# Primary Prevention of Type 2 Diabetes in Ontario: Policies, Research and Community Capacity

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# Executive Summary


Diabetes is a serious, chronic condition characterized by the body's inability to produce sufficient amounts, and/or to make proper use, of insulin (Blair & Gustafson, 2001). There are three types of diabetes: Type 1, Type 2, and Gestational.

**Type 1** diabetes, which accounts for 5-10% of cases, is related to the body's inability to produce insulin. This type typically develops in children and young adults, and is managed through insulin injections, diet and exercise. At this time, there are no established strategies for preventing this type of diabetes.

**Type 2** diabetes, accounting for approximately 90% of cases, results from insulin resistance, followed by insufficient insulin production. This type usually develops in persons who are over 40, have a family history of the disease, and are overweight. Management of this type of diabetes requires healthy eating, exercise, blood glucose testing and oral medication. It is believed that Type 2 diabetes is largely preventable through risk factor modification.

**Gestational** diabetes is a form of glucose intolerance that develops during pregnancy. This type of diabetes disappears postpartum, however those women who experience gestational diabetes may be at increased risk for the development of Type 2.

It is estimated that 1.5 million Canadians have been diagnosed with diabetes, and that another 3-5% of the adult population has unrecognized type 2 (Tan & MacLean 1998).

In Ontario, over 600,000 people have diabetes, 60,000 new cases are diagnosed yearly, and another 300,000 people are unaware that they have it (Ontario Ministry of Health and Long-Term Care,1999). The prevalence of type 2 diabetes is increasing, and with an aging population and rising obesity rates, this trend is projected to continue.

**Primary prevention** strives to prevent disease from occurring in susceptible persons or populations through environmental change, or through changing modifiable risk factors. It is believed that the key to reducing the incidence of diabetes in Ontario is through the primary prevention of Type 2. As such, the underlying focus of this paper is the primary prevention of Type 2 diabetes.

In addition to diabetes, other chronic conditions have a significant impact on the health of Ontarians. Asthma, cancer, heart disease, osteoporosis and stroke all present serious health problems in Ontario, their prevalence is increasing, and, when combined with diabetes, account for nearly 70% of all deaths in Ontario.

The **purpose** of this document is to illustrate the similarities between provincial, and, where relevant, federal policy documents with respect to diabetes primary prevention efforts and the other chronic diseases. Stated guidelines are used in order to provide a platform for open discussion and for the collaborative planning of chronic disease prevention efforts.

A review of the relevant policy documents demonstrates that there exists considerable overlap between the risk factors for diabetes, asthma, cancer, heart disease, osteoporosis and stroke, especially with respect to the modifiable risks: diet and alcohol intake, physical activity level, tobacco use, and BMI. It is interesting to note that the risk factors for diabetes and those for cardiovascular disease are particularly similar.

In addition to disease risk factors, the health status of a population correlates with the determinants of health: 12 interacting social, economic and cultural factors that form the roots of illness. As many of these factors cut across sectors (health, social, etc.), the improvement of community health is a shared responsibility, requiring collaboration between the health sector and other groups.

An analysis of the prevention strategies for diabetes, asthma, cancer, heart health, stroke, and osteoporosis reveals a number of general points:

- Emphasis is placed on support for healthy behaviour, to be achieved through education, empowerment, community programs, policy or legislation
- Programs are typically multi-focal, take place in various settings and usually promote smoking cessation, healthy body weight, physical activity, dietary change and healthy environments, or limit cigarette access or use
- Specific high risk subgroups are seen as important for programming focus
- Coordination with other groups is acknowledged as an efficient use of resources, as is strengthening the risk factor programming already in place
- Research is acknowledged to be important, especially program research/evaluation and surveillance/monitoring
- Coordination and management of programs occurs at different levels, with the government and boards of health often assuming pivotal roles
- Media approaches vary, but the media is often used to promote health

In light of the striking similarities between diabetes initiatives and the goals of other disease prevention efforts, a collaborative chronic disease prevention strategy accounting for risk factors and the determinants of health, with the health of Ontarians as its end-point, presents an efficient, cost effective, streamlined alternative. The information presented in this report is intended to serve as a starting point for collaborative discussion and effort.

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# Introduction

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# Section 1: Introduction

## Diabetes Defined

Diabetes mellitus is a chronic condition characterized by the body's inability to produce sufficient amounts, and/or to make proper use, of insulin (Blair & Gustafson, 2001). The disease can be classified into three types:

- Type 1 diabetes
- Type 2 diabetes
- Gestational diabetes

**Type 1** accounts for 5 to 10% of cases and is related to the body's inability to produce insulin. Although it can occur at any age, this type typically develops in children and young adults. In order to survive, people with type 1 diabetes must take insulin on a daily basis. In addition to insulin injections, the disease is managed through diet and exercise (National Diabetes Information Clearinghouse, 2001).

The risk factors for this type include genetic susceptibility, and exposure to auto-antibodies and cow's milk protein during infancy (Ontario Ministry of Health and Long-Term Care, 1999). At present, there are no specific strategies to prevent type 1 diabetes.

**Type 2** results from insulin resistance, followed by insufficient insulin production. This type is the most common form of diabetes and usually develops in people who are over 40, have a family history of the disease, and are overweight. Accounting for approximately 90% of cases, it is estimated that one third of those with this type do not know they have it.

Risk factors for type 2 diabetes include genetic susceptibility, obesity, age, physical inactivity, poor diet, glucose intolerance, previous gestational diabetes, cholesterol abnormalities and high blood pressure (Ontario Ministry of Health and Long-Term Care, 1999).

Management of this type requires healthy eating, exercise, blood glucose testing and oral medication (National Diabetes Information Clearinghouse, 2001). Primary prevention is believed to be the key to reducing the incidence of this type.

**Gestational** diabetes is a form of glucose intolerance that develops during pregnancy. Although it disappears postpartum, those women who experience gestational diabetes may be at increased risk for the development of type 2.

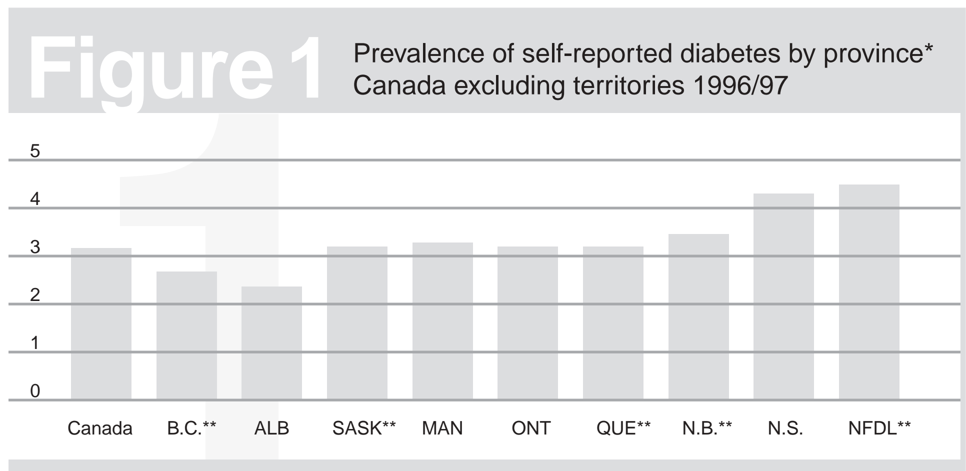
This type of diabetes is more likely to happen in certain ethnic groups (Aboriginals, Blacks, Hispanics) and in people with a family history of the disease (National Diabetes Information Clearinghouse, 2001).

Diabetes can be treated, but it cannot be cured. Even when carefully managed, people with diabetes are at increased risk for heart disease and stroke (American Heart Association, 2000). This increased risk is due to the fact that diabetes affects cholesterol and triglyceride levels, and can cause high blood pressure (American Heart Association, 2000)

Clearly there are groups at greater risk for the development of diabetes, although experts feel that anyone can develop the disease. Since the risk is population wide, diabetes is a population health issue, requiring a population health approach to prevention (Blair & Gustafson, 2001).

**Diabetes is a serious public health problem**

Diabetes is a serious public health problem, affecting more than 135 million people globally (King et al., 1998). Nationally, it is estimated that 1.5 million Canadians have been diagnosed with the disease, and it is believed that another 3-5% of the adult population have unrecognized type 2 (Tan & MacLean, 1995). It should be noted that data on the occurrence of diabetes do not identify the three subtypes, therefore the statistics in this section refer to all types of diabetes combined. Provincially, self-reported prevalence rates vary from 3%-4% (Figure 1).



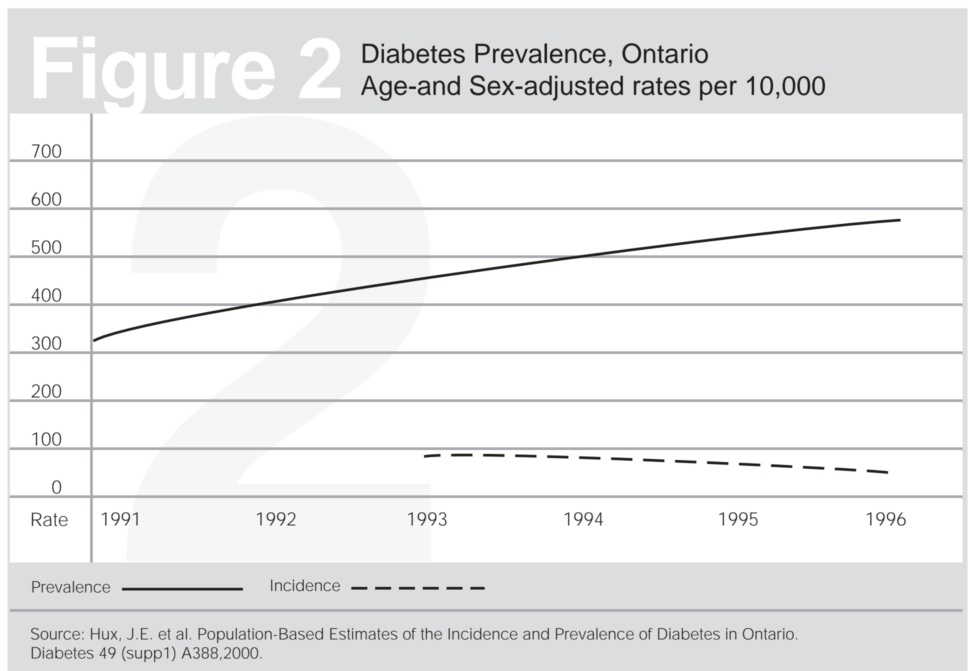

* P.E.I. is not included here because the sample size is too small (<30) for reportable prevalence estimate.
** Prevalence estimate has high sampling variability
Notes: Samples sizes (n): BC n=45; ALB n=384; SASK n=37; MAN n=498; ONT n=1354; QUE n=77; NB n=30; NS n=40; NFLD n=38. Diabetes is self-reported. Respondents were aged 12 and over.
Source: LCDC 1998—using National Population Health Survey 1996/97. Health Share file, preliminary release

From: Health Canada. Diabetes in Canada: National Statistics and Opportunities for Improved Surveillance, Prevention, and Control. Ottawa: Minister of Public Works and Government Services, 1999.

In Ontario, over 600,000 people have been diagnosed with diabetes, 60,000 new cases are diagnosed yearly, and it is believed that another 300,000 people are unaware that they have it (Ontario Ministry of Health and Long-Term Care, 1999). The prevalence of type 2 diabetes is increasing at an alarming rate (Figure 2), and with an aging population and rising obesity rates, this trend is projected to continue.

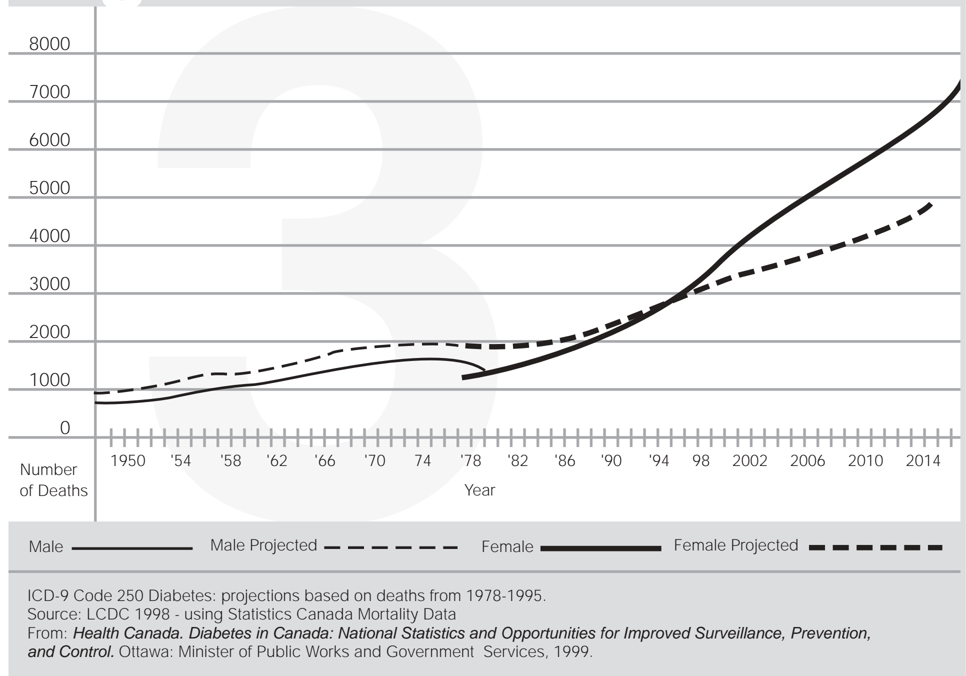
Four out of 10 people with diabetes experience serious complications such as blindness, limb amputations, kidney disease, nerve damage and stroke. Besides physical difficulties, diabetes exacts social, psychological and economic costs resulting from the decreased productivity, health care expenses, and lifestyle limitations associated with disease management (Ontario Ministry of Health and Long-Term Care, 1999).

