.84	130	10.78
C34	Malignant neoplasm of bronchus and lung	95	4.78	19.0	45	5.76	50	4.15
C50	Malignant neoplasm of breast	81	4.08	16.2	80	10.24	1	0.08
I21	Acute myocardial infarction	68	3.42	13.6	15	1.92	53	4.39
E14	Diabetes mellitus NOS	65	3.27	13.0	21	2.69	28	2.32
K70	Alcoholic liver disease	56	2.82	11.2	18	2.30	28	2.32
C71	Malignant neoplasm of brain	54	2.72	10.8	16	2.05	21	1.74
C18	Malignant neoplasm of colon	49	2.47	9.8	18	2.30	18	1.49
I60	Subarachnoid haemorrhage	46	2.32	9.2	16	2.05	16	1.33
C80	Malignant neoplasm without site specification	37	1.86	7.4	17	2.18	14	1.16
	Total for all causes	1987	100.00	397.4	781	100.00	1206	100.00
Age 50–59								
I25	Chronic ischaemic heart disease	406	10.77	81.2	79	5.22	327	14.51
C34	Malignant neoplasm of bronchus and lung	382	10.14	76.4	187	12.35	195	8.65
I21	Acute myocardial infarction	187	4.96	37.4	37	2.44	150	6.65
C50	Malignant neoplasm of breast	169	4.49	33.8	168	11.10	1	0.04
C18	Malignant neoplasm of colon	116	3.08	23.2	43	2.84	73	3.24
E14	Diabetes mellitus NOS	102	2.71	20.4	43	2.84	59	2.62
C25	Malignant neoplasm of pancreas	83	2.20	16.6	36	2.38	47	2.09
C56	Malignant neoplasm of ovary	77	2.04	15.4	77	5.09		0.00
C80	Malignant neoplasm without site specification	73	1.94	14.6	30	1.98	42	1.86
C71	Malignant neoplasm of brain	72	1.91	14.4	24	1.59	25	1.11
	Total for all causes	3768	100.00	753.6	1514	100.00	2254	100.00

Note: Causes of deaths were ranked based on the total number of deaths.

Seniors

Table 21: Ten leading causes of death for seniors aged 60 years and older in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Cancer	11036	26.65	2207.2	5231	24.17	5805	29.37
Heart disease	10227	24.70	2045.4	5090	23.52	5137	25.99
Cerebrovascular disease	2979	7.19	595.8	1814	8.38	1165	5.89
Dementia and Alzheimer's disease	2902	7.01	580.4	1993	9.21	909	4.60
Chronic lower respiratory disease	1954	4.72	390.8	937	4.33	1017	5.15
Diabetes	1811	4.37	362.2	905	4.18	906	4.58
Unintentional injury	1198	2.89	239.6	633	2.92	565	2.86
Influenza and pneumonia	1132	2.73	226.4	640	2.96	492	2.49
Renal failure	753	1.82	150.6	390	1.80	363	1.84
Aortic aneurysm and dissection	405	0.98	81.0	167	0.77	238	1.20
All other causes	7012	16.93	1402.4	3844	17.76	3168	16.03
Total for all causes	41409	100.00	8281.8	21644	100.00	19765	100.00

Note: Causes of deaths were ranked based on the total number of deaths. Causes of deaths were grouped by ICD-10 codes.

Table 22: Ten leading causes of death for seniors aged 60 years and older by decile of age in Manitoba, 2004–2008¹⁹

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 60–69							
Cancer	2589	43.31	517.8	1188	50.08	1401	38.85
Heart disease	1265	21.16	253.0	343	14.46	922	25.57
Diabetes	294	4.92	58.8	108	4.55	186	5.16
Cerebrovascular disease	215	3.60	43.0	88	3.71	127	3.52
Unintentional injury	190	3.18	38.0	64	2.70	126	3.49
Chronic lower respiratory disease	170	2.84	34.0	73	3.08	97	2.69
Chronic liver disease and cirrhosis	133	2.22	26.6	37	1.56	96	2.66
Influenza and pneumonia	70	1.17	14.0	34	1.43	36	1.00
Renal failure	67	1.12	13.4	29	1.22	38	1.05
Aortic aneurysm and dissection	59	0.99	11.8	14	0.59	45	1.25
All other causes	926	15.49	185.2	394	16.61	532	14.75
Total for all causes	5978	100.00	1195.6	2372	100.00	3606	100.00
Age 70–79							
Cancer	3807	35.71	761.4	1668	36.56	2139	35.07
Heart disease	2410	22.61	482.0	909	19.93	1501	24.61
Cerebrovascular disease	602	5.65	120.4	273	5.98	329	5.39
Diabetes	551	5.17	110.2	246	5.39	305	5.00
Chronic lower respiratory disease	510	4.78	102.0	226	4.95	284	4.66
Dementia and Alzheimer's disease	334	3.13	66.8	189	4.14	145	2.38
Unintentional injury	233	2.19	46.6	94	2.06	139	2.28
Renal failure	184	1.73	36.8	84	1.84	100	1.64
Influenza and pneumonia	163	1.53	32.6	67	1.47	96	1.57
Aortic aneurysm and dissection	138	1.29	27.6	46	1.01	92	1.51
All other causes	1729	16.22	345.8	760	16.66	969	15.89
Total for all causes	10661	100.00	2132.2	4562	100.00	6099	100.00

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Table 22: Ten leading causes of death for seniors aged 60 years and older by decile of age in Manitoba, 2004–2008¹⁹ (continued)

Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 80–89							
Heart disease	4050	25.36	810.0	2085	24.14	1965	26.80
Cancer	3682	23.06	736.4	1811	20.97	1871	25.52
Cerebrovascular disease	1335	8.36	267.0	820	9.49	515	7.02
Dementia and Alzheimer's disease	1300	8.14	260.0	837	9.69	463	6.32
Chronic lower respiratory disease	871	5.45	174.2	428	4.95	443	6.04
Diabetes	714	4.47	142.8	390	4.51	324	4.42
Influenza and pneumonia	465	2.91	93.0	254	2.94	211	2.88
Unintentional injury	455	2.85	91.0	262	3.03	193	2.63
Renal failure	298	1.87	59.6	150	1.74	148	2.02
Parkinson's disease	194	1.21	38.8	86	1.00	108	1.47
All other causes	2605	16.31	521.0	1515	17.54	1090	14.87
Total for all causes	15969	100.00	3193.8	8638	100.00	7331	100.00
Age 90 and older							
Heart disease	2502	28.43	500.4	1753	28.87	749	27.45
Dementia and Alzheimer's disease	1224	13.91	244.8	946	15.58	278	10.19
Cancer	958	10.89	191.6	564	9.29	394	14.44
Cerebrovascular disease	827	9.40	165.4	633	10.42	194	7.11
Influenza and pneumonia	434	4.93	86.8	285	4.69	149	5.46
Chronic lower respiratory disease	403	4.58	80.6	210	3.46	193	7.07
Unintentional injury	320	3.64	64.0	213	3.51	107	3.92
Diabetes	252	2.86	50.4	161	2.65	91	3.33
Renal failure	204	2.32	40.8	127	2.09	77	2.82
Senility	159	1.81	31.8	130	2.14	29	1.06
All other causes	1518	17.25	303.6	1050	17.29	468	17.15
Total for all causes	8801	100.00	1760.2	6072	100.00	2729	100.00

Note: Causes of deaths were ranked based on the total number of deaths.

