TARGETING CANCER

an action plan for cancer prevention and detection

CANCER 2020 SUMMARY REPORT

Canadian Cancer Society / Société canadienne du cancer

cancer care ontario | action cancer ontario

ACKNOWLEDGEMENTS

This report is the labour of many heads, hands and hearts. In 2001 Cancer Care Ontario was invited by the Ontario Ministry of Health and Long-Term Care to lead the development of a broad provincial plan for cancer prevention. With support from the Public Health Branch, a provincial steering group was established to guide the project and a project manager was hired to help oversee the work.

Cancer 2020 Steering Committee Membership:

Ms Lisa Ashley, Ottawa Public Health Department
Ms Terry Bissett, Survivor
Ms Brenda Carter, London Regional Cancer Centre
Dr. Deborah Hellyer, Occupational Health Clinics for Ontario Workers
Mr. Andy King, United Steelworkers of America
Dr. Robert Kyle, Durham Regional Health Unit
Dr. Les Levine, Ministry of Health and Long-Term Care
Ms Dianne Macfarlane, National Ovarian Cancer Association
Mr. Michael Power, Northwestern Ontario Regional Cancer Centre
Dr. Kirsten Rottensten, Public Health Branch, Ministry of Health and Long-Term Care
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Ms Connie Uetrecht, Ontario Public Health Association

In addition to these energetic volunteers, a number of Cancer Care Ontario's program leaders and staff have played important support and technical roles in the work leading up to the production of this report. They include Eric Holowaty, Verna Mai, John Garcia, Nancy Kreiger, Carmen Jones, Loraine Marrett, Melody Roberts, Robbi Howlett, Beatrice Boucher, Vicki Nadalin, Peggy Sloan, Anna Chiarelli, Michelle Cotterchio, Brenda Irvine, Irene Armstrong, Steven Savvaidis, Myrna Wright, Valerie Benson and Christine Lyons. Thanks also to Bo Green for his work on the cancer projections and Diane Finkle for her work on the final report.

Doug Sider and Bob Kyle did yeoman duty and chaired working groups for different future scenarios based on preparatory work by Trevor Hancock. The consultations in each region of Ontario were based on their scenarios. In addition, helpful guidance and input was provided by a number of provincial organizations as well as officials from the Ministry of Labour, Agriculture and Food, Environment, and Health and Long-Term Care.

This project has also allowed a collaborative relationship to flourish in cancer prevention between Cancer Care Ontario and the Canadian Cancer Society, Ontario Division. Special thanks are due to Donna Kline from Cancer Care Ontario and Sylvia Leonard from the Canadian Cancer Society, Ontario Division for the development and launch of this report. Helen Angus provided capable and energetic project leadership. To her a large debt is owed for shepherding this work through from conception to conclusion.

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CANCER 2020: A CALL TO ACTION

The time has come for strong, well-coordinated action to address the slow epidemic of cancer in Ontario. The Cancer 2020 report represents the work of many individuals and organizations and calls for a solid, long-term provincial plan for cancer prevention and *early detection*. This summary report provides a synopsis of the plan and its targets.

The Cancer 2020 report is a **call for action** against the impact of cancer in Ontario. Its goals are aggressive because, quite simply, there are lives at stake. If we really intend to save these lives we must set and deliver on clear targets to lower the incidence of cancer.

The Cancer 2020 report is also an **action plan**. In order to achieve our goals we must have a solid long-term provincial plan for cancer prevention and early detection that is well understood and well resourced. It must have measurable goals and targets for cancer prevention and early detection and a reasonable time frame in which to achieve them.

Finally, the Cancer 2020 report provides a **framework to monitor our progress** in reducing cancer incidence and mortality and we are committed to communicating this progress on a regular basis as a way to reinforce and motivate action.

We have deliberately adopted an almost 20-year time frame to make improvements in cancer prevention and screening. This is because a long-term view is the only way to show clear impacts on cancer incidence and mortality. However, our actions today will also have important medium-term impacts and we have thought carefully about what needs to be put into place over the next five years as the foundation for reaching the Cancer 2020 targets.

CANCER 2020 PROCESS

In 2001, Cancer Care Ontario (CCO) was asked by the Ministry of Health and Long-Term Care to lead the development of a long-term plan for cancer prevention and early detection in Ontario. A Steering Committee was established which included a broad range of *stakeholders* from within the cancer control community including cancer survivors and representatives from key organizations.

The Steering Committee adopted an innovative planning approach and consulted with a large number of research and practice groups across Ontario and internationally. Two future *scenarios* were developed: one based on an optimistic yet conservative view of the future and the second based on a future where society's values had changed significantly. Based on stakeholder input, the two were fused into a single vision which incorporated elements of the two original scenarios and established a clear vision for the year 2020. Consistent with the scenario, the targets are ambitious but based on the best available scientific evidence.

CANCER 2020 SUMMARY REPORT

The purpose of this report is to build a case for the Cancer 2020 action plan. This summary version provides information about the Cancer 2020 targets and a synopsis of the five year action plan for Ontario that has been developed for 2003–2008, and its vision and principles.

The complete report provides much more detail on the case for action as well as specific details on why each of the Cancer 2020 targets was chosen. It also includes a glossary, list of acronyms, references and a number of appendices such as the Terms of Reference and membership of the Steering Committee, a complete fusion scenario used to underpin the planning exercise and a detailed summary of the Cancer 2020 planning process and the technical methodologies used.

The full Cancer 2020 report as well as a number of technical papers which were produced during the development of the Cancer 2020 plan can be accessed on CCO's website at **www.cancercare.on.ca**

Cancer Care Ontario
www.cancercare.on.ca

Canadian Cancer Society
www.cancer.ca

THE CASE FOR ACTION

- Cancer is a leading health issue in Ontario.
- The number of new cancer cases will increase by two-thirds by 2020.
- Over half of all cancer cases can be prevented.
- Ontario spends less than one percent of the cancer budget on prevention.

