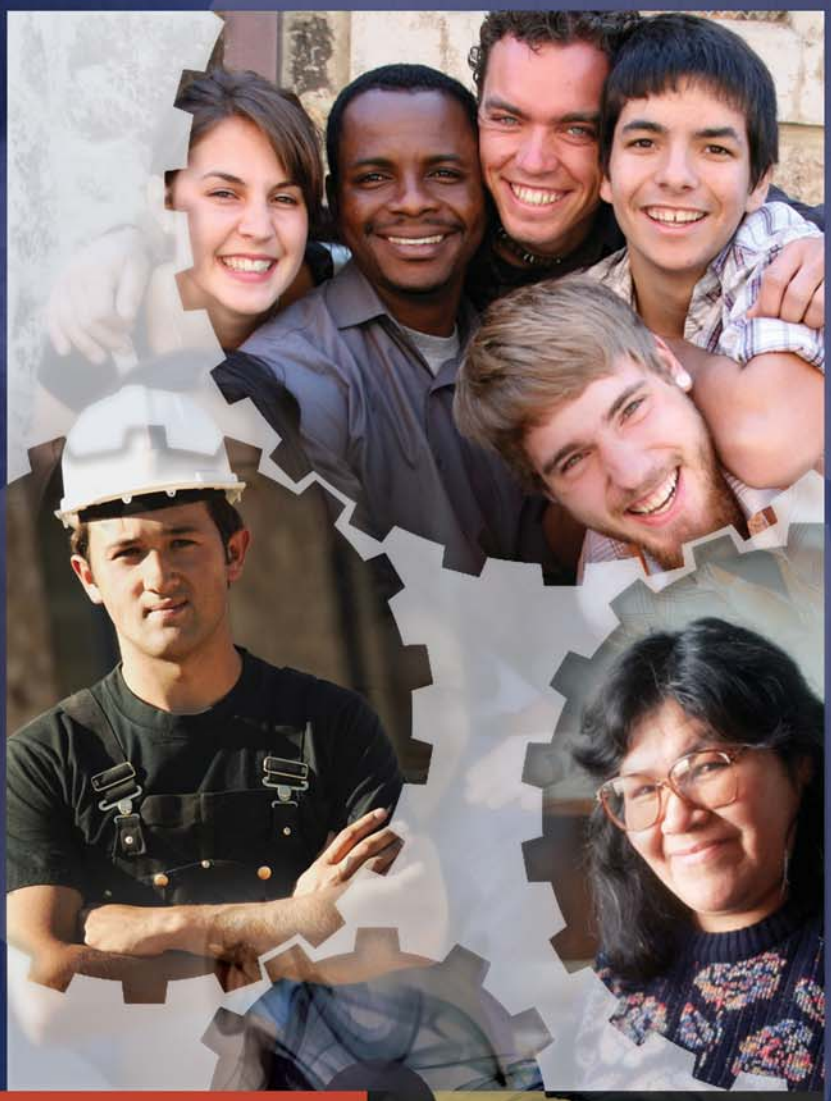

Evidence to Guide Action:

Comprehensive Tobacco Control in Ontario

Ontario
Agency for Health Protection and Promotion
Agence de protection et de promotion de la santé

Smoke-Free Ontario Scientific Advisory Committee

2010

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Executive Summary

The purpose of this report is to provide scientific advice and submit recommendations to the Ministry of Health Promotion and Sport (MHPS) to inform renewal of the provincial tobacco control strategy for 2010 to 2015. In mid-2009, MHPS requested this advice, recognizing that the five-year period of the Smoke-Free Ontario strategy was approaching completion.

This report provides evidence regarding effective interventions to greatly reduce the total number of people who use or are exposed to tobacco products in Ontario.

Tobacco use is not an intractable problem. To the contrary, the important interventions are known and tobacco control is effective when implemented in a comprehensive and consistent manner over an extended period of time at an adequate dose.

Overview

Smoking and other forms of tobacco use remain the leading cause of preventable illness and death in Ontario. Smoking and exposure to tobacco smoke have been clearly established as the cause of a large number of diseases and health conditions. Tobacco use costs the Ontario economy billions of dollars annually in health care and lost productivity costs. Reduced tobacco use will lead to better health, reduced demand on the health care system from tobacco-attributed diseases and less drain on productivity.

A comprehensive approach to tobacco control was introduced in 1992 in Ontario through the Ontario Tobacco Strategy (OTS) and continues with the Smoke-Free Ontario (SFO) strategy implemented in 2004-2005. Since then, significant achievements have been realized, including impressive declines in adult-smoking prevalence and implementation of innovative measures to protect the public from tobacco smoke exposure. Despite many successes, challenges remain and there is much room for improvement.

In Ontario, the comprehensive tobacco control (CTC) strategy faces many challenges, including:

- Low prices of tobacco products and low tobacco taxes
- Widespread availability of contraband tobacco products
- Innovative marketing and other activities of the tobacco industry
- Absence of an ongoing media campaign to denormalize the tobacco industry and promote protection, prevention and cessation
- A low dose of interventions in most areas (e.g., cessation, prevention)
- Elimination of remaining exposure to tobacco smoke
- Persistent inequities with regard to reaching subpopulations

Effective policies and programs in tobacco control exist. We know what works to address the problem. We now need to adopt and implement a combination of effective programs and policies as a system of tobacco control. Ontario has an opportunity to build on and expand CTC as a fully integrated, multi-level, comprehensive, coordinated and intense strategy that will greatly reduce use of and exposure to tobacco products and the illnesses and deaths they cause.

This report describes the most effective strategies for confronting the disease vector, protecting nonsmokers from exposure to tobacco smoke, preventing uptake of smoking, supporting cessation, and reducing inequities in tobacco control. The evidence from Ontario and other jurisdictions is reviewed and recommendations are developed for Ontario for the period 2010-2015. System enablers – leadership, funding, a learning system, and others – are also described.

Confronting the Tobacco Disease Vector

The tobacco industry remains unique as the supplier of a legal product that can kill half its long-term users when used as intended and harms most others. Unlike disease vectors commonly encountered in public health, the tobacco industry is highly intelligent and seeks to avoid statutory and regulatory control whenever possible. Contraband adds a further layer of complexity by circumventing regulatory controls and price deterrents from excise and sales taxation.

Evidence from other jurisdictions identifies opportunities to challenge the tobacco industry and make public health gains through pricing increases and tighter restrictions on packaging, new product development, promotion and distribution.

Price: There is strong and unequivocal evidence that increases in the price of cigarettes result in decreased demand and consumption and increased intention to quit. Cigarette prices in Ontario remain the second lowest in Canada. After a substantial increase in 2006, there has since been no significant increase in tobacco taxes.

Tobacco industry denormalization: Tobacco industry denormalization (TID) campaigns can highlight the industry's attempts to increase the social acceptability of smoking. Effective TID campaigns expose the cause of the epidemic of tobacco-related diseases (i.e., the tobacco industry itself), influence the public's beliefs about the tobacco industry and contribute to reduced prevalence of tobacco use.

Plain and standard packaging and health warnings: The intentional manipulation by the industry of package configuration, colour, symbols and imagery continue to undermine public health messaging and contribute to false beliefs about the harm caused by tobacco products.

Tobacco product regulation: Tobacco manufacturers develop new products to keep or grow their market share. New tobacco products should be prohibited unless there is unequivocal evidence of a net-positive population health benefit.

Retail distribution and accessibility: Reducing the number of tobacco retailers and locations permitted to sell tobacco products is one mechanism to limit consumption. Tobacco retail outlet density is associated with tobacco-use uptake in nearby schools and neighbourhoods. Retail accessibility is also related to physical and social availability.

Marketing and promotion: The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) emphasizes the need to ban a broad scope of marketing activities that include direct marketing, sales promotions, personal selling and interactive online methods. Partial bans leave room for the tobacco industry to adapt to new regulations by shifting expenditure to unregulated areas in creative and indirect ways.

Tobacco industry accountability: Interests of the tobacco industry and public health policy are in direct conflict. Litigation and industry monitoring play key roles and can be used generate greater support for public health policy, while containing tobacco-industry activities; thus, reducing usage, exposure and avoidable premature death and illness.

Prevention

Comprehensive tobacco control programs include interventions to facilitate a smoke-free transition from adolescence to young adulthood and beyond. As with all elements of tobacco control, prevention initiatives are most effective when implemented as part of a comprehensive strategy. The target population for prevention interventions includes youth and young adults (up to and including 29 years of age).

Media and social marketing: Well-funded, appropriately targeted and sustained media campaigns can be an effective strategy to prevent tobacco use in youth and young adults. These campaigns are most effective when combined with other elements of a comprehensive strategy.

Smoking in the movies and video games: Exposure to tobacco imagery in movies increases the risk of smoking initiation in youth and young adults. Most youth exposure to onscreen smoking comes from smoking incidents in youth-rated films. Films and video games that depict tobacco use should therefore be rated as adult content. Where tobacco use is depicted, audiences and users should receive appropriate warnings.

Effective and enforced policies: School and community environments play an important role in influencing young people's smoking behaviour. Strong and well-enforced tobacco policies in these environments have demonstrated positive effects on controlling the prevalence of smoking behaviours.

Aligned and co-ordinated interventions: Individual tobacco control programs are not independent. Sustained effort using multiple approaches — in-school and community-wide — is likely to be most effective. A co-ordinated system of initiatives designed to prevent tobacco use and support quitting among youth and young adults is required.

Targeted prevention interventions: Environmental characteristics, school and community variables and students' perceptions contribute to the variability of student-smoking susceptibility and risk across schools. Evidence indicates that certain interventions targeted to those at highest risk are most effective, and school-based programs can work in high-risk contexts. Targeted program interventions across settings aimed at youth and young adults at greatest risk for tobacco use are required.

Retail access and compliance: The impact of current youth access restrictions on tobacco use prevalence may be limited by the ease by which youth access cigarettes through social sources and some retailers. Reconsideration of current protocols for testing compliance is required. More rigorous and realistic compliance testing protocols may prevent sales to underage consumers, and thus lead to reduced access through social sources.

Cessation: The majority of youth and young adults intend to quit using tobacco but lack awareness of, or interest in, existing cessation supports. Many supports are limited to the school environment, and services and interventions provided by health professionals remain infrequent and inconsistent. There is a need to build cessation intervention and counselling for youth and young adults into the practice of all health professionals. Additional research is needed to develop effective interventions for youth and young adults.

Evaluation and learning: Surveillance and evaluation systems help to better understand school and community contributions to prevention and support program planning and development. However, no system currently exists to identify or measure the impact of tobacco control policies and programs implemented in schools, colleges, universities or communities in Ontario.

Protection

As there is no level of exposure to tobacco smoke that is considered safe, creating tobacco-free environments is the best way to achieve protection. Tobacco-free environments eliminate adverse physical effects and social reinforcement of tobacco use and help people trying to quit.

Despite Ontario's progressive municipal and provincial legislation regarding the creation of smoke-free environments, many Ontarians continue to be exposed to tobacco smoke. There is strong public support for smoke-free environments across various settings in Ontario. In addition to support for legislation, Ontarians are increasingly implementing voluntary policies in their own homes.

Smoke-free legislation: Using legislation to restrict smoking in certain indoor public spaces is insufficient. Ontarians continue to be exposed in indoor and outdoor spaces, including unenclosed restaurant and bar patios, multi-unit dwellings, homes and vehicles. Local strategies and learning from them provide evidence and precedents to support stronger provincial legislation.

Media interventions: Effective media interventions are essential components of any comprehensive tobacco control strategy. These interventions can lead to protection from involuntary exposure to tobacco smoke by preventing initiation, promoting and facilitating cessation, and influencing social norms, stimulating public support for tobacco control interventions and increasing knowledge regarding the dangers of exposure.

Health professionals: Patients may be motivated to make quit attempts and seek additional assistance if guided by health professionals. Health professionals may also play a role in motivating patients to take action to protect family members, friends and the public by adopting policies that reduce usage and restrict exposure that can harm others.

Evaluation and learning: Research has demonstrated the importance of community support and involvement at the grassroots level in implementing several highly effective and innovative program and policy interventions. These include increasing restrictions on tobacco-product marketing practices and creating smoke-free environments. Surveillance, evaluation and monitoring enable ongoing learning from these interventions and application of knowledge across new settings.

Cessation

A tobacco control strategy with appropriate investment in cessation will attain significant short-term reductions in health burden and health care costs. Even if the uptake of tobacco use is immediately halted in Ontario, there would still be approximately 2.1 million smokers in Ontario who continue to accrue health consequences and ultimately increased health care costs. The approach to tobacco-use cessation described in this report encompasses a wide range of evidence-based interventions (policy, media, programs) across a variety of settings. Most importantly, cessation is a highly cost-effective intervention that saves lives.

Policies that support cessation: There are many well-researched examples of policies that support cessation while achieving other objectives. The most successful are raising tobacco prices through tax increases, extending smoke-free places, and denormalizing the tobacco-industry. Each of these policies motivates smokers to quit, encourages quit attempts, and leads to reduced consumption.

Cessation media campaign: Mass media tobacco control campaigns increase intentions to quit, decrease consumption, increase quit rates, and lower the prevalence of tobacco use. These campaigns are effective at informing and directing tobacco users to existing cessation services, thus expanding their reach and uptake.

Tobacco-user support system: Tobacco cessation can be a complex process that spans many months or years; moreover, some smokers simply want to reduce their consumption. Individuals may experience a range of psychological and physiological withdrawal symptoms and therefore may benefit from behavioural support and cessation medication such as nicotine replacement therapy. Even so, a significant proportion will relapse. Therefore, for many, becoming free from tobacco use or nicotine dependence is a lifelong struggle. An effective cessation system must be able to attract tobacco users and support them throughout their entire cessation process.

Direct-to-tobacco-user cessation services: It is important to actively recruit, engage, support and provide current tobacco users with cessation services. This approach complements systematic cessation services in the health care field and primary care and includes a combination of telephone, text messaging and Internet-based services complemented with free cessation medication, such as nicotine replacement therapies where necessary.

Cessation interventions in primary care and across all other health care settings: Cessation interventions are effective when provided in a number of settings and delivered by a variety of professionals, for example, family physicians, dentists, pharmacists, or during emergency room visits and pregnancy. Challenges remain in increasing reach, accountability and continuity of care. Providing cessation training opportunities in primary care and across all health care settings is essential.

Role of pharmaceutical companies: Pharmaceutical companies play an important role in developing cessation medications. They are involved in mass media public education to motivate and support quit attempts, support research into systems of cessation for high-need populations and sponsor training and other capacity building activities. There is a need to define the roles that pharmaceutical companies can play in the development of comprehensive tobacco control in Ontario.

Social-ecological approaches to cessation: A social-ecological approach attempts to understand the impact of an individual's environment and social networks on health behaviour. To understand the properties of these networks, the research lens must be widened to encompass whole groups of individuals and their interconnections. Cessation approaches using network phenomena may be used to spread positive health behaviour and augment existing population interventions such as taxation and media campaigns.

Evaluation and learning: As with prevention and protection, ongoing monitoring and evaluation is essential to improve understanding of the cessation process and the impact of the range of interventions used to promote cessation.

Disparities and Equity

Reducing tobacco-related disparities is part of achieving the public health goal of health equity. Universal interventions, particularly those related to the price of tobacco, can reduce tobacco-related health inequity while making overall improvements to population health. Focused interventions should be chosen by looking at existing population-level policies and services to ensure that those who are disadvantaged by social inequalities receive a fair and equitable share of the projected benefits and do not experience harmful, unintended consequences.

Applying an equity lens: The first step in incorporating equity into a renewed tobacco control strategy is to identify the groups who may be at higher risk, systematically disadvantaged, or bear a higher burden of poor health related to tobacco use and exposure. Consideration of the social determinants of health, including social status, social networks, employment, education, social and physical environments is necessary.

Universal and focused interventions: Evidence supports employing a balance of universal and focused interventions to best achieve the goal of reducing tobacco-related disparities while reducing the overall burden of tobacco-use and exposure.

Evaluation and learning: An equity perspective should be applied to the monitoring and evaluation of all interventions in prevention, protection and cessation. This is essential to learning whether interventions are contributing to both the improvement of population health and the reduction of tobacco–related inequities.

System Enablers in Comprehensive Tobacco Control

System enablers are inter-related functions or capacities that support effective comprehensive tobacco control. These include:

Strong sustained leadership and partnerships: In all jurisdictions with effective comprehensive tobacco control, a strong political commitment has been necessary to develop and support comprehensive, sustained, multi-sectoral measures and co-ordinated responses. Leadership across multiple government sectors to develop and implement a strong strategic plan are required to achieve tobacco control outcomes. Leadership and commitment are critical to anticipate and manage the countervailing efforts of the tobacco industry.

Partnerships within civil society (i.e., partnerships between and among government and non-government agencies) at local, provincial and national levels play an important role in generating and sustaining momentum. Advocacy organizations and community partners sustain momentum for social action and galvanize support for policy change.

Policy, programs and social marketing: Policies, programs and social marketing are essential components of comprehensive tobacco control: they bring tobacco control to both the general population and specific sub-groups such as current and potential smokers.

Funding: Comprehensive tobacco control is a cost-effective strategy and will more than pay for itself in health care savings alone. Studies suggest a dose-response relationship between the intensity of interventions and outcomes achieved by CTC. Funding at the level required to achieve high levels of intervention intensity and population reach over a sustained period of time will achieve population level changes in tobacco use and chronic disease prevention.

Comprehensive tobacco control learning system: Ontario has a well-developed tobacco control infrastructure consisting of tobacco control resource centres, the Ontario Tobacco Research Unit and many other partners. This system provides tobacco control intermediaries with scientific and practice-based evidence, surveillance and monitoring data, evaluation, knowledge exchange, training, tools and technical supports. To build capacity to implement the renewed strategy, Ontario requires a system which delineates roles, responsibilities and accountability and examines new and existing aspects of the strategy, including capacity-building for implementing these changes and improving existing elements.

Tobacco control in Ontario within a global context: Ontario tobacco control practitioners and researchers have made substantial contributions to global knowledge in comprehensive tobacco control. Ontario has the depth, breadth and infrastructure to support a comprehensive scientific enterprise that contributes to global understanding of what works and how it works in eliminating tobacco use and exposure. As such, many elements of the learning system are already in place. By strengthening and coordinating existing resources, Ontario can support and enable rapid innovation, experimentation and feedback to continually inform the renewal of tobacco control polices and practice.

Recommendations

Given the above, the following recommendations are made to advance a comprehensive tobacco control strategy for Ontario which will lead to prevention and substantial reductions in tobacco use, reduced physical and social exposure to tobacco smoke, reduced tobacco-related health inequities across the province, and, ultimately, elimination of tobacco-related illness and death in Ontario. These recommendations are numbered according to the chapter to which they belong.

Chapter 2: Comprehensive Tobacco Control: Action Informed by Evidence

RECOMMENDATION

Comprehensive Tobacco Control

[2.1] Build on and expand comprehensive tobacco control in Ontario as a fully integrated, multi-level, comprehensive, coordinated and intense strategy.

Chapter 4: Confronting the Disease Vector in Tobacco Control

Goal: To minimize the ability of the tobacco industry to market, promote and sell tobacco products.

RECOMMENDATIONS

Taxation and Price

[4.1] Implement a substantial increase in provincial tobacco taxes.

- [a] Commit to regular cigarette tax increases to address inflation and tax increases in other provinces.
- [b] Dedicate and invest a proportion of provincial cigarette taxes into comprehensive tobacco control efforts.
- [c] Establish a minimum retail market price for tobacco products.
- [d] Implement recommendations 4.1, 4.2, and 4.3 concurrently.

Contraband

[4.2] Implement tax markings/stamps, a tracking and tracing system and enhanced enforcement (border controls, investigations, intelligence, inspections and seizures) for tobacco products.

[4.3] Engage and work with First Nations leadership and communities to reduce commercial tobacco use among First Nations people, reduce the sales of tax-exempt tobacco to ineligible individuals, and develop and implement strategies to address the production, distribution and sale of contraband tobacco.

Tobacco Industry Denormalization

[4.4] Develop and implement a sustained tobacco industry denormalization campaign.

[4.5] Divest provincial pension plans and other investments of tobacco holdings and amend legislation to allow other institutions (e.g., Ontario universities, hospitals) to divest their tobacco holdings.

Packaging and Health Warnings

[4.6] Mandate plain and standard packaging (including onserts and inserts).

[4.7] Refresh the tobacco product health warning system in a timely and continuous manner, ensure that a 1-800 cessation helpline number is included as part of the health warning system, and align mass media campaigns with these warnings.

Product Regulation

[4.8] Prohibit the approval, selling and marketing of any new* tobacco or non-therapeutic nicotine product unless there is unequivocal scientific evidence of a net-positive health benefit at the population level.

* New products include brand extensions, changes to name or packaging and new forms of tobacco.

Retail Distribution

[4.9] Employ licensing strategies, zoning by-laws, and move toward a system of designated sales outlets as a mechanism to continuously reduce the number of tobacco retailers and locations permitted to sell tobacco products.

[4.10] Extend the prohibition of the retail sale of tobacco products to match or exceed those of the leading Canadian provinces.

Marketing and Promotion

[4.11] Close existing loopholes on tobacco product advertising and promotion.

[4.12] Legislate tobacco manufacturer reporting requirements that match or exceed what is currently required by the Federal government.

Industry Accountability

[4.13] Implement tobacco-industry surveillance, monitoring and intervention development functions to address and plan for mitigation of tobacco industry activities.

[4.14] Require, by statute, that tobacco manufacturers (including importers selling tobacco products in Ontario) meet stated annual reductions in the number of under-aged tobacco users in Ontario. Substantial penalties, based on the revenue gained by tobacco companies over a smoker's lifetime, should be applied if the stated goals are not met. Funds should be directed to tobacco control activities.

Industry Litigation

[4.15] Identify public health provisions that should be included in a judgment or settlement resulting from tobacco-industry litigation.

Chapter 5: Prevention of Tobacco Use Among Youth and Young Adults

Goal: To prevent the uptake of tobacco use among youth and young adults in Ontario, where uptake encompasses all stages of smoking, initiation and progression.

RECOMMENDATIONS

Media and Social Marketing

[5.1] Implement media and social marketing strategies using traditional and non-traditional media (e.g., viral and interactive media channels) that denormalize the tobacco industry, highlight the social unacceptability of tobacco use, identify resources available to youth and young adults who want to quit and encourage youth and young adults to refrain from tobacco use.

[5.2] Require adult ratings for movies (18A) and video games (Mature) with any tobacco imagery.

Movies and Video Games

[5.3] Require ads that aim to denormalize tobacco companies and change social norms related to tobacco products and their use preceding movies and video games that contain tobacco imagery, as well as warnings on movie and video game packaging.

Policy Enforcement

[5.4] Develop, implement and enforce comprehensive tobacco control policies within and across settings (e.g., schools, colleges, universities and communities).

Program Alignment

[5.5] Align cessation and prevention programs in schools, colleges, universities and communities with other activities (e.g., media and social marketing, policy interventions) within the provincial tobacco control strategy.

High Risk Youth and Young Adults

[5.6] Target program interventions to the schools, colleges, universities and workplaces where youth and young adults are at greatest risk for tobacco use.

Evaluation and Monitoring

[5.7] Further develop and implement an integrated system of intervention development, evaluation and surveillance that is applicable province-wide and at the local level, to:

[a] Identify high-risk environments and at-risk subpopulations.

[b] Guide the implementation of evidence-based prevention initiatives (programs and policies).

[c] Evaluate the impact that changes in programs and policies have on youth and young adult smoking behaviour over time.

Retail Access and Compliance

[5.8] Implement revised and more rigorous (realistic) compliance protocols with tobacco retailers regarding sales to underage consumers.

Cessation Assessment and Early Intervention

[5.9] Ensure smoking status is assessed and cessation services are provided in all settings (e.g., social, school and health care) providing services to youth and young adults.

Chapter 6: Protection from Tobacco Smoke and Social Exposure to Tobacco Use

Goal: To protect Ontarians from all physical and social exposure to tobacco products.

RECOMMENDATIONS

Smoke-free Policies

[6.1] Amend the *Smoke-Free Ontario Act* and Regulation to eliminate smoking of tobacco products and combustible water-pipe preparations in priority settings including:

[a] Unenclosed restaurant and bar patios (including nine metres from the perimeter of the patio).

[b] Not-for-profit multi-unit dwellings.

[c] Selected outdoor public places such as doorways to public and commercial buildings (within nine metres), transit shelters, provincially regulated parks and playgrounds, outdoor sports facilities, beaches, sidewalks and public events such as parades and outdoor entertainment venues.

[d] Hotels, motels, inns and bed and breakfasts.

[e] Vehicles that carry nonsmokers at any time.

Media and Social Marketing

[6.2] As part of a comprehensive tobacco control program, implement media and social marketing strategies that increase public awareness and knowledge of the health effects of exposure to secondhand smoke and social exposure to tobacco use, and that influence social norms supportive of tobacco-free living.

Social Action

[6.3] Develop a province-wide program to enable implementation of grassroots local action initiatives (e.g., partnerships, community mobilization and innovative interventions) that address social norm change and protection from exposure to tobacco smoke.

Smoke-free Compliance and Enforcement

[6.4] Continue to promote, enforce and monitor compliance with the *Smoke-Free Ontario Act.* Consider enforcement approaches to maximize compliance and enforcement activities by setting (e.g., schools, bars, etc.) and additional policy promotion.

Learning System

[6.5] Continue to support research, surveillance, evaluation and monitoring of provincial and local initiatives, program and policy experiments related to protection from exposure to tobacco products and social norm change. Enhance the capacity to use findings to foster learning and innovation at the provincial, regional and local levels.

Professional Development

[6.6] Develop, evaluate and implement guidelines, training programs and incentives to promote brief interventions by health professionals with their patients that aim to protect nonsmokers, especially children and pregnant women, from second-hand smoke.

Chapter 7: Cessation

Goal: To reduce the health and economic burden from tobacco industry products, at an individual and societal level, through cessation interventions.

RECOMMENDATIONS

Media Campaign

[7.1] Implement a sustained and intensive mass media campaign to encourage smokers to quit, either on their own or with help.

Tobacco-User Support System

[7.2] Create a Tobacco-User Support System to operationalize the concept that there is "no wrong door" for access to cessation support services. The system will reach out to tobacco users, understand, support and address their needs, and improve interventions through its various components.

Direct Support

[7.3] Enhance systems of telephone, text messaging and Internet-based cessation support services that would entail:

[a] Integration with the overall Tobacco-User Support System.

[b] Integration with the cessation mass media campaign.

[c] Capability for continual engagement with smokers.

[7.4] Provide free direct-to-tobacco-user smoking cessation medication in combination with varying amounts of behavioural support where indicated and appropriate.

Cessation in Other Settings

[7.5] Systematize, expand, support, and tailor cost-effective and evidence-based cessation policies, services and supports across health care and public health settings such as primary health care, hospitals and long term care homes.

[7.6] Create accountability mechanisms to ensure that smokers are asked, advised and assisted to quit at every point of contact with the health care system (local health integration networks, hospitals, primary care providers, specialty care, home care, etc.).

[7.7] Provide free smoking cessation medications for individuals on Ontario Drug Benefit, with the dose and duration determined by the presence of co-morbidity and end organ damage as assessed by their health care provider.

[7.8] Target subpopulations that are at high risk for tobacco related disease or have decreased access to tobacco cessation services in order to provide services that address their specific needs. Sub-populations may include people in addiction and mental health treatment settings including those struggling with problematic gambling.

Cessation Training

[7.9] Support and enhance training and professional development for all tobacco control practitioners through existing resources such as the Program Training and Consultation Centre (PTCC) and the Training Enhancement and Applied Cessation Counselling and Health (TEACH) program.

Pharmaceutical Companies

[7.10] Engage pharmaceutical companies to better understand their potential contribution to a tobacco-use cessation system for Ontario.

Innovative Approaches

[7.11] Support research and development of innovative social-ecological approaches to smoking cessation in various settings, including workplaces and community-based organizations.

Chapter 8: Tobacco-related Disparities and Equity

Goal: To reduce tobacco-related disparities – both the unequal distribution of disease and the inequitable application and impact of interventions – while reducing the overall burden of tobacco, as key strategy for achieving health equity in Ontario.

RECOMMENDATIONS

Disparities and Equity

[8.1] Incorporate equity considerations into the renewal of Ontario's strategy to reduce tobacco use and exposure, and into all future phases of comprehensive tobacco control in Ontario.

Targeted Interventions

[8.2] Use a portion of the additional revenue generated by increasing taxation on tobacco to allocate resources to interventions directed at sub-populations that do not optimally benefit from universal interventions.

Community Involvement

[8.3] Involve members of identified priority communities in the conceptualization, design and implementation of interventions that will form Ontario's renewed strategy to reduce tobacco use and exposure in support of reducing tobacco-related inequities.

Evaluation and Monitoring

[8.4] Ensure monitoring and surveillance of tobacco-related disparities, and that evaluation of policies and services, capture the differential impact on sub-populations.

Chapter 9: Key System Enablers in Tobacco Control

Goal: Ontario will be a recognized leader in the design and implementation of an evidence-informed comprehensive tobacco control strategy and system in order to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

RECOMMENDATIONS

Leadership and Partnership

[9.1] Foster and sustain commitment at every level and across all of government to lead, coordinate, monitor and ensure accountability for outcomes in comprehensive tobacco control.

[9.2] Foster and sustain coalitions to sustain the vision, innovate and promote tobacco control initiatives at local and provincial levels.

[9.3] Foster and sustain partnerships between government and non-government organizations, the public health system, the health care system and others in order to coordinate and deliver the programmatic and social marketing interventions required to eliminate the burden of tobacco use in Ontario.

[9.4] Leadership must anticipate and manage the countervailing efforts of the tobacco industry.

Policy, Program, and Social Marketing Support

[9.5] Ensure those responsible for developing and implementing comprehensive tobacco control policies, programs and social marketing interventions have adequate resources, capacity and support to design and implement activities effectively.

Funding

[9.6] Fund the Ontario comprehensive tobacco control program consistently at levels required to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

Learning System

[9.7] Optimize and sustain the comprehensive tobacco control learning system infrastructure which makes Ontario a leader in intervention research, development, and dissemination; as well as continuous improvement of comprehensive tobacco control through research, evaluation, performance monitoring, surveillance of outcomes, and continuous quality improvement.

Global Leadership

[9.8] Demonstrate leadership within Canada in achieving and exceeding the World Health Organization's Framework Convention on Tobacco Control provisions in Ontario.

[9.9] Collaborate with Quebec and New York State to address the contraband problem.

Preface

In 2009, the Ministry of Health Promotion and Sport (MHPS) requested the Ontario Agency of Health Protection and Promotion (OAHPP) establish a scientific advisory committee to provide scientific and technical advice and recommendations to the Government of Ontario to inform comprehensive tobacco control strategy renewal for 2010-2015. The Smoke-Free Ontario – Scientific Advisory Committee (SFO-SAC) was convened to address the request.

The approach to SFO-SAC is consistent with OAHPP's mandate as a hub organization linking practitioners and researchers to provide scientific and technical advice to protect and promote the health of Ontarians and reduce health inequities.

OAHPP convened the best scientific minds in the tobacco control field from Ontario to serve on the Committee. The work was supported by a project secretariat at OAHPP that committed to scientific excellence and broad engagement of the tobacco control community. In addition, an International Expert Panel consisting of internationally renowned tobacco control scientists provided external peer review on the evidence and recommendations to assure quality and scientific rigour, and consideration of advice from jurisdictions outside Ontario.

This report presents a case for continued comprehensive tobacco control in Ontario. It describes the SFO-SAC approach and proposes recommendations related to the disease vector, prevention, protection and cessation, as well as additional recommendations related to equity and system enablers.