Table 23: Ten leading causes of death for seniors aged 60 years and older by decile of age for individual causes in Manitoba, 2004–2008¹⁹

ICD	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 60–69								
C34	Malignant neoplasm of bronchus and lung	793	13.27	158.6	357	15.05	436	12.09
I25	Chronic ischaemic heart disease	626	10.47	125.2	147	6.20	479	13.28
I21	Acute myocardial infarction	371	6.21	74.2	107	4.51	264	7.32
E14	Diabetes mellitus NOS	198	3.31	39.6	76	3.20	122	3.38
C50	Malignant neoplasm of breast	195	3.26	39.0	192	8.09	3	0.08
C18	Malignant neoplasm of colon	179	2.99	35.8	65	2.74	114	3.16
C25	Malignant neoplasm of pancreas	143	2.39	28.6	63	2.66	80	2.22
J44	Other chronic obstructive pulmonary disease	138	2.31	27.6	57	2.40	81	2.25
C80	Malignant neoplasm without site specification	122	2.04	24.4	63	2.66	59	1.64
I64	Stroke not specified as haemorrhage or infarction	89	1.49	17.8	37	1.56	52	1.44
	Total for all causes	5978	100.00	1195.6	2372	100.00	3606	100.00
Age 70–79								
I25	Chronic ischaemic heart disease	1100	10.32	220.0	396	8.68	704	11.54
C34	Malignant neoplasm of bronchus and lung	1061	9.95	212.2	476	10.43	585	9.59
I21	Acute myocardial infarction	731	6.86	146.2	257	5.63	474	7.77
E14	Diabetes mellitus NOS	467	4.38	93.4	171	3.75	206	3.38
C18	Malignant neoplasm of colon	377	3.54	75.4	129	2.83	156	2.56
C61	Malignant neoplasm of prostate	355	3.33	71.0		0.00	273	4.48
C80	Malignant neoplasm without site specification	285	2.67	57.0	113	2.48	111	1.82
F03	Unspecified dementia	273	2.56	54.6	114	2.50	91	1.49
C25	Malignant neoplasm of pancreas	224	2.10	44.8	93	2.04	111	1.82
C50	Malignant neoplasm of breast	205	1.92	41.0	194	4.25	3	0.05
	Total for all causes	10661	100.00	2132.2	4562	100.00	6099	100.00

Continued on page 212

Table 23: Ten leading causes of death for seniors aged 60 years and older by decile of age for individual causes in Manitoba, 2004–2008¹⁹ (continued)

ICD	Cause of death	Total # of deaths	% of total deaths	Average # of deaths/year	Female deaths	% of total female deaths	Male deaths	% of total male deaths
Age 80–89								
I25	Chronic ischaemic heart disease	1683	10.54	336.6	824	9.54	859	11.72
I21	Acute myocardial infarction	1145	7.17	229.0	554	6.41	591	8.06
I64	Stroke not specified as haemorrhage or infarction	953	5.97	190.6	600	6.95	353	4.82
F03	Unspecified dementia	832	5.21	166.4	514	5.95	318	4.34
J44	Other chronic obstructive pulmonary disease	802	5.02	160.4	384	4.45	418	5.70
C34	Malignant neoplasm of bronchus and lung	744	4.66	148.8	345	3.99	399	5.44
E14	Diabetes mellitus NOS	478	2.99	95.6	274	3.17	204	2.78
I50	Heart failure	469	2.94	93.8	289	3.35	180	2.46
J18	Pneumonia, organism unspecified	450	2.82	90.0	241	2.79	209	2.85
G30	Alzheimer's disease	408	2.55	81.6	291	3.37	117	1.60
	Total for all causes	15969	100.00	3193.8	8638	100.00	7331	100.00
Age 90 and older								
I25	Chronic ischaemic heart disease	1075	12.21	215.0	752	12.38	323	11.84
F03	Unspecified dementia	843	9.58	168.6	655	10.79	188	6.89
I64	Stroke not specified as haemorrhage or infarction	654	7.43	130.8	505	8.32	149	5.46
I21	Acute myocardial infarction	526	5.98	105.2	348	5.73	178	6.52
I50	Heart failure	441	5.01	88.2	307	5.06	134	4.91
J18	Pneumonia, organism unspecified	418	4.75	83.6	274	4.51	144	5.28
J44	Other chronic obstructive pulmonary disease	371	4.22	74.2	188	3.10	183	6.71
G30	Alzheimer's disease	330	3.75	66.0	255	4.20	75	2.75
E14	Diabetes mellitus NOS	169	1.92	33.8	112	1.84	57	2.09
R54	Senility	159	1.81	31.8	130	2.14	29	1.06
	Total for all causes	8801	100.00	1760.2	6072	100.00	2729	100.00

Note: Causes of deaths were ranked based on the total number of deaths.

Glossary

Aboriginal

Aboriginal people are the descendants of the original inhabitants of North America. The Canadian Constitution recognizes three groups of Aboriginal people – Indians, Metis and the Inuit. These are three separate people with unique heritages, languages, cultural practices and spiritual beliefs. The term “First Nations” has now replaced the term “Indian,” except for historical reference and in legal terms in relation to the Indian Act.¹

Abuse

There are many different forms of abuse, however, they are generally categorized into four broad categories:²

- physical and sexual abuse
- psychological abuse
- financial abuse
- neglect

Adjusted rate

These rates mathematically adjust for the effects of different population age and sex distributions that may influence overall rates; also called rate standardization or standardized rates. Adjusted rates are estimates of what an area’s rate might have been, if that area or population’s age and sex distribution were the same as that for the

province overall. This adjustment is done to ensure that rates for different areas can be fairly compared, because the demographic profile of the two populations is not affecting the comparison. Adjusted rates allow comparisons of rates across areas or populations, by removing the effects of demographic differences.³

Alzheimer’s

Alzheimer’s disease is a progressive, degenerative disease of the brain, which causes thinking and memory to become seriously impaired. It is the most common form of dementia. As Alzheimer’s disease progresses and affects different areas of the brain, various abilities become impaired. The result is changes in abilities and/or behaviour.⁴

Arthritis

Arthritis is a group of conditions that causes inflammation of joints.

Asthma

A disease in which inflammation of the airways causes airflow into and out of the lungs to be restricted.⁵

Attention-deficit hyperactivity disorder (ADHD)

ADHD is a neurobehavioral developmental disorder that is characterized by inattention, hyperactivity and impulsivity. The disorder is often identified during school ages and symptoms may continue into adulthood.⁶

¹ Martens PJ, Bond R, Jebamani L, Burchill C, Roos NP, Derksen S, Beaulieu M, Steinbach C, MacWilliam L, Walld R, Dik N, Sander-son D, Health Information and Research Committee AoMC, Tanner-Spence M, Leader A, Elias B, O’Neil J. *The Health and Health Care Use of Registered First Nations People Living in Manitoba: A Population-Based Study*. Winnipeg, MB: Manitoba Centre for Health Policy, 2002.

² Centre on Aging (2010). Profile of Manitoba’s Seniors 2010. Winnipeg, MB: Centre on Aging, University of Manitoba.

³ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009

⁴ Alzheimer’s Society (March, 2009). What is Alzheimer’s Disease? Available at <http://www.alzheimer.ca/english/disease/whatisit-intro.htm>

⁵ MedlinePlus. Asthma. Available at <http://www.nlm.nih.gov/medlineplus/asthma.html>

⁶ (American Psychiatric Association, 2000)

Autism Spectrum Disorders (ASDs)

Autism Spectrum Disorders are characterized by social, communicative and behavioural impairments, which range in severity. As there is no genetic or biologic marker for diagnosis and no clear cause for these disorders, they are currently diagnosed using the DSM–IV–R (American Psychiatric Association, 2004) under an umbrella classification of the Pervasive Developmental Disorders. This includes the more commonly recognized Autistic Disorder, Asperger’s disorder and Pervasive Developmental Disorder NOS, and the less recognized Rett’s Disorder and Childhood Disintegrative Disorder.

Binge drinking

Binge drinking is commonly defined in the social sciences as having five or more alcoholic drinks on one occasion. In the Canadian Community Health Survey (CCHS), one drink was defined as one bottle or can of beer or a glass of draft; one glass of wine or a wine cooler; or one drink or cocktail with 1.5 ounces of liquor.

Body mass index (BMI)⁷

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

Health risk classification according to Body Mass Index (BMI)

Classification	BMI Category (kg/m ²)	Risk of developing health problems
Underweight	< 18.5	Increased
Normal Weight	18.5 – 24.9	Least
Overweight	25.0 – 29.9	Increased
Obese class I	30.0 – 34.9	High
Obese class II	35.0 – 39.9	Very high
Obese class III	>= 40.0	Extremely high

Note: For persons 65 years and older the ‘normal’ range may begin slightly above BMI 18.5 and extend into the ‘overweight’ range. The following Health Canada website provides an online BMI calculator:

This does not apply to pregnant women and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres).

Canadian Community Health Survey (CCHS)

The CCHS is a biennial survey conducted by Statistics Canada to provide regular and timely cross-sectional estimates of health determinants, health status and health system utilization for 136 health regions in Canada, including the territories. There are approximately 133 300 Canadians surveyed, of whom about 8,000 (or 6%) are from Manitoba. In Manitoba, survey respondents were sampled from 11 different regions. Respondents were 12 years of age and older; the sampling methodology was

⁷ Source: Health Canada. Canadian Guidelines for Body Weight Classification in Adults. Ottawa: Minister of Public Works and Government Services Canada; 2003. http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/bmi_chart_java-graph_ime_java-eng.php

designed to ensure over-representation of youth under 19 years of age and seniors 65 years of age and older. The survey excludes populations living in Indian Reserves, on Canadian Forces Bases, and in some remote areas, and those not living in households.⁸

Cancer

Cancer is a class of diseases characterized by uncontrolled cell growth. Cancers are classified and named by the type of cell and organ that is initially affected.⁹

Cause of death

Cause of death is a matter of judgement on the part of the physician that completes the death certificate and is intended to be the main or underlying cause, regardless of how many other factors or causes that may have contributed. The International Classification of Diseases (ICD-10) coding system was used to classify causes of death for Manitoba mortality data in the period of 2004–2008.

Cardiovascular disease

Cardiovascular disease is a term that refers to includes diseases of the circulatory system including the heart and blood vessels, whether the blood vessels are supplying the heart, lungs, brain, kidneys, extremities or other parts of the body. Cardiovascular diseases are the leading cause of death in adult Canadian men and women.¹⁰

Child mortality

For the purpose of this report, child mortality is defined as the number of deaths of children aged one to 19 years in a given year, expressed

either per 1,000 or 100,000 children in this age group. Because child death is a rare event, child mortality rates are presented by larger geographical regions.

Chronic disease

Chronic diseases, in contrast to acute diseases, are those conditions that have a prolonged or lifelong course, are usually incurable, are often caused by many factors and can often be detected by screening before symptoms begin. In the CCHS, chronic diseases are defined as “long-term conditions” which are expected to last or have already lasted six months or more and that have been diagnosed by a health professional.

Chronic obstructive pulmonary diseases

COPD are a group of chronic lung diseases characterized by limited airflow. Emphysema (permanently enlarged air sacks of the lung with reduced lung elasticity) and chronic bronchitis (inflamed and narrowed airways) are the most common forms of COPD.

Cognitive function

Any mental process that involves symbolic operations – ex: perception, memory, creation of imagery, and thinking; cognitive function encompasses awareness and capacity for judgment.¹¹

Communicable disease

An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible

⁸ Beland, Y. (March, 2002). Canadian Community Health Survey: Methodological Overview. Health Reports, 13(3). Accessed from <http://www.statcan.gc.ca/studies-etudes/82-003/archive/2002/6099-eng.pdf>

⁹ Medical News Today. What is cancer? What causes cancer? Available at <http://www.medicalnewstoday.com/info/cancer-oncology/>

¹⁰ Public Health Agency of Canada. Cardiovascular disease. Available at <http://www.phac-aspc.gc.ca/cd-mc/cvd-mcv/index-eng.php>

¹¹ McGraw-Hill Concise Dictionary of Modern Medicine. 2002 by The McGraw-Hill Companies, Inc.

host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment.¹²

Congenital anomaly

Congenital anomaly is an abnormality of structure, function or body metabolism that is present at birth (even if not diagnosed until later in life) and results in physical or mental disability.

Congenital malformation

A physical defect present in a baby at birth, irrespective of whether the defect is caused by a genetic factor or by prenatal events that are not genetic (ex: viral infection or drug effect). In a malformation, the development of a structure is arrested, delayed, or misdirected early in embryonic life and the effect is permanent.

Core housing need

Core housing need refers to households that are unable to afford shelter that meets adequacy, suitability and affordability norms. The norms have been adjusted over time to reflect the housing expectations of Canadians. Affordability, one of the elements used to determine core housing need, is recognized as a maximum of 30 per cent of the household income that is spent on shelter.

Crude rate

The number of people with a given condition or procedure, divided by the number of people living in that population. Crude rate is often expressed as a rate per 1,000 residents. Crude

rates are helpful in figuring out the burden of disease and/or number of residents with that condition or procedure. This is in contrast to adjusted rates, which statistically adjust the crude rates, to arrive at an estimate of what an area's rate might have been if the local population's age and sex distribution were the same as that for the entire province.¹³ Adjusted rates are more useful for comparisons of risk or rate of events, and better understand variations and causes.

Cumulative mental illness

Cumulative mental illness is a term used to provide an overall indicator of the prevalence of mental illness, accounting for the co-occurrence among mental illnesses. Cumulative prevalence is defined as the proportion of the population who received treatment for any of the following: depression, anxiety, substance abuse, personality disorders or schizophrenia.¹⁴ The term "no disorder" is used to refer to people with no diagnosed mental disorder during the five-year period of study. The term "other disorders" refers to people who have been diagnosed with at least one mental illness, but not one of the disorders listed under the "cumulative mental illness" grouping.

Dementia

Dementia is a loss of brain function. Dementia has many causes that result in memory, learning, behaviour and communication problems. The problems are usually progressive, gradually worsening over time.