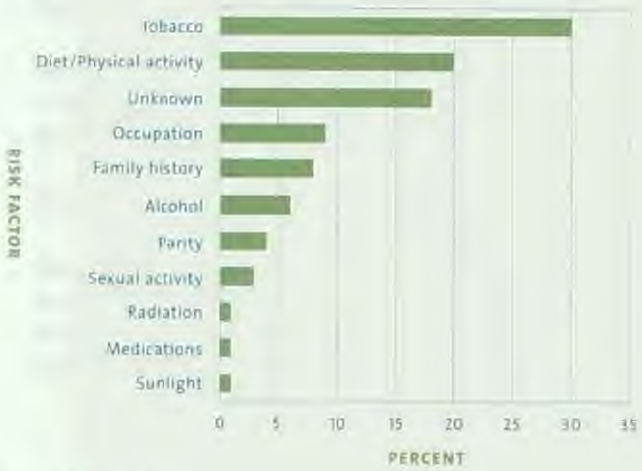
WHAT IS CANCER?

Cancer is a disease that starts in our cells. Normally, our cells function effectively and we remain healthy. Sometimes a cell's instructions get mixed up and it grows abnormally. After a while, groups of abnormal cells form lumps or tumours. The term cancer actually covers a variety of diseases because various types can behave in completely different ways. The cause of some cancers is known, while the cause of others is unknown. Some cancers can be cured, while others cannot.

WHAT CAUSES CANCER?

As shown in Figure 1, about half of all cancer deaths are related to tobacco use, diet and physical activity. These are followed closely by occupational factors, family history, alcohol and drug use, sexual activity, infections and other environmental factors such as radiation and sunlight.

FIGURE 1: CAUSES OF CANCER DEATHS IN DEVELOPED COUNTRIES

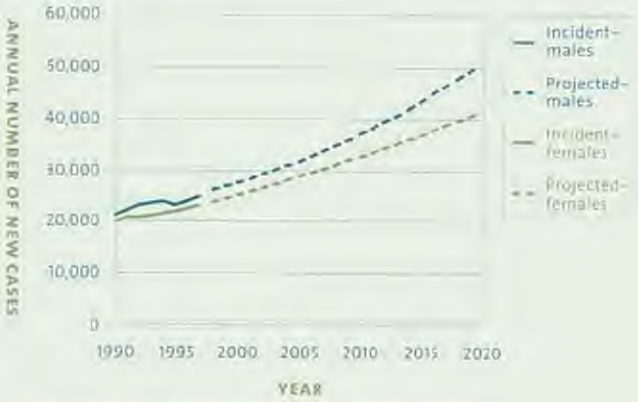


Source: Adami et al., 2001[1]

THE INCIDENCE OF CANCER IN ONTARIO

Cancer is a major concern in Ontario. In terms of potential years of life lost, it is the province's number one health problem. In 2002 it was estimated that over 52,000 *Ontarians* would be diagnosed with and approximately 24,000 would die from the disease.[2] Three types of cancer account for at least fifty percent of the new cancer cases in each sex: prostate, lung and colorectal cancers in men and breast, lung and colorectal cancers in women.[3] Thirty percent of cancer deaths in men and almost one-quarter in women are due to lung cancer alone.[4]

FIGURE 2: ANNUAL NUMBER OF NEW CANCER CASES IN ONTARIO BY SEX 1990 – 2020



Source: Cancer Care Ontario (Ontario Cancer Registry, 2002[5]*)*

Figure 2 paints a disturbing picture of the rising number of cancer cases in Ontario. Unless we take action the combined total number of newly diagnosed cancers will increase each year from 53,400 in 2002 to 91,000 in 2020. It is expected that the number of newly diagnosed cancers will grow by about **two-thirds** by 2020 and **double** by 2028.

Although an individual's average risk of developing any form of cancer has actually changed very little over the past 50 years, demographic trends will result in an increasing number of cancer cases. One of the main reasons why the incidence of cancer is increasing is because Ontario's population is aging.

THE CASE FOR ACTION

TREATMENT ALONE IS NOT THE SOLUTION

Approximately fifty percent of cancers that will be diagnosed over the next twenty years can either be prevented or detected early, before they become a serious health problem. This includes some of the deadliest cancers such as lung, stomach and esophageal cancer, for which treatments are less effective.

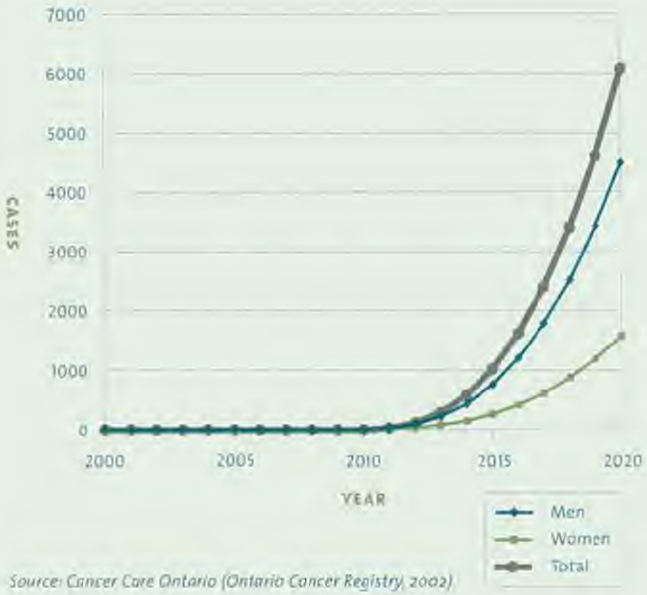
REDUCING THE COST OF CANCER CARE IN ONTARIO

By taking action now on a plan for *cancer prevention and screening*, the expected increase in the cost of cancer care could be reduced.

