National Report on the Health Status of the Population of Québec

Producing Health

Québec

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Santé et Services sociaux Québec

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Message from the Minister

When people are asked what is most important to them in their life, they invariably answer "to be healthy," which is undoubtedly associated, at a more or less conscious level, with happiness. Obviously, staying in perfect health, without any physical or psychosocial problems, is a goal that very few of us can boast about. Nevertheless, as individuals, communities and society as a whole, we can take action to avoid many problems.

In his report, the National Public Health Director, Dr. Alain Poirier, provides precisely the keys that will allow the Québec population to enjoy enhanced health, by describing the most glaring avoidable problems facing Quebecers and, especially, by explaining how to prevent them in a more effective way. What is striking when we read Dr. Poirier's report is that the means of action to prevent these problems cannot be found mainly in the health care system, but rather certainly involve all the activity sectors of our society. In many cases, a concerted and structured approach, focusing on a few factors, will have both substantial and long-lasting repercussions on the health of all of us.

Thus, this report suggests that we adopt a new conception of health, which is seen as a responsibility shared by individuals, communities and society as a whole. The actions described in it, if carried out, will eventually improve the health of every Quebecer. As a member of the government responsible for making the most of scarce resources, I cannot help pointing out that better prevention could, in the long term, help to alleviate the pressure on our health and social services system, thus giving it the additional latitude which everyone acknowledges is necessary.

I hope that you will enjoy reading the report!

Philippe Couillard
Minister of Health and Social Services

Foreword

In 2001, the Government of Québec adopted a new legislative framework on public health – the *Public Health Act*. Its principal object is the protection of the health of the population and the establishment of conditions favourable to the maintenance and enhancement of its health status. The Act establishes different measures to monitor the evolution of the population's health status and to disseminate the resulting information, including the production of a national report, a responsibility that falls to the national public health director.

Thus, I am pleased to submit the first national report on the health status of the population of Québec. In this report, it appeared relevant to describe the health of Québec society. What are the preventable health problems? What are the available means to prevent them? What are our responsibilities as individuals, communities and society in the implementation of these preventive means?

I am convinced that this first national report will be an invaluable tool to further our understanding of the determinants of the principal health problems and will stimulate debates on the major measures to enhance the health of the Québec population. But above all, I hope that this first report will mobilize everyone to work towards a common goal, that of *Producing Health*.

Alain Poirier
National Public Health Director

Producing Health

The health status of the Québec population has greatly improved over the last decades. However, several problems continue to cause devastation. Many of these problems are preventable since they are associated with common factors that can be acted on. Nevertheless, not all means of action can be found in the health and social services system. Indeed, even a cursory examination reminds us of a too often forgotten truth, that is, the enhancement of health is a goal that all of us can and must help to attain.

The Major Physical and Social Ills

In Québec, as everywhere else in the world, health problems have been changing over the years. While some have been eradicated, or nearly so, new problems are appearing and old problems are resurfacing.

Infectious diseases

While for a long time infectious diseases were the principal threat to health, today this is no longer the case. Vaccines help to prevent or control many infections and new treatments are also available. However, a new influenza pandemic is feared. Moreover, the evolution of multiple antibiotic resistant bacteria should not be taken lightly. It is important to review the professional practices regarding the prescription of antibiotics and to ensure that hygiene and sanitation rules in care institutions are followed. The same rules apply to the prevention of nosocomial infections which, although not new, have recently increased. New infections are appearing, such as Severe Acute Respiratory Syndrome (SARS), West Nile virus encephalitis, for which there is no known treatment at the moment. The spread of infectious diseases as well as their emergence and resurgence are associated with various factors related to individual characteristics and behaviours, the quality of the physical, economic and social environment as well as the organization of health services. As ever, vigilance is in order.

Chronic diseases

Chronic diseases develop slowly, persist over time, are often incurable and result in a disability and, above all, they claim many victims. Four chronic diseases are responsible for more than 70% of deaths in Québec every year. They are, in order of importance, cancers, cardiovascular diseases (CVDs), respiratory diseases and diabetes. Over the last 50 years, deaths attributable to cancers have increased steadily while those associated with CVDs have decreased. Obesity has increased by 56% among adults since 1987; in 2003, 14% of the population were considered to be obese. Chronic diseases have many determinants. While age, gender and heredity are among those that cannot be acted upon, lifestyle and the environment can certainly be influenced. A poor diet, lack of exercise, smoking and excessive alcohol use are

known to be involved in deaths linked with chronic diseases, in proportions that can be as high as 80%. Links are also evident between the quality of the environment and several chronic diseases, in particular certain cancers and respiratory diseases.

Unintentional injuries

In Québec, unintentional injuries cause one death every five hours and one hospitalization every ten minutes. Unintentional injuries occur on the roads, at home and during recreational or sports activities. Road traffic injuries constitute the leading cause of mortality from unintentional injuries and are closely followed by unintentional falls, which occur mainly among those more than 75 years of age. According to statistics, the young and the poorest are at greater risk of dying from an unintentional injury. Indeed, more than one third of all individuals who die from this cause are under 45 years of age, and unintentional injuries are the leading cause of mortality among those aged 5 to 14 years old and the death rate attributable to this type of injury is one and a half times higher among disadvantaged people. The factors linked with unintentional injuries are associated with the environment and individual behaviours. The environmental factors include poor road planning, lack of safety devices (smoke detector, carbon monoxide detector, etc.), inadequate maintenance of facilities, etc. The factors related to behaviours are impaired driving, excessive speed, dangerous behaviours in sports, etc. In the case of falls occurring at home, physical characteristics such as muscle weakness and visual disorders should also be mentioned.

Development and social adjustment problems of young people

Young people are affected by four main categories of problems: physical development problems; developmental delay and academic failure; conduct disorders and delinquency; and ill treatment. Approximately 5.5% of children are born underweight, and 8% are affected by intrauterine growth retardation. Subsequently, at two and a half years old, one in five children is affected by cognitive developmental delay. It is known that children whose development was delayed in their early years are at greater risk than other children of having adjustment problems and learning disabilities when they attend day care or school.

Every year, 6% of children are subject to serious physical violence. Moreover, nearly 10 000 children must be taken into care by the *Direction de la protection de la jeunesse* (youth protection department), half due to neglect, nearly one quarter because they display conduct disorders or were abandoned, and the remaining because they have been victims of physical or sexual abuse.

Children from poor neighbourhoods are overrepresented, and this is the case for all types of problems: premature birth or low birth weight, ill treatment and dropping out of school. Moreover, young people's development and social adjustment problems are attributable to various social and cultural factors as well as to the characteristics of parents – in particular the way they raise their children –, and of the young people themselves.

Violence, mental disorders and suicide

While violence, mental disorders and suicide perhaps kill less than physical problems, their effects are just as devastating. Intimate partner violence and sexual assaults are among the most common situations of violence. Young women aged 18 to 24 are the most affected by all forms of violence inflicted on women.

One in five persons will have a mental health problem sometime during his life. The most common and preventable problems are anxiety disorders and depression. Difficulties faced by people in their social and working lives can threaten their mental health.

Québec has one of the highest suicide rates in the world, and it is primarily men who commit suicide. For the last 25 years, the suicide rate has been rising, from 14.8 to 17.8 per 100 000 population. A high proportion of individuals who committed suicide had a mental disorder, most often depression. Among other known factors are the family and social environment as well as stressful events such as a relationship break-up or a job loss.

The Role of Health and Social Services

We naturally turn to the health and social services system to find a solution to preventable health problems. Thus, what role does this system play in the enhancement of the population's health? What are its possibilities and its limitations?

The health and social services system plays a major role in society. It protects individuals, without distinction, against the financial risks linked to disease and social problems. It relieves pain and suffering. It contributes to greater social equity. Over the years, the population has been expecting more and more from the system. Today, it performs three major functions: to prevent, to cure and to care. The way the system performs these functions has an impact on the enhancement of the population's health. However, health gains will mainly come from prevention. That is why, in addition to the responsibilities related to its major functions, the health and social services sector is responsible for fostering and co-ordinating common efforts of prevention.

To discharge its responsibilities, the system has two major means: an organization of services offered in the entire territory and levers for action in public health.

As regards the organization of services, three major goals will help to optimize the contribution of the health and social services system to enhancing health, that is:

- to improve accessibility of services and their continuity by relying especially on strengthening primary care;
- to intensify prevention within the system of services;
- to support excellent professional practices.

Moreover, the health and social services sector must also make other activity sectors in society aware of the importance of their contribution to enhancing the population's health and support their efforts. It will discharge this responsibility by resorting to, in particular, the available levers in public health. The *Public Health Act* and the *Québec Public Health Program 2003-2012* are, in this respect, essential instruments.

The system can act and its action, although still partial and limited, is essential. For action that is conducive to health, all social actors must combine their efforts so as to improve living conditions, preserve the environment and promote the adoption of healthy lifestyles.

Major Courses of Action

The means to act on the principal common determinants of preventable health problems are essentially found outside the health and social services system, and they involve all sectors of society. The principal intersectoral means that are likely to influence the common determinants must target the following goals: to reduce poverty and inequalities, to preserve the physical environment, to foster the development of supportive communities, to support the adoption of healthy lifestyles and to support child and youth development.

A fairer society and a healthier population

Socio-economic conditions have a determining impact on health. In all societies, the poorest individuals are more likely to be exposed to diseases, to contract a disease while younger and to die at a younger age. Moreover, it is known that disparities in health follow the social hierarchy, that is, differences can be observed from one level to the next, not only at the extremes.

To be effective, the battle against poverty and inequalities must be waged on several fronts, in particular those of income, employment, and education. Therein lies the spirit of the Act and Strategy centred on the battle against poverty and social exclusion as well as the action plan adopted by the government which is being implemented. It will be crucial to closely monitor this plan and to evaluate the impact of its various measures. Moreover, it will need to be supplemented and supported through long-term objectives. Also, all ministries and government organizations as well as all social actors must join forces to battle poverty and social inequalities. This social project will surely be beneficial to the health and lives of individuals, families and communities. Moreover, this can only lead to greater solidarity and productivity for society.

Habitat: developing a healthy environment

In order to enhance the population's health, it is necessary to improve the environment. We must therefore attend to all of the elements that directly influence the quality of living environments: management of resources, land use, and the modes of production of goods and services. Currently, thanks to hydroelectricity, Québec's environmental performance in terms of emission of air pollutants compares favourably with that of the other Canadian provinces. Similarly, the use of chemical products and pesticides is increasingly regulated. However, the increase in pollution attributable to the transportation sector is a concern. Constant efforts must be made to maintain and improve the quality of the St. Lawrence River as well as other rivers and lakes.

The *Québec Sustainable Development Plan* represents an important step on the part of the government. However, sustainable development requires everyone's involvement, that is, the producers of goods and services will have to implement more eco-efficient production methods (reduction of energy output, limitation of dispersion of toxic products, protection of water and forests, reduction of unnecessary packaging, etc.); municipalities will have to adopt a rational waste management policy and urban land-use plans which restrict motor vehicle traffic; and consumers will have to reduce their energy consumption and review the way in which they use resources.

Supportive communities: living together in harmony

Health does not depend only on physical and biological characteristics. Indeed, psychological and social factors have proven to be just as important. Two key notions allow us to better understand the influence of these factors: social support and social cohesion. Social support refers to the result of the interaction between two people with the aim of one giving the other various forms of appreciation and recognition, tangible help, information, or even supportive care and attention. Social cohesion refers to the willingness of members of a society or community to co-operate in order to prosper. It presumes that individuals share the same values. Social support and social cohesion foster individual and collective empowerment as well as dialogue and co-operation.

The state plays an important role in promoting social support and social cohesion. In particular, it can adopt appropriate policies, promote citizen involvement and encourage participation,

create numerous opportunities for citizens to participate in the life of their community and, finally, use innovative means which promote participation in institutions (citizen panels, citizen juries and deliberative polling). Particular attention must be paid to more vulnerable communities.

The individual: making it easier to opt for healthy lifestyles

The links between health and healthy lifestyles are well known. A poor diet, lack of exercise, smoking and excessive alcohol use are involved in approximately 40% of all deaths. Today, Quebecers eat better and smoke much less. However, they are less active than other Canadians.

Campaigns to promote healthy lifestyles are certainly essential. However, the most crucial task will be to change the environment in order to make it easier to make healthy choices, that is, by improving access to healthy products in vending machines; by designing school yards that are more conducive to physical activity; by planning safe routes for walking or cycling, and by creating infrastructures and developing programs in towns and villages that encourage physical activity. Lessons should be drawn from the battle against smoking in order to prevent a new feared epidemic – obesity. For actions to be effective, as recommended by the World Health Organization, it is necessary to adopt a global, multidimensional approach based on the collaboration of partners from various activity sectors.

A solid foundation: supporting child and youth development

Childhood and adolescence are major learning periods during which individuals are highly sensitive to the economic, physical and social environments. For this reason, support for the development and social adjustment of children and adolescents is an essential way to act on all health determinants. The objectives set out in Québec's family policy suggest the path to be followed to better support child and youth development: maintaining universal support for families, providing greater assistance to low-income families, facilitating the reconciliation of work and family responsibilities as well as encouraging equal opportunity. These objectives are already reflected in various measures.

For the future, action must be intensified, particularly by adopting public policies that provide better living conditions for all families; by continuing to improve child care services and ensuring high quality educational services in child care centres; by supporting the implementation of projects based on the Health Promoting Schools approach; and by supporting the development of harmonious and welcoming communities for children, adolescents and their families. Finally, a major social objective must guide all interventions: to prevent the appearance of problems and reduce inequalities among Québec children.

The nature of the problems that most affect the health of the Québec population has changed considerably over the years. Several of today's problems are preventable and the means of action are within our reach. However, we cannot act in isolation and actions cannot be unidimensional. Moreover, it would be futile to try to find a panacea, a miracle solution which would solve all our ills. Rather the means of action are in the economic, physical and social environment, in public policies, and in gestures of solidarity. It is precisely here and nowhere else that solutions will be found.

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List of abbreviations and acronyms

CLSC	Centre local de services communautaires (local community service centre)
COPD	Chronic obstructive pulmonary disease
CSSS	Centre de santé et de services sociaux (health and social services centre)
CVD	Cardiovascular disease
Gini coefficient	Coefficient of global inequity
GMF	Groupe de médecine de famille (family medicine group)
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
OECD	Organization for Economic Co-operation and Development
SARS	Severe acute respiratory syndrome
WHO	World Health Organization
WNV	West Nile virus

Introduction

Today Quebecers can expect to live longer than previous generations and to be healthy longer. Their health has improved over the last decades. Individually, everyone is more concerned about their health and that of their family and friends. Collectively, society is devoting more and more resources to services and activities aimed not only at protecting health but also at preventing problems and, in general, acting on the determinants of these problems.

The conception of health has also changed. For a long time, health was perceived as a mere absence of illness. Nowadays, pursuant to section 1 of the *Act respecting health services and social services*, it is defined as "[…] the physical, mental and social capacity of persons to act in their community and to carry out the roles they intend to assume in a manner which is acceptable to themselves and to the groups to which they belong."[1] Thus, health is no longer considered to be a static state. Moreover, it is no longer limited to the physical aspect only, but also encompasses psychosocial aspects.

This broader perspective can be largely explained by the dramatic development of health sciences and social sciences over the last half-century. Scientific advances have continued to further our understanding of the complex nature of problems. They have also helped to fight diseases more effectively and to better control many infectious diseases. Diagnostic tools and treatments have steadily improved. Similarly, the care and support provided to individuals affected by a disease or a disability have taken new forms by shifting to the latter's own environment. Lastly, preventive means have improved and intensified at the same time as a new conception of health emerged and knowledge continued to evolve.

Nevertheless, today while some diseases have disappeared, others are becoming increasingly common, in particular chronic diseases as well as psychosocial problems, developmental problems and mental disorders. Disease and death continue to strike prematurely. This means, for example, the death from a heart attack of a man who is barely 45 years old, the loss of autonomy of a previously healthy older woman as a result of a bad fall, or the suicide of a 15 year-old youth. There are far too many of these events and most of them could be prevented.

Thus, Quebecers can still improve their health, live better and longer lives. The factors causing the major problems are well known, and it is possible to act on them so as to prevent problems or delay their appearance.

However, there are no simple solutions. Nor can they be found mainly in the health and social services system, in improved treatments and care for example. These elements to which the state must devote a great deal of resources should not be minimized either. However, to significantly enhance the population's health, the solutions must instead be sought in living conditions, the environment, communities, lifestyles and behaviours, in short in everything that contributes to producing health effectively and enduringly. If we do not embark on this path, we will forever be confined to treating the consequences, and this is certainly not a choice that Quebecers want to make.

Thus, this first report of the National Public Health Director answers two major fundamental questions: What are the major and preventable problems that most affect the Québec population? And, how can these problems be prevented?

Part I describes the major preventable physical and social ills that affect the population and their extent. These problems are presented in order of the importance given to them by society over the years, that is, infectious diseases, chronic diseases, unintentional injuries, the problems of development and social adjustment which affect children and adolescents as well as psychosocial problems of adults and suicide. The determinants which are the cause of each of the problems are given: biological and genetic factors, individual behaviours, the physical, economic and social environment, and the organization of health and social services.

Part II sets out the way in which the health and social services system can contribute to enhancing health. Basically, the system of services must offer all citizens, without distinction, protection against the financial risks linked with disease or problems. However, beyond this protection offered to individuals, the system contributes to the overall enhancement of the health of the community. To this end, it must perform three major functions as effectively as possible, that is, prevention, cure and care. Lastly, it must use all possible means to mobilize all social actors to strive for health.

Part III answers the key question which constitutes the basic framework of this report: What are the social choices that offer the best possibilities for individuals, communities and society to prevent major problems and, more broadly, to maintain and improve their health? The major courses of action selected to better prevent avoidable problems relate to the following objectives: the reduction of social disparities and the fight against poverty, the improvement of the quality of the physical environment, the development of supportive communities, the adoption of lifestyles that are conducive to health and the optimal development of children and youth.

The solutions put forward in this report are not easy to apply – firstly, because they must be based on a broad social consensus and, secondly, because they require considerable collective effort. They call for solidarity, without which we cannot build a healthier and better society.

1. QUÉBEC. *An Act respecting health services and social services: R.S.Q., chapter S-4.2, updated to 1 December 2004*, www2.publicationsduquebec.gouv.qc.ca/home.php, consulted February 2, 2004.

Part I

The Major Physical and Social Ills

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Like everywhere else in the world, the population's health in Québec has considerably evolved over the years. There has been a striking evolution of mortality causes. While the main causes of mortality until the late 17th century were infectious diseases, today they are chronic diseases, such as cancers and cardiovascular diseases (CVDs). But what has been even more striking is the phenomenal increase in longevity. A child born today can expect to live several years longer than his grandparents who were born in the middle of the last century. This increase in longevity is associated, in particular, with the extraordinary decrease in infant mortality. Thus, while in 1901, 1 in 7 Canadian children died before their first birthday, the proportion today is 1 in 100. Moreover, not only can we expect to live longer but also to stay healthy until a more advanced age. Owing to this progress, we can now also focus our attention on another type of problem, that is, psychosocial problems, such as suicide, child development problems, youth social adjustment problems, mental health problems and problems of violence.

The evolution of health goes hand in hand with that of health determinants. The progress recorded over the decades is primarily attributable to improved hygiene and living conditions associated with industrialization. The population's health has also been greatly enhanced through scientific advances, for example, the arrival of vaccination, the discovery of antibiotics or the modern conceptions of mental health and mental disorders.

Lessons should be drawn from this rapid survey of the evolution of health and disease. Above all, illness is not always fatal since a great number of health problems and psychosocial problems are preventable. Since these problems are preventable, it follows that the determinants that influence them must be modifiable. Thus, what are the preventable health problems and their determinants at the beginning of this millennium?

Infectious Diseases: A Lasting Problem

Infectious diseases are diseases caused by micro-organisms, a very great number of which can be transmitted from person to person. While infectious diseases are no longer the main threat to the population's health in industrialized countries today, the population is not free from them. In fact, the emergence of new diseases and the resurgence of diseases which have been in decline can be observed. Globally, the incidence of infectious diseases, that is, the number of new cases observed each year, has increased from 10% to 20% in the last 15 years.[1] Vigilance is therefore imperative in Québec as everywhere else in the world.

For the purposes of intervention, the main infectious diseases can be grouped as follows:

- diseases preventable by vaccination;
- sexually transmitted and bloodborne infections;
- resurgent or increasing infectious diseases;
- emerging infectious diseases.

Diseases Preventable by Vaccination

As a result of vaccination, several bacterial or viral diseases can now be prevented or controlled to various degrees. Smallpox is now eradicated from the planet and poliomyelitis has been eliminated from the Americas.[2] Rubella, which can be transmitted from mother to child during pregnancy,[3] was the cause of many birth defects, particularly between the 1930s and the 1960s. Since pregnant women are now systematically vaccinated against this disease, today less than one case of congenital rubella is seen per year.[4]

All children in Québec are also vaccinated against rubella. Vaccinations against diphtheria, whooping cough, tetanos, poliomyelitis, *Haemophilus influenzae* type b invasive infections, measles, mumps, invasive serogroup C meningococcus infections and hepatitis B are also offered to them. Recently, the pneumococcal conjugate vaccine has been offered to children under 5 years old, and the influenza vaccine to children aged 6 to 23 months. Adolescents are now also vaccinated against whooping cough. In the coming years, other vaccinations will be offered free of charge to children and adults, with the vaccination against chickenpox being at the top of the list. Although viewed as a benign disease, chickenpox can potentially be serious for adults. It can also result in particularly serious complications in immunodepressive individuals and cause congenital defects if it is contracted during the first half of pregnancy.

Sexually Transmitted and Bloodborne Infections

Sexually transmitted bacterial or viral infections have always constituted a threat to the health of populations. More recently, we have witnessed the appearance of bloodborne infections acquired through intravenous drug injection and the sharing of soiled needles, through a transfusion or a transplant and through mother-to-child transmission during pregnancy or childbirth. The main sexually transmitted and bloodborne infections are infection by the human immunodeficiency virus (HIV), infection by the hepatitis C virus, chlamydia, gonorrhea, syphilis, infection by the human papilloma virus, herpes and hepatitis B. These infections are mostly preventable and some of them (chlamydia, gonorrhea, syphilis) can be effectively treated with antibiotics.