¹² Public Health Agency of Canada (n.d.) Notifiable Diseases Online. Accessed from: <http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/glossa-eng.php>

¹³ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

¹⁴ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

Depression

Depression is a mood disorder characterized by feelings of sadness, low energy, and a lack of interest in activities that persist to the point at which they interfere with daily life for an extended period of time.¹⁵

This disorder is characterized by the presence of the majority of these symptoms:

- Depressed mood most of the day, nearly every day, as indicated by either subjective report (ex: feels sad or empty) or observation made by others (ex: appears tearful). (In children and adolescents, this may be characterized as an irritable mood.)
- Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day
- Significant weight loss when not dieting or weight gain (ex: a change of more than 5 of body weight in a month), or decrease or increase in appetite nearly every day.
- Insomnia or hypersomnia nearly every day
- Psychomotor agitation or retardation nearly every day
- Fatigue or loss of energy nearly every day
- Feelings of worthlessness or excessive or inappropriate guilt nearly every day
- Diminished ability to think or concentrate, or indecisiveness, nearly every day
- Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

Diabetes

Diabetes mellitus is a chronic condition in which the pancreas no longer produces enough insulin (type 1 diabetes) or when cells stop responding to the insulin that is produced (type 2 diabetes), so that glucose levels in the blood are increased.

Disease prevention and control and injury prevention

Prevention and control of disease and prevention of injury are the main ways that public health aims to achieve its goal to maintain and improve human health. Primary prevention focuses on preventing the occurrence of a disease or injury through actions such as vaccination, safe alcohol use, avoidance of tobacco, and promoting healthy weights. This report will focus more on primary prevention of disease and injury, which is the purview of public health, rather than secondary and tertiary levels of prevention and control, which, although they also have significant impact on health, are more in the domain of the health care system.

Secondary prevention, better known as screening, aims to detect diseases that have occurred but before symptoms have started, in the expectation that earlier treatment will lead to a better outcome. An example of this type of prevention would be mammogram screening programs to detect breast cancer.

Tertiary prevention is the diagnosis and treatment after the onset of symptoms, including rehabilitation and palliative care, and may have as its purpose to prevent disability, premature death, or pain and suffering. Tertiary prevention constitutes the main function of the health care

¹⁵ American Psychiatric Association (1994). *Diagnosis and Statistical Manual of Mental Disorders*. 4th Edition. Washington DC: American Psychiatric Association.

system (primary, secondary and tertiary care) and is a very important part of maintaining and restoring the health of the population. It is not, however, usually considered in the domain of public health with the exception of the treatment of communicable diseases such as tuberculosis, aimed both at curing the individual with the disease and preventing the spread of disease to others.

Down syndrome

Down syndrome is a genetic disorder characterized by mental retardation and other physical defects resulting from the presence of an extra copy of chromosome number 21.

Environment

1) Natural

The natural environment encompasses all living and non-living things occurring naturally on Earth. It encompasses the interaction of all living species. The natural environment includes specific smaller ecological units (ex: an area of wetlands or a range of hills) as well as universal natural resources such as air, water and climate that do not have clear-cut boundaries.

The natural environment is contrasted with the built environment, which comprises the areas and components that are directly influenced by humans.¹⁶

2) Built

The term built environment refers to the human-made surroundings that provide the setting for human activity, ranging in scale from personal shelter and buildings to neighbourhoods and cities that can often include their supporting

infrastructure, such as water supply or energy networks. The built environment of settings may also include the supplies of that setting such as food and other consumer products.¹⁷

3) Social

The social environment of an individual, also called social context or milieu, is the culture that he or she was educated and/or lives in, and the people and institutions with whom the person interacts. The interaction may be in person or through communication media, and may be anonymous or one-way, (ex: television).¹⁸

The social environment has a major influence on health. It includes factors such as relationships, living conditions, education and work.

Ethnicity and race

Ethnicity is derived from the Greek word “ethnos,” meaning “nation or people.” Ethnicity typically refers to a group of people whose members identify, or are identified with, each other and have common language, history, culture, religion, physical appearance or nationality. Race has referred to major divisions of human kind (ex: Caucasian, Black,) and has been used to distinguish human beings into categories defined by body constitution and appearance derived from common gene pools.¹⁹ In the data used in this report the words ethnicity and race are used interchangeably. Wherever relevant and possible, this report will note where ethnicity has been associated with particular health status. Whether these associations are the result of genetics or the social environment is a more complex question.

¹⁶ http://en.wikipedia.org/wiki/Natural_environment

¹⁷ http://en.wikipedia.org/wiki/Built_environment

¹⁸ http://en.wikipedia.org/wiki/Social_environment

¹⁹ Glossary of terms relating to ethnicity and race: for reflection and debate. R. Bhopal, *J Epidemiol Community Health* 2004; 58: 441-445.

Families First

Healthy Child Manitoba combined the *BabyFirst* and *Early Start* programs into one program known as Families First. Families First offers home-visit supports to families with children, from pregnancy to school entry.²⁰

Fetal alcohol spectrum disorder

Fetal Alcohol Spectrum Disorder (FASD) is an umbrella term that encompasses three specific medical diagnoses that result from prenatal exposure to alcohol: Fetal Alcohol Syndrome (FAS), Partial Fetal Alcohol Syndrome (pFAS) and Alcohol Related Neurodevelopmental Disorder (ARND). FAS describes those individuals with a characteristic pattern of physical and neurological birth defects, including facial dysmorphism, growth deficiency, and neurobehavioural abnormalities; pFAS refers to those with facial dysmorphism and neurobehavioural abnormalities but no evidence of growth deficiency; ARND pertains to those individuals who have characteristic neurodevelopmental abnormalities but no dysmorphism or growth retardation. The spectrum of brain differences with FASD varies by individual and may cause different learning, behavioural and daily living challenges for each.

FASD sometimes referred to as Fetal Alcohol Syndrome/Fetal Alcohol Effects (FAS/FAE) in older literature.²¹

Food Security (Access)

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The food security module in the Canadian Community Health Survey (CCHS) 2.2 focuses primarily on characteristics of food security that relate to household “food access” in the context of financial resource constraint.”²²

Gestational age

Gestational age is approximated from the age of a newborn infant from the first day of the woman’s last menstrual period to birth and is often reported in weeks of gestation. The average gestational age of a newborn is 37 weeks.²³

- 1) Infants that are at or below the 10th percentile in birth weight, from an infant population of the same sex and gestational age.²⁴
- 2) Infants that are at or above the 90th percentile in birth weight, from an infant population of the same sex and gestational age.²⁵

²⁰ Brownell, M., DeCoster, C., Penfold, R., Derksen, S., Au, W., Schultz, J., & Dahl, M. (2008). *Manitoba Child Health Atlas Update*. Winnipeg, MB: Manitoba Centre for Health Policy

²¹ Chudley et. al(2005). Fetal alcohol spectrum disorder: Canadian guidelines for diagnosis. *Canadian Medical Association Journal*, 175 (Suppl. 5), S1-S21.

²² (Health Canada, CCHS: http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/cchs_guide_esc-eng.php#pre6)

²³ Martens P, Fransoo R, The Need to Know Team, Burland E, Prior H, Burchill C, Romph L, Chateau D, Bailly A, Ouelette C. *What Works? A First Look at Evaluating Manitoba’s Regional Health Programs and Policies at the Population Level*. Winnipeg, MB: Manitoba Centre for Health Policy, 2008.