Estimating an average present cost of approximately $22,000 per cancer case, we could save over $375 million in direct cancer care costs over the seventeen years of the plan. Indirect costs of cancer are approximately five times this number, associated with disability costs, lost wages and productivity. Ontario could easily justify an increased investment in cancer prevention and screening to a level of $20 million per year. If the Cancer 2020 targets were met in just three areas (reducing smoking, increasing fruit and vegetable intake and increasing physical activity) thousands of new cancer cases could be avoided. This is without regard to significant associated drops in other chronic diseases which would also occur (heart, stroke, lung disease, diabetes).

As illustrated by Figure 3, **over 6,000 premature deaths** due to cancers caused by tobacco could be prevented between now and 2020 by implementing the kind of comprehensive *tobacco control* program that is required to reach the targets in this report.[6] In addition, approximately **1,200 cancer deaths could be avoided** between 2002 and 2020 by implementing an organized colorectal screening program using Fecal Occult Blood Testing (FOBT).

FIGURE 3: CUMULATIVE CANCER CASES PREVENTED, PROJECTED TO 2020 BY IMPLEMENTING SMOKING INTERVENTIONS



Source: Cancer Care Ontario (Ontario Cancer Registry, 2002)

Cancer Care Ontario
www.cancercare.on.ca

Canadian Cancer Society
www.cancer.ca

CANCER 2020 TARGETS

The Cancer 2020 plan rests on scientific evidence and precaution in the avoidance of cancer risk. Our priorities for action are based on the recommendations of thought leaders world-wide and focus on risk factors that are well established and where the relationship to cancer is high. These recommendations have also been grounded in Ontario's communities who contributed to their refinement in the last year. These targets are consistent with an ambitious agenda and provide a benchmark against which our progress can be measured.

CANCER PREVENTION TARGETS

- Tobacco Use
- Diet and Nutrition
- Healthy Body Weight
- Physical Activity
- Alcohol Consumption
- Occupational Carcinogens
- Environmental Carcinogens
- Ultraviolet Exposure
- Viral Infections

CANCER SCREENING TARGETS

- Breast Cancer Screening
- Cervical Cancer Screening
- Colorectal Cancer Screening
- Prostate Cancer Screening

EMERGING ISSUES

- Medications and Supplements
- New developments in Screening

We believe that this approach is the best way to reduce the burden of cancer. Our prevention research priorities emphasize the need for more definitive information on suspected cancer risks and methods to change the *risk behaviours* of Ontarians.

For each target, we have identified key priorities for action where we feel the greatest gains can be made. For example, as part of our tobacco use target, one important focus of activity will be on youth and Aboriginal youth smoking. In order to measure whether we are having an impact on youth smoking behaviour, we will measure the percent of youth who are cigarette smokers now and compare it to the percent in the year 2020.

The tables that follow provide detail on the key priorities for action we have identified for each of our Cancer 2020 targets. For each priority we have listed the type of behaviour we will measure to determine change. Where possible, we have included the most recent estimate of the *prevalence* of this behaviour and identified whether this activity is currently increasing, decreasing or remaining stable.

Each table lists our Cancer 2020 target for the specific behaviour related to our key priority for action.

PREVENTION TARGETS

TABLE 1: KEY PRIORITIES FOR TOBACCO USE REDUCTION

	TEEN SMOKING	ADULT SMOKING	QUITTING SMOKING	EXPOSURE TO SECOND-HAND SMOKE	SMOKE-FREE SPACE
MEASURE	Percent of teens who are current cigarette smokers	Percent of adults who are current cigarette smokers (ages 18 and older)	Percent of daily smokers who will make at least one attempt to quit smoking per year	Percent of Ontarians who will be exposed to second-hand smoke in the home and in private vehicles	Percent of public places (including bars, restaurants and gaming facilities) in Ontario that will be smoke-free
MOST RECENT ESTIMATE	19%[7]	26%[8]	48%[9]	18% (children) 25% (adults)[10]	50% coverage in Ontario[11]
CURRENT TREND	Holding steady	Holding steady	Slightly increasing	Slightly decreasing	Slightly increasing
CANCER 2020 TARGET	**2%**	**5%**	**90%**	**Less than 1%**	**100%**
DESIRED DIRECTION	Decrease	Decrease	Increase	Decrease	Increase

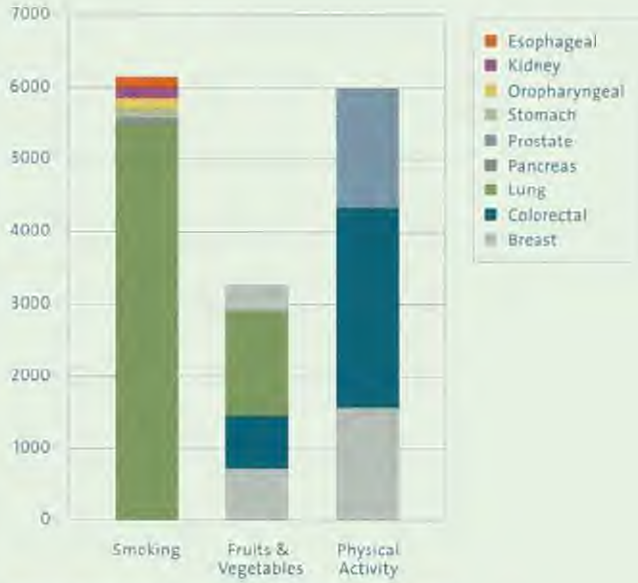
TABLE 2: KEY PRIORITIES FOR DIET, WEIGHT, PHYSICAL ACTIVITY AND ALCOHOL

	FRUIT AND VEGETABLE INTAKE	PHYSICAL ACTIVITY	OBESITY	ALCOHOL CONSUMPTION
MEASURE	Percent of Ontarians who consume five or more servings of vegetables and fruits daily	Percent of Ontarians who participate in moderate to vigorous activity on most days of the week	Percent of Ontarians who are obese, as measured by a Body Mass Index over 30	Percent of Ontarians who follow the low-risk drinking guidelines set out by the Centre for Addition and Mental Health
MOST RECENT ESTIMATE	32% adults[12] 44% children over 12 years old[13]	34%[14]	Over 15%[15]	94%[16]
CURRENT TREND	n/a	Slightly decreasing	Steadily increasing	n/a
CANCER 2020 TARGET	**90%**	**90%**	**10%**	**98%**
DESIRED DIRECTION	Increase	Increase	Decrease	Increase

How much of a difference can we make?