CHAPTER 1

The Case for Tobacco Control: Evidence for Bold Action

Abstract

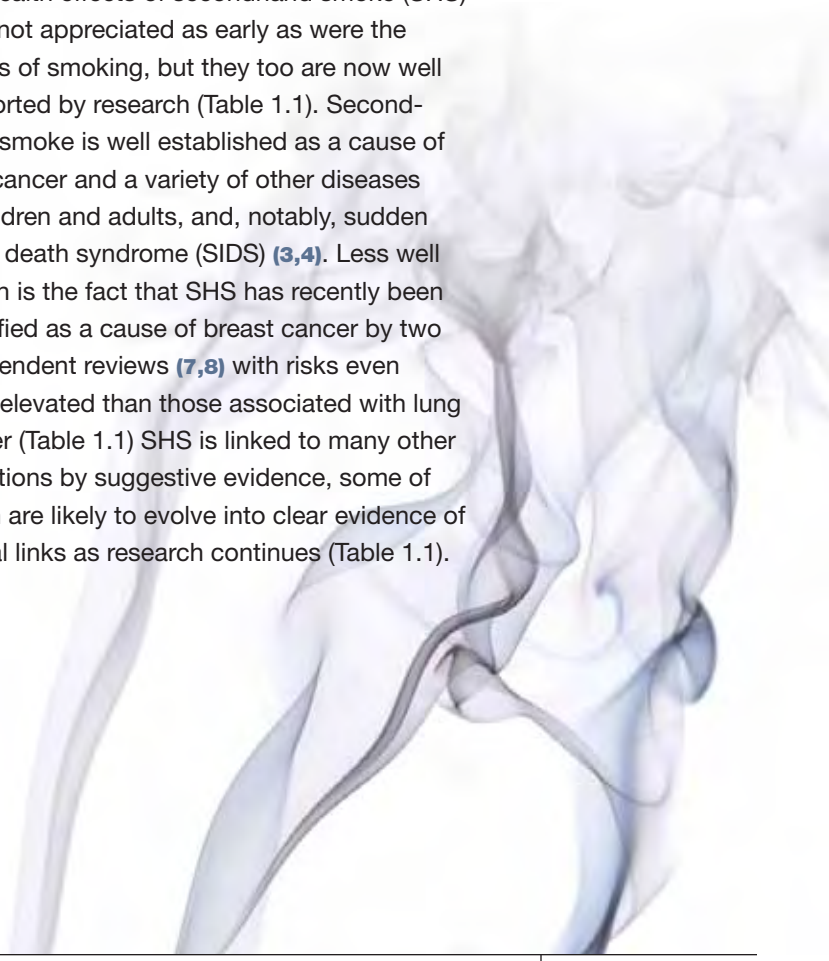
Tobacco use remains the leading cause of preventable illness and premature death in western societies. It is estimated that tobacco-related illness and death cost the Ontario economy over $7 billion annually, including $1.93 billion in health care costs. In contrast, the revenue from tobacco taxes would total approximately $1.5 billion even with no losses to contraband. Reduced tobacco use will quickly lead to better health, reduced demand on the health care system from tobacco-attributed diseases and less drain on productivity. Effective approaches to controlling the tobacco epidemic are known; the challenge is to adopt and implement them. This chapter summarizes the proposed goals for renewed comprehensive tobacco control in Ontario and provides example targets related to the overall goals and expected outcomes of recommended interventions.

Tobacco Use Remains the Leading Preventable Public Health Epidemic

Smoking, along with other forms of tobacco use, remains the leading cause of illness and death in western societies. In 2002, it accounted for 17% of all deaths in Canada — 21% for men and 12% for women **(1)**. Tobacco use is responsible for three times as many deaths as the combined total of alcohol, drugs, suicide, homicide, injuries sustained from car crashes, and AIDS **(2)**.

Based on rigorous reviews of research conducted by authoritative agencies over many years in a variety of populations, smoking has been clearly established as a cause of a large number of diseases and health conditions (Table 1.1). In addition to lung cancer and chronic obstructive pulmonary disease (COPD) — for which smokers can have 12 to 23 times the risk of nonsmokers **(3)** — smokers can anticipate cancer in at least 18 other sites (Table 1.1). They also have two to four times the risk of coronary heart disease (CHD) and stroke as nonsmokers **(4)**. Moreover, smoking multiplies the harm associated with other conditions and risks such as obesity **(5)** and alcohol abuse **(6)**.

The health effects of secondhand smoke (SHS) were not appreciated as early as were the effects of smoking, but they too are now well supported by research (Table 1.1). Secondhand smoke is well established as a cause of lung cancer and a variety of other diseases in children and adults, and, notably, sudden infant death syndrome (SIDS) **(3,4)**. Less well known is the fact that SHS has recently been identified as a cause of breast cancer by two independent reviews **(7,8)** with risks even more elevated than those associated with lung cancer (Table 1.1) SHS is linked to many other conditions by suggestive evidence, some of which are likely to evolve into clear evidence of causal links as research continues (Table 1.1).



Beyond the health effects of smoking and SHS, there may be negative consequences of "third hand smoke" (smoke contamination that remains after the cigarette has been extinguished and is thus a more durable form of SHS). Third hand smoke is now being investigated for its health effects (9) with the likelihood that they will be similar to those for SHS.

While tobacco use has declined significantly in much of the Western world since its maximum levels in the 1950's, the tobacco epidemic has not yet been solved. There are good reasons for this: tobacco smoking is addictive for many users (3,10) and the tobacco industry is a resourceful and resilient force. Furthermore, when gains have been made, they have not been distributed equitably throughout the population, and members of many population groups do not optimally benefit from tobacco control (see Chapter 8).

Other jurisdictions recognize the tobacco epidemic continues and have ambitious new plans for tobacco control. These include California, New York State (11), England (12), and Australia (13). In all of these jurisdictions, the mission is to eliminate tobacco use in the foreseeable future.

Tobacco Use is an Enormous Drain on the Ontario Economy

Tobacco use currently costs the Ontario economy an estimated $7.73 billion annually. This imposing total consists of health care costs and lost productivity. It is calculated as follows:

In 2002, the direct cost for health care related to tobacco was $1.6 billion (14). When inflation and population growth are considered, this is the equivalent of $1.93 billion in 2009.[2] Moreover, this figure is likely underestimated because many more diseases have been attributed to tobacco use since this study was conducted five years ago. Most notably, breast cancer is now regarded as causally linked to smoking (Table 1.1). These costs include acute care hospitalizations (2.2 million days in 2002), specialized inpatient and outpatient treatment, ambulatory care, doctors' fees, and prescribed drugs. Tobacco-related disease accounted for 10% of hospital days in 2002, more than the days for alcohol and illegal drugs combined (14).

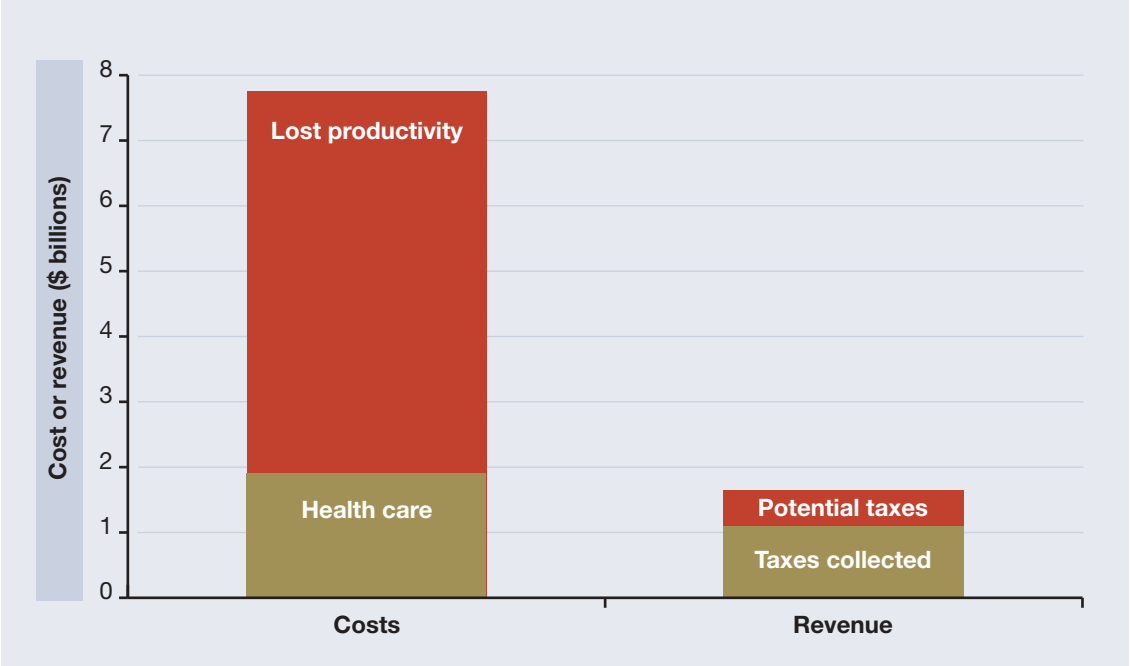
In addition to these health care expenditures for diseases related to tobacco, there are indirect but very real costs. These are the costs of productivity lost due to increased sick days and the early death of adults who are employed or work at home.[3] The economic value of this lost labour was $4.4 billion in 2002. The 2009 equivalent was $5.8 billion.[4]

2 Based on 2002 data as reported, adjusted for 11.9% inflation (health and personal care sub-index) from 2002-09 and 8.1% population growth (Ontario, all ages) during the same period (Statistics Canada, Consumer Price Index and CANSIM, Estimates of population growth by province). Considering the aging of the population and the consequent demand for heath care, this latter adjustment is most likely conservative.

3 The latter is sometimes measured as potential years of life lost (PYLL). In 2002, tobacco use resulted in 516,000 potential years of life lost — 17% of the combined PYLL from all causes.

4 Based on 2002 data as reported, adjusted for 22.1% increase in median individual income and 8.1% population growth from 2002-09 (Ontario, all ages) during the same period (Statistics Canada, CANSIM Table 111-0008 and CANSIM, Estimates of population growth by province).

FIGURE 1.1: Estimated costs of smoking vs. tax revenue from cigarettes, Ontario, 2009



Tobacco Use is an Enormous Drain on the Ontario Economy

Reduced tobacco use has immediate and long-term benefits for the smoker and for society

The tobacco industry sometimes argues that the revenues generated by taxing their products are more than enough to cover any costs they engender. The Auditor General of Ontario concludes otherwise. Only $1.1 billion in tobacco tax revenue was collected in 2008, with perhaps another $500 million lost to contraband **(15)**, for a total of $1.6 billion. The revenues are thus substantially short of the costs generated by tobacco use (Figure 1.1). This conclusion has been recognized in the past by such bodies as the Ontario Medical Association (OMA) **(16)**. In 2003, the OMA concluded that a comprehensive program of tobacco control could result in $1.3 billion in public health-care savings, $2.4 billion in increased sales and income tax revenue, and $7.5 billion in increased tobacco tax revenue.

Reduced tobacco use has immediate and long-term benefits for the smoker and for society

The potential gains of successful tobacco control in Ontario are enormous. Meaningful benefits can be expected in the relatively short term, in addition to the well-understood long-term benefits more commonly stated. Some of the more significant gains in the near term are:

- Reduced hospital admissions for myocardial infarction and stroke within 12 months **(17)**
- Reduced low birth weight with maternal cessation of smoking in the first trimester **(18)**
- Reduced lung cancer incidence within one year and bladder cancer incidence within three years **(19)**

Tobacco Use is an Enormous Drain on the Ontario Economy

Reduced tobacco use has immediate and long-term benefits for the smoker and for society

Tobacco control starts with acknowledging the disease vector: tobacco

It is obvious that reduced tobacco use will lead to better health, less demand on health care facilities for tobacco-related diseases, and less drain on productivity. Less obvious, but well supported by the evidence, is that costs savings can be expected to occur after a fairly short interval.

Tobacco control starts with acknowledging the disease vector: tobacco

Currently in Ontario, the disease vector has two sources — legal manufacturers and distributors, and contraband suppliers. Contraband refers to the sale of tobacco products with evasion of any applicable federal and provincial statutes (e.g., regarding importation, stamping, marking, manufacturing, distributing, and payment of duties and taxes) **(20)**.

The combination of legal manufacturers of a deadly product and contraband suppliers operating outside the law is a formidable challenge to public health.

Over the years in Canada, the United States and elsewhere, tobacco manufacturers have shown themselves to be well resourced, determined, adaptable to changing conditions **(21)** and even — when it serves their interests — deceitful **(22-24)**. The industry fights vigorously to protect its profits and counter tobacco control efforts that threaten it **(25)**. Moreover, tobacco control initiatives in Canada receive special scrutiny from the industry because they can and do become precedents for global action, an example being Canada's graphic warnings **(26)**.

The tobacco industry remains unique as the supplier of a (legal) product that can kill half its long-term users when used as intended, and harms most of the others **(4,10,27)**. It thus has a strong incentive to recruit new users **(28)**. At the same time, it benefits from far less oversight than other industries that do much less harm (see Chapter 4).

As part of its protective stance, the tobacco industry has fostered myths to its advantage and to the detriment of tobacco control **(29,30)**. Prominent examples include:

- *"Smoking is a lifestyle choice,"* when in fact it is an addiction for many users and a potential addiction for others **(3)**. Nor is it a simple matter of will when the individual is faced with tobacco-company marketing practices including slick, intensive media campaigns and product modifications
- *"The science on the harm of secondhand smoke is contradictory and inconclusive,"* when in fact the only uncertainty is whether the list of negative health effects will ever be complete (see Table 1.1)

A myth exists that tobacco use is under control

While progress has been impressive in Ontario, the decline in smoking has all but flat-lined (see Chapter 2, Figure 2.5); contraband is serious; the industry has new, unregulated, marketing strategies and products **(31)**; and tobacco-related inequities persist (see Chapter 8 on Equity).[5] Many recommendations made in 1999 after a thorough review of the Ontario situation **(32)** have not yet been acted upon.

The public — who must bear the costs of tobacco use — do not agree that the tobacco problem has been solved and support new control measures. In 2008, a majority of Ontario adults agreed that **(33)**:

- Smoking should be banned from restaurant and bar patios (75% agreed)
- Smoking should not be allowed indoors in multi-unit dwellings (82% agreed)
- Parents should not be allowed to smoke at home if children are living there (78% agreed)

In conclusion, the current situation requires a renewed understanding of evidence and a new commitment to a comprehensive response to tobacco control. There is more to be done.

Recommendations and Targets for a Comprehensive Tobacco Control Strategy

Taken as a whole, the Smoke-Free Ontario-Scientific Advisory Committee (SFO-SAC) recommendations in this report provide a strategy designed to answer the tobacco challenge with a set of effective measures to achieve goals and reach meaningful targets. The recommendations are informed by evidence and are responsive to the current Ontario context. Chapters 4 to 9 lay out this strategy in detail and the logic models (Appendix B) describe their interrelations.

The balance of this chapter considers goals and targets to which a renewed strategy could aspire. All goals and targets are stated in specific, measurable terms. A marker of current or recent status is provided as an example of this measurability.

5 Progress and challenges remaining are detailed in the next chapter, and in each of the chapters recommending interventions.

Goals for Renewed Comprehensive Tobacco Control in Ontario

Goals for Renewed Comprehensive Tobacco Control in Ontario

This section summarizes the goals that guide the development of interventions recommended in other chapters in this report. They are compared, where possible, to the goals for the Smoke-Free Ontario strategy (SFO-S) and the Ontario Tobacco Strategy (OTS), and a rationale is offered for the new goal statement.

Overall goal	**Eliminate tobacco-related illness and death in Ontario — rapidly, equitably, and cost-effectively.**
Previous goal	Eliminate tobacco-related illness and death in Ontario.
Status marker	13,000 deaths in 2002 **(14)**, estimated $1.93 billion in health-care costs in 2009.

Rationale: The proposed new goal maintains the focus on improving the health of Ontarians, and adds the qualifiers "rapidly, equitably and cost effectively."

Meeting specified targets by 2015 requires rapid implementation of this report's recommendations. The 2015 Pan-Am Games provide an incentive to do so because they offer an opportunity to showcase a healthy Ontario to the rest of the world. Reaching the targets also requires the most cost-effective means available in order to maximize progress with the resources at hand. Therefore, cost-effectiveness forms an integral part of the goal statements.[6] Finally, several targets below deal specifically with equity and the reduction of inequities, without which the renewed strategy can never be regarded as fully successful, no matter what progress is registered against the other targets.

Goal for the disease vector	**To minimize the marketing, promotion and sale of non-therapeutic nicotine products.**
Previous goal	None
Status marker	Contraband is a source of cigarettes for a significant number of smokers. New products and marketing strategies by the legal industry circumvent existing restrictions.

Rationale: The proposed goal explicitly recognizes that the supply of tobacco — the disease vector — must be dealt with directly, in addition to the more familiar strategies of reducing demand through prevention, cessation and, indirectly, through protection. See Chapter 4 for recommended strategies to address the disease vector.

6 Since good evidence for cost-effectiveness is not always available, gathering this evidence will be part of the learning system recommended below.

Goals for Renewed Comprehensive Tobacco Control in Ontario

Goal for prevention	To prevent uptake of tobacco use among youth and young adults, where uptake encompasses all stages of smoking initiation and progression.
Previous goal	Prevent smoking initiation and habitual use among children, youth and young adults.
Status marker	One third of 11 to 15 year-old never-smokers were considered susceptible to tobacco use in 2006 (Chapter 5).

Rationale: The proposed goal is more inclusive in its reference to tobacco use rather than smoking only. It is more explicit about intervening in all stages of uptake, and the age range of concern is extended to 29 in recognition of a trend toward later ages of initiation. See Chapter 5 for recommended prevention strategies.

Goal for protection	To protect Ontarians from all physical and social exposure to the use of tobacco products.
Previous goal	Eliminate involuntary exposure to environmental tobacco smoke.
Status marker	In 2008, 6% of nonsmoking Ontarians aged 12+ years living with a smoker were exposed to SHS in their home every day or almost every day, while 8% of adult workers were exposed to SHS while indoors at work **(34)**.

Rationale: The new goal retains the focus on protection from SHS and adds social exposure. Social exposure models smoking and other tobacco use. Reducing such exposure is an integral part of deglamorizing smoking and making it less visible. See Chapter 6 for recommended protection strategies.

Goal for cessation	To reduce the burden from tobacco products at an individual and societal level through cessation interventions.
Previous goal	Reduce smoking in Ontario.
Status marker	In 2007-08, 23% of Ontarians age 12+ years (2.45 million) used some form of tobacco in the previous 30 days **(34)**.

Rationale: The proposed goal makes clear reference to cessation and now extends beyond smoking to all tobacco products. See Chapter 7 for recommended cessation strategies.

Goals for Renewed Comprehensive Tobacco Control in Ontario

Potential Targets for Renewed Comprehensive Tobacco Control in Ontario

Goal for equity	To reduce tobacco-related disparities – both the unequal distribution of disease and the inequitable application and impact of interventions – while reducing the overall burden of tobacco, as part of achieving health equity in Ontario.
Previous goal	None
Status marker	In 2008, smoking status varied by gender, age, region, education, occupation, income, Aboriginal status and mental health.

Rationale: As smoking contributes significantly to health disparities and is preventable, reducing differences in tobacco use between population groups will contribute to improved health equity and will be essential to reducing the overall burden of tobacco-related health consequences for the entire province. See Chapter 8 for strategies related to improving equity.

Goal for Enabling the CTC System	Ontario will be a recognized leader in the design and implementation of an evidence-informed comprehensive tobacco control strategy and system in order to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.
Previous goal	None
Status marker	In 2009-10, strategy renewal had commenced, there were leadership changes within MHPS and CTC funding was budgeted at $42.8M, approximately $3.15 per capita.

Potential Targets for Renewed Comprehensive Tobacco Control in Ontario

Target-setting is fraught with complexities: a) making assumptions about future funding and other forms of support for a new strategy, b) finding relevant baseline and trend data to describe recent experience, c) attributing observed trends to past CTC interventions, and d) making assumptions about the impact of externalities such as contraband or other unanticipated developments.

Despite these challenges, target-setting is a useful exercise with several benefits (35), among them:

- Increasing the breadth and intensity of health improvement activities (by setting goals that require a "stretch" compared to past progress)
- Improving the efficiency and effectiveness of CTC activities by defining high-priority strategies
- Building awareness of and support for interventions among policymakers
- Guiding decisions on allocation of funding

Targets for these purposes should be based on knowledge of available resources and informed by discussion with stakeholders and modeling of future trajectories under various assumptions. The targets set out here have not had the benefit of such information, and thus should be seen as suggestive – as a starting place for those discussions, which are properly part of the strategy design of the implementation phases for renewed CTC in Ontario.

Potential Targets for Renewed Comprehensive Tobacco Control in Ontario

Rationale for societal targets

These targets are for the most part based on Ontario trend data (described where applicable) and assume the adoption of a fully comprehensive and appropriately funded strategy of CTC. This includes, as described in Chapters 4, 7 and 9, the active participation of government agencies in addition to the Ministry of Health Promotion and Sport (MHPS). Moreover, it assumes that adequate funding will be in place early in fiscal 2010-11. If these assumptions are not valid, e.g., there is no change in CTC activity during 2010-11, the target dates will have to be adjusted accordingly.

Targets are described in two groups, the first related to the overall goals of CTC in Ontario and the second to expected outcomes of interventions, as suggested by the logic models (Appendix B). All targets aim for 2015, as requested by MHPS. In addition, because the effects of sustained tobacco control are cumulative, many targets for 2020 are also proposed. The 2020 targets suggest the trajectory of benefits that can be anticipated with a continuing commitment to CTC.

All targets should be reviewed no later than 2015 and adjusted as appropriate.[7]

Societal targets for CTC	■ By 2015, significantly reduce work-loss days and early death attributable to tobacco, compared to 2010 levels ■ By 2015, significantly reduce use and cost of health care and the cost of lost productivity attributable to tobacco, compared to 2010 levels ■ By 2015, reduce per-capita sales of cigarettes by 25% from 2007 levels after adjustments for contraband
Previous target	Reduce per-capita sales of cigarettes by 20% between 2003 and 2007.
Trends	Per-capita sales fell 12% between 2003 and 2007 when contraband is taken into account (27% without adjusting for contraband) **(36)**.

Rationale for societal targets

The first target is directly related to the overall goal of reducing tobacco-related illness and death. The second follows from accomplishing the first: costs due to smoking-attributable disease will necessarily decline, starting in the short-term, when such disease declines. The third target, based on per-capita cigarette consumption, is an update of the most general of targets adopted by Smoke-Free Ontario. As an updated version, it takes into account estimates of the contraband market, as noted. This implies that reaching the target will be in jeopardy if contraband is not brought under control (see Chapter 4).

7 This is standard practice in the United States with respect to setting national health objectives: 10-year targets are established periodically and mid-term reviews are regularly conducted. For example: U.S. Department of Health and Human Services. Healthy People 2000: Midcourse Review and 1995 Revisions. Washington, DC: 1996.

Potential Targets for Renewed Comprehensive Tobacco Control in Ontario

Examples of targets for strategy outcomes

Examples of targets for strategy outcomes

2015 target	2020 target	Baseline/Trends*
Prevalence of current smoking age 18+: 10%	Prevalence of current smoking age 18+: 5%	Prevalence in 2008: 17%, down from 23% in 1999
Prevalence of nonsmokers among adults with high school or less education significantly increased	No disparity in adult smoking prevalence related to education	Prevalence of nonsmokers in 2008: < high school, 70%, high school, 72%, some post-secondary, 80%, university, 90%
Prevalence of nonsmokers among men age 18-29 significantly increased	Disparities in adult smoking among age-sex groups significantly reduced as smoking declines for all	Prevalence of nonsmokers in 2008: men age 18-29: 68%, significantly below all other age-sex groups
Daily consumption (daily smokers) of 14.5 cig/day	Daily consumption (daily smokers) of 14.0 cig/day	Consumption in 2008: 15.7 cig/day, down from 17.5 in 1992
Prevalence of student nonsmokers in the North significantly increased	No disparity in student smoking related to region of the province	Past-year smoking (all grades) in 2009: 18% in the North, 7% in Toronto (37), 12% for Ontario average
Proportion of 14-15 year-olds susceptible to smoking significantly reduced	Proportion of 14-15 year-olds susceptible to smoking further reduced	In 2006: 31% of 14-15 year-old never-smokers susceptible to smoking (see Chapter 5)
No exposure to SHS on bar and restaurant patios	2015 target maintained	In 2008: 54% of Ontarians were exposed to SHS on restaurant patios, 77% on bar patios
No exposure to SHS in vehicles that carry nonsmokers	2015 target maintained and widely supported by public opinion	In 2008: 7% of Ontarians reported exposure to SHS in vehicles; 87% of adults agreed smoking should not be allowed in cars with children
No exposure to SHS in not-for-profit multiple-unit dwellings	No exposure to SHS in all multiple-unit dwellings	In 2007-08: 28% of multi-unit dwellings residents noticed smoke entering their home from outside (38)
No exposure to SHS at home for age 0-19	2015 target maintained and widely supported by public opinion	In 2008: 3% of age 0-11 and 13% of age 12-19 reported exposure at home, down from 21% in 2003

Source: *OTRU Monitoring and Evaluation Series, Vol. 14/15, 2010 (34), unless noted.

Rationale for outcome targets

These examples of targets refer to a range of outcomes related to cessation, protection, prevention and equity.

Prevalence is the most widely used and direct indicator of immediate CTC progress, but must be monitored among population groups to ensure that it leads to the ultimate goal of better health outcomes and reduced disparities in outcomes. The prevalence targets for adults (10% and 5%) were suggested by the International Expert Panel (IEP) **(39)** and are ambitious but conceivable **(40)**. Targets for reducing inequities are described here in positive terms as increasing the proportion of nonsmokers. An education gradient has been in place for decades **(41)**, and certain age-sex groups such as young men are noteworthy for their higher prevalence of smoking. Reducing these inequities requires a substantial effort. There is also a long-standing and major inequity in the level of smoking among Aboriginal Canadians, people with low income, those with mental health and addictions issues, gay populations, and problem gamblers. Setting targets for reducing such disparities should be undertaken in consultation with these communities.

The target for reducing daily consumption by smokers complements reduced prevalence: it reflects less use by smokers who do not quit. Daily consumption has been slow to change and reaching this target will require a special effort.

With respect to exposure, the targets cover a variety of settings – home, vehicles and patios. This is not an exhaustive list, as eliminating exposure in public places such as parks and beaches has also been recommended (see Chapter 6). These targets provide examples of how protection can be addressed with targets for both self-reported exposure and supportive public opinion, which is an important condition for success, especially in locations traditionally regarded as private.

Legend

CEP – Canadian expert panel on tobacco smoke and breast cancer risk, 2009 (7)

EPA – Respiratory health effects of passive smoking (US Environmental Protection Agency), 1992 (42)

IARC – Tobacco smoke and involuntary smoking (IARC Monographs on the evaluation to carcinogenic risks to humans), 2004 (3)

SGR 2004 – The health consequences of smoking: A report of the Surgeon General, 2004 (27)

SGR 2006 – The health consequences of involuntary exposure to tobacco smoke: A Report of the Surgeon General, 2006 (4)

TABLE 1.1: Diseases and conditions related to smoking and secondhand smoke exposure[8]

Disease or condition	Effects on smoker (first-hand exposure)	Effects on nonsmokers (secondhand exposure)	
	Clear evidence of causation	Clear evidence of causation	Evidence suggestive of causation
Respiratory			
Acute respiratory infections		SGR 2006	
Acute respiratory infections, adults			SGR 2006
Asthma (increased severity), children		SGR 2006	
Asthma, adult-onset and worsening control			SGR 2006
Bronchitis	SGR 2004		
Chronic airway obstruction	SGR 2004		
Chronic respiratory symptoms			SGR 2006
COPD death	SGR 2004 (12-13 x)		
COPD	IARC		SGR 2006
Emphysema	SGR 2004		
Lower respiratory illness, infants and children		SGR 2006	
Reduced lung function, children		SGR 2006	
Respiratory symptoms, children		SGR 2006	
Cancer			
Bladder	IARC, SGR 2004		
Brain tumour, children			SGR 2006
Breast, pre-menopausal women	CEP	EPA (168-220%), CEP (160-170%)	SGR 2006
Breast, post-menopausal women	CEP		
Cervix	IARC, SGR 2004		EPA
Childhood cancer			SGR 2006
Esophagus	IARC, SGR 2004		
Kidney	IARC, SGR 2004		
Larynx	IARC, SGR 2004		
Leukemia, acute myeloid	IARC, SGR 2004		

8 This table is conservatively based on conclusions by authoritative agencies from their rigorous reviews of large numbers of studies. It does not summarize all the relevant evidence from other sources.

Disease or condition	Effects on smoker (first-hand exposure)	Effects on nonsmokers (secondhand exposure)	
	Clear evidence of causation	Clear evidence of causation	Evidence suggestive of causation
Cancer			
Leukemia, childhood			SGR 2006
Liver	IARC		
Lung, men	IARC, SGR 2004 (23 x)	SGR 2006	IARC, SGR (0.2-0.3)
Lung, women	IARC, SGR 2004 (13 x)	SGR 2006	IARC, SGR (0.2-0.3)
Lymphoma, children			SGR 2006
Nasal sinus			SGR 2006, EPA
Oral cavity	IARC, SGR 2004		
Pancreas	IARC, SGR 2004		
Stomach	SGR 2004		
Throat	SGR 2004		
Uterus	SGR 2004		
Cardiovascular disease			
Abdominal aortic aneurysm	SGR 2004		
Atherosclerosis			SGR 2006
Coronary heart disease	SGR 2004 (2-4 x)	SGR 2006	
Peripheral vascular disease	SGR 2004		
Stroke	SGR 2004 (2-4 x)		SGR 2006
Pregnancy, delivery and related			
Infertility and sub-fertility	SGR 2004		
Low birth weight		SGR 2006	
Placenta previa	SGR 2004		
Preterm delivery			SGR 2006
Stillbirth		SGR 2006	
Sudden infant death syndrome		SGR 2006	
Other conditions			
Ear problems, children		SGR 2006	
Middle ear disease, children		SGR 2006	
Osteoporosis	SGR 2004		
Peptic ulcers	SGR 2004		
Periodontitis	SGR 2004		
Premature death, children and adults		SGR 2006	
Surgical complications	SGR 2004		

Potential Targets for Renewed Comprehensive Tobacco Control in Ontario

Legend

CEP – Canadian expert panel on tobacco smoke and breast cancer risk, 2009 (7)

EPA – Respiratory health effects of passive smoking (US Environmental Protection Agency), 1992 (42)

IARC – Tobacco smoke and involuntary smoking (IARC Monographs on the evaluation to carcinogenic risks to humans), 2004 (3)

SGR 2004 – The health consequences of smoking: A report of the Surgeon General, 2004 (27)

SGR 2006 – The health consequences of involuntary exposure to tobacco smoke: A Report of the Surgeon General, 2006 (4)

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CHAPTER 2

Comprehensive Tobacco Control: Action Informed by Evidence

Abstract

This chapter defines and describes comprehensive tobacco control, and provides evidence for the synergies that occur when protection, prevention and cessation efforts are intensive and widespread. Comprehensive tobacco control strategies implemented in California, Massachusetts, and New York State provide examples to improve our understanding of various synergies. The chapter provides a brief history of comprehensive tobacco control in Ontario, successes achieved and challenges remaining.

Methods

The science of tobacco control interventions has been advanced significantly by authoritative evidence-based public health organizations including the US Surgeon General, the US Centers for Disease Control and Prevention (CDC), US National Cancer Institute, the Institutes of Medicine in the US and the World Health Organization's Tobacco-Free Initiative. Each of these agencies has published major reviews on comprehensive tobacco control (CTC), and some do so regularly. Their reports offered the most authoritative starting place for researching the literature on CTC. They not only provided their own conclusions based on wide-ranging reviews by expert panels, but also pointed to seminal studies that were subsequently consulted.

For various historical reasons, CTC has been tried in the United States more than in any other country. Moreover, the US experience provides a type of natural experiment in CTC, as the form of intervention has varied from state to state. This variation strengthens the evidence that CTC works.

Two examples of CTC in the United States are consistently mentioned in the literature — California and Massachusetts. Other US states and other countries have also had CTC strategies, but few have the long history, extensive evaluation efforts and documented success of these two states. However, New York State has a CTC program that, while relatively new, is exceptionally well documented and has many features similar to those proposed in this report.

The websites of these three state programs were important sources of information for this chapter. They provided descriptions of program components, impacts and outcomes and also gave leads to important studies in the peer-reviewed literature. These sources were supplemented by suggestions from the members of the Smoke-Free Ontario - Scientific Advisory Committee (SFO-SAC) and International Expert Panel (IEP) and online database searches for specific topics such as evaluation of CTC components.

For describing the Ontario context, the main source was the Monitoring and Evaluation Series of the Ontario Tobacco Research Unit (**www.otru.org/monitoring_reports.html**).

Comprehensive Tobacco Control: The Essential Qualities

Why comprehensive tobacco control?

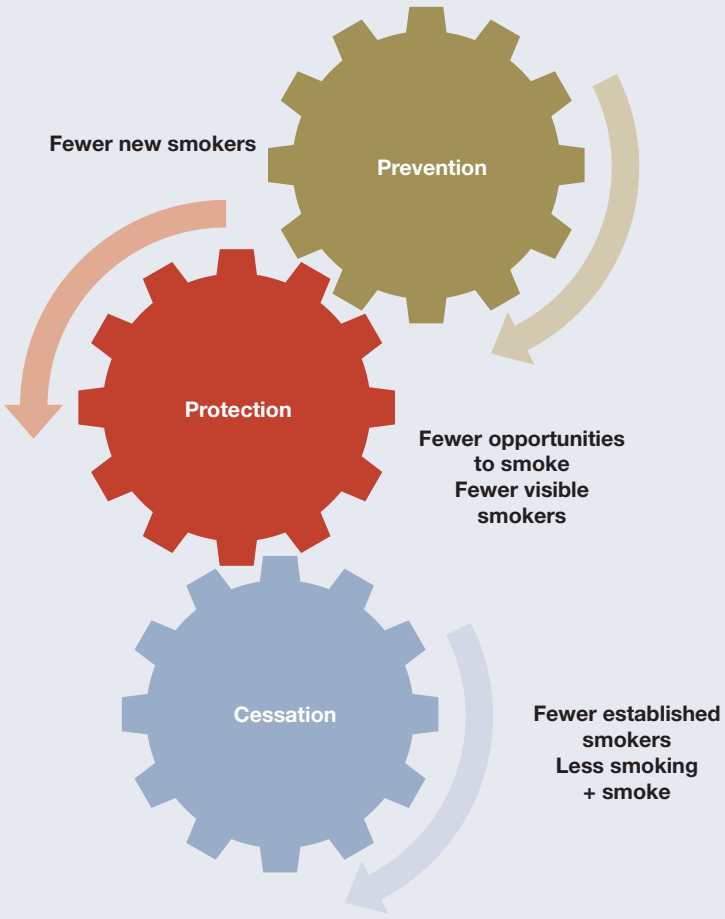
What is comprehensive tobacco control (CTC), and why is it the appropriate response to the tobacco epidemic? This chapter defines and describes CTC, provides evidence of how CTC has worked to control the tobacco epidemic in Ontario and elsewhere, describes what remains to be done in Ontario and builds on this evidence to recommend a course forward.

Later chapters in this report expand this approach to consider the evidence for dealing effectively with the disease vector (Chapter 4), prevention (Chapter 5), protection (Chapter 6) and cessation (Chapter 7). They also consider tobacco-related disparities and how to reduce them (Chapter 8) and describe the essential components of the system required to enable effective CTC (see Chapter 9).

The nature of CTC is determined by the complexity of the tobacco epidemic, its causes and consequences. Of necessity, CTC is a complex system of interventions. It requires efforts by many different individuals and agencies working at several levels across government and civil society (see Chapter 9). The focus of these efforts is typically the prevention of a new generation of tobacco users, the protection of nonsmokers, the support of cessation by established tobacco users, and denormalization of the tobacco industry **(1,2)**.

FIGURE 2.1: The coordinated components of CTC

- **Prevention** decreases the supply of new users and thus helps ensure the elimination of tobacco use over time. It maximizes benefits to individuals and society by promoting a lifetime of abstinence.
- **Protection** from secondhand smoke (SHS) is motivated by the desire to protect the health of nonsmokers. It also serves to make smoking less visible and 'normal,' and reduces opportunities to smoke as well as cues for smokers, especially those trying to quit. Smoke-free restrictions at work and at home decrease consumption and encourage quitting **(3)**.
- **Cessation** reduces the amount of smoke and tobacco use that others are exposed to. Fewer adult tobacco users means fewer role models for youth, thus supporting the prevention goal.



CTC pursues these multiple objectives through a combination of program, policy and mass media interventions; through multiple channels and locales such as community, schools, workplaces, and health care settings; and addressing myriad population groups including high priority groups due to health equity concerns. It involves an intensive and widespread effort to coordinate intervention elements and their interplay. This interplay means that protection, prevention and cessation efforts are mutually reinforcing, producing synergies that lead to more cost-effective outcomes than if only one or two components were implemented (Figure 2.1). A coordinated, integrated, intense and comprehensive strategy thus includes all these components, and resists a teasing apart of the strategy into individual elements. Such an integrated approach directly responds to the challenge presented by an adaptive disease vector and the need to address disparities in tobacco use that are a major contributor to health inequities in Ontario.

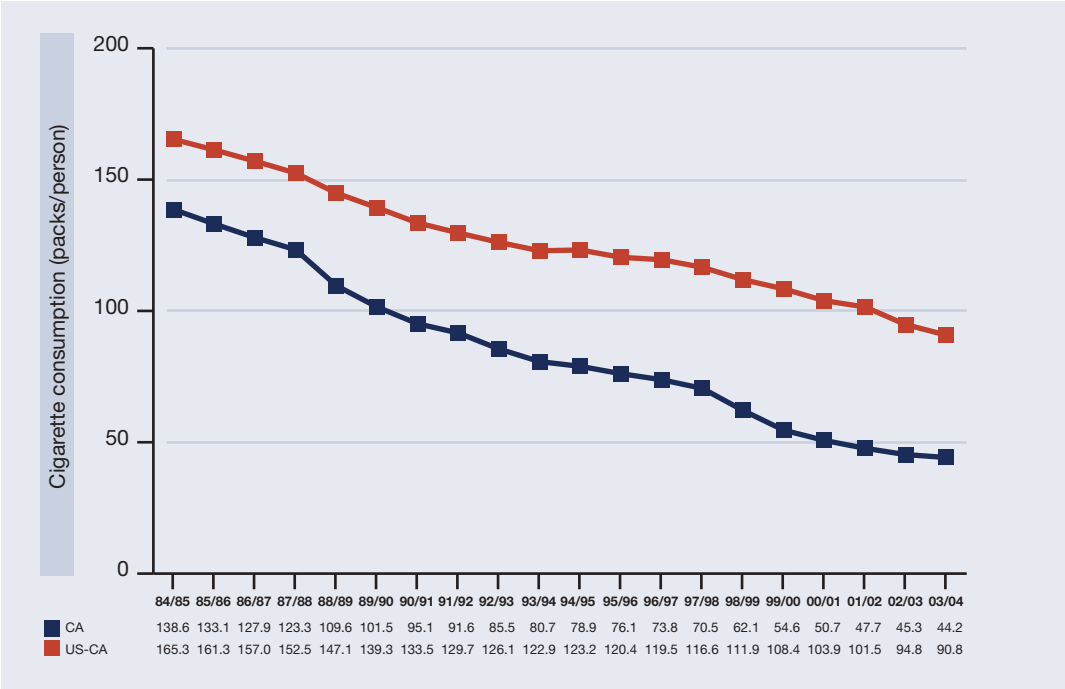
The multilevel approach of CTC is consistent with social-ecological theory: it seeks to change the social environments – local, community- and province-levels – that support the complex behaviour of tobacco use (4). As a result, effective CTC targets both youth and adults with a mix of educational and policy strategies. Both theory and evidence encourage policies, often supported by media campaigns, that will lead to permanent and extensive change in the social environment (5). The proposed logic models for CTC in Ontario illustrate some of this complexity (See Appendix B).

Comprehensive Tobacco Control – Evidence for Effectiveness

The California Tobacco Control Program

California provides an early example of the impact of CTC. With the passage of Proposition 99 and assured funding of their tobacco control program, California's adult smoking prevalence declined from 23% in 1988 to 14% in 2005 (6). By 2008, the rate was 13% — lower than any other state except Utah (7) or any Canadian province (8). In line with prevalence, per-capita consumption of cigarettes was lower than the rest of the US, and it fell faster during the California Tobacco Control Program (CTCP) (Figure 2.2). The California program contributed not only to declining smoking (9), but also to reducing tobacco-related disease (10–12) and the cost of caring for such disease (13).

FIGURE 2.2: Adult per-capita cigarette consumption, California and the rest of the United States



Source: Adapted from California Department of Public Health – Tobacco consumption, 2005 (14).

Comprehensive Tobacco Control – Evidence for Effectiveness

The California Tobacco Control Program

The Massachusetts Tobacco Control Program

The tobacco control program mounted by California is a classic example of CTC (15). Its components have included:

- A statewide media campaign
- A tobacco cessation helpline
- Coordinated tobacco control efforts of 61 local health departments with hundreds of trained public health workers
- State-wide technical support services
- Approximately 40 community-based organizations and thousands of adult and youth volunteers
- Partnerships with non-governmental organizations, the University of California's Tobacco Related Disease Research Program and the California Department of Education's Tobacco Use Prevention Education program

The approach of the California Tobacco Control Program has been to change the broad social norms around the use of tobacco by "indirectly influencing current and potential future tobacco users by creating a social milieu and legal climate in which tobacco becomes less desirable, less acceptable, and less accessible" (16). This is a clear application of social-ecological principles.

The CTCP currently focuses its tobacco control activities on four priority areas:

- Countering pro-tobacco influences in the community: working to curb the advertisement and marketing of tobacco products in the retail environment — tobacco industry sponsorship of local events and the depiction of tobacco products in the entertainment industry
- Reducing the availability of tobacco: supporting the enforcement of existing laws that prohibit selling tobacco to minors, eliminating free tobacco product sampling, requiring licensure of tobacco retailers and establishing tobacco-free pharmacies
- Reducing tobacco smoke exposure: promoting initiatives that use a policy and advocacy approach to restrict smoking in public and private places (emerging areas include policies associated with casinos, multiple-unit dwellings and outdoor venues)
- Supporting services that help smokers quit: CTCP provides support for the operation of the California Smokers' Helpline and for community-based cessation programs

These four areas correspond closely to those described in this report — Confronting the Disease Vector (Chapter 4), Prevention (Chapter 5), Protection (Chapter 6) and Cessation (Chapter 7).

The Massachusetts Tobacco Control Program

Massachusetts initiated a comprehensive program — the Massachusetts Tobacco Control Program (MTCP) — in 1994, which was well funded through 2002 ($39 million annually) (17). Funding reached a low of $2.5 million in 2004 (18). MTCP continues today with slightly improved funding ($8.25 million in 2006), but at a level that is still well down from its inception.

Two notable accomplishments during the MTCP have been declines in youth smoking and in illegal sales to minors. During the period when the MTCP was well supported, both indicators registered significant improvement — a drop of about 37% in student smoking from 1993 to 2002 (Figure 2.3) and of 54% in illegal sales from 1998 to 2002 (Figure 2.4). From the time that program funding was cut back in 2002, student prevalence levelled out and illegal sales started to increase [17].

Massachusetts also reports improvements in adult smoking — from 28% in 1986 to 18% in 2005. These improvements were not uniform over this period, however. Prevalence dropped 1.7 percentage points annually while the program was well funded (1994 to 2002) and 1.3 points per year after funding was cut in 2002 [17]. The per-capita purchase of cigarettes also declined over the course of the MTCP — a total of 43% from 1994 to 2006. This was interrupted with a modest increase in 2002 [17]. Evaluations covering the period 1994 to 2002 described a range of important gains in smoking and reduced exposure to tobacco smoke and clearly demonstrated that Massachusetts was outperforming the rest of the US with respect to tobacco control [19].

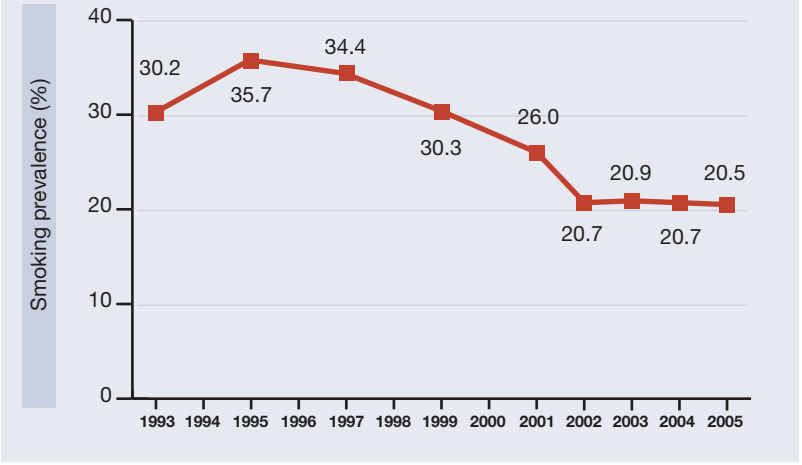
The MTCP was one of the early and successful state-level responses to the tobacco epidemic. It was multifaceted, in the manner of a true comprehensive program, with innovative and aggressive media messages and a range of comprehensive community-based tobacco treatment services including counselling, nicotine replacement therapy, a state-wide quitline and an Internet-based counselling and referral system [17]. With drastic cuts to its funding, however, these gains have been severely diminished.

The New York State Tobacco Control Program

CTC in New York State started more recently than in many other states, but it has some novel features and claims several achievements.

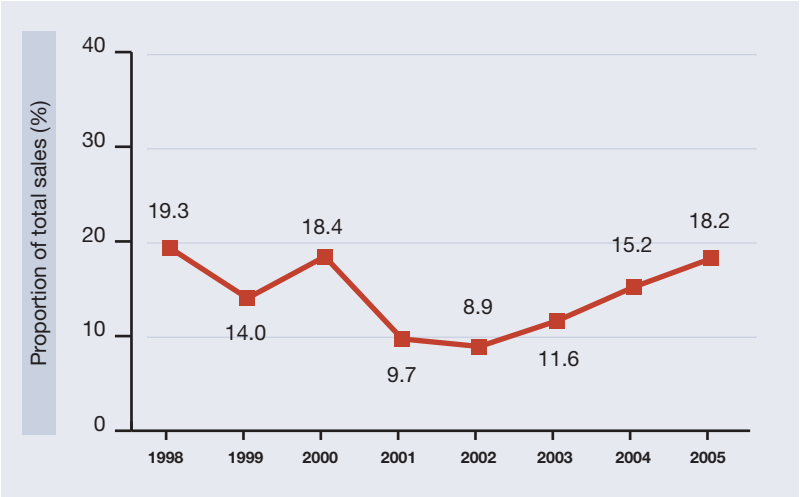
The program began in January 2000, and was built on a foundation of community partners using evidence-based strategies from the CDC Guide to Community Preventive Services to decrease tobacco use. Over time, the program has effectively implemented a strong clean indoor air law, maintained support for high

FIGURE 2.3: Prevalence of current smoking, high school students, Massachusetts, 1993 to 2005



Source: Adapted from Bureau for Family Health, Massachusetts Department of Public Health, 2007 [17].

FIGURE 2.4: Illegal tobacco sales to minors, Massachusetts, 1998 to 2005



Source: Adapted from Bureau for Family Health, Massachusetts Department of Public Health, 2007 [17].

Comprehensive Tobacco Control – Evidence for Effectiveness

The New York State Tobacco Control Program

tobacco taxes, kept the price of tobacco high and worked to increase access to effective cessation services and motivate smokers to try to quit **(20)**.

As a result of programmatic efforts, youth and adult smoking rates are at their lowest levels on record **(21)**. The prevalence of current smoking by middle school and high school students declined from 11% to 4% between 2002 and 2006 **(21)**. Adult smoking was 18% in 2006 and starting to fall below the US national average **(22)**.

> "There is compelling evidence that a comprehensive tobacco control program, if adequately financed to allow appropriate implementation, could effectively prevent the onset of smoking, protect Ontarians from exposure to SHS, and increase smoking cessation rates. Copious research points to the need for such an approach. Interventions that focus only on one or a few population groups, such as women or youth, or on one or a few approaches, such as restrictions on sales to minors, have little impact."
>
> Source: Expert Panel on the Renewal of the Ontario Tobacco Strategy, Actions will speak louder than words: getting serious about tobacco control in Ontario, (1999) p. 12 **(29)**.

New York implemented a comprehensive *Clean Indoor Air Act* (CIAA) in 2003. Within 12 months, measured exposure from all sources of SHS had declined by 94% **(23)**. The CIAA reduced exposure to SHS among hospitality workers **(24)** and the general population of nonsmokers in New York **(23)** and led to declines in heart attacks **(25)**. Hospital admissions for acute myocardial infarction declined by 8%, saving $56 million in health care costs in 2004 alone **(22)**. Within 24 months, public opinion in support of the act grew from 64% to 80% **(23)**.

Following a media campaign to encourage smokers to quit, there were increases in intentions to quit, calls to the state quitline and quit attempts. Media campaigns also targeted support for high tobacco taxes, and cigarette prices remained above the national average. In 2008, the cigarette excise tax of $2.75 per pack was the highest in the United States **(26)**.

How were these achievements accomplished in such a relatively short time? According to its own description, the New York State Tobacco Control Program (NYSTCP) implements evidence-based and promising strategies to prevent and reduce tobacco use. The program nurtures community partners, has established 19 cessation centers to support cessation by working with health care providers and employs hard hitting, emotionally evocative media messages to educate the public about the dangers of tobacco smoke and expose the deceptive practices of the tobacco industry **(21)**.

In 2008, the NYSTCP goal for 2010 was one million fewer smokers, or an adult prevalence rate of 14% and a youth rate of 10%. (Prevalence in 2006 was 18% for adults and 16% for students.) The NYSTCP specified how they would achieve this target: a) encouraging 900,000 adult smokers to quit and b) preventing 100,000 youth on track to smoke to avoid starting **(27)**.

The top four priorities for the NYSCTP are very similar to objectives proposed in this report for Ontario **(22)**:

- Eliminate exposure to SHS for all New Yorkers
- Decrease the social acceptability of tobacco use
- Promote cessation from tobacco use
- Prevent the initiation of tobacco use among youth and young adults

New York has two further priorities, echoed in this report not as overall CTC objectives for Ontario, but as means to reaching objectives (see Chapter 9 on key system enablers, particularly the proposed learning system):

- Build and maintain an effective tobacco control infrastructure
- Contribute to the science of tobacco control

The Evidence in the Ontario Context

Programs, impacts and outcomes

Comprehensive tobacco control has been in place in Ontario since 1992, when the Ontario Tobacco Strategy (OTS) was announced by the Ontario Ministry of Health. The strategy objectives were: a) to prevent the onset of smoking, b) to protect nonsmokers from environmental tobacco smoke, and c) to help smokers quit.

The passage of the *Tobacco Control Act* (TCA) in 1994 established rules about selling and smoking tobacco **(28)**. Its purpose was to reduce smoking, especially among young people. The TCA raised the minimum age for smoking to 19 and made it illegal to provide tobacco to anyone younger. Tobacco sales were prohibited in pharmacies, hospitals and most other health care facilities, and vending machines sales were banned. The TCA also sought to limit exposure to tobacco smoke by establishing designated smoking areas in a range of public places, and it specifically enabled municipalities to introduce by-laws to increase the prevalence of smoke-free environments.

In 1999, an Expert Panel convened by the Minister of Health **(29)** reviewed the progress of the OTS and concluded that drastic action was needed to meet the strategy's objectives (see box). In short, the recommendation in 1999 was to install true CTC in Ontario. The government's response was a significant increase in funding for CTC and a revitalized mandate and coordination of effort.

In 2004, a tripling of the OTS budget put Ontario back into a leadership role in Canada in terms of funding for tobacco control. The most prominent strategy in 2003-04 was public education at 44% of project spending, followed by infrastructure development at 33%. Assistance to smokers accounted for 23% **(30)**.

In December 2004, the *TCA* was amended, strengthened and renamed the *Smoke-Free Ontario Act (SFOA)* by the Government of Ontario. The Act had two main thrusts: a) to reduce the visibility of tobacco products at the retail level, and b) to extend and regularize municipal smoke-free by-laws to cover enclosed public spaces and workplaces. The *SFOA* was intended to help the Ministry of Health Promotion and Sport (MHPS) reach its two main goals — to reduce tobacco consumption by 20% and ensure 100% smoke-free enclosed workplaces and public places. Before the Act came into force in 2006, priority was given to ensuring compliance; thus, the emphasis was on educating the public via a media campaign, educating vendors and ensuring more and better trained enforcement officers. In concert with the new Act, the OTS was rebranded the Smoke-Free Ontario strategy.

For all of its history in Ontario and elsewhere, CTC has focused on smoking. This has been a valid emphasis, considering actual past and current patterns of tobacco use. Nevertheless, smokeless tobacco in its various forms is included in the recommendations of this report, as its use can be high in certain popula-

tion groups, and it may receive more industry push in the future, as smoking becomes ever less acceptable in society.

Achievements to Date in Ontario

There have been many positive achievements for CTC in Ontario over the nearly 20 years that the province has had a systematic approach to the tobacco-use epidemic:

- Enclosed workplaces and public spaces are now required to be smoke free, and compliance is very high (see Chapter 6)
- Smoking in motor vehicles with children present is prohibited (see Chapter 6)
- Ontario has filed a $50 billion law suit against a number of tobacco companies, seeking damages for health care costs linked to tobacco use (see Chapter 4)
- Since 2006-07, Ontario has directly helped 1.2 million smokers make a quit attempt by implementing legislation (e.g., smoke-free spaces) and programs to enable quitting. Examples of programs offering supportive counselling and nicotine replacement therapy include the Smoking Treatment for Ontario Patients (STOP) study (See Chapter 7) and the Ottawa Model for Smoking Cessation, in place at more than 29 Ontario hospitals
- In Ontario, retailer compliance with selling cigarettes to minors has steadily increased over the years — from 62% in 1995 to 89% in 2008. Over this same period, the national compliance rate changed from 48% to 86% **(31)**
- In 2008, only BC had a prevalence of smoking lower than Ontario's for the population age 12+: 17% vs. 19% respectively **(31)**
- In 2008, the rate of smoking in Ontario for age 15 to 19 year olds was significantly lower than the average for the rest of Canada — 9% vs. 13% respectively **(31)**
- Among adult ever-smokers, there has been an increase in the quit rate from 48% in 1998 to 58% in 2008 **(31)**

Unfinished business

Several ambitious targets were articulated in 1992 when the OTS was initiated:

- By 1995, make all schools, workplaces and public places smoke-free
- By 1995, eliminate tobacco sales to persons under the age of 19
- By 2000, reduce the proportion of 12 to 19 year olds who smoke to 10%
- By 2000, reduce the proportion of women and men aged 20 and over who smoke to 15%
- By 2000, eliminate the use of tobacco products by pregnant women

None was completely accomplished by the target date, but all remained (unofficial) targets that guided action over the ensuing years and progress on many has been significant.

Many challenges persist and new ones have arisen.

While youth smoking prevalence has dropped substantially in the last decade, these declines have all but disappeared in the past few years:

- Between 1999 and 2006, past-year smoking was down markedly across each of grades 7 to 11. Since 2006, rates have remained relatively stable among all students. Similarly, from 2007 to 2009, the prevalence of past-30-day current smoking remained static at 12% **(31)**.
- Between 1999 and 2008, smoking among Ontario youth aged 15 to 19 decreased from 22% to 9%, but most of this drop occurred in the early part of this period, and there has been no significant change since 2003 (when it was 11%). In the rest of Canada, the downward trend has continued to the present **(31)**.

- From 2003 to 2009, there was a general increase among students in grades 7 to 12 in lifetime abstinence from smoking cigarettes. However, there was no statistical change in the prevalence of lifetime abstinence from 2007 to 2009 **(31)**.
- One third of 11-15 year-old never-smokers were considered susceptible to tobacco use in 2006 (see Chapter 5).

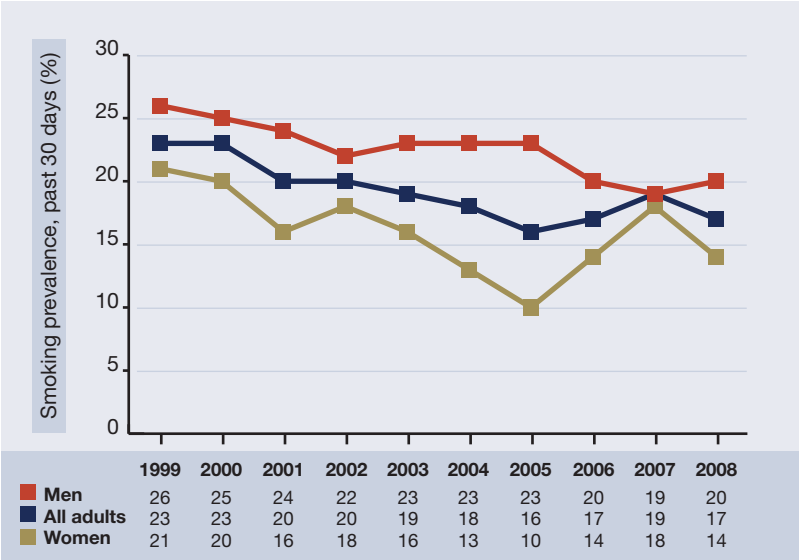
Among adults, the pattern is similar for both smoking and exposure — impressive gains over the long-term, but closer analysis reveals that the pace of improvement has not been sustained in recent years:

- Current smoking among women increased from 2005 to 2008. Among men, it has changed little since 2002 (Figure 2.5).
- The prevalence of 30-day quit intentions in 2008 among Ontario smokers was 21%, a rate unchanged in recent years. Six-month quit intentions in 2008 were lower than in 2002 (52% vs. 64%) **(31)**.
- Over the period 2005 to 2008, overall (indoor and outdoor) exposure to SHS among workers aged 15 years and older has not declined (31% in 2005 and 30% in 2008) **(31)**.

Five major barriers to progress confront each of these challenges:

- The ongoing low rate of tobacco taxation in Ontario – consistently among the lowest in Canada despite the salutary effect of taxation on youth and adult tobacco use **(32-34)** (see Chapter 4).
- The status of contraband as a major source of cigarettes for the price-conscious, particularly teen smokers **(35,36)** (see Chapter 4). Contraband diminishes provincial revenues **(37)** while undermining tobacco control efforts **(38)**.
- The absence of ongoing media campaigns to denormalize the tobacco industry and promote protection, prevention and cessation (see Chapters 4-7). A media campaign has been a vital part of every successful state program of CTC, **(2,39)** as described above.
- Persistent inequities in tobacco use and thus tobacco-related disease and death – ten years ago, OTRU noted the challenge of inequities related to socio-economic status **(40)**, and they have not yet been effectively addressed (see Chapter 8).
- Changes in tobacco control leadership and funding, which impede long-range planning and the ability to capitalize on the effective infrastructure and capacity-building of the early years of the OTS **(41)** (see Chapters 9 and 10).

FIGURE 2.5: Current smoking (past 30 days), by sex, ages 18+, Ontario, 1999 to 2008



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Men	26	25	24	22	23	23	23	20	19	20
All adults	23	23	20	20	19	18	16	17	19	17
Women	21	20	16	18	16	13	10	14	18	14

Source: Adapted from OTRU Monitoring and Evaluation Series Vol. 14/15, 2010 **(31)**.

Inequities in tobacco use are not subtle (see Chapter 8). They can manifest as three-to-one differences between one group and another. For example, in 2007-08:

- Among occupations: current smoking prevalence was 13% for workers in health occupations vs. 34% in the trades **(31)**
- Education: current smoking prevalence was 10% for university graduates vs. 30% for adults with less than high school **(31)**
- Among public health units: current smoking ranged from a low of 15% in York Region to a high of 29% in each of Porcupine and Oxford **(31)**
- Blue-collar workers: a significantly higher level of exposure to SHS while working compared to workers in other occupations **(31)**

The way forward

Effective policies and programs in tobacco control are known and this has been recognized by reputable scientific bodies **(1,34)**. The essential components are described above and detailed in the chapters that follow. The challenge is adoption and implementation **(42)**.

Recommendation

Comprehensive Tobacco Control

[2.1] Build on and expand comprehensive tobacco control in Ontario as a fully integrated, multi-level, comprehensive, coordinated and intense strategy.

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CHAPTER 3

Smoke-Free Ontario – Scientific Advisory Committee Approach to the Evidence

Abstract

This chapter describes the approach taken to convene scientists and gather evidence to develop evidence-informed recommendations for renewal of comprehensive tobacco control. The Smoke-Free Ontario – Scientific Advisory Committee (SFO-SAC) was convened by the Ontario Agency for Health Protection and Promotion (OAHPP) at the request of the Ministry of Health Promotion and Sport (MHPS) to provide scientific and technical advice and recommendations to inform provincial tobacco control renewal. The project, including research, consultation with international scientific experts, deliberation and report writing, was conducted within a six-month period. SFO-SAC members and OAHPP staff met regularly with MHPS staff and the Tobacco Strategy Advisory Group (TSAG) to advise on the project direction and emerging evidence to support the Smoke-Free Ontario strategy renewal.

Convening the Smoke-Free Ontario – Scientific Advisory Committee

Ontario experts were identified by OAHPP staff in August 2009 and invited in September to serve on SFO-SAC. Experts were selected to ensure a diversity of content knowledge in tobacco control science and practice. Members include Ontario Tobacco Research Unit (OTRU) principal investigators, other university-based researchers and public health practitioners (e.g., a Public Health Research, Education and Development (PHRED) representative and a medical officer of health).

The SFO-SAC was convened for the first time in Toronto in November 2009 to review the project purpose and deliverables, establish a comprehensive set of issues and questions that needed to be considered in the strategy renewal and identify a work plan. The SFO-SAC met on five occasions between November 2009 and the end of

Convening the Smoke-Free Ontario – Scientific Advisory Committee

Work groups

International Expert Panel

March 2010. During SFO-SAC meetings, work groups presented initial rationale and recommendations for interpretation and review by the committee. Additional evidence was often submitted and final content and recommendations were agreed upon through a process of iterative review and consensus.

Work groups

Work groups were convened to address substantive areas of the SFO-SAC report associated with reaching public health goals including addressing the disease vector. SFO-SAC members divided themselves into four work groups – the disease vector, prevention, protection, and cessation. Members not involved in work groups advised on issues cutting across goal areas.

Work groups met regularly throughout the study period by telephone or in person. The work group chair, members and staff engaged in telephone and email communication between meetings. In some cases, work groups identified additional experts to be consulted and added members to the work group who were not members of SFO-SAC. The aim of involving these additional contributors was to ensure that a wide range of expert perspectives was considered. Contributors were also asked to respond to and provide comments on draft chapters. In some instances, contributors were invited to attend work group teleconferences, provide specialized information, or advise on specific aspects of draft reports at the request of SFO-SAC and work group chairs.

To ensure the scientific credibility, selection of additional contributors was guided by the following criteria: individuals a) must hold an academic appointment at a recognized university and b) were to be actively involved in research. In addition, work group chairs and OAHPP consulted with experts as necessary to understand the current context and the historical development of tobacco control in Ontario or elsewhere.

International Expert Panel

An International Expert Panel (IEP) was convened to serve as an additional quality assurance mechanism, contributing scientific rigor, experience and advice from jurisdictions outside of Ontario. Members of this panel are highly reputable and respected tobacco control scientists. They were chosen as follows: a) a preliminary list of North American experts in tobacco control was identified through collaboration between the OAHPP staff and SFO-SAC members, and b) SFO-SAC members were asked to identify their choices for six members from the much longer list by considering their biographies and expertise.

The IEP was convened by telephone in November 2009 to assist in project conceptualization and advise on the use of evidence in the scientific review process. IEP also advised on three key issues – goal setting, dealing with contraband and approaching equity with both targeted and population-wide interventions. The IEP subsequently convened in person and by telephone in March 2010. Draft SFO-SAC recommendations and evidence were shared and discussed during this meeting. IEP provided constructive criticism of the evidence presented, suggestions regarding priorities and additional references documenting evidence to support SFO-SAC recommendations. The penultimate draft of the report was sent to IEP members on April 1 for their final review of the evidence presented and to ensure accurate interpretation of the advice given. IEP feedback was reviewed by SFO-SAC and considered as the report was revised.

Staff

Staff support for all SFO-SAC, IEP and work group meetings was provided by a secretariat at the OAHPP, under the supervision of the Director of Health Promotion, Chronic Disease and Injury Prevention. Other members included a policy analyst, project analyst, research analyst, research coordinator, community medicine resident, and executive assistant. A scientific consultant was contracted to provide technical advice and serve as a key member of the project team.

Evidence Considered

The SFO-SAC was asked to accumulate and consider existing evidence that would be relevant to the renewal of Ontario's comprehensive tobacco control strategy. The IEP advised against taking too narrow a view of evidence. They expressed concerns about the limitations of traditional approaches to systematic reviews as carried out in the context of clinical interventions that privilege true experiments in the form of efficacy trials (1) and the need to recognize the limits of such evidence in public health (2). The particular challenges and priorities in evaluation of evidence for public health, and other social interventions such as social policy and education, have long been recognized by evidence groups working in these areas, as characterized by the Campbell Collaboration (www.campbellcollaboration.org), United Kingdom National Institute for Health and Clinical Excellence (NICE) group (www.nice.org.uk) and recent expansion of activity of the Cochrane Collaboration into the area of evaluation of public health policies and interventions (www.cochrane.org). Reviewers of public health and social interventions sometimes require knowledge of a much larger range of research designs (often quite sophisticated) including community trials, quasi-experimental designs such as cross-sectional-time-series studies, mixed methods, evaluative studies, qualitative research and well-designed observational studies such as longitudinal cohort and panel designs. Public health reviews require a high standard for external generalizability of findings, and may favour rigorous observational studies which speak to effectiveness of policies in specific or diverse settings and populations (3,4). Furthermore, the IEP encouraged SFO-SAC to consider a range of sources and disciplines, including econometrics, surveillance and evaluation findings from Ontario.

In considering the quality of evidence, it was suggested that SFO-SAC should be transparent about what is known through empirical investigations. It was also suggested that a critical empirical scientific approach to understanding causation be adopted, i.e., on the basis of empirical verification of putative causal mechanisms and theories of action. See, for example, Green and Kreuter (5) for a discussion of intervention theories and Pawson (6) for a discussion of evidence-based policy using a scientific realist orientation. Public health theories of cause, including

Evidence Considered

The Ontario context

those used to determine the role of tobacco products in disease causation, have been based on Bradford Hill criteria (7) linking smoking to lung cancer in men and the California Environmental Protection Agency Report on second hand smoke (SHS) (8) and breast cancer (9). They are useful in inferences to the best explanation (10). Consistency of association, plausibility of putative (theoretical) mechanisms, and temporal precedence of cause before observed effects, ruling out of competing hypotheses for observations from non-experimental data and other criteria should all be applied when determining confidence in evidence.

It was also noted by the IEP and SFO-SAC that much evidence for comprehensive tobacco control (CTC) came as a result of field-based demonstrations and public health practice, rather than controlled scientific experiments. It therefore was advised that SFO-SAC use insights derived from science and practice to make recommendations for future innovations that would advance science and practice and be subject to empirical verification upon implementation.

SFO-SAC considered a variety of evidence sources including:

- Systematic reviews (e.g., from Cochrane Collaboration, US Task Force on Community Preventive Services)
- Seminal tobacco control reports that have addressed evidence-based public health practice (e.g., US Centers for Disease Control and Prevention's Best Practice for Comprehensive Tobacco Control (11), Institute of Medicine's Ending the Tobacco Problem: A Blue Print for the Nation (12), World Health Organization's Smoke-Free Movies (13), and the World Health Organization's Framework Convention on Tobacco Control (14))
- Peer-reviewed scientific studies
- Qualitative research into stakeholder views about necessary directions for tobacco control
- Various monitoring and evaluation studies of the Ontario Tobacco Research Unit (OTRU) and
- Government documents from other jurisdictions (e.g., pertaining to smoking cessation systems in other jurisdictions)

At the outset, it was recognized that Canada in general and Ontario in particular have a history of many important, even world precedent-setting, tobacco control innovations. These innovations were predicated on the basis of a scientific understanding of the causes and consequences of tobacco-industry products and their use. Furthermore, these innovations have contributed to substantial public health gains and knowledge generation through direct experience with tobacco control interventions and their evaluation. This approach to public health intervention research and development integrates science as a core element of the comprehensive tobacco control model.

The Ontario context

Stakeholder feedback and insight were identified as key pieces of evidence for SFO-SAC to consider in the development of advice and recommendations for comprehensive tobacco control renewal. Two purposive samples were identified, members of the Tobacco Strategy Advisory Group (TSAG) and MHPS Smoke-Free Ontario staff, from which to gather contextual information and practice-based evidence. Semi-structured individual and group interviews were conducted to engage stakeholders and gather their feedback regarding Smoke-Free Ontario logic models and implementation of comprehensive tobacco control in Ontario.

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WARNING
CIGARETTES LEAVE YOU BREATHLESS
Tobacco use causes crippling, often fatal lung diseases such as emphysema.
Health Canada
YOU'RE NOT THE ONLY ONE SMOKING THIS CIGARETTE
WARNING
CIGARETTES HURT BABIES
Tobacco use during pregnancy reduces the growth of babies during pregnancy. These smaller babies may not catch up in growth after birth and the risks of infant illness, disability and death are increased.
Health Canada

CHAPTER 4

Confronting the Disease Vector in Tobacco Control

Abstract

This chapter describes the role of the disease vector in the tobacco epidemic. Recommendations are made to address the low price of tobacco products including contraband tobacco, undertake a tobacco industry denormalization campaign, monitor tobacco industry activity, limit retail distribution and accessibility, close marketing and promotional loopholes, make the tobacco industry responsible for the consequences of its actions and prepare for public health input into the current litigation process in Ontario.

Goal: To minimize the ability of the tobacco industry to market, promote and sell tobacco products.

Methods

The published literature was primarily searched using Medline for articles published between 1995 to present; this search used features such as “cited in” to identify related publications. Search terms included those relevant to the chapter sections, such as “tobacco price” and “tobacco marketing.” Common and within-site search engines were also used for public reports by authoritative sources, such as the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), provincial and federal government and other non-government organizations. Smoke-Free Ontario Scientific Advisory Committee (SFO-SAC), work group, and International Expert Panel members provided search suggestions and citations based on expertise and knowledge of the published and grey literature. Institutional websites such as otru.org and camh.net were used to obtain information on issues associated with tobacco control in the Ontario context.

Why Confront the Disease Vector in Tobacco Control?

As with other disease epidemics, a public health approach to ending the disease burden due to tobacco use cannot succeed without understanding and directly targeting the disease vector. In epidemiological terms, the disease vector transmits the disease agent (tobacco product) to the host (tobacco user) within an environment (Ontario). For this report, the disease vector refers to the entities responsible for producing, supplying, marketing, and promoting commercial tobacco to current and potential users. This includes tobacco growers and importers, manufacturers, companies involved in producing tobacco product inputs (e.g. cigarette paper), wholesalers and the retailer network including tobacconists. An increasingly significant part of the disease vector in Ontario is the illicit trade in contraband tobacco, which involves a multitude of players operating outside of the regulatory framework.

Unlike disease vectors commonly encountered in public health, these vector components are intelligent, quickly adaptive, and have

been shown to take advantage of regulatory loopholes to maximize self-interests (1). This behaviour is expected given the nature of the players. For example, tobacco manufacturers run legal business operations with fiduciary responsibilities to maximize profits for shareholders (1). This may mean recruiting new smokers, increasing or maintaining consumption and fighting against regulations which impede their ability to return dividends to their investors. Internal tobacco company documents have also shown clear intent to minimize, distort and suppress evidence and communications concerning the harmful nature of tobacco products (2-16).

Many comprehensive tobacco control strategies have recognized the importance of addressing the disease vector, including the CDC's Best Practices for Comprehensive Tobacco Control Programs (17,18), the WHO's Framework Convention on Tobacco Control (FCTC) (18), and US state-based strategies such as those in California (19), Massachusetts (20), Florida (21,22), New York State (23), and the national "Truth" campaign implemented by the American Legacy Foundation (24). An example of the central role of the disease vector in a tobacco control program is provided by New York State (Figure 4.1). This chapter adopts an approach consistent with these other CTC strategies, but extends the concept of disease vector to include contraband sources.

The Ontario Context

Tobacco manufacturers and retailers

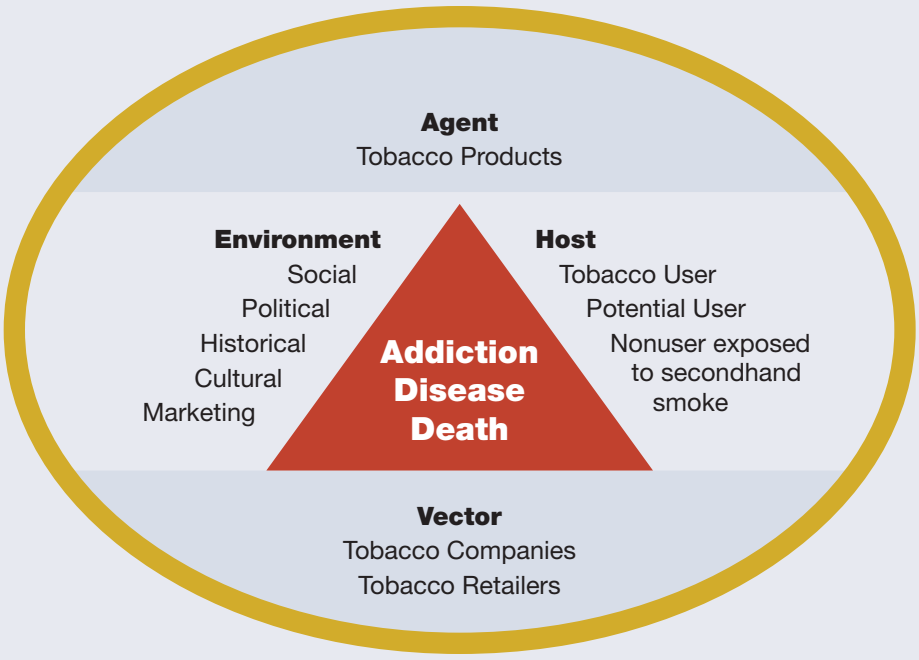
The major legal tobacco manufacturers in Canada are Imperial Tobacco (52% of market share), Philip Morris International (34% of market share) and Japan Tobacco International-Macdonald (25). In 2008, the number of retail outlets selling tobacco in Ontario was estimated at approximately 14,500 (email communication: Sit, D., Policy Analyst, Ministry of Health Promotion and Sport, March 23, 2010). Under the Ontario *Smoke-Free Ontario Act,* registered tobacconists are exempt from some regulations that govern tobacco sales (e.g., the display of tobacco product accessories such as humidifiers and cigar clips) (26). The role of retailers and the distribution of tobacco products are discussed later in this chapter.

Tobacco growers in Ontario

Table 4.1 presents indicators of tobacco growing in Ontario, comparing the 2007/08 to the 2008/09 growing year.

The Provincial and Federal governments have attempted to transition tobacco farmers or tobacco-dependent communities away from tobacco-based economies.

FIGURE 4.1: Program approach of the New York State Tobacco Control Program



Source: Adapted from One Million Fewer Smokers by 2010: Shaping a Tobacco-Free Society for All New Yorkers, 2008-1010, 2010 (23, p.5).

TABLE 4.1: Ontario flue-cured tobacco indicators, 2007/08 and 2008/09

Indicator	2007/08	2008/09
Total sales	$34,380,966	$22,011,273
Selling days	91	49
Number of producers	444	370
Estimated acres planted	15,075	9,668
Export of flue-cured tobacco (redried lbs)*	22.7 million	14.6 million
Import of flue-cured tobacco (redried lbs)*	6.8 million	8.8 million

Source: Adapted from The Ontario Flue-cured Tobacco Growers Marketing Board 2009 Annual Report, 2009 (27).
Note: *may not directly reflect crop year.

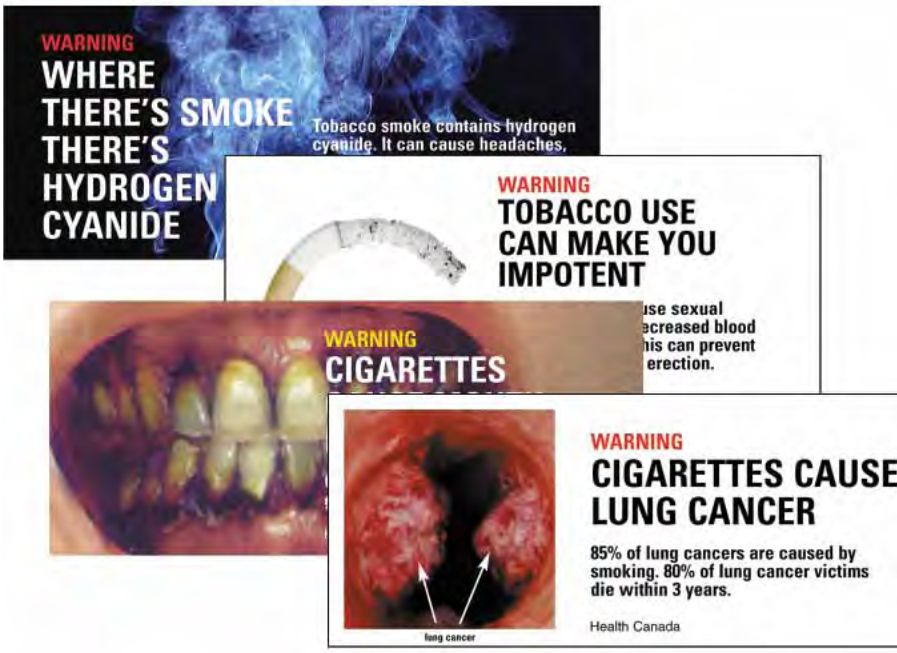
From 2005 to 2009, $15 million was spent through the Ontario Community Transition Program (CTP) to target tobacco growers in Brant, Elgin, Norfolk and Oxford counties (28).

In 2009, the CTP was replaced in part with the $301 million Federal Tobacco Transition Program (TTP) (29). Similar to the CTP, $15 million from the TTP was allocated toward community development projects. In addition, the TTP provided a monetary incentive for tobacco farmers to leave the industry permanently. This transition was predicated on the implementation of a new licensing system for flue-cured tobacco grown in Ontario, which was established in 2009 (29). Under the TTP, licensed tobacco farmers had the choice of accepting a cash payment ($1.05 per pound of Basic Production Quota) and leaving tobacco farming permanently or remaining in tobacco farming under the new licensing system. Farmers who accepted the buy-out would not be able to obtain a license to re-enter tobacco farming; however, there were no additional restrictions on transferring licenses, for example, to family members.

Confronting the Disease Vector – Intervention Areas

The evidence and recommendations for this chapter are presented in the following sections:

- Price
  - Taxation and minimum pricing
  - Contraband
- Tobacco industry denormalization
- Plain and standard packaging and health warnings
- Tobacco product regulation



Confronting the Disease Vector – Intervention Areas

Price

- Retail tobacco distribution and accessibility
- Marketing and promotion
- Tobacco industry accountability
- Public health input into litigation

In addition, the program logic models (PLM) presented in Appendix B describe how the interventions identified in each chapter contribute to comprehensive tobacco control in Ontario. Due to the pervasive nature of the disease vector, interventions to deal with it are tightly integrated into the logic models for prevention, protection, and cessation.

Price

Rationale – Why address price?

There is strong and unequivocal evidence that increases in the price of cigarettes result in decreased demand and consumption of cigarettes and increased intention to quit **(30-33)**. Youth are particularly sensitive to higher tobacco prices for uptake and consumption **(30,34-36)**. Cross-sectional surveys clearly show that a significant proportion of Ontario youth are regular users of discount brands **(35,37-40)**.

*The evidence on the impact of pricing and tobacco use is consistent across time and is observed in all parts of the world **(31,40-42)**.*

It is not surprising, then, that pricing policy is recognized as a key component of CTC strategies across the world, including those in Canada (the National Strategy for Tobacco Control **(43)**) and the USA **(17)**, and highlighted by the WHO in Article 6.1 of the FCTC **(18)**.

Is increasing the price of tobacco regressive?

Concerns have been raised as to whether tobacco taxes are regressive, particularly because increases in the price of goods have a greater impact on those who are least able to pay. It is important to note that these concerns have been perpetuated by long-standing tobacco industry funding of third-party advocates, such as the Consumer Tax Alliance (in the US) **(44-46)**. Moreover, tobacco products are not ordinary goods due to their addictive nature and the immense negative health burden that they cause.

Some evidence demonstrates that pricing strategies can reduce health-related inequalities from tobacco use **(47)** as well as have a greater impact on reducing tobacco-use rates among those with lower incomes or working in manual occupations **(48)**. This effect is also seen in minority groups in the US **(49)**. While low-income smokers are more likely to quit smoking in response to tax increases, those who do not quit pay higher prices and bear a greater cost burden associated with price increases **(50)**. These distributional concerns should be addressed by coupling tobacco tax increases with publicly financed smoking cessation initiatives that are structured to particularly target low-income tobacco users **(51)**.

The Ontario context

As of March 31, 2010, the average price of a carton of 200 cigarettes in Ontario was $74.49; the second lowest price among Canadian provinces and territories **(52)** (see Table 4.2). Since the mid-1990's, Ontario has had the most affordable cigarettes in Canada. After taking inflation into account, the 2010 price is approximately 4% higher than 2006 (please refer to Chapter 10, Table 10.1 for an explanation of the calculation).

TABLE 4.2: Price of 200 cigarettes, by province and territory, March 2010

Province/territory	Price of 200 cigarettes*	Percent of Ontario price
Northwest Territories	$104.83	140
Nova Scotia	$100.89	135
Manitoba	$97.71	131
Saskatchewan	$97.06	130
Prince Edward Island	$95.70	128
Newfoundland and Labrador	$95.19	128
Yukon Territory	$92.65	124
Nunavut	$92.65	124
Alberta	$90.55	122
British Columbia	$87.40	117
New Brunswick	$78.81	106
Ontario	$74.49	-
Quebec	$70.18	94

Source: *Cigarettes Prices in Canada, 2010 (52).

In Ontario, the two major factors which affect the retail price of cigarettes are taxation and the availability of contraband tobacco. A third influence is tobacco companies' increasing use of discount or value brands. It is also important to stress that the components impacting the retail price of tobacco (taxation and contraband in particular) are interrelated and must be addressed together to ensure the effectiveness of price as a tobacco control measure. Lastly, pricing is presented in this report as a means to influence affordability, or in general, the ability for someone to pay for tobacco; thus, increases in price may impact the purchasing behaviour of some people more than others.

Taxation and minimum pricing policy

Rationale – Why address taxation and minimum price?

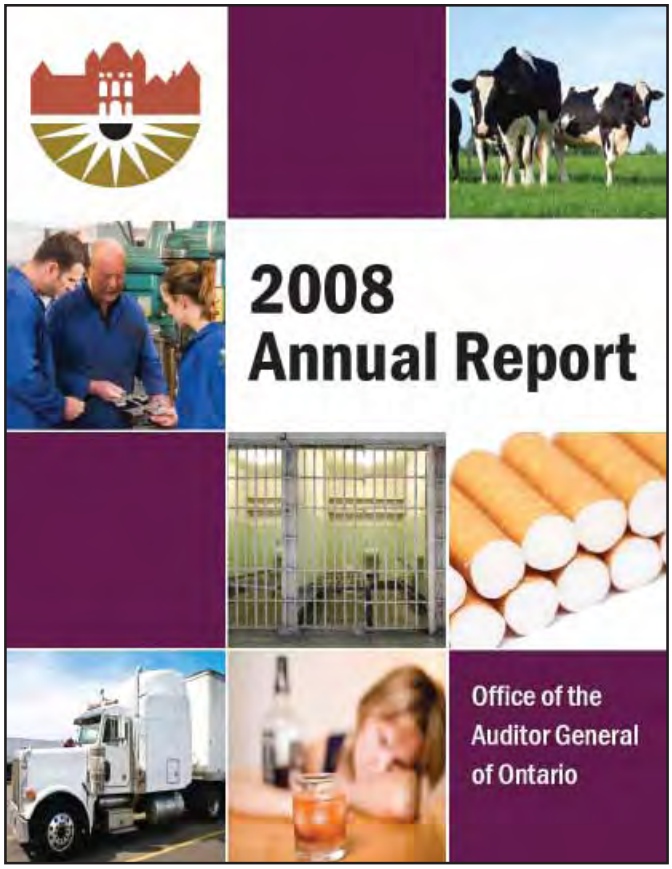
Taxation is a key strategy for affecting tobacco prices. It is used by jurisdictions across the world, including Ontario and Canada, as both a health and revenue policy. It is generally accepted that the demand for tobacco products is price-inelastic, and that for every 10% increase in the real price (i.e. after inflation) there is a 3% to 4% decrease in consumption (53). Children and youth may be twice as price sensitive (i.e., 7% to 8% or more) (53). Recent analysis on tobacco price elasticity among high school students in the US shows that the impact of tax increases may be less than previously observed; however, taxation is still observed to be effective in reducing consumption of tobacco among youth (54).

Confronting the Disease Vector – Intervention Areas

Taxation and minimum pricing policy

Reinvesting tobacco tax revenue in tobacco control

In addition to its direct impact on reducing tobacco use (by increasing price), revenue from a tobacco tax can be earmarked for re-investment into comprehensive tobacco control programs to provide funding for mass media campaigns, prevention and cessation efforts and research. Jurisdictions which have adopted this approach include California, Massachusetts, Arizona and Oregon **(55)**. California's Tobacco Control Program, funded since 1988 through a proportion of a 25-cent tax per cigarette pack (and a proportional tax increase on other tobacco products) is the one comprehensive tobacco control program that has been sustained over two decades and that has remained vibrant — with communities leading the way in policy innovation, and significant declines in tobacco-related diseases and associated health care expenditures **(56-58)**. It should also be noted that California's 25-cent tax per pack has not been increased to account for inflation; thus, funding for the program has decreased over time. Lastly, as explained in Chapter 2, well-funded CTC shows a positive return on investment – further justification for using a portion of tobacco taxation to fund an adequate dose of tobacco control.



Minimum pricing

A complementary method to increase the retail price of tobacco is to mandate a minimum pre-tax price for tobacco products **(59)**. A minimum price can prevent manufacturers' use of discount and value brands to offer low-price products and can reduce the manufacturers' ability to lower prices across their existing product line in response to increases in tobacco taxes. In the US, some state minimum tobacco pricing laws were ineffective due to the concurrent use of manufacturer promotional programs; there was little impact on retail price. In contrast, New York mandated minimum pricing in addition to prohibiting the use of discount programs; this resulted in a higher retail price **(59)**. Minimum price policies are effective and widely used in reducing the consumption and harm from alcohol **(60-62)**.

The Ontario context

In Ontario, taxation is applied through a combination of federal and provincial excise taxes collected directly from the manufacturer and at the point of purchase **(63)**, although, Ontario has yet to earmark revenue from tobacco taxation for tobacco control. As well, the new harmonized sales tax (HST), effective July 2010 in Ontario, will apply to tobacco sold in Ontario **(64)**. This increase in the price of tobacco may still be mitigated by the presence of discount brands, a reduction in retail prices, and the continued availability of contraband tobacco. As discussed below, a significant proportion of Ontario youth regularly consume

discount cigarettes (37,39) — tobacco products that are priced to be attractive to cost-conscious consumers.

It should also be noted that status First Nation persons purchasing tobacco in First Nations communities are exempt from both provincial and federal taxes and the upcoming HST. However, excise taxes (applied at manufacture) remain applicable and are built into the selling price (65); thus, an increase in tax at the point of sale may not impact all Ontarians the same way.

Lastly, the concept of mandating a minimum price on consumer products to further public health objectives is not new in Ontario. For example, the Liquor License Board of Ontario (LLBO) was established in 1947 to regulate the sale, service and consumption of alcoholic beverages and to promote moderation and responsible use (66). The impact of minimum pricing of alcohol on reduction in use and public health benefit is well documented (60,61,67-70).

Recommendation

Taxation and Price

[4.1] Implement a substantial increase in provincial tobacco taxes.

[a] Commit to regular cigarette tax increases to address inflation and tax increases in other provinces.

[b] Dedicate and invest a proportion of provincial cigarette taxes into comprehensive tobacco control efforts.

[c] Establish a minimum retail market price for tobacco products.

[d] Implement recommendations 4.1, 4.2, and 4.3 concurrently.

Contraband tobacco

Rationale – Why address contraband tobacco?

Contraband tobacco refers to tobacco products that are sold without payment of all applicable taxes (71). Contraband tobacco is of different varieties, including genuine or counterfeit tobacco products smuggled across borders by large-scale criminal organizations or small-time bootleggers, illicit manufacturing and the diversion of tax-free products intended for specific groups (e.g., First Nation peoples) to the general public.

> *The Royal Canadian Mounted Police (RCMP) defines contraband tobacco as:*
>
> *…any tobacco product that does not comply with the provisions of all applicable federal and provincial statutes. This includes importation, stamping, marking, manufacturing, distributing, and payment of duties and taxes. Contraband tobacco originates from both domestic and international activities (72).*

The negative public health impact of contraband tobacco is due largely to its low price which makes it more affordable. As indicated above, lower tobacco prices result in increased consumption. In practice, tobacco excise taxes and sales taxes are not applied to these illegal tobacco products, resulting in lower total prices paid by consumers. Other consequences include decreased government revenue (from taxation), increased criminal activity and increased, easy and unmonitored access by youth (72-77).

Confronting the Disease Vector – Intervention Areas

Contraband tobacco

The Ontario context – contraband

The contraband tobacco issue facing Ontario today is much different than the situation in the 1990s. In that period, the primary source of contraband involved Canadian tobacco manufacturers shipping their products (free of export tax) to US-based wholesalers; the tobacco would then be smuggled back into Canada, once again avoiding taxation (71). Smaller scale activity included bootlegging; US-bound tobacco was sold at nearby border crossings at a much lower tax rate, thus inviting bootleggers to purchase the cigarettes and smuggle them into Canada (71). Table 4.3 presents the major, present-day sources of contraband tobacco in Ontario. In contrast to the 1990s, the primary issue is the first listed source (72).

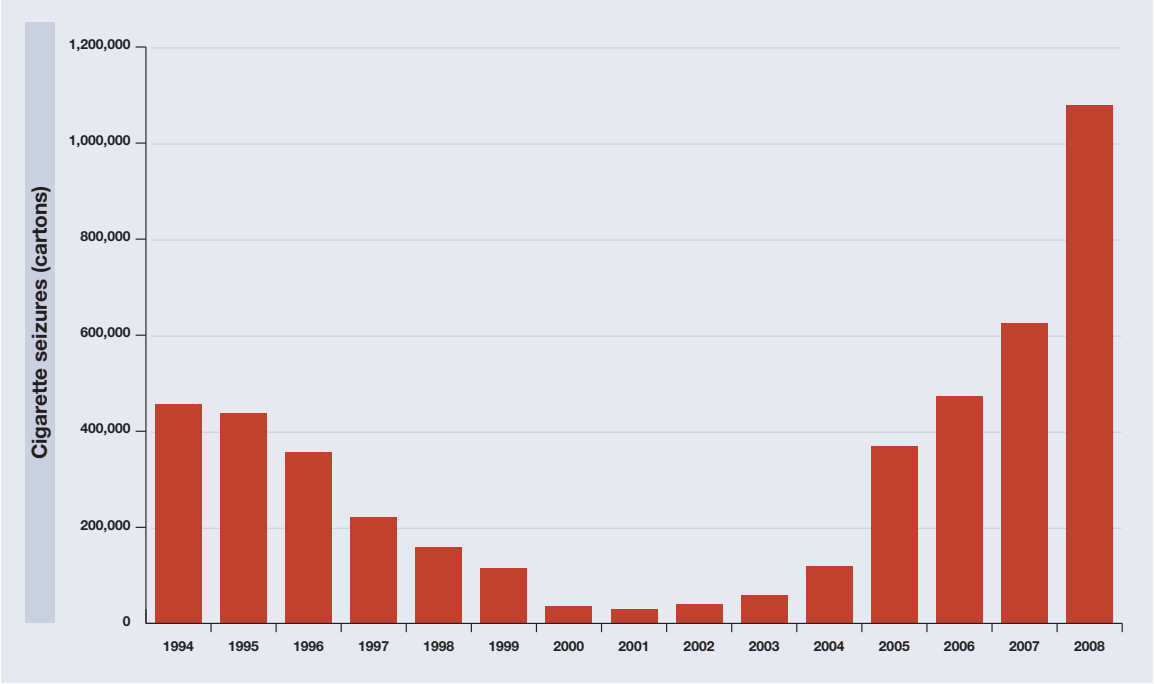
The RCMP reports annually on the extent of contraband tobacco seizures across Canada. Figure 4.2 presents the number of cartons seized by RCMP from 1994 through 2008. The trend since 2001 is upward, with approximately 1.1 million cartons seized in 2008. This is 36 times larger than in 2001 and represents a 73% increase from the previous year (74). As well, the RCMP reports seizing the equivalent of 69,000 kilograms of illegal loose tobacco and 18,445 kilograms of raw-leaf tobacco in 2008, the latter being a 137% increase from 1994 (74). Seizures of fine-cut tobacco have also been increasing since 2001 (Figure 4.3). As is always the case with statistics based on enforcement, it is not clear how accurately they reflect the size of the underlying problem.

TABLE 4.3: Major sources of contraband identified by the RCMP, 2008

Source	Description
Lawful/unlawful tobacco product manufactured in the US and smuggled into Canada or unlawful manufacture in Canada	■ Largest source is from manufacturing on the US side of Akwesasne (ON), Kahnawake (QC), Tyendinaga (ON) and Six Nations (ON). These products may be legally manufactured in the US, but they are smuggled into Canada and do not meet importing requirements or comply with applicable legislation to be sold in Canada. ■ Street-level retail takes the form of "baggies" – clear plastic bags of 200 cigarettes selling for about $6. Baggies are sold in smoke shops (on reserve), other retail outlets, school property, and through door-to-door sales. These do not bear the required health warnings, information on toxic emissions or licensing information. Taxes are not collected on these sales.
Illegal entry of counterfeit tobacco products or other international brands	■ The majority of counterfeit tobacco products (i.e., imitating domestic branded tobacco products) arrive from China via shipping ports. International brands and products are also smuggled in. These often cater to specific cultural tastes (e.g., Egyptian hooka tobacco, bidis and chewing tobacco mixed with betel nuts).
Diversion of (legally manufactured) GST/HST-relieved and provincial tax-exempt tobacco products	■ Some tobacco products are manufactured to be sold without the application of provincial taxes (i.e., sales tax-exempt). These are commonly referred to as "black stock" and have different markings compared to products where provincial taxes are to be paid. These products are only approved for sale in First Nations communities to a status First Nations person. ■ Diversion occurs when these products are sold to non-First Nations people on reserve, or when they are sold outside of First Nations communities, which is illegal regardless of the recipient's First Nations status. When this occurs, the province loses revenue on the sales tax usually collected. (Federal excise taxes are paid by the manufacturer at time of production and are not lost in this manner.)

Source: Adapted from RCMP Contraband Tobacco Enforcement Strategy, 2008 (72, p.12-18).

FIGURE 4.2: RCMP cigarette seizures, Canada, 1994 to 2008



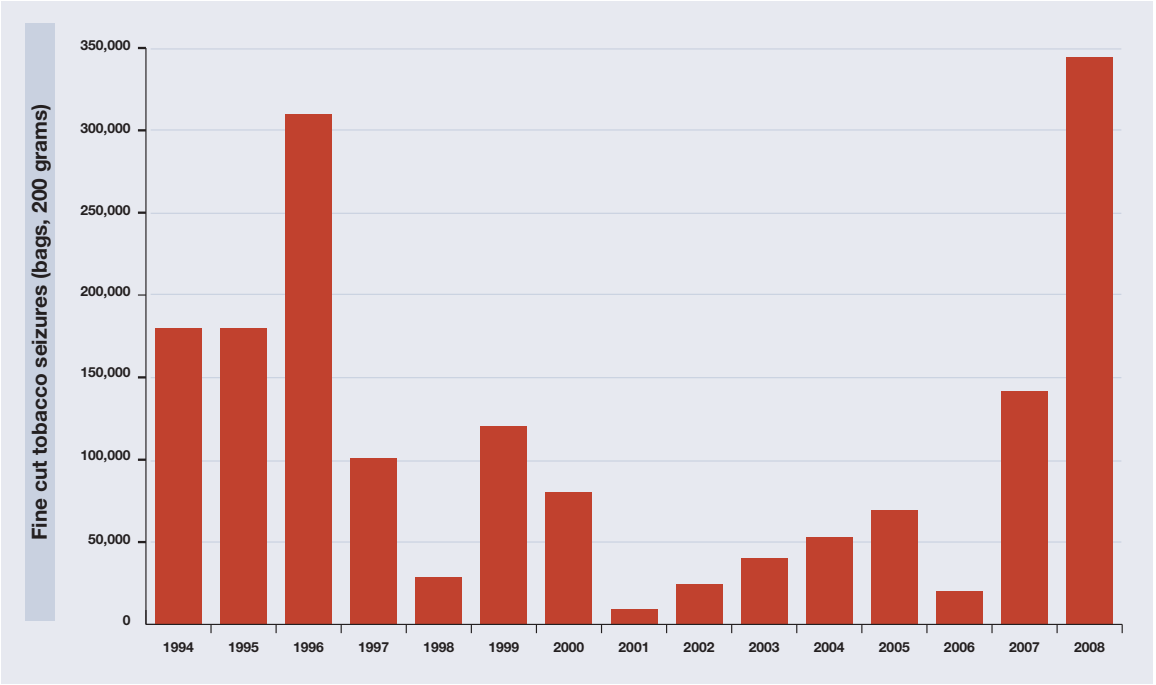
Source: Adapted from RCMP Illicit Tobacco Statistics, 2008 (74).

Confronting the Disease Vector – Intervention Areas

Contraband tobacco

Year	Cartons
1994	456,333
1995	437,709
1996	356,643
1997	222,228
1998	158,355
1999	115,011
2000	36,131
2001	28,966
2002	39,773
2003	59,347
2004	119,968
2005	369,169
2006	472,268
2007	625,659
2008	1,079,529

FIGURE 4.3: RCMP fine cut tobacco seizures, Canada, 1994 to 2008



Source: Adapted from RCMP Illicit Tobacco Statistics, 2008 (74).

Year	Bags
1994	179,932
1995	180,098
1996	309,652
1997	101,265
1998	28,912
1999	120,550
2000	80,315
2001	9,245
2002	24,422
2003	40,341
2004	53,130
2005	69,242
2006	20,407
2007	141,680
2008	344,306

Confronting the Disease Vector – Intervention Areas

Contraband tobacco

The RCMP reports that provinces in Central Canada (Ontario and Quebec) are the largest consumers of contraband cigarettes **(72)**. Points of sale in Central Canada include bingo parlours, flea markets, workplaces and home delivery **(72)**. The RCMP reports 42 criminal organizations operating in the Cornwall/Valleyfield region **(72)**.

In terms of lost revenue from taxation, the Auditor General of Ontario estimates that, in 2007, the amount of contraband consumed was worth approximately $500 million in lost taxes **(76)**; this tax gap has expanded significantly since 1999.

In the US, an area of concern has been the sales of tobacco product through the Internet. This was recently addressed with the passage of the *Prevent All Cigarette Smuggling Act* of 2009 (PACT Act) which treats cigarettes and smokeless tobacco as nonmailable matter, imposes additional reporting requirements on sellers, and enacts several provisions to aid enforcement **(78)**. The prevalence and impact of illegal online sales of tobacco in Canada not well understood, but is expected to be minimal as mail delivery of tobacco products is prohibited under the federal *Tobacco Act.*

Who is using contraband tobacco?

Results from the 2005-06 Ontario Tobacco Survey (OTS), found that one in four adult smokers (26%) purchased tobacco on reserve in the past six months **(79)**. Overall, 12% of current smokers reported usually purchasing cigarettes on reserves while 14% of all cigarettes were purchased on reserve. Individuals who purchased cigarettes on reserves were more likely to be heavy smokers, have no intention to quit, have lower educational attainment and reside in Northern Ontario.

In 2009, 6% of all Ontario students reported smoking contraband cigarettes in the past year **(39)**. This proportion increased with grade — reaching 10% of all grade 12 students. Among past-year smokers, half (53%) reported smoking contraband cigarettes. Data from the 2006-07 Canadian Youth Smoking Survey (YSS) show that 9% and 13% of Canadian youth (in grades 6 -12) were usual smokers of native and discount brands, respectively **(37)**. Native brands appeared to be more appealing among youth with less spending money or who were heavier smokers, compared to premium-brand users.

Overall, there is less understanding about the use of some types of contraband such as counterfeit and legally produced products entering the market illegally. Users of counterfeit products are often unaware of the nature of their cigarettes, while stolen cigarettes cannot be distinguished from those that have been legally obtained.

What can be done about contraband tobacco?

A recent policy review completed by the Ontario Tobacco Research Unit (OTRU) identified options to address the issue of contraband in Ontario **(73)**; these are presented in Table 4.4. An exhaustive discussion of these options exceeds the scope of this report, and readers are encouraged to review the report on their own. The report itself is the most comprehensive to date on the contraband issue in Ontario and examines how other jurisdictions address contraband. In addition to a literature review, it is informed by interviews with key informants and expert focus panels from stakeholder groups.

TABLE 4.4: Summary of select anti-contraband measures

Policy	Relevance to Contraband
Licensing	Licensing places explicit obligations or regulations on the licensee. This provides an effective deterrent and means of enforcement for non-compliance to agreed-upon stipulations, including engagement in illicit contraband activity.
Tax markings / stamps	These markings or stamps allow easy identification of counterfeit product, origin of seized product and determination if appropriate taxes have been paid.
Tracking and tracing	In conjunction with tax markings/stamps, tracking and tracing efforts allow tobacco products and its intermediaries to be followed throughout the distribution process.
Record keeping / control measures	This places requirements and regulation on entries of the supply chain. This can be applied to growers and tax-exempt products.
Enhanced enforcement	Enforcement includes border controls, inspections at retail or along the supply chain, criminal investigation and intelligence gathering. All components need to be resourced to identify sources of contraband and have the means to intercept them.
Export taxation	This type of tax is required where one jurisdiction has a much lower taxation rate than another on a specific product. For tobacco, if export taxes are not in place, smuggling is encouraged (i.e., tobacco could be exported at the lower price and smuggled back into the originating country or sold domestically). This was the main source of contraband tobacco in Ontario in the late 1990s (71).
Tax harmonization	Similar to export taxation, price differentials across nearby jurisdictions encourage smuggling. Harmonization reduces this differential and, thus, the incentive to smuggle.
Tax agreements with First Nations and Native American Communities	Taxation (and price) differentials can also exist within jurisdictions. In Ontario, PST/GST- and HST-exempt tobacco products are available to eligible individuals in First Nations communities. In some instances, these products may be sold to ineligible individuals, thus, evading taxes. Tax agreements would eliminate the incentive to sell products to ineligible individuals.

Source: Adapted from Anti-contraband Policy Measures: Evidence for Better Practices, 2009 (73).

Anti-contraband measures have also been recently outlined by the RCMP (72) and the Auditor General of Ontario (76). These reports recognize the complex nature of the issue and the many stakeholders that need to be involved, including the federal and Ontario governments, tobacco manufacturers and retailers, non-government organizations, First Nations communities and leadership, researchers and American counterparts.

The reports cited place a strong emphasis on working with First Nations communities and First Nations leadership in addressing the specific contraband tobacco issues

which involve those jurisdictions (72,75,76). In its response to the 2008 Auditor General's Report on tobacco tax, the Ontario Ministry of Revenue recognized this importance and outlined significant challenges, including issues of jurisdiction (76). It is also necessary to recognise and appreciate the health burden, and economic and health care access challenges experienced by many First Nations communities in pursuing any resolution (80).

Recommendations

Contraband

[4.2] Implement tax markings/stamps, a tracking and tracing system and enhanced enforcement (border controls, investigations, intelligence, inspections and seizures) for tobacco products.

[4.3] Engage and work with First Nations leadership and communities to reduce commercial tobacco use among First Nations people, reduce the sales of tax-exempt tobacco to ineligible individuals, and develop and implement strategies to address the production, distribution and sale of contraband tobacco.

Tobacco industry denormalization

Rationale – Why address tobacco industry denormalization?

There are a number of definitions of tobacco industry denormalization (TID) and its related set of concepts in the scientific and grey literature (22,81-90). For example, in a 2001 report commissioned to inform the media campaign of Health Canada's Tobacco Control Strategy, the following explanation is provided (91):

> Tobacco industry denormalization campaigns usually point out negative traits of the tobacco industry, such as manipulative or unethical activities in which the tobacco industry may engage. This educates both smokers and non-smokers about the motives and tactics of the tobacco industry. Tobacco industry denormalization campaigns can reduce the social acceptability of smoking by highlighting the tobacco industry's overt attempts to increase social acceptability of smoking.

The Non-Smokers' Rights Association (NSRA) provides the following definition (92):

> Tobacco industry denormalization or TID is a tobacco control strategy. TID tells the public the truth about the tobacco industry's role as the disease vector in the development and perpetuation of the tobacco epidemic. Tobacco industry denormalization is the reversal of the process of industry normalization promoted by cigarette manufacturers for decades. TID shows the public why the tobacco industry is not normal, or legitimate, and falls outside the norms of behaviour of legitimate business.

Studies on TID campaigns have shown that:

- Support for action against the tobacco industry was protective against tobacco use and associated with increased intention to quit among adults (83).
- Mass media campaigns which integrate tobacco industry denormalization themes may help to reduce tobacco use above and beyond campaigns that only target social norms (87).
- Exposure to the American Legacy Foundation's "truth" campaign changed youth's attitudes against tobacco use (88), anti-tobacco beliefs, attitudes, and intention not to smoke among youth (93,94) and was associated with a significant decline in youth smoking prevalence (95).
- Among youth, occasional and regular tobacco use was significantly related to their beliefs about tobacco companies doing good things in the community, manipulating young people to think smoking is cool, advertising to youth and using athletes and sports sponsorships to get young people to smoke (85).

- Having anti-tobacco media campaigns in combination with other tobacco control interventions is effective in reducing tobacco use by youth **(17)**.

The importance of TID is apparent upon consideration of the continual, calculated and well-resourced efforts that manufacturers undertake to shape public and media opinion and public policy. For example, internal documents from Philip Morris (PM) outline its "societal alignment" strategy to "meet society's expectations of a responsible tobacco company" without materially changing its practices **(96)**. This strategy involved public opinion research to identify the expectations of a responsible tobacco company and selective retooling of corporate positions and programs to further its business objectives **(96)**. PM also widely publicizes its corporate philanthropy and financial contributions to influence public health policy and improve its image among key constituencies **(97)**.

Divestment of pension and tobacco related investments

> *Organizations and institutions with a mandate to improve the health of Ontarians should not simultaneously stand to profit from the sale of tobacco products* ***(98-102).***

The Government of Ontario, in particular, may have an additional conflict of interest in that it is currently pursuing litigation to recover past health-care costs due to tobacco use. Any conflicts of interest can be negated through the divestment of tobacco-related investments, which would also contribute to tobacco industry denormalization objectives **(103)**.

Article 5.3 of the WHO FCTC deals with the protection of tobacco control activities from commercial and other vested interests of the tobacco industry **(18)**. Principle 1 of the Guidelines for Implementation states: "There is a fundamental and irreconcilable conflict between the tobacco industry's interests and public health policy interests." The Guidelines for Implementation of Article 5.3 includes two recommendations relevant to divestment:

- 4.7 Government institutions and their bodies should not have any financial interest in the tobacco industry, unless they are responsible for managing a party's ownership interest in a state-owned tobacco industry.
- 7.2 Parties that do not have a state-owned tobacco industry should not invest in the tobacco industry and related ventures.

As a signatory to the FCTC, Canada and its jurisdictions are required to adhere to these recommendations.

The Ontario context

A sustained TID campaign has yet to be implemented by the Ontario or Canadian governments, although TID related activities are carried out by non-government organizations such as the Non-Smokers' Rights Association (NSRA). In 2001, a report to Health Canada also recommended the inclusion of TID as part of the social media campaign of the Federal Tobacco Control Strategy **(91)**, but, this has not yet been put into practice. TID was cited as the most important intervention in CTC by members of the International Expert Panel **(104)**.

The exact amount and contribution of tobacco investments in provincial pension plans is not known. Tobacco companies may be registered as various domestic and international

subsidiaries. As well, there are no standards for the public reporting of holdings; in some cases, the best insight is garnered from proxy voting records. Despite the present lack of specific knowledge of the extent of the problem in Ontario, the need for divestment as outlined has been well established.

Recommendations

Tobacco Industry Denormalization

[4.4] Develop and implement a sustained tobacco industry denormalization campaign.

[4.5] Divest provincial pension plans and other investments of tobacco holdings and amend legislation to allow other institutions (e.g., Ontario universities, hospitals) to divest their tobacco holdings.

Plain and standard packaging and health warnings

Rationale – Why address packaging and health warnings?

In response to increased restrictions on tobacco advertising and promotion, product packaging has gained prominence as a promotional vehicle to maintain interest among current users and appeal to potential new smokers **(105-107)**. The tobacco industry continues to push the boundaries of package design, including the use of onserts and inserts **(105,108)**. Examples of recent innovations in tobacco packaging include **(105)**:

- The octagonal duMaurier package, introduced by Imperial Tobacco Canada, for brand differentiation and obscuring of health warnings
- The "wallet" package, which can be easily separated into two ten-cigarette partitions to facilitate cost-sharing among multiple users
- "Below the line" marketing such as referencing sporting events and other promotions
- Targeting women using colours (e.g., pink and pastels), symbols, imagery and brand descriptors (e.g., slim, vogue, glamorous)
- Use of colours (e.g., blues and lighter tones), numbers and other descriptors to connote that certain brands are healthier

The intentional manipulation of package configuration, colour, symbols and imagery continues to undermine public health messaging and create false beliefs about tobacco products **(107,109-116)**.

The FCTC recognizes the importance of the tobacco package as a means of advertising and promotion and recommends the adoption of plain and standard packaging **(18)**. With plain and standard packaging, health warnings are expected to have increased prominence and impact.

Guidelines for the implementation of plain and standard packaging are outlined in Article 13 of the FCTC **(18)** and the FCTC Toolkit on Labelling **(105,117)**. Features of plain and standard packaging include:

- Use of only one or two contrasting colours
- No logos, corporate symbols or colours
- Standard size, shape and material
- No advertising or promotion inside or attached to the package or individual cigarettes (e.g., onserts and inserts)
- Mandated information such as health warnings
- Prescribed font size and typeface

Health warnings

Pictorial health warnings on tobacco products were first introduced in Canada and are recognized as a best practice in tobacco control **(18)**. They are now widely adopted in countries around the world. However, warnings lose their impact over time and need to be updated periodically to maintain

effectiveness (116). Lastly, Article 11 of the FCTC (health warnings) recommends providing advice about cessation (18); this may include providing information for quitlines and alignment of the cessation message with larger media initiatives.

The Ontario context

Tobacco labelling in Canada is regulated by the Tobacco Products Information Regulations (TPIR) of the Federal *Tobacco Act* (118). These regulations apply to tobacco sold in Canada and mandate the inclusion of graphic health warnings, information on toxic emissions and health information messages. These information labels are required to cover a specified proportion of the package surface. Federal health warnings have not been updated since 2000.

Plain and standard packaging is needed to prevent the current and future use of tobacco packaging as a marketing and promotional medium and to minimize the package's appeal to youth.

Recommendations

Packaging and Health Warnings

[4.6] Mandate plain and standard packaging (including onserts and inserts).

[4.7] Refresh the tobacco product health warning system in a timely and continuous manner, ensure that a 1-800 cessation helpline number is included as part of the health warning system, and align mass media campaigns with these warnings.

Tobacco product regulation

Rationale – Why address new tobacco products?

From a tobacco manufacturer perspective, it is important to continually update and refresh existing product lines to respond to competitors and maintain consumer interest (e.g., to develop more socially acceptable cigarettes (119) and products with purportedly lower exposure (120-122)). For the purposes of this report, a new product may be a variation on an existing product (extension of a product line, including changes to name or packaging), a completely new product, or the updating or rebranding of an existing product to give the impression that it is new, has incorporated new technologies or is otherwise improved.

There are a number of significant concerns with allowing new tobacco products to be approved, promoted and sold. In addition to those discussed in this report:

- No tobacco product has been demonstrated to be completely free of harm
- The use of innovative packaging, symbolism and other features can run counter to public health messaging and create false beliefs about the product (107,109-116)

The Ontario context

The Federal *Tobacco Act* has previously been used to control the type of tobacco products that can be sold in Canada. For example, in October 2009, amendments to the Act banned fruit flavourings and candy flavoured additives from cigarettes, little cigars and blunt wraps to reduce their appeal to children and youth (although menthol was exempted). In addition, nicotine products such as nicotine replacement therapy and electronic cigarettes are regulated under the *Food and Drugs Act and Related Regulations.* These products are required to provide substantive scientific evidence of a product's safety, efficacy and quality. For example, in 2009, Health Canada issued an advisory to potential importers of electronic cigarettes; these devices had not yet received market authorization for importation, marketing and sale in Canada (123).

As indicated above, tobacco manufacturers have proven to be very capable of adapting to changes in product regulations (e.g., adopting new packaging designs to obscure health warnings and introducing discount brands to attract cost-conscious consumers). An inconsistency currently exists where nicotine products such as nicotine replacement therapies used in cessation are regulated under the *Food and Drugs Act and Regulations,* while tobacco products are regulated under various statutes such as the Tobacco Act and *Ontario Tobacco Tax Act* and *Smoke-Free Ontario Act.* These latter statutes are less demanding with respect to consumer safety. It is highly unlikely that any tobacco product would be approved for sale and marketing if it were forced to comply with the conditions of the *Food and Drugs Act and Regulations.*

Recommendation

Product Regulation

[4.8] Prohibit the approval, selling and marketing of any new* tobacco or non-therapeutic nicotine product unless there is unequivocal scientific evidence of a net-positive health benefit at the population level.

* New products include brand extensions, changes to name or packaging and new forms of tobacco.

Retail tobacco distribution and availability

Rationale – Why address retail tobacco distribution and availability?

Controlling the retail distribution of harmful consumer products is one method used by government to limit their consumption or subsequent dangerous and unhealthy consequences (e.g., prescription drugs through pharmacies and alcohol through designated outlets). For products with negative public health impacts, the association between outlet density and health is most evident in alcohol policy **(60,124)**. Tobacco retail outlet density has been shown to be associated with tobacco use uptake in nearby schools and neighbourhoods **(125-129)**.

The present retail distribution system for tobacco products is inconsistent with their substantial negative public health impact. This system allows tobacco to be accessed with minimal effort and provides many opportunities for users to obtain the product easily throughout their daily lives **(126)**. Access restrictions are appropriate for products that are likely to harm users when used as intended. Although the current retail system was established before the health effects were well understood, there are policy measures to correct it. Some mechanisms include retail licensing, zoning by-laws to restrict geographic density of outlets and selling products in designated sales outlets only **(51,126)**.

These access restriction paradigms have many public health and administrative benefits:

- Providing a sanction for violation of laws such as revoking a license for failure to comply with point of sale or youth sale provisions
- Providing a mechanism to monitor and control the number and geographic distribution of retail outlets
- Providing revenue through licensing or other administration fees

The Ontario context

In Ontario, tobacco sales are prohibited by statute from vending machines and at pharmacies, hospitals and other health care facilities and residential-care facilities **(130)**. Retail sales may also be restricted in some places due to voluntary administrative policies (e.g., bans on sales on university and college campuses).

Compared to other provinces and territories, only New Brunswick has fewer restrictions on tobacco retail sales than Ontario **(130)**. Prince Edward Island, Newfoundland and Labrador, Nova Scotia and Quebec have more comprehensive restrictions and include important

settings targeting youth (e.g., colleges and universities, theatres, sports facilities and recreational facilities) **(130)**. Licensing of tobacco retailers has been employed by some municipalities and cities such as Ottawa **(130)** and Hamilton.

Recommendations

Retail Distribution

[4.9] Employ licensing strategies, zoning by-laws, and move toward a system of designated sales outlets as a mechanism to continuously reduce the number of tobacco retailers and locations permitted to sell tobacco products.

[4.10] Extend the prohibition of the retail sale of tobacco products to match or exceed those of the leading Canadian provinces.

Marketing and promotion

Rationale – Why address marketing and promotion?

Restrictions on marketing and promotion are widely recognized as an important component of CTC strategies to decrease tobacco use **(17,18,131,132)**. This is outlined in Article 13 of the FCTC **(18)**, which provides implementation guidelines to the effect that restrictions must:

- Be comprehensive and applicable to all tobacco advertising, promotion and sponsorship
- [Apply] to all forms of commercial communication, recommendation or action and all forms of contribution to any event, activity or individual with the aim, effect or likely effect of promoting a tobacco product or tobacco use either directly or indirectly
- Include cross-border advertising, promotion and sponsorship — includes both out-flowing advertising, promotion and sponsorship (originating from a party's territory) and in-flowing advertising, promotion and sponsorship (entering a party's territory)
- Address all persons or entities involved in the production, placement and/or dissemination of tobacco advertising, promotion and sponsorship
- [Include e]ffective monitoring, enforcement and sanctions supported and facilitated by strong public education and community awareness program[s]

Article 13 of the FCTC also emphasizes the need to ban a broad scope of marketing communication activities that includes direct marketing, sales promotions, personal selling and online interactive methods. It is also recognized that partial bans will allow the tobacco industry to adapt to new regulations by shifting expenditures to unregulated areas in creative and indirect ways, particularly towards young people.

Bans should also cover activities which have indirect promotion effects; for example **(18)**:

- Sales or distribution agreements
- Association of tobacco with events or other products
- Promotional packaging and product design features
- Merchandise that mimics tobacco products such as toys or candy
- Use of words, colours or symbols that are associated with tobacco companies
- Brand extensions or sharing
- Tobacco intermediaries such as paper, raw tobacco and equipment
- Depictions of tobacco in entertainment media
- Corporate promotion (including the promotion of socially responsible causes)

The Ontario context

Marketing, promotion and sponsorship of tobacco products are regulated under the Federal *Tobacco Act.* The *Tobacco Act* was enacted in 1997 and has withstood a 2007 constitutional challenge where the Supreme Court upheld the ability of the federal government to restrict advertising, ban sponsorship and require warning labels **(133)**. In 2009, amendments to this act closed a loophole which allowed tobacco companies to advertise in newspaper dailies, which had been permitted if readership was at least 85% adult **(134)**.

As indicated in the FCTC, and as evident in recent history in Canada and Ontario, the tobacco industry has and will likely continue to adapt to partial and incremental restrictions on marketing, promotion and sponsorship. In order to unequivocally address the present and future impact of such activity, an all-inclusive ban on marketing, promotion and sponsorship is required **(18)**. Lastly, it is important to reiterate that the tobacco package is currently the premier marketing and promotion tool for tobacco products, and must be addressed as per Recommendation 4.6.

Recommendation

Marketing and Promotion

[4.11] Close existing loopholes on tobacco product advertising and promotion.

Tobacco industry accountability

Rationale – Why address industry accountability?

As discussed above, Article 5.3 of the WHO FCTC unequivocally states: "There is a fundamental and irreconcilable conflict between the tobacco industry's interests and public health policy interests."

In 2006, a US Federal District Court Judge, Gladys Kessler, ruled that the major tobacco companies violated the *Racketeer Influenced and Corrupt Organizations Act* (RICO) by defrauding the public through a fifty-year conspiracy, and that the fraud continues to this day **(135,136)**. Judge Kessler determined that the evidence from six years of litigation, nine months of trial, hundreds of depositions and thousands of exhibits, showed that the defendants:

- Repeatedly denied that smoking caused adverse health effects despite knowing for fifty years or more that cigarette smoking caused disease

- Publicly denied that smoking is addictive and withheld information about their research that showed that the nicotine in tobacco causes cigarette smoking to be addictive — and that the defendants acted this way to maintain profits, avoid liability and prevent regulation of the industry
- Control nicotine levels in cigarettes to ensure that smokers become and stay addicted
- Misled consumers about "light" cigarettes despite knowing for decades that "light" cigarettes offer no clear health benefit — and that the defendants continue to make these false and misleading claims
- Used their own research to develop highly sophisticated marketing campaigns aimed at young people in order to remain profitable
- Undermined independent research efforts, funded industry-friendly research and suppressed and trivialized unfavourable research results on tobacco smoke, despite knowing that it is hazardous to nonsmokers
- Suppressed and concealed scientific research and destroyed documents in an effort to protect themselves from litigation and regulation

Litigation

An important part of the Master Settlement Agreement (MSA) in the United States was the release of internal tobacco industry documents. These provided unprecedented insight into industry motives, research strategies and data that extend to related companies outside the US **(137)**. For example, documents by Imperial Tobacco and British American Tobacco (BAT) demonstrated that these companies knew about the carcinogenic and addictive nature of tobacco smoke.

Internal tobacco industry documents may also provide important information that is not available in the public scientific literature, particularly on issues of tobacco smoke and cigarette toxicity **(5)**. For example, BAT research showed that the tar and nicotine levels delivered to tobacco users were greater than what was measured in standard testing protocols **(5)**. Moreover, BAT used this knowledge to design cigarettes that delivered more tar and nicotine than the level being measured through the mandated test **(5)**.

In addition to direct tobacco industry reporting and document disclosure, a complementary strategy would engage in surveillance and monitoring of industry activity **(17,18)**. This allows for a complete understanding of the cause of the epidemic, including manufacturing, marketing and product distribution.

Transferring responsibility for youth smoking onto tobacco manufacturers

A novel approach to transfer accountability for youth tobacco use has been proposed and outlined in the May 1, 1998 version of the (John) McCain Committee bill (S. 1415rs, the "National Tobacco Policy and Youth Smoking Reduction Act") **(138)**. These "look-back" provisions place responsibility for reducing tobacco use on manufacturers themselves. Manufacturers would be required to reduce smoking rates among youth incrementally on an annual basis. In the US context, these provisions could be implemented through the existing taxation framework. Survey methodology would be used to assess compliance and apply penalties based on the degree of missed reduction and proportion of market share, smaller makers would be exempt **(138)**.

The Ontario context

Under the Tobacco Reporting Regulations of the Federal *Tobacco Act,* tobacco manufacturers are required to report on various aspects of their operation in the form of annual reports to

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Tobacco industry accountability

Health Canada (139). Reporting requirements include sales, manufacturing, ingredients, toxic constituents and emissions and research and promotional activities (139). Although these data have been used in government reports and academic research, there are still difficulties in accessing information and limitations in the material itself. For example, there are no requirements to report on cigarette paper and bindings. Publicly available data is limited. The monitoring of tobacco industry activity also occurs through various academic and non-government groups, such as the Ontario Tobacco Research Unit (OTRU) and Non-Smokers' Rights Association (NSRA).

Currently, local reporting of practices related to waterpipe tobacco use is emerging in Ontario's larger cities and with post-secondary students. Surveillance is required in Ontario among youth, young adults, retailers and immigrant populations in order to monitor emerging trends related to alternatives to cigarette smoking and to mitigate the harmful effects of such practices. Additional details are available in Chapter 6 – Protection.

Recommendations

Industry Accountability

[4.12] Legislate tobacco manufacturer reporting requirements that match or exceed what is currently required by the Federal government.

[4.13] Implement tobacco-industry surveillance, monitoring and intervention development functions to address and plan for mitigation of tobacco industry activities.

[4.14] Require, by statute, that tobacco manufacturers (including importers selling tobacco products in Ontario) meet stated annual reductions in the number of under-aged tobacco users in Ontario. Substantial penalties, based on the revenue gained by tobacco companies over a smoker's lifetime, should be applied if the stated goals are not met. Funds should be directed to tobacco control activities.

Rationale – Why address public input into litigation?

The role of public litigation against tobacco manufacturers in advancing tobacco control efforts is well documented from the US and other parts of the world (140-148). Some potential benefits include (149):

- Assessing the impacts of corporate decisions retrospectively
- Affecting industry decisions about the design of future products due to the threat of liability
- Educating the public about the health effects of tobacco use and industry practices via public discourse about the litigation process (i.e., as a key part of the TID strategy)
- Disclosure of internal documents

The following is a brief summary of seminal, state-initiated lawsuits and settlements and their contribution to important tobacco control measures.

A summary of landmark tobacco litigation cases

In 1996, Liggett and Myers became the first tobacco company to settle in a combined class action and state-brought lawsuit. As part of the settlement agreement, the company agreed to monetary damages, placing warning labels on their packages and providing further evidence that would support future litigation against other companies (147).

Between 1997 and 1998, several US tobacco companies settled lawsuits with Florida, Mississippi, Texas and Minnesota. In addition to monetary reimbursement to health insurance companies, the companies agreed to establish public health and tobacco control programs and restrict their advertising. They also agreed to a "most favoured nation" clause, which automatically obliges them to incorporate any more favourable terms from any subsequent

settlement with other states (143,147). Also in 1998, the four major US tobacco companies entered into a comprehensive settlement agreement called the Master Settlement Agreement (MSA) with 46 states and five territories, agreeing to pay $246 billion to governments over 25 years.

In addition to monetary compensation and agreement to the release of industry documents, the MSA included restrictions on outdoor advertising, promotional merchandise, sponsorship of public events, lobbying and targeting of under-age smokers (146-148).

The Ontario context

In 2000, the Government of Ontario filed a $40-billion, US Federal lawsuit against major North American tobacco companies under the US *Racketeer Influence and Corrupt Organization (RICO) Act.* Ultimately, the original suit and appeal was dismissed (150).

In September 2009, the Ontario Government initiated a lawsuit against tobacco manufacturers to reclaim health-related costs incurred due to smoking since 1955: *Her Majesty v. Rothmans Inc., Rothmans, Benson and Hedges Inc., et al (2009).* This suit was made possible by the previous passing of the *Tobacco Damages and Health Care Costs Recovery Act* (May 2009) which created a method for quantifying the costs associated with tobacco use and the allocation of liability based on market share. Fourteen tobacco companies based in Canada, the US, and the UK are cited in the suit.

The Government of Ontario needs to be prepared to leverage the potential opportunity to include public health and tobacco control clauses into any judgment or settlement of the current litigation process. It is also important to learn from past mistakes and to anticipate how the tobacco industry will adapt to changes in the policy and regulatory environment. Judgments and settlements over the past 20 years provide a rich source of information and knowledge on which to prepare, plan and strategize the next steps. Seminal reviews in tobacco control, such as *Ending the Tobacco Problem: A Blueprint for the Nation* (51) provide an excellent starting point for this type of preparation.

Recommendation

Industry Litigation

[4.15] Identify public health provisions that should be included in a judgment or settlement resulting from tobacco-industry litigation.

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CHAPTER 5

Prevention of Tobacco Use Among Youth and Young Adults

Abstract

All youth and young adults may be considered at risk for smoking uptake and should be a target for prevention and cessation efforts. Effective strategies to prevent smoking uptake in youth and young adults will minimize the health consequences and lifetime burden associated with tobacco use. Tobacco use prevention is most effective when implemented as part of a comprehensive strategy. Evidence indicates a combination of interventions — including mass media, addressing tobacco imagery in the movies, implementation and enforcement of comprehensive programs and policies across various settings, provision of appropriate cessation interventions, evaluation and monitoring, and improved compliance — will be useful to prevent tobacco use uptake and progression among youth and young adults in Ontario. While integral to prevention strategies, interventions including high prices of tobacco and smoke-free legislation aimed at protecting youth and young adults from exposure from tobacco smoke are addressed in Chapters 4 and 6, respectively.

Goal: To prevent the uptake of tobacco use among youth and young adults in Ontario, where uptake encompasses all stages of smoking, initiation and progression.

Methods

Evidence to guide development of this chapter was gathered from the published and grey literature:

- Published literature – Searched Medline for reviews published between 1999 to the present:
  - Search terms included: “smoking prevention” and “adolescent”
  - Other searches addressed specific policies or programs (e.g., school-based programs)
  - Recent references were identified through hand searching and regular monitoring of the Globalink – Medical Journal Update for relevant evidence
- Seminal reports by credible sources, often referred by SFO-SAC members, including:
  - Preventing Tobacco Use Among Young People – A Report of the Surgeon General (1994)
  - Institute of Medicine – Ending the Tobacco Problem – A Blueprint for the Nation
  - Centers for Disease Control and Prevention – Best Practices for Comprehensive Tobacco Control Programs

- SFO-SAC and work group members – made suggestions and provided citations based on knowledge of the published and grey literature:
  - Key articles upon request
  - Program publications and evaluation (e.g., annual reports – Leave the Pack Behind)
- Internet resources:
  - Specific web sites referred to by work group members (e.g., Youth Smoking Survey – **www.yss.uwaterloo.ca/?section=1&page=111**)

Why Address Tobacco Use in Youth and Young Adults?

All youth and young adults may be considered at risk for tobacco use uptake and should be a target for prevention and cessation efforts. Historically, prevention efforts have focused on youth, particularly school-age youth, and have neglected young adults. However, recent evidence suggests young adults remain susceptible to smoking uptake. One fifth of current young adult smokers in Canada tried their first cigarette after the age of 18 years, and the majority of young adults who smoke became regular smokers after the age of 18 **(1)**.
The target population in this chapter therefore includes youth and young adults (up to and including 29 years of age).

Effective strategies to prevent uptake of tobacco use in youth and young adults will minimize the health consequences and lifetime burden associated with tobacco use.

A comprehensive tobacco control program requires interventions to facilitate a smoke-free transition from adolescence to young adulthood and beyond. The strategy for youth and young adults should be concerned with the primary prevention of experimentation, increases in the amount of tobacco use (including cigarettes and use of smokeless tobacco), and cessation as early as possible in youth and young adults' lifetimes.

Stages of initiation may include some, but not necessarily all of the following: a preparatory stage of changing attitudes and beliefs about smoking, trying tobacco, experimentation and regular use **(2,3)**.

The Ontario Context

The following provides a summary of the prevalence of tobacco use among Ontario youth and young adults and a description of prevention activities implemented as part of the Smoke-Free Ontario strategy.

Smoking among youth and young adults

Prevalence of tobacco use among youth has declined over the last decade (Figure 5.1). However, youth and young adults continue to experiment, smoke occasionally and become regular smokers[9] **(4)**. In addition, approximately one third of Ontario adolescent nonsmokers between 11 and 15 years of age were susceptible to tobacco use uptake in 2005-06. Data from the Youth Smoking Survey (YSS) indicate 35% of 11-13 year old and 31% of 14-15 year old never-smokers were considered susceptible to tobacco use (unpublished analysis prepared by the Propel Centre for Population Health Impact). Such students had not tried smoking, but had positive intentions to try smoking in the future, or smoke a cigarette in the next year or accept a cigarette if offered by a best friend. These high rates of

9 See Appendix A – Glossary of Terms and Acronyms for definitions of smoking status

smoking susceptibility among youth are cause for concern as research demonstrates that susceptible never-smokers are at significantly increased risk for becoming future smokers (5).

Both prevalence of smoking and amount smoked increase with age in youth and young adults, peaking in 20 to 24 year olds (see Table 5.1). In Ontario, 5% of 14 to 15 year olds were current smokers in 2006, compared to 25% of 20 to 24 year olds and 19% of 25 to 29 year olds. A 2005 study found that, on average, current and former smokers tried their first cigarette at 14.8 years of age, while 19% smoked their first cigarette after the age of 18 (1). Daily smokers were less likely to try their first cigarette after the age of 18 compared to occasional smokers, and there were no differences in the age of initiation between male and female young adult smokers (1).

FIGURE 5.1: Past year cigarette smoking, 1977–2009 (Grades 7, 9 and 11 only)

Source: CTUMS and YSS, 2006 through 2008, unpublished analysis prepared by the Propel Centre for Population Health Impact (Ahmed, R.) for this report, 2010. Note: Values in bold text are for Ontario, values in plain text are for Canada excluding Ontario.

NR – Non reportable due to sampling variation
NA – Not available, questions re: susceptibility not asked
YSS – Youth Smoking Survey
CTUMS – Canadian Tobacco Use Monitoring Survey

Whereas 5% of 14-15 year olds were current smokers, 16% were considered to be experimental smokers in 2006. In contrast, 25% of 20-24 year olds and 19% of 25-29 year olds were current smokers compared to 21% of 20-24 year olds and 18% of 25-29 year olds who were categorized as experimental smokers or puffers.

In comparing smoking rates across surveys, it is important to identify the definitions used in producing prevalence measures. YSS and Canadian Tobacco Use Monitoring Survey (CTUMS) report rates based on definitions used in adult surveys. For example, a "current" smoker is one who has smoked 100 cigarettes lifetime and has smoked in the past 30 days. In Ontario Student Drug Use and Health Survey (OSDUHS), the default rate is "any smoking in the past year" which will lead to generally higher rates than either YSS or CTUMS. Table 5.1 provides YSS and CTUMS estimates. Figure 5.1 provides data from OSDUS by grade and year.

The prevalence of tobacco use and susceptibility to tobacco use in Ontario tends to be lower than rates among youth and young adults in the rest of Canada (see Table 5.1).

Smoke-Free Ontario strategy

The Smoke-Free Ontario strategy is a comprehensive tobacco control strategy, and in part, aims to prevent children and youth from starting to smoke. In addition to protection and cessation initiatives, which influence youth tobacco use behaviour, policy, programs and media interventions have been implemented. The following outlines several of the initiatives implemented through the strategy.

Policy – legislation and enforcement

The Smoke-Free Ontario Act (SFOA) (2006) includes many provisions to protect youth from tobacco use initiation. In particular, the legislation prohibits tobacco sales to anyone under 19 years of age and requires retailers to request identification from anyone purchasing tobacco products who looks younger than 25 years old. A total ban on tobacco point-of-sale promotions and display came into effect in May 2008.

Programs and media

Funds were provided for community and school-based smoking prevention programs, university and college tobacco control programs and media interventions. Some

TABLE 5.1: Smoking status of youth and young adults, by age group, Ontario and Canada excluding Ontario, 2006 and 2008

	11-13 years (YSS, 2006)		14-15 years (YSS, 2006)		15-16 years (CTUMS, 2008)		17-19 years (CTUMS, 2008)		20-24 years (CTUMS, 2008)		25-29 years (CTUMS, 2008)	
	Pop est.	%	Pop est.	%	Pop est.	%	Pop est.	%	Pop est.	%	Pop est.	%
Current smoker	**NR**	**NR**	**17,139**	**5.2**	**NR**	**NR**	**63,302**	**12.8**	**220,026**	**25.0**	**163,098**	**18.7**
	6,1467	0.9	32,701	6.5	34,578	6.5	134,783	16.9	344,002	25.0	333,798	23.4
Experimental and puffer	**33,692**	**7.1**	**52,152**	**15.8**	**NR**	**NR**	**79,702**	**16.1**	**182,740**	**20.7**	**156,677**	**18.0**
	80,202	11.4	114,917	22.8	65,726	12.3	132,146	16.6	259,236	18.8	269,122	18.9
Susceptible	**151,363**	**35.0**	**73,664**	**30.8**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
	184,579	31.2	107,788	34.9	NA	NA	NA	NA	NA	NA	NA	NA

Source: CTUMS and YSS, 2006 through 2008, unpublished analysis prepared by the Propel Centre for Population Health Impact (Ahmed, R.) for this report, 2010
Note: Values in bold text are for Ontario, values in plain text are for Canada excluding Ontario

NR – Non reportable due to sampling variation
NA – Not available, questions re: susceptibility not asked
YSS – Youth Smoking Survey
CTUMS – Canadian Tobacco Use Monitoring Survey

interventions included Youth Action Alliances (YAAs), the Youth Advocacy Training Institute (YATI), High School Grant Program, Lungs are for Life (a school-based tobacco control education curriculum for kindergarten to grade 12 students) and Leave the Pack Behind (a comprehensive, age-tailored, tobacco control initiative for young adults on post-secondary campuses). Stupid.ca is a multi-faceted mass media campaign designed by youth and includes an interactive website. Implementation of stupid.ca was accompanied by advertising, give-aways, toolkits and involvement of YAAs.

Fiscal restraint led to significant cuts to youth-oriented prevention initiatives in 2009-10. In addition to renewal of a comprehensive tobacco control strategy for Ontario, the Ministry of Health Promotion and Sport is currently exploring options to re-invest in youth engagement strategies in a wide variety of health promotion initiatives.

Prevention of Tobacco Use – Intervention Areas

Tobacco control and prevention are most effective when implemented as part of a comprehensive strategy **(7-9)** (see Chapter 2). For example, high prices of tobacco (see Chapter 4) and smoke-free legislation (see Chapter 6) aimed at protecting youth and young adults from exposure will also contribute to preventing initiation of tobacco use (Figure 2.2). The following sections present evidence to guide action in preventing tobacco use uptake and progression among youth and young adults:

- Media and social marketing interventions
- Smoking in the movies
- Effective and enforced policies
- Aligned and co-ordinated program and policy interventions
- Targeted interventions for high-risk youth and young adult populations
- Evaluation and monitoring
- Retail access and compliance
- Youth and young adult cessation

Logic models (see Appendix B) describe the possible interaction and contribution of interventions to achieving the prevention goal and overall goal of comprehensive tobacco control (CTC) in Ontario.

Media and social marketing interventions

Evidence to guide action

Media campaigns can be an effective strategy to prevent tobacco use in youth and young adults (10-13). Mass media interventions can be most effective when combined with other elements of a comprehensive tobacco control strategy **(13)** and may be compromised by tobacco advertising and marketing **(14)**. For example, in studies comparing media combined with a school-based intervention to a school-based intervention alone, or to no intervention, all but one found an effect **(13)**.

Prevention of Tobacco Use – Intervention Areas

Media and social marketing interventions

Evidence from the US demonstrates the magnitude by which effective media campaigns contributed to declines in smoking prevalence. Over the first two years of the Florida "truth" campaign, current cigarette use declined by 40% (from 19% to 11%) among middle school students and by 18% (from 27% to 23%) among high school students (15-17). Further evaluation concluded the campaign was associated with substantial declines in youth smoking and has accelerated recent declines in youth smoking prevalence (11). Upon review of media-based efforts to promote non-use of tobacco products and previously published meta-analytic work, Slater estimated effects of media interventions on youth smoking rates and suggested the absolute prevalence of smoking among American youth is probably about 2 percentage points less than it would be in the absence of media campaigns (e.g., smoking prevalence changed from 20% to 18%). Furthermore, he predicts that if media campaign efforts were to end and their cumulative effects were to dissipate, the prevalence of smoking in each succeeding cohort might be expected to increase (18).

Not all media campaigns are effective at reducing tobacco use in youth and young adults. Development of specific interventions requires rigorous research, testing and periodic evaluation and independence from political pressure (19). Media and social marketing campaigns require appropriate targeting to the diverse youth and young adult audiences and should employ both traditional and non-traditional channels (20,21). Finally, campaigns should be funded on an ongoing basis as a permanent component of a strategy to reduce tobacco use (7,18).

The Ontario context

The impact of media strategies on the behaviour of youth and young adults implemented under the Smoke-Free Ontario campaign in Ontario is not well understood. For example, evaluation data from the Stupid.ca campaign are not yet publicly available and evaluation of interventions delivered through the Heart and Stroke Foundation of Ontario did not target or examine the impact on youth (22).

Recommendation

Media and Social Marketing

[5.1] Implement media and social marketing strategies using traditional and non-traditional media (e.g., viral and interactive media channels) that denormalize the tobacco industry, highlight the social unacceptability of tobacco use, identify resources available to youth and young adults who want to quit and encourage youth and young adults to refrain from tobacco use.

Interventions to address smoking in the movies and video games

Evidence to guide action

Tobacco imagery in films is pervasive, and youth exposure to it is high. Between 1996 and 2006, tobacco imagery was featured in more than three quarters of both youth and adult rated movies made in the US **(23)**. Estimates of exposure — based on American audience age composition (by rating), box office (gross revenue from ticket sales by film) and tobacco imagery incidence (by film) during the same period — suggest viewers aged 12 to 17 years were subject to 20% of the 45 billion estimated tobacco impressions delivered by films in Canadian and American theatres **(24)**. This amounts to almost four times more in-theatre tobacco impressions per capita than for children aged 6 to 11 and 18% more tobacco impressions than for viewers aged 18 to 35 **(24)**.

Extensive research on the effects of smoking and other tobacco portrayals in films demonstrates a relationship between smoking in the movies and youth tobacco initiation. Two recent reviews confirm the risks associated with smoking in the movies. An Institute of Medicine **(18)** review concluded exposure to tobacco imagery increases the risk for smoking initiation, and a US National Cancer Institute study found sufficient evidence in a review of cross-sectional, longitudinal and experimental studies to conclude that a causal relationship exists between exposure to depictions of smoking in movies and youth smoking initiation. This includes a dose-response relationship between exposure to onscreen smoking and youth tobacco initiation **(13)**.

Prevention of Tobacco Use – Intervention Areas

Interventions to address smoking in the movies and video games

Both the World Health Organization (WHO) **(24)** and the US Institute of Medicine **(18)** recommend policy to reduce smoking imagery in movies, including the requirement for adult ratings for movies with tobacco imagery. Given the dose-response relationship reported by the National Cancer Institute study, a key goal should be to reduce youths' level of exposure. Most youth exposure to tobacco imagery comes from smoking incidents in youth-rated films.

> *Because fewer children and adolescents view adult-rated films, official ratings for age-appropriateness would be an effective method to reduce exposure without interfering with movie content **(24)**.*

WHO **(24)** also recommends strong anti-smoking ads appear before a film that includes tobacco imagery in an effort to inoculate both younger and older adolescents against the promotional effects of exposure to tobacco images.

The Ontario context

Recent data indicate Ontario youth spend an average of 2.7 hours each day watching television or movies, playing video or computer games, surfing the Internet and instant messaging or talking on the phone **(25)**. With few exceptions, all films to be distributed or screened in Ontario are classified by the Ontario Film Review Board (OFRB). The OFRB receives its mandate through the Film Classification Act, 2005 and aims to "classify film and thereby provide the public with sufficient information to make informed viewing choices for themselves and for their children" **(26)**. As cited above, there is unequivocal evidence that exposure to tobacco imagery in movies has the potential to cause harm. Changes to the ratings process are required to minimize potential harm and enable better-informed viewing choices for Ontarians.

Evidence regarding the relationship between tobacco imagery in video games and youth smoking behaviour is not well established. However, the strong evidence in movies suggests exposure through video games may also present a risk to youth and young adults. In Ontario, video and computer games are subject to a voluntary classification system. The mission of the Entertainment Software Rating Board is "to empower consumers, especially parents, with the ability to make informed decisions about the computer and video games they choose for their families through the assignment of age and content ratings, and to hold the computer and video game industry accountable for responsible marketing practices" **(27)**. The rating system adheres to the philosophy that it should inform and suggest, rather than prohibit. As such, demonstration of tobacco imagery should be considered as a basis for adult ratings.

Recommendations

Movies and Video Games

[5.2] Require adult ratings for movies (18A) and video games (Mature) with any tobacco imagery.

[5.3] Require ads that aim to denormalize tobacco companies and change social norms related to tobacco products and their use preceding movies and video games that contain tobacco imagery, as well as warnings on movie and video game packaging.

Effective and enforced policies

Evidence to guide action

Effective and enforced policies are key components of comprehensive tobacco control programming. Tobacco policy interventions influence the environment with the ultimate goal of preventing young people from initiating tobacco use. As described in other sections of this report, strategies may include high price of tobacco products, point of purchase and access restrictions, bans on promotion and advertising and smoke-free legislation. In particular, school and community environments play an important role in influencing the behaviour of young people. However, school policies alone are not sufficient to prevent initiation or use of tobacco **(28-32)**.

Several recent studies examined factors associated with the school and community environments which influence student smoking behaviour. Students were less likely to smoke if they attended a school with a strong prohibition element to their tobacco policy **(29,31)**, and if they perceived tobacco policies to be well enforced **(29,30)**. Students' perceptions that there were a higher number of smokers at school were also a strong predictor of smoking prevalence **(29,30)**. These data suggest the importance of reducing the visibility of tobacco use in schools through enforcement of smoking policies and implementation of cessation interventions in controlling the prevalence of smoking behaviours. Other evidence highlights the importance of addressing the influence of smoking peers and family members and linking comprehensive programming within the broader context of other community and policy interventions **(33)**.

Evidence also indicates the college or university campus environment influences students' tobacco use behaviour **(34)**. In one study, students' awareness of policies prohibiting smoking on campus was seen as a barrier to smoking and a facilitator for cessation **(35)**.

A survey of 30 colleges and universities found smoking prevalence was highest among students who lived in locations where campus smoking regulations may not apply, such as fraternities or sororities and off-campus housing (36). Smoke-free policies and restrictions on college and university campuses appear to be acceptable to both smokers and nonsmokers (37), and may play a significant role in preventing initiation and progression among university and college students (38).

Little research is available on the behaviours and influence of policies and programs on youth and young adults in the workplace or in communities outside of school settings. However, an understanding of policy influence on students described above lends support to the importance of policies targeted to youth and young adults across all settings.

The Ontario context

Smoking has been prohibited on school property since 1994 in Ontario. However, findings from the 2006-07 Youth Smoking Survey suggest that students are unaware of the policy, or the law may not be strictly enforced at their schools. One fifth of Ontario student respondents did not know the rules about smoking tobacco on school property, and 8% thought it was allowed in some areas on school property. One quarter (25%) of students familiar with rules about smoking at their school felt rules were not obeyed (39).

Leave the Pack Behind supports colleges and universities across Ontario to implement stronger campus tobacco policies. In 2008-09, the program assisted six colleges and eight universities to improve tobacco control policies on campus, including banning tobacco sales, improving enforcement and moving butt receptacles ten meters from buildings (40). Despite implementation of such interventions, surveillance and monitoring data are not available to understand the full impact on prevention of tobacco-use initiation and progression.

Recommendation

Policy Enforcement

[5.4] Develop, implement and enforce comprehensive tobacco control policies within and across settings (e.g., schools, colleges, universities and communities).

Aligned and coordinated program and policy interventions

Evidence to guide action

Individual tobacco control programs are not independent, but work synergistically and reinforce one another in reducing youth and young adult tobacco use. Community-wide, sustained effort using multiple channels of influence is likely to be most effective in preventing tobacco use (10).

Evidence presented earlier in the chapter highlights the need to coordinate tobacco use prevention and cessation programs with other activities. For example, mass media campaigns designed to discourage tobacco use are most effective when combined with school and community-based programming (13). Similarly, existence of a school policy alone is not sufficient to affect smoking behaviour (29-31). Interventions delivered and accessible through the school environment are not sufficient to enable quitting. Interventions implemented in a school environment neglect youth and young adults who are unemployed and in the workforce and studies indicate youth and young adult smokers want opportunities to quit in a variety of settings and with help from professionals (41,42).

A coordinated system of initiatives designed to prevent tobacco use and support quitting in youth and young adults is required.

The Ontario context

Some alignment of programming occurred through the Youth Action Alliances, Youth Advocacy Training Institute, High School Grants and public health unit programs. However, significant cuts were made in 2009-10, influencing the degree of alignment and integration possible.

Recent examples provide evidence of alignment that has occurred in Ontario:

- The *exposé* Smoke-Free Youth project is a multi-component tobacco-use prevention program implemented in high schools across Ottawa. The program combines mass media, youth mobilization and leadership development, curriculum, school and community action, smoking cessation support for young people, promotion and enforcement of legislation and evaluation in an effort to prevent initiation and tobacco addiction. Extensive evaluation demonstrated the project was associated with changes in smoking behaviour and attitudes towards smoking. Between 2002 and 2005, current 30-day smoking prevalence significantly decreased from 20% to 16% **(43)**.
- Area Youth Coalitions and Tobacco Control Area Networks (TCANs) supported and aided the development of the Bill C-32 legislation banning the tobacco industry's use of flavouring by implementing workshops and public-education campaigns to raise awareness of issues and gain awareness for support of the bill **(44)**. Youth and youth groups contacted local MPs requesting support, represented the issue in the media, and presented to the Standing Committee on Health regarding the issue. On October 8, 2009, Bill C-32, banning flavouring of tobacco, received Royal Assent and will be proclaimed into law on July 1, 2010.

Recommendation

Program Alignment

[5.5] Align cessation and prevention programs in schools, colleges, universities and communities with other activities (e.g., media and social marketing, policy interventions) within the provincial tobacco control strategy.

Targeted interventions for high-risk youth and young adult populations

Evidence to guide action

Environmental characteristics, school and community variables, and students' perceptions contribute to the variability of student tobacco use behaviours and risk for future smoking (i.e., susceptibility) **(29,33,45-49)**. Risk is influenced by the social and physical environment, including social determinants of health and others' behaviours. High-risk schools include those where smoking rates are elevated among senior students **(50)**. Evidence indicates that interventions targeted to those school environments that place students at greatest risk for tobacco use uptake and progression can be effective. Despite research arguing school-based prevention programs do not work **(51,52)**, there is evidence that school-based programs can work **(53,54)** and are most effective when implemented in high-risk contexts **(46,50,55)**. In 1999, Cameron and others concluded it may be wasteful to institute intensive interventions in low-risk schools. In contrast, substantial benefits might accrue from offering intensive programs in high-risk schools **(50)**. Effectiveness of school-based programs varies as a function of program characteristics and other conditions such as prevalence, policy and setting **(55)**. Carefully targeted school programs may be valuable as part of a comprehensive approach to smoking reduction.

Effective prevention programs and policies need to be implemented where they are most likely to work. Implementation first requires the identification (e.g., needs assessment) of the schools, colleges, universities and environments where youth and young adults are at greatest risk. This requires not only surveillance data of youth smoking behaviours at school and in the community longitudinally, but also school level programs and policies tailored to the environment. Appropriate prevention and cessation interventions need to be implemented in those high-risk contexts.

The effectiveness of prevention programs delivered at colleges, universities and workplaces has not been well studied. Evaluation is required to understand the mechanisms of intervention that work for various groups of students, schools and communities, under which conditions.

The Ontario context

The Youth Smoking Survey provides a representative sample of student and school characteristics to enable development of risk profiles and identification of high-risk schools. Data may be used to identify both high-risk schools in the sample and characteristics of high-risk schools. An understanding of these characteristics allows for targeting of interventions across Ontario.

Similar data do not exist to identify high-risk environments for young adults attending college or university or for those outside of school.

The Government of Ontario, through the elementary and high school curricula and the Ontario Public Health Standards, among others, has made a commitment to promote healthy living and active lifestyles. Although targeted prevention and cessation programs may not be required in all environments, comprehensive health education should include, at minimum, basic information on tobacco. In addition to curriculum requirements in health and physical education, tobacco-free information and issues can be integrated into other components of the curriculum, including English, math, science, business and media, civics and law **(56)**.

Recommendation

High Risk Youth and Young Adults

[5.6] Target program interventions to the schools, colleges, universities and workplaces where youth and young adults are at greatest risk for tobacco use.

Evaluation and monitoring

Evidence to guide action

Evidence presented earlier in the chapter highlights the importance of understanding the school and community context for both targeting interventions to where they are most likely to have impact, and for identifying new and emerging interventions that are effective in reducing tobacco uptake and progression. Currently however, there is not an adequately developed and integrated system in place in Ontario that can: a) identify high-risk environments where youth and young adults are highly susceptible to tobacco use, b) identify what school, college, university or community tobacco control policies or programs exist or have been implemented, c) measure the impact of such initiatives on youth and young adult tobacco-use behaviour, d) enable planning and guide the implementation of initiatives toward the contexts where they are most likely to work and e) document learning from the experience of implementation and continuously improve interventions. Surveillance and evaluation systems can help to better understand how characteristics of schools or communities contribute to prevention efforts and support program planning and development, and are recommended by the CDC as a best practices approach to CTC **(7)**.

Prevention of Tobacco Use – Intervention Areas

Evaluation and monitoring

The concept of a learning system with mechanisms to continuously learn and apply what is learned is not new, yet successful application across systems is relatively new (57). Although somewhat limited due to cross-sectional data collection, a possible model learning system currently exists and is being used nationally by Health Canada and in three provinces. The School Health Action Planning and Evaluation System (SHAPES) is a school-based, data collection system that was created to support evidence-informed public health planning, support public health field research and strengthen public health evaluation (58-60). SHAPES is designed to create learning from "natural experiments" of innovative, community-led policy and program interventions, and collects data from elementary or high schools on topics such as smoking, alcohol and drug use, eating and physical activity. The Tobacco Module of SHAPES is being used by Health Canada to measure and understand youth smoking behaviour through the biennial Youth Smoking Survey. In the 2010-11 wave, data collection will be expanded to collect information on other health behaviours. In Manitoba, New Brunswick and Prince Edward Island, schools and communities are using the system to achieve mandated improvements in youth health (57). Analysis of SHAPES data allows for identification of traits that qualify schools as high risk and enables stakeholders to implement interventions with similar high-risk characteristics. Longitudinal data collection in a sample of schools allows for understanding over time.

Currently there is little research into effective prevention and cessation interventions for young adults (34). In addition to benefits realized in planning, implementing and evaluating interventions for youth, a learning system will generate the necessary information to intervene most effectively with young adults (58). Implementation of a comprehensive learning system in Ontario could be used to inform and guide a tobacco control strategy as it unfolds and changes over time.

The Ontario context

Surveillance activities in Ontario include biennial cross-sectional monitoring surveys to gather data on youth behaviours (Youth Smoking Survey, Ontario Student Drug Use and Health Survey) and local and provincial evaluation of various programs. However, there is currently no comparable system in place to monitor behaviours of college and university students, and population tools collecting data regarding young adults in the workforce are limited.[10]

Enhanced learning systems will allow for greater precision in identifying high-risk environments, empower local decision makers and social actors, enable shared learning of evaluation of new initiatives across settings and contribute to increased capacity to use evaluation findings in planning, policy development and management.

10 Two national surveys collect data annually from populations samples starting at age 12 (CCHS) and age 15 (CTUMS). While useful, they have important limitations for the purposes discussed here – limited tobacco content for CCHS and a small sample size for CTUMS.

Recommendation

Evaluation and Monitoring

[5.7] Further develop and implement an integrated system of intervention development, evaluation and surveillance that is applicable province-wide and at the local level, to:

[a] Identify high-risk environments and at-risk sub-populations.

[b] Guide the implementation of evidence-based prevention initiatives (programs and policies).

[c] Evaluate the impact that changes in programs and policies have on youth and young adult smoking behaviour over time.

Retail access and compliance

Evidence to guide action

The impact of current youth access restrictions on tobacco use prevalence may be limited by the ease by which youth access cigarettes through social sources and some retailers (61-63). Given that compliance rates may be an inaccurate measure of youths' ability to purchase cigarettes, and a threshold level of compliance has yet to be identified to be effective at reducing tobacco access due to social sources of tobacco, consideration of current compliance testing protocols is required (64).

More accurate indicators of retailer compliance may be attained using a revised compliance protocol which uses young tobacco users as the test shopper. This allows test tobacco users to behave in a manner consistent with their normal behaviour when trying to purchase tobacco products illegally (65-67). Evidence also suggests store clerks may change their behaviour (68) and warn other retailers if they are aware testing is occurring (69). As such, there may be benefit to performing all compliance tests in secret (64).

Youth who rely solely on social sources of tobacco products tend to smoke less than those who access cigarettes through retail sources (70), and intensity of tobacco use may be partially related to having the greatest access to cigarettes (71). Enhanced protocols will reduce youth access to tobacco through retail sources, and as such, lead to reduced access through social sources.

The Ontario context

There is evidence to suggest current test protocols may not be capturing the true proportion of Ontario vendors who do not sell tobacco products to youth under the age of 19 years. Evaluation findings indicate 90% of Ontario vendors were in compliance with the ban on sales to youth, and 78% with the requirement to request identification (72). However, among underage smoking youth, 41% of daily smokers and 36% of non-daily smokers report that they access cigarettes through retail sources (73). These findings are supported by evaluation data from Ontario Tobacco Enforcement Officers (TEOs). During interviews, the majority of TEOs agreed that the compliance-check protocol does not accurately capture vendor non-compliance. They reported the protocol was not realistic enough to capture vendor non-compliance since test shoppers are unable to lie about their age, they are strangers to store clerks, and sometimes the test shopper does not fit in with the area's ethnic culture (74).

Recommendation

Retail Access and Compliance

[5.8] Implement revised and more rigorous (realistic) compliance protocols with tobacco retailers regarding sales to underage consumers.

Cessation for youth and young adults

Evidence to guide action

Early research on tobacco cessation efforts mainly focused on adults with an emphasis on regular daily smokers **(75)**. Although limited, evidence is emerging regarding effective interventions to enable youth and young adults to quit tobacco use. The majority of youth and young adults intend to quit using tobacco, but many are neither aware of nor interested in existing cessation supports. Additionally, services and interventions from health professionals are not often provided to youth and young adult smokers **(76,77)**.

The Ontario context

As described in Chapter 7 – Cessation, the proportion of youth smokers who tried to quit in the past 12 months has declined since 1999. The reasons for this trend are unclear. It may be that youth do not identify themselves as smokers needing assistance, or they perceive cessation services to be unavailable.

An OTRU report examined the extent to which Ontario's current smoking-cessation system meets the needs of young male smokers aged 19 to 29 years of age **(78)**. Evaluation findings suggest the current cessation system reaches less than 3% of young adult male smokers each year, and despite a desire to quit, young adult males make limited use of existing services to help them quit or reduce their tobacco use.

An integrated and coordinated smoking cessation system is required to serve the needs of youth and young adults (see Chapter 7 – Cessation); learning systems (SFO-SAC Recommendation 5.7) will help to identify cessation support requirements in various school and community settings. Focused services among professionals, including physicians, pharmacists, dentists, social workers and counsellors, are required to asses and refer youth and young adults to appropriate cessation interventions.

Recommendation

Cessation Assessment and Early Intervention

[5.9] Ensure smoking status is assessed and cessation services are provided in all settings (e.g., social, school and health care) providing services to youth and young adults.

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CHAPTER 6

Protection from Tobacco Smoke and Social Exposure to Tobacco Use

Abstract

No safe level of exposure to tobacco smoke has been identified. Creating tobacco-free environments is the primary path for achieving full protection from exposure to tobacco. A tobacco-free environment is one where individuals are protected from both physical and social exposure to tobacco products. Smoke-free policy interventions are effective mechanisms to reduce exposure to tobacco smoke, prevent initiation of smoking, encourage cessation, support recent quitters and contribute to denormalization of tobacco use. The chapter describes the settings where Ontarians continue to be at risk of tobacco smoke exposure and outlines the evidence available to support interventions to eliminate exposure.

Goal: To protect Ontarians from all physical and social exposure to tobacco products.

Methods

Evidence to guide development of this chapter was gathered from the published and grey literature.

- Published literature – Searched Medline for reviews published from 1999 to present:
  - Search terms included, but were not limited to: "tobacco smoke pollution" and "public policy"
  - Other searches addressed specific policies or exposure issues (e.g., third hand smoke)
  - Recent references were identified by scanning literature reviews and reference lists and regular monitoring of Globalink – Medical Journal Update
- Seminal reports by credible sources:
  - International Association for Research on Cancer Handbooks of Cancer Prevention – Tobacco Control – Evaluating the Effectiveness of Smoke-free Policies
  - Institute of Medicine – Ending the Tobacco Problem
  - US Centers for Disease Control and Prevention – Best Practices for Comprehensive Tobacco Control
- SAC and work group members made suggestions and provided citations based on knowledge of the literature. Examples of references and reference sources included:
  - Grant applications – syntheses of recent literature
  - Key articles upon identified by work group members
  - Program publications and evaluation reports (e.g., annual reports — Leave the Pack Behind)
- Internet Resources:
  - Scan of the Ontario Tobacco Research Unit (OTRU) website (http://www.otru.org/) for relevant science-based reports (e.g., Updates, Special Reports, Monitoring Reports), and other resources (Current Abstracts on Tobacco Control, Reading Lists, OTRU Library, OTRU Glossary of Tobacco Control)

- Specific web sites identified by work group members (e.g., Non-Smokers' Rights Association – http://www.nsra-adnf.ca/cms/; Smoke-free Housing Ontario http://www.smokefreehousingon.ca/sfho/index.html)

Introduction

Creating tobacco-free environments is the primary path for achieving protection from exposure to tobacco. A tobacco-free environment is one where individuals are protected from both physical and social exposure to tobacco products. Physical exposure includes all tobacco smoke (also referred to as secondhand smoke (SHS), passive smoke or environmental tobacco smoke), all smoke and other gases, chemicals and heavy metals that persist after tobacco products are extinguished ("third hand smoke"), and any associated tobacco pollution (e.g., unlit cigarettes, butts and packages). Physical exposure adversely affects the health of children and adults and is a cause of several diseases (1,2). Social exposure includes the visual and sensory cues associated with the use of tobacco products. Elimination of social exposure may prevent initiation and relapse, reduce maintenance of tobacco use and motivate tobacco users to quit (3,4).

Why Address Exposure to Tobacco Smoke?

Physical exposure to tobacco smoke causes premature death and disease

There is no safe level of exposure to secondhand smoke (1). All exposure to tobacco smoke is harmful and should be eliminated (5). Over the past three decades, a substantial body of research has confirmed that exposure to tobacco smoke among children and adults causes a range of adverse health effects (see Table 1.1 in Chapter 1), including premature death and disease (1,2,6).

Exposure to second hand smoke among adults is associated with several types of cancer, respiratory illness and heart disease (1-3,6). The International Association for Research on Cancer estimated that involuntary exposure increases the risk of an acute coronary event by 25% to 35% (6,7).

Tobacco smoke exposure is a cause of several cancers. The Canadian Expert Panel on Tobacco Smoke and Breast Cancer Risk concluded that such exposure is "consistent with causality" regarding breast cancer in younger, primarily premenopausal women who have never smoked (7). Meta-analyses conducted by the California Environmental Protection Agency and the US Surgeon General indicate that a 60% to 70% increase in breast cancer risk among younger/primarily premenopausal women who had never smoked was associated with regular long-term exposure to tobacco smoke (7).

Estimates suggest that for every eight smokers who die from smoking, one nonsmoker dies from tobacco smoke exposure (8) which translated to the Canadian population would be approximately 4,400 deaths. These estimates do not include tobacco-attributable causes of death, such as breast cancer, which were confirmed more recently.

Historically, exposure to secondhand smoke was assumed to be harmful only indoors during active smoking. Recent research indicates that outdoor levels of tobacco smoke within one to two metres of a lit cigarette, can be as high as indoors (9), and that by-products of smoking that remain when active smoking ceases are potentially harmful as well. (See Third hand smoke below).

Physical and social exposure to tobacco smoke harms children and youth

Children and youth face greater risks from exposure to tobacco smoke than adults, both in terms of the health effects of physical exposure and the behavioural influence of social exposure. Children are smaller and have higher respiration rates than adults, and their lungs are still developing, all of which increase the severity of current exposure and the duration of their lifetime exposure. Children and youth regularly exposed to tobacco smoke are at increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, middle-ear infections, more severe asthma, respiratory symptoms and decreased lung function (1,2,10). Children whose parents smoke are also at risk for cognitive impairment and deficits in math and visio-spatial reasoning and miss more days of school because of illness (1). Recent evidence indicates the effects of secondhand smoke exposure in childhood persist into adulthood. Children regularly exposed to tobacco smoke at home are more likely to develop early emphysema in adulthood (11) and may be at increased risk of coronary disease (12) (see Table 1.1 in Chapter 1.)

Exposure to SHS adversely affects fetal growth and development. A recent systematic review and meta-analysis examining the effect of maternal secondhand smoke exposure on birth outcomes concluded that women exposed to tobacco smoke have increased risk of delivering infants with lower birth weight, congenital anomalies and smaller head circumferences (13). The California Air Resources Board concluded that exposure to tobacco smoke is causally associated with low birth weight, decreases in birth weight and pre-term delivery. There is suggestive evidence of an association between exposure to secondhand smoke and spontaneous abortion, intrauterine growth retardation, adverse impact on cognition and behaviour, decreased pulmonary function growth and allergic sensitization (2).

Why Address Exposure to Tobacco Smoke?

Physical exposure to tobacco smoke causes premature death and disease

Physical and social exposure to tobacco smoke harms children and youth

Social cognitive theory (14) and social ecological theory (15) suggest that modeling of social behaviour is an important mechanism for social learning. Friends and family members who smoke influence behaviour by providing social reinforcement and by modelling the outcomes associated with the behaviour. Thus, children and youth exposed to smoking are not only at risk for adverse health effects, but are also at increased risk for tobacco use. The theory is confirmed by evidence. Students surrounded by smoking friends and family are more likely to take up smoking (10,16,17).

Why Address Exposure to Tobacco Smoke?

Physical and social exposure to tobacco smoke harms children and youth

Emerging risks – water-pipe tobacco smoking and third hand smoke

A recent study of second hand smoke exposure among British children between 1996 and 2006 concluded that SHS exposure is highest in nonsmoking children when one or both parents smoke, when children are cared for by caregivers who smoke and when smoking is allowed in the home **(18)**. The exposure of children and adolescents to tobacco smoke raises concerns about equity, as children and youth are generally not able to avoid these risks on their own. As smoking is more prevalent among those with lower socioeconomic status, children in these groups are at greater risk of starting to smoke and acquiring tobacco-attributable diseases due to physical and social exposure to tobacco use.

Social exposure is pervasive through tobacco imagery used in movies and films. There is substantial evidence that the amount of exposure to tobacco use seen on screen is associated with the likelihood of tobacco use **(19)**. In 2008, the US National Cancer Institute concluded that a causal relationship exists between exposure to depictions of smoking in the movies and youth smoking initiation **(19)**.Seeing tobacco use in movies also normalizes tobacco use behaviour, making it appear more acceptable to young viewers. (Additional evidence and interventions to address tobacco imagery in movies are described in Chapter 5.)

The evidence presented highlights the importance of eliminating tobacco smoke exposure in the home to protect children from adverse health effects of secondhand smoke and from the associated social exposure.

Emerging risks – water-pipe tobacco smoking and third hand smoke

Water-pipe tobacco smoking (hookah, narghile, shisha)

Among users of water-pipe tobacco, there is a widespread but unsubstantiated belief that water-pipe smoking is relatively safe **(20)**. However, there is good evidence that water-pipe smoking poses the same hazards as cigarette smoke, and that water-pipe tobacco should be included in public smoking bans. Water-pipe smoke contains an abundance of carcinogens and other products that cause cardiovascular disease and addiction **(21)**. During a typical one-hour water-pipe session, a water-pipe smoker may generate ambient carcinogens and toxicants equivalent to two to ten cigarette smokers **(22)**. Physicians should advise their patients that water-pipe tobacco smoking exposes them and others in their environment to many of the same toxins as cigarette smoking, and that the two methods of smoking tobacco likely share the same health risks **(23)**.

In Ontario, current product identification related to water-pipe smoking renders enforcement of the *Smoke-Free Ontario Act (SFOA)* and other protective legislation very difficult. Distinguishing between herbal products and tobacco products being sold and used in water-pipe smoking requires laboratory testing in the absence of product labelling and regulations (email communication: McDonald, C., Tobacco Control Supervisor, Ottawa Public Health, March 19, 2010). However, herbal and other “natural” products create similar air quality hazards.

Third hand smoke

Third hand smoke refers to the products of tobacco smoking that persist in the environment after the cigarette or other tobacco product is extinguished. The remaining substances can persist at hazardous levels for at least five hours and much longer at lower levels **(2)**. Heavy metals such as cadmium and lead stick to carpets, flooring, clothing and hands. Particles attach themselves to walls, drapes, furniture, carpets and clothing after active smoking ends, and form new carcinogens (tobacco- specific nitrosamines) when nicotine combines with ambient nitrous acid **(2,24,25)**.

Smoking tobacco products when children or other nonsmokers are not present is not protective. Exposure to third hand smoke may increase over time. Re-emission of previously absorbed organic compounds can increase exposures to toxic compounds for a nonsmoker who specifically avoids the smoking area while active smoking is occurring but occupies the area when smoking has stopped **(26)**. Application of the precautionary principle suggests that long-term exposure to lower levels of third hand smoke should be avoided.

The Ontario Context

Ontario has a history of progressive legislation, both municipally and provincially, regarding the creation of smoke-free environments following community action on protection issues. However, many Ontarians continue to be exposed to tobacco smoke and cues for smoking. The following provides a summary of the historical and current situation for protection initiatives in Ontario, including provincial and municipal legislation, enforcement and compliance, and public attitudes.

Key indicators and trends

Self-reports of exposure

OTRU surveillance and monitoring reports provide evidence for decreased exposure to second hand smoke over time in many, but not all settings (**www.otru.org**). The following provides information on self-reported exposure to tobacco smoke.

Between 2005 and 2008, combined indoor and outdoor exposure to second hand smoke among workers aged 15 years and older was stable at 31% in 2005 and 30% in 2008. In 2008, 8% of adult workers reported that they were exposed to second hand smoke indoors at work. Blue-collar workers had a significantly higher level of total exposure at work compared to other occupational groups (46% reported exposure compared to 27% of white-collar and 27% of sales and service workers). While indoor exposure has declined substantially, blue-collar workers and possibly outdoor workers continue to experience higher levels of exposure. In the year following implementation of the *SFOA,* a substantial proportion of patrons of restaurants (48%) and bars (74%) continued to be exposed to tobacco smoke on outdoor patios.

> *In 2008, 53% of Ontarians were exposed to tobacco smoke at building entrances, unchanged in recent years, and 56% reported exposure outdoors on sidewalks and in parks* ***(27).***

In 2008, 6% of nonsmoking Ontarians aged 12 years and older were exposed to tobacco smoke in their own homes every day or almost every day **(27)**, and 18% of Ontarians reported noticing secondhand smoke entering their homes from an external source **(28)**. Children continue to be exposed to tobacco smoke in the home. In 2008, 3% of all children under the age of 12 were regularly exposed to tobacco smoke at home in Ontario compared to 6%

across Canada (29). While this is lower than in other provinces, it still represents many thousands of children exposed to harm.

Public attitudes and opinions

Public support for smoking restrictions across various settings is strong in Ontario. In 2009, most Ontario adults supported bans on smoking in vehicles with children (93%) and in homes with children (80%), and 84% believed smoking should not be allowed inside multi-unit dwellings with shared ventilation (27). At least half of Ontario adults supported banning smoking on sidewalks (50%) and in parks and on beaches (59%) (27). In addition to support for legislation, Ontarians are increasingly implementing voluntary policies in their homes. In 2008, 86% of Canadians aged 15 and over who were surveyed in the Canadian Tobacco Use Monitoring Survey (CTUMS) reported living in a household where smoking is not allowed in the home. This compares favourably to 2005 CTUMS results, where only 82% of respondents reported living in households with smoking bans (data prepared through the Tobacco Informatics Monitoring System).

Legislation

The *Smoke-Free Ontario Act (SFOA)* protects Ontarians from exposure to tobacco smoke in many venues, and additional protection is provided by various municipal bylaws.

Smoke-Free Ontario Act

Effective May 31, 2006, the *SFOA* prohibits smoking in enclosed workplaces and public places, and bans the display of tobacco products prior to purchase. The law includes a ban on smoking within nine metres of entrances and exits to health care facilities, common areas of multi-unit dwellings and partially enclosed restaurant and bar patios. Effective January 21, 2009, an amendment to the *SFOA* prohibits smoking in motor vehicles when children under 16 years of age are present.

Surveillance and monitoring data indicate high compliance with the *SFOA.* One year following implementation, virtually all restaurants and bars were observed to be in full compliance with the ban on indoor smoking (30).

Municipal policies and bylaws

Numerous municipalities across Ontario have enabled new policies or passed bylaws that extend protection beyond that covered by the *SFOA.* Examples include prohibition of smoking on all restaurant and bar patios (*SFOA* does not apply to unenclosed patios), doorways, windows and air intakes beyond hospital settings, playgrounds, parks and other outdoor settings. For example, under a new policy enabled in 2010, all new leases signed by Waterloo Region Housing (not-for profit housing) required that all buildings and properties be 100% smoke-free and banned outdoor smoking within five metres from any windows, entrances or exits to the building or unit (31). In Woodstock, the Woodstock Smoke-free Outdoor Spaces Bylaw, effective September 1, 2008, restricts or bans smoking in seven different outdoor environments, including downtown sidewalk

cafés, city-owned parks and recreational fields, municipal building entrances and entrances to private buildings that elect to be listed, areas around transit stops and at outdoor special events such as music festivals (32). Additional information regarding local protection initiatives is documented in the Compendium of Smoke-free Workplace and Public Place By-Laws (33).

Protection from Physical and Social Exposure – Intervention Areas

Protection interventions — media, policy and programs — interact synergistically. Protection from physical and social exposure to tobacco products requires integrated prevention, cessation and protection strategies (see Figure 2.1 in Chapter 2.) The following sections present evidence to guide action to fully protect Ontarians from physical and social exposure to tobacco use. Areas for intervention include:

- Policy interventions – legislation
- Implementation of mass media strategies
- Social action and engagement
- Enforcement of legislation
- Evaluation and monitoring
- Involvement of health professionals

Logic models (see Appendix B) describe the possible interaction and contribution of interventions to achieving the protection goal and overall goal of comprehensive tobacco control (CTC) in Ontario.

Smoke-free policy interventions

Evidence to guide action – Comprehensive smoke-free policies

Much research has examined the effect of smoking bans and restrictions on tobacco use (1-3,34,35). Based on strong evidence of effectiveness in reducing exposure to SHS, the US Task Force on Community Preventive Services recommends smoking bans and restrictions, either alone or as part of multi-component community or workplace interventions. Smoke-free policy interventions protect nonsmokers, especially children, from physical and social exposure to tobacco, and also protect smokers from secondhand smoke that adds to their primary exposure.

Smoke-free policies reduce exposure: Substantial reductions in exposure to tobacco smoke result from legislation to restrict smoking in the workplace (3), and complete bans are most effective (36). Studies of legislation prohibiting smoking in virtually all indoor workplaces consistently demonstrate reduced exposure to SHS by 80% to 90%, even in high-risk settings such as hospitality venues (36). Indoor exposure can still result from smoke that drifts in from outdoor patios through doorways, windows and vents, and from toxic emissions from clothing contaminated by tobacco smoke. Without outdoor bans on adjacent patios, entrances and sidewalks, indoor smoke-free workplace laws reduce, but do not eliminate risks associated with tobacco smoke. This is particularly true for bars, restaurants and similar settings where staff and patrons are exposed outdoors to harmful levels of tobacco smoke (36).

Public laws that eliminate or greatly reduce tobacco smoke exposure also discourage smoking in the home. This may result from public education that accompanies such laws and contributes to increased awareness of the harmful effects of tobacco smoke in all settings. Evidence from the International Tobacco Control Four-Country Survey demonstrates that smoke-free homes are becoming more prevalent, and smoke-free public places facilitate implementation of smoke-free environments in homes with smokers (37). This evidence suggests that supportive public attitudes are likely to contribute to the adoption of voluntary control measures (e.g., smoke-free homes and, in most jurisdictions, also cars) and compliance by individuals and families (37).

Protection from Physical and Social Exposure – Intervention Areas

Smoke-free policy interventions

Reduced exposure is also associated with short-term improvements to health. In a review of the impact of smoke-free legislation on population health, the International Association for Research on Cancer found that wide-ranging bans on smoking in the workplace are followed by 10% to 20% reductions in hospital admissions for acute coronary events in the first year post-ban and concluded, with a high degree of confidence, that a substantial reduction in tobacco smoke exposure reduces rates of heart disease (3). Recent evidence also demonstrates reductions in hospital admissions rates due to respiratory conditions following implementation of smoke-free policies in restaurants (38).

Smoke-free policies support recent quitters: Policies to reduce environmental and social exposure to tobacco use also support recent quitters by reducing cues for smoking and increasing their likelihood of quitting permanently (39).

Smoke-free policies reduce consumption among continuing smokers, increase smoking-cessation attempts, increase the number of smokers who successfully quit and reduce the prevalence of tobacco use among workers (34,35,40).

It is difficult to isolate the effect of smoking restrictions on smoking behaviour, as many policies are implemented in the context of comprehensive tobacco control initiatives. When smoking restrictions are part of such programs, significant declines in smoking behaviour are observed, although not all of the decline may be attributed to smoking policies. However, in locations with multiple tobacco control efforts including smoking restrictions, significant declines in prevalence and consumption for both the short- and long-term are consistently observed following program implementation (3,35). Correlational studies indicate an association between the strength and scope of laws that restrict smoking in public places and workplaces and reduced tobacco use by youth. (See also Chapter 1.)

Smoking policies that ban smoking at home and at work are associated with a reduced likelihood of smokers being in the pre-contemplative stage of change with respect to stopping smoking and an increased likelihood of being in the later stages. Smokers who reported recent changes to their home or workplace policies were more likely to quit smoking over the subsequent two years compared to those who were not subject to restrictions on smoking at home or at work (39,41).

Smoke-free policies also contribute to changing social norms. For example, outdoor bans may discourage smoking behaviour by making it more difficult for tobacco users to find a place to smoke or by preventing children from associating smoking with enjoyable outdoor activities (9).

Evidence to guide action – Comprehensive legislation

Restricting legislation to indoor public spaces and workplaces is insufficient to protect Ontarians from exposure to tobacco smoke. Outdoor smoking can be a substantial source of physical exposure and in some cases outdoor exposure may be as high as indoor exposure (9). The exposure attributable to outdoor smoking may be quite elevated during a meal at an outdoor establishment or while waiting on a sidewalk or in some other public area where there is active smoking and people are close together (9). Average smoke particle levels near active sources of emissions (i.e., smokers) over the course of one or more cigarettes can be comparable to average well-mixed indoor tobacco smoke particle levels observed in living rooms or bedrooms during smoking. Thus, outdoor restaurant and bar workers who spend a significant portion of their time within a few feet of outdoor smokers

are likely to experience substantial exposure over the course of a day, likely exceeding the US Environmental Protection Agency 24-hour health standard for fine particles (9,36).

Building entrances and exits are also a significant source of physical and social exposure to tobacco smoke. Studies of the average levels of tobacco smoke outside building entrances indicate high levels of smoke particles compared to background levels. In one study, maximum outdoor levels of tobacco smoke were as high as 496 µg/m^3 when smoking was present (42). This measure corresponds to an Air Quality Index (AQI) of more than 1000 which is ten times the level considered acceptable (AQI = 100) averaged over 24 hours (43). In addition, smoking at entrances was identified as a problem by both nonsmokers and smokers.

Tobacco smoke pollution is also a problem experienced by those who live in multi-unit dwellings (MUDs). Nonsmokers are at risk of exposure in their homes due to tobacco smoke seeping through shared walls, ventilation systems, doors and windows. Smoke may also drift between units through a neighbour's patio or balcony, through open windows or doors, electrical outlets, cable or phone jacks, ceiling fixtures, cracks and gaps around sinks, plumbing, windows, doors, floors, walls and ceilings, and through the building's ventilation system (44).

Internationally and municipally across Ontario, outdoor smoking restrictions cover such settings as parks, beaches, bus stops, partly enclosed streets, grounds of health care facilities, sports stadiums and grounds, university campuses and within specific distances from entrances to public buildings (3).

Protection from Physical and Social Exposure – Intervention Areas

Smoke-free policy interventions

Evidence to guide action – Public support for comprehensive smoke-free policies

Evidence from the International Association for Research on Cancer (IARC) indicates that the majority of both nonsmokers and smokers support some smoking restrictions, including those in hospitality settings. Additionally, there is no evidence of reduced public support after enactment of a smoke-free law in any setting (3).

The Ontario context

As described above, Ontarians continue to be exposed to tobacco smoke indoors and in outdoor spaces, including unenclosed restaurant and bar patios, MUDs, outdoor spaces, homes and vehicles. However, public opinion and municipal experience provide evidence and precedents to support stronger provincial legislation.

Restaurant bars and patios: The *SFOA* includes some coverage of patios. However, the regulatory provisions have been difficult to interpret and are open to some challenge. As a result, workers and patrons continue to be exposed to tobacco smoke on unenclosed patios. In 2008, 54% and 77% of restaurant and bar patrons were exposed to tobacco smoke respectively (27). Completely smoke-free patios have long existed in several provinces and some Ontario municipalities. Alberta, Yukon, Nova Scotia and Newfoundland and Labrador prohibit smoking on

Protection from Physical and Social Exposure – Intervention Areas

Smoke-free policy interventions

patios (45). In Ontario, Kingston, Thunder Bay, Woodstock, Brighton and some smaller communities have implemented municipal bylaws prohibiting smoking on unenclosed patios (33). In 2009, 80% of Ontario adults agreed that smoking should be banned from all restaurant and bar patios (27).

Multi-unit dwellings: Although the *SFOA* prohibits smoking in common areas of MUDs, it does not restrict tobacco use in individual units. Approximately 4.5 million Ontarians live in MUDs (46), and data from the Ontario Tobacco Survey (OTS) suggest one-quarter of those could be exposed to tobacco smoke from other units in the building. Of those surveyed, 28% of respondents who lived in MUDs reported noticing tobacco smoke entering their homes from an external source, and were more likely to experience this than those living in single-family dwellings (13%) (28).

Most Ontarians (84% in 2009) support complete bans on smoking in MUDs (27).

In addition to protecting the health of residents, there are many reasons to implement smoke-free policies in MUDs. Many tenants prefer a smoke-free environment (31,47) but landlords and managers may be unaware of tenants' concerns; few people lodge formal complaints, because they think nothing can be done about the problem. Other advantages of smoke-free housing include reductions in fire risk and reduced clean-up costs when tenants vacate.

Ontarians residing in social housing units in MUDs may be at particular risk of exposure, in many cases involuntarily. More than 400,000 Ontarians live in non-profit housing (48). Many residents belong to groups with higher risks associated with exposure (e.g., elderly, children or socially disadvantaged). Although it is difficult to quantify the degree to which multi-unit dwelling residents are exposed to tobacco smoke, it is important to consider that any exposure is harmful.

In response to tenants' complaints regarding exposure to tobacco smoke from neighbouring units, the Region of Waterloo implemented a smoke-free policy through Waterloo Regional Housing, effective April 1, 2010. The decision reflected legal considerations, health protection, feasibility of implementation and ensuring compliance, financial costs and benefits. Evaluation of the policy is planned to better understand the process of implementation and outcomes (31).

Outdoor spaces: The *SFOA* restricts tobacco use within nine metres of entrances to health-care facilities. However, the regulations do not protect Ontarians from exposure in other outdoor settings and spaces. Several municipalities in Ontario have bylaws prohibiting smoking in playgrounds, parks and other outdoor spaces (N = 19), at doorways, windows and air intakes to public buildings and transit shelters (N = 20), on beaches (N = 2) and on hospital grounds (N = 2) (33).

Furthermore, evidence from one municipality supports the feasibility and potential public acceptance of outdoor smoking restrictions. Evaluation of the City of Woodstock Outdoor Smoke-free Spaces Bylaw indicated that the majority of smokers (73%) and nonsmokers (92%) supported the bylaw one year after implementation and one third (33%) of smokers felt the bylaw helped them to reduce the number of cigarettes they smoke. The bylaw has had no impact on the way people use city facilities or businesses (32).

Hotels, motels, inns and bed and breakfasts: The *SFOA* protects hotel guests and staff from exposure to tobacco smoke in common areas. However, evidence presented above regarding smoke drift in MUDs and new research on third hand smoke suggests

that both patrons and staff are not fully protected from exposure to tobacco smoke when they are present in rooms after smoking has occurred.

The hotel industry has begun to recognize the importance of smoke-free environments to consumer satisfaction and to the health of their employees. Many hotels, including the Westin, Sheraton and Marriott chains, have 100% smoke-free indoor air policies (49), and Huron County implemented legislation in 2004 prohibiting smoking in rooms used for temporary accommodation such as hotel and motel rooms, bed and breakfast rooms and similar facilities (33). Effective July 2010, Wisconsin was the first US state to prohibit smoking in lodging establishments (e.g., hotels, bed and breakfasts, and tourist rooming houses) (50).

Vehicles that carry nonsmokers: Current Ontario legislation protects children under the age of 16 years from active smoking that occurs in vehicles. However, the *SFOA* does not protect adults and pregnant women and excludes protection from smoke residues and off-gassing for all children and adults. During active smoking, tobacco smoke reaches hazardous levels in vehicles, even under realistic ventilation conditions (51), and can be ten times more concentrated than the level considered unhealthy by the US Environmental Protection Agency (2).

Smoking in a vehicle contributes to the accumulation of third hand smoke. Evidence presented above indicates that restricting smoking in a vehicle to times when children or other nonsmokers are not present does not protect against third hand smoke exposure.

Recommendation

Smoke-free Policies

[6.1] Amend the *Smoke-Free Ontario Act* and Regulation to eliminate smoking of tobacco products and combustible water-pipe preparations in priority settings including:

[a] Unenclosed restaurant and bar patios (including nine metres from the perimeter of the patio).

[b] Not-for-profit multi-unit dwellings.

[c] Selected outdoor public places such as doorways to public and commercial buildings (within nine metres), transit shelters, provincially regulated parks and playgrounds, outdoor sports facilities, beaches, sidewalks and public events such as parades and outdoor entertainment venues.

[d] Hotels, motels, inns and bed and breakfasts.

[e] Vehicles that carry nonsmokers at any time.

Media interventions

Evidence to guide action

Effective media interventions can lead to protection from tobacco smoke exposure by:

- Preventing initiation
- Promoting and facilitating cessation
- Changing social norms related to tobacco use (e.g., smoking outside rather than in the home and voluntary policies)
- Stimulating public support for tobacco control interventions and creating a supportive climate for policy and program interventions in communities (1)

Protection from Physical and Social Exposure – Intervention Areas

Media interventions

Evaluations of state-wide media programs implemented in California, Massachusetts and Florida have demonstrated success in protecting the public from harmful exposure to tobacco smoke. (See additional information in Chapters 2, 4 and 5). Recent evidence from England suggests media campaigns are effective in leading to reduced exposure to tobacco smoke among children **(18)**. The authors examined average cotinine levels among nonsmoking children between 1996 and 2006. The largest decline was between 2005 and 2006, a time of increased public debate and public information campaigns about tobacco smoke, leading up to implementation of smoke-free legislation in public spaces.

Evidence from Kentucky demonstrates how media campaigns influence social norms, attitudes and behaviours to protect others from exposure to smoking. An evaluation of a Northern Kentucky media campaign examined the effectiveness of the campaign to increase adult smokers' willingness to protect children from exposure. The campaign raised awareness of the consequences of exposure and the investigators concluded that seeing or hearing the ads was significantly associated with intentions to smoke outside the home and to ask visitors to do the same **(52)**.

When smoke-free laws are accompanied by public education campaigns, there appears to be increased support for the smoke-free policy **(3)**. The Centers for Disease Control and Prevention (CDC) recommends implementation of strategic, culturally appropriate, and high-impact messages in sustained and adequately funded campaigns integrated into the overall tobacco control effort **(53)**.

The Ontario context

Anti-tobacco mass media campaigns have been implemented since 1999. However, the impact of media and social marketing campaigns in Ontario is not well-documented. For example, the extensive public media campaign before the implementation of the *SFOA* was not independently evaluated, so there was no way to attribute the high compliance with the Act to the campaign. Further, the budget for media interventions has been reduced over time.

Recommendation

Media and Social Marketing

[6.2] As part of a comprehensive tobacco control program, implement media and social marketing strategies that increase public awareness and knowledge of the health effects of exposure to secondhand smoke and social exposure to tobacco use, and that influence social norms supportive of tobacco-free living.

Smoke-free social action interventions

Evidence to guide action

State and community grassroots programs were identified as one of the most effective population-based approaches by the Centers for Disease Control and Prevention (CDC) Best Practices for Comprehensive Tobacco Control programs and Task Force on Community Preventive Services **(53)**. There is good evidence to demonstrate the effectiveness of many of the population-based approaches highly recommended by the Task Force on Community Preventive Services. The strongest evidence comes from studies in which specific strategies for smoking cessation and prevention are combined with efforts to mobilize communities and integrate these strategies into synergistic and multi-component efforts **(54)**.

The CDC recommends that comprehensive state-wide tobacco control programs combine and co-ordinate community-based interventions that focus on eliminating exposure to tobacco smoke. This is seen as a key strategy to produce durable changes in social norms and effect local and province-wide policy changes likely to have the greatest population impact. Other tobacco-related issues (e.g., eliminating waste from tobacco industry products) may also be addressed.

Multi-level social action strategies, such as the American Stop Smoking Intervention Study for Cancer Prevention (ASSIST), demonstrate the value of an approach that makes scientific expertise available to support the actions of state and local tobacco control coalitions — including government and non-government partners — to advance tobacco control policy and clean indoor-air policies **(55,56)**. The need for action on tobacco smoke exposure remains a high priority, as discussed in previous sections of this chapter.

The Ontario context

Ontario has a long history of tobacco control coalitions mobilizing action and policy change through local bylaws and voluntary administrative policy.

The *Tobacco Control Act* of 1994, as amended by the *SFOA,* specifically enables municipalities to pass local bylaws to control second-hand smoke.

The Ontario Campaign for Action on Tobacco, local coalitions, local public health agencies, and voluntary health agencies have worked together to advance tobacco control efforts over the past four decades. More recently, the Ministry of Health Promotion and Sport (MHPS) has funded regional and local coordinators and facilitated their coming together through Tobacco Control Area Networks (TCANs). These networks share information among themselves; coordinate annual action planning with the Ministry, resource centres and other partners; develop and implement interventions; and learn from their experiences. In addition, MHPS has provided funding through a Healthy Communities Fund to create a community of practice that is mobilizing local support and change for smoke-free sport and recreation facilities province-wide.

Scientific advice from OTRU and technical assistance from the Program Training and Consultation Centre support the development of local media and policy advocacy campaigns that target voluntary policy development. The Non-Smokers' Rights Association has been an active supporter of local voluntary policy development contributing to the smoke-free multi-unit dwellings movement. This builds on a long history of excellence in policy advocacy at international, national, provincial and local levels.

Such networks of practitioners, researchers, advocates and decision-makers enable innovative and immediate action on emerging issues. For example, waste products from tobacco (including discarded packaging and cigarette butts) are increasingly recognized as a pervasive problem and risk to the environment. Butts are often discarded on streets and carried through storm water drains to rivers, lakes, oceans and beaches. Cigarette filters are non-biodegradable. Heavy metals such as arsenic, nicotine and polyaromatic hydrocarbons from cigarette butts leach into the environment **(57)**.

*Many options are available to reduce the environmental impact of tobacco product waste, including developing biodegradable filters, increasing fines and penalties for littering, implementing smoke-free policies on beaches and near waterways, increasing the availability of cigarette receptacles and expanding public education **(58)**.*

Research and innovative community policies are required to understand the most effective combination, and to determine the impact of program and policy options and mechanisms to eliminate the toxicity and hazard to the environment.

An approach to address tobacco smoke exposure and social-norm change that integrates various elements into a coherent, progressive and continuously advancing protection strategy is needed. This would include overall public health strategy development (selecting strategic priorities and sites to target), social marketing strategy development (i.e., planned communication), scientific research, technical support to tobacco control networks and coalitions (and through them to policy makers), regional and local mobilization, aggressive paid and earned media activity, monitoring of performance, evaluation of interventions and continuous improvement of the strategy through repeated program cycles of activity.

Smoke-free compliance and enforcement

Evidence to guide action

Recommendation

Social Action

[6.3] Develop a province-wide program to enable implementation of grassroots local action initiatives (e.g., partnerships, community mobilization and innovative interventions) that address social norm change and protection from exposure to tobacco smoke.

Enforcement of and compliance with smoke-free laws minimizes physical and social exposure to tobacco use. Enforcement of smoke-free laws is required and is critical to establishing the credibility of new laws. Active and uniform enforcement must occur, at least until laws become self-enforcing **(59)**. However, there is limited published evidence regarding best practices for enforcement, monitoring compliance and the point at which laws become self-enforcing. Experience from other areas of law enforcement suggests that, after sustained compliance is achieved, there may be a need for periodic intensive enforcement campaigns to ensure compliance is maintained at high levels (e.g., the use of RIDE programs to discourage driving under the influence of alcohol, and seat-belt campaigns to encourage seat-belt use) **(60)**.

The Ontario context

Data from Ontario indicate that smoke-free legislation is effective in protecting the public, although protection is not complete, and there is room for improvement. Exposure to SHS in restaurants and bars has declined substantially since implementation of the *SFOA* in 2005. However, data also indicate increased exposure on restaurant and bar patios (see Figure 6.1) **(61)**. Prior to implementation of the *SFOA* in 2005, 22% of Ontario adults who visited a restaurant in the past month reported people smoking around them. In the year following implementation of the Act, 9% reported exposure to SHS and in 2008, only 3% reported exposure. Similarly, exposure in bars has significantly declined to 10% of respondents reporting exposure, compared to 42% prior to *SFOA* implementation.

Evaluation activities indicate high levels of compliance with the *SFOA.* Following implementation, a significant increase in compliance with the prohibition on indoor smoking in restaurants and bars between baseline (94% compliance) and at follow-up (99.9%) was observed **(30)**. Compliance with smoking bans on patios where the structure prohibited smoking was less at 62%. However, low levels of compliance on patios, compared to indoor spaces, may be due to confusion regarding which premises and which parts are covered by the current legislation.

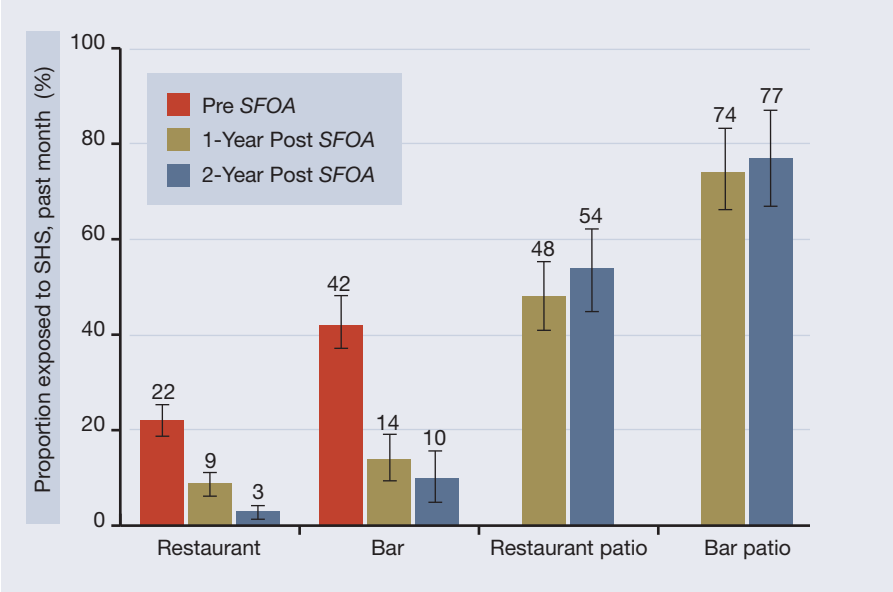
Enforcement of the Act is monitored by local public health units. A provincial database (Tobacco Inspection System – TIS) tracks data regarding the number and type of inspections, complaints, corrective actions taken and convictions. Preliminary unpublished data from a recent web-based survey suggest public health units conduct inspections of workplaces and public places in response to complaints only **(62)**.

Protection from Physical and Social Exposure – Intervention Areas

Smoke-free compliance and enforcement

Provincial resources have been devoted to enforcement of the Act and educating affected workplaces and public places about their responsibilities. A significant amount of activity was anticipated with the promotion of tobacco control policy, including education of the public and proprietors about existing legislation (bylaws and *SFOA*) and working with local coalitions to advance tobacco control policy that would restrict SHS and decrease tobacco use (particularly by youth).

FIGURE 6.1: Past-month exposure to secondhand smoke at restaurants and bars, 1 year before passage of the *SFOA* and 1 and 2 years after implementation, ages 18+



Source: Adapted from OTRU Monitoring and Evaluation Series Vol. 14/15, 2010 **(61)**.
Note: Vertical lines represent 95% confidence intervals. Numbers correspond to actual data represented by bar levels. The *Smoke-Free Ontario Act (SFOA)* was implemented May 31, 2006.

The MHPS, with the support of the Ontario Tobacco Research Unit, is currently exploring risk-based enforcement approaches designed to maximize the cost-effectiveness of enforcement efforts.

Recommendation

Smoke-free Compliance and Enforcement

[6.4] Continue to promote, enforce and monitor compliance with the *Smoke-Free Ontario Act.* Consider enforcement approaches to maximize compliance and enforcement activities by setting (e.g., schools, bars, etc.) and additional policy promotion.

Smoke-free learning system

Evidence to guide action

Surveillance and evaluation are an essential element of best practices in comprehensive tobacco control **(53)**. Such systems contribute to accountability and provide opportunity to document outcomes, guide program improvement and assess progress towards objectives and the relative effectiveness of innovative programs. Findings from monitoring and evaluation activities are also critical to maintaining public awareness and support for comprehensive tobacco control and identifying the tobacco industry's efforts to undermine protection policies **(59)**. As such, tobacco control evaluation and monitoring activities are integral to, and should not be seen as separate from, tobacco control strategies. Health Canada, the Centres for Disease Control and Prevention (CDC) and the World Health Organization (WHO) suggest allocating about 10% of all resources for this purpose **(63)**.

There are many important research and evaluation questions that remain unanswered. For example, tobacco control in Ontario would benefit by knowing the factors that contribute to the successful development of various smoke-free policies, including those discussed above (e.g., Region of Waterloo smoke-free housing policy, City of Woodstock outdoor smoke-free spaces bylaw). In addition, we need to understand the contribution of public education, policy advocacy, media communication and research to local policy change processes. While there is strong evidence to support the effectiveness of smoke-free policies in protecting nonsmokers from tobacco smoke exposure and in reducing tobacco use among workers **(1,3,35)**, there remains an opportunity to estimate and better understand both the independent and synergistic effects of smoke-free policies on various outcomes of interest (e.g., cessation, exposure and social norm change).

Other gaps in knowledge suggest a need for additional research and knowledge translation regarding:

- Population and subgroup estimates of exposure and associated risk, including second hand smoke and third hand smoke among, for example, low income, multi-unit dwelling (MUD) residents and cultural groups
- Accurate levels of exposure in outdoor environments (self-reports of exposure are likely to be underestimated)
- Public knowledge and understanding of the health consequences of tobacco smoke exposure

The Ontario context

The Ontario Tobacco Research Unit (OTRU) conducts comprehensive evaluation of the *SFOA,* including formative and outcome assessment of activities to enforce regulations pertaining to smoke-free spaces, youth access and restrictions on point-of-purchase promotion. An evaluation of the total display ban is ongoing and includes a process evaluation to inform decisions and guidelines, a targeted survey of smokers in the process of quitting and focus group interviews. Data from population surveys (e.g., Canadian Community Health Survey (CCHS), Canadian Tobacco Use Monitoring Survey (CTUMS), CAMH Monitor) are used to monitor Ontarians' behaviours and attitudes over time. The Performance Indicators Monitoring System (PIMS) tracks data at the local level. Evaluation and surveillance findings are communicated to the MHPS, Tobacco Control Area Networks (TCANs) and public health units.

The role that OTRU plays is complemented by activities of numerous health promotion resource centres, including the Smoking and Health Action Foundation (SHAF), Youth Advocacy Training Institute (YATI), Program Training and Consultation Centres (PTCC), and Training Enhancement in Applied Cessation Counselling and Health (TEACH). In addition, many players at all levels of the tobacco control system share an interest in strategic planning, implementation, evaluation, and management activities.

Recommendation

Learning System

[6.5] Continue to support research, surveillance, evaluation and monitoring of provincial and local initiatives, program and policy experiments related to protection from exposure to tobacco products and social norm change. Enhance the capacity to use findings to foster learning and innovation at the provincial, regional and local levels.

Health professionals

Evidence to guide action

There are lessons to be learned from health professional interventions to promote smoking cessation that can be applied to protection from tobacco smoke. Smoking cessation interventions are effective when delivered by a variety of health professionals (e.g., physicians, dentists and nurses) across a broad range of settings and situations (see Chapter 7). The Clinical Practice Guidelines for Treating Tobacco Use and Dependence recommend that clinicians and health care delivery systems institutionalize the consistent identification, documentation and treatment of every tobacco user in the health care setting and offer treatment to every patient **(64)**. However, these guidelines do not address the potential for a brief intervention by health professionals with their patients to encourage them to protect others in their environment from secondhand smoke exposure. New Guidelines under development by the Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT) will include such recommendations **(65)**.

Protection from Physical and Social Exposure – Intervention Areas

Health professionals

The theory of behaviour change and evidence from brief cessation interventions suggest there is potential for health care interventions to reduce exposure to tobacco smoke, although evidence at this point is inconclusive **(66)**. Health-professional organizations recognize the importance of such interventions and have highlighted the need for action in policy and position papers. In 2009, the American Academy of Pediatrics identified a role for pediatricians in reducing family tobacco use and secondhand smoke exposure. The policy statement recommends that pediatricians ask about and document tobacco use and tobacco smoke exposure at all clinical encounters, counsel children and parents about the harms of tobacco use and tobacco smoke exposure, advise all families to make their homes and cars smoke-free and urge users to quit **(67)**.

The Ontario context

The evidence pertaining to smoking cessation suggests that patients may be motivated to make quit attempts and seek additional assistance if guided by health professionals (see Chapter 7.) Thus, health professionals could motivate patients to take action to protect the health of their family members, friends, co-workers and the public. This area should be considered a priority for development and evaluation.

In 2004, the Ontario Medical Association (OMA) recommended that programs and training opportunities be created to enhance the ability of health professionals to prevent parents from exposing their children to second hand smoke. They argued that effective training programs across health disciplines would allow health professionals to provide brief interventions and enable opportunities to interact with parents and their children **(68)**.

Recommendation

Professional Development

[6.6] Develop, evaluate and implement guidelines, training programs and incentives to promote brief interventions by health professionals with their patients that aim to protect nonsmokers, especially children and pregnant women, from second-hand smoke.

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CHAPTER 7

Cessation

Abstract

Tobacco cessation is an essential strategy to reduce morbidity and mortality rapidly and cost effectively. Cessation can also be thought of as an outcome of comprehensive tobacco control. As an intervention, cessation is cost-effective at both population and clinical levels. Tobacco users in Ontario want to quit. Many will try and fail, while others will succeed. The evidence presented clearly demonstrates that cessation interventions improve their chances of quitting and staying tobacco-free. This chapter outlines the components of a comprehensive cessation system which if fully implemented, would enable tobacco users in Ontario, especially those who face a disproportionate amount of the burden, to access cessation services and remain engaged until they achieve complete abstinence.

Goal: To reduce the health and economic burden from tobacco industry products, at an individual and societal level, through cessation interventions.

Methods

The published literature was primarily searched using Medline for articles published between 1995 to present; this search used features such as “cited in” to identify related publications. Search terms included those relevant to the chapter sections, such as, “tobacco cessation.” Systematic and meta-reviews were sought regarding common cessation intervention areas. Common and within-site search engines were used to find public reports such as those from the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), provincial and federal government and other non-government organizations. Smoke-Free Ontario - Scientific Advisory Committee (SFO-SAC) members and work group participants provided search suggestions and citations based on expertise and knowledge of the published and grey literature. Institutional websites such as otru.org and camh.net were used to obtain information on issues associated with tobacco control in the Ontario context. The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT) was used for the Canadian adaptation of international smoking cessation guidelines in clinical settings.

Why Address Cessation?

A tobacco control strategy which does not include considerable investments in cessation is unlikely to attain any significant short term reduction in health burden or health care costs. Even if the uptake of tobacco use is immediately halted in Ontario, there would still be approximately 2.1 million smokers in Ontario who continue to accrue health consequences and ultimately increased health care costs in the short and long term. In a comprehensive tobacco control (CTC) strategy, and as described in this chapter, cessation interventions, including policy interventions, can rapidly reduce the smoking population and the related health and economic consequences.

Getting Ontarians to stop smoking will have health benefits at the individual and population levels

Every tobacco user can benefit from stopping smoking. There are immediate and long-term health benefits in a variety of life circumstances. For example, cessation reduces risk of heart disease **(1)** and is a significant secondary prevention intervention post-myocardial infarction **(2)**. The chances of having a heart attack begin to decrease after just one day of abstinence **(3)**. After one year of remaining smoke-free, the excess risk of having a heart attack is cut in half, relative to those who continue to smoke **(4)**. After 15 years of abstinence, the risk of heart disease is the same as someone who has never smoked **(4)**.

Quitting smoking also reduces respiratory infections such as pneumonia, chronic lung disease and post-operative complications **(3)**. For people who stop smoking at age 50, the risk of dying of lung cancer is reduced to about 6% or less than half that of a nonsmoker (16%); but, this risk is still much greater than for the nonsmoker, whose risk is less than 1% **(5)**. Therefore, although sustained cessation does not reduce the risk of lung cancer to that of a life-long nonsmoker, the risk is substantially less than for those continuing to smoke **(5,6)**. After ten years of cessation, the risk of lung cancer is 30% to 50% lower for former smokers than for continuing smokers **(7)**.

Other benefits of smoking cessation include:

- Former smokers are less likely to be admitted to hospital and those who are hospitalized are less likely to suffer medical and surgical complications and thus have shorter stays **(8)**.
- Cessation reduces the incidence of post-operative complications that smokers usually face due to higher incidence of tissue and wound healing complications and effects from anaesthesia **(9-12)**.
- Quitting smoking offers enormous short-term health and economic benefits for women of child bearing age and their partners. There are additional benefits to the fetus if a pregnant smoker stops smoking **(13)**.
- Cessation benefits nonsmokers, especially children, who suffer higher rates of asthma, respiratory infections, and sick days with exposure to second-hand smoke. Cessation also links to prevention efforts: When parents quit smoking, their children are half as likely to start and among current smokers, twice as likely to try to quit **(14)**.
- A reduction in the cumulative risk of death from lung cancer is proportional to or dependent on the age that a smoker stops; the earlier in life cessation is achieved, the greater the benefits. Further, it has been well documented that smokers who quit smoking before age 50 cut in half their risk of dying in the next 15 years **(3)**.
- A conservative estimate shows that reductions in smoking over the last half century have accounted for about 40% of the decrease in overall male cancer deaths in men in the US during 1991 to 2003 **(15)**.

The importance of policy in cessation

There are many reasons why reducing tobacco consumption or quitting altogether can be challenging for an individual. Factors such as response to nicotine, knowledge, attitudes and experience play an important role; however, the attitudes and practices of social networks, environmental cues, product availability, and other interpersonal and extra-personal factors are also profoundly influential.

Policy interventions can complement individual treatment by altering these intrapersonal, interpersonal, and extra-personal factors. For instance, it is well documented that

cigarette price, as determined by taxation and minimum pricing policy, is a major driver in reducing tobacco consumption, increasing intent to quit, and ultimately leading to higher rates of cessation (16-21). Policies such as smoke-free places and increasing the number of smoke-free homes can reduce the social norm of tobacco use, reduce consumption, increase attempts to quit and improve the odds of remaining smoke free (22-25). Health warnings on tobacco products provide a means of educating tobacco users, directing them to cessation resources, increasing quit attempts, and reducing relapse (26-28).

Polices are broad reaching and highly cost effective. For example, an increase in taxation applies to all sales of tobacco (with some exemptions) while increasing government revenue. For general populations, clean indoor air polices may be more cost effective than the provision of medication (29).

Helping smokers to quit has immediate health benefits and is cost-effective

Providing cessation interventions is a proven cost-effective clinical intervention that is widely recognised in the scientific literature and by national comprehensive tobacco control strategies (30-37). However, what is less recognised is that cessation can have significant health benefits and cost savings at the population level. For example, some authors have argued that increasing the reach of cessation interventions can reduce tobacco-related deaths by as much as 60% over the next 50 years with detectable reductions in morbidity and mortality in the short term (38). Research also highlights the cost-effectiveness of cessation programs that target pre-surgical smokers and the considerable short-term savings to the health care system from such interventions (39-41).

In a systematic assessment of the value of clinical preventive services conducted by the US Preventive Services Task Force, smoking cessation treatment for adults was one of the highest-ranked services in terms of its cost-effectiveness and its potential to reduce the burden of disease (9). A more recent review of existing clinical practice guidelines and literature by CAN-ADAPTT reached a similar conclusion (42).

Most smoking cessation interventions cost less per year of life saved than most routine preventive healthcare interventions, including screening for hypertension, annual mammography and cervical cancer screening (43). Moreover, nicotine replacement therapy (patch and gum) is recognised by the World Health Organization (WHO) as one of the minimum drugs necessary for a basic health care system (44).

As well, due to discounting, investments used to obtain a given benefit next year can be more cost-effective than that same level of investment spent to obtain an identical benefit 30 years from now (9). Thus, interventions that successfully assist both youth and adult smokers in quitting can produce a large and

Why Address Cessation?

The importance of policy in cessation

Helping smokers to quit has immediate health benefits and is cost-effective

rapid public health and health care system benefit, including reduced length of stay and wait times. A recent study modeled the impact of four effective tobacco cessation interventions (i.e. price increases, behavioural change, nicotine replacement therapy (NRT), and physician advice to quit) and estimated the net savings of 33,307 acute care hospital days, or $37 million dollars, annually for the Canadian health care system **(45)**.

It should be noted that some case-series and non-experimental studies have reported increased health care utilization costs in the first year after quitting smoking; this is attributable to the fact that many people quit smoking because of pre-existing health conditions or a serious health scare which account for the increases in services utilization **(9)**. However, these same studies demonstrate that smokers who quit do have significantly reduced healthcare utilization within a few years of follow-up (due to the gradual and incremental reduction in smoking-related morbidity and mortality), relative to comparable smokers who continue to smoke **(9,46,47)**.

Economic benefits of smoking cessation in publicly funded systems

Smoking cessation can cut total health care expenditures.

At a minimum, reduction of smoking-associated need for health care services has enormous potential to free up health services resources and ameliorate other challenges such as waiting times and availability of services to address other health problems.

For example, data from Nova Scotia indicate that a light, moderate or heavy smoker who quits between the ages of 40 and 44 may reduce their healthcare costs by $25,842, $45,118 or $79,300, respectively **(48)**.

The province of Quebec offers the most comprehensive coverage of smoking cessation medications. The *Régie de l'assurance Maladie du Québec (RAMQ)* has reimbursed smoking cessation prescription therapies (nicotine patches, nicotine gum and bupropion) since the last quarter of 2000. They were also the first province to pay for varenicline shortly after its release on the Canadian market.

The *RAMQ* reimburses smoking cessation pharmacotherapies for a maximum of 12 consecutive weeks per year. Analyses indicate that the *RAMQ* spent approximately $66 million on smoking cessation therapies over these six years **(49)**. Moreover, a recent economic analysis found that each percentage-point decrease in smoking prevalence would save $114.3 million. This translates into savings of $686 million to Quebec society, including $246 million for the Quebec health care system alone, between 2000 and 2005 **(50)**. The program was also effective at reaching financially disadvantaged tobacco users **(51)**.

Reducing disparity

There is evidence that socioeconomic group disparities in health outcomes are largely explained by differences in smoking rates; this is especially true for cancers related to tobacco use **(52,53)**. In addition, widespread smoking cessation could eventually halve the absolute differences between these social strata in the risk of premature death **(54)**. Since equity is an objective of government health policy, cessation system development would contribute toward achieving improved health for all.

Missed opportunity and lost lives due to limited access to evidence-based services

Most tobacco users in Ontario want to quit, have tried to quit in the past and will try to quit within next year. However, among those who attempt to quit, only a small proportion succeed over the long term without repeated attempts. Evidence demonstrates that formal cessation supports significantly increase the odds of success for a given attempt. Moreover, while recent policy interventions in Ontario have been critical in creating an environment where quitting is directly or indirectly encouraged and facilitated, more work needs to be done.

Helping more tobacco users to quit will reduce premature mortality and morbidity related to tobacco use and the associated health care costs. However, the current cessation programs in Ontario reach only a very small proportion of the estimated 2.1 million smokers. In other jurisdictions, much higher proportions of smokers are reached through formal population-level or clinical cessation supports, with these methods often complementing each other and resulting in decreased consumption and prevalence.

A comprehensive cessation strategy is a key pillar of many tobacco control strategies **(31,32,55)**. Providing tobacco-use cessation interventions is cost-effective; the alternative is for Ontarians to continue to accrue significant health consequences and health care costs due to tobacco use.

The Ontario Context

Tobacco use in Ontario

The most recent assessment of tobacco use in Ontario comes from the recently released Ontario Tobacco Research Unit's (OTRU) 2010 reports, Indicators of Smoke-Free Ontario Progress **(56)** and Evidence to Inform Smoking Cessation Policymaking in Ontario **(57)**. The following section provides highlights from that report. Readers are encouraged to review the report for a more in-depth understanding of the tobacco-use situation in Ontario (the report provides information on cessation behaviour as well). (Additional information on tobacco use is available in Chapter 8).

Past-30-day cigarette smoking declined from 23% in 2000/01 to 19% in 2007/08 (among those 12 years or over). For 2007/08, this is approximately equal to 2.1 million cigarette smokers. The Ontario rate is significantly lower than the national average of 20%, and women smoked at a significantly lower rate than men (16% vs. 22% respectively). There are also significant variations in smoking rates across Ontario. York Region Health Services reported the lowest current smokers with 15% while Porcupine Health Unit and Oxford Public Health reported the highest with 29%. Toronto Public Health, with 19% prevalence, has the highest number of current smokers with an estimated 413,300 persons, or about 1 in 5 of all smokers in Ontario.

The population groups with the highest prevalence of current smoking are those with moderate and problem gamblers (45%), self-identified Aboriginals (40%), 25 to 29-year-old men (37%), individuals whose first language

learned and understood was English and French (35%), and trade workers (34%). Population groups with the largest number of current cigarette smokers are individuals who spoke English at home (1.8 million), white (1.6 million), born in Canada (1.6 million), English as first spoken language (1.5 million) and those who ate fewer than 5 servings of fruit and vegetables a day (1.4 million).

When considering health impact by sub-population, many of the groups with the highest prevalence rates of tobacco use also have some of the highest rates of average daily consumption, started using tobacco at an earlier age, and have some of the highest rates of comorbidity (e.g., alcohol and other addictions). The relatively small absolute number of tobacco users in some sub-populations may stand to gain a relatively larger amount by quitting, compared to other lower risk populations. As such, the benefit of cessation is not a simple matter of counting the number of tobacco users in various population groups; it is critical to understand who is likely to benefit most from quitting.

Tobacco use patterns among youth and students are discussed in Chapter 5: Prevention.

Cessation behaviour in Ontario

Table 7.1 summarizes a number of cessation indicators among adult tobacco users in Ontario. In 2007, 1 in 3 smokers had an intention to quit in the next 30 days, an increase from approximately 1 in 5 in 2005. However, this is slightly lower than it was for Canada in 2008 (32% versus 37%) (56). Also, the indicator of quit attempts in the past 12 months, was lower in 2007 than 2003, as was average daily consumption. However, the proportion of smokers with heavy dependence remained stable.

These data show that while interest in quitting seems to be on the rise, actual quit attempts are declining, suggesting that Ontario smokers may need to be encouraged to make a quit attempt and need to be informed of the resources that are available to increase their chances of success. Also the demand characteristics of these surveys give a higher rate compared to others where the questions are worded differently (58).

Additional insight on cessation behaviour can be found in the Canadian Community Health Survey (CCHS). Tables 7.2 and 7.3 present the top-ranked population groups based on proportion and estimated population size respectively. The full segmentation analysis, *Evidence to Inform Smoking Cessation Policymaking in Ontario (2008),* was conducted by OTRU (57).

TABLE 7.1: Reported cessation behaviour among Ontario tobacco users

Indicators	2003	2005	2007	2008
Intention to quit in the next 30 days	22%	22%	32%	42%
Current smokers who made a serious attempt to quit smoking at least once over the last 12 months	50%	47%	44%	49%
Percentage of ever smokers who are former smokers (quit ratio)	54%	58%	55%	58%
Percentage of daily smokers who have high dependence	NA	12%	12%	16%
Number of cigarettes smoked per day (daily smokers)	16.4	16.3	15.2	15.7
Percentage of women (20–44) and pregnant in the past 5 years who smoked during most recent pregnancy	12%	10%	NA	10.1%

Source: OTRU Monitoring and Evaluation Series, Vol. 14/15, 2010 (56); Towards a Smoke-Free Ontario: Progress and Implications for Future Developments, 2009 (59).

Tables 7.2 and 7.3 show that the rate of past-year quit attempts was highest in population groups making up the smallest proportion of the total smoking population, with pregnant women appearing to be highly motivated to quit. Conversely, groups that make up large portions of the smoking population are less likely to quit.

The relationship between cessation behaviour and other risk factors (e.g., unhealthy eating, drinking and inactivity) may also support the need for larger chronic disease prevention strategies to interface with the cessation system and incorporate smoking-cessation interventions. The cessation system may also need to screen and intervene with other risk factors such as alcohol, nutrition and physical activity as it relates to quitting smoking.

Univariate analysis only provides a preliminary and limited perspective; Ontarians may fall within a number of dimensions presented in Tables 7.2 and 7.3. Future research may employ multivariate analysis of the same data to reveal more information of the socioeconomic context of Ontario tobacco users. In addition, the variables used in the analysis indicate that underlying social factors may be implicated in the development and maintenance of tobacco use (e.g. social networks): this requires further research and may inform future intervention development.

Overall, in 2007-08, half of all current smokers in Ontario (49%) had made a quit attempt in the past year and 19% had made both a quit attempt in the past year and intended to quit in the next 30 days. This represents approximately 374,000 current smokers (56). Quit attempts or intention did not vary by tobacco control area network (TCAN) or local health integration network (LHIN) (56).

Tobacco cessation behaviour among youth and students is discussed in Chapter 5: Prevention.

TABLE 7.2: Past year quit attempt among current tobacco users, top 10 groups by proportion, 2007-08 CCHS

Ranked by Prevalence		
Group	**Proportion**	**Estimated population size**
Pregnant women	75%	10,800
Male 15-19	66%	33,100
Female 15-19	65%	24,800
Black	63%	21,100
Immigrated (less than 5 years ago)	61%	35,500
Male 20-24	61%	74,200
Female 20-24	60%	55,400
Management (occupation)	59%	75,100
South Asian	55%	32,700
Unemployed	55%	55,700

Source: Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 (57).

TABLE 7.3: Past-year quit attempts among current tobacco users, top 10 groups by population count, 2007-08 CCHS

Ranked by Estimated Population		
Group	**Estimated population size**	**Proportion**
Speaks English at home	858,900	49%
White	764,500	47%
Born in Canada	759,000	49%
English as first language	737,400	49%
Unhealthy eating	663,400	48%
Non low-risk drinking	601,400	49%
Inactive	529,000	46%
Completed post-secondary school	494,500	51%
Overweight	451,000	48%
Household income > $100,000	205,400	51%

Source: Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 (57).

The Ontario Context

First Nations people living in First Nation communities

First Nations people living in First Nation communities

For this report, tobacco use and cessation behaviour from the national report of the First Nations Regional Longitudinal Health Survey 2002-03 is presented **(60)**. Data concerning the non-traditional use of tobacco for First Nations people living in First Nations communities in Ontario is more difficult to obtain (only the national data is presented).

Nationally, in 2002/03, First Nations adults (18 years or over) and youth (12 to 17 years) smoked at the rates of 59% and 38% respectively. Youth rates varied from 11% for 11 year olds to 61% for 17 year olds. Over half (54%) of adults reported at least one quit attempt in the past year. Nearly one in five (19%) reported three or more quit attempts in the past year. Nearly nine out of ten adult former tobacco users (89%) reported quitting without any type of assistance **(60)** (note that this is over the entire lifespan). A small proportion reported help from spirituality, assistance from family and nicotine replacement patch. Adults reported the following reasons for quitting:

- Choose a healthier lifestyle, 64%
- Greater awareness and education on ill effects of tobacco on my health, 30%
- Health condition, 29%
- Out of respect for loved ones, 28%

Among First Nations youth (aged 12 to 17) 69.8% of non-traditional tobacco users reported attempting to quit at least once in the past year **(60)**. Among successful quitters, youth reported healthier lifestyle (50%), respect for loved ones (26%), greater awareness and education on the ill effects of tobacco (18%) and having acquired a health condition (13%) as reasons for quitting **(60)**.

The national data presented above cannot be directly extended to the Ontario context. Nevertheless, the general pattern of high rates of non-traditional tobacco use is alarming; such rates have not been observed in the general population since 1965 when the smoking rates were 61% and 38% for men and women respectively, 15 years of age and older **(61)**. These rates are also comparable to the present day rates for countries such as Greece, Nauru, and the Russian Federation **(62)**. As a whole, Canada ranks favourably when compared to other developed countries; however, the Canadian situation demonstrates that the national aggregation of tobacco use statistics can conceal large disparities among subpopulations within the country.

What is also clear from the limited data is that a significant proportion of First Nations people do want quit and that many are doing so without any type of formal intervention. Future work should seek to improve the understanding of (non-traditional) tobacco use among First Nations people living in First Nation communities and their cessation behaviour.

Cessation interventions and recent policy changes in Ontario

A number of population-wide cessation interventions are available in Ontario in a number of settings; these are presented in Table 7.4. Due to the variability in funding amounts for these programs, direct comparisons cannot be made. It is also possible that tobacco users accessed more than one program; as well, the data come from various sources with different methods of classifying program uptake. Readers are strongly encouraged to review the related websites (right hand column) to obtain more information on each intervention.

In addition to these province-wide programs, individual public health units (PHU) offer their own cessation programming. In some cases, PHU programming uses existing resources such as materials from the Leave the Pack Behind intervention. An environmental scan completed by OTRU in 2009 provides a summary of the smoking cessation services offered by PHUs across Ontario. Information on 35 PHUs was available for analysis.

The most commonly available services were self-help resources (35/35), group counselling (27/35) and individual counselling (24/35) **(59)**. The least common were online support (2/35), quit kits (3/35), specialized clinics (4/35) and information sessions or workshops (8/35) **(59)**. PHUs also offered targeted services. Among the 35 reporting PHUs, the most common targeted services were for pregnant women (12/35), youth (11/35), mental illness (7/35) and aboriginal communities (5/35) **(59)**.

Ontarians are also accessing cessation pharmacotherapy. In 2008, 29% of current and former tobacco users reported using nicotine patches, and 25% reported using nicotine gum in the past two years **(66)**. Also in 2008, among current tobacco users, 47% and 23% reported having been asked or advised, respectively about their tobacco use **(66)**.

TABLE 7.4: Listing of cessation interventions in Ontario

Intervention	Reported reach or utilization	Website Link
Programs		
Smokers' Helpline	16,833 calls reported from April 2008 to March 2009 **(63)**	www.smokershelpline.ca
Smokers' Helpline Online	5,680 registered users reported in 2008/09 **(63)**	www.smokershelpline.ca
Leave the Pack Behind	13,573 users accessing services in 2008/09 **(64)**	www.leavethepackbehind.org
Campaigns		
Driven to Quit	22,139 registered participants in 2008/09 **(59)**	www.driventoquit.ca
Pilots		
Ottawa Model for Smoking Cessation	5,587 participants in 2008/09 **(59)**	www.ottawamodel.ca
Smoking Treatment for Ontario Patients Study	63,934 participants from 2005-2009 **(65)**	www.stopstudy.ca

Source: The source for each intervention is identified in the middle column.

Lastly, a number of important policy and regulatory changes have taken place in the past five years; these include:

- Policies to protect against second hand smoke (e.g., smoking in cars with minors)
- Elimination of the PST portion of taxes on nicotine replacement therapy drugs (although, the move to a harmonized federal/provincial sales tax will negate this)
- Total display ban (with some exemptions for tobacconists)

- Restrictions on tobacco sales in certain areas
- Ban on certain flavourings (not including menthol) at the Federal level

While these changes are not directly related to cessation, they may have a downstream effect that will result in more tobacco users attempting to quit. According to the ASSIST study, states in the US that invested in the above had many more quitters than those that did not **(67,68)**.

Cessation – Intervention Areas

A comprehensive cessation system includes a variety of evidence based, effective interventions, reaching a large proportion of the tobacco users in the population, and is accessible through a various settings. These interventions are supported by a series of policy changes such as increases in tobacco price and promotion of smoke-free places. Tobacco users are thus motivated to make quit attempts (or reduce consumption) and have access to behavioural or pharmacological assistance, social support, and relapse prevention supports. The evidence and recommendations in this chapter are compiled into the following sections:

- Cessation media campaign
- Tobacco user support system
- Direct-to-tobacco-user cessation services
- Cessation interventions in primary care and other health care settings
- Role of pharmaceutical companies
- Social-ecological approaches to cessation

The members of the SFO-SAC reviewed and assessed the evidence on the impact of taxation policy on cessation behaviour and outcome. The value of taxation and price in general is recognized to contribute to increased intention to quit and cessation rates; taxation is addressed in Chapter 4: Addressing the Disease Vector in Tobacco. Readers are also encouraged to review the cessation logic model presented in Appendix B for a complete overview of the recommended cessation interventions including policy, media, and programs.

Cessation media campaign

Evidence to guide action

Mass media tobacco control campaigns have been shown to have positive population level effects on the tobacco user. In particular, increased intention to quit, decreased consumption, increased quit rates and lower tobacco-use prevalence **(69-72)**. These campaigns are also effective at informing and directing tobacco users to existing cessation services such as quit lines **(70,73,74)**, thereby expanding their reach and impact. For continual effectiveness, mass media interventions must be sustained **(69,75)**. Lastly, care must be taken in developing mass media campaigns to reach the socioeconomically disadvantaged and other higher need groups **(76)**.

The Ontario context

As presented in the introduction of this chapter, a significant number of tobacco users in Ontario want to quit and have made recent quit attempts. These individuals should be motivated and encouraged to quit and provided with information on how to access cessation services through a mass media campaign.

A number of cessation efforts in Ontario include media campaigns as part of their effort to increase reach (e.g., Driven to Quit by the Canadian Cancer Society). Moreover, many of the online components of these cessation programs are interconnected. For example, the Driven to Quit website **(77)** provides a direct link to Smokers' Helpline Online and other resources **(77)**.

Recommendation

Media Campaign

[7.1] Implement a sustained and intensive mass media campaign to encourage smokers to quit, either on their own or with help.

Tobacco User Support System

Evidence to guide action

There are a number of ways that a tobacco user will eventually achieve cessation; many will simply try to quit abruptly on a designated day **(78)**. Emerging evidence suggests that tobacco users benefit from reducing consumption and receiving support prior to quitting altogether **(78,79)**. Abrupt withdrawal may also produce clinically significant distress in some individuals which would be helped with outpatient care including behavioural and pharmacological support **(80)**. However, for most tobacco users, withdrawal symptoms are mild, self limited and tolerable. For others, they can be quite disabling and contribute to early relapse. These symptoms include anger, anxiety, depression, difficulty concentrating, impatience, insomnia and restlessness, which peak at one week and may last up to 4 weeks **(81)**. Quitters often experience minor weight gain, especially within the first year although it may last up to eight years. This is an important consideration for cessation providers **(82)**. For all of these reasons, cessation may not be the immediate goal for some tobacco users in addressing their issue with tobacco use. A comprehensive cessation system must be able to accommodate a broad range of cessation motivations.

Individuals who gradually reduce consumption or are initially unsuccessful in maintaining an abrupt quit attempt are likely to benefit from extended treatment **(83)**. For tobacco users who simply want to reduce their consumption, evidence suggests that promoting a graduated reduction would be an effective way to bring more people into cessation services and eventually onto cessation **(84)**.

Tobacco users who are successful at achieving some form of abstinence face the possibility of relapse. Although predicting relapse is difficult, a recent meta-analysis estimates that 5% to 17% eventually relapse even after maintaining abstinence for a full year **(85)**. Cessation medication or nicotine replacement therapy (NRT) is beneficial in maintaining abstinence in the short term. However, long-term trials are inconclusive primarily because treatment is stopped between eight to 12 weeks **(86)**. This is a peculiarity in smoking cessation medication trials compared to trials for other chronic conditions. Regardless, there is still a significant treatment effect detectable six to 12 months after treatment stops.

Lastly, tobacco users also come from a wide range of life circumstances which may present barriers to accessing cessation services or additional complications in the cessation process. For example, tobacco users with alcohol dependency may experience negative alcohol use outcomes if simultaneous treatment is undertaken **(87)**. However, other studies have shown no effect on alcohol use outcomes **(88,89)**. These individuals are also under-represented in trials involving approved pharmacotherapy for tobacco-use cessation **(90)**, but are more likely to experience tobacco related mortality **(91)**.

Cessation – Intervention Areas

Tobacco User Support System

In summary, the evidence shows that the paths to permanent cessation are varied and may be a complex process that can span many months or years. Individuals may employ a number of cessation methods, benefit from behavioural support and cessation medications including NRT and experience a range of psychological and physiological withdrawal symptoms. For those successful at abstinence, relapse is a very high possibility for a significant proportion during any given quit attempt. For some, becoming free from tobacco use or nicotine dependence is a lifelong struggle.

An effective cessation system must be able to attract tobacco users and support them throughout their entire cessation process. More specifically, a Tobacco-User Support System which would be modelled on the approaches for chronic disease prevention or the "no wrong door" model for mental health **(92)**, would have the following components:

- Integration with a mass media campaign to build awareness of the overall approach to cessation and individual services
- Establishing a preferred, common entry point for tobacco users, families, providers and researchers (although clients will be able to enter the system at any point)
- Guidance of tobacco users to appropriate, cost-effective and culturally appropriate services
- Provision of cessation intervention including cessation medications and NRT, behavioural support, resources for self-help and support through providers and groups
- Capacity for ongoing engagement with the tobacco user, throughout their transition to cessation and with ongoing maintenance (including outreach to populations)
- Allow for innovation, research and continual improvement in cessation interventions

For those tobacco users not interested in quitting or only interested in significantly reducing their tobacco use (as opposed to quitting altogether), support will be provided in the form of continual engagement and provision of pharmacotherapy where indicated and appropriate. In 2009, Health Canada approved a protocol for the use of NRT (gum) to reduce smoking over four to six months and then quit. The entire process lasts a year.

An approach to building capacity for ongoing engagement of tobacco users may be in the formation of a Tobacco User's Registry. Through data sharing agreements, data from existing cessation programs may be used to seed the registry. A recruitment drive would be undertaken to attract new registrants.

The Ontario context

A tobacco user support system, as outlined above, does not exist in Ontario. However, there are existing programs which may form the basis of some of its components. For example, Smokers' Helpline may have a role in behavioural support and as part of a hub to redirect users to appropriate services. Also, the user databases of the various online campaigns and research studies may seed the tobacco user registry.

Recommendation

Tobacco-User Support System

[7.2] Create a Tobacco-User Support System to operationalize the concept that there is "no wrong door" for access to cessation support services. The system will reach out to tobacco users, understand, support and address their needs, and improve interventions through its various components.

Direct-to-tobacco-user cessation services

Evidence to guide action

An important aspect of a tobacco-use cessation strategy is to actively recruit, engage, support and provide current tobacco users with cessation services. This approach complements systematic cessation services in the health care field and primary care (discussed in the following section). Direct-to-tobacco-user services include a number a of components such as support through a combination of telephone, text messaging and Internet-based services complemented with free cessation medication or nicotine replacement therapies where necessary.

Telephone-based cessation interventions have been proven to be effective (93-95). Text-messaging cessation interventions showed a significant increase in self-report cessation in the short term (96). Similarly, cessation support delivered via mobile phones has been demonstrated to have positive results in the short term, although not in the long term (96). Internet-based and computer-based cessation interventions have been shown to be effective for adult populations in a clinical setting (97). Overall, web-assisted tobacco interventions are cost effective and able to direct users to resources and provide unique interactivity such as virtual support (98).

These support services would be complemented by the provision of free cessation medication and nicotine replacement therapy in combination with behavioural therapy. This approach has been shown to be effective in increasing reach, cessation attempts and cessation (99-102). Nicotine replacement therapy, in all its commercial forms can increase the rate of cessation (103). However, the evidence is clear that effectiveness in cessation and maintenance is greatly enhanced when the provision of NRT is accompanied by behavioural support (103,104). Distribution approaches using a combination of clinic and mail, such as that employed by the Smoking Treatment for Ontario Patients (STOP) program, may be a way to reduce disparity due to cost, geography and lack of access to