²⁴ Kramer MS, Platt RW, Wen SW, Joseph, KS, Allen A, Abrahamowicz M, Blondel B, Bréart G, Fetal/Infant Health Study Group of the Canadian Perinatal Surveillance System. A new and improved population-based Canadian reference for birth weight for gestational age. *Pediatrics* 2001;108(2):1-7

²⁵ Kramer MS, Platt RW, Wen SW, Joseph, KS, Allen A, Abrahamowicz M, Blondel B, Bréart G, Fetal/Infant Health Study Group of the Canadian Perinatal Surveillance System. A new and improved population-based Canadian reference for birth weight for gestational age. *Pediatrics* 2001;108(2):1-7

Health

- 1) “A state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.” – WHO (1948).
- 2) “The ability to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is therefore a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.” – WHO (1986)

Health equity

Health equity suggests that all people can reach their full health potential and should not be disadvantaged from attaining it because of their race, ethnicity, religion, gender, age, social class, socioeconomic status or other socially determined circumstance.²⁶

Health inequity

“...refers to those inequalities in health that are deemed to be unfair or stemming from some form of injustice.... The crux of the distinction between equality and equity is that the identification of health inequities entails normative judgment premised upon (a) one’s theories of justice; (b) one’s theories of society; and (c) one’s reasoning underlying the genesis of health inequalities. Because identifying health inequities involves normative judgment, science alone cannot determine which inequalities are also inequitable, nor what proportion of an observed inequality is unjust or unfair.”²⁷

Health inequality

“...is the generic term used to designate differences, variations, and disparities in the health achievements and risk factors of individuals and groups...that need not imply moral judgment...[and may result from] a personal choice that would not necessarily evoke moral concern”.²⁸ Some inequalities reflect random variations (i.e. unexplained causes), while others result from individual biological endowment, the consequences of personal choices, social organization, economic opportunity or access to health care. Public policy is concerned with health inequalities attributable to modifiable factors, especially those that are perceived as inequitable.

Health promotion

Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.²⁹

²⁶ Dahlgren & Whitehead. Concepts and principles for tackling social inequities in health: *Levelling up Part 1*, World Health Organization, 2006.

²⁷ Kawachi I, Subramanian SV, Almeida-Filho N. A glossary for health inequalities. *Journal of Epidemiology and Community Health* 2002;56:647-52, at 647.

²⁸ Kawachi I, Subramanian SV, Almeida-Filho N. A glossary for health inequalities. *Journal of Epidemiology and Community Health* 2002;56:647-52, at 647.

²⁹ WHO Ottawa Charter for health promotion. Available at <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>

Health protection

The work of public health is achieved in many ways, using approaches ranging from education to enforcement. Health protection is the enforcement end of that spectrum and uses legislative and regulatory methods to prevent disease and injury. Drinking water standards, for example, are used to reduce the risk of exposure to harmful bacteria, as tobacco legislation is used to reduce exposure to second-hand smoke. Health protection often applies to the safety of consumer products such as children's toys and addresses a range of environmental concerns such as food, water, soil and air quality.

Health surveillance and population health assessment

Health surveillance usually refers to regular and current monitoring of health information such as weekly rates of influenza cases or outbreaks. **Population health assessment** is a more comprehensive process of information gathering and analysis that can provide a longer-term understanding of the present and future health issues of a population such as rates and trends of lung cancer and smoking. Such sources of information constitute the evidence base for our understanding of health status and for recommendations on policies and action. The data and information used in this report have been obtained from the findings of many health surveillance and population health assessment processes, using several sources.

Heavy drinking or high-risk drinking

Regularly drinking more than 12 drinks per week (as defined by the Canadian Community

Health Survey)³⁰ or having five drinks or more at a sitting for men, and four or more drinks at a sitting for women.³¹

Home care

The Manitoba Home Care Program, established in 1974, is the oldest comprehensive, province-wide, universal home care program in Canada. Home care is provided to Manitobans of all ages assessed as having inadequate informal resources to return home from hospital or to remain at home in the community. Home care services are provided free of charge.

Human papillomaviruses (HPVs)

Human papillomaviruses are a group of more than 150 related viruses. They are called papillomaviruses because certain types may cause warts, or papillomas, which are benign (noncancerous) tumors. Some HPVs, such as those that cause the common warts that grow on hands and feet, do not spread easily, and disappear over time. However, more than 40 HPV types are sexually transmitted, and these HPVs spread very easily through genital contact. Some types of sexually transmitted HPVs cause cervical cancer and other types of cancer. These are called high-risk, oncogenic, or carcinogenic HPVs. Other sexually transmitted types of HPV do not appear to cause cancer and are called low-risk HPVs. They can cause genital warts which can be severe and recurrent. Although genital HPV infections are very common, most occur without any symptoms and go away without any treatment within a few years. However, some HPV infections can persist for many years. Persistent infections with high-risk HPV types

³⁰ Public Health Agency of Canada (January, 2007). Alcohol Use and Pregnancy: An Important Canadian Public Health and Social Issue. Access from: <http://www.phac-aspc.gc.ca/publicat/fasd-ru-ectaf-pr-06/4-eng.php>

³¹ Health Canada. (March, 2005). Canadian Addictions survey. Accessed from: <http://www.ccsa.ca/2005%20CCSA%20Documents/ccsa-004028-2005.pdf>

can cause cell abnormalities. If untreated, areas of abnormal cells can develop into cancer.³²

Incidence

Incidence is the number of new cases of a specific disease, condition or event over a specified period. The incidence rate uses only new cases in the numerator; individuals with a previous history of the disease or condition are not included in the numerator or denominator. The denominator for incidence rates is the population at risk. Even though individuals who have already developed the condition should be eliminated from the denominator if they are not at risk to get the disease again, incidence rates are often expressed using the whole population in the denominator rather than only the population at risk.

Income quintiles

Income quintile divides the population into five income groups (from lowest income to highest income) such that approximately one fifth (20%) of the population is in each group. The quintiles in most reports are based on enumeration area (EA) or dissemination area (DA) level average household income values from public-use census files. Income quintiles are created within two population groups: urban (Winnipeg and Brandon) and rural (other Manitoba areas). Each person within an EA is “attributed” the average household income of the EA, so this is not a measure of individual income but rather an area-level average income.³³

Infant mortality rate

IMR is the number of deaths among infants under one year of age usually per 1,000 live births in a cohort of live-born babies. Rates fluctuate in areas with small populations; therefore, averages of several years may be chosen rather than a single year of data. The rate is usually expressed for a given period of time.

Infant mortality is a measure of deaths among infants within one year of birth. This may exclude very-low-birth weight babies (< 500 g) and those with very short gestations (< 22 weeks), who are more likely to die. Infant mortality is used as an indicator of health status, level of healthcare in an area and the effectiveness of prenatal care. It often correlates with socioeconomic status and economic development of a population.