Nationally, it is believed that 5,500 deaths per year are directly attributable to the disease, making it the seventh leading cause of death. When this rate is combined with deaths caused by disease complications, diabetes accounts for approximately 25,000 Canadian deaths per year (Health Canada, 1999). According to the Ministry of Health, diabetes caused more than 2,200 deaths in Ontario in 1996. Trends in mortality are expected to increase exponentially along with population aging and climbing obesity rates. Figure 3 shows these trends in men and in women with data projections to the year 2016 (Health Canada, 1999).




Source: Hux, J.E. et al. Population-Based Estimates of the Incidence and Prevalence of Diabetes in Ontario. Diabetes 49 (supp1) A388,2000.

**Figure 3** Number of diabetes deaths (1950-1995) and projections to year 2016, by gender - Canada




ICD-9 Code 250 Diabetes: projections based on deaths from 1978-1995.
Source: LCDC 1998 - using Statistics Canada Mortality Data
From: ***Health Canada. Diabetes in Canada: National Statistics and Opportunities for Improved Surveillance, Prevention, and Control.*** Ottawa: Minister of Public Works and Government Services, 1999.

## Prevention is our best opportunity to save lives

Over the past 50 years, chronic disease management has improved in efficiency (Loefler, 2001). Medical advances have brought medications, implants and transplants, all of which have prolonged lives and reduced suffering from chronic disease.

Historically, chronic disease programming focused on disease management, or on those who show early symptoms, with comparatively little attention given to prevention. The postponement of death from chronic disease through medical intervention, however, is costly, will only grow more costly, and is a questionable goal for population health (Loefler, 2001). Given the drawbacks of disease management, it is not surprising that in recent years there has been a shift in focus in chronic disease programming, with increased attention being paid to prevention.

Primary prevention strives to prevent disease from occurring in susceptible persons or populations through environmental change, or through changing modifiable risk factors. It is now believed that the primary prevention of chronic disease would provide a greater opportunity for a reduction in suffering, mortality and healthcare expense in the province of Ontario than would improvements in treatment delivery or disease management.

Type 2 diabetes, which accounts for 90% of all cases, is largely preventable, as is true for many chronic diseases. For diabetes, experts feel that basic lifestyle modifications, involving weight management and physical activity, would result in a lowering of the disease burden. As such, the underlying focus of this paper is the primary prevention of Type 2 diabetes.

In light of the serious, costly and chronic nature of diabetes, primary prevention efforts offer a promising avenue for health care savings, as well as for the alleviation of human suffering.

## Project Purpose

The purpose of this document is to compare the stated guidelines of provincial, and where relevant, federal agencies with respect to the primary prevention of diabetes and other chronic diseases so that there may be a platform for further discussion and collaborative effort. The underlying context of this document is the implication that a coordinated, collaborative, chronic disease prevention effort would be cost-effective, efficient, and would generate considerable synergy in efforts to reduce the population burden of chronic disease.

The demonstrable overlap in risk factors for diabetes and for other chronic diseases suggests that prevention recommendations may be, at least in part, the same for all of these chronic diseases.

## Document outline

This document presents an accurate picture of the prevention strategies in place for diabetes, asthma, cancer, heart disease, osteoporosis and stroke. Note that this paper is not intended to provide an extensive discussion of the diseases themselves.

The previous section provided a picture of the seriousness of diabetes. Similarly, section two, "Other important chronic diseases in Ontario", provides information with respect to the other chronic diseases under consideration, and offers a comparative look at risk factors for them. This discussion is followed by section three, "Determinants of health/Population health approach", which provides a population health perspective for chronic disease prevention. Section four, "Methods", discusses the means by which the strategy documents were selected, and section five, "Chronic disease strategies", outlines and compares the content of the strategies. Finally the "Conclusion", section six, integrates the information presented and identifies chronic disease prevention implications.

# Other Important Chronic Diseases in Ontario

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# Section 2: Other Important Chronic Diseases in Ontario

Along with diabetes, there are other chronic conditions that have a significant impact on the health of Ontarians. The following section presents information with respect to the conditions of asthma, cancer, heart disease, osteoporosis and stroke.

## Asthma

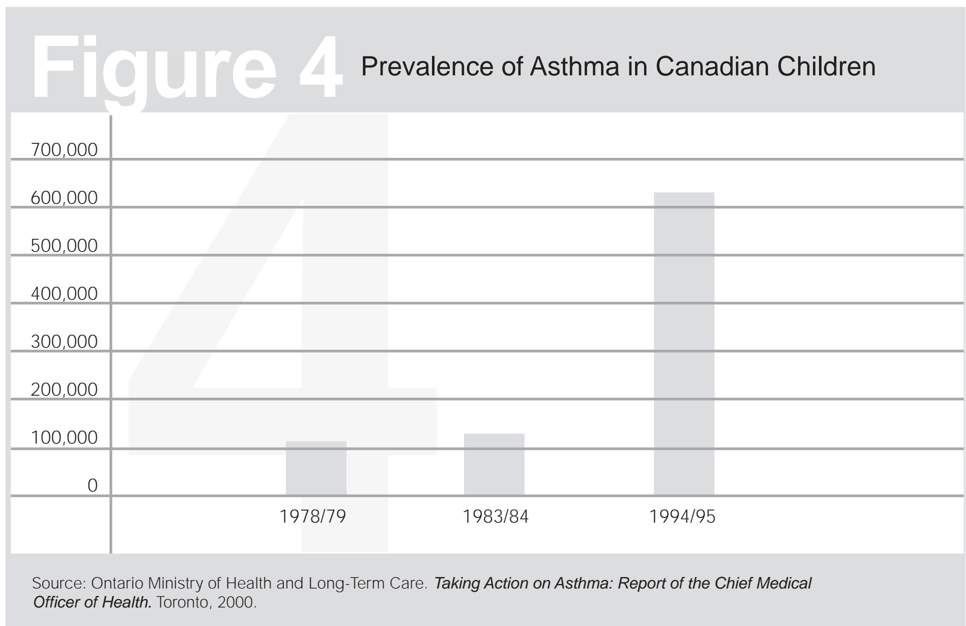
Asthma is a chronic inflammatory airway disorder characterized by breathlessness, coughing, wheezing, and chest tightness, with airflow restriction and hyper-responsiveness to causal agents and triggers (Canadian Asthma Consensus Group, 1996). Asthma triggers are agents that exacerbate existing asthma.

The prevalence of this disorder has increased substantially in recent years. In 1978/79, 141,000 children 0-14 years suffered from asthma, a rate that increased to 167,000 children in 1983/84, and then jumped to 672,000 in 1994/95 (Figure 4), an increase from 2.5% to 11.2% in children over an 18 year period (Ontario Ministry of Health and Long-Term Care, 2000).

Asthma is also an important problem in the adult population. The 1996/97 Ontario Health Survey (OHS) indicated that 694,928 people over 12 self-reported asthma, and 48,000 individuals reported activity restrictions due to the condition. In Ontario, it is believed that asthma causes over 155 deaths per year (Ontario Ministry of Health and Long-Term Care, 2000).

For 1990, the total health care cost of asthma in Canada was between $504 and $648 million, with $306 million (61%) related to direct health care costs such as emergency visits and drugs, while $197.7 million was related to indirect costs such as travel, premature death and disability

Figure 4 Prevalence of Asthma in Canadian Children




Source: Ontario Ministry of Health and Long-Term Care. ***Taking Action on Asthma: Report of the Chief Medical Officer of Health.*** Toronto, 2000.

(Ontario Ministry of Health and Long-Term Care, 2000). Comparative numbers are not available for Ontario, although it is known that asthma is the leading cause of childhood hospital admission, with hospital separation rates for children 0-14 years at 463.5 per 100,000 in 1994/95 (Ontario Ministry of Health and Long-Term Care, 2000).

Such expense estimates do not, however, account for the full gravity of the disease. Undiagnosed cases, unreported episodes, and the human cost of the disorder all add to the importance of asthma as a health concern. In fact, asthma often restricts the lives of those affected, which can lead to financial strain (due to work absenteeism), psychosocial suffering, stigmatization and a diminished quality of life (Ontario Ministry of Health and Long-Term Care, 2000).

## Cancer

Simply put, cancer is disease where abnormal cells grow out of control in an organ or tissue. It can cause benign (local) or malignant (invasive) tumors. While it can occur at any time in life, cancer is primarily a disease associated with aging. In fact, 70% of new cancers and 82% of related deaths occur in those at least 60 years of age (National Cancer Institute of Canada, 2001).

It is estimated that there will be 134,100 new cases in Canada this year, with the most frequently diagnosed types being breast cancer for women and prostate cancer for men (National Cancer Institute of Canada, 2001). Cancer will cause 65,300 deaths in Canada in 2001, with lung cancer being the leading cause (National Cancer Institute of Canada, 2001).

Cancer is a costly disease. Nationally, in 1993 the annual value of lost productivity due to cancer was estimated to be $727,921,000, and direct costs (such as hospital care) totaled 13.1 billion (Health Canada, 1993).

In Ontario, rates are increasing at approximately 3% a year, largely due to an increase in the population age. This year, it is estimated that 50,200 new

**Table 1: Cancer Incidence by Province/Territory, 1996, All Ages, All cancer Sites Rate/100,000 (excluding skin)**

| | Canada | Ontario | Newfoundland | P.E.I. | Nova Scotia | New Brunswick | Quebec | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon | Northwest Territries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Females | 335 | 337 | 302 | 350 | 354 | 333 | 336 | 351 | 319 | 333 | 327 | 359 | 392 |
| Males | 446 | 445 | 391 | 458 | 474 | 488 | 468 | 453 | 424 | 427 | 426 | 321 | 385 |
| Both Sexes | 391 | 391 | 346 | 404 | 414 | 410 | 402 | 402 | 372 | 380 | 376 | 340 | 388 |

Source: Cancer Bureau, LCDC, Health Canada: Statistics Canada and the Canadian Council of Cancer Registries
From: National Cancer Institute of Canada. Canadian Cancer Statistics 2001. Toronto: 2001.

cases of cancer will occur in Ontario, and that 23,800 people will die from the disease (National Cancer Institute of Canada, 2001). The cancer incidence rate for Ontario is comparable to national statistics (Table 1).

Although the risk of dying from some cancers has increased in recent years, such as lung in women, the risk of others, such as stomach, has declined (Cancer Care Ontario, 2000). In fact, when population aging is taken into account, the odds of an individual dying from cancer have changed little over the past 50 years, and small decreases have been observed in Ontario over the last decade due to screening, prevention efforts and improvements in treatment (Cancer Care Ontario, 2000).

Unfortunately, such improvements are outweighed by the demographic trend of population aging, as a result cancer is growing in relative importance (Cancer Care Ontario, 2000). The most promising avenue for cancer control is in the area of prevention, where between 30 and 40% of cancers can be prevented through behavioural change (in diet, physical activity, weight control and alcohol intake), yet to date little has been done to decrease incidence.

## Heart Disease and Stroke

Heart disease refers to any pathological condition of the heart. Stroke refers to a loss of consciousness leading to paralysis caused by hemorrhage into the brain, an occluded artery or a ruptured extracerebral artery. Because the risk factors for these diseases are very similar, the literature often discusses heart disease and stroke together, under the umbrella of cardiovascular disease. For the purposes of this section, these diseases will be discussed together.

Cardiovascular disease is a large health problem, and rates do not appear to demonstrate any great decline. Nationally, in 1993, cardiovascular disease had direct costs (such as hospital care) estimated at $19.7 billion dollars, and was responsible for a lost productivity value due to long term disability of $4,501,786 (Health Canada, 1993).

## Osteoporosis

Osteoporosis is a disease characterized by low bone density and bone tissue deterioration, leading to bone fragility and increased risk of fracture, particularly for the hip, spine and wrist (Osteoporosis Society of Canada, 2001).

At present, there are 1.4 million Canadians with osteoporosis (Osteoporosis Society of Canada, 2001). Although the disorder can strike at any time, it tends to be a condition of advanced age, with one in four women and one in eight men over 50 suffering from osteoporosis (Scientific Advisory Board, Osteoporosis Society of Canada, 1996).

Nationally, it was estimated that the cost of treating fragility fractures in 1993 was $1.3 billion, while in Ontario the cost was $400 million (Goree et al. 1996). Such fractures can have serious long-term effects. It is believed that hip fractures

(of which 70% are associated with osteoporosis) can lead to death in up to 20% of cases, and disability in 50% of survivors (Osteoporosis Society of Canada, 2001). Residual effects of an osteoporotic fracture can include pain, physical restriction, fear of falling, anxiety, depression, and social limitations that can decrease quality of life or lead to an exacerbation of the condition (Strategic Action Working Group on Osteoporosis, 2000).