Figure 4 shows the number of cancer cases that could be prevented by implementing smoking, diet and physical activity interventions. These figures are conservative for several reasons. The number of years following a change in risk factor exposure during which the risk of disease remains the same (*latency*) has been estimated at ten years, but with the exception of tobacco, there is evidence that risks may actually begin to decrease after five years. In addition it is likely that there are other cancers and other chronic diseases for which these behaviours are protective.

FIGURE 4: CUMULATIVE CANCER CASES PREVENTED BY IMPLEMENTING TOBACCO, DIET AND PHYSICAL ACTIVITY INTERVENTIONS BY 2020



Source: Cancer Care Ontario (Ontario Cancer Registry, 2002)

TABLE 3: KEY PRIORITIES FOR ULTRAVIOLET EXPOSURE

	SUN PROTECTION	TANNING EQUIPMENT	SUNBURNS
MEASURE	Percent of Ontarians spending unprotected time in the summer sun between 11 a.m. and 4 p.m.	Percent of young adults using tanning equipment	Percent of Ontarians reporting a sunburn once in the summer
MOST RECENT ESTIMATE	36% of Ontario adults avoid the sun during these hours[17]	16–30% once in the last ten years[18]	55%[19]
CURRENT TREND	Holding steady	Increasing	Holding steady
CANCER 2020 TARGET	**Reduce time in the sun by 75%**	**Reduce use by 75%**	**Reduce sunburns by 75%**
DESIRED DIRECTION	Decrease	Decrease	Decrease

TABLE 4: KEY PRIORITIES FOR OCCUPATIONAL CARCINOGENS

GOAL	ACTIVITIES
ENHANCE SURVEILLANCE	An occupational cancer surveillance program will be developed including the: ➤ Identification and assessment of existing Ontario data files containing occupation information, including exposure assessment measures ➤ *Evaluation* of the job-exposure matrix to identify high burdens of exposure to specific substances in the Ontario workforce
IDENTIFY PRIORITY SUBSTANCES	The Ministry of Labour will be supported in updating their threshold limit values for designated substances: ➤ Their data collection will be utilized as part of exposure burden surveillance ➤ The Ministries of the Environment and Labour will receive support to develop a list of substances for attention ➤ CCO will develop the appropriate surveillance system ➤ Initial priorities should include but not be limited to diesel exhaust and its components, pesticides and asbestos
REDUCE AND CONTROL	All workplaces will become smoke-free from tobacco and other workplace contaminants. The percentage of outdoor workers demonstrating sun-protective safety behaviours will be increased.

TABLE 5: KEY PRIORITIES FOR ENVIRONMENTAL CARCINOGENS

GOAL	ACTIVITIES
ENHANCE SURVEILLANCE	A surveillance system will be developed to estimate and monitor levels of exposure to substances such as: ➤ Air: chromium (VI), benzo(a)pyrene, benzene, arsenic, dioxins/furans, PAHs, PM2.5 ➤ Drinking water: THMs and other chlorination byproducts ➤ Soil/ground water remediation: vinyl chloride, trichloroethylene, PAHs, benzene, arsenic A public report will be produced annually on amounts of carcinogenic industrial emissions to air (O. Reg 127/01) and levels in municipal drinking water (DWSP–O. Reg 459/00) (Ministry of the Environment).
IDENTIFY PRIORITY SUBSTANCES	Building on existing Ontario lists, environmental substances will be identified for action including substances such as air pollutants from transportation emissions and other sources, water disinfection byproducts.
REDUCE AND CONTROL	Exposure levels will be reduced for the substances identified above based on accepted standards in comparable jurisdictions, such as the OECD. ➤ Drinking water: Further reduce the Ontario population's exposure to THMs and other possible chlorinated disinfection by-products expected to be identified in 2005, by Health Canada's Disinfection By-Products Task Group ➤ Air: Reduce average annual exposures to fine particulates in air (particles ≤2.5 um, or PM2.5) in Ontario by 20% from current levels by 2010 and by 30% in 2020 No Ontarian will be exposed to ambient levels of environmental carcinogens from all sources above the minimum risk level of one in a million excess cancer risk for candidate substances.

SCREENING TARGETS

TABLE 6: KEY PRIORITIES FOR EARLY DETECTION

	BREAST SCREENING	CERVICAL SCREENING	HUMAN PAPILLOMA VIRUS VACCINATION (HPV)	COLORECTAL SCREENING
MEASURE	Percent of women aged 50–69 who participate in organized breast screening	Percent of women who have ever been sexually active who participate in organized cervical screening	Percent of young women who are vaccinated for HPV before sexual activity begins	Percent of Ontarians who participate in an organized colorectal screening program
MOST RECENT ESTIMATE	62% for any screening 20% organized (Ontario Breast Screening Program)[20]	82% report a Pap test in the last three years[21]	Vaccine not yet available	10% aged 50–74 report Fecal Occult Blood Test screening in the last two years[22]
CURRENT TREND	Slightly increasing	Holding steady	n/a	n/a
CANCER 2020 TARGET	**90%**	**95%**	**95%**	**90%**
DESIRED DIRECTION	Increase	Increase	Increase	Increase

EMERGING ISSUES IN CANCER PREVENTION AND SCREENING

TABLE 7: EMERGING ISSUES

GOAL	ACTIVITIES
MONITOR RESEARCH ON POTENTIAL ANTI-CANCER AGENTS	CCO will monitor the research on the use of medications and supplements as anti-cancer agents to determine their future clinical application for high-risk and *population-based* approaches.
ESTABLISH A SCREENING PANEL	As new screening tests are developed, an objective review process should be developed to assess their *effectiveness* as an early detection tool for the average-risk population. CCO will establish a screening panel to review and assess new screening methods and approaches.