Influenza

Influenza (flu) is a specific infection caused by the influenza virus. The virus enters the upper part of the respiratory tract through the nose or mouth. The influenza virus specifically infects the nose, throat and lungs. Symptoms usually appear after an incubation period of one to three days. The incubation period is the time between the exposure to the virus and the beginning of symptoms. Influenza is very contagious. Typical symptoms include: sudden onset of headache, chills, dry cough, body aches and fever.³⁴

Intentional injury

An intentional injury can be defined as the use of physical force or power, threatened or actual, against oneself, another person, or against

³² National Cancer Institute. Available at <http://www.cancer.gov/cancertopics/factsheet/Risk/HPV>

³³ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

³⁴ Canadian Coalition for Immunization Awareness and Promotion. What is influenza. Available at <http://www.immunize.cpha.ca/en/specific-groups/childactivities/influenza/defn.aspx>

a group or community, that results in injury, death, psychological harm, mal-development or deprivation. Intentional injuries include, but are not limited to, child abuse, suicide, homicide, assaults and bullying.³⁵

Ischemic heart disease

Ischemia is a condition in which blood flow (and thus oxygen) is restricted to a part of the body, usually due to narrowing of the arteries. Ischemic heart disease refers to heart problems caused by narrowed heart (coronary) arteries. This is also known as coronary artery disease or coronary heart disease. It is the cause of heart attacks otherwise known as myocardial infarctions.³⁶

Leisure physical activity

The leisure physical activity index is a measure that is calculated and used by the Canadian Community Health Survey. It is calculated by using the number of times an individual participates in an activity and the duration of participation. The index then groups people into the categories “active,” “moderately active” and “inactive.” To be classed as active, an individual must expend at least three kilocalories (commonly referred to as calories) per kilogram of weight, per day, through leisure physical activity. The definition of “moderately active” is 1.5–2.99 kcal/kg/day, and “inactive” refers to less than 1.5 kcal/kg/day. Leisure physical activities include walking, running, swimming, fishing, gardening, and team sports such as hockey, basketball, volleyball and soccer.³⁷

Level of care

Level of care refers to a person’s degree of dependency on nursing staff time for activities of daily living and basic nursing care to maintain functioning. The higher the level of care, the greater the degree of dependency. Persons in Level 1 require half an hour of nursing time, persons in Level 2 two hours, and persons in Levels 3 and 4 at least three and half hours per 24-hour period.³⁸

Life expectancy

Life expectancy is the average number of years an individual of a given age is expected to live if current age-sex-specific mortality rates apply throughout their life.

Low-income cut-off

Low income cut off represents an income threshold where a family is likely to spend 20% more of its income on food, shelter and clothing than the average family, leaving less income available for other expenses such as health, education, transportation and recreation. LICOs are calculated for families and communities of different sizes.³⁹

Statistics Canada has clearly and consistently emphasized, since their publication began over 25 years ago, that the LICOs are quite different from measures of poverty. They reflect a consistent and well-defined methodology that identifies those who are substantially worse off than the average. In the absence of an accepted definition of poverty, these statistics have been

³⁵ (World Health Organization, 2009)

³⁶ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

³⁷ Beland, Y. (March, 2002). Canadian Community Health Survey: Methodological Overview. Health Reports, 13(3). Accessed from <http://www.statcan.gc.ca/studies-etudes/82-003/archive/2002/6099-eng.pdf>

³⁸ Fröhlich N, De Coster C, Dik N. *Estimating Personal Care Home Bed Requirements*. Manitoba Centre for Health Policy: Winnipeg, MB, 2002.

³⁹ Statistics Canada. Low-income cutoffs - definition. Available at <http://www.statcan.gc.ca/pub/81-004-x/def/4153357-eng.htm>

used by many analysts who wanted to study the characteristics of the relatively worse off families in Canada. These measures have enabled Statistics Canada to report important trends such as the changing composition of this group over time.⁴⁰

Malformation

A structural defect in the body due to abnormal embryonic or fetal development. There are many types of malformations (ex: cleft lip and cleft palate).⁴¹ See also Congenital malformation.

Mammography

Mammography is a procedure that uses x-rays to screen for early signs of breast cancer before the onset of symptoms or signs of the disease such as a palpable lump. In 1995, Manitoba introduced a province-wide breast-screening program operated by the Manitoba Breast Screening Program of CancerCare Manitoba. It is recommended that all women between 50 and 69 years of age be screened every two years for breast cancer.

Market Basket Measure (2008 base)

The Market Basket Measure (MBM)⁴² is based on the cost of a specific basket of goods and services representing a modest, basic standard of living. It includes the costs of food, clothing, footwear, transportation, shelter and other expenses for a family of two adults aged 25 to 49 and two children (aged nine and 13). MBM provides thresholds for a finer geographic level than the low-income cut-off (LICO), allowing, for example, different costs for rural areas in the different provinces. These thresholds are compared to disposable income of families to determine low-income status. Disposable income

is defined as the sum remaining after deducting the following from total family income: total income taxes paid; the personal portion of payroll taxes; other mandatory payroll deductions, such as contributions to employer-sponsored pension plans, supplementary health plans, and union dues; child support and alimony payments made to another family; out-of-pocket spending on child care; and non-insured but medically prescribed health-related expenses such as dental and vision care, prescription drugs, and aids for persons with disabilities.

The MBM thresholds are calculated as the cost of purchasing the following items:

- A nutritious diet as specified in the 2008 National Nutritious Food Basket
- A basket of clothing and footwear required by a family of two adults and two children
- Shelter cost as the median cost of a two- or three-bedroom unit, including electricity, heat, water and appliances
- Transportation costs, using public transit where available or costs associated with owning and operating a modest vehicle where public transit is not available
- Other necessary goods and services

Mortality rate

Mortality rate is the number of deaths usually per 1,000 residents, per year. The rate may be crude or adjusted.

The North in Manitoba

“The north” in Manitoba includes all of the northern regional health authorities, that is, Nor-Man, Burntwood and Churchill.⁴³

⁴⁰ Statistics Canada. Low-income cutoffs. <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=13-551-X>

⁴¹ MedicineNet. Definition of malformation. Available at <http://www.medterms.com/script/main/art.asp?articlekey=22055>

⁴² Statistics Canada. Market basket measure. Available at <http://www.statcan.gc.ca/pub/75f0002m/2010005/mbm-mpc-eng.htm>

⁴³ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

Osteoarthritis

Osteoarthritis is a type of arthritis (inflammation of joints) that increases with age. It can involve any joint, but is usually most significant for the weight-bearing joints such as hips, knees, feet and spine.

Osteoporosis

Osteoporosis is a disease that leads to a reduction in bone density, making bones more likely to break.

Periodontal diseases

Periodontal diseases (also called periodontitis) are diseases that affect one or more of the periodontal tissues that surround the teeth: alveolar bone, periodontal ligament, cementum and gingival. While many different diseases affect the tooth-supporting structures, plaque-induced inflammatory lesions make up the vast majority of periodontal diseases and have traditionally been divided into two categories: gingivitis and periodontitis. While in some sites or individuals, gingivitis never progresses to periodontitis, data indicates that gingivitis always precedes periodontitis.