In Québec, the number of reported cases of chlamydia and gonorrhea has more than doubled in the last ten years.[5] If these diseases are not treated early, they can have serious consequences such as ectopic pregnancies and infertility. Infection by the human papilloma virus can lead to cervical cancer. Since these infections are often asymptomatic, they have an increased risk of complications.[6]

By the end of 2002, approximately 18 000 persons were infected by HIV, an increase of almost 11% compared to 1999.[7] From 1980 to 2003, 6 003 AIDS cases were reported in Québec,[8] AIDS being the advanced stage of HIV infection. It should be underlined that the discovery of effective therapies against HIV infection has had beneficial effects on the life expectancy and quality of life of infected individuals, and has helped to reduce HIV mother-to-child transmission as well as the number of hospitalizations. Despite these advances, HIV infection is still a worrying health problem.

Resurgent or Increasing Infectious Diseases

A pandemic is a form of epidemic that spreads to a whole continent, even to the whole world. Throughout history, several pandemics have affected the world population, for example, the plague, cholera and the Spanish influenza. Pandemics have been successfully prevented through better control of health measures, improved living conditions as well as the appearance of vaccination and antibiotics. However, the resurgence of certain infectious diseases still constitutes a threat to the health of populations. The same is true of bacteriological attacks in the context of bioterrorism which the authorities must take seriously.

Today, in the early 21st century, certain infections are especially worrying because of the free movement of individuals and goods, intensive animal breeding which increases the risk of diseases spreading from animal to animal and also from animal to humans, as well as the growing resistance to antibiotics.[9-10] This is the case, for example, of a particularly virulent strain of influenza (flu).

The influenza threat

There are three strains of influenza virus: A, B and C. New vaccines are developed every year against the epidemics of influenza caused by the A and B strains. The A strain virus undergoes a major genetic mutation about three times per century, leading to an influenza pandemic. The 1918 Spanish flu pandemic caused more than 40 million deaths. Subsequently, two other pandemics – the Asian flu in 1957 and the Hong Kong flu in 1968 – although less destructive, still resulted in considerable morbidity and mortality worldwide. Unlike the usual epidemics, pandemics cause severe complications in healthy adults. Specialists expect that the virus will undergo a major genetic change soon.[11]

Waterborne diseases

Waterborne diseases constitute a threat to the health of populations. The ingestion of and contact with contaminated water can cause health problems such as epidemic gastroenteritis, dermatitis and acute poisoning. For 1998 and 1999, 33 outbreaks of waterborne diseases were reported in Québec, affecting 576 individuals.[12]

Nosocomial infections

Although the phenomenon of infections contracted in health care institutions during a hospitalization, treatment or convalescence is not new, it has recently increased in scale. Based on American data, the annual incidence of nosocomial infections is estimated to be 5 to 10 cases per 100 hospitalizations.[13] Control of these infections is further complicated by the growing resistance to antibiotics. The recent increase in cases of *Clostridium difficile* bacterial infections in Québec hospitals highlights the need to act rapidly in order to curb this threat.

Tuberculosis

It is currently feared that there will be a resurgence of diseases believed to have been controlled in the industrialized countries. For example, tuberculosis cases have been re-appearing, associated with, in particular, HIV infection, the presence of antibiotic-resistant strains, poverty and social exclusion.[14] Recently, a plague bacillus strain resistant to all known antibiotics has appeared in Madagascar.[15] Thus, the resistance to antibiotics is complicated by the appearance of bacteria that have become resistant to multiple antibiotics and by the fact that, for the last 25 years, no new class of antibiotics has been discovered.

Emerging Infectious Diseases

For about 20 years, a new disease has appeared nearly every year. This trend will very likely continue or accelerate in the coming years.[16] In fact, in evolutionary terms, infectious and parasitic diseases are probably in their infancy.[17] The threat of an epidemic is also associated with new infectious diseases, such as severe acute respiratory syndrome (SARS).

SARS

SARS manifests itself in the days following the onset of the first symptoms with a respiratory illness that can be serious. Recognized by the World Health Organization (WHO) in March 2003, SARS probably appeared in China in November 2002.[18] Ever since, cases of this syndrome have been reported in Asia, North America and Europe. A total number of 251 cases have been reported in Canada, while no case has been diagnosed in Québec.[19] This new virus was contained quite effectively through isolation measures and the media informing the population about its transmission pattern. However, currently there is no vaccine or treatment to prevent or cure SARS.[20]

Avian influenza

In recent years, there has been a transmission of some pathogenic agents of animal origin to humans, such as the avian flu virus. This transmission has given rise to concern about a link between the animal virus and the human virus, a link that is likely to create a hybrid virus against which current vaccines could prove to be ineffective.[21]

West Nile virus encephalitis

In Québec, 2 cases of humans infected with WNV were confirmed in 2004 while 17 cases were confirmed in 2003.[23]

West Nile virus (WNV) is transmitted to humans by infected mosquitoes and causes encephalitis. The virus was isolated for the first time in 1937 in the Ugandan district of West Nile. Since then, outbreaks have occurred in several places in the world. In North America, the first outbreak was reported in New York in 1999, while in Québec, the first case of human infection by WNV appeared in 2002. It should be noted that the preventive measures implemented in Québec since 2003, in particular the use of larvicides, seem to have been effective.[22]

Determinants of Infectious Diseases

The spread of infectious diseases as well as their emergence and resurgence are associated with various factors which relate to individual characteristics and behaviours, the quality of the physical, economic and social environment, as well as the organization of health services.[24-25]

People's health status and their immune resistance are likely to influence the spread of infectious diseases. The same is true of individual behaviours such as hand washing and going to places where population density is high (child care centres, schools, workplaces, public transportation, and so on). Safe sex, influenced in particular by the number and the stability of partners and condom use, is directly linked with the spread of sexually transmitted and bloodborne infections. In the last few years, a collective withdrawal has been observed regarding HIV-AIDS and all sexually transmitted and bloodborne infections, which can be attributed to the discovery of AIDS treatments. Because of this discovery, the feeling of danger associated not only with the spread of HIV but also with that of sexually transmitted and bloodborne infections in general has diminished, and the strong belief in the need to intervene forcefully so as to prevent these infections has somewhat abated. It should also be underlined that using intravenous drugs and exchanging used syringes constitute behaviours which increase the risks of transmission of sexually transmitted and bloodborne infections. Recourse to vaccination, which is based on a personal choice (of parents when it comes to having their children vaccinated), is another behaviour that has a great impact on individual protection against infectious diseases preventable by vaccination.

As regards the physical environment, the quality of water, air, soil and food is associated with several infectious diseases. This point is aptly demonstrated by the Walkerton incident in Ontario in which 7 individuals died and more than 2000 fell sick as a result of the municipality's water being contaminated by the bacterium *E. coli*. Considerable changes in the environment, such as climate changes, are also likely to affect the transmission of infectious agents. The economic and social environment also plays a role, that is, poverty and overpopulation increase the risks that infectious diseases will spread. The role of poverty and social exclusion in the resurgence of tuberculosis has already been mentioned. Also, it has already been emphasized that the opening of markets, the intensification of communications, and intensive breeding practices favour the transmission of infections and that terrorist acts using bacteriological weapons constitute a risk.

Lastly, the organization of health services has an influence on infectious diseases. Accessibility of vaccination is a factor that helps to increase the population's vaccination coverage and, hence, their protection against a great number of infectious diseases. The sanitation of health institutions, the complexity of the cases treated in care facilities, the more invasive treatment procedures, the accelerated work pace and the mobility of patients from institution to institution are linked with the spread of nosocomial infections.[26] Lastly, the practices of health professionals, for example as regards health measures, the safety of transfusions and transplants as well as the appropriate prescription of antibiotics, are linked with the control of infectious diseases.

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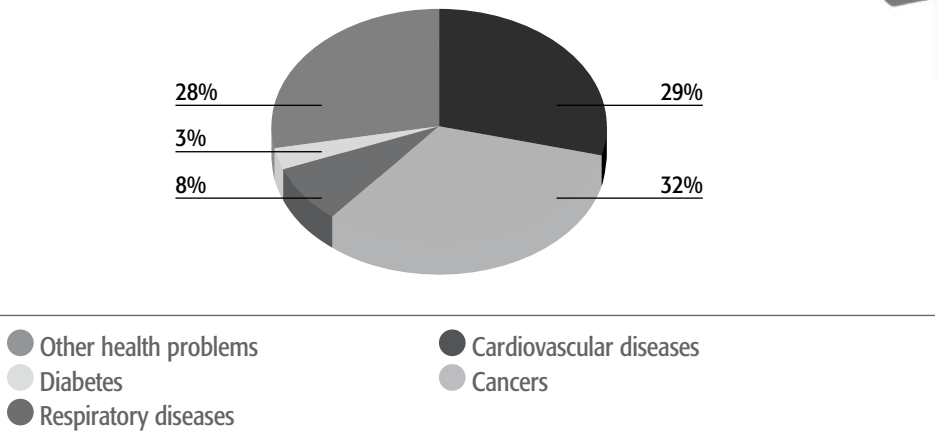
The Curse of the Century: Chronic Diseases

Chronic diseases are diseases that are not contagious, develop slowly, lead to disabilities, can persist over time and are often incurable but preventable. These diseases are attributable to a combination of factors which interact with each other throughout a person's life.[1]

The chronic diseases that cause the highest mortality rates are cancers, cardiovascular diseases (CVDs), respiratory diseases and type 2 diabetes, the risk factors of this latter disease being the same as those of chronic diseases that are the greatest killers. These four health problems were responsible for more than 70% of deaths in Québec in 2002.[2] (Figure I)

Figure I

Proportion of deaths (%) by principal chronic diseases, Québec, 2002[3]



Examination of the evolution of the principal chronic diseases since 1951 shows that the CVD mortality rate has considerably decreased and the mortality rate for cancers exceeded the rates associated with other chronic diseases in 1998 among women, and in 2000 among men. On the other hand, the mortality rate for respiratory diseases remained more or less the same between 1951 and 2002 (figures II and III).

Figure II

Evolution of mortality among women (adjusted rate, per 100 000 population) attributable to principal chronic diseases, Québec, 1951-2002[4-5]

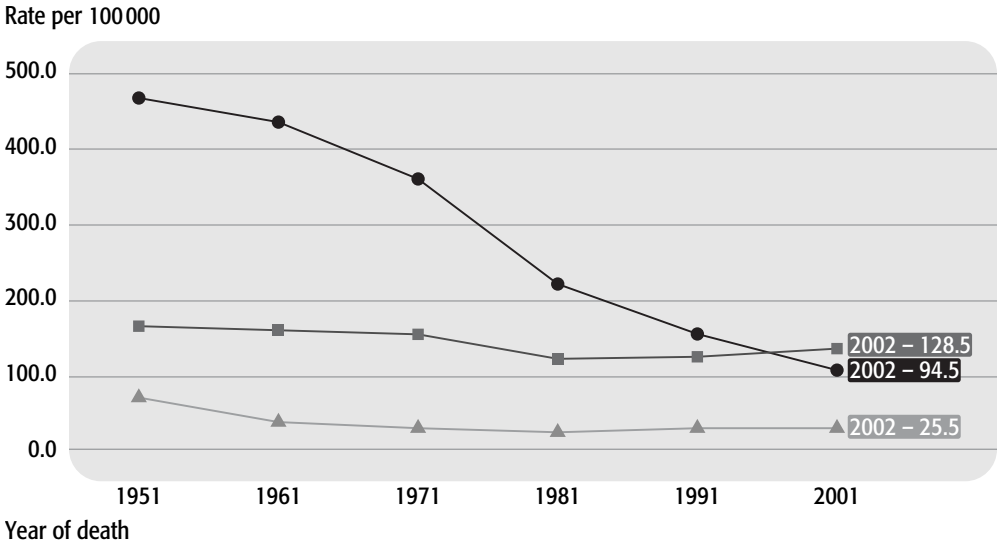
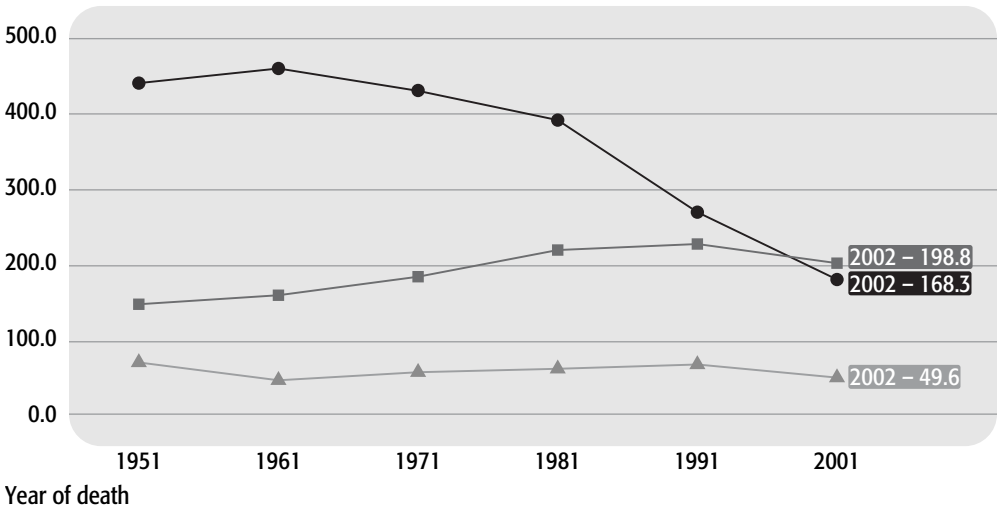


Figure III

Evolution of mortality among men (adjusted rate, per 100 000 population) attributable to the principal chronic diseases, Québec, 1951-2002 [6-7]



As can be seen in Table I below, Québec has a relatively low mortality rate for CVDs compared to Canada, Sweden and the United States; however, it tops the list of these countries for the mortality rate for cancers.

Table I

Mortality (adjusted rate, per 100 000 population) by Principal Chronic Diseases, in Québec, Canada, the United States and Sweden, 2000-2001[8-9-10-11]

	Cardiovascular diseases	Cancers	Respiratory diseases
Québec	184	195	48
Canada	201	179	47
U.S.	252	172	63
Sweden	242	150	37

Cancers

Cancers became the leading cause of death among Quebecers in 2001. Approximately 37 000 new cancer cases are reported every year.[12] The cancers which result in the highest mortality rates are: lung cancer, breast cancer, prostate cancer and colorectal cancer. Skin cancers, most of which do not result in death, are steadily rising and constitute the most common cancers.[13]

Lung cancer causes the most deaths among men, but its incidence rate is declining. Colorectal cancer is the second leading cause of mortality among men. The risk of developing this type of cancer is low before age 35, and the mean age at diagnosis is 60.[14] Prostate cancer ranks third among the cancers which cause the most deaths among men (Table II). The number of new cases increases every year, and it is expected that the recorded number of men affected by this cancer will continue to rise because of the increasingly widespread use of early detection methods.[15-16]

Among women, lung cancer also causes the most deaths due to cancer. Although this type of cancer causes fewer deaths among women than among men, it is nevertheless increasing among women, thus reflecting the evolution of smoking over the last 30 years. Breast cancer, which ranks second among the cancers which cause the most deaths among women, is still a considerable health problem. The number of new cases recorded every year has nearly doubled over the last 20 years.[17] This is partly explained by the aging of the population and the early detection of new cases as a result of screening mammography. Colorectal cancer is the third leading cause of mortality among women, claiming fewer victims among the latter than among men (Table III).

The main cancers which affect children aged 0 to 14 are leukemia, cancer of the brain and of the central nervous system as well as lymphoma. However, the number of children aged 0 to 14 suffering from cancer is not very high, that is, 1 100 new cases for the 1995 – 2000 period. On average, 14 out of 100 000 Québec children were affected by cancer during this period.[18]

Table II

Estimated Number of Deaths by Type of Cancer and Gender, Québec, 2004[19]

Type of cancer	Men	Women	Total
Lung	3 954	2 455	6 409
Breast (in women)	—	1 462	1 462
Prostate	964	—	964
Colorectal	1 246	1 090	2 336
Other sites	4 326	3 920	8 246
Total	10 490	8 927	19 417

Table III

Estimated Number of New Cases by Type of Cancer and Gender, Québec, 2004[20]

Type of cancer	Men	Women	Total
Lung	3 972	2 744	6 716
Breast (in women)	—	5 732	5 732
Prostate	3 825	—	3 825
Colorectal	2 644	2 204	4 848
Other sites	8 113	7 407	15 520
Total	18 554	18 087	36 641

Cardiovascular Diseases (CVDs)

CVDs mainly include heart attacks, angina, strokes and artery disease. Although the CVD mortality rate has dropped considerably since 1950, these diseases are still a major cause of mortality, morbidity and disability in the Québec population.

In 2002, more than 16 000 Quebecers died from CVDs.[21] Among all health problems, CVDs account for the greatest number of hospitalizations, that is, more than 100 000 per year.[22] Although in general, men are more likely to die as a result of a CVD, it is observed that an increasing number of women die from this disease. This number will increase even more since women generally live longer than men and the CVD mortality rate increases with age.[23]

Respiratory Diseases

Asthma and chronic obstructive pulmonary diseases (COPDs), mainly emphysema and chronic bronchitis, are among the principal respiratory diseases. They affect an increasing number of individuals and lead to a considerable drop in the quality of life. In 25 years, the number of deaths attributable to COPDs has more than tripled in Québec, while the mortality rate associated with this disease has remained relatively stable.[24] There are few reliable data that help to accurately assess the extent of COPD. As regards asthma, a Canadian analysis reveals that the prevalence of this disease rose from 2.5% to 11.2% between 1976 and 1995 among

children aged 0 to 14,[25] and the disease continues to cause the greatest number of hospitalizations among this age group in Canada.[26] Asthma affects twice as many boys as girls in childhood, whereas in adolescence, it mostly affects girls.[27]

Type 2 Diabetes

Diabetes is a chronic disease which is characterized by the body's inability to store or produce the glucose which it needs as a source of energy.[28] It is estimated that 10% of all diabetics suffer from type 1 diabetes. This diabetes is characterized by the body being unable to produce insulin. It develops almost uniquely in children and young adults. The other 90% of diabetics suffer from type 2 diabetes. In this case, the body produces insulin but cannot use it effectively.

In 2001-2002, 5.8% of the Québec population aged 20 or over had diabetes.[29] Type 2 diabetes is seen mainly in adults aged 40 or over, but is increasingly seen among young people because of the rise in obesity. Worldwide, WHO predicts a 57% increase of all diabetes cases over the next 25 years.[30]

It is the serious consequences of diabetes that make it such a great health concern. Diabetics are at least twice more prone than non-diabetics to have a cardiovascular disease.[31] Diabetes is the leading cause of blindness, renal failure and non-accidental amputation.

Determinants of Chronic Diseases

Chronic diseases can be attributed to a set of factors, some of which are modifiable while others are not. The non-modifiable factors include personal characteristics such as age, gender and heredity. The great majority of chronic diseases develop with age, and population aging is a particularly important demographic factor in the increase of chronic diseases. Chronic diseases can be prevented or delayed by acting on a number of modifiable factors, that is, on lifestyles, the quality of the physical environment, and socio-economic conditions.[32]

Three lifestyles are involved in approximately 80% of deaths related to CVDs, 90% of deaths related to diabetes and approximately one third of deaths attributable to cancer. They are: smoking, poor eating habits and lack of physical activity.[33]

Thus, smoking is associated with 85% of COPD cases, approximately 30% of CVD cases and 30% of all cancer cases, 85% of which are lung cancer cases.[34] Moreover, WHO reports that in countries where smoking has existed for a long time, over 90% of lung cancer cases in men and 70% in women are due to smoking.[35] Smoking is the risk factor associated with the greatest number of deaths, representing 13 000 deaths per year in Québec;[36] people who are exposed to environmental tobacco smoke are also at risk.

A low daily intake of fruits and vegetables is associated with CVDs and certain cancers.[37-38] Similarly, lack of physical activity is linked to CVDs, certain cancers and diabetes.[39-40]

There are also diseases that constitute risk factors for other chronic diseases. These are high blood pressure, cholesterolemia and obesity. These diseases, which may have a genetic component, can also be related to the combination and interaction of lifestyles. Thus, high blood pressure which can be attributed, in particular, to a salt-rich diet, lack of physical activity and overweight, as well as cholesterolemia, which can be attributed, in particular, to a high-fat diet, in particular saturated fat and trans fat,[41-42] increase the risks for CVDs and diabetes.[43-44]

Obesity constitutes a risk factor associated with CVDs, post-menopause breast cancer[45] and diabetes.[46] Obesity among individuals aged 20 or over has increased in scale in Québec as elsewhere in the world. Since 1987, the prevalence of obesity among adults aged 20 or over has increased by 56%,[47] affecting 14% of the Québec population in 2003.[48] Although the situation is still far from being as critical as it is in the United States, it is nevertheless a cause for concern.[49]

There are many links between the physical environment and chronic diseases. In fact, it has been observed that during episodes of air pollution, CVDs worsen.[50] There is also a correlation between increased air pollution and lung cancer.[51] Moreover, indoor and outdoor air pollution is a factor that contributes to the development of COPDs.[52] Furthermore, there is a link between skin cancer and exposure to ultraviolet rays.[53] Some studies suggest that children who have been exposed to pesticides in their home environment or whose mother was exposed to pesticides during her pregnancy face a greater risk of developing certain types of cancer (leukemia, brain cancer and lymphoma).[54] In the work environment, people who are exposed to substances that are harmful to health are more likely to develop lung cancer, for example.[55] It is also estimated that 15% of all asthma cases are associated with repeated exposure to certain substances in the workplace, such as isocyanates, flour or shellfish proteins.[56-57]

Lastly, difficult socio-economic conditions constitute a critical risk factor for chronic diseases. Indeed, CVDs, certain types of cancer, respiratory diseases and diabetes are strongly linked with the economic and social status of individuals.[58] Moreover, a strong link has been observed between smoking, diet, physical activity and income. Thus, the lower the income, the greater the probability of adopting lifestyles that are not conducive to health.[59]

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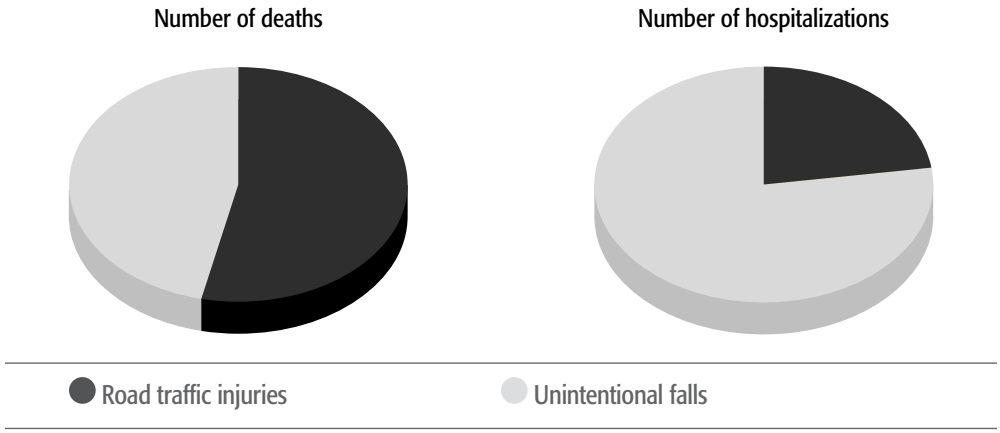
Accidental Injuries: Predictable!

Unintentional injuries include all injuries and cases of poisoning that occur unintentionally. These injuries are referred to as unintentional to distinguish them from injuries attributed to violence and suicide, which are the result of acts committed intentionally by people, either against themselves or against other people. The principal categories of unintentional injuries are road traffic injuries, that is, injuries sustained by occupants in a motor vehicle collision, cyclists, motorcyclists, pedestrians and drivers of all-terrain vehicles, injuries occurring at home, mainly falls, poisoning and burns as well as recreational or sports injuries.

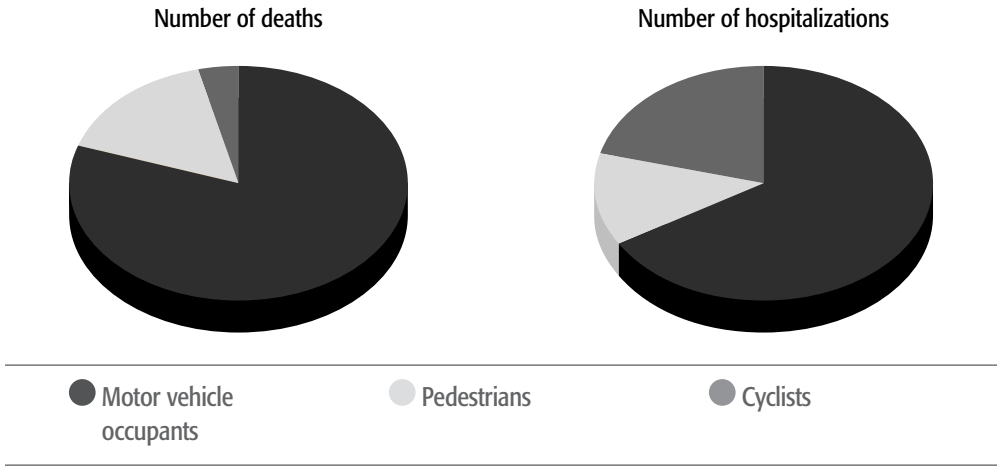
The most recent data available for all unintentional injuries relate to the 1997-1998 period for deaths and the 1997-1999 period for hospitalizations.[1] Every year, in Québec, there are approximately 2 000 deaths and 50 000 hospitalizations as a result of an unintentional injury, which represents 1 death every 5 hours and 1 hospitalization every 10 minutes. Unlike most other health problems, unintentional injuries occur early in life. Indeed, over one third of the victims are under 45 years of age at the time of their death. Moreover, unintentional injuries constitute the leading cause of death among children and young individuals aged 5 to 14.[2]

Road traffic injuries constitute the leading cause of mortality due to unintentional injuries and are closely followed by unintentional falls. Conversely, the leading causes of hospitalizations for this type of injury are falls followed by road traffic injuries.[3]



Road Traffic Injuries

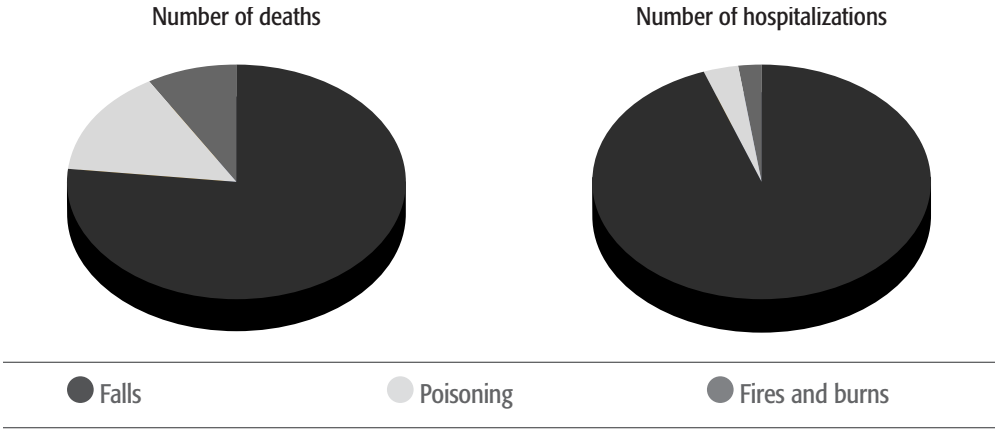
The majority of deaths and severe trauma associated with road traffic injuries occur as a result of a collision between vehicles.[4] Compared to women, men are overrepresented among victims of road traffic injuries. In terms of age, young people aged under 24 and individuals aged over 75 are the principal victims of injuries among motor vehicle occupants. Pedestrians rank second for deaths due to road traffic injuries. It is mainly children under 14 and individuals aged 65 or over who die. Cyclists, on the other hand, represent only 3% of deaths by road traffic injuries. It should be underlined that 90% of accidents in which the victims are cyclists occur in urban areas.[5-6] On the whole, over the last 20 years, a substantial decrease in deaths due to road traffic injuries and an equally substantial decrease in hospitalizations have been observed among all road users except for cyclists.[7] Efforts should be made to bring the mortality rate for road traffic injuries in Québec to a level similar to that of some countries. Indeed, a recent study shows that for the 2000-2002 period, compared to Sweden, Québec had an overmortality of 79% for women and nearly 60% for men.[8-9]



Besides deaths, many of the injuries caused by road traffic crashes can lead to long-term physical after-effects and psychosocial problems. Whether it be, for example, the fear of moving around, fatigue or being unable to go back to work, the victims of road traffic injuries often experience a temporary or permanent decline in their quality of life.[10] The same is true of their families.

Injuries Occurring at Home

Although the circumstances of falls may differ, most falls occur at home. Falls alone are responsible for approximately 75% of deaths due to unintentional injuries occurring at home and more than 90% of hospitalizations attributable to these injuries. Given the aging of the population, an increase in the absolute number of deaths and hospitalizations associated with falls is to be expected, even though their proportion remains relatively stable or is decreasing.[11]



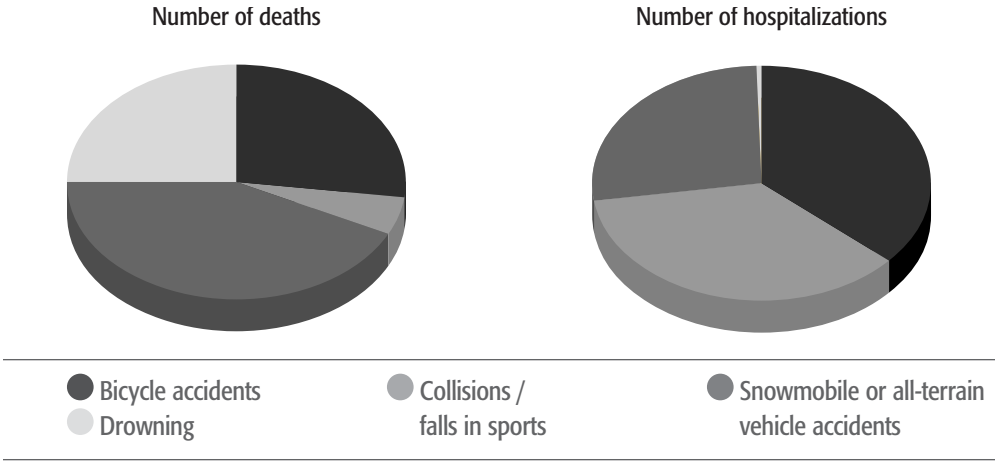
The principal victims of falls are seniors. Indeed, more than 75% of deaths and nearly 40% of hospitalizations due to falls involve individuals aged 75 or over. In addition, it is estimated that approximately one third of individuals aged 65 or over fall at least once a year.[12-13] Besides the fear of falling again, a fall will provoke a gradual loss of autonomy among many seniors. Fifty percent of seniors who survive a hip fracture will never recover all their functional capacities, many of them will be hospitalized and 20% will die within six months.[14] A fall, even without a fracture, is an important precursor of institutional living.[15]

As regards unintentional poisoning, the highest proportion of deaths is associated with the ingestion of medications and occurs among men aged 25 to 44, followed by men aged 75 or over. It is, however, young children under 4 who are generally hospitalized for this type of injury. Among the latter, household products are most often the cause of the poisoning. Death and hospitalization rates related to unintentional poisoning have been relatively steady for the last ten years.[16]

Although fire- and burn-related injuries do not occur exclusively at home, most of them are actually associated with a fire in a private residence. These injuries are decreasing in Québec; their principal victims are seniors, followed by young children.[17]

Injuries Occurring During Recreational or Sports Activities

Injuries which occur during recreational and sports activities account for around 100 deaths per year. Deaths from this type of injury are mainly related to drowning and snowmobile, all-terrain vehicle or bicycle accidents. The highest number of hospitalizations attributable to this type of injury are recorded following, first, a bicycle accident, then, a fall or a collision during a sports activity and, lastly, after a snowmobile or an all-terrain vehicle accident. The main victims of recreational and sports injuries are young males aged 10 to 19. While mortality attributable to this type of injury has remained stable, hospitalizations related to them have decreased over the last two decades.[18]



Determinants of Unintentional Injuries

An approach modelled by William Haddon, an engineer and physician, suggests that the interaction between multiple factors explains the occurrence of injuries and their severity, seen primarily as the consequences of energy transfer.[19] In addition to human factors, there are environmental factors which include the economic environment, the social environment and the physical environment (including the factors related to the agents involved such as motor vehicles, toxic products or sports equipment). Environmental factors play a part at different points in time in relation to the event's occurrence. Some factors can have an influence before the event (for example, speed) while others come into play during the event (for example, the lack of protective equipment) or after the event (for example, the quality of first-aid). Thus, all these factors should be examined in order to understand and prevent unintentional injuries, and minimize their consequences.[20]

The economic environment has an impact on all unintentional injuries. In fact, the risk of dying from unintentional injuries faced by the most economically disadvantaged people is one and a half times greater than that faced by the most privileged people. The same is true of morbidity associated with these injuries, which is revealed by the hospitalization rates, that is, morbidity rises with poverty and this is mainly due to road traffic injuries as well as falls.[21]

"Planning decisions regarding transport, land use and road networks have significant effects on public health – as they affect the amount of air pollution by vehicles, the degree of physical exercise undertaken by individuals, and the volume of road traffic crashes and injuries."[22]

There are several factors to explain road traffic crashes and the ensuing injuries. They are: impaired driving mainly due to alcohol, excessive speed, not using protective devices, such as a seat belt in motor vehicles, as well as poor construction of roads, cycle paths and footpaths.[23] As regards this last factor, the existence of traffic-related conflicts should be underlined, in particular those observed in urban areas, which can be attributed to the problem of road sharing between pedestrians, cyclists and drivers. Quebecers' growing passion for cycling, at least in Montréal,[24] the increase in the number of vehicles on the road[25] and inadequate transport planning,[26] are all factors likely to contribute to road accidents, in particular in cities. The issue of road traffic injuries is related to that of transportation in particular in urban areas, which is associated with pollution and land development, in particular the urban sprawl.

Multisectoral interventions and the combination of legislative measures to promote safety and injury prevention have certainly contributed to the decrease in road traffic injuries observed in the last decades. Actions carried out in recent years have included measures to increase seat belt use, to curb impaired driving, to reduce speed, and to improve vehicles as well as roads and cycle paths.[27-28]

Home safety is an important component of the prevention of injuries at home. We need only think of, for example, the presence of ramps or accessories to compensate for the loss of balance, the presence of a smoke detector, a carbon monoxide detector and a system to regulate the temperature of the water heater so as to prevent poisoning and burns.[29] Moreover, the individual's health status (for example, muscle weakness, visual disorders, problems with walking and balance) and behaviour (use of medications, lack of exercise) are other factors that are associated with falls among seniors.[30] Accessibility of dangerous products is a factor involved in unintentional poisoning. Smoking and drinking as well as the use of a back-up heating system figure among the risk factors for fire and burns.[31]

Safety related to the planning and maintenance of facilities as well as safety equipment,[32] the quality of supervision during recreational and sports activities, and the behaviour of people who engage in these activities are all factors which contribute to the prevention of injuries during recreational and sports activities.[33]

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A Poor Start: Development and Social Adjustment Problems of Young People

The great majority of children are born healthy and develop normally until late adolescence. However, some children can be affected by various problems, some of which can result in death, particularly during their first year of life. These are mainly problems surrounding birth and development during the early years of life (intrauterine growth retardation, prematurity, low birth weight and developmental delay) as well as social adjustment problems that can appear early in childhood or in adolescence (academic delay and dropping out, conduct disorders and delinquency as well as ill treatment).

Infant and Child Physical Development Problems

The infant mortality rate, that is, the number of deaths during the first year of life per 1000 live births, has decreased steadily during the last decades. It dropped from 25.6 per 1000 in 1965,[1] to 4.8 in 2002,[2] thus affecting less than 0.5% of Québec babies.[3] In this respect, Québec compares favourably with other Canadian provinces and industrialized countries. This decrease in infant mortality can be attributed to the following factors: the evolution of demographic factors, in particular the falling birth rate, the improved quality of perinatal medical care, the control of infectious diseases by vaccination and antibiotics and, lastly, the overall improvement of the socio-economic conditions of the Québec population.[4-5]

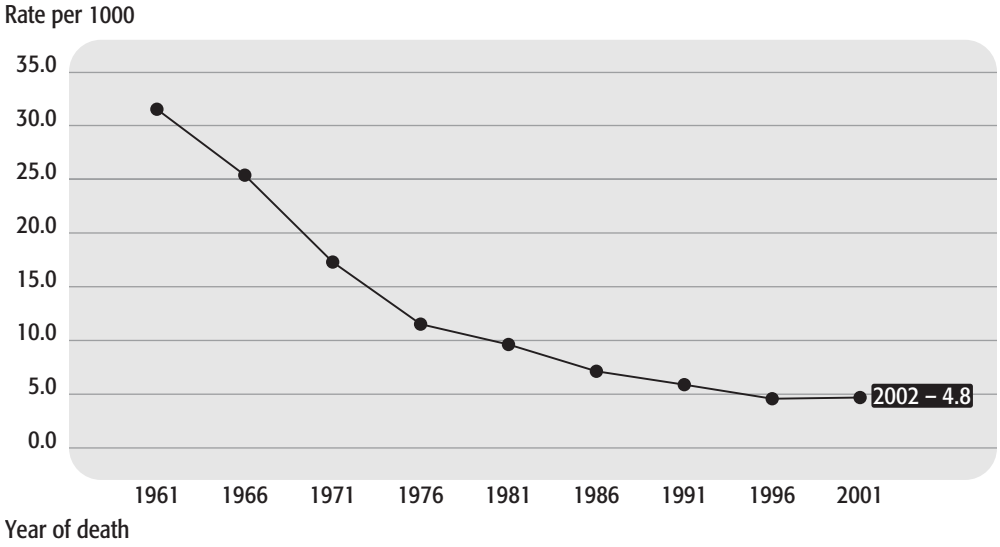
Table I

Infant Mortality Rate per 1000 Live Births in Québec, Canada and other Industrialized Countries, 2002

Sweden	2.8[6]
France	4.2[7]
Québec	**4.8[8]**
United Kingdom	5.3[9]
Canada	5.4[10]
United States	7.0[11]

Figure I

Evolution of infant mortality rate (rate per 1000 live births) in Québec, 1961 to 2002[12-13]



Despite this decrease, physical development problems continue to affect the fetus or newborn baby, who may be affected by intrauterine growth retardation, prematurity and low birth weight. Since the early 1990s, a relatively steady rise in prematurity has been observed (7.4% of live births in 2002).[14] This rise can be attributed in particular to the increased use of obstetrical interventions which ensure that some children who would be stillborn a few years ago, are born alive and figure among the premature births. The increase in prematurity is also linked with an increase in multiple pregnancies, which reduces the probability of a full gestation.[15-16] The proportion of low-birth-weight children (under 2500 grams) has stabilized around 5.5% of live births in 2002,[17] while the proportion of those with intrauterine growth retardation has decreased steadily, stabilizing at around 8% (8.3% of live births in 2002).[18-19]

From Developmental Delay to Academic Failure

The development of children and adolescents is not only limited to the physical aspect but also includes social, language, psychomotor and intellectual aspects. However, some children have a developmental delay, that is, they do not reach a developmental stage that is normally reached by children of a given age and culture, generally in more than one sphere of development. Children with such a delay are more likely than other children to have adjustment and learning problems once they start day care or school. The extent of developmental delays among young children is not well known. According to the *Étude longitudinale du développement des enfants du Québec* (longitudinal study on Québec children's development), 20% of two-and-a-half year-old children have a cognitive developmental delay.[20] This delay, which is likely to appear early in life, can be entirely or partly reversible.

In 2002-2003, more than 10% of Québec elementary-school students were lagging behind at school, that is, they were older than the expected age for their class.[21] In many cases, it can be assumed that this academic lag is due to a developmental delay in preschool. It is important to emphasize that children who lag behind academically in elementary and high school are less

likely to obtain a high school diploma.[22] Thus, the high school dropout rate of Québec children was 21.2% in 2002-2003, which was the highest dropout rate recorded in Québec in the last 15 years.[23] Boys perform less well at school than girls. Proportionally more boys than girls lag behind academically and obtain lower results in the language of instruction, that is, the language used to teach the core subjects, and fewer boys obtain a high school diploma.[24] Lastly, a low level of education is a direct cause of illiteracy. In Québec, nearly 5% of individuals aged 16 to 44 have less than 9 years of schooling, which puts them at high risk of being functionally illiterate.[25] Functional illiteracy negatively affects the daily life of an individual, on a personal, social or professional level. Indeed, an illiterate person is less likely to hold a steady, interesting and well-paid job. Moreover, illiteracy constitutes an obstacle to civic participation.

Behavioural Disorders and Delinquency

Behavioural disorders include all psychosocial problems which involve the relationships that children and adolescents have with people around them. These may involve disorders through which they externalize their difficulties, through opposition or aggression for example, or problems through which they internalize their difficulties by isolating themselves or causing harm not to others but themselves, as in social withdrawal and inhibition.[26]

Children and adolescents who exhibit aggressive, provocative and threatening behaviour towards others as well as destructive behaviours towards material goods, who defy social rules, reject authority and are often angry and impulsive, suffer from problems called conduct disorders. Bullying other young people, such as taxing, and being violent in their romantic relationships are common examples of manifestations of conduct disorders. In general, conduct disorders are more common in adolescence and among boys.[27-28]

Children who exhibit these disruptive behaviours in early childhood are more likely to have serious and frequent conduct disorders in adolescence. In addition to these disorders, they may have other problems such as those related to alcohol or drug use. These young individuals are likely to become delinquents since their deviant conduct leads them to have trouble with the law because of the crimes they have committed against property or people.[29]

The extent of conduct disorders is not known. However, it is known that crime among Québec youth is falling. The rate of criminal charges among Québec youth aged 12 to 17 for violating the *Criminal Code* decreased by 35% between 1997 and 2002. In 2002, youths in this age group accounted for 18% of presumed violators of the *Criminal Code and*, in this regard, they are overrepresented in relation to adults.[30] However, on the whole, Québec has the lowest youth crime rate among the Canadian provinces.[31]

Other children, on the contrary, are socially withdrawn. They keep their distance from other children, do not interact much with the latter and rarely participate in social activities. Although these problems are displayed in a less spectacular way than are conduct disorders, they should not be ignored given their link with anxiety disorders, depression or other mental health problems.[32] In general, proportionally more girls than boys have anxiety disorders.[33]

Ill Treatment

Many children and adolescents experience neglect, physical or psychological violence, or else are victims of sexual assault. In most cases, these events occur within the family. Data on ill treatment experienced during childhood and adolescence are scarce. Based on a recent survey of Québec mothers, the proportion of children who have experienced severe violence is estimated to be 6.3%.[34] This means that, during the year preceding the survey, these children

were shaken, struck with a hard object, punched or kicked, strangled or got a slap in the face or a blow on the head. These results are similar to those of the survey conducted five years earlier on the same subject, in which the proportion of children who were victims of severe violence rose to 6.5%.[35] Moreover, these two surveys show that severe physical violence against children is reported twice more often by Québec women who are poor or very poor than by those who are better off financially (12% versus 6%).[36-37] In general, the proportion of ill-treated children is higher among socio-economically disadvantaged families.[38]

Data from Québec youth centres allow us to provide an approximate estimate of ill treatment. Thus, every year, the number of children whose situation was justifiably reported and who were taken into care pursuant to the *Youth Protection Act* is estimated to be 10 000.[39] The reasons for reporting cases of ill treatment are, by order of importance, neglect, psychological abuse, physical abuse and, lastly, sexual abuse.[40]

Ill treatment is likely to provoke short- and long-term consequences for the victims related to different aspects of development and social adjustment. A recent Québec study shows that approximately 40% of children whose cases were reported and retained had various problems, including learning problems, hyperactivity and attention problems, depression or anxiety, developmental delays or other chronic health problems.[41] However, a cause/effect relationship cannot be established based on this study. It is impossible to determine whether ill treatment led to these various problems or whether these problems already existed and contributed to the child being ill treated.

Determinants of Development and Social Adjustment Problems

It is important to underline the links between different problems that occur during childhood. Thus, infants with physical development problems will perhaps have developmental delays in preschool.[42] Moreover, it has already been pointed out that developmental delays in preschool were likely to lead to academic delay and dropping out. A consequence of leaving school prematurely is illiteracy. Lastly, the links between aggressiveness at an early age, conduct disorders in adolescence, problems of drug or alcohol use, and subsequent delinquency have also been mentioned.

Although the risk factors for these problems are numerous and diversified, ranging from the individual characteristics of children, adolescents and their parents to those of the broader environment, the dominating influence of the families' living conditions (poverty, unemployment, parents' educational level, etc.) on most young people should be noted. Socio-economically disadvantaged children are overrepresented among those born premature or underweight,[43-44] those with a developmental delay in preschool[45] and those who are ill-treated.[46] Socio-economic conditions, in particular the mother's low level of schooling, also constitute a factor in the academic delay and dropout.[47]

The family plays a key role in the child's development and social adjustment. Parents' beliefs and values regarding the child's development and education, the quality of the parent-child relationship, the parenting style, and the way parents supervise their child are part of the family characteristics which have an impact on the development trajectory of children and adolescents.[48-49] Other characteristics such as the young age of parents, their personal history (past history of psychopathology or criminal behaviours, experiences of ill-treatment), their ethnic origin and culture, the social support available to them, the family structure (single-parent family, blended family, and so on) and the quality of the marital relationship are other factors likely to have an influence.[50-51]

Besides the family, other life settings, i.e., the day care, school and neighbourhood, exert an influence on children and adolescents. Thus, an adequate level of cognitive and language development is observed among children who have attended a quality day care in terms of supervision of children, staff training and stability as well as excellent educational activities.[52] Moreover, the school's structures, the organization of its programs and the educational practices advocated have an influence on academic persistence and success. Schools most in favour of academic success use a wide range of pedagogical practices. In addition, they provide children with the supervision they need and many activities to help them discover their fields of interest and develop their skills. Teachers' attitudes also exert a crucial influence on the academic experience of children and adolescents. Students perform better when teachers value academic success and have high and realistic expectations for their students.[53] Lastly, the neighbourhood also has an influence on children and adolescents. For example, violence or tensions between the different social groups can have an impact on the appearance of conduct disorders.[54-55]

Besides gender, which has already been mentioned, certain characteristics of children and adolescents themselves play a part in their development and social adjustment. This is true of their temperament, physical, sexual and emotional growth, and their abilities or skills.[56-57]

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When Hearts and Minds Are Affected: Violence, Mental Disorders and Suicide

Psychosocial problems affect not only children and adolescents but also people of all ages, in particular those related to violence, mental disorders or suicide. These psychosocial problems can certainly take a variety of forms, depending on the stages of life in which they appear.

Violence

World Health Organization defines violence as:

> *"[…] the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation."*[1]

The typology of violent acts proposed by WHO includes three broad categories, divided according to who commits these acts: self-directed violence, interpersonal violence, inflicted by another individual or by a small group of individuals, and collective violence, inflicted by larger groups such as states, organized political groups or terrorist organizations.[2] This chapter deals with problems of interpersonal violence between adults since violence inflicted on children has already been examined and collective violence, at least its physical aspects, is not common in industrialized countries. Suicide is examined in another section of this chapter.

Interpersonal violence between adults, like violence inflicted on children inside and outside the family environment, has long been a taboo subject. This form of violence is expressed especially in a context of intimate partner violence, in particular through sexual assaults. It can also be inflicted on seniors. Although the forms of interpersonal violence between adults are not exclusively directed against women, the latter are overrepresented among its victims.

Intimate partner violence, which has for a long time been considered as a rare and private phenomenon, became an issue in the 1960s. The first battered women's shelters were created in the 1970s, and it was really from the 1980s onwards that intimate partner violence was put on the political agenda, as a result of numerous representations by women's groups. Intimate partner violence can take a variety of forms, that is, physical, verbal, psychological or sexual assaults. Intimate partner violence can also be expressed through economic violence, with one partner depriving the other of the resources essential for daily life. Intimate partner violence can also have consequences for the victims' physical, psychological and social health, such as physical injuries, fatigue, insomnia, anxiety, distress, depression and social isolation.

Physical and sexual violence, the victims of which are mostly women, are the most visible and best documented forms of intimate partner violence. The 1998 survey on violence against female partners in Québec couples reveals that 6% of women who have lived as part of a couple

for at least two months reported physical violence perpetrated by their partner, while 7% of women affirmed that they were subject to sexual violence. These two forms of violence are often linked with each other. Indeed, women who have experienced sexual violence, compared with those who have not experienced this type of violence, have a higher probability of experiencing physical violence (32% compared to 4%). The same link is observed among women who have experienced physical violence. Among the latter, 36% have also experienced sexual violence, compared with approximately 5% of women who have not experienced physical violence.[3]

Based on Québec police statistics, among women victim of crimes against the person in 2001, 39% had been assaulted by a partner, an ex-partner or a close male friend. Based on the cases reported to the police between 1997 and 2001, the number of women victims of intimate partner violence had increased by more than 20%. These same statistics show that women aged 18 to 24 are most often the victims of this type of violence.[4]

Sexual assaults are acts of a sexual nature, which do not necessarily include physical contact and are committed without the consent of the targeted person. In many cases, the aggressor may use physical force, blackmail or manipulation to get what he wants. There are several forms of sexual assault: rape, sexual harassment, exhibitionism, voyeurism, etc. Sexual assaults have many consequences for the victims, ranging from emotional disorders to depression and suicide and even behavioural problems or withdrawal from social life.

It is estimated that approximately 34% of adult Québec women had been victims of at least one sexual assault since the age of 16. Although children and adolescents are not free from these assaults, the greatest number of victims is found primarily among individuals aged 18 to 24 for all cases of sexual assault.[5] Moreover, in 2001, police statistics showed that 8% of women victims of sexual assault were assaulted in the context of intimate partner violence.[6]

Furthermore, violence inflicted on seniors by a family member or caregivers is a problem that is attracting more and more attention, given the aging of the population. This may involve a lack of care or physical, psychological, sexual or economic violence. Unfortunately, there are no available data on the extent of violence inflicted on seniors in Québec.[7] Based on the surveys conducted elsewhere in the world, the extent of the phenomenon can be estimated to be between 4% and 6% in some industrialized countries.[8]

Mental Disorders

Mental disorders cover a range of problems that alter thinking, mood or behaviour. They are associated with distress and can, to varying degrees, impair functioning in day-to-day activities. The principal mental health problems are mood disorders (which include, in particular, depression), schizophrenia, anxiety disorders, personality disorders and eating disorders.[9] Although several mental disorders – including the most severe ones – cannot be prevented, it is possible to act on the most common problems, for example, anxiety disorders and certain types of depression, before they appear.

Few data on the population's mental health are available. However, based on Canadian data, it is estimated that 20% of the population will have a mental health problem in the course of their lifetime, while the remaining will be affected by the mental illness of a close relation (family member, friend, colleague). Anxiety disorders and depression are among the most common mental disorders.[10] In order to assess the mental health of individuals, surveys are most often used to measure either the psychological distress they experience or their perception of their mental health.

In Québec, in 1998, approximately 8% of all individuals aged 15 or over perceived their mental health as average or poor.[11] More recently, based on a Canadian survey, the proportion of Quebecers who perceived their mental health as average or poor was estimated to be 4.9%, compared to 6.9% for all Canadians. This shows that, between 1998 and 2002, there was a decrease in the proportion of individuals who think that their mental health is not good enough. According to this same survey, one in ten Quebecers reported having had at least one mental disorder, including substance abuse. The same proportion is found for all Canadians.[12]

The index of psychological distress measures the symptoms of depression and anxiety in people. Rather than determining specific psychopathologies, the psychological distress index situates people on a continuum ranging from mental health to mental illness. In the 1987 Santé Québec survey, 20% of the population aged 15 or over were found to be experiencing severe psychological distress, the highest score on this index. These results can be compared with those obtained since then: in 1992-1993, the proportion of individuals experiencing severe psychological distress reached 26% and in 1998, this proportion decreased to 20%. The 1998 Survey also showed that the proportion of individuals experiencing severe psychological distress was higher among women (23%), youth aged 15 to 24 (28%), the unemployed (30%), those with a low educational level (23%) and those with a low income (24%).[13]

Moreover, it is found that incapacity for work due to mental health problems is increasing in Québec. Indeed, according to the Santé Québec surveys, the average number of days of incapacity for work per person due to mental health problems more than tripled from 1992 to 1998.[14]

Suicide

Suicide is a potential consequence of mental health problems, but it is not exclusively associated with this type of disorder. Québec ranks first among the Canadian provinces in terms of suicide rate for the whole population.[15] In fact, Québec has one of the highest suicide rates in the world. With Finland and Austria, Québec is one of the three industrialized countries with the highest suicide rates among the male population. A particularly worrying aspect of the problem of suicide is the young age at which suicidal thoughts, suicide attempts or suicide appear. Suicidal thoughts have been observed in Québec children who were not even ten years old.[16] For the 1975-1978 to 2000-2002 period, the suicide rate in Québec rose from 14.8 to 17.8 per 100 000 population. During the same period, suicide increased to 29% among men, stabilizing at 28 deaths per 100 000 men very recently.[17]

Suicide represents a great loss in terms of potential years of life lost, with a rate of 6.2 years per 1000 persons for the 2000-2002 period.[18] Potential years of life lost means the number of years of life "lost" when a person dies "prematurely" from any cause – before age 75 (the reference age).[19] Moreover, there is no measure to assess the suffering of suicidal individuals before they commit suicide or that of their close relations.

Determinants of Violence, Mental Disorders and Suicide

Personal characteristics, the social environment, stressful events and the characteristics of the health and social services system are factors that have an influence on the onset or continuity of these problems.

Relationships between women and men are linked with intimate partner violence and sexual assaults. In addition, although the characteristics differ from situation to situation, women who are victims of intimate partner violence often come from a difficult socio-economic environment and are often socially isolated.[20] On the other hand, women who are victims of sexual assault come from all socio-economic environments. Individuals who belong to a marginalized world (prostitution, homelessness), who have a physical or mental disability or certain cultural characteristics are more likely to be sexually assaulted.[21] Violence perpetrated by relatives against seniors often results from already strained relations within the family and exacerbated by the loss of autonomy. On the other hand, violence perpetrated in the care setting is associated with the deficiencies of care, lack of staff training and work overload.[22]

The most incapacitating mental disorders, for example schizophrenia, are not considered to be preventable. However, viewed from a global perspective, mental health is related to people's positive perception of their mental health and satisfaction with their social life, in particular work and marital life. Similarly, people who have a satisfying social life and enough social support are less inclined to experience psychological distress. Moreover, a high level of psychological distress goes hand in hand with the occurrence of traumatic events during childhood or adolescence, less satisfaction with their social life and lack of social support.[23] Lastly, psychological distress is associated with low self-esteem.[24] In addition, some mental health problems are linked with work organization. The number of individuals compensated by the *Commission de la santé et de la sécurité du travail* (occupational health and safety board) for a mental illness is on the rise.[25] Quantitative work overload, little recognition from co-workers, an unsatisfying relationship with one's superior, lack of participation in decision making, insufficient information flow and harassment are, among others, characteristics of work organization which are associated with work-related mental health problems.[26]

There are many factors involved in suicide. One study shows that a high proportion of individuals who die by suicide had a mental disorder, most often a depression. Moreover, most of those who had a mental disorder had consulted a physician for this problem during the year preceding the suicide either at an office or at the psychiatric or general emergency department. This means that the health and social services system needs to play a key role in detecting suicidal behaviours early and providing support to these individuals.[27] In addition, factors relating to the family and social environment and certain stressful events, such as a relationship break-up, job loss or the announcement of a fatal disease, can be associated with suicide.[28-29] Several hypotheses have been put forward to explain the higher rates of suicide among men compared to women, in most countries in the world.[30] Is this due to a greater tendency among men to resort to highly risky behaviour and extreme violence? Is suicide more socially accepted when committed by men? Is it because it is difficult for men to accept their vulnerability and seek support when they are in distress? Is it because it is difficult for men to accept the changes in men and women's roles in cultures such as ours? These are all plausible explanations that, however, need to be explored further.

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Part II

The Role of Health and Social Services

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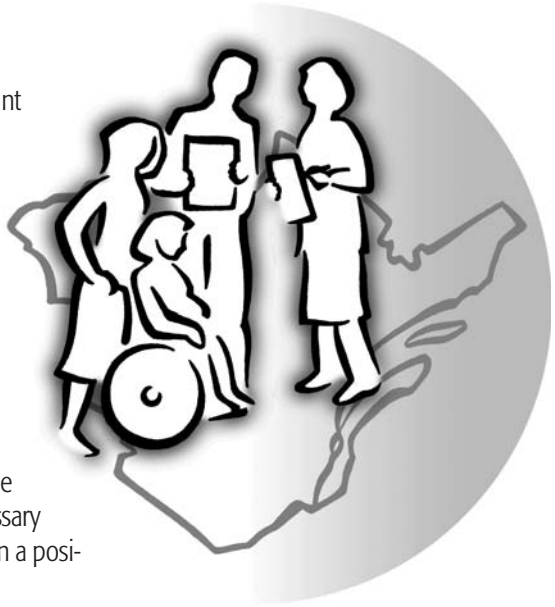
The Role of Health and Social Services



The health and social services system is, in many respects, important to the population. We quite naturally tend to turn to this system in order to deal with the major preventable health problems. It has become very important and plays a fundamental role in society. It provides individuals with relief from suffering, the guarantee that they will benefit from scientific advances, the support needed in case of temporary or permanent disability and, lastly, protection against the financial risks related to disease and psychosocial problems. For society, the health and social services system is an important instrument for social equity and lever on development. But what exactly is its contribution to the prevention of the avoidable problems that have just been described and, more broadly, to the enhancement of the population's health? In order to find out, it is necessary to examine the functions that it performs and the influence that it is in a position to exert.

First of all, it is necessary to clear up a confusion that has existed since public services systems were first created. Many people truly believe that the health of a society is directly proportional to the expenditures incurred on health services. Nevertheless, it is known that the health services utilization rate and the consumption of care account for only 20% of the differences in mortality and morbidity among industrialized countries. We need only look at countries such as Sweden, Norway and Denmark which spend less on services than many other societies but obtain better health outcomes. The situation of Canada can also be compared with that of the United States, that is, Americans spend one and a half times more than Canadians on health services, but the latter have a more positive overall health status.[1]

At least two explanations can be put forward. Firstly, it has been known for a long time that health services constitute one of the health determinants, the other determinants being living conditions, the physical environment, lifestyles and biology. Depending on the circumstances, one determinant or a combination of determinants will have more influence. In general, it is estimated that only 8 of the 30 years gained in life expectancy during the last century in the

West can be attributed to the action of health services.[2] Secondly, once a certain amount has been invested in health services, investment obeys the law of diminishing returns. This fact is clearly illustrated by the examination of morbidity and mortality that are preventable through the health care system. These two notions refer to hospitalizations and deaths as a result of certain health problems that can be prevented when appropriate health care is delivered in a timely manner.[3] The establishment of publicly-funded health care systems has helped to decrease avoidable morbidity and mortality. However, it should be noted that in rich countries where many causes of disability and death are already under control, the impact of the organization of care and services on the population's health status is less visible.[4] In other words, this implies that we cannot expect to enhance health substantially through new massive investments in the health services. Of course, investments are essential but the justifications for them lie elsewhere.

Thus, how can the health and social services system best contribute to enhancing the population's health? By performing the functions assigned to it by society as effectively as possible.

The Functions of the System

The basic function of the public system is that of an insurer. The insurance plan must protect all citizens, without distinction, against the financial risks related to a disease or an injury. This function remains essential. In order for the system to perform this function effectively, accessibility of care and services remains vital. The coverage must be as full as possible, the deployment of resources in the territory must allow for optimal access, and the care and services must be adapted to the needs of the various groups, more particularly socio-economically disadvantaged groups, who are more often struck by disease or psychosocial problems. Greater accessibility of services is likely to contribute to enhancing the health status of the most deprived individuals, thereby reducing health inequalities. To sum up, although the health and social services system cannot on its own enhance the population's health, it can contribute to it, in particular by lessening the effects of poverty on health.

In general, the health and social services system constitutes an important lever on social equity. It makes a double redistribution of wealth possible, that is, from healthy people to sick people and, more particularly, to the gravely ill; and from richer taxpayers to poorer taxpayers.

People are asking the system to be more than an insurer. They want the system to continue to relieve suffering and pain, to organize assistance for those with a disability, to oversee the social integration of those with mental disorders, to remove all types of disability, in short, to contribute actively to social development. To this end, the functions of the system have increased over the years. Today, they are as follows:

- **to prevent:** health promotion, prevention, including screening, protection, and surveillance;
- **to cure:** treatment, rehabilitation and social reintegration;
- **to care:** support and assistance provided to persons with a temporary or permanent disability and end-of-life care.

Treatment is a function that is almost exclusive to the health and social services system. The overwhelming majority of its human, material and financial resources are devoted to this function. Moreover, to perform its function of prevention and support, the system relies on the contribution of several social actors. In particular, action on health determinants requires everybody's contribution since it is based on social choices, such as wealth distribution or sustainable development. However, the health care system, as a mandatary of society as a whole on health issues, plays a key role in mobilizing social actors and carrying out multisectoral actions to foster health through prevention and promotion.

Means to Prevent Avoidable Problems and Enhance the Population's Health

The health care system has two major means at its disposal to fulfil its role: care and services; a power to influence, and means of action to mobilize actors in all activity sectors to work to promote health.

An organization of services offered in the entire territory

Currently, what factors in the organization of services are most likely to help prevent avoidable problems? The scientific literature is quite clear on this point. Strengthening primary health care, emphasizing prevention and best professional practices provide the greatest potential for the organization of care and services.

Strengthening primary health care

Primary health care is defined as a set of universally accessible first-level services which are based on the full participation of the community as a whole and are delivered at a reasonable cost.[5] These services include access to a professional working in an interdisciplinary team who coordinates the patients' pathway through reception, assessment, diagnosis, referral and follow up.[6] Primary health care services are the point of entry to the health system. They give access, in an integrated and coordinated manner, to a set of preventive or curative treatments and rehabilitation and support services, delivered on an ambulatory basis or in the home, as well as to specialized and highly specialized services. Moreover, primary health care services are organized to meet the needs of a local population, according to its health and social characteristics.

The systems that have a solid infrastructure of primary health care services are associated with lower rates of morbidity and premature mortality as well as with lower health costs.[7-8] An adequate organization of primary health care services, characterized in particular by services being rooted in the local communities, can even help to reduce the impact of socio-economic inequalities.[9]

Since the creation of the public system in Québec, primary health care services have been delivered according to two different models of organization. The first model is based on private medical clinics, where the majority of Québec physicians who participate in the health insurance plan practise their profession. The second model, community-based, revolves around the local community service centres (CLSCs), which are today integrated into the health and social services centres (CSSSs). The CSSS services include access to a professional working in an interdisciplinary team who coordinates the patients' pathway through reception, assessment, diagnosis, referral and follow up.[10]

Over the years, various commissions of inquiry, committees and task forces have highlighted a number of shortcomings in primary health care services in Québec. This is one of the main causes of the problems of accessibility, continuity and coordination of services, problems that were pointed out many times.

The reform undertaken last year aims precisely at correcting these problems. The organization of health and social services is now based on two principles: responsibility for a population and hierarchical organization of services. Responsibility for a population means that the local workers are jointly responsible for providing the population with the services they need or ensuring that the services are provided to them. They are also responsible for the individual's trajectory, his transition from primary health care services to specialized or highly specialized

services as well as his return to primary health care services in his living environment. The principle of hierarchical organization refers to the complementarity between the primary health care services, the specialized services and the highly specialized services, a complementarity that precisely aims at facilitating the patient's trajectory.[11]

All the agents in a local territory must operate as a network with the CSSS as its centre. CSSSs were created by the fusion of a hospital centre, one or more CLSCs and one or more residential and long-term care centres. There are 95 CSSSs which cover the entire territory of Québec. Based on a health portrait of its population, each CSSS must adopt a clinical project so as to set health and social objectives, define an appropriate range of services and determine the methods of organization and the contributions agreed with its partners.[12] The Ministère has basically determined the range of general services which must be delivered in each local territory.[13] Particular attention must be paid to primary social services intended for children, young people and their families, general mental health services and preventive services, since shortcomings in these services were observed in recent years.[14-15]

CSSSs will evolve in partnership with the newly created family medicine groups (GMFs). The GMF is a group of physicians who collaborate closely with nurses with regard to the care of the people registered, in a setting that is conducive to the practice of family medicine. GMF physicians are also connected with other health and social services professionals.[16] Currently, there are over 85 GMFs, and their number should increase gradually over the next few years. GMFs allow the population to consult a family physician more easily. The creation of GMFs also fosters continuity of services, in particular through the strengthened links between GMF physicians and other professionals, in particular those in CSSSs.[17]

The reform is currently under way. In the medium and long term, other measures should help to strengthen primary health care services, in particular the introduction of a new method of budget allocation increasingly oriented towards the characteristics of the populations involved, the adjustment of methods of remuneration of physicians so as to encourage preventive practices and interprofessional collaboration, the review of fields of practice so as to remove interprofessional barriers and, in another area, the establishment of effective information systems.

Monitoring measures are provided for to assess the impact of the current reform to strengthen primary health care services, the appropriateness of the response to needs, in particular for groups with particular characteristics, and the accessibility of services and continuity of interventions (for example, the transition from primary health care services to specialized services as well as the return to primary health care services).

Apart from the mechanisms provided for, innovative means should also be used to encourage and maintain citizens' participation in the planning and implementation of services intended for them. The adaptation of services will be all the more successful if the population is involved in the decisions.

An increased role for prevention

The importance of prevention no longer needs to be demonstrated. There are best practice guides which determine the most effective clinical preventive practices, for example the recommendations from the Canadian Task Force on Preventive Health Care, and numerous preventive interventions have proved their worth. Preventive activities are an integral part of health care and services. The prevention of diseases, injuries and psychosocial problems is indeed the concern of all actors in the system. However, it is of course the actors delivering primary health care services who are in the best position to carry out preventive interventions.

Different types of preventive intervention must be established. Some are aimed at reducing healthy people's risk of developing health problems. These interventions can be provided to the general population or groups who have particular risk factors. Other preventive interventions are aimed at reducing the consequences of an already existing problem the symptoms of which have not yet appeared. Screening for cervical cancer as well as high blood pressure and congenital hypothyroidism are a few examples of the latter interventions.

In 2003, the Ministère published the *Québec Public Health Program 2003-2012*. This program defines the preventive interventions to be established throughout Québec.[18] In addition, it specifies preventive interventions that clinicians are encouraged to include in their everyday practice. The targeted clinicians include not only physicians, midwives, dentists, pharmacists and nurses, but also professionals working in the psychosocial field, such as social workers and psychologists.

The main preventive interventions defined in the *Québec Public Health Program 2003-2012* are, among others, vaccination, counselling, early detection of health problems and psychosocial problems as well as systematic disease screening programs.

Instruments should be developed to intensify preventive efforts within the health care system, to encourage clinicians to increase the time they spend on prevention and to support them. To do this, financial or other incentives and strengthening actions, such as further training, should also be put in place. At the same time, actions should be carried out to enhance the acceptability and feasibility of preventive interventions. Lastly, the basic training of health professionals and psychosocial professionals should include a stronger prevention component so that they can integrate this aspect into their practice and feel that they are better equipped for this task.

Support for the adoption of best practices

Work organization and professional practices have an influence on health outcomes. Approaches which rely on interdisciplinary work, evidence-based practices, a work organization based on quality and continuity of care as well as patients' involvement in decisions that concern them are a guarantee of success. For example, in the case of chronic diseases, rehabilitation services for individuals who have had a heart attack or coordinated care for individuals suffering from diabetes can help to decrease mortality or the complications associated with these diseases.[19] Similarly, continuous, coordinated and comprehensive palliative care helps to enhance the quality of the end of life.

Although the care and services system can contribute to enhancing the population's health status, it can also give rise to health problems. It is estimated that between 3% and 16% of patients who are admitted to hospital are victims of an adverse event which results from the care processes, the consequences of which can range from temporary disability to death.[20] Over a third of these events, which often result from a combination of errors, are preventable.[21] Nosocomial infections and medication-related accidents figure among these events.

Given the adverse events related to care, the *Act respecting health services and social services* was amended to include the safe provision of health and social services.[22] A ministerial action plan has also been produced.[23] The *Act respecting health services and social services* stipulates that any person working in an institution has the obligation to report any incident or accident as soon as possible after becoming aware of it and that the user has the right to be informed of it. Moreover, every institution is required to form a risk and quality management committee, in particular to monitor accidents, and to apply for accreditation of their services from recognized bodies.

To prevent the transmission of infections in care settings, the *Comité sur les infections nosocomiales du Québec* (nosocomial infections committee) drew up a series of recommendations.[24] Following the recent increase in cases of *Clostridium difficile* infections, a surveillance system has been put in place. Most of the general and specialized care hospitals are participating in this system. The *Clostridium difficile* surveillance system is the basis of a provincial surveillance system for nosocomial infections. New staff have been assigned to the prevention of these infections and control measures (hand washing, disinfection of premises, etc.) have been strengthened.

Another way to encourage the adoption of best practices lies in the continuous assessment of professional practices.[25] The two main components of quality are services and care, which must be based on the most recent scientific knowledge, and the organization of services or care processes. The definition of indicators related to these two aspects and their systematic monitoring could not be more timely since the Québec system is currently in transition. The management of risks related to adverse events in care settings could become an integral part of this global process of quality assessment, particularly as regards clinical activities.

Continuous quality improvement involves a series of other measures: appraisal by the council of physicians, dentists and pharmacists, the council of nurses, the council of midwives or the multidisciplinary council of a care institution, of the quality of the professional act in the institution; the use of practice guides, further training and case discussions are all elements which are increasingly integrated into practice. Still not very common in Québec are: the evaluation of technologies and health intervention; auditing or monitoring of indicators related to structures, processes and outcomes.

A power to influence and action to mobilize intersectoral actors for health

The enhancement of the population's health nevertheless requires that factors external to the health services be considered. Thus, in addition to the means stated above, the health and social services sector must make other activity sectors of society aware of the importance of their contribution to enhancing the population's health.

To mobilize the intersectoral actors with respect to the objectives of enhancing the population's health, the health and social services sector can specifically rely on its public health component and the recent instruments it adopted: the *Public Health Act* and the *Québec Public Health Program 2003-2012*.

The Act confers on the Minister of Health and Social Services the role of advisor to the Government on health promotion and the adoption of policies conducive to health. Indeed, pursuant to the *Public Health Act*, the Minister of Health and Social Services "[…] shall give the other ministers any advice he or she considers advisable for health promotion and the adoption of policies capable of fostering the enhancement of the health and welfare of the population."[26] The Act also legitimates the power of public health authorities to warn the actors in the various activity sectors about a situation that represents a high risk of mortality. The Act stipulates that "where a public health director becomes aware of the existence or fears the occurrence in the region of a situation putting the population or a group of individuals at high risk of avoidable mortality, disability or morbidity and, in the director's opinion, effective solutions exist for the reduction or elimination of those risks, the director may formally request the authorities whose intervention appears useful to participate in the search for a solution adapted to the circumstances. Authorities who receive such an invitation are required to participate in the search for a solution."[27]

The program constitutes a plan of action to intervene more effectively on the health determinants that can be modified through concerted and planned action. It sets precise objectives to that effect for the next ten years and includes a set of activities which reflect, in practical terms, the core functions of public health (promotion, prevention, protection and surveillance) defined in the Act, in order to take action before the problems arise and enhance the population's health.[28] The authorities in the various activity sectors should be supported in the identification and achievement of actions centred on health enhancement.

Multisectoral action must be organized at all levels of the health and social services system. At the provincial level, the MSSS signs agreements with its partners to coordinate its services with those delivered by other organizations, for example, the complementarity agreement with the education sector and the agreement with the ministère de la Justice and the ministère de la Sécurité publique for the handling of sexual assault cases. At the regional level, the local health and social services network development agency applies these agreements in its territory and also oversees the establishment of specific partnerships, adapted to its realities. Lastly, at the local level, the new CSSSs have explicitly received the mandate to work on an integrated network of services with the various sectoral and intersectoral partners in their territory and in connection with the regional and provincial levels. They can even sign agreements to this effect. This framework of action requires the commitment of all the partners involved, in short, a considerable collective effort to foster health, which is the first condition for success.

Lastly, the intervention of the health and social services system is essential for both individuals and the community as a whole. However, it is inevitably partial and limited. We cannot rely on the system alone to enhance the population's health because it is often compelled to act on a problem-by-problem basis and because the major determinants, those which most influence health, are beyond its reach. For action that will have a great impact on health, all the social actors must combine their efforts in order to improve living conditions, preserve the quality of the physical and social environment, support the adoption of healthy lifestyles and support child and youth development.

The Core Functions of Public Health

Ongoing surveillance of the population's health status

Through this function, it is possible to monitor, in time and space, the evolution of the population's health status and its determinants and to provide information about the latter to the population and decision makers belonging to activity sectors likely to have an impact on health.

Promotion of health and well-being

This function includes activities intended to have an impact on the evolution of health determinants so that individuals and communities can have greater control over their living conditions and the means to enhance their health. It consists in increasing knowledge of the determinants, conducting more effective interventions, resorting to intersectoral consultation and mobilizing individuals and communities and, lastly, contributing to the adoption of policies conducive to maintaining and improving health.

Prevention of diseases, psychosocial problems and injuries

Prevention has two purposes: to reduce the risk factors of diseases, psychosocial problems as well as injuries and to detect these problems as early as possible before they get worse. Preventive activities are intended for the whole population or certain vulnerable groups. They involve furthering knowledge about the risk factors associated with the principal health problems and the effective means of prevention to strengthen individuals and communities, disseminating this knowledge to the population and the social actors as well as encouraging the use of effective preventive interventions by primary health care workers.

Health protection

In the event of a real or apprehended threat to health, the health authorities intervene with either the population or groups or individuals. These interventions help to obtain the information necessary for the epidemiological investigation in order to document the threat and implement measures to deal with or correct the situation. Hence the need for health monitoring to identify in real time the threats to the population's health. The health protection function also includes preparing for emergencies, in collaboration with the partners involved, planning activities to prevent risks and organizing relief as well as the implementation of emergency measures.

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Part III

Major Courses of Action

Part III

Major Courses of Action

The major courses of action that will make it possible to enhance the health of the population, i.e., to prevent avoidable health problems and psychosocial problems, are actions that target the determinants of these problems. What are these determinants?

Among the factors that influence health are the personal characteristics of each individual, that is, biological characteristics, in particular genetic factors, and psychosocial factors, such as temperament. Individual behaviours and lifestyles also influence health. For example, it has been found that certain sexual behaviours influenced the spread of sexually transmitted and bloodborne infections and that lifestyles played a role in the onset of the main chronic diseases. In addition, the impact of the economic environment on health has been amply demonstrated. Poor people do not live as long as those who are economically advantaged. Poor people also have more health problems. It has already been mentioned that poverty and overpopulation increased the risks of contracting infectious diseases, that the main chronic diseases were associated with poverty, that the living conditions of families, including poverty and the low educational level of parents, had a dominant influence on the development and social adjustment of children and adolescents and, finally, that poverty created an atmosphere conducive to violence. As regards the physical environment, it has been observed that CVDs, respiratory diseases, and lung cancer were often associated with air pollution. Road safety and safety in the home can also be associated, in particular, with unintentional injuries. In addition, the social environment influences health. Indeed, it has been demonstrated that people who had a satisfactory social network were ill less often than those who had an inadequate social network, and that communities that maintained a degree of social cohesion took greater control of their destiny and were healthier, both physically and psychologically.

Although it is difficult to change people's personal characteristics, it is possible to act on other determinants. While the previous part reported on the possible means to improve the contribution of the health and social services system to the population's health, this part presents how to act on the other common determinants of avoidable health problems, that is, poverty, the quality and safety of the physical environment as well as the social environment, in particular communities. Finally, although all the determinants mentioned can be modified at any period of life, it is especially important that this occurs during childhood and adolescence. Children and adolescents are particularly sensitive to the characteristics of their environment. It is therefore important to act during these periods in order to foster health in adulthood.

A Fairer Society and a Healthier Population

"Because they are largely the product of social and economic circumstances rather than of fate, poverty-related inequalities in health and well-being cannot be tolerated. Today, there is a broad consensus on the need to reduce this type of inequality. In addition to our will to act, society also has the means to succeed, in continuity with the actions taken and efforts made until now."[1] (translation)

The Links between Socio-Economic Conditions and Health

We cannot talk about the links between socio-economic conditions and the health status of different population groups without also talking about an unequal distribution of health among social groups, which means talking about inequalities in health. Talking about inequalities in health means, above all, talking about the impact of poverty.

Not only poor, but sick too

There is no question that socio-economic conditions have an impact on health, as do characteristics such as educational level, employment and income. There are plenty of examples to illustrate the association between socio-economic characteristics and various health problems such as HIV infection and AIDs, the main chronic diseases, certain types of injuries, developmental problems in young children and mental health problems, just to name a few.

In all countries, differences are observed between the health status of socio-economically disadvantaged groups and that of advantaged groups. Thus, individuals who belong to the most disadvantaged groups are more likely to have different types of diseases, to contract the disease while younger or to die at a younger age than those in more advantaged groups. Moreover, the longer the period of socio-economic deprivation, the greater the damages to health.[2-3-4-5]

In Québec, for the 2000-2002 period, the most socio-economically disadvantaged men could expect to live an average of 8 years less than the men who were most advantaged; the gap was 3 years for women. While the gap has remained stable among men, compared to the 1996-1998 period, it increased slightly among women (from 2.5 to 3 years).[6-7-8]

Poverty may be thought of in absolute terms, that is, as the condition of possessing little measured against an objectively defined minimum. In this sense, poverty influences health because of the material deprivations it causes: indeed, it is easy to see that when, for example, people cannot afford adequate housing, eat their fill every day of the month or get around as they would like to, they have a higher risk of developing a physical health or psychosocial problem.

However, poverty is not limited to a matter of lack of material goods but can be viewed in relative terms, that is, in relation to what the majority of people possess in a given society. Thus, the focus is on the fact that an individual has little compared to most people. From this perspective, a gradual effect of socio-economic conditions on health can be observed. Even within affluent groups, people at the upper levels of affluence are healthier than those at the lower levels. Disparities in health are also observed between the middle class and the upper class, differences that are impossible to attribute to a lack of material goods. Other factors also come into play. They are linked to the subjective feeling of not having enough resources to manage on one's own and not being able to exercise sufficient control over one's life. Individuals may feel relative social discomfort and that they have to deal with environmental and psychosocial conditions that are not always favourable. For example, the prejudices of other people may engender feelings of shame or rejection. In addition, in prosperous countries or regions, the overall health status of populations with a more equitable income distribution is better. Indeed, they live longer than people in countries that are as wealthy or even wealthier but in which considerable socio-economic inequalities continue to exist.[9-10]

The many faces of poverty and inequalities or how poverty influences health

Although different definitions of poverty exist, it is generally agreed that it has many dimensions, each one of which is likely to have a harmful effect on health.[12-13]

"Life is short where its quality is poor. By causing hardship and resentment, poverty, social exclusion and discrimination cost lives."[11]

As mentioned above, poverty primarily has a material dimension, that is, poor people have an income that limits or compromises their access to goods and services such as housing, clothing, food, transportation, or even a high quality environment. This is certainly very often the case of people who have no employment income and low-wage earners.

In addition, poverty has a cultural dimension which is manifested through a limited access for poor people to education and culture. A low educational level is linked to job insecurity, unemployment and low income. Because they do not have access to education, information and culture, poor people are thus deprived of the knowledge needed to make choices, particularly regarding lifestyles. In fact, smoking, a poor diet and lack of exercise are behaviours which are more common among people from socio-economically disadvantaged groups than from other groups.

Poverty also has an important social component. Poverty paves the way for low self-esteem, lack of social support and even social exclusion. In fact, being poor often means being excluded from the dominant lifestyle in a society centred on consumption, it means having reduced civic participation and, possibly, feeling rejected and socially useless.[14] Being in an uncomfortable position in the social hierarchy contributes to this feeling of uselessness and the sense that one does not have enough control over one's own life.

Poverty also has an environmental dimension. Poor people are in fact more likely to be exposed to environmental risks. They are more likely than those who are better off to live in neighbourhoods where they are exposed to physical, biological or chemical risks. Given their lack of financial resources, they generally are unable to choose where to live and are confined to living in rundown, less safe neighbourhoods with, for example, higher levels of air pollution. Finally, even if they are not exposed to the stress of unemployment or job insecurity, poor people often work in environments that are hazardous to their health.

The combination of all these material, cultural, social and environmental risk factors causes poverty to have negative effects on health.

Poverty and socio-economic inequalities in Québec

Based on an index for measuring poverty defined under the United Nations Development Programme, Canada has very poor results, ranking 12th among 17 countries that are members of the Organization for Economic Co-operation and Development (OECD). Sweden and Norway rank first, while the United States is in last place.[15] Based on a study that serves as a reference for many countries, in 2000, the poverty rate in Canada was 11.4%, while those of Sweden and the United States were, respectively, 6.5% and 17.0%.[16]

Studies have not provided unanimous conclusions as regards the evolution of poverty in Québec. The differences in the results largely stem from the different methods used to measure poverty. According to the compilations done by the Institut de la statistique du Québec based on data from Statistics Canada's *Survey of Consumer Finances*, the proportion of poor families in Québec (that is, under the low income threshold, after taxes) decreased between 1986 and 2000.[17-18] However, this decrease is not reflected in all age groups. Indeed, poverty has grown among individuals aged under 25 and decreased among elderly people.

The income inequalities among Québec families, as measured by the global inequity coefficient (Gini), increased for the same period, while those of single individuals decreased slightly. When compared with other Canadian provinces, Québec has one of the highest low income rates while its income distribution is among the most equitable.[19] Comparison of the Gini coefficient shows that for 2000, the income distribution in Québec (0.36)[20] was less equitable than in Sweden (0.25), but more equitable than in the United States (0.41).[21] At the very least, it shows that income inequalities exist in Québec and that we can do better.

Finally, as regards health inequalities, certain characteristics of Native communities should be pointed out. Although little data exist on the aboriginal population as a whole, considerable information is available on the health status of the Inuit, who represent 90% of the population of Nunavik, and the Cree, who make up 95% of the population of the Cree Lands of James Bay. However, the socio-economic indicators of these groups must be interpreted with caution and in light of the distinctive features of the regions in which they live, as well as their cultural characteristics, particularly as regards their traditional subsistence activities.

Based on the data, it can be concluded that Québec can still reduce poverty and socio-economic inequalities. Differences in the health status of various social groups (according to income, gender, age, marital status or ethnic origin) are, in fact, unacceptable because they are unfair and, moreover, avoidable. In addition, in economic terms, health inequalities represent an enormous loss of productivity which otherwise could benefit society as a whole.[31]

Socio-economic conditions and their consequences for the health of Québec's Native peoples

One of the indicators of the socio-economic situation of Native peoples is their educational level. In the Cree Lands of James Bay and Nunavik, in 2001, slightly more than 50% of individuals aged 20 to 34 did not have a high school diploma, compared with 16% for the Québec population as a whole.[22-23] The health status of Native peoples can be distinguished from the rest of the Québec population in several respects:

- in 2001, approximately 50% of the population aged 15 or over from the Cree communities of Québec and Native people of Nunavik stated that they were in excellent health, compared with approximately 61% of the Québec population;[24-25-26]
- for over 20 years, one in 10 individuals born in Nunavik has lived approximately 10 years less than an individual born anywhere else in Québec;[27]
- for the 1998-2002 period, the infant mortality rate of the Cree Lands of James Bay (13.3 per 1000 live births) was 2 to 3 times higher than that recorded for Québec (4.9 per 1000 live births), while the rate for Nunavik (16.8 per 1000 live births) was 3 to 4 times higher than that of Québec as a whole;[28]
- in 2003, three to four times more people in the Cree Lands of James Bay than in Québec as a whole were diagnosed with diabetes;[29]
- for the 1998-2002 period, 21% of deaths in Nunavik were attributable to suicide, compared with 3% for Québec.[30]

Combating Poverty — How Far Have We Come?

In 2002, the Government of Québec adopted a strategy to combat poverty and social exclusion whose overall objective is to improve the economic and social situation of people living in poverty. The specific objectives of this strategy are: fostering the creation of employment for people who are able to work and sustaining such employment; providing access to essential services (healthcare, childcare services, housing support, etc.); ensuring access to an income

that allows individuals to lead dignified lives and participate fully in their communities; and ensuring that anyone temporarily, or in the longer term, without sufficient income to meet his basic needs receives sufficient support.[32]

More recently, Québec passed the Act to Combat Poverty and Social Exclusion. The main purpose of this Act is "to guide the government and Québec society as a whole towards a process of planning and implementing actions to combat poverty, prevent its causes, reduce its effects on individuals and families, counter social exclusion and strive towards a poverty-free Québec."[33]

The Act is intended, by 2012, to make Québec's population one of those with the fewest poor people. To that end, this Act officially establishes a national strategy to combat poverty and social exclusion. It also establishes an advisory committee, whose main function is to advise the Minister on the implementation and monitoring of the strategy, as well as an observatory on poverty whose function is to conduct studies and research to monitor the evolution of poverty and social exclusion. The Act also provides for the creation of the *Fonds québécois d'initiatives sociales*, a fund dedicated to the financing of projects to combat poverty and social exclusion. Finally, the Act provides for the establishment of a government action plan which sets forth a set of activities the government plans on carrying out to achieve its goal.[34-35]

The aim of the action plan, which has already been adopted, is to improve the situation of individuals living in poverty by indexing and consolidating social-assistance benefits (indexation to the cost of living for individuals with significant employment limitations and partial indexation for those who are able to work), supplementing them for participation in training or employment insertion measures and by improving the opportunities to participate in such measures. The plan also introduces a work premium for low-income earners and proposes that financial support programs for families be overhauled and improved. In addition to these measures, the plan recommends that the minimum wage be raised for 2004 and 2005. Finally, the plan recommends measures that go further than the provisions set forth in the Act to support children, in the form of financial support for families and easier access to social housing. In addition, the plan recommends that intervention be adapted to the needs of Native nations.[36] Finally, the action plan provides for additional intervention aimed at reducing the effects of poverty, for example, in relation to food security and more generally, promoting the potential of individuals and communities.

Measures related to food security and promoting the potential of individuals and communities as well as the establishment of the Fonds québécois d'initiatives sociales will be addressed later in this report. The measures related to the establishment of the *Comité consultatif de lutte contre la pauvreté* (advisory committee on combating poverty) and the *Observatoire de la pauvreté et de l'exclusion sociale* (observatory on poverty and social exclusion) are not yet in force.

Overall, it is recognized that the National Strategy to Combat Poverty and Social Exclusion as well as the Act pave the way for a genuine redistribution of collective wealth. The actions planned will have to, if they are aimed at resolutely reducing poverty and inequalities, uphold the spirit of the Strategy and the Act.

The Next Step... Reduce Poverty and its Effects

Given the impacts of poverty on health, it is necessary, on the one hand, to deal with the structural causes of poverty. On the other hand, since the results of such an undertaking will only appear in the long term, in the meantime, it is necessary to establish measures aimed at lessening the consequences of poverty.

Reducing poverty

There is no question that the adoption of the Strategy and the Act to Combat Poverty and Social Exclusion is a major step towards reducing social inequalities and health inequalities. However, the Strategy and the Act are only instruments, though important ones, and concrete measures must still be established to improve the lot of less affluent Quebecers and to reduce socio-economic and health disparities among different population groups. These measures concern the state but will also have to involve private enterprise, in particular in relation to employment and working conditions, including wages.

Thus, it must be ensured that the goal of reducing poverty will be pursued in the long term and that, beyond the selective measures provided for in the action plan, commitments will be made to continue efforts to combat poverty and social exclusion in the coming years. It will be necessary to define long-term national objectives and establish mechanisms for co-operation, consultation and monitoring, as provided for in the Act through the establishment of the advisory committee and the observatory on poverty and social exclusion.[37]

Reducing gaps in gross income

In order to combat poverty and inequalities, various measures will have to be taken to ensure that wealth is more fairly distributed. These include reducing income gaps, increasing the wages of low-income earners and adjusting the minimum wage.

Implementing measures to promote tax fairness and the redistribution of resources

Measures to promote tax fairness and redistribute resources must be pursued (indexation and consolidation of social-assistance payments, allocations for participation in training and employment insertion activities, improvement of financial support programs for low-income earners, families and children), particularly those aimed at individuals without dependent children, who are able to work and who have no employment income, a group which is often criticized and judged.

Facilitating access to employment and education

To combat poverty and inequalities, it is also necessary to facilitate access to education as well as labour market integration and participation. Loans and bursaries programs, maintenance and creation of stable, well-paying jobs and improvement of working conditions, at least in certain activity sectors, are all means that are likely to increase the proportion of the population that have a sufficient level of employment income. It is also necessary to ensure that concrete measures are established to support training and labour market insertion, measures that are currently lacking.[38] Access to employment support measures, such as assisting individuals with significant employment limitations or French courses for immigrants, will have to be improved.

Increasing access to goods and services for those who are the most economically disadvantaged

In addition, advances in the supply of public services on a universal basis are desirable in order to counter the social disadvantages handed down from one generation to the next.[39] Universal services are generally more generous and are more likely to be maintained during recession periods.[40-41] However, the costs of essential services should not be allowed to weaken or eliminate the improvement and stability of income guaranteed by law. Thus, the costs of food, housing, transportation, childcare and medications must be especially monitored because

increases in these costs can only threaten the fragile financial balance of socio-economically disadvantaged individuals and families. The government's action plan will have to include the examination of the evolution of these costs.

Lessening the effects of poverty

It seems obvious that economic measures will not – on their own and all at once – succeed in eradicating socio-economic inequalities and health inequalities. Measures of another kind will have to be implemented. The same is true of measures aimed at ensuring the quality of health and social services intended for the most socio-economically disadvantaged groups, especially accessibility of these services. Measures aimed at reducing the negative impact of poverty should also include improvement of the physical environment in which these groups live. The same is true of action taken with a view to developing communities and which rely on the development of local solidarities and community initiatives in order to allow individuals and groups to have greater control over their life in general and their living conditions. Various means should also be adopted to encourage the adoption of healthy lifestyles by individuals living in unfavourable socio-economic conditions. Finally, support for child and adolescent development figures among the approaches that should be promoted in order to reduce social inequalities and health inequalities. All these measures will be dealt with later in this report.

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Habitat: Developing a Healthy Environment

"Looking into the future I see that, just as the understanding of social health has come to include cultural and spiritual well-being, so physical well-being will come to mean much more than the biology of the human body: it will include a safe environment and the responsibility for our physical surroundings on the planet as a whole." [1]

The Environment and the Population's Health Status

The mark left by humans on the environment is becoming more and more evident, and this has repercussions on the health of populations. We now realize that the ecosystem is deteriorating not only at the expense of health, but also at the expense of future generations. The human species alone consumes approximately 50% of the planet's resources, a proportion that is on the rise and has already tripled during the last century. The many environmental disasters which have occurred in the world over the last fifty years have aroused an environmental awareness which had hitherto been only faint. Since then, sporadic ecological disasters, such as the Exxon Valdez oil spill or even the fire at the Chernobyl nuclear power plant, regularly make the headlines. However, another, more generalized but perhaps less spectacular, deterioration of the environment is also occurring, but one that is probably more damaging in the long-term: the deterioration of lands and water courses due to industrial and agricultural pollution, the air pollution linked to transport and industries, the proliferation of waste and the way in which it is disposed of, the destruction of natural habitats linked to land use, overfishing in all the oceans, etc. All of these forms of deterioration increase the risks to the health of populations by reducing services that are essential to life and which nature provides society free-of-charge.

The impact of the environment on the population's health is increasingly well documented. Although there are links that are not yet confirmed due to the sheer number and complexity of the parameters that must be taken into account, certain problems are of particular concern from the perspective of the population's health.

Air pollution

Over the last years, an association has been observed between an increase in the levels of air pollutants and an increase in premature mortality, the incidence of certain diseases, the number of emergency room visits and hospitalizations.[2-3] Respiratory diseases, such as asthma and bronchitis, as well as CVDs, can be aggravated significantly by the presence of indoor and outdoor air pollutants.[4] Thus, the environmental studies of the last few decades show that the largest sources of toxic substances come from indoors, where we spend most of our time.

Tobacco smoke, radon, asbestos and other volatile organic compounds such as fine particles constitute the largest indoor air pollutants.[5] Even though tobacco is still the leading cause of lung cancer, indoor and outdoor air pollution plays a significant role in the incidence of this disease, a role which will likely increase in the near future.[6-7]

Smog, which is formed by the combination of different types of pollutants largely generated by transport[8] and American coal-fired power stations along the Canadian border,[9] is also a source of air pollution which is damaging to health. The intensive animal production in rural environments may also create respiratory risks for health, particularly for farm workers, their families and immediate neighbours.[10]

During the 1996 Summer Olympic Games in Atlanta, in the United States, motor vehicle traffic in the city was reduced by 22%. During the same period, reductions in hospitalization rates for asthma varying between 11% and 44% were observed in the city's emergency rooms.[11]

In Québec, it is generally industrial and commercial activities as well as the consumption of fossil fuels, particularly in transport, which cause air pollution problems. However, thanks to hydroelectricity, Québec's environmental performance in terms of greenhouse gas compares favourably with that of the other Canadian provinces. Although overall air quality in Québec has improved over the last few years, it is still a health concern because of the increase in pollution attributable to the transportation sector[12] and to transboundary continental pollution which remains a major problem.[13] Ozone layer thinning, another consequence of air pollution, and the fashionability of tanning since the 1970s have greatly contributed to the increase in the incidence of skin cancer. In fact, more than 90% of skin cancers are attributable to prolonged exposure to ultraviolet radiation, whether from natural or artificial sources.[14]

The pollution of drinking water and recreational waters

Drinking contaminated water and contact with contaminated water may lead to health problems such as gastroenteritis, otitis, dermatitis and acute poisoning.[15] Both ground water and surface water can be contaminated. Pollutants come from a variety of sources: agriculture and intensive animal production, industries, municipal sewers, septic tanks, etc. Small communities are especially more vulnerable to the risk of contamination given the characteristics of their drinking water supply systems, which are often more fragile and less supervised (small waterworks and artesian wells).[16] Although they have carried out more intensive water treatment, the larger municipalities are not free of contamination. According to Health Canada, despite the considerable benefits of disinfection and the resulting disease prevention, it is possible that chlorination itself creates by-products which could have harmful effects, ranging from adverse pregnancy outcomes to a higher risk of cancer, particularly bladder cancer.[17]

Moreover, the probability of young children swimming in contaminated water is higher since they spend more time in the water compared to adults, in particular in shallow water, which tends to stagnate, thereby increasing the risks of infections such as dermatitis or epidemic gastroenteritis.[18]

Although the quality of water in Québec has improved over the last 15 years, much remains to be done to improve and maintain the quality of the St. Lawrence River as well as other rivers and lakes[19] which are deteriorating, particularly because of the presence of cyanobacteria and phosphorus.[20] In addition, the experts agree on the fact that the poor state of certain canal systems and water treatment plants, as well as the lack of training of operators, can compromise water quality.[21]

Soil pollution

Soil pollution is a significant health problem, even though it is difficult to clearly establish the precise toxicological links between the various chemical and organic products that contaminate the soil and threaten health.[22] The main pathways of human exposure to soil pollution are oral, cutaneous and respiratory. Cancers as well as renal and arterial problems are associated with certain chemical and organic pollutants like benzene, benzopyrene and nitrate.[23] Children are more vulnerable to soil contamination because of the immaturity and sensitivity of their organs, such as the nervous, endocrine and immunological systems, and because of certain behaviours.[24] In fact, their needs in terms of air, water and food are greater than those of adults given their body weight, and they spend more time outdoors, are in closer contact with the soil and often put their hands in their mouth.[25]

Soil contamination mainly results from industrial waste, but also from inadequate management of agricultural waste and activities. While soil pollution predominantly affects the quality of the environment, water pollution from runoff of soil elements, such as nitrogen and phosphorus, or toxic compounds, like pesticides, may contaminate sources of drinking water for human consumption. In addition, when one considers the fact that soil pollution reduces the amount of land that is suitable for agriculture and therefore agricultural productivity, it is evident that food security itself is at stake.[26]

The use of pesticides, especially in an urban environment, is also an emerging environmental health issue. The precise impact of pesticides on the population's health is not yet known. While the risks of acute poisoning related to certain products have already been amply demonstrated, the long-term effects of the latter are raising many concerns.[27]

Climate changes

Several health problems linked to the environment could be magnified by the effects of climate change which are already affecting the planet. Global warming is caused by the increase in greenhouse gases produced by humans combined with natural events, for example, forest fires, volcanic explosions or solar cycles.[28] Global warming has many effects on health. It is probable that cold-related morbidity (especially cardiac and respiratory diseases) is decreasing because of milder winters. On the other hand, researchers predict an increase in mortality linked to CVDs and respiratory diseases because of longer, hotter summers and the increase in heat waves accompanied by smog. The resurgence of CVDs and respiratory diseases, such as asthma and hay fever, is the most likely health impact. Since higher temperature creates environments that are more conducive to the development of pathogenic micro-organisms, infectious diseases transmitted by mosquitoes and animals will likely increase.[29] It is also predicted that the level of sources of fresh surface water (St. Lawrence and other rivers) will drop, creating a problem with the drinking water supply.[30-31] Heat and the drop in water level could also result in an increase in waterborne and foodborne diseases.[32]

Everyday nuisances

Noise and bad odours are factors which affect the population's health. Indeed, it has been observed that people subject to odours from hog farms in rural areas suffer more anxiety and depression, feel more anger and fatigue and have more obvious mood disorders than the population as a whole.[33] European studies have also demonstrated that noise from busy roads can interfere with concentration, sleep and children's learning capacity.[34] The most common complaints in municipalities are noise-related ones.

Damage to ecosystems that are essential to life

Québec is particularly well endowed with natural resources. Indeed, Québec possesses a large forest cover, abundant drinking water resources (3% of the world's entire water reserve for only 0.1% of the world's total population), a fertile agricultural land base, subsurface soil that is rich in minerals as well as a high level of electric power, particularly hydroelectric power.[35] However, inadequate exploitation of these natural resources can contribute to a loss of biodiversity. Biodiversity encompasses all that is organic, whether micro-organisms, bacteria, insects, fauna or flora. Each organism, no matter how minuscule, plays an essential role in regulating the elements that make life on earth viable, that is, water, air and soil. The human being is an element that is inseparable from the physical environment and thus suffers from the consequences of interventions affecting the environment. It should be recalled that human beings depend on plant and animal species to feed themselves, produce medications and obtain raw material.[36] Natural resources and individuals who must breathe, drink and eat still constitute the basis of the economy. At a global level, species have disappeared and are in the process of becoming extinct, partly because of the pressure that human beings put on their habitats, for example, through overfishing or urban development.[37]

Urban development

The link between health and the conception of the environment is similar. Thus, the way a territory is developed – i.e., the use, destruction and pollution of natural resources – influences the sustainability of the physical environment. The urban landscape has changed considerably over the last 60 years. The most visible change is urban sprawl and urban growth, which can be seen in the taller, bigger buildings and wider highways. The urban fabric has also changed: people live further away from their neighbours, and houses, businesses and workplaces which were previously side by side are now often scattered. While people used to walk and take the bus or tramway, they now travel by car.[38] The increase in road transport has been accompanied by increased infrastructure costs, air and water pollution, consumption of resources and destruction of habitats. Recent studies have concluded that urban sprawl is linked to a decrease in physical activities such as walking and cycling. In addition to its direct effects on health, such as the increase in the main chronic diseases, this decrease in physical activity is closely linked to the problem of obesity which is plaguing North America.[39-40] A relationship has also been observed between the way in which community infrastructures are built and social cohesion, which has an impact on health.[41]

Sustainable Development of the Physical Environment: How Far Have We Come?

Many activities have been carried out in Québec over the last few decades, and considerable gains have been made. In addition to sectoral policies, the Government of Québec has adopted the *Québec Sustainable Development Plan*,[45] which concerns not only the physical aspects of the environment, but also its social and economic aspects. This plan is intended to guide Québec's actions to promote sustainable development in the coming years.

The *Québec Sustainable Development Plan* is structured around six main themes:

- public consultation;
- legislation on sustainable development;
- a sustainable development strategy;

- interventions by ministries and government organizations;
- assessment and accountability mechanisms, including a Sustainable Development Commissioner;
- involvement of citizens and partnership among all groups in society.[46]

In parallel with this plan, over the years, Québec has created instruments such as a water policy,[47] the 2004-2007 biodiversity strategy and action plan,[48] land-use policies,[49] and the *Québec Residual Materials Management Policy 1998-2008*,[50] all measures that can promote better management of resources.

Water and energy consumption in Québec is particularly high as compared to other countries, largely because of its economic structure, which relies on industrial sectors that are large consumers of water and energy, particularly hydroelectricity, and the pulp and paper as well as the iron and steel industries.[42] Thus, in terms of energy consumption per capita, Québec is surpassed only by the rest of Canada and the United States.[43] In addition, Québec ranks among the largest producers of residual materials, producing 11.2 million tonnes in 2002, which corresponds to 1.5 tonnes per Quebecer.[44]

The Québec water policy, adopted in 2002, is a strong commitment from society to join together to preserve this natural resource. This policy reaffirms Québec's desire to recognize water as a collective heritage of all Quebecers to be protected and managed from a perspective of sustainable development.[51]

In spring 2001, the Government of Québec amended its *Regulation respecting the quality of drinking water*, making it one of the best policies on drinking water in North America. The quality standards for drinking water were tightened, and mechanisms to ensure distribution of clean drinking water were established. As a result of this amendment to the regulation, Québec is able to protect its population even more effectively against contamination episodes such as the one that occurred in Walkerton, Ontario.[52]

The 2004-2007 biodiversity strategy and action plan, which was first adopted in 1996 and recently revised and improved, also constitutes an important step towards the preservation of Québec's fauna and flora. It provides for the implementation in Québec of the United Nations Convention on Biological Diversity adopted in Rio in 1992. Efforts have been made to improve the situation of biodiversity in Québec. In July 2002, the area of protected land was increased from 2.9% to 4.8%, then to 5.27% in February 2003. The aim of the Government of Québec is to protect 8% of the province's surface area by 2005. The international average for protected areas is more than 10%.[53]

Land-use policy directions allow for a useful consideration of the concept of territory in Québec and of the means to achieve sustainable urban development through development plans. These plans are mainly based on two objectives. The first consists in consolidating existing urban areas and revitalizing city centres and old neighbourhoods, while the second aims at managing urban extension, particularly as regards its consequences for farmland, new infrastructures and the environment in general.[54]

The purpose of the *Québec Residual Materials Management Policy 1998-2008*, is to recover, by 2008, 65% of the residual materials that can be reclaimed each year through the collaboration of citizens, producers and municipalities.[55]

The $3 environmental levy per tire sold in Québec has had positive effects on the management of these products. In 2003, 6.3 million scrap tires were recovered, that is, 88% of scrap tires generated during the year. The rest were exported. The 85% recovery goal was therefore reached. More than 76% of scrap tires are recycled into all sorts of products, such as tires for containers, mudguards, slip resistant rugs, carpet underpadding, soundproofing panels, etc. In addition, 5 million tires were disposed of while 4 out of the 12 major storage sites were emptied, thus eliminating as many risks of fire and mosquito breeding sites (potential carriers of WNV).[57]

Nevertheless, most impartial observers agree that, so far, the implementation of these legislative instruments and government policies has been half-hearted. Thus, Recyc-Québec has pointed out that the municipalities will have to make an even greater effort if the objectives for reducing waste are to be reached by 2008.[56] Other sectors, for example, used tires or construction materials, have already achieved their objectives, a few years ahead of time.

The use of chemical products and pesticides is increasingly regulated. A study by Statistics Canada revealed that many more farmers in Québec than in other Canadian provinces have adopted a pesticide management plan.[58] The *Pesticide Management Code*, which came into force in 2003, establishes standards for the storage, sale and use of pesticides in Québec.[59]

The Next Step... Measures to Reduce Environmental Impacts on Health

If we are to achieve sustainable management of the environment, reduce the impacts of pollution on health and preserve our living environments, a collective effort will be needed to change modes of production and consumption, to adopt taxation that is favourable to health and the environment, to save energy and use renewable energy sources, to protect water and biodiversity, to integrate land-use management and assess environmental impacts. To achieve this, the Government of Québec, its provincial partners, the federal government and other countries will have to work together because pollution and degradation of the environment know no bounds.

Just like other ministries, the ministère de la Santé et des Services sociaux will have to help implement the *Québec Sustainable Development Plan*, particularly as regards the elimination of biomedical waste, energy and water consumption and equipment management.

Changing modes of production and consumption

If unnecessary consumption is reduced, the population will be less exposed to toxic products and industrial air pollutants and nuisances, and the risks related to waste will be reduced, thereby preserving healthy living environments. Reducing unnecessary consumption requires that producers implement more eco-efficient production, particularly by reducing the energy consumed to produce goods and services, reducing the quantity of packaging used, recycling more materials and creating new ways to use renewable resources. Consumers must also review their consumption habits and by this very fact, clearly express their choices to producers.

It is important to implement various interventions in the area of waste management such as residual materials management planning, citizen participation in the decision-making process, education and information, research and development for sustainable solutions and the generalized introduction of tripartite waste removal (waste- recycle-compost).[60]

Adopting taxation that favours health and the environment

Currently, the calculation of the country's wealth does not take into account the damages caused to the environment and the population's health. What is worse, they are recorded as economic gains.[61] It would be advantageous to determine a method to calculate the gross domestic product that takes into account environmental and health factors, as proposed by the *Table ronde nationale sur l'environnement et l'économie* (national round table on the environment and the economy).[62] In addition, economic tools are now available to correct certain market imperfections.[63]

Ecological taxation is increasingly used in industrialized countries to correct market imperfections that too often result in an allocation of resources that is unsustainable from an environmental point of view. Taxes and royalties (on petroleum and gas, fertilizers, solvents, waste, carbon, etc.) are most often used. Ecological taxation makes it possible to tax polluters, forcing them to adjust their prices to better reflect the real costs to society. This approach leads to a

change in the behaviours of consumers and producers, since the increase in prices motivates consumers to seek similar products that are less harmful to the environment and, as an indirect result, producers strive to make their production more ecological. Finally, an increase in taxes on goods and services that are harmful to the environment can lead the government to reduce other rates and taxes, such as income tax, to lighten the tax burden of more ecological firms or establish programs that encourage the production and consumption of environmentally sustainable goods and services.[64]

Saving energy and using renewable energy

For the population to be less exposed to air pollutants, the objectives set out in 1996 in a government policy paper advocating energy efficiency and increased use of renewable energy forms must be implemented.[65] Certain measures intended to decrease and guide energy consumption especially concern the transportation sector and can be achieved through increased accessibility of public transport, reducing urban sprawl and increased use of vehicles that limit pollution. Other measures should promote hydroelectricity as a source of energy production as well as the use of renewable, sustainable energy, such as wind or solar energy.

Protecting water and biodiversity

While it is necessary to find ways to reduce waste, it is also imperative to examine certain industrial and agricultural practices that broadly or sporadically pollute surface or ground sources of drinking water. Implementation of the Québec water policy will allow sustainable management of the resource: this will involve reforming the governance of water resources, implementing integrated management of the St. Lawrence River, adopting integrated watershed-based management, protecting water quality and aquatic ecosystems, pursuing water purification and improving water services management. Watershed-based management is the cornerstone of the Québec water policy because it results in a better understanding of water quality and quantity issues.[66]

"When applied to surface water, a watershed means a geographic area bounded peripherally by a water parting and draining to a common outlet: a point on a larger stream or river, a lake, bay, etc."[67]

The Commission for study of public forest management in Québec (the Coulombe Commission Report) brought to light the urgent need to act to protect the Québec forest as a whole, which is essential to biodiversity and life. The proposed shift is based on ecosystem-based management and not only on management according to a resource – timber. The Commission also proposed that the National Assembly appoint a Chief Forester.[68]

Integrating land-use management for a healthier environment

Land-use management that implements integrated urban land-use plans, based on European models, in which services as well as leisure venues and workplaces are located close to each other, will have a positive impact on health. These approaches will help to decrease automobile use, encourage walking and cycling and make urban infrastructure cost-effective. Public transportation that is more frequent and better adapted to the needs of the population is essential for harmonious urban and peripheral development. Future climate risks must also be taken into account in infrastructure renewal programs by reducing potential mosquito breeding sites, since the latter are vectors of infectious diseases (disposal wells and management of adapted retention ponds).[69] Preventing the deterioration of groundwater as future sources of drinking water also seems to be a wise option in the context of climate changes.

Conducting environmental impact assessments

Environmental impact assessments must be conducted in order to assess the various choices to be made in the area of environmental policies, to define measures to mitigate the actions resulting from the choices made and to consider a broader range of impacts, such as indirect, secondary and cumulative impacts. Decision-making about environmental quality must be guided by the following principles: safeguarding human health, caution, precaution, equity and social acceptability.

Working jointly with partners

The collaboration of all parties is necessary in order to achieve a balance between human activities and a safe and sustainable physical environment. Thus, it is imperative that Québec act in harmony with the other Canadian provinces regarding the observance of international agreements, such as the Kyoto Protocol, which will help to decrease pollution and destruction of natural resources. The collaboration of international partners, in particular the developing countries, requires increased financial aid, technical support and a transfer of more environmentally friendly technologies to allow them to avoid the mistakes made by Western countries during the successive stages of industrialization.[70] While we cannot expect developing countries to slow down their economic development, we can certainly help them adopt an ecological approach to development.

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Supportive Communities: Living Together in Harmony

"The right of individuals and communities to participate in the decision-making that concerns them is one of the most promising ingredients for enhancing their health and well-being. This right implies that members of a community will come together to act and find solutions to common problems."[1] (translation)

Supportive and Healthy Communities

The health of individuals is influenced by the relationships maintained at an individual level and the social bonds forged within an entire nation or at the level of the immediate groups to which they belong, that is, their communities. The following two concepts help us to understand this influence: social support, which is the product of the individual's relationships with family and friends, and social cohesion, which refers to the willingness of members of a community to co-operate for everyone's well-being.

Social support

Social support results from the interaction of two individuals in which one gives the other various forms of appreciation and recognition, tangible help, information, or even moral support.[2-3] It has been observed that the mortality rates for several diseases are higher among individuals who have a weak social network, that social support plays a role in controlling blood pressure, that it influences the level of certain hormones and the quality of the immune response,[4] and that there is a correlation between the lack of social support and different aspects of mental health, in particular depression.[5] Although we still have a lot to learn about the links between social support and health, particularly the process by which social support affects health, it is nevertheless recognized as a factor that influences health.[6] For example, reciprocity is recognized as playing a role in the effects of social support. In other words, the effects of social support are enhanced because the individual receiving the support believes that he will one day be able to reciprocate by providing support to the person who is helping him.[7] Thus, there is a certain comfort associated with not only receiving social support, but also with providing it.

Social cohesion

Individuals also live within a broader community, a feature of which is the quality of the bonds between its members. These social bonds may be characterized by social cohesion, which refers to the willingness of members of a society or community to co-operate in order to survive and prosper. The idea of community is essential here because it refers to the environment in which individuals go about their daily lives. This willingness of individuals to co-operate presumes that they freely choose to associate with each other and that they are likely to reach their goals,

the other groups also being willing to co-operate and equitably share the result of their efforts.[8]

Social cohesion refers to the existence of common values and interests as well as shared challenges and to feelings of trust and reciprocity between the citizens and members of a community.[9] Beyond the willingness to co-operate, social cohesion presumes that individuals have the capacity to do so and that they support social values such as justice, freedom, equality, tolerance and, more generally, respect for human rights.

"The term *community* refers to "[…] a structured social system that brings together people living within a precise geographical space (town, village, neighbourhood...), who have a social interaction and share certain common values as well as psychological bonds with each other and with the place where they live, thus demonstrating a certain awareness of their identity as a community."[10] (translation)

Social cohesion favours collective efficacy, which is seen as a community's capacity to reach common goals.[11] Collective efficacy and the sense of this efficacy correspond to what is called collective empowerment, that is, the capacity of a community to make decisions and undertake activities that will enhance its well-being as well as the belief in this capacity. The pursuit of common goals depends on the shared expectations within a community and on a mutual commitment to achieving these goals for the benefit of the entire community. These goals will be achieved if links are established with organizations outside the community, for example, with institutions and the broader political environment. These outside links are essential so that the community can have access to external resources as well as services, and can also achieve a degree of regulation of the relations between individuals and between the groups therein.

Social cohesion fosters the health of the members of a community just like social support has a positive influence on the health of individuals. Thus, a link can be observed between the trust connecting the members of a community and health, and this applies to general mortality, infant mortality and mortality associated with certain diseases such as CVDs and cancers.[12] Moreover, in communities where a co-operative social support network exists, children are less likely to be born underweight.[13] Social cohesion is also linked with psychosocial aspects of health. In fact, a study has demonstrated that the rates of violent crimes varied among various neighbourhoods in Chicago according to the level of collective efficacy as measured by the degree of informal social control and social cohesion.[14] Social cohesion is also associated with a number of other positive effects, particularly on economic development.[15]

How does social cohesion contribute to gains for society, like health, and an equitable distribution of social gains? Firstly, the higher the level of social cohesion, the more support there is for social standards as well as for values and social institutions. In fact, co-operation is more easily achieved when values are shared between members and standards have been established by the community. Secondly, social cohesion goes hand in hand with participation which directly favours the production of results that are useful to society or to the community. Lastly, the higher the level of social cohesion, the greater the pressure to provide political support for social measures, such as health care or educational services, to promote universal accessibility to such measures as well as to allow an equitable distribution of income. Finally, the mechanisms that link social cohesion to public policies and the results obtained are reciprocal since public policies, just like the gains made and their equitable distribution, reinforce social cohesion.[16]

In the same way that social cohesion reinforces social gains, and vice versa, the inverse effects are also possible. Thus, negative social results (for example, job losses) or an inequitable distribution of these results can erode social cohesion which, in turn, reduces the probability of obtaining positive social results, thereby setting in motion a vicious circle of social deterioration.[17]

On the whole, it is found that the social environment, just like the physical environment, plays a determining role in health, particularly through social support and social cohesion. Thus, two key levers exist to make the social environment more supportive: the participation of citizens

in collective well-being and public policies conducive to this well-being. Citizens must therefore have the necessary space to participate in the life of their community. This participation can take the form of volunteerism or involvement in a community organization or in any enterprise working towards the empowerment of the communities by themselves. It may also take the form of a contribution to the functioning of institutions, for example, in sectors that have a direct impact on the daily life of individuals and their families. Public policies must above all aim to achieve the most equitable distribution possible of resources and universal access to essential services. To maximize the positive effects of the social environment on health, it is absolutely necessary to develop communities.

Civic Participation and Social Cohesion: How Far Have We Come?

Québec supports the core values of democracy, that is, freedom, justice and equal opportunity. Solidarity, sharing and mutual help are also values held by Quebecers. Quebecers' spirit of co-operation is aptly illustrated by their solidarity, which has been expressed through volunteerism or donations during the disasters of the past decade (the ice storm in Montreal and the Saguenay floods).[18]

"Québec has a strong tradition of civic participation, without which several of our institutions would not have developed in the way they have. We are referring to the *Mouvement Desjardins*, unions, farmers' movement, and the large provincial or municipal political parties."[19] (translation)

Civic participation

Civic participation is expressed through different types of participation in collective life: volunteerism, community action, local intersectoral action and participation in social institutions.

Volunteerism and community action

In 2002-2003, there were approximately 8 000 community organizations working in various activity sectors. It is estimated that approximately 1.1 million individuals in Québec voluntarily give their time to an organization, which corresponds roughly to one fifth of the population aged 15 or older; more than 180 million hours are devoted to volunteerism annually, or the equivalent of 100 000 full time jobs.[20] In total, 24 government ministries and organizations spend approximately $530.5 million to support community organizations; more than half of these amounts come from the health and social services sector and one quarter come from the social solidarity and employment sector.[21] The contribution of the CLSCs (now part of the CSSSs) to the establishment of community organizations and the support that they provide to these organizations, mainly through community organizers, should also be mentioned. In a recent plan of action, the Government of Québec confirmed its recognition of the autonomy of these organizations. At the same time, it consolidated the funding of their mission, without increasing it however, and announced its intention to rationalize assistance to organizations, in particular by avoiding what it considers to be the duplication of missions in the same territory. The government guaranteed greater stability to organizations through multi-year funding of at least three years.[22]

"Community organizations are defined as constituents of an autonomous social movement of public interest, as agents of social change which act to enhance the quality of the social fabric since their intervention goes beyond the mere satisfaction of the population's social needs and health needs."[23] (translation)

The mission of community organizations is to combat poverty and discrimination in order to enhance the quality of the social fabric through the creation of mutual help groups, advocacy, social and political action as well as the delivery of services adapted to the needs of different population groups.[24] While certain organizations work in a specific field, for example,

intimate partner violence or addiction, others set up multifaceted projects that aim, for example, to reduce poverty and its consequences.

In addition, in Québec in the late 1990s, social economy firms were created. They are a good illustration of how we can benefit from linking social and economic concerns. Social economy firms focus on the production of goods and services whose costs are shared by the state and users. Unlike private firms, these firms are not driven by profits. Indeed, social economy firms subscribe to two key goals: to create jobs for individuals who would be easily excluded from the labour market and to provide goods and services which would otherwise not be easily accessible to certain population groups.[25]

Local intersectoral action

Québec's recent emphasis on local intersectoral action should also be highlighted. Through this action, it is acknowledged that the members of a community are in the best position to find solutions to the problems that concern them, particularly with regard to their health, because many of the means to improve health are the responsibility of sectors other than the health and social services sector. Two major measures have constituted an important stage in local intersectoral action to promote health.

First of all, since the mid-1980s, the *Réseau québécois de Villes et Villages en santé* (Québec Network of Healthy Cities and Towns) has mobilized many actors from different activity sectors, particularly the municipalities. The latter collaborate with public health departments as well as the then CLSCs and several Québec regions with the aim of promoting healthy municipal policies, facilitating projects undertaken by members of the municipalities and encouraging exchange between the different municipalities.[26] Currently, more than 140 municipalities, which represent more than half the population of Québec, belong to the *Réseau québécois de Villes et Villages en santé*.[27]

The second measure consists in holding regional and local forums on social development organized by the *Conseil de la santé et du bien-être*. The purpose of these forums is to bring together local and regional actors from different activity sectors to discuss social development as well as the tools and conditions necessary to achieve it.[28] These forums and the subsequent national forum highlighted problems linked to poverty, weak social ties and social exclusion as well as the willingness of local and regional communities to commit themselves to supporting individuals and reducing inequalities.[29] Following these forums, the regions pursued their own development processes, according to structures defined by each region. These regional efforts are based on different approaches, either structuring because they are oriented towards the development of the efficacy of communities, or targeting specific development projects aimed at assisting different vulnerable groups or improving infrastructures to encourage civic participation.[30] The effects of these forums can still be felt, through the continuing initiatives of communities as well as the action of volunteer groups, community organizations and social economy firms.

Participation in social institutions

Québec has used various mechanisms to encourage its citizens to participate in the functioning of institutions. This participation can take various forms, ranging from simple consultation on policy and program development to direct contributions to the functioning of organizations or institutions. Despite a clearly expressed desire on the part of governments to give citizens a real role in governance, the range of strategies used until now has been relatively limited given all the innovative means put at the disposal of political and administrative systems.[31]

Social policies

As regards public policies that are conducive to social cohesion and civic participation, as mentioned previously, the Government of Québec has adopted the *National Strategy to Combat Poverty and Social Exclusion*. Besides reducing poverty, inequalities and social exclusion, this strategy aims to develop social solidarity. Through this strategy, the state undertakes, in particular, to support action by citizens as well as local and regional initiatives to combat poverty, to recognize and encourage corporate social responsibility and to involve community organizations in combating poverty and intervention with those groups that are most affected by poverty.[32] In addition, under the recently passed an *Act to Combat Poverty and Social Exclusion*, the Government created the *Fonds québécois d'initiatives sociales* (a fund dedicated to the financing of projects to combat poverty and social exclusion) to support community initiatives. All ministries and organizations are invited to help establish and monitor these projects.[33-34] In this regard, new partnerships between the public, private and community sectors are encouraged, including the pooling of resources.

As was also previously mentioned, in addition to the Act and Strategy, the Government has adopted a community initiative action plan and over the last few years, has implemented various measures related to education, employment, childcare, social housing and prevention of social exclusion among seniors.

The Next Step... Strengthening Support for the Development of Communities

"Particular attention must be paid to the emerging energies in the community and the contact made with local communities. The actors concerned within the communities must agree on what they can achieve together and find the keys for change in order to develop their population's health. It is therefore important to encourage approaches that give priority to assistance and support for analysis of the community as well as management of change processes."[35] (translation)

While the attention given to the social environment as a strategy for enhancing the population's health is relatively recent, the focus on interventions that may improve it is even newer. For a number of years, the trend in community development intervention emphasizing collective empowerment, participation, consultation and favourable public policies has been dominant. An approach that fosters social cohesion by encouraging civic participation and promoting the adoption of public policies that are conducive to this cohesion can be seen in the development of communities.

Encouraging participation in community life

Given the importance of participation in community life, there should be sufficient space at the local level for decision-making and action. Thus, the opportunities for citizens to participate in the life of their community should be increased, particularly through volunteer and community action, and state support is essential. The involvement of community members is also essential. Promoting civic participation among the general population and educating young people about citizenship – in particular through the Health Promoting Schools projects, which is based on a model developed by WHO and acts on a set of factors related to the health and education of students in order to support the development, social adjustment and academic success of youth – are likely to encourage this commitment and participation. In order to promote civic participation by youth, the idea of granting academic credits to students for community service, which has been adopted by a few schools, should become more widespread.[36]

In order to encourage citizens' participation in institutions, innovative means should be used to bring together administrators, elected representatives and the public, particularly in a context of mergers (of municipalities and institutions) that could contract the space for public participation. Different levels of participation can be envisaged, depending on whether the goal is to inform the population or raise awareness among the population, gather information on their opinions, values or expectations, reconcile the positions of different interest groups, or make decisions or implement solutions. It is expected that it will be necessary to combine different mechanisms of participation, depending on the goal pursued, and to experiment with innovative means which have been tested in other countries, in particular when the goal is to encourage citizen involvement. This is true of citizen juries, citizen panels and deliberative polling.[37-38]

Table I

Examples of Innovative Means of Participation in Institutions

Means	Description	Use
Citizen jury	The authorities submit a public policy issue to obtain an opinion or a decision which they undertake to implement. The jury members are recruited from the population and represent the latter.	When there is no obvious solution to a complex problem.
Citizen panel	The authorities submit a public policy issue to a panel of non-experts to obtain a consensus.	To obtain comments and opinions on controversial issues and increase the general public's understanding of them.
Deliberative polling	A series of meetings is held over a period of two to four days during which a large number of participants (250-600), who are recruited based on demographic criteria and their attitude on the subject in question, discuss and receive information on a subject (polling before and after the meetings).	To bring out a public opinion on a specific issue and increase the public's understanding of this issue.

Providing tools to the most vulnerable communities

To be empowered, certain communities will need special support. This does not mean replacing community members with experts in order to reach collective goals, but rather giving community members tools based on their potential. This support can take various forms:[39-40]

- help community to determine the knowledge and skills of its members, strengthen skills and knowledge among members and encourage the latter to make the most of them;
- support community members who have leadership skills so that they can share their concerns and needs, find solutions and take action;
- enhance communities' feeling of efficacy by promoting and highlighting their achievements and successes;
- encourage evaluation and feedback on action, the purpose of which is to reinforce openness to new ideas and knowledge, and listening to the ideas of others. The capacity of communities will be enhanced because they will be able to learn and benefit from their own experiences and those of others.

To carry out their projects, communities need financial resources, especially socio-economically disadvantaged communities. It therefore seems advisable to pool resources from the public sector, the private sector and the community sector. To consolidate the *Fonds québécois d'initiatives sociales* for 2004-2005, ministries and organizations were asked to reserve amounts for community-based projects, in particular vulnerable communities. It is hoped that the government will opt to provide a degree of continuity in the funding of initiatives from the communities, as it did for community organizations, in order to ensure the stability and continuity of these projects.

Encouraging action through networks

Given the importance of social determinants, individuals and communities alone cannot be given the responsibility for their health.[41] All the actors of society must make an effort. All actors must assume their share of responsibilities, based on their own mission, by making use of what they can offer to achieve collective goals. The collaboration between the state and private industry to promote health, as recommended by WHO, is an example of the possibilities offered by such alliances not only for funding certain services, but also for the exchange of expertise which may result and the greater consistency of actions in pursuit of a common goal. Such collaborative efforts bring together at least two actors, an enterprise and a government organization, which strive to achieve a goal that promotes health, on the basis of a precise distribution of tasks which has been agreed on by all the actors.[42-43]

The capacity of community action will be all the greater because there will be relationships of trust and collaboration with other communities, institutions, different intersectoral actors and the broader political environment. Local, regional and national infrastructures should encourage these exchanges. In this regard, the importance of an equitable sharing of responsibilities between the government, the private sector, the community and individual citizens should be underlined, as well as the need for the government and private sector, in particular, to establish partnerships and work with targeted intersectoral actors.

Adopting policies conducive to the maintenance and development of social cohesion

It seems clear that public policies conducive to social cohesion also foster health and give rise to other benefits for society or the community. Thus, even policies which, at first glance, appear to favour prosperity or economic growth will lose their long-term benefits if they have potentially negative effects on social cohesion: the exclusion, alienation and the weakening of co-operation that could result from these policies could in fact render them futile.

Although there is a very wide range of public policies which can influence social cohesion, the particular importance of certain fields should be underlined. Beyond the policies concerning an equitable distribution of wealth and the creation of quality jobs, the policies aimed at ensuring the universal accessibility of essential services, such as day care services, educational services, housing, food and transportation as well as health and social services are particularly important for communities.

"Good policy is the only sure lever available to enhance social cohesion, since political support cannot be dictated, values and adherence to informal norms can rarely be legislated and civic participation cannot be compelled. However, all policy can be social cohesion policy, since all policy can have the indirect effect of increasing or decreasing people's willingness to cooperate, their sense of inclusion and their sense of belonging. […] In this sense, good public policy is part of the "virtuous circle" that maintains social cohesion and reinforces the trust that underpins sustainable societies."[44]

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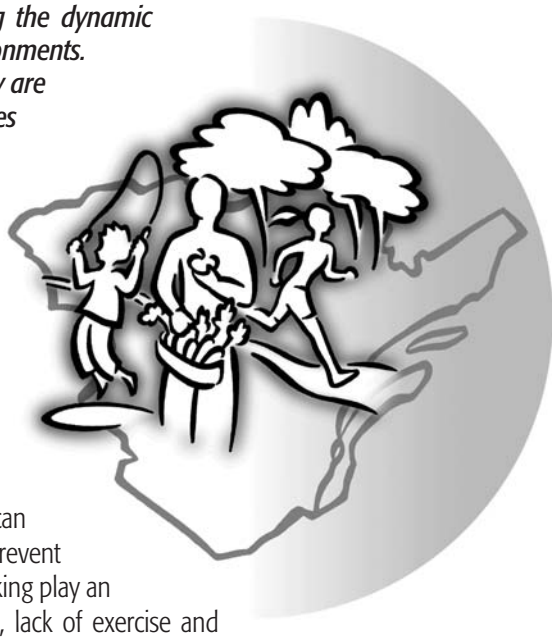
The Individual: Making it Easier to Opt for Healthy Lifestyles

"Increasingly, health promotion professionals are recognizing the dynamic interplay which exists between individuals and their environments. Although lifestyle choices are ultimately personal decisions, they are made within a complex mix of social and environmental influences which affect health behaviors by making healthier lifestyle options more readily accessible, affordable, comfortable, and safe."[1]



Diet, Exercise and Smoking: Links with Health

Several behaviours and lifestyles influence health. For example, safe behaviours while on roads, at home and when participating in sports activities can prevent injuries, and the use of vaccination can prevent many infectious diseases. Many lifestyles can also help to prevent health problems. Thus, a healthy diet, regular exercise and not smoking play an important role in the prevention of chronic diseases. A poor diet, lack of exercise and smoking, coupled with excessive alcohol use, are involved in approximately 40% of all deaths[2] and in up to 80% of deaths linked to chronic diseases.[3] These diseases represent a heavy burden for Québec society in terms of mortality and morbidity, a loss of quality of life for the individuals affected and costs for the health care system. Although other determinants are also involved, such as genetic factors, socio-economic conditions, the physical and social environment as well as the quality of health care, lifestyles nevertheless have a considerable impact on health.

Diet

Diet influences health in many ways. Eating healthy foods[4-5] and reducing consumption of certain foods such as salt,[6] saturated fats,[7] and trans fats,[8] protect against several chronic diseases. In addition, the balance between energy intake and output helps individuals to reach and maintain a healthy weight.

In Québec, the proportion of the population aged 12 or over that eat five servings of fruits and vegetables per day, an indicator which is often used to assess diet quality, was 42.5% in 2003, the highest proportion among all the provinces in Canada. The proportion of women who eat at least five servings of fruits and vegetables per day is higher than that of men.[9] Daily fruit and vegetable intake varies markedly according to personal income: in 2001, 45% of people in the highest income group ate at least five servings of fruits and vegetables per day, compared with 35% of those who belonged to the group with the lowest income.[10]

Physical activity

The term active refers to an energy output of approximately 1000 kilocalories or more per week – exercise that is spread out to at least 3 times per week at a moderate or high level of intensity: for example, 30 minutes of brisk walking 7 days per week, or 30 minutes of jogging at medium speed, 3 times per week.[15]

Physical activity improves the metabolism of glucose, reduces fats in the body and lowers blood pressure. It can improve the state of the musculoskeletal system, help to control body weight and better distribute body fat, as well as reduce depressive symptoms.[11]

The proportion of Quebecers aged 18 or over who are considered to be physically active during leisure time increased from 26% to 31% between 1994-1995 and 2000-2001, while the proportion of those who walk to get around (for 6 hours or more per week) was approximately 11% during the latter period.[12] It should be noted that men are generally more active than women.[13] Income also influences physical activity: thus, in 2001, 61% of individuals in the highest income group were considered to be active during their leisure time, compared to 50% of those in the lowest income group.[14]

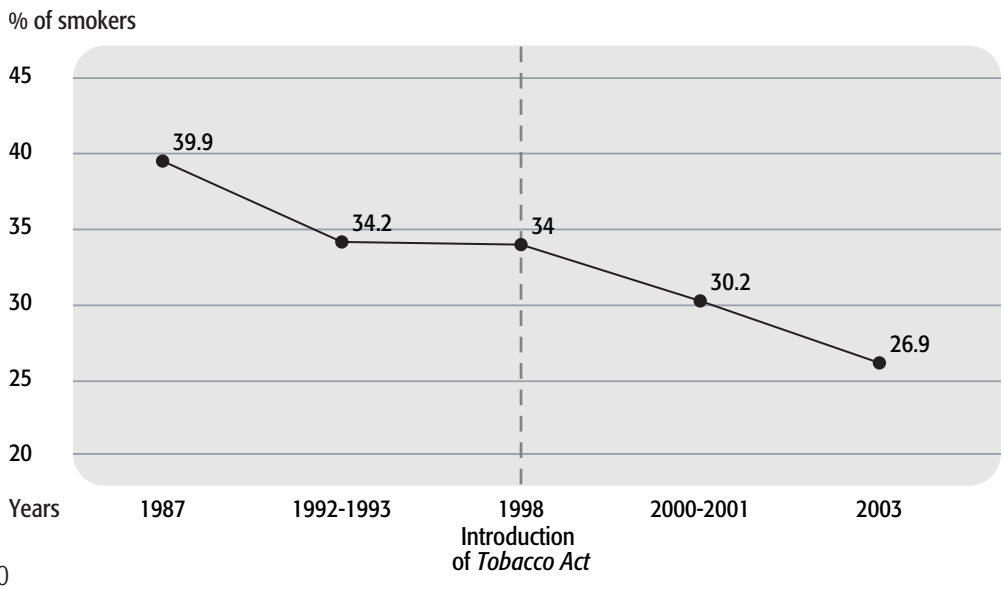
Smoking

The effects of smoking on health have been known for many years. Experts agree that one out of two persons who smoke will die prematurely. In fact, according to a British study, persistent cigarette smokers from youth will die ten years sooner than non-smokers. The risks associated with smoking are reduced by half if a person quits smoking at age 50, and almost all the risks will be avoided if he quits at 30.[16]

Surveys show that smoking prevalence among individuals aged 15 or over decreased from 40% in 1987 to 27% in 2003.[17] (Figure 1). The proportion of smokers aged 12 or over is still higher in Québec than elsewhere in Canada.[18] In 2003, the proportion of young smokers aged 12 to 19 reached 20% in Québec, compared to a proportion varying from 10% to 17% in the other Canadian provinces.[19] For the same year, 26% of young Quebecers under 18 years old were exposed to secondary smoke at home, a decrease of 12% compared to 2000.[20] There is an association between income and smoking, that is, there is a gap of over 20% between the proportion of smokers in the highest income group and the proportion of smokers in the lowest income group (23% compared with 47%).[21]

Figure 1

Evolution of the proportion of smokers, population aged 15 or over, Québec, from 1987 to 2003 [22-23-24]



Promotion of Healthy Lifestyles: How Far Have We Come?

The *Québec Public Health Program 2003-2012*

In Québec, actions to promote healthy lifestyles and to prevent chronic diseases have existed for a long time. However, most of the actions taken have been isolated and fragmented. The *Québec Public Health Program 2003-2012* proposes a global approach to the promotion of healthy lifestyles and prevention of chronic diseases by combining health education, preventive clinical practices, modification of environmental conditions and the application of public policies favouring health. Particular emphasis was put on living environments, for example, in schools, using the Health Promoting Schools approach.[25] Through this approach, actions can be integrated that are aimed at a set of lifestyles, targeting both individuals and their environment while at the same time paying attention to the skills development and academic performance of young people.

Certain measures that are included in the program concern one lifestyle or another.[26] This is true of the review of policies and strategies on diet, promotion of safe and accessible environments and contexts to promote regular physical activity as well as measures related to the application of the *Plan québécois de lutte contre le tabagisme 2001-2005* (Québec plan to combat smoking),[27] which will be explained below.

To facilitate the implementation of a global approach to the promotion of healthy lifestyles and prevention of chronic diseases, a framework was recently developed by the ministère de la Santé et des Services sociaux. This reference framework sets out the rationale underlying the global approach, which targets three main lifestyles (integrated intervention) using a combination of strategies aimed at individuals and their environment (multidimensional intervention). The reference framework also determines the conditions for the successful implementation of such an approach.[28]

Working groups made up of different public health actors were established in 2004 and examined a variety of themes: healthy food environments, physical activity and the built environment, clinical practices to promote healthy lifestyles and prevent chronic diseases, the examination of a pilot project in this area, the *0-5-30 Combinaison prévention* program,[29] and socio-cultural and media-related aspects of the promotion of healthy lifestyles. These working groups are responsible for determining the most promising actions to be implemented.

Following the *Forum des générations* (intergenerational forum) which was held in fall 2004, an intersectoral think-tank was formed to mobilize the population around the promotion of healthy lifestyles and the prevention of chronic diseases, by considering children, youth and their living environments (family, child care environment, school, etc.), municipalities and communities.[30] This working group is responsible for bringing out general orientations to which will be eventually added the different actions from the public health working groups. The following sectors participate in this intersectoral group: social solidarity, income, family, education, agriculture, fisheries, food, municipal affairs, sports and recreation, youth, and health and social services.

Finally, national media campaigns on healthy lifestyles have been launched. A government campaign to promote healthy eating, physical activity and non-smoking was recently launched (the Do it For You campaign),[31] and private sector agents have collaborated with the government for the *Défi Santé 5-30* (the 5-30 health challenge) campaign to promote the consumption of fruits and vegetables (5 servings per day) and physical activity (30 minutes per day).[32]

Québec's battle against smoking: a success story[36]

Smoking is still a widespread phenomenon in Québec. However, considerable progress has been made since the global action strategy to combat smoking was introduced. The strategy adopted by the Québec government consists partly in denormalizing tobacco products as well as the marketing and use of these products, but also in providing information to the population on the harmful effects of smoking as well as on smoking cessation services. Thus, an approach that relies on a series of political, legislative, educational and clinical measures was established; this approach also relies on the mobilization of the research and evaluation milieus.

Thus, the legislative and regulatory approach has allowed the Québec government to apply several tax increases on tobacco and to adopt the *Tobacco Act* in 1998, with the aim of preventing smoking among youth and protecting the population against environmental smoke. The *Tobacco Act* includes measures that restrict the use, sale and advertising of tobacco.

At the same time, efforts in the areas of communication, education and support were made to convince individuals either not to start smoking, or to quit. Help is now offered to people who want to stop smoking through free telephone help lines, screening and support by health professionals as well as through the inclusion of smoking cessation products in the list of medications covered by the basic prescription drug insurance plan and private plans.

The different partners concerned by this subject have also taken action to reduce smoking in Québec: the CSSSs, public health departments, community organizations, groups and associations in contact with youth, ministries and agencies, the media and the federal government.

Research, surveillance and evaluation are important components of this multidimensional effort. Surveys on the use of tobacco products, new studies on attitudes toward smoking and evaluation of all the measures established are essential components in keeping this strategy up to date and correcting it if needed.

The *Tobacco Act* and the *Plan québécois de lutte contre le tabagisme 2001-2005* (Québec plan to combat smoking)

In 1998, the Québec National Assembly passed the *Tobacco Act*.[33] In addition, Québec established the *Plan québécois de lutte contre le tabagisme 2001-2005* (Québec plan to combat smoking), which was mentioned above,[34] and which aims to prevent smoking among youth, to promote and support smoking cessation and to protect the population from environmental smoke as well as to support research and evaluation so as to develop knowledge on this subject. Combating smoking in Québec is an example of a successful application of a multidimensional strategy.[35] Figure 1 on the evolution of smoking since 1987 shows that the number of smokers has markedly decreased since 1998, the year in which Québec's *Tobacco Act* was passed.

The Kino-Québec Plan of Action

As regards physical activity, the Kino-Québec Plan of Action, developed according to the municipal affairs, sports and recreation as well as the health and social services sectors, will soon be implemented. The main goal of this plan of action is to increase exercise among school-aged youth (aged 15-17) and their parents through intervention in the schools and municipalities.[37]

The Next Step... New Means of Promoting Healthy Lifestyles

Several arguments can be made to support a global approach to the promotion of healthy lifestyles and the prevention of chronic diseases. Although educational interventions aimed at individuals are essential for the latter to have the information they need to make informed choices, these are not enough. Interventions must also target the environment of individuals in order to facilitate and maintain healthy choices.[38] Social sciences and behavioural psychology have shed new light on the way we conceptualize the promotion of healthy lifestyles. They have helped to integrate into an ecological model the different factors (biological, psychological, social, cultural and political) that influence behaviours centred on health and their interactions.[39] This model leads us to believe that individual attitudes towards health can be influenced by modifying environments and social standards.[40] To implement this model, multidimensional interventions are necessary.

A large proportion of the population (between 40% and 60% of adults) has more than one modifiable risk factor for chronic diseases: acting on one or more risk factors could increase the effectiveness of the interventions aimed at preventing chronic diseases. This suggests that the adoption of one healthy lifestyle will have a positive impact on the other lifestyles.[41] However, the results to date are not conclusive regarding this spill-over effect, undoubtedly because the interventions carried out were isolated instead of being integrated into a global approach. In this regard, certain combinations of interventions could prove to be more effective than others.[42]

It is generally agreed that a global approach is needed to promote healthy lifestyles, since the latter are powerful determinants of chronic diseases. However, this approach must use interventions that are considered to be effective and they must be implemented through solid intersectoral partnerships.

The global approach

Although many questions remain regarding how to translate the global approach in concrete terms, several avenues have been identified as a result of experiments already carried out concerning individual interventions, modification of environments and public policies favouring health.

In the area of individual interventions, individual aptitudes should be reinforced through campaigns centred on the harmful effects of tobacco, the promotion of the consumption of a minimum of five fruit and vegetable servings per day and the integration of physical activity into leisure time and moving around on a daily basis. We can also rely on health services by training professionals to provide counselling on healthy eating, physical activity, not smoking and smoking cessation.

There are several ways to create environments that are conducive to the adoption and maintenance of healthy lifestyles. It is possible to increase accessibility to healthy products, decrease accessibility to harmful products (vending machine content, cafeteria menus, etc.) and facilitate access to space and equipment for physical activity in schools and municipalities. As for not smoking, efforts must continue to be made to reduce accessibility to tobacco products. It is also possible to create contexts that encourage healthy eating and physical activity by improving the quality of the premises and the conditions in which individuals eat their meals and by planning safe routes for moving around on a daily basis, particularly between home and school. Another way to support the modification of the environment consists in supporting community efforts to carry out various activities related to diet and physical activity (e.g., setting up community kitchens, loaning equipment, etc.).

It is important to underline that actions aimed at modifying environments to promote physical activity go hand in hand with those centred on safety. Indeed, whether it involves encouraging active ways of getting to school (walking or cycling) or even participating in sports or other leisure activities, consideration of safety can only help maximize the positive effects on health. Thus, an improvement in physical condition can be associated with injury prevention, and most of the time this association motivates people to be physically active. For example, the determination of safe routes may reassure parents, who will then encourage their child to walk to school, which is an easy way for children and adolescents to get regular exercise.

Finally, it will only be possible to modify environments if regulations, laws and public policies favouring the adoption and maintenance of healthy lifestyles are implemented. Nutrition policies could be adopted for day care centres, schools and the workplace, nutritious meals could be funded to reduce the competition from neighbouring fast-food restaurants, regulations on food product advertising aimed at children could be reinforced, and the regulation of weight loss products, services and methods could be strengthened. In the area of physical activity, financial incentives could be used to encourage walking and cycling to get around and to encourage schools to devote more hours to physical activity. The *Tobacco Act* could be revised, in particular, to broaden the category of public places where smoking is prohibited, for example, restaurants and bars and to limit the promotion and display of tobacco products in sales outlets.

Favourable conditions: effective interventions and partnerships

The establishment of a global approach to the promotion of healthy lifestyles and the prevention of chronic diseases requires the use of interventions that are considered to be effective. Québec will be able to draw on the WHO Global Strategy for Noncommunicable Disease Prevention and Control as well as strategies developed in Canada[43] and elsewhere in the world.[44-45-46-47]

The global approach also requires that local, regional and provincial actors work in partnership to determine, implement and co-ordinate interventions in order to act effectively on a set of determinants. Ministries and organizations, municipalities, schools, workplaces, community organizations and private firms all have a role to play.

Various means can be used to help develop productive partnerships. As in the efforts made to combat smoking, it must be ensured that the various partners involved share common values and goals and the support of politicians must be secured. Then, from the very inception of an intervention, the support of key partners must be obtained and all partners concerned must be included. Finally, concrete results must be sought through the establishment of precise and realistic goals. A solid partnership remains the key to success in the implementation of a global approach to the promotion of healthy lifestyles.

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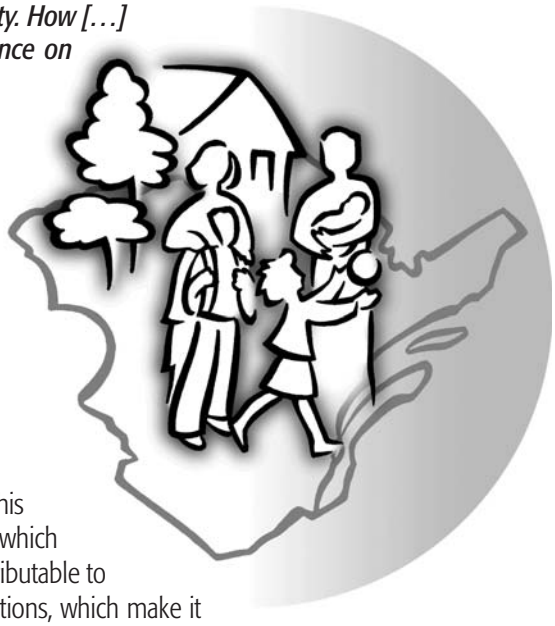
A Solid Foundation: Supporting Child and Youth Development

"Children are the touchstone of a healthy and sustainable society. How […] a society treats its youngest members has a significant influence on how it will grow, prosper, and be viewed by others."[1]



Child and Adolescent Development and Health in Adulthood

Child and adolescent development is a process whereby they make discoveries and acquire skills that mark their daily life. Development during the first twenty years of life is particularly important because it determines health in adulthood. There are three main reasons to explain the importance of this development.

Firstly, the brain is highly malleable during the first years of life. This malleability means that to the first connections between neurons, which are determined genetically, are added new connections that are attributable to the external stimulations that the child receives. These new connections, which make it possible for the child to acquire increasingly complex skills, develop at a particularly rapid pace in the very young child. While development is very rapid in the child's early years, at the same time the brain is highly vulnerable to injuries that can affect the central nervous system. Although the young child's brain has a greater capacity to recover than an adult's, it must, however, be emphasized that even after the first stages of development, new connections between the neurons are possible. In addition, the child's development does not depend on biological processes alone: the characteristics of his environment, particularly the stimulations to which he is exposed, have a far from insignificant influence.[2]

Secondly, right from his first few days, the child establishes an attachment relationship with his parents, and this relationship will be decisive for all other relationships that he subsequently establishes.[3] The child experiences a feeling of secure attachment towards adults who respond to his demands in an adequate, stable and consistent manner. This feeling of trust and security acquired by the child becomes a prism through which he views the bonds uniting him not only to his parents, but also to a circle of people that gradually widens. Subsequently, the child's socialization will be influenced by the relationship that his parents have with him throughout his childhood and adolescence.[4] This also applies to their parenting style, in particular, the way that they discipline and supervise the child,[5] and the educational and childrearing style of other adults in his environment, such as teachers.

Thirdly, it is during childhood and adolescence that the child experiences the first stages of schooling during which he will or will not acquire the skills needed to enter the labour market and pursue social goals. The influence of educational level on health is known: as was seen previously, social and economic conditions, which are largely determined by educational level

and income, influence health.[6-7] For the child, the acquisition of skills during childhood and adolescence and in particular, academic performance, will have a definite effect on his health throughout his life.

In order to support the development and social adjustment of children and adolescents, it is therefore necessary to take action on the different systems in which they live, whether the family, other living environments (especially the childcare setting, the school and the community), on the links between these different living environments, and more generally, the set of public policies that affect children and adolescents.

Support for Children and Adolescents: How Far Have We Come?

In 1991, the report of the Working Group on Youth entitled "*Un Québec fou de ses enfants*" specified the means to be implemented to prevent the appearance of serious problems among youth.[8] Although this report helped to launch measures to support children and youth, a great deal remains to be done, particularly to reduce health inequalities among Québec's children and adolescents.

Several activities put forward in Québec to support the development of children are today part of the objectives of family policy,[9] that is, maintaining universal support for families and providing greater assistance to low-income families, facilitating the reconciliation of work and family responsibilities as well as encouraging child development and equal opportunity. The National Strategy to Combat Poverty and Social Exclusion provides for a series of interventions to support families, to ensure the success of youth and their social integration as well as to improve the services intended for them.[10] Finally, several other sectors, including education and health and social services, as well as many community organizations devoted to childhood and youth are establishing measures with similar goals.

Measures to improve the living conditions of families

The *Government Action Plan to Combat Poverty and Social Exclusion*[11] provides for the application of the provisions of *An Act to combat poverty and social exclusion* in order to increase family incomes and help integrate people into the labour market. In addition to these provisions, which were presented earlier in this report, are measures to support children. These measures consist, in particular, in improving the financial assistance offered to all families and special measures intended for low-income families.

In order to address the issue of work-family balance, the Québec Parental Insurance Plan will eventually be improved, to include more generous, accessible and flexible parental leaves than those granted until now. Among the main changes to the Plan are the increase in maternity leave payments, parental leaves or adoption leaves and the introduction of a paternity leave of up to five weeks.[12]

Clinical and preventive social services and health services

A whole set of social services and health services are offered to future parents, as well as children and adolescents. Basically, these include:

- **preventive services** that are part of the *Québec Public Health Program 2003-2012*:[13]

  universal services:

  - youth clinic services for consultation concerning sexuality, elective abortion services and access to emergency oral contraception,
  - breastfeeding support services through the "*Amis des bébés*" ("Baby-friendly Hospital Initiative") network,
  - vaccination services through the Québec immunization program;

  selective services intended for vulnerable families:

  - integrated perinatal and early childhood services intended for families living in a context that makes them vulnerable and to support parents in their role and encourage the healthy development of their children,[14]
  - preventive dental services;

- **clinical services** intended for young people in difficulty and their families. To this end, the *Stratégie d'action pour les jeunes en difficulté et leur famille* (action strategy for young people in difficulty and their families) recommends, among other measures, that the basic services offered mainly by the CSSSs be consolidated and that a range of specialized services by youth centres and pediatric psychiatric units be defined and provided.[15]

Accessible day care services

Since 1997, the government has established educational day care services that are subject to a reduced fee for three- and four-year-old children. The cost of these services, initially set at $5 per day, was recently increased to $7 per day. These reduced-fee services should gradually be made available to two-year-old children and infants. In addition, the government plans to increase the number of spaces over the coming years by taking into account, in particular, parents who have atypical work schedules.[16]

The Health Promoting Schools approach

Inspired by the model developed by WHO, the Québec Health Promoting Schools projects reaffirm the importance for students to grow up in a learning environment conducive to developing healthy habits and competencies that will have a positive impact on their health and well-being.[17] This approach focuses on concerns related to both education and health, thus placing preventive actions at the heart of the school's educational mission and inviting parents and community partners to join forces with the school. The Health Promoting Schools projects act on six key factors: self-esteem; social competence; lifestyle; healthy, safe behaviour; favourable school, family and community environment; and prevention services. The joint actions must simultaneously target young people, families, the school and the community so that they are complementary and mutually reinforce each other.

"A health promoting school works toward the optimal development of young people. The approach proposed to achieve this goal relies on school-based, global and concerted promotion and prevention. It consists of a series of measures used in a coherent fashion by various partners working together. These measures are implemented within the framework of the school's educational mission and achievement plan."[18] (translation)

The Health Promoting Schools projects focus on three areas of intervention: (1) changes in the learning environment to support the development of competencies and the adoption of a healthy lifestyle; (2) promotion of competencies, lifestyle and safe and healthy behaviours; and

(3) establishment of partnerships between the school, family and the community. Depending on the option chosen, the school is the location where all activities take place (school model) or, the school is a partner among others and the activities are carried out both outside and inside the school (community model).[19]

Social and employment insertion measures

Through the work carried out in the education, employment, social solidarity and family sectors, different measures allow young people who have little education or who dropped out of school to acquire skills and enter the labour market. These measures take the form of learning and support services adapted to the needs of individuals between the ages of 16 and 24.[20]

The contribution of community youth support organizations

Many community organizations work with children, adolescents or their families. These organizations offer services in the areas of parent support, prevention of developmental delays among young children, homework assistance and social and employment insertion services for young people who have dropped out of school or who are in difficulty, particularly through support and mentoring. Finally, several organizations intervene in the community and support the development and the social adjustment of youth. This is true of the *maisons des jeunes* (centers for youth aged 12 to 18 offering a variety of structured programs and leisure activities), which exist in all Québec regions.

The Next Step... Strengthen Actions that Promote Child and Youth Development

Support for child development is needed to ensure that the population's health status will be enhanced and maintained in a long-term, sustainable way. In concrete terms, the goals that should be pursued to ensure the optimal development of children and adolescents as well as their social adjustment are as follows:

- improve living conditions of families;
- prevent unwanted pregnancies during adolescence;
- provide parents with care and parenting tools;
- ensure the quality of child care and educational services in schools and facilitate the acquisition of competencies and the adoption of a healthy lifestyle among children and youth;
- support parents, particularly mothers and especially vulnerable mothers (very young, poor, with little education), during pregnancy and the first years of the child's life;
- facilitate the social integration of youth in difficulty.

"Children are raised by families, but they grow up in neighbourhoods and communities. For this reason the strategies which support child development need to focus upon more than just the child and their parents."[21]

Generally speaking, the actions to be implemented should ensure that children and adolescents are healthy, both physically and emotionally, that they feel loved and secure, that they learn, acquire a range of skills, succeed at school and are socially engaged and responsible.[22]

While certain measures are universal and intended for everyone, others are selective and target vulnerable children and adolescents as well as their family. These different universal and selective measures complement each other. Universal measures have the advantage of targeting a large

number of children and preventing children from being labelled and stigmatized. Through universal measures, all children are provided with the conditions that they need in order to develop. In addition, since the trajectory of the children's vulnerability is not linear (certain children with normal development at a given age may become vulnerable the following year), universal interventions are more likely to apply to all vulnerable children. Finally, although proportionally more children from socio-economically disadvantaged environments have problems related to their development, children from the middle and upper classes also have such problems. In fact, there is no socio-economic threshold beyond which children and adolescents are exempt from development problems. This constitutes another argument in favour of universal measures.[23] However, given the intensity of certain preventive interventions, the importance of selective measures cannot be questioned when the risk factors are well known. It is obvious that a full range of clinical services and universal, selective preventive services must be offered to meet the needs of all children.

On the whole, the actions put forward in Québec to support the development and the social adjustment of children and youth involve numerous activity sectors of society. During the coming years, particular attention should be paid to the following measures:

"Providing every child […] with the conditions in which he can develop to his full potential, from the very first moments of life, has emerged as the most inspiring way to prevent serious problems among young people."[24] (translation)

- adopt public policies that improve the living conditions of families, particularly as regards income and reconciling work and family responsibilities, and ensure that all actors in society contribute to this improvement of living conditions, including private enterprise. Monitor these public policies;
- ensure a balance between selective services that target vulnerable families and universal services intended to support all children, adolescents and their parents. In this regard, two challenges must be met: meeting the needs of parents while basing action on conclusive data on the effectiveness of interventions implemented and ensuring that selective actions are aimed at all vulnerable families;
- continue to improve child care services, according to the terms which best meet the varied needs of parents and at a reasonable cost, so that child care services are accessible to all families. Ensure the quality of the educational services offered by implementing the necessary evaluation and follow-up processes;
- continue to implement the Health Promoting Schools projects by meeting the challenge of establishing the close collaboration needed between the school, family and community, and supporting teachers and school administrations, who are the key actors in the implementation of these projects;
- ensure that communities can care for their children and adolescents by providing them with many opportunities for their development, creating infrastructures intended for them (libraries, parks, etc.), making recreational, sports and artistic activities accessible and offering support services to families, particularly through community organizations;
- support the continuity and integration of services offered to young people in difficulty through research and evaluation.

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Conclusion

The purposes of this first report of the National Public Health Director were to draw an overall portrait of the most striking yet preventable health problems, to identify their determinants and to specify the courses of action available to act on these factors and prevent disease. It was found that the population's health has improved over the years but there are still formidable challenges ahead, in particular regarding action on the common factors associated with several health problems and psychosocial problems. The means to prevent these problems are as diverse as they are numerous, but their implementation gives rise to several issues.

The population's health status has thus evolved. In recent decades, there has been a decrease in CVDs, a reduction in road traffic injuries and a decline, indeed even the elimination, of infectious diseases which were previously not controlled. However, HIV infections, the number of people suffering from cancer, as well as falls among seniors have increased. An influenza pandemic is also feared. Lastly, several psychosocial problems affect people of all ages.

A close examination of the evolution of the population's health status has helped us to understand a number of factors behind this progress: the improvement of health care, the improvement of the physical environment, such as water quality control, as well as the improvement of the social environment, in particular living conditions and individual behaviours such as adopting personal hygiene measures or wearing a seat belt in a motor vehicle, and progress made in health care delivery, in particular the existence of a systematic vaccination program, early detection and use of cutting-edge technologies. These health determinants have made it possible to prevent health problems that were previously considered to be unalterable. A better understanding of the mechanisms of these determinants as well as the combination and interaction of the various risk factors also shows that health is a complex phenomenon which we cannot expect to maintain or enhance through simplistic or unidimensional means.

Can progress still be made in health? Yes. This is shown by the examination of the courses of action that allow us to act on the determinants of the principal health problems and psychosocial problems. We can expect to increase the contribution of the health and social services system by strengthening primary care services, improving professional practices and emphasizing the role of prevention. We can most certainly strengthen the population's health by reducing socio-economic inequalities. We can make progress by enhancing the quality of the environment through changes in production modes and consumption patterns, for example, saving energy and protecting natural resources. We can also enhance social cohesion and, thus the capacity of individuals and communities to take control of their lives, by relying more on civic participation and public policies that promote collective well-being. We can make the environment more conducive to the adoption of healthy lifestyles and behaviours. And especially, we can still leave a precious legacy to our children by guaranteeing them the optimal conditions for development and participation in society.

The problems are preventable and the solutions are within our reach. How do we continue to enhance the population's health? Since health is a complex phenomenon existing in a complex universe, unidimensional solutions are no longer adequate. We must work together towards common goals that relate to health, the economic environment, the physical environment and the social environment. *Producing health* is an achievable goal. What remains to be determined is whether we are willing to work towards that goal.

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