AN ACTION PLAN FOR ONTARIO: 2003–2008

Our plan is ambitious because we intend to save lives. This section focuses on what needs to be put into place over the next five years in order to set the stage for the future, when the largest gains will be made.

Strategies to reach the Cancer 2020 targets will include the following components:

- **Leadership and Commitment**
  We must be prepared to take the lead where no strategy exists or support other key stakeholder agencies with implementation.

- **Inclusiveness**
  Everyone must play a role if we are to reach the targets set out in our plan, including all units of Cancer Care Ontario and partners in the public health, primary care and voluntary sectors.

- **Comprehensiveness**
  Comprehensive strategies, rather than a series of distinct interventions, are required to make the kind of changes we need.

A PROVINCIAL CANCER PREVENTION AND SCREENING COUNCIL

We are recommending that a Provincial Cancer Prevention and Screening Council be created which would report through Cancer Care Ontario. This new Council would have a broad mandate and membership and it would require resources consistent with a mandate for strategy development, planning and public reporting, surveillance of risk factors, providing the sustained focus that this sector so urgently needs.

The key functions of this group would be to initiate, support and lead where necessary, the development and execution of strategies and to advise on emerging issues and programs. This group would also fund and support the further development of regional cancer prevention initiatives and publish an annual public report on regional and provincial progress toward the Cancer 2020 targets.

The membership of this group would include:

- The Canadian Cancer Society (Ontario Division)
- Cancer Care Ontario
- Cancer survivors
- Chairs of the Regional Cancer Prevention and Screening Networks
- Provincial organizations including but not limited to the Ontario College of Family Physicians
- Ontario Public Health Association
- Public Health Research, Education and Development Program
- Ontario Ministry of Health and Long-Term Care
- Association of Local Public Health Agencies
- Representatives from other non-governmental organizations
- A representative of the Joint CCO-Aboriginal Cancer Committee
- Primary care leadership

Cancer Care Ontario
www.cancercare.on.ca

Canadian Cancer Society
www.cancer.ca

IMMEDIATE PRIORITIES

Currently in Ontario we have a number of cancer prevention and screening strategies and programs that have already been developed and require further funding.

Comprehensive Tobacco Control Strategy

We are calling for the implementation of a comprehensive tobacco control strategy at the level recommended by the Ontario Tobacco Strategy Steering Committee.

Colorectal Screening Pilot Program

We are recommending that the proposal for a colorectal screening pilot be funded and implemented as soon as possible and that the pilot results inform the expansion of colorectal screening in Ontario.

Ontario Breast and Cervical Screening Programs

Ontario already has excellent programs for breast and cervical screening. These programs should continue to be strengthened and adapted to changing technology.

Aboriginal Cancer Strategy[23]

Aboriginal peoples in the Province have differing rates and risks associated with cancer. The Aboriginal Cancer Care Unit will work within CCO to further develop and implement an Aboriginal Tobacco Strategy that is part of an overall provincial Aboriginal cancer strategy.

LONGER-TERM PRIORITIES

In addition to what currently exists, there are a number of strategies and programs that need further development.

Nutrition and Healthy Body Weight Strategy

A comprehensive provincial strategy, modeled on the Ontario Tobacco Strategy should be developed as soon as possible.

Active Living Strategy

The active living strategy already exists in Ontario. More investment is required to make an impact on sedentary lifestyles.

Alcohol Strategy

The proposed Provincial Cancer Prevention and Screening Council should support the Centre for Mental Health and Addiction's efforts to develop a comprehensive alcohol strategy for Ontario.

Occupational Carcinogens Surveillance Strategy

There is a need for high-quality surveillance information on the extent of occupational exposures to carcinogens and their link to cancer.

Environmental Carcinogens Reduction Strategy

The proposed Provincial Cancer Prevention and Screening Council should advocate for and participate in the development of a strategy to reduce environmental carcinogens.

Sun Safety Strategy

A comprehensive sun safety strategy must be developed.

A Screening Strategy

CCO should develop an overall provincial screening strategy and report to the proposed Provincial Cancer Prevention and Screening Council on its progress. This would include existing programs.

PRIORITIES FOR INFRASTRUCTURE DEVELOPMENT

Effective cancer prevention and screening programs will be carried out at various levels by many different stakeholders. The need for coordination will be critical. The following components are essential to a well developed infrastructure.

Integrate the Cancer 2020 Targets into the Public Health Mandatory Core Programs

Integrate the Cancer 2020 targets into the revised chronic disease prevention and early detection program standards of the Mandatory Health Programs and Services Guidelines under the Health Promotion and Protection Act.

Invest in Prevention Research

Ontario has recently announced a $1 billion fund for cancer research. We are recommending that research funding in the areas of *primary prevention* and screening be tripled from existing levels. Ontario should continue to support, conduct, monitor and evaluate research in areas such as:

- Risk factors for cancer
- Environmental carcinogens and cancer
- Gene-environment interactions
- Occupational carcinogens and cancer
- Evaluation of interventions
- Effective dissemination of interventions

Enhance Risk Factor Surveillance Activities

CCO should develop an expanded surveillance system in Ontario that tracks risk factor prevalence, cancer incidence and mortality and initiate other relevant surveillance activities in support of the measurement of progress toward the Cancer 2020 plan (both provincially and regionally).

Establish a screening panel to review and assess new screening methods and approaches

As new screening tests are promoted, there needs to be an objective review process to assess their effectiveness as an early detection tool for the average-risk population. This panel would also monitor and make recommendations on strategies for genetic testing.

Establish mechanisms to coordinate and plan regional cancer prevention and screening activities

The eight Regional Cancer Prevention and Screening Networks need to be better resourced. Funds are required to build their *capacity* to develop regional cancer prevention plans and produce annual regional reports on progress toward Cancer 2020 targets.

The efforts of the Regional Cancer Prevention and Screening Networks should be coordinated with other chronic disease networks, (e.g. Heart Health) where possible in order to have maximum impact on risk factors in common.

KEY PLAYERS

The key players involved in ensuring that we reach our targets are as follows:

- Proposed Provincial Cancer Prevention and Screening Council
- Cancer Care Ontario
- The Canadian Cancer Society (Ontario Division)
- The Government of Ontario
  - Ministry of Health and Long-Term Care
  - Ministry of the Environment
  - Ministry of Labour
  - Other Ontario government ministries (Agriculture and Food, Education) and institutions (Centre for Addiction and Mental Health)
- Joint CCO-Aboriginal Cancer Committee

CANCER 2020 VISION AND PRINCIPLES

In order to advance our battle against cancer, it is essential that we operate from a clear and well-articulated vision of the future. Our vision is based on the firm belief that with sustained action, we can achieve dramatic improvements in cancer control by the year 2020.

VISION

By the year 2020, Ontario will be an internationally recognized leader in reducing the burden of cancer.

- **Public understanding of health will have expanded beyond the traditional medical model to include social, economic and environmental determinants.**
- **Healthier public *policy* will be developed in all health and non-health sectors.**
- **A strong, stable government spending plan on disease prevention and screening (including research and programs) will lead the nation in per capita spending.**

It will take time, effort, resources and leadership to achieve this vision. However, we are committed to leading and organizing the efforts of individuals and organizations across the province.

GUIDING PRINCIPLES

Optimism

We believe that innovative planning and responsiveness to technological developments can dramatically reduce the burden of cancer.

Accountability

The plan establishes a five-year framework that can be used to develop measures for progress in cancer prevention and screening and identifies key actions including who is responsible for carrying them out.

A focus on population health

A population-based focus would utilize a variety of targeted strategies to increase knowledge among the public and health professionals and create a supportive public policy environment that reinforces behaviour change across the entire population.

Evidence-based

Cancer 2020's research priorities are based on emerging evidence of cancer risk, public concern and prevention research that is currently underway. We will respond quickly to new evidence in cancer prevention and screening and adapt proposed policies, programs and media campaign components accordingly.

The precautionary principle

Cancer 2020 is also guided by precaution in the avoidance of cancer risk. Even if some cause-and-effect relationships are not fully established scientifically it is desirable to reduce and/or eliminate exposure.

Integration and collaboration

Many *risk factors* for cancer such as tobacco use, poor diet and physical inactivity are common to other *chronic diseases*. Collaborative action among organizations involved in chronic disease prevention is cost-effective and increases the chance of successful behaviour change.

Strategic use of resources

It is crucial to make the best use of prevention resources and therefore, Cancer 2020's overall priorities for action are based on factors that put the population at the highest risk for cancer. For example, Aboriginal communities in Ontario have slightly different high-risk categories of cancer than the rest of the population and therefore, the best use of prevention resources would probably be different for this group.

ANNUAL REPORT OF THE ONTARIO CANCER PREVENTION AND TREATMENT AGENCY: 2020

A REPORT WE WOULD LIKE TO SEE IN 2020

It is with great pride that I present the third annual report to the Ministry of Health Improvement, which this year focuses on our progress to date in cancer prevention, as well as our aspirations for the next twenty years.

I want to take a few moments to review the significant developments we have implemented here in Ontario over the past ten or fifteen years that have already helped to reduce the incidence of cancer.

We have successfully implemented the 2003 cancer research and development plan and have a stronger scientific basis for our prevention efforts. We now know more about the causes of cancer, particularly about the variation in cancer risk amongst different populations and the role of diet. We also know more about how and why different populations adopt healthy behaviours and can customize programs to suit their needs.

We have made enormous progress in smoking reduction. As a result of the comprehensive prevention and cessation programs that have been in place for almost fifteen years, tobacco is no longer the leading cause of preventable death in Ontario.

Also contributing to our improved health is the fact that our diet is much healthier. Ontarians consume an average of five or more servings of vegetables and fruits a day and partnerships between government ministries, health care professionals, the non-profit community and business and labour sectors have had a huge impact on a number of diseases with risks in common, including obesity. Alcohol consumption has gone down significantly due to a notable shift in attitudes about the harmful effects of alcohol.

There is also a much higher level of physical activity today than was the case twenty years ago, helped of course by the inclusion of one hour of mandatory physical activity and health education daily from kindergarten to grade twelve. Most people in Ontario now live within a half kilometre of a fitness trail and are using them regularly for walking, biking, skiing and similar activities, while business increasingly encourages—and sometimes requires—employees to take fitness breaks.

On the environmental front, Ontario's air quality has improved significantly and levels of airborne *carcinogenic* particulates are at an all-time low. This year we will finally reach our Kyoto target. How did we get here? Vehicle taxes are tied to pollutant emissions and fuel taxes incorporate the true and full costs of vehicle use. We banned the building of coal-fired electric power plants and provided incentives for pollution-free clean energy. Twelve years ago we adopted a "polluter pay" agreement with industry and have recently implemented provincial legislation prohibiting the use of cosmetic pesticides and many other toxic substances. People drive less and walk, bike or use public transit more. Last year the sale of electric cars surpassed fossil-fuelled cars for the first time.

The incidence of skin cancer has gone way down not only because the ozone layer has been "healed" over the past 20 years, but because of the public's commitment to sun protection, coupled with our urban design shade policies, for which we won an international design award last year.

In the area of cancer screening, our investment in *biomolecular* research has started to pay dividends. We now have the ability to detect genetic susceptibility to cancer at an early age, as well as detect biomarkers of carcinogenesis, thus allowing us to focus *interventions* on high- and moderate-risk individuals. Screening for cancer biomarkers in average-risk individuals is now routine and for those cancers that escape early identification, we are able to distinguish aggressive tumours from those that are less so.

Given our recent advances, the fact that no new cancer epidemics have emerged in the past decade and the future developments we have outlined above, we believe it is reasonable to set a *goal* for 2040 of no new cases of preventable cancer. That is an achievable target and certainly one well worth aiming for—an important milestone in our quest for a cancer-free society.

Sincerely,
CEO
Ontario Cancer Prevention and Treatment Agency

GLOSSARY OF TERMS

Aboriginal peoples
Includes a variety of indigenous people from Canada and North America otherwise identified as status Indians, Inuit, Metis and non-status Indians. The term denotes that there are many differences among and between different Aboriginal peoples, nations, regions and political status.

Accountability
The responsibility to ensure that decisions made regarding the future of the cancer prevention and screening system are clear and transparent. This means establishing goals, targets and benchmarks for the system, tracking performance and reporting to the public.[24]

Biomolecular
Having to do with an organic molecule (part of a living organism) which includes proteins, DNA and RNA.[25]

Cancer prevention and screening
A set of activities that includes: conducting research relevant to the biology of cancer, the underlying causes of cancer and methods for preventing and detecting cancer; developing consensus on the significance and implications of the results of cancer research, surveillance and outcome evaluation; implementing tailored/targeted strategies based on evidence to prevent and screen for cancer; conducting surveillance to monitor and evaluate progress in cancer prevention and screening.[26]

Capacity
Partnerships, knowledge transfer, problem solving and infrastructure support in order to achieve a range of specific and generalized health outcomes.[27]

Carcinogen(ic)
Any substance that causes cancer.[28]

Chronic disease
A disease or condition that is generally slow in onset and persists or progresses over a long period of time.

Early detection
Detecting disease in apparently healthy individuals who have no apparent symptoms.

Effectiveness
Improvement in a health or behavioural outcome produced by an intervention.[29]

Evaluation
Systematic application of social research procedures for assessing the conceptualization, design, implementation and utility of social intervention programs.[30]

Evidence-based
A strategy for explicitly linking public health or clinical practice recommendations to the underlying scientific evidence that demonstrates effectiveness.[31]

Goal
A desired state to be achieved, i.e. the object of effort or intended outcome, generally without specific timeframes or in measurable form.

Infrastructure
Human, financial and material resources, organizational and administrative structures, policies, regulations and incentives which facilitate an organized response to identified issues and challenges.[32]

Intervention
Any program or other planned effort designed to address a risk factor or factors and produce intended changes in a target population in various settings.

Latency period
The number of years following a change in risk factor exposure that the risk of disease remains the same.

Occupational exposure
Exposure to harmful substances at or during employment.

Ontarians
Adults, youth and children living in Ontario.

PM2.5
Particulate matter that has an aerodynamic diameter of less than 2.5 microns.[33]

Policy
A formal statement or procedure within institutions (notably government), which defines priorities and the parameters for action in response to needs, available resources and other political pressures.[34]

Population-based
Pertaining to an entire population (or well-defined subgroup).

Precautionary principle
Taking precautionary action in the presence of scientific uncertainty and suspected harm. Shifts the burden of proof to the proponent of an activity rather than the public.

Premature death
Deaths under 65 years of age.

Prevalence
The number of events, e.g., instances of a given disease or other condition, in a given population at a designated time.[35]

Primary prevention
Programs, policies, media campaigns or combinations of these undertaken, coordinated and managed with the ultimate goal of decreasing the number of new cancers through the reduction (or elimination) of risk factors.

Risk behaviour
A specific form of behaviour which is proven to be associated with a specific disease or health condition.[36]

Risk factor
Social, economic or biological status, behaviours or environments which are associated with a specific disease, health condition or injury.[37]

Scenario
An imagined future.

Screening
Checking for disease in apparently healthy individuals with no apparent symptoms.

Second-Hand Smoke
Smoke that comes from burning any tobacco product, including smoke that smokers exhale[38] and side-stream smoke from the burning end of a cigarette, pipe or cigar. Second-hand smoke is a confirmed carcinogen.[39]

Stakeholder
An individual or organization directly or indirectly affected by or involved in the implementation and results of a plan.

Sun safety
Practices that protect a person from the harmful effects of exposure to ultra-violet radiation, such as avoiding the sun during peak periods, wearing hats, sunglasses and other protective clothing, using sunscreens and seeking shade.

Surveillance
A process of measuring rates and estimating trends to study the impact of a disease on a population.

Target
A desired measurable goal toward which a plan is directed.

Tobacco control
A broad range of planned and coordinated activities (e.g., policy, cessation, marketing, price) directed at various audiences and in different settings designed to reduce tobacco consumption and use.

ENDNOTES

1 Adami HO, Day NE, Trichopoulos NE & Willett WC (2001). Primary and secondary prevention in the reduction of cancer morbidity and mortality. European Journal of Cancer. 37: S118–S127.

2 National Cancer Institute of Canada (2002). Canadian Cancer Statistics 2002. Toronto, ON.

3 Cancer Care Ontario (March 1999). Cancer Incidence and Mortality in Ontario 1964–1996. ICD9 140–208, excluding 173 All Sites. Cancer Care Ontario: Toronto, ON. Available from: http://www.cancercare.on.ca/ocr/report/home.htm.

4 National Cancer Institute of Canada (2002).

5 Ontario Cancer Registry (2002). Surveillance Unit, Division of Preventive Oncology, Cancer Care Ontario: Toronto, ON.

6 This does not include the substantial impact of reducing deaths due to cardiovascular and lung disease.

7 Health Canada, Tobacco Control Programme (2002). Supplementary Tables, CTUMS 2001 [online, cited 2002, July 22]. Available from: http://www.hc-sc.gc.ca/hecs-secs/tobacco/research/ctums/2001/supplementary.html.

8 Ibid

9 Ibid

10 Ibid

11 Perley M (2002). Personal Communication with Ontario Campaign for Action on Tobacco.

12 Cancer Care Ontario (2003). Nutrition and Cancer Prevention Survey. Cancer Care Ontario: Toronto, ON (preliminary results).

13 Ontario Health Survey (1990). Working Paper No. 8. Allergic Disorders in Ontario: Prevalence and Utilization of Health Services.

14 Katzmarzyk PT, Gledhill N & Shephard RJ (2000). The economic burden of physical inactivity in Canada. CMAJ. 163 (11): 1435-1440.

15 Katzmarzyk PT. The Canadian obesity epidemic: 1985-1998. CMAJ 2002; 166(8): 1039-1040.

16 Bondy, SJ, Ashely, MJ, Rehm, JT, Walsh, G (1999). Do Ontarians Drink in Moderation – A Baseline Assessment Against Canadian Low-Risk Drinking Guidelines. CJPH 90 (4): 272-275.

17 Ontario Sun Safety Working Group (1998). Sun Exposure and Protective Behaviours, Ontario Report 1998. Ontario Sun Safety Working Group: Toronto, ON.

18 Ibid

19 Ibid

20 Cancer Care Ontario (October 2000). Breast Cancer in Ontario. Cancer Care Ontario: Toronto, ON.

21 National Population Health Survey, 1998/99 (December 2000). Statistics Canada: Ottawa, ON.

22 Rapid Risk Factor Surveillance System (1999). Pilot, Durham Region, Ontario.

23 The Aboriginal Cancer Care Unit was created after Cancer Care Ontario, in collaboration with the Joint (Cancer Care) Ontario—Aboriginal Cancer Committee (JOACC) found that there were unique needs and issues of Aboriginal peoples in Ontario in regards to cancer and cancer care. Access, screening, risks, attitudes and a number of other factors about cancer and cancer care for Aboriginal peoples in Ontario were further developed through "It's Our Responsibility", the Aboriginal Cancer Care Needs Assessment.

24 Adapted from Romanow RJ (2002). Building on Values: The Future of Health Care in Canada. Final Report of the Commission on the Future of Health Care in Canada. Commission on the Future of Health Care in Canada: Saskatoon, SK.

25 Cambridge Healthtech Institute (2003). Genomics Glossary [online]. Available from http://www.genomicglossaries.com.

26 Adapted from Canadian Strategy for Cancer Control (2001). Archived Material [online]. Available from: http://www.cancercontrol.org.

27 University of Queensland (2000). Assessing Community Capacity: Brief Intervention in the Northern Rivers area of New South Wales [online]. Available from: http://www.sph.uq.edu.au/CPHC/research/Capacity.html.

28 National Cancer Institute (2003). Cancer.gov Dictionary [online]. Available from: http://www.nci.nih.gov/dictionary/db_alpha.aspx?expand=%23.

29 Adapted from Truman BI, Smith-Akin CK, Hinman AR, Gebbie KM, Brownson R, Novick LF, Lawrence RS, Pappaioanou M, Fielding J, Evans CA Jr, Guerra FA, Vogel-Taylor M, Mahan CS, Fullilove M, Zaza S, & The Task Force on Community Preventive Services (2000). Developing the Guide to Community Preventive Services—Overview and Rationale. American Journal of Preventive Medicine. 18(1S): 18–26.

30 Rossi PH & Freeman HE (1989). Evaluation: A Systematic Approach, 4th ed. Sage Publications: Newbury Park, CA.

31 Truman et al. (2000).

32 World Health Organization (1998). Health Promotion Glossary [online]. Available from: http://www.who.int/hpr/backgroundhp/glossary/glossary.pdf.

33 University of Toronto (2003). Carbon & Nitrate PM2.5 Report—Introduction [online]. Available from: http://www.chemeng.utoronto.ca/~aerosols/reports/carni_into.htm.

34 World Health Organization (1998).

35 Last JM (1995). A Dictionary of Epidemiology, 3rd ed. Oxford University Press: New York.

36 Adapted from World Health Organization (1998).

37 Ibid.

38 Canadian Cancer Society (2003). Cancer Glossary [online]. Available from: http://www.cancer.ca/ccs/internet/frontdoor/0,,3543__langId-en,00.html.

39 National Clearinghouse on Tobacco and Health (2003). What is Environmental Tobacco Smoke (ETS)? [online]. Available from: http://www.cctc.ca/NCTHweb.nsf/MainFrameSet?OpenFrameSet

cancer care ontario | action cancer ontario

Cancer Care Ontario is dedicated to improving the quality of care and safety for cancer patients by creating a seamless journey for them as they access the highest quality programs in cancer prevention, early detection, treatment, supportive care, palliative care and research. Working with partners, including the Cancer Quality Council of Ontario, CCO will measure, evaluate and report on quality improvement in the cancer system. Cancer Care Ontario is a policy, planning and research organization that advises government on all aspects of provincial cancer care.

Canadian Cancer Society | Société canadienne du cancer

The Canadian Cancer Society is a national, community-based organization of volunteers whose mission is the eradication of cancer and the enhancement of the quality of life of people living with cancer.

The Canadian Cancer Society, in partnership with the National Cancer Institute of Canada, achieves its mission through research, education, patient services and advocacy for healthy public policy. These efforts are supported by volunteers and staff and funds raised in communities across Canada.

To order additional copies, contact the Canadian Cancer Society's *Cancer Information Service* at 1 888 939-3333 or through the webmaster at webmaster@ccsont.org or CCO's webpage at www.cancercare.on.ca.

Cancer 2020 Summary and Background Report can be found on both the Canadian Cancer Society's and Cancer Care Ontario's websites.

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