Personal care homes

Personal care homes (PCH's), sometimes referred to as nursing homes, are residential facilities for predominantly older persons with chronic illness or disability. PCHs may be proprietary (for profit) or non-proprietary. Non-proprietary PCHs may further be classified as secular or ethno-cultural (associated with a particular

religious faith or language other than English) as well as either freestanding or juxtaposed with an acute-care facility.⁴⁴

Personality disorders

Personality Disorders are characterized by an enduring pattern of thinking, feeling, and behaving which is significantly different from the person's culture and results in negative consequences. This pattern must be longstanding and inflexible for a diagnosis to be made. There are ten types of personality disorders, all of which result in significant distress and/or negative consequences within the individual.⁴⁵

Physical activity

Canadian Community Health Survey (CCHS) respondents are classified as active, moderately active or inactive based on an index of average daily physical activity over the previous three months. The CCHS calculates this index as the sum of the average daily energy expenditures from physical activities that are in addition to normal daily activity. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 – 2.9 kcal/kg/day = moderately active; less than 1.5 kcal per day = inactive.⁴⁶ In other words, a physically active 80 kg adult would need to burn up 240 kcal per day through exercise – above and beyond the energy burned through daily work and home activities and the body's basic physiological needs.

⁴⁴ De Coster C, Peterson S, Kasian P. *Alternatives to Acute Care* (July 1996). Winnipeg, MB: Manitoba Centre for Health and Evaluation, 1996.

⁴⁵ American Psychiatric Association (1994). *Diagnosis and Statistical Manual of Mental Disorders*. 4th Edition. Washington DC: American Psychiatric Association.

⁴⁶ Brownell M, De Coster C, Penfold R, Derksen S, Au W, Schultz J, Dahl M. *Manitoba Child Health Atlas Update*. Winnipeg, MB: Manitoba Centre for Health Policy, 2008.

Physician claims

Claims that are submitted to the provincial government by individual physicians for services they provide. Fee-for-service physicians receive payment based on these claims, while those submitted by physicians on alternate payment plans (ex: salary) are for administrative purposes only.⁴⁷

Potential years of life lost (PYLL)

PYLL is an indicator of premature death (before age 75), which gives greater weight to deaths occurring at a younger age than to those at later ages. PYLL emphasizes the loss to individuals, their families, and society of the potential living and contribution that are lost by that death. By emphasizing the loss of life at an early age, PYLL focuses attention on and prioritizes causes of deaths that may occur earlier in life (ex: unintentional and intentional injuries, cancer and heart disease) to improve life expectancy and the opportunity to lead a more full life.

For each death, the PYLL is calculated as: $PYLL = 75 - \text{age at death}$. For example, a death at age 25 from a motor-vehicle collision, suicide or heart attack equals 50 potential years of life lost or PYLL for the cause of death specified in the death certificate. A death at age 75 or over does not contribute any PYLL's for that specific cause of death.

Premature mortality rate (PMR)

PMR is the rate of deaths per year among people in a specified population (ex: geographic area or health region) that are under the age of 75. Thus it is a measure of the rate of "premature deaths", defined as any death occurring before the age of 75.

Premature mortality rates are often used as a comparative health indicator between populations. It is based in part on the recognition that death is inevitable, but premature death is not and can be prevented. At the time that age 75 was used as the definition of premature death, the average life expectancy of women and men combined was about 75 in most developed countries. Now that average is closer to 80 years, but the usual definition of PYLL's has not yet changed.

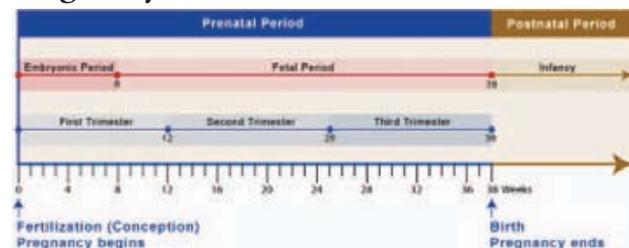
Pre-peri-postnatal

Prenatal: the period of time from conception until birth

Perinatal: the period of time immediately before and after birth

Postnatal periods: the period of time from birth to four or six weeks of age

Pregnancy Timeline⁴⁸



Preterm birth

Preterm birth is defined as a live birth where the gestational age of the infant is less than 37 weeks.

Prevalence

1) Point prevalence: the proportion of the population that has a given disease or condition at a specified point in time, usually a particular day. Comparisons between different point prevalences (i.e. different points in time) are useful to monitor disease burden, but do

⁴⁷ Brownell M, De Coster C, Penfold R, Derksen S, Au W, Schultz J, Dahl M. *Manitoba Child Health Atlas Update*. Winnipeg, MB: Manitoba Centre for Health Policy, 2008.

⁴⁸ The Endowment for Human Development. Prenatal form and function. Available at http://www.ehd.org/dev_article_intro.php#ft18

not necessarily indicate progress in prevention or treatment. For example, primary prevention action would be expected to decrease prevalence by reducing the incidence, whereas effective treatment may increase prevalence by increasing the duration of life among people that have the disease.

- 2) Period prevalence: the proportion of people that have a disease or condition in during a specified period of time (ex: one month or one year).
- 3) Treatment prevalence: the administrative data (doctor's billing information and hospital admission information) are not always valid measures of the presence of a disease, but using information about specific treatments based on physicians' diagnosis and patterns of care, including hospitalizations and prescription drugs. Therefore, the term treatment prevalence is also used instead of prevalence, as it reflects the proportion of people with a specified disease that have received care for that condition.

Public health

1) "Public health is one of the efforts organized by society to protect, promote, and restore the people's health. The programs, services, and institutions involved emphasize the prevention of disease and the health needs of the population as a whole... the goals remain the same: to reduce the amount of disease, premature death and disease-produced discomfort and disability in the population. Public health is thus a social institution, a discipline and a practice."⁴⁹

⁴⁹ Higher Education for Public Health: A Report of the Milbank Memorial Fund Commission. New York:1976

⁵⁰ T. Kue Young: Population health: concepts and methods. Oxford University Press US, 2005

⁵¹ Fransoo R, Martens P, The Need to Know Team, Burland E, Prior H, Burchill C, Chateau D, Walld R. *Sex Differences in Health Status, Health Care Use, and Quality of Care: A Population-Based Analysis for Manitoba's Regional Health Authorities*. Winnipeg, MB: Manitoba Centre for Health Policy, 2005.

⁵² Mayo Clinic (April, 2010). RH Factor Blood Test. Available at <http://www.mayoclinic.com/health/rh-factor/MY01163>

2) "In North America, public health usually refers to the array of programs and services organized primarily, but not exclusively, by various levels of governments to protect, promote and restore the health of citizens."⁵⁰

The core functions of public health are : surveillance, population health assessment, disease prevention, health protection, and health promotion.

Regional health authority (RHA)

In 1997, the province of Manitoba established regional health authorities (RHA) as governance structures to be responsible for the delivery and administration of health services. As of July 1, 2002, there are 11 RHAs in Manitoba: Winnipeg, Brandon, South Eastman, Assiniboine, Central, Parkland, North Eastman, Interlake, Burntwood, Nor-Man and Churchill.

Renal failure

Renal failure is a decreased function of the kidneys to produce urine in concentrations and volumes to keep in balance the biochemistry of the blood. Severe renal failure usually requires regular dialysis or a kidney transplantation.⁵¹

Rh

Rhesus (Rh) factor is an inherited trait that refers to a specific protein found on the surface of red blood cells. If your blood has the protein, you're Rh positive – the most common Rh factor. If your blood lacks the protein, you're Rh negative. Although Rh factor doesn't affect your health, it can affect pregnancy. Your pregnancy needs special care if you're Rh negative and your baby's father is Rh positive.⁵²

Risk factors

Risk factors are a range of genetic, behavioural and environmental factors that are known or suspected to be a cause of a specific disease or injury or a marker of increased risk when there is less certainty of the actual cause.