The Canadian population is aging, and unless preventive steps are taken now, the cost of osteoporosis is expected to increase substantially in coming years. It is estimated that the national health care system will face exponential growth in hip fracture rates (Figure 5) (Papadimitropoulos et al. 1997).

As demonstrated, osteoporosis is a costly condition, however the expense estimates cited do not account for additional costs of the disorder, which include lost productivity and wages, rehabilitation and private treatment, home care services or post-fracture discharge of previously independent persons into long-term care facilities (Strategic Action Working Group on Osteoporosis, 2000).

Figure 6 demonstrates the 1998 mortality from these diseases in Ontario, along with additional causes of death.

Clearly these diseases are important health problems in Ontario, accounting for nearly 70% of all deaths.

Table 2 presents the risk factors for these diseases, as outlined in primary prevention documentation. The

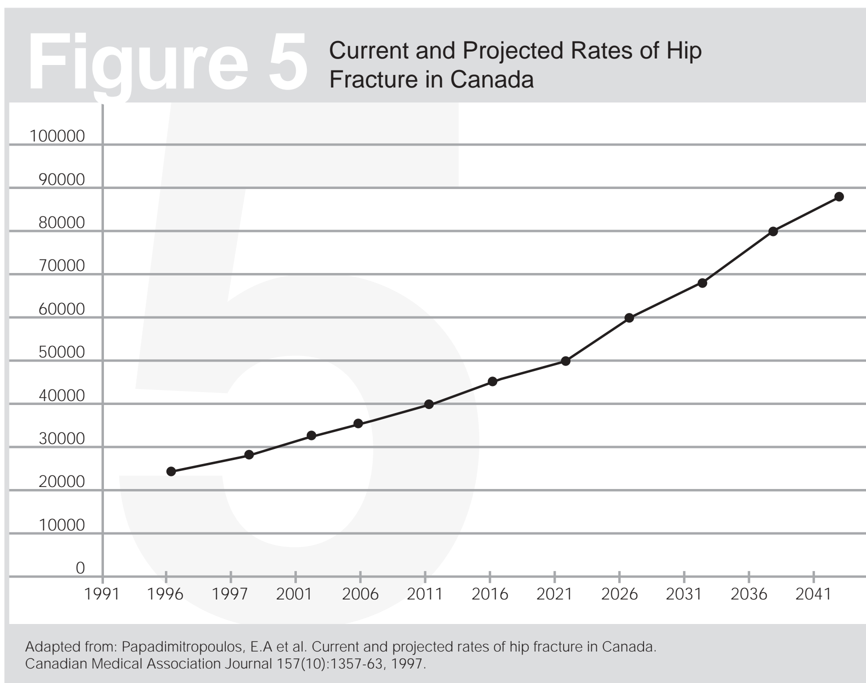



**Figure 5** Current and Projected Rates of Hip Fracture in Canada

Adapted from: Papadimitropoulos, E.A et al. Current and projected rates of hip fracture in Canada. Canadian Medical Association Journal 157(10):1357-63, 1997.

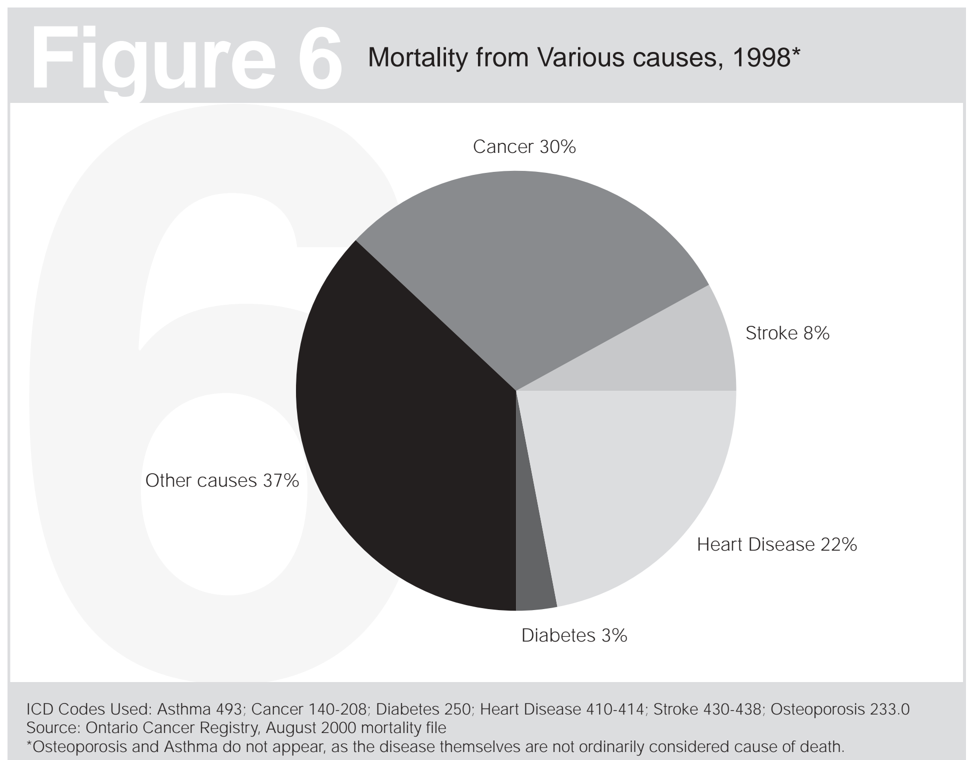
documents cited indicate that the burden of these diseases can be lessened through change in the modifiable risk factors. A quick scan of this table demonstrates that many of the risk factors for these diseases are of the modifiable type.

It can also be seen that there is considerable overlap between risk factors for these diseases. The most striking similarities are with respect to modifiable risks: diet and alcohol intake, physical activity level, tobacco use and BMI. Also notable are the similarities between diabetes risk factors and those listed for heart disease and stroke. In fact, as mentioned previously, diabetes itself is indicated as a risk factor for both heart disease and stroke.

This overlap between diabetes and cardiovascular disease is not surprising. Research has demonstrated that persons with diabetes face twice the risk of heart disease and stroke (Ministry of Supply & Services, 1995). Mortality rates (age-adjusted) for heart disease are higher among those with diabetes: heart disease and stroke mortality rates are 2-3 times higher for males and 3-7 times higher for women for those with diabetes than those without (Manson et al., 1992).

Considering the fact that chronic illnesses are increasing in prevalence, are of a progressive or unchanging nature, and that their management presents a significant burden to the health care system, it is logical that focus be placed on prevention of these diseases.

**Figure 6** Mortality from Various causes, 1998*




ICD Codes Used: Asthma 493; Cancer 140-208; Diabetes 250; Heart Disease 410-414; Stroke 430-438; Osteoporosis 233.0
Source: Ontario Cancer Registry, August 2000 mortality file
*Osteoporosis and Asthma do not appear, as the disease themselves are not ordinarily considered cause of death.

**Table 2: Risk Factors for Selected Chronic Diseases, based on a review of selected primary prevention strategy documents**

| Risk Factors | | | Strategy | | | |
|---|---|---|---|---|---|---|
| | **Asthma*** | **Cancer** | **Diabetes (type 2)** | **Heart Disease** | **Osteoporosis** | **Stroke** |
| **Lifestyle** | | | | | | |
| Dietary factors | X[3, 4] | X[6] | X[1] | X[7, 9] | X[10] | |
| Alcohol intake | | X[6**] | | X[9] | X[10] | X[8, 9] |
| Physical activity level | X[3, 4] | X[6] | X[1, 2] | X[7, 9] | X[10] | X[8, 9] |
| Sun exposure | | X[6] | | | | |
| Tobacco exposure | X[3, 4] | X[6] | X[2] | X[7, 9] | X[10] | X[8, 9] |
| Weight/BMI | | X[6] | X[1, 2] | X[9] | X[10] | X[8, 9] |
| **Health Problems** | | | | | | |
| Diabetes | | | | X[9] | | X[8, 9] |
| Glucose intolerance, gestational diabetes, insulin resistance | | | X[1] | | | |
| Heart problems (incl. hyperhomocysteinemia and atrial fibrillation) | | | | X[9] | | X[8, 9] |
| High blood pressure, Dyslipidemia | | | X[1, 2] | X[9] | | X[8, 9] |
| Previous stroke, transient ischemic attack, carotid stenosis | | | | | | X[8] |
| **Socio-demographic** | | | | | | |
| Age | | | X[1] | X[9] | X[10] | X[8, 9] |
| Ethnicity | | | X[1] | X[9] | X[10] | X[8, 9] |
| Sex (incl. hormonal factors) | X[3, 4] | | | X[9] | X[10] | X[8, 9] |
| Socioeconomic status | X[4] | | X[2] | | | X[8] |
| Other | | | | | | |
| Allergies (incl. atopy) | X[3, 4] | | | | | |
| Environmental Factors/Exposures | X[3, 4] | X[6] | | | | |
| Family History/Genetics | X[3, 4] | | X[1] | X[9] | X[10] | X[8, 9] |
| Infections | X[3, 4] | | | X[9] | | |
| Peak bone mass | | | | | X[10] | |
| Medication, antioxidant use | X[4] | | | X[9] | X[10] | |
| Stress/Emotions | X[4] | | | X[9] | | |

*Risk factors for asthma are complex, involving the interaction of predisposing, causal and contributing factors. For individuals with asthma, triggers (which include causal factors, included here) exacerbate the disorder.
**Implicit in dietary guidelines

[1]Diabetes: Strategies for Prevention. Report of the Chief Medical Officer of Health.
[2]Diabetes in Canada: National Statistics and Opportunities for Improved Surveillance, Prevention and Control.
[3]Taking Action on Asthma. Report of the Chief Medical Officer of Health.
[4]The Prevention and Management of Asthma in Canada: a major challenge now and in the future.
[5]Mandatory Health Programs and Services Guidelines.
[6]A Cancer Prevention System for Canada: Preliminary Recommendations for Leading an Integrated Approach to Cancer Prevention.
[7]Heart Health Program Application Guidelines.
[8]Towards an Integrated Stroke Strategy for Ontario.
[9]The Changing Face of Heart Disease and Stroke in Canada.
[10]A Framework and Strategy for the Prevention and Management of Osteoporosis.

3

# Determinants of Health/ Population Health Approach

## What's in this section?

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# Section 3: Determinants of Health/ Population Health Approach

## A population health approach

In Canada, the advent of improved living conditions, antibiotic medications, and universal health care eradicated many of the infectious diseases, and led to an increased human life span (Shah, 1994). As a corollary to these changes, chronic disease emerged as an important health concern, which required a shift in the focus of health care from that of disease management to health promotion, i.e., primary prevention. Primary prevention refers to the prevention of disease before it occurs.

As the previous section has noted, the burden of chronic illness in Ontario is significant and is growing along with risk factor changes. Chronic diseases are generally caused by a myriad of interacting risk factors, with modifiable factors that can potentially effect anybody in a population. As such, chronic disease is of a population-wide nature, with its primary prevention necessitating a population health approach.

From a brief scan of the disease risk factors shown in Table 2, it is readily apparent that many items, such as weight and smoking, are both modifiable and the result of behaviour. Such risks exist inside the realm of program intervention. From a population health perspective, chronic diseases can be prevented through primary prevention efforts to change modifiable risk factors.

Modifiable risk factors do not exist, however, in a vacuum--they are very much affected by the system in which they occur and effective prevention efforts should take this fact into consideration when designing programs. Risk factors are influenced by the determinants of health: the social, economic and cultural factors that affect the health status of a population.

## The determinants of health

In addition to specific disease risk factors, the health status of a population correlates with numerous, interacting factors that form the roots of illness. These factors, as identified by Health Canada, are known as the determinants of health (Figure 7).

As with disease risk factors, some of these can be modified through programming, while others cannot, or are not within the realm of primary prevention efforts (e.g., income and social status). As Figure 7 demonstrates, there are twelve determinants:

1) Income and social status
2) Social support networks
3) Education
4) Employment/working conditions
5) Social environment
6) Physical environment
7) Personal health practices and coping skills
8) Healthy child development
9) Biology and genetic endowment
10) Health services
11) Gender
12) Culture

The health status of a population is determined by these interacting and independent factors. As is the case with disease risk factors, some of these determinants are amenable to change, with some of them falling within the realm of the health sector, while others are not alterable.

Table 3 provides an overview of the key determinants, their rationale, and examples of how they might be linked to opportunities for change.

The capacity of a community to prevent chronic disease needs to be examined in light of the 12 determinants discussed here. Community capacity refers to a potential that can lead to community mobilization and includes the dimensions of leadership, participation, skills and resources, coalitions, and community power, values and critical reflection (Goodman et al., 1998). Community capacity is an essential condition for the development, implementation and continuation of community prevention efforts (Goodman et al., 1998).

Modifiable risk factors are partly related to the behavioural decisions individuals make in the context of the community in which they live, decisions for example, regarding exercise program participation or purchase of healthy food. These decisions are related to numerous factors which may include cultural beliefs, social structures, and structural barriers such as transportation, child care and community safety (Goodman et al., 1998). As such, interventions cannot be divorced from the fact that health behaviour is social behaviour.

Since many of these factors cut across sectors, improving community health can be seen as a shared responsibility, requiring the collaboration of the health sector and other groups related to but not usually associated with health (Health Canada, 2001). Also required is the identification of common goals among partners, and the enactment of actions and policies that support health (Health Canada, 2001). When the resources and expertise from many sectors and agencies are pooled, communities can then better mobilize to maximize their power and influence (Goodman et al., 1998).

According to Health Canada, the development of effective strategies requires that there be an identification of who will employ the strategies, to which groups, at what time, and where. This section has provided a rationale for the development of primary prevention approaches that, in addition to addressing risk factors, take into account health determinants, are collaborative and multi sectoral, make use of multiple strategies, and can be applied in multiple settings (Health Canada, 2001).

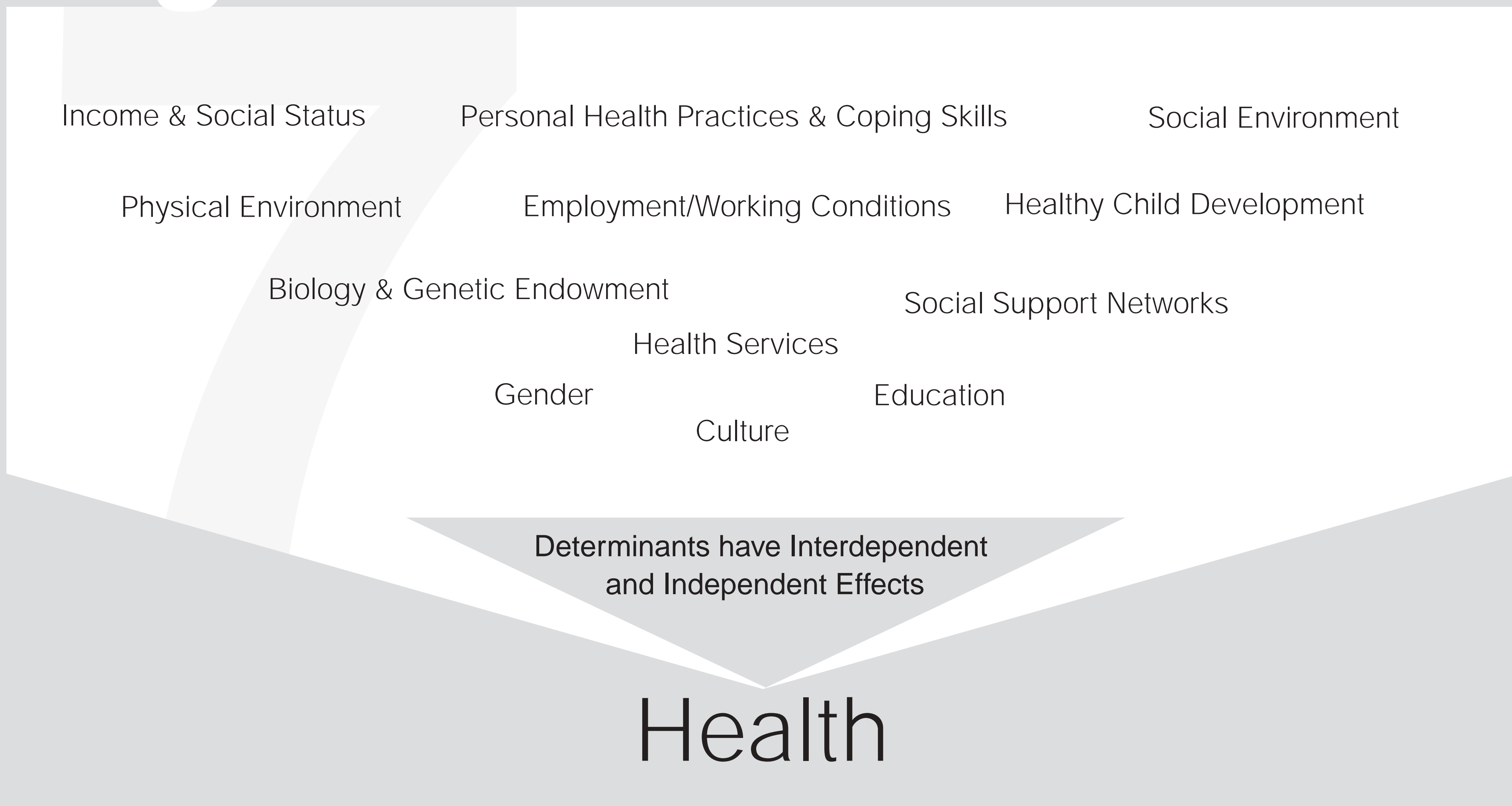
Figure 7
The Determinants of Health
Income & Social Status
Personal Health Practices & Coping Skills
Social Environment
Physical Environment
Employment/Working Conditions
Healthy Child Development
Biology & Genetic Endowment
Social Support Networks
Health Services
Gender
Education
Culture
Determinants have Interdependent and Independent Effects
Health
Source: Health Canada, Population Health Approach, 2001

Table 3: The Determinants of Health and Examples of their Links with Health Opportunities

| Key Determinant | Rationale | Examples of links with health opportunities |
|---|---|---|
| 1. Income/Social status | • Higher incomes and social status are associated with better health<br>• Lower life expectancies and more illnesses are found among Canadians with lower income<br>• Increases in income are associated with less sickness and longer life expectancy<br>• Health increases with job rank | • Smoking rates vary with social class<br>• Lower income people have less money to afford good food<br>• Lower income lessens the ability to purchase a gym membership or to afford childcare while exercising<br>• Income determines one's housing circumstance and ability to move away from environmental exposures, or unsafe neighbourhoods<br>• In stressful circumstances, higher income is related to a greater sense of control and discretion to act |
| 2. Social support network | • Social support networks are associated with better health and lower premature death rates<br>• Social networks could be important to how people solve problems and deal with adversity<br>• Having social supports can help one maintain a sense of control over life circumstances<br>• Social supports and the sense of well-being they foster appear to buffer against health problems | • Social supports could assist or provide advice to individuals in making healthy choices<br>• Social supports could provide childcare while parents exercise<br>• Social supports could provide dietary advice, assist with cooking etc. |
| 3. Education | • Higher education is associated with health status<br>• Educated people are better equipped with problem solving skills to deal with problems and have a greater sense of mastery and control over life<br>• Those with lower education miss more work days due to illness than those with higher education<br>• Those with higher education rate their health as better | • Education is related to unemployment and poverty, which relates to the ability to purchase good food, the accessibility of healthy environments and to physical fitness facilities<br>• Those with higher education are less likely to smoke (possibly related to better problem solving skills)<br>• Those with higher education have more access to and potentially a greater understanding of health information, making them easier to reach for primary prevention interventions |
| 4. Employment/ Working conditions | • Employment status is related to health, sense of identity and purpose, social contacts and personal growth opportunities<br>• Unemployed people have lower life expectancy and more health problems than employed people<br>• Unsafe or stressful work is associated with poorer health | • Employment is related to income, which determines ability to afford good food, gym memberships, and childcare while exercising<br>• As employment is related to income, and those with lower paid work are more likely to smoke<br>• Work environment could be related to environmental exposures<br>• Those not involved in the workplace are harder to reach for primary prevention programs<br>• Flexible working conditions e.g., flex time contribute to workers' ability to incorporate physical activity into their lives |
| 5. Social environments | • Social environments are associated with opportunities to share resources and develop attachments to others<br>• Healthy lifestyle refers to the behaviour of 1) individuals, 2) individuals in social environments and 3) the relationship between individuals and their environments<br>• The social environment can add to the ability of an individual to cope with change and promote health<br>• A supportive society reduces or avoids many health risks<br>• Group membership is associated with reduced mortality | • Lifestyle choices are made by individuals within the context of social environments; e.g., the decisions to quit smoking or to start exercising are not made in a vacuum<br>• Primary prevention can be approached as a social or community issue<br>• Community responses can add to the coping strategies of an individual |

| Key Determinant | Rationale | Examples of links with health opportunities |
|---|---|---|
| 6. Physical environments | • Physical environment is related to health and the types of environmental risks one is exposed to<br>• Exposure to contaminants can cause health problems | • Those with lower incomes, lower education or who are unemployed may not have as much access to healthy environments, therefore may have fewer lifestyle opportunities<br>• Outside workers may have fewer opportunities to prevent sun exposure<br>• Some employment conditions provide fewer opportunity to avoid workplace contaminants/pollutants |
| 7. Personal health practices and coping skills | • Individual actions can prevent disease, and promote self-care, coping strategies, self-reliance, problem solving and healthy choices | • "choice" is often related to environment (economic, environmental and social); interventions that create supportive environments enhance healthy behaviour<br>• effective coping skills are also related to behaviour choices |
| 8. Healthy child development | • Early developmental experiences and opportunities are related to health status | • Development is affected by housing, food, income, education, access to physical recreation, access to medical care and genetic make up |
| 9. Biology and genetic endowment | • Biology and genetic endowment are fundamental to health<br>• Genetic endowment predisposes some to disease or health problems | • Active living and lifelong learning can maintain health and cognitive capacity despite biological age |
| 10.Health services | • The availability of health services is related to the health of a population | • Disease prevention efforts could increase healthy lifestyle opportunities |
| 11.Gender | • Many health issues e.g., nutrition status are related to gender-based status or roles<br>• Women live longer than men and are more likely to suffer from some chronic conditions | • Adolescent girls are more likely to smoke than adolescent boys<br>• The pursuit of thinness in young females can adversely effect nutrition choices<br>• More women than men are inactive<br>• Females exercise less vigorously than males |
| 12.Culture | • Some groups face greater health risks due to a dominant culture that may marginalize, stigmatize and devalue a group, and not provide culturally sensitive health services<br>• First nations persons face higher infant mortality rates and are at higher risk for chronic disease | • Marginalized and stigmatized groups are more likely to face poverty, to have lower education, and to be under or unemployed than other groups; as such they have fewer health opportunities |

Source: Health Canada, Population Health Approach, 2001

# Section 4: Methods

## What's in this section?

Methods . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 27

# Section 4: Methods

The disease specific strategy documents reviewed for this paper were selected under the direction of the Ontario Public Health Association, in consultation with the Prevention Unit, Division of Preventive Oncology, Cancer Care Ontario, and through contact with relevant agencies at the federal and provincial levels. As a result of a decision by the Ontario Public Health Association, risk factor strategies were excluded from the document review.

The documents were reviewed with an eye to identifying commonalities and differences between strategies. In an effort to standardize the information presented, relevant statements in each policy document were grouped into the following categories:

1) Purpose
2) Policy
3) Program
4) Research, Surveillance & Evaluation
5) Coordination & Management

The documents were also examined in order to compare risk factors. Table 2 presented the results of the risk factor review. The list of risk factors presented was not intended to be exhaustive as it is restricted to those cited in the program documents.

# Chronic Disease Strategies

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Osteoporosis . . . . . . 34

# Section 5: Chronic Disease Strategies

## Diabetes

Reviewed:
1. Ontario Ministry of Health and Long-Term Care. Diabetes: Strategies for Prevention: Report of the Chief Medical Officer of Health. Toronto, 1999. (provincial documentation)
2. Health Canada. Diabetes in Canada: National Statistics and Opportunities for Improved Surveillance, Prevention, and Control. Ottawa: Minister of Public Works and Government Services, 1999. (federal documentation)
3. Health Canada. Canadian Diabetes Strategy (CDS) Update. Ottawa, 2001. (federal documentation)
4. Health Canada. National Diabetes Surveillance System (NDSS). Ottawa, 2001. (federal documentation)

## Asthma

Reviewed:
1. Ontario Ministry of Health and Long-Term Care. Taking Action on Asthma: Report of the Chief Medical Officer of Health. Toronto, 2000. (provincial documentation)
2. The National Asthma Control Task Force. The Prevention and Management of Asthma in Canada: a major challenge now and in the future. 2000. (federal documentation)

In general, the chronic disease strategies mention:

- Increased disease incidence and prevalence;
- Costs of disease management, to the individual, to society, and to the health care system;
- Primary prevention as a means of reducing the disease burden; and,
- The need for coordinated prevention efforts between government sectors, in partnership with other sectors, and through partnerships with other chronic disease or risk factor prevention strategies.

What follows is a brief discussion of the strategies examined with respect to policy and program elements. Table 4 provides a comprehensive examination of each strategy.

Provincial strategies are the basis for this discussion and for Table 4. Each document reference makes note of the level from which it is from, i.e., federal or provincial. Elements of federal strategies that do not appear in or differ from provincial documentation are noted.

### Diabetes

The policy and programming in relation to diabetes have as their purpose primary prevention of the disease through the promotion of healthy eating, physical activity, and emotional health.

Policy is specifically directed at making supportive changes to the social and physical environment in order to encourage or increase access to physical activity, and to increase the availability of good food. An additional policy recommendation is the introduction of meaningful food product labeling.

Prevention approaches are to be directed at both high-risk groups and the general population. The program itself is focused on empowerment, education, skill building, and supportive policy development. These efforts are to be tailored to various settings, and should take into account different socioeconomic, ethnic, age and aboriginal groups.

### Asthma

Policy and programming with respect to the primary prevention of asthma are directed at minimizing the risk of disease onset, and at controlling asthmatic episodes. The stated goals are to be achieved largely through environmental interventions to reduce, minimize or eliminate asthma causes and triggers.

Policy focuses on reducing exposure to tobacco smoke, and to automobile and industry pollutants, and through making changes to building codes to improve indoor air quality. The programming discussed is multi-focal, and requires that the individual, community and government all work together in order to reduce the costs of asthma.

Other program elements encourage asthma education, community promotion of smoking cessation, breast-feeding programs for new mothers, immunization, healthy body weights, and healthy environments. These are to be

# Cancer

Reviewed:
1. Prevention Working Group of the Canadian Strategy for Cancer Control. A Cancer Prevention System for Canada: Preliminary Recommendations for Leading an Integrated Approach to Cancer Prevention. Canadian Strategy for Cancer Control, 2001. (federal documentation)
2. Research Working Group. Report and Recommendations. Canadian Strategy for Cancer Control, n.d. (federal documentation)
3. Surveillance Working Group. Cancer Surveillance in Canada. Canadian Strategy for Cancer Control, n.d. (federal documentation)
4. Canadian Strategy for Cancer Control. Draft Synthesis Report. 2001. (federal documentation)

# Heart Health

Reviewed:
1. Health Promotion Branch, Public Health Branch. Heart Health Program Application Guidelines. Toronto: Ontario Ministry of Health, 1997. (provincial documentation)
2. Heart and Stroke Foundation of Canada. The Changing Face of Heart Disease and Stroke in Canada. Ottawa, 1999. (federal documentation)

undertaken in an effort to reduce risk factor exposure.

In addition, the federal background paper discusses the possibility of establishing a screening program as an additional aspect of control and prevention programs.

## Cancer

The purpose of the cancer primary prevention strategy is to reduce the incidence, morbidity and mortality of cancer.

It is recommended that a framework of cancer prevention legislation be developed, and that there be the generation of and support for the enactment of supportive policies. The prevention strategy document provides examples of policies and supportive environments in the areas of tobacco control, sun exposure, nutrition, physical activity/obesity, and environmental/occupational exposures. It is also recommended that there be provincial and territorial legislation for the collection of cancer information to meet national surveillance needs.

Program elements include increasing risk factor knowledge and creating an environment that supports change in risk factor exposure. It is suggested that the program be a population-based, comprehensive, integrated and coordinated approach to reducing risk factors. Also recommended is that the program have a community capacity building focus.

## Heart Health

The policy documentation for the heart health program has as its purpose the reduction of the modifiable risk factors associated with cardiovascular disease. The risk factors cited are smoking, physical inactivity, and "unhealthy" eating. The policy favours supportive environmental changes (e.g., non-smoking by-laws, mandatory bike lane by-laws), the fulfillment of local community needs, and the promulgation of support for the objectives and expectations of the provincial Heart Health Program.

The initiatives developed are to coordinate and augment any existing heart health activities, and should integrate existing programs that address the risk factors of tobacco, physical inactivity and unhealthy eating.

Federally, it is recommended that subgroups such as youth and first nations receive greater programming effort.

# Stroke

Reviewed:
1. Joint Stroke Strategy Working Group. Towards An Integrated Stroke Strategy for Ontario. Toronto: Ministry of Health and Long-Term Care, 2000. (provincial documentation)
2. Heart and Stroke Foundation of Canada. The Changing Face of Heart Disease and Stroke in Canada. Ottawa, 1999. (federal documentation)

## Stroke

The stroke strategy seeks to reduce the number of Ontarians at risk for stroke through risk factor modification. These modifications include smoking cessation, increased physical activity and good nutrition.

The supportive policies outlined involve limiting tobacco exposure through increased taxation, the elimination of smoke in public places, and through legislation controlling smoking and environmental tobacco smoke.

The programs are to be integrated and coordinated, emphasizing primary prevention in primary care, and strengthening and expanding the scope of current primary prevention resources and programming, in relation to physical activity, nutrition and tobacco.

Stroke prevention clinics should be developed to improve secondary stroke prevention (i.e., preventing the disease from moving ahead to a complete stroke or to prevent stroke recurrence), and to support prevention in primary and acute care settings, and in the rehabilitation sector. Programming should provide a compensation mechanism to encourage primary care providers to provide counseling in risk factors. The medications needed for "best practices" should be provided within the Ontario Drug Benefit program.

In addition, the federal strategy recommends focus on subgroups such as youth and first nations persons.

# Mandatory Core Programs

Reviewed:
1. Public Health Branch. Mandatory Health Programs and Services Guidelines. Toronto: Ministry of Health, 1997. (provincial documentation)

## Mandatory Core Programs

The mandatory core programs aim to reduce the morbidity and mortality associated with chronic disease, thereby increasing the length and quality of life of the population of Ontario. Policies are directed at improving the environment to support tobacco-free living, healthy food choices, healthy weight and physical activity.

The program initiatives seek to educate, increase awareness, build skills, and provide environmental support. The strategies to be developed should promote healthy lifestyle choices (including discouraging alcohol abuse and ultraviolet radiation exposure) in a variety of settings, and should be comprehensive, address multiple risk factors, and reflect the determinants of health.

## Osteoporosis

The purpose of the osteoporosis prevention strategy is to reduce the incidence of the disease, fractures and related mortality, and to increase awareness of and improve bone health.

Stated policies involve an incorporation of bone health into school outcomes, and a re-institution of mandatory health and physical education programs. Other policies relate to the provision of healthy meal programs, and advocacy of dairy products and calcium-rich choices in schools.

Policy also suggests providing calcium and vitamin D supplements to the homebound elderly or to those in long term care. It is also recommended that there be improved access to choices within each prevention and management medication category through the provincial formulary system. The programming approach is expected to support the policies outlined. It should also be coordinated and equitable, including education programs to the lay public and to health professionals.

# Osteoporosis

Reviewed:

1. Strategic Action Working Group on Osteoporosis. A Framework and Strategy for the Prevention and Management of Osteoporosis. Ontario Women's Health Council, 2000. (provincial documentation)

6

# Conclusion

## What's in this section?


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Cancer Strategy . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 42
Heart Health Strategy . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 44
Stroke Strategy . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 46
Madatory Core Programs . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 48
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# Section 6: Conclusion

## Similarity across strategies

As this document has demonstrated, type II diabetes represents a major cause of illness in Ontario, is a burden to the health care system, and, with projected shifts in demography, the situation is expected to worsen. While improvements have been made in the treatment of chronic diseases, including diabetes, chronic diseases remain costly, long-term health problems. The best means of improving health status in Ontario is through disease prevention.

There exist prevention strategies for individual chronic diseases. Five of these strategies, in addition to diabetes, have been analyzed for this document. An examination of these strategies and their risk factors, illustrated in tables 2 and 4 demonstrates, above all, the striking similarities that exist between diabetes risk factors and those of the other chronic diseases, and between diabetes and the prevention strategies outlined[1]. Of note, with respect to modifiable risk factors, tobacco use, dietary factors and physical activity appeared as risks for all six diseases, while weight considerations were risks for all except asthma. Further, alcohol appeared as a stated risk for four of the diseases examined. Also of note, diabetes is a risk factor for both heart disease and stroke, further demonstrating the overlap between these diseases.

When tables 2 and 4 are examined, it becomes evident that stated policies are often unclear or do not address all of the modifiable risk factors outlined in the documents. The vacuums in policy illustrated by these tables might provide the relevant agencies with the opportunity to clarify or illustrate their positions, or to engage in collaborative efforts that would address these risk factors.

In reference to the actual prevention strategies outlined, in general, great emphasis was placed on providing individuals with support for healthy behaviour. The requisite support is to be created through education, empowerment, community programs, policy or legislation. The programs are typically multi-focal, take place in a variety of settings, and usually act to promote smoking cessation, healthy body weight, physical activity, dietary change and healthy environments, or to limit cigarette access or use.

Further, the heart and diabetes strategies indicated the need to address specific subgroups, e.g., different age, ethnic and economic groups. The cancer and heart health strategies made note of the possible value of coordinating with other groups for a more efficient use of resources, while the stroke strategy suggested strengthening the risk factor programming already in place (e.g., physical activity, nutrition and tobacco).

Programs varied in the media approaches, and included computerized, written, audio, television, and video. Research is acknowledged to be an important need in all of the strategies examined, with program research/evaluation and surveillance/monitoring mechanisms appearing across programs. The coordination and management of programs were observed as occurring at

[1] Note that the risk factors discussed are those discussed in program documentation, and may not represent a complete risk factor list for each chronic disease.

different levels for different strategies, with the government and boards of health often assuming pivotal roles.

## The need for collaborative effort

Given the striking similarities that exist between diabetes initiatives and the goals of the other disease prevention strategies, it seems logical to suggest the creation of a collaborative chronic disease prevention strategy. The goal of such a strategy would be improvement in the health of Ontarians, in contrast to the current disease-specific goals found in prevention documentation.

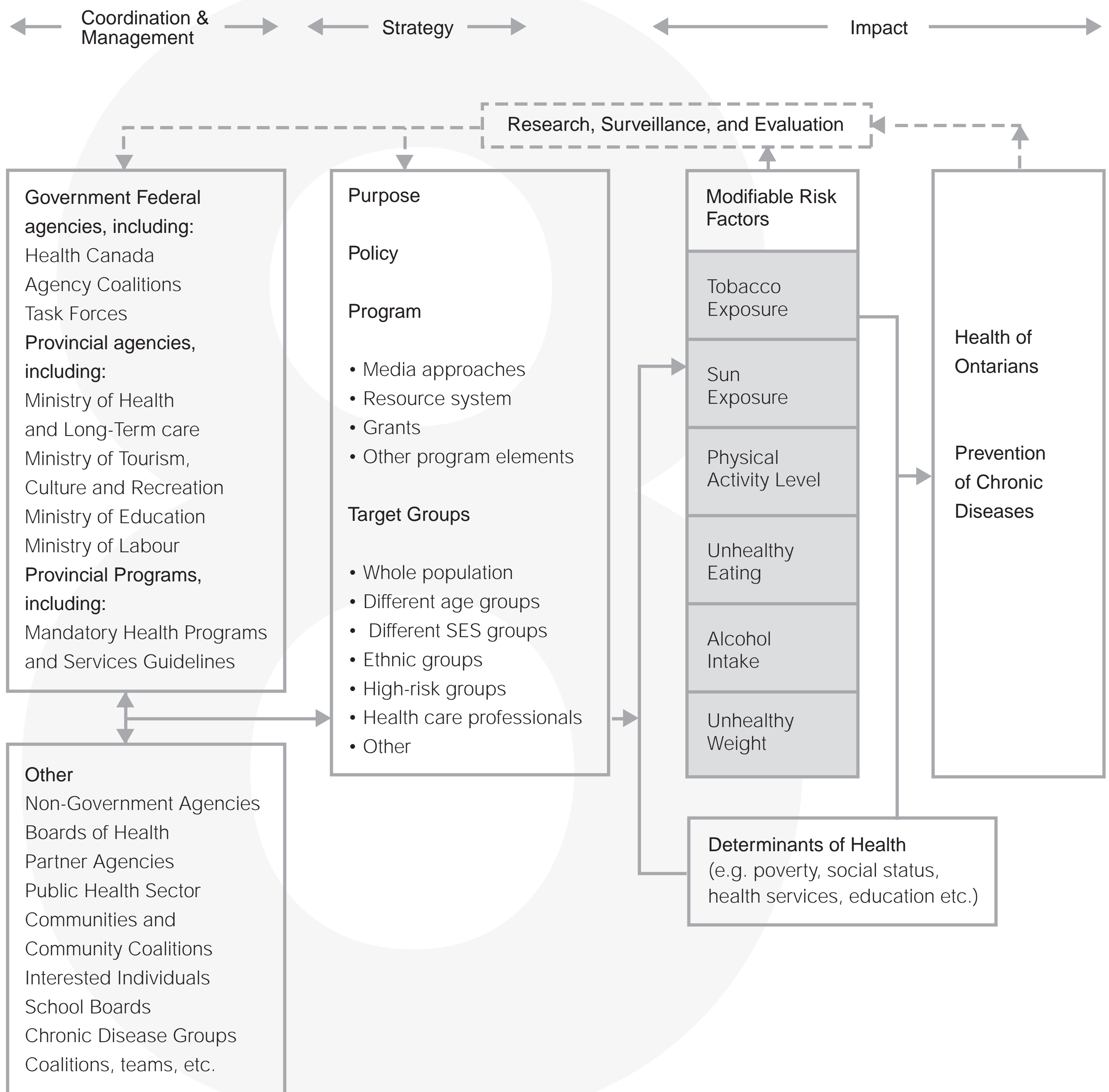
A generalized, coordinated, collaborative chronic disease effort would increase the efficiency of interventions, eliminate duplication of effort, and be more cost effective. The approach could decrease the incidence of diabetes, cancer, asthma, heart disease, stroke, and osteoporosis, as well as reduce the risk for other health problems with similar risk factors. Collaborative effort would also reduce the risk for those diseases that are secondary (e.g., diabetes prevention would help to prevent heart disease and stroke). All of these changes would lead to an overall improvement in the health of Ontarians.

## A framework for collaborative effort

Figure 8 provides a framework for the collaborative planning and evaluation of strategies for chronic disease prevention in Ontario. It identifies the partners who, working together, might develop interventions to change the modifiable risk factors for chronic disease, taking into consideration the determinants of health. Planning would start from the desired end-point, the improved health of Ontarians. The process would require an examination of risk factors and determinants of health in the target community, the strategies directed at changing these determinants, the requisite capacities to develop and implement the interventions, and resources for capacity building (Ontario Ministry of Health and Long-Term Care, 2000). Important to this process are the elements of research, surveillance and evaluation, which will provide a means for measuring progress and assessing the utility of interventions, and, where necessary, indicating the need for program improvements.

This document has outlined the major elements of the diabetes prevention strategy along with those of five other chronic diseases. It has compared strategies and outlined similarities, along with those in the risk factors outlined. It has demonstrated that there exist striking similarities between strategies and risk factors. The information presented here is intended to serve as a starting point for collaborative discussion and effort.

# Figure 8 Chronic Disease Prevention Framework*




* Adapted From Health Promotion Framework, Ontario Ministry of Health and Long-Term Care, Community Programs and Health Promotion Branch, 2000

**Table 4: Elements of Primary Prevention Strategies Diabetes Strategy**

| | |
|---|---|
| **Purpose of Strategy** | • Prevent diabetes through "changing risk factors and conditions by promoting healthy eating, physical activity, and emotional well-being" [1] (p. 8) |
| **Stated Policies** | • Provide environmental support; social and physical[1] (p. 13)<br>• Introduce policies for meaningful product labeling of foods (by federal government) [1] (p. 16)<br>• Employers, schools and communities to increase access to/encourage physical activity, and the availability of good food[1] (p. 13, 14) |
| **Program** | **Media Used**<br>• Include various materials; written, audio, video or computerized[1] (p. 16)<br>• Television ads and a web site have been developed federally[3] (p. 2) |
| | **Resource System**<br>• Train and support health care providers and policy-makers in intervention[1] (p. 15) |
| | **Grants**<br>• Provide government funding for diabetes research[1] (p. 16)<br>• Funding has been granted to projects that raise awareness, and for community prevention programs[3] (p. 2) |
| | **Other Program Elements**<br>• Empower, educate, build skills, and develop supportive policy tailored to various settings, and to different socioeconomic, ethnic, age and aboriginal groups[1] (p. 10-11, 13)<br>• Encompass both population-based and high-risk approaches to prevention[1] (p. 8) |
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Focus on understanding and preventing the causes of diabetes[1] (p. 16) |
| | **Program Research/Evaluation**<br>• Study effective prevention strategies and behaviour modification[1] (p. 16)<br>• Federal and provincial governments to evaluate the programs implemented[1] (p. 15)<br>• The National Diabetes Surveillance System (NDSS) is modeling intervention effects and setting prevention targets[4] (p. 12) |
| | **Surveillance/Monitoring**<br>• Federal and provincial governments to monitor the health impact of diabetes, the incidence of complications and to track treatment and follow-up procedures[1] (p. 15)<br>• The National Diabetes Surveillance System (NDSS) will improve collection and dissemination of diabetes information [3] (p. 1) |
| | **Systems/Health Service Research**<br>• Study clinical management and ways to reduce the economic costs[1] (p. 16) |
| | **Other Research**<br>• Focus on "reducing the burden of the disease and its complications" [1] (p. 16)<br>• Federal and provincial governments to study risk factors in the population[1] (p. 15) |
| **Program Coordination & Management** | **Government**<br>• Provincial government can lead the federal government in a national strategy[1] (p. 16)<br>• The Diabetes Council of Canada (DCC) (a "coalition of diabetes-related non-governmental organizations and federal government agencies") to focus program development[2] (p. 52)<br>• Health Canada is developing a national diabetes strategy (including a prevention strategy, national surveillance system and aboriginal diabetes initiative) with a coordination committee [2,3] (p. 53) |
| | **Other**<br>• Boards of health to develop partnerships with numerous agencies to lead in providing access to physical activity and good food[1] (p. 13)<br>• Requires commitment from individuals, communities, health districts and governments[1] (p. 16)<br>• Public health sector can share leadership in research[1] (p. 16) |

[1]Diabetes: Strategies for Prevention. Report of the Chief Medical Officer of Health. (provincial documentation)
[2]Diabetes in Canada: National Statistics and Opportunities for Improved Surveillance, Prevention and Control. (federal documentation)
[3]Canadian Diabetes Strategy (CDS) update. (federal documentation) [4]National Diabetes Surveillance System (NDSS). (federal documentation)

**Asthma Strategy**

| Category | Details |
|---|---|
| **Purpose of Strategy** | • Minimize asthma risk in susceptible persons and control asthmatic episodes in those with the disease[1] (p. 1) |
| **Stated Policies** | • Reduce access to cigarettes by minors, limit cigarette packaging and advertising, raise prices through taxation, strengthen the Tobacco Control Act, and legislate smoke-free schools, workplaces and public places[1] (p. 14)<br>• Legislate reduced automobile emissions and industry pollutants[1] (p. 14)<br>• Change building codes to improve air quality[2] (p. 26) |
| **Program** | **Media Used**<br>• Not stated |
| | **Resource System**<br>• Provide continuing education to health care providers[2] (p. 55) |
| | **Grants**<br>• Funds for the National Asthma Control Task Force provided by the Laboratory Centre for Disease Control[2] (p. 51) |
| | **Other Program Elements**<br>• Multi-focal, addressing the individual, community and government[1] (p. 15)<br>• Educate asthmatics, health care providers and the general population[1] (p. 12)<br>• Promote smoking cessation, breast-feeding in new mothers, immunization, healthy body weights, and healthy environments at the community level[1] (p. 14)<br>• Screening might contribute to a control and prevention program[2] (p. 31) |
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Not stated |
| | **Program Research/Evaluation**<br>• Incorporate evaluation research into programs, services and policies[1] (p. 14)<br>• Increase networking and linking of databases, ensuring better use of existing data for program evaluation[2] (p. 53) |
| | **Surveillance/Monitoring**<br>• Develop a comprehensive monitoring system to provide detailed and current information[1] (p. 13) |
| | **Systems/Health Service Research**<br>• Network and link databases to ensure better use of existing data for health service research[2] (p. 53) |
| | **Other Research**<br>• Facilitate asthma prevention and control research, including basic, epidemiologic and clinical[1] (p. 14)<br>• Enhance research support for all aspects of prevention and control, and into screening issues[2] (p. 55, ix) |
| **Program Coordination & Management** | **Government**<br>• National Asthma Control Task Force to function as coordinating mechanism at federal level[2] (p. 51) |
| | **Other**<br>• Boards of health to assist school boards with asthma issues, including healthy environments, policy development, information and education[1] (p. 13)<br>• Develop/support coalitions at the local, provincial/territorial and national level[2] (p. 55) |

[1]Taking Action on Asthma. Report of the Chief Medical Officer of Health. (provincial documentation)
[2]The Prevention and Management of Asthma in Canada: a major challenge now and in the future (federal documentation)

**Cancer Strategy**

| | |
|---|---|
| **Purpose of Strategy** | • Reduce the incidence, morbidity and mortality of cancer[1] (p. 14) |
| **Stated Policies** | • Develop a framework of legislation and generate, support or enact supportive policies[1] (p. 29)<br>• The document provides examples of policies and supportive environments for tobacco control, sun exposure, nutrition, physical activity/obesity, and environmental/occupational exposures[1]<br>• Advocate for legislation to collect cancer information [2] (p. 45) |
| **Program** | **Media Used**<br>• Include mass-media campaigns[1] (p. 17) |
| | **Resource System**<br>• Provide or facilitate training (at local and provincial levels) for groups and staff to help them adopt and contribute to best practices[1] (p. 19)<br>• Share intervention knowledge through web sites, list serves, sponsoring forums, and improving access to experts[1] (p. 19)<br>• Provide technical assistance and consultation[1] (p. 28)<br>• Address gaps in research human resources[3] (p. 6) |
| | **Grants**<br>• Use resources more efficiently by identifying and funding initiatives with the greatest impact [1] (p. 6)<br>• Provide funding incentives for best practices at provincial and local levels[1] (p. 19)<br>• Increase and develop innovative mechanisms for research funding [3](p. 6) |
| | **Other Program Elements**<br>• Increase knowledge and provide a supportive environment[1] (p. 15)<br>• Embody a population-based, comprehensive, integrated, and coordinated public health approach to disease risk factor reduction, with a community capacity building focus[1] (p. 3) |

## Cancer Strategy

| | |
|---|---|
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Study the impact of carcinogens and environmental contaminants[1] (p. 8, 23) |
| | **Program Research/Evaluation**<br>• Collect and disseminate information illustrating what is being done in cancer prevention and its effectiveness[1] (p. 17)<br>• Research ways to improve program efficacy[2] (p. 43) |
| | **Surveillance/Monitoring**<br>• Improve links between cancer surveillance and other chronic disease groups[1] (p. 23)<br>• Enhance carcinogen exposure surveillance[1] (p. 23)<br>• Add a longitudinal component to surveillance databases[2] (p. 45)<br>• Determine and meet local data surveillance needs, and those of the cancer control continuum[1] (p. 21), [4](p. 7)<br>• Survey professionals working in prevention, the number of programs, and provincial/jurisdictional financial investment [1] (p. 8) |
| | **Systems/Health Service Research**<br>• Measure service utilization and outcomes[1] |
| | **Other Research**<br>• Create stronger links between funded research and its applications [2] (p. 44)<br>• Conduct fundamental and socio-behavioural research[1] (p. 18)<br>• Collect and provide access to data on a range of cancer dimensions[3] (p. 6)<br>• Improve relevance, accuracy and timeliness of data and survey results [2] (p. 45) [1](p. 23) |
| **Program Coordination & Management** | **Government**<br>• National leadership with national agencies (Canadian Association of Provincial Cancer Agencies, Canadian Cancer Society and Health Canada) sharing responsibility for developing and maintaining the system[1] (p. 14)<br>• The support and participation of provincial ministries of health is essential to planning[1] (p. 14) |
| | **Other**<br>• Collaborate and coordinate with other chronic disease groups, have a broad representation of stakeholders at all levels[1] (p. 16) |

[1]A Cancer Prevention System for Canada: Preliminary Recommendations for Leading an Integrated Approach to Cancer Prevention. (federal documentation)

[2]Draft synthesis report. (federal documentation)

[3]Report and Recommendations. (federal documentation)

[4]Cancer Surveillance in Canada. (federal documentation)

## Heart Health Strategy

<table>
<tr><td>Purpose of Strategy</td><td>• "Reduce the prevalence of the modifiable risk factors (smoking, physical inactivity, unhealthy eating) associated with cardiovascular disease"[1] (p. 3)</td></tr>
<tr><td>Stated Policies</td><td>• Provide environmental support for healthy behaviour (e.g. non-smoking by-laws, mandatory bike lane by-laws) [1] (attachment 2, p. 3)<br>• Establish community policies to "meet local needs and support progress towards provincial Heart Health Program objectives and expectations" [1] (attachment 2, p. 1)</td></tr>
<tr><td rowspan="4">Program</td><td>Media Used<br>• Use a variety of approaches, including media[1] (p. 7)</td></tr>
<tr><td>Resource System<br>• Adapt and use the best practices/resource materials developed by others, and develop materials/programs when necessary[1] (p. 8)</td></tr>
<tr><td>Grants<br>• Plan, implement and monitor local heart health project using base funding awarded by the Ministry of Health[1] (p. 1)<br>• Communities to sustain project components after Ministry funding is completed[1] (p. 6)<br>• Community partners will match provincial funding through contributions, and the board of health will also match funding, possibly by dedicating program staff[1] (p. 10)</td></tr>
<tr><td>Other Program Elements<br>• Increase number of initiatives and number of people reached, and use combinations of approaches[1] (p. 3)<br>• Coordinate and augment existing heart health activities, and integrate existing programs addressing tobacco, physical activity and healthy eating[1] (p. 3)<br>• Emphasize subgroups such as youth and first nations[2] (p. 40)</td></tr>
<tr><td rowspan="5">Research, Surveillance & Evaluation</td><td>Etiologic Research<br>• Study the underlying pathophysiology of the disease[2] (p. 40)</td></tr>
<tr><td>Program Research/Evaluation<br>• Use Ministry funds to plan evaluations, and to monitor/evaluate activity outputs, community perception and outcomes[1] (p. 13)<br>• Conduct community-based needs assessment to substantiate project components, and for program planning, development and implementation[1] (p. 22)<br>• Collect data on risk factor measures to inform planning, evaluation, policy and legislation[2] (p.40, 97)</td></tr>
<tr><td>Surveillance/Monitoring<br>• Recommend greater surveillance of medical service use[2] (p. 63)<br>• Link incidence to morbidity and mortality for follow-up, and mortality by ethnicity[2] (p.83)</td></tr>
<tr><td>Systems/Health Service Research<br>• A needs assessment will provide an overview of existing programming, community needs, gaps etc. [1] (p. 22)</td></tr>
<tr><td>Other Research<br>• Provide community overview, demographic and epidemiologic data obtained through a needs assessment[1] (p. 22)<br>• No long-term research projects, however, communities encouraged to participate in government studies[1] (p. 13)</td></tr>
</table>

**Heart Health Strategy**

| Program Coordination & Management | **Government**<br>• Ministry of Health has set direction, funding etc. and has established a program advisory committee[1] (p. 14) |
|---|---|
| | **Other**<br>• Plan, implement and evaluate with help of local boards of health and community partners[1] (p. 1) |

[1]Heart Health Program Application Guidelines. (provincial documentation)

[2]The Changing Face of Heart Disease and Stroke in Canada. (federal documentation)

## Stroke Strategy

| | |
|---|---|
| **Purpose of Strategy** | • Reduce the number of Ontarians at risk for stroke through lifestyle modifications such as smoking cessation, increased physical activity and good nutrition. [1] (2) |
| **Stated Policies** | • "Eliminate secondhand smoke in public places" [1] (p.63)<br>• "Increase tobacco taxes" [1] (p.63)<br>• "Legislate to control smoking and environmental tobacco smoke" [1] (p.63) |
| **Program** | **Media Used**<br>• Build on current health promotion programs which include television and print media[1] (p.56) |
| | **Resource System**<br>• Establish a training fund and core training elements for health professionals requiring training in stroke[1] (p.26)<br>• Share resources of stroke prevention clinics with community-based prevention clinics and/or cardiac prevention services[1] (p.19) |
| | **Grants**<br>• Acquire sufficient funding "to achieve the province's prevention objectives as described in the Mandatory Health Programs and Guidelines" [1] (p. 17)<br>• Plan for stroke training and continuous upgrading using provincial core elements[1] (p.26)<br>• Develop a coordinated and intensified approach to stroke research funding[1] (p.32) |
| | **Other Program Elements**<br>• Integrate and coordinate programs, with emphasis on primary prevention in primary care, and on strengthening and expanding the scope of the primary prevention resources and programming already in place (e.g. physical activity, nutrition and tobacco[1]) (p.17, 18)<br>• Focus on subgroups such as youth and first nations persons [2] (p. 40)<br>• Develop stroke prevention clinics to improve secondary stroke prevention, and to support prevention in the primary care, acute care and rehabilitation sectors[1] (p. 19)<br>• Provide "adequate and effective compensation mechanism to encourage primary care providers to provide risk factor counseling" [1] (p. 20)<br>• Provide drugs needed for "best practices" in stroke prevention within the Ontario Drug Benefit program[1] (p.20) |

## Stroke Strategy

| | |
|---|---|
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Study the underlying pathophysiology[2] (p.40) |
| | **Program Research/Evaluation**<br>• Demonstrate, document and evaluate "best practice" procedures for blood pressure monitoring and control[1] (p. 64)<br>• Implement surveys which include risk factor measures such as blood pressure, physical activity and blood lipids to inform planning, evaluation, policy and legislation[2] (p.40, 97) |
| | **Surveillance/Monitoring**<br>• Collect and analyze data (that measure and monitor indicators and outcomes) throughout the continuum of care [1] (p.16)<br>• Survey medical service use and satisfaction with services[2] (p. 63)<br>• Link incidence to morbidity and mortality for follow-up[2] (p.83) |
| | **System/Health Service Research**<br>• Develop projections to assess future human resources needs in prevention, care and rehabilitation[1] (p.26) |
| | **Other Research**<br>• "Ensure that data collection is useful, user-friendly, cost-effective, and efficient, comprehensive, coordinated, timely, integrated, accessible, evaluated and flexible" [1] (p.16)<br>• Conduct good research at all points in the continuum of care (prevention, acute care and rehabilitation) [1] (p.16)<br>• Integrate existing data sources consistent with developments in other parts of the stroke care continuum, coordinated with national initiatives [1] (p.16) |
| **Program Coordination & Management** | **Government**<br>• Develop a Stroke Implementation Steering Committee comprising: members from all phases of the continuum of care and co-chairs internal and external to the Ministry of Health and Long-Term Care who will oversee, guide and support implementation and provide ongoing support to community sites[1] (p.27)<br>• Develop a Ministry Management Team, comprising representatives from all branches and divisions in stroke care to ensure coordinated implementation across programs within the Ministry of Health and Long-Term care, and liaise "with work groups, pilot sites and ministry regions" [1] (p. 28)<br>• Encourage the Ministry of Health and Long-Term Care to support prevention by primary care providers, together with boards of health, non-governmental agencies and professional organizations[1] (p.19) |
| | **Other**<br>• Form work groups, developed by each program area to direct single component development in the continuum, integrated at the Steering Committee level[1] (p.28)<br>• Establish a Regional Forum, comprising representatives from all phases of the care continuum to meet regularly and share information, data etc. [1] (p. 28) |

[1]Towards An Integrated Stroke Strategy for Ontario. (provincial documentation)
[2]The Changing Face of Heart Disease and Stroke in Canada. (federal documentation)

**Mandatory Core Programs**

| | |
|---|---|
| **Purpose of Strategy** | • "Increase the length and quality of life by reducing the mortality and morbidity associated with chronic diseases." [1] (p. 11) |
| **Stated Policies** | • Improve the environment so that it supports tobacco-free living, healthy eating, healthy weight and physical activity [1] (p. 10) |
| **Program** | **Media Used**<br>• Use at least three of the following: "television, radio, newspaper, posters/pamphlets, transit/billboard ads, community forums and contests" [1] (p. 13) |
| | **Resource System**<br>• Encourage continuing education of public health practitioners[1] (p. 9) |
| | **Grants**<br>• Not stated |
| | **Other Program Elements**<br>• Awareness, skill building, education and environmental support[1] (p. 10)<br>• Develop comprehensive strategies that are multiple risk factor, and reflect the determinants of health[1] (p. 5, 10)<br>• Promote tobacco free living, physical activity, healthy eating and healthy weight in a variety of settings[1] (p. 13)<br>• Decrease ultraviolet radiation exposure and the overuse of alcohol[1] (p. 10) |
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Not stated |
| | **Program Research/Evaluation**<br>• Assess and use community health status information in assessing local needs, and for evaluating programs[1] (p. 8)<br>• Develop liaison with all relevant agencies (including district health councils, social service organizations and social planning bodies) to access data relevant to program planning[1] (p. 8)<br>• The board, together with researchers will ensure programs and services are developed (consistent with the mandatory guidelines), evaluated (in areas related to mandatory programs and services) and the knowledge disseminated[1] (p. 8) |
| | **Surveillance/Monitoring**<br>• Collect annual data on community health status in the health unit[1] (p. 8) |
| | **Systems/Health Service Research**<br>• Assess and use community health status information in assessing local needs, and for planning programs[1] (p. 8) |

**Mandatory Core Programs**

| | |
|---|---|
| | **Other Research**<br>• Assess the community for demographic, mortality, morbidity, and risk factor prevalence information on an annual basis[1] (p. 8)<br>• The board will produce an annual health report covering key issues[1] (p. 8) |
| **Program Coordination & Management** | **Government**<br>• Minister of Health develops and publishes guidelines for minimum program and service standards[1] (p. 4) |
| | **Other**<br>• Boards are to provide leadership and develop programs and services in the context of the community[1] (p. 7)<br>• Devolve responsibility for program delivery to local level; it is expected that there will be extensive partnership between boards and other agencies and sectors, with intersectoral coordination [1] (p. 4, 7) |

[1]Mandatory Health Programs and Services Guidelines (provincial documentation)

**Osteoporosis Strategy**

| | |
|---|---|
| **Purpose of Strategy** | • Increase awareness of and improve bone health[1] (p. 4)<br>• "Reduce the incidence of osteoporosis, fractures, and related mortality in Ontario" [1] (p. 4) |
| **Stated Policies** | • Incorporate bone health into school outcomes, re-institute mandatory health/physical education programs, facilitate the provision of healthy meal programs, and advocate for dairy products and calcium rich choices in schools[1] (p. 20)<br>• Provide supplements to homebound elderly or to those in long term care[1] (p. 21)<br>• Improve access to choices within each medication category through the provincial formulary system[1] (p. 21) |
| **Program** | **Media Used**<br>• Not stated |
| | **Resource System**<br>• Allocate resources from the Ministry of Health and Long-Term Care to develop implementation infrastructure[1] (p.20) |
| | **Grants**<br>• Request that the Ministries of Health and Long-Term Care and Education "jointly fund the development and implementation of an education program aimed at teaching children, youth, parents and teachers" about osteoporosis prevention[1] (p. 20) |
| | **Other Program Elements**<br>• Employ a coordinated, equitable approach[1] (p.20, 21)<br>• Develop education programs, increase accessibility of dairy products in schools, re-institute mandatory physical education, increase health professional awareness[1] (p. 20, 21) |
| **Research, Surveillance & Evaluation** | **Etiologic Research**<br>• Not stated |
| | **Program Research/Evaluation**<br>• Develop culturally sensitive strategies addressing low calcium intake in high risk groups[1] (p. 23)<br>• Evaluate impact of interventions, programs and curricula[1] (p. 23) |
| | **Surveillance/Monitoring**<br>• Coordinate collection of data on those with osteoporosis[1] (p. 23) |
| | **Systems/Health Service Research**<br>• Conduct economic analysis of osteoporosis diagnosis and management[1] (p.23) |
| | **Other Research**<br>• Conduct research in epidemiology, diagnosis and management of osteoporosis in different populations[1] (p. 23)<br>• Study disease impact, pain management, alternative therapies, and develop risk assessment and clinical tools[1] (p. 23)<br>• "Study diagnosis, prevention and management of osteoporosis in men" [1] (p. 23) |
| **Program Coordination & Management** | **Government**<br>• Encourage Ministry of Health and Long-Term Care to establish advisory committees for key areas, and to allocate resources (human and financial) to develop an infrastructure that will support implementation[1] (p. 20) |
| | **Other**<br>• Not stated |

[1]A Framework and Strategy for the Prevention and Management of Osteoporosis. (provincial documentation)

# Glossary

# Glossary

### Asthma
A chronic inflammatory airway disorder characterized by breathlessness, coughing, wheezing, and chest tightness. Episodes are usually associated with airflow obstruction.

### Cancer
Where abnormal cells grow out of control in an organ or tissue. It can cause benign (local) or malignant (invasive) tumors.

### Cerebrovascular Disease
Disease of the blood vessels in the brain.

### Chronic Disease
Refers to disease that shows little change or progresses slowly.

### Determinants of Health
Twelve interrelated factors as identified by Health Canada which correlate with the health of a population: education, employment/working conditions, gender, personal health practices and coping skills, biology and genetic endowment, health services, culture, social support networks, physical environment, income and social status, social environment, and healthy child development.

### Diabetes
A serious, chronic condition characterized by insufficient insulin production and/or the inability to make proper use of it.

### Heart Disease
Refers to any pathological condition of the heart.

### ICD
International Classification of Diseases; a disease classification system.

### Incidence
Number of new instances of an illness that occur in a specific time period, in a specific population.

### Modifiable Risk Factors
Predisposing risk factors that are amenable to change.

### Morbidity
Number of people with a disease relative to a specific population

### Mortality
Number of deaths from a particular cause in a given population.

### Osteoporosis
A disease characterized by low bone density and bone tissue deterioration leading to bone fragility and increased risk of fracture.
Prevalence
Number of existing cases of an illness that are present at a given time, in a given population.

### Primary Prevention
Strives to prevent disease from occurring in susceptible people or populations by environmental change, or through changing modifiable risk factors.

### Rate

Proportion of a group affected over a period of time, such as a year. It is usually expressed as the number of new cases (deaths, separations etc.) per 1,000 or 100,000 people per year.

### Risk Factors

Factors thought to predispose one to the development of an illness.

### Secondary Prevention

Involves the early detection of a disease, either when there are disease symptoms or before symptoms are noticed.

### Stroke

Loss of consciousness and paralysis caused by hemorrhage into brain, occluded artery or ruptured extracerebral artery.

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# Other Relevant Web Resources

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Asthma in Canada Statistical report
http://www.asthmaincanada.com/

Asthma Society of Canada
http://www.asthmasociety.com/

Canadian Cancer Society
http://www.cancer.ca/indexe.htm

Canadian Diabetes Association
http://www.diabetes.ca/

Canadian Lung Association
http://www.lung.ca/

Canadian Strategy for Cancer Control Homepage
http://www.hcsc.gc.ca/hppb/cscc/cscc.html

Cancer Care Ontario
http://hiru.mcmaster.ca/ccopgi/

1998 Clinical Practice Guidelines for the Management of Diabetes in Canada
http://www.cma.ca/cmaj/vol-159/issue-8/diabetescpg/

Heart and Stroke Foundation of Canada
http://www.na.heartandstroke.ca/index.html

National Cancer Institute
http://www.nci.nih.gov/

National Diabetes Information Clearinghouse
http://www.niddk.nih.gov/health/diabetes/ndic.htm

The Osteoporosis society of Canada
http://www.osteoporosis.ca/

# Community Capacity Scan Final Report

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# Community Capacity Scan

## Introduction:

SPS Research & Evaluation is pleased to submit the Final Report on the Community Capacity Scan conducted for the Primary Prevention of Type 2 Diabetes in Ontario: Policies, Research and Community Capacity project conducted by the Ontario Public Health Association.

## Project Background:

SPS Research & Evaluation was commissioned to undertake a community capacity scan for the Primary Prevention of Type 2 Diabetes in Ontario. The capacity scan was expected to feed information about services currently available within Ontario to the overall project conducted by the Ontario Public Health Association. The scan was to include all primary prevention programs and resources related to risk factors and associated disease conditions associated with Type 2 Diabetes. Only Ontario-based organizations were included in the capacity scan.

By commissioning the capacity scan, the Ontario Public Health Association ensured coordination of its scan with the Stroke Prevention Inventory Project conducted by the Heart Health Resource Centre. Through this, information relevant to both projects was collected, with less inconvenience and staff time requirements on the part of organizations contacted than would have occurred if the two projects had been completed separately.

## Project Methodology:

Upon commissioning of the project, a database and template for data collection were developed[1]. The items included in the template and database were identified through discussions with the OPHA Project Manager. One template was completed for each participating organization, unless the organization provided more programs and/or resources than could be included in a single template.[2]

Data collection was completed simultaneously with and using the same approaches as those used for the Stroke Inventory Project.

The original approach to enlisting participation and collecting information was to contact organizations via telephone and identify an individual who could serve as contact person. If the first person contacted could not identify a person based on the information provided in the conversation, brief materials were faxed or e-mailed to the first person to assist them in identifying an appropriate contact person. The appropriate contact person was identified and a telephone conversation took place to make an initial determination of whether or not the organization had programs/resources relevant for inclusion in the inventory and/or the diabetes capacity scan database. If the contact person was interested in participating and thought some programs and/or resources would be appropriate, the package of materials about the inventory was faxed or e-mailed to the contact person.

[1] A copy of the data collection template is included in Appendix A.

[2] This occurred with only one organization.

In addition, a date was set for a telephone interview to complete the data collection about each program and/or resource to be included. Based on the package of materials, the contact person would identify appropriate programs/resources for inclusion. Data collection was monitored on an on-going basis through weekly reporting of activity and through discussions of difficulties faced by interviewers as they arose.

In response to concerns about the amount of time required to complete data collection, the Stroke Inventory Project data collection approach was amended to permit participants to complete a Word version of the template rather than providing information about programs and resources through a telephone interview. As a result, information for the diabetes capacity scan was also collected the same way.

The Diabetes capacity scan included only Ontario-based organizations.

Information for the Diabetes Prevention scan was also collected from the Ministry of Health and Long Term Care. The Ministry provided an extensive list of diabetes prevention projects currently underway in Ontario. In addition, information for the Canadian Diabetes Association was collected from the Association's web site.

# Project Results:

[3] Detailed lists of the organizations contacted are included in Appendix B.

## Participation in the Project:

Table I shows the number of organizations contacted at each level by whether or not they participated.[3] As shown, the overall participation rate was 28.9%.

On average, organizations were contacted 4 times each via telephone and/or e-mail before a definitive response as to whether or not they would participate was provided. Many organizations did not provide a definitive response and did not respond to final contact e-mails.

In total, 67 programs and 77 resources were included in the inventory from the 45 organizations.

## Limitations of the Capacity Scan:

The capacity scan was limited by the fact that the participation rates were low. Hence, the picture of the overall capacity of areas within Ontario to provide services and the capacity to provide necessary services, value added services as well as innovative services is limited by the participation. The data included in the scan should not, therefore, be considered to be a complete overview of services and service provision capacity within Ontario.

TABLE I
ORGANIZATIONS CONTACTED

| LEVEL | CONTACTED # (%) | PARTICIPATED # (%) | DID NOT PARTICIPATE # (%) |
|---|---|---|---|
| Provincial (Within Ontario) | 27 (100) | 10 (37.0) | 17 (63.0) |
| Local (within Ontario) | 129 (100) | 35 (27.1) | 94 (72.9) |
| **Total** | 156 (100) | 45 (28.9) | 111 (71.1) |

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# Organizations Contacted

# Organizations Contacted

**Northern Diabetes Health Network: Sioux Lookout**
37 Front Street, Box 163, Sioux Lookout, Ontario P8T 1A3
**Programs:** Sioux Lookout Diabetes Education Program

**The Next Step to Active Living Program**
South Common Community Centre, 2233 Millway Drive, Mississauga, Ontario, L5L 3H7
**Programs:** The Next Step to Active Living Program

**National Quality Institute**
Toronto
**Programs:** Five Day Revive and Thrive Challenge (workplace health)
**Resources:** Excellence: Workplace Wellness: Something's Happening Here; Five Day Revive and Thrive Challenge; Excellence: Great Expectations for Healthier Workplaces in 2001

**The Canadian Intramural Recreation Association**
740-B Belfast Road, Ottawa, Ontario K1G 0Z5
**Programs:** The Student Leadership Development Program; Playground Leadership Program; Health in Perspective
**Resources:** Zany Activities With Panty Hose, Boxer Shorts and Leotards; The Treasury of MOGA Madness (The Most Outrageous Group Activities); Snow Fun: Favourite Canadian Winter Activities

**Dairy Farmers of Ontario**
6780 Campobello Road, Mississauga, Ontario L5N 2L8
**Programs:** School Nutrition Information Program
**Resources:** Menu Planner

**Nutrition Resource Centre**
468 Queen Street East, Suite 202, Toronto, Ontario M5A 1T7
**Programs:** Community Food Advisor; Eat Smart; Food Steps
**Resources:** Healthy Eating

**The Four Villages Community Health Centre**
1700 Bloor Street West, Toronto, Ontario M6P 4C3
**Programs:** Concerning Cholesterol Program; Heart Health Program in Polish

**Active Living Coalition for Older Adults**
33 Laird Drive, Toronto, Ontario M4G 3S9
**Programs:** ALCOA Speakers' Bureau; ALCOA National Diabetes Project
**Resources:** Research Update; Canada's Physical Activity Guide to Healthy Active Living for Older Adults; Moving Through the Years: A Blueprint for Action on Active Living and Older Adults

**Canadian Diabetes Association, Sudbury Branch**
D-105 Elm Street, Sudbury Ontario P3C 1T3
**Programs:** Speakers' Bureau

**Canadian Diabetes Association, Ottawa and District Branch**
403-1355 Bank Street, Ottawa, Ontario K1H 8K7
**Programs:** Canadian Diabetes Association Speakers' Bureau

**South Asian Women's Centre**
1332 Bloor Street West, Toronto, Ontario M6H 102
**Programs:** Multicultural Women's Wellness Group; Healthy Heart is a Happy Heart; Tamil Breast Health Education Program

**Stonegate Community Health Centre**
150 Berry Road, Etobicoke, Ontario M8Y 1W3
**Programs:** Smoking Cessation: Step by Step Program
**Resources:** The Healthy Heart Kit

**Canadian Association for the Advancement of Women and Sport and Physical Activity**
Suite 202, 801 King Edward Avenue, Ottawa, Ontario K1N 6N5
**Programs:** On the Move; Chatelaine/On the Move Walking Club; Girls @ Play

**North Lambton Community Health Centre**
59 King Street West, Forest, Ontario N0N 1J0
**Programs:** Awake With a Walk; Winter Walking Program; Smoking Cessation Programs; Diabetes Prevention Strategy

**Canadian Association of Health, Physical Education, Recreation and Dance (CAHPERD)**
403-2197 Riverside Drive, Ottawa, Ontario K1H 7X3
**Programs:** Quality School Health; Quality Daily Physical Education
**Resources:** Quality Daily Physical Education; Canadian Active Living Challenge; Physical and Health Education Journal

**Ontario Physical and Health Education Association**
1185 Eglinton Avenue East, Suite 501, Toronto, Ontario M3C 3C6
**Programs:** Active Schools, Creating Capacity for Physical Activity Project
**Resources:** ACTION Kit; Active Kids: Any Time, Any Place; PlaySport

**Heart and Stroke Foundation of Ontario**
1920 Yonge Street, 4th Floor, Toronto, Ontario M4S 3E 2
**Programs:** Heart Healthy Kids
**Resources:** HeartSmart Family Fun Pack; Heart and Stroke Information Catalogue; Living With Cholesterol; Take Control: Actions to Lower Your Risk

**Durham Region Health Department**
1615 Dundas Street East, Whitby Mall, Suite 210, Whitby, Ontario
**Programs:** Healthy Decisions Workshop; Teens Tackling Tobacco; Smoke Free Cars: Smoke Free for Me and My Kids; Smoke Free Home Contest
**Resources:** Smoke Free Schools: A Resource Document; Smoke Free is Good For Business; Guide to Smoke Free Restaurants; Smoke Free Home Decal; Smoke Free Home: Tips to Make Your Home Smoke Free

**Brock University, Community Health Science**
St. Catherines, Ontario
**Programs:** Leave the Pack Behind (smoking cessation)

**Middlesex-London Health Unit**
50 King Street, London, Ontario N6A 5L7
**Programs:** Families in Motion; "I did it" Program; Turn Off the TV and Screens; Walking Workshop; Post Secondary School Alcohol Policy and Programming
**Resources:** Treasure Boxes for Active Living; Active Trivia; Activity Break; Active Living Education Session; Walking Map of the City of London; Born to Be Active Display; Alcohol and Your Health Display; Addictions Jeopardy; Heart Health Reach and Teach Kit

**Hotel Dieu Health Sciences Hospital, Niagara**
St. Catherines, Ontario
**Programs:** Healthy Heart Program; 3 S Stop Smoking Support Program

**Simcoe County District Health Unit**
15 Sperling Drive, Barrie, Ontario L4M 6K9
**Programs:** Be Fit Be Safe; Eat Well Stay Alive; Healthy Lifestyle Line; Student Tobacco Action Committee
**Resources:** Ready, Steady, Walk: Walking Guide; Nutrition Fact Sheets; 100% Smoke Free Simcoe County Information Package; Take a Closer Look (Food Labeling) Fact Sheets, Quiz and Shopping Pads

**Northern Diabetes Health Network:**
Diabetes Health Thunder Bay
Thunder Bay
**Programs:** Diabetes Health Thunder Bay (education)

**Haliburton, Kawartha, Pine Ridge Health Unit**
200 Rose Glen Road, Port Hope, Ontario L1A 3V6
**Programs:** Reading Food Labels; Smoke Free Living
**Resources:** How to Adapt Your Favourite Recipes to be Lower in Fat; Grab a Bite That's Right; Calling it Quits; Making Your Home Smoke Free; Clean Air for Kids; A Guide to Healthy Eating; Canada's Guide to Healthy Eating: Serving Sizes; Changing 'Yuk' to 'Yum': A Guide for Picky Eaters; Building Better Lunch

**Regional Municipality of Waterloo, Community Health Department**
P. O. Box 1633, 99 Regina Street, South Waterloo, Ontario N2J 4V3
**Programs:** Tobacco Information Line
**Resources:** Focus on Healthy Eating Series; So You Want to Quit Smoking: A Guide to What's Available in Waterloo Region

**Osteoporosis Society of Canada**
33 Laird Drive, Toronto, Ontario M4G 3S9
**Programs:** Speaking of Bones Speakers' Bureau; Move Your Bones Exercise Program
**Resources:** Fact Sheets on a Series of Lifestyle Issues Impacting Osteoporosis; BoneSmart Video; Walkmate Walking Tapes

**Canadian Cancer Society, Ontario Division**
1639 Yonge Street, Toronto, Ontario M4T 2W6
**Resources:** Seven Steps to Health

**Ottawa-Carleton Health Department**
Ottawa, Ontario
**Resources:** Taking Care of Business: Ottawa-Carelton Small Business Health Project

**Health Canada, Health Promotion and Programs Branch**
Population Health Directorate, Ottawa Ontario
**Resources:** Workplace Health website; The Business Case for Active Living at Work

**Access Alliance Multicultural Community Health Centre**
340 College Street, Suite 500, Toronto, Ontario M5T 3A9
**Programs:** Best Practices in Diabetes Prevention Project
**Resources:** Bok Choy, Black Beans and Bananas: A Newcomer's Guide to Healthy Eating

**Region of Niagara Public Health Department**
St. Catherines, Ontario
**Resources:** Healthy Weight Fact Sheets

**Program Training and Consultation Centre**
City of Ottawa, People Service, Public Health and Long Term Care Branch, 495 Richmond Road, Ottawa, Ontario K2A 4A4
**Resources:** The Action Guide for Smoke-Free High Schools; Info Pack: Understanding and Using Audience Analysis for Tobacco Control; Break on Through; Environmental Tobacco Smoke in the Home; Info Pack: Understanding and Using Fear Appeals for Tobacco Control

**Program Training and Consultation Centre**
City of Ottawa, People Service, Public Health and Long Term Care Branch, 495 Richmond Road, Ottawa, Ontario K2A 4A4
**Resources:** Info Pack: Understanding and Using Mass Media for Tobacco Control; Minimal Contact Interventions for Smoking Cessation; The Power of

Many: Tobacco Action Plan for This Generation; Info Pack: School Based Smoking Interventions; Schools Without Boarders; Info Pack: Women and Tobacco
Northern Diabetes Health Network: Timiskaming Diabetes Program
Timiskaming, Ontario
Programs: Canadian Diabetes Strategy Diabetes Prevention Project

**Lambton Heart Health; Lambton Diabetes Prevention Network**
c/o Lambton Health Unit
**Programs:** Making Healthy Choices the Easy Choices

**Canadian Diabetes Association: Windsor and District Branch**
**Programs:** A 3 Year Sequenced Social Marketing Campaign Aimed At Reducing the Prevalence of Type 2 Diabetes Among Windsor-Essex County Residents

**The Anne Johnston Health Station**
Toronto, Ontario
**Programs:** Diabetes Healthability

**London InterCommunity Health Centre**
London, Ontario
**Programs:** Latin American Outreach for the Prevention of Diabetes

**Brant County Health Unit**
Brant, Ontario
**Programs:** Diabetes Prevention: A Social Marketing Campaign

**Haliburton Highlands Health Services Corporation**
Haliburton, Ontario
**Programs:** Haliburton County Diabetes Project

**East End Community Health Centre**
Toronto, Ontario
**Programs:** Recess Revival: Alternative Strategies for Promoting Physical Activity

**Regional Heart Beat**
Ottawa-Carleton, Ottawa Ontario
**Programs:** A Walk Away from Diabetes @ Diabetes Prevention in Ottawa-Carleton

**Victorian Order of Nurses**
Cochrane Ontario
**Programs:** Wellness Works Well

**The Heart Connection Northumberland County**
Port Hope, Ontario
**Programs:** Northumberland County Diabetes Prevention Project

**United Way of Greater Simcoe County**
Barrie, Ontario
**Programs:** Simcoe County Diabetes Prevention Project