Rural south

The rural south in Manitoba includes all of the regional health authorities in the south and the mid-province of Manitoba except the two urban centres of Winnipeg and Brandon. Those RHAs are: South Eastman, Central, Assiniboine, Interlake, North Eastman and Parkland.

Schizophrenia

Schizophrenia is a long-term mental illness that affects how a person thinks, feels and acts. Symptoms of the illness may include auditory hallucinations, delusions, difficulty in expressing emotions, and disorganized speech and thought.

Self-rated health

Self-rated health has been found to be an indicator of the overall health status of the population and is correlated with other population-health-status measures such as premature mortality rate. It can reflect aspects of health not captured in other measures, such as incipient disease, disease severity, aspects of positive health status, physiological and psychological reserves, and social and mental function and attitudes. Respondents to the CCHS self-rated their own health status as excellent, very good, good, fair or poor. Because there are no criteria or guidelines for these categories, self-related health is a subjective matter and should be used with caution.

Self-rated mental health

Self-reported mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, not necessarily reflected in self-reported (physical) health or by specific diagnosis or treatment records. Respondents to the CCHS self-rated their own mental health status as being excellent, very good, good, fair or poor. Because there are no criteria or guidelines for these categories, self-related health is a subjective matter and should be used with caution.

Settings approach

The settings approach to health has its genesis in the Ottawa Charter of 1986, which motivated the World Health Organization to focus on the settings of everyday life in order to target health promotion. A settings approach to health is based in the concept that in order to be effective, health promotion and health care must be inclusive and holistic, so people are healthy and practice good health in all parts of their lives and in all their environments, including where they work, learn and play. Examples include homes, schools, workplaces, restaurants and community centres. In addition to the physical characteristics of settings, including their supplies (ex: food), the social environment (for example, relations between teachers and students) is a very important factor that influences the health of people.

Stillbirth

Stillbirth is the death of a baby before delivery. Stillbirth rates are calculated for gestational ages of at least 20 weeks duration.⁵³

⁵³ Brownell M, De Coster C, Penfold R, Derksen S, Au W, Schultz J, Dahl M. *Manitoba Child Health Atlas Update*. Winnipeg, MB: Manitoba Centre for Health Policy, 2008.

Stroke

A stroke occurs when there is a sudden death of brain cells due to a lack of oxygen when the blood flow to the brain is impaired by blockage or rupture of an artery to the brain. Symptoms of a stroke depend on the area of the brain affected. The most common symptom is weakness or paralysis of one side of the body with partial or complete loss of voluntary movement or sensation in a leg or arm. Other common symptoms include speech problems, weak facial muscles, numbness and tingling. A stroke involving the base of the brain can affect balance, vision, swallowing, breathing and consciousness.

Substance abuse

Substance abuse is the excess use of and reliance on a drug, alcohol, or other chemical that could lead to severe negative effects on the individual's health and well-being or the welfare of others.⁵⁴

Substance dependence

When a person is psychologically and/or physically dependent on a drug (can we say i.e. addicted?), which is used excessively and the use continues despite the person experiencing serious problems.⁵⁵

Sudden infant death syndrome (SIDS)

SIDS is sudden and unexpected death of an apparently healthy baby under one year of age. Such deaths usually occur while the child is sleeping. The diagnosis of SIDS can only be made when the cause of death remains unexplained even after a full investigation (Health Canada, 2005).

Therapeutic abortion

Therapeutic abortion, or induced abortion, is defined as the deliberate termination of a pregnancy resulting in the death of the fetus or embryo. It does not include spontaneous abortions (i.e. miscarriages).⁵⁶

Total fertility rate (TFR)

An estimate of the average number of live births a woman can be expected to have in her lifetime, based on the age-specific fertility rates (ASFR) of a given year. For example, a total fertility rate of 2.1 means that the average woman will have just over two live births during her fertility period.

The total fertility rate (TFR) = SUM of single year of age-specific fertility rate.⁵⁷

Total respiratory morbidity (TRM)

TRM is a measure of the burden of all types of respiratory airway illnesses in the population. Respiratory illnesses included asthma, acute or chronic bronchitis, emphysema and chronic airway obstruction.

Treatment prevalence

See prevalence.

Tuberculosis (TB)

Tuberculosis is an infectious disease caused by a germ, a bacteria called *Mycobacterium tuberculosis*. TB usually infects the lungs. TB can also infect other parts of the body, including the kidneys, spine and brain. The main TB symptoms are a persistent cough, fever, night sweats, losing

⁵⁴ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

⁵⁵ Health Canada. (2000). Straight facts about drugs & drug abuse (p. 3). Ottawa: Health Canada. Accessed from: http://hc-sc.gc.ca/hc-ps/pubs/adp-apd/straight_facts-faits_mefaits/index-eng.php

⁵⁶ Association of Public Health Epidemiologists of Ontario. Core indicators. Available at <http://www.apheo.ca/index.php?pid=55>.

⁵⁷ Statistics Canada. Data quality, concepts and methodology: Definitions. Available at <http://www.statcan.gc.ca/pub/84f0210x/2007000/technote-notetech1-eng.htm>

weight, and feeling weak. TB can be contagious, especially among people with close and prolonged contact.

Unintentional injury

Unintentional injury is preferred as a term rather than “accident,” as the word accident may imply events are random, unpredictable, and unpreventable... Some of the main types of unintentional injuries are transport accidents, falls, poisoning, suffocation and choking, drowning, exposure to animate/inanimate mechanical forces, overexertion and accidental exposure to unspecified factors.

Urban area

Urban area is an area with at least 1,000 people and a population density of at least 400 persons per square kilometre. The term “urban Manitoba” refers to Winnipeg and Brandon combined.⁵⁸

Visible minority

Whether a person belongs to a visible minority group or not is defined by the Employment Equity Act and, if so, the visible minority group to which the person belongs. The Employment Equity Act defines visible minorities as “persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour”. The visible minority population consists mainly of the following groups: Chinese, South Asian, Black, Arab, West Asian, Filipino, Southeast Asian, Latin American, Japanese and Korean.⁵⁹

Winnipeg community areas (CA)

CAs are the 12 planning districts within the Winnipeg Regional Health Authority (WRHA). They have similar population sizes as the rural and northern regional health authorities (RHAs).⁶⁰

⁵⁸ Fransoo R, Martens P, Burland E, The Need to Know Team, Prior H, Burchill C. *Manitoba RHA Indicators Atlas 2009*. Winnipeg, MB: Manitoba Centre for Health Policy, 2009.

⁵⁹ Statistics Canada (n.d.) Visible Minority of a Person. Accessed from: <http://www.statcan.gc.ca/concepts/definitions/minority-minorite1-eng.htm>

⁶⁰ Brownell M, De Coster C, Penfold R, Derksen S, Au W, Schultz J, Dahl M. *Manitoba Child Health Atlas Update*. Winnipeg, MB: Manitoba Centre for Health Policy, 2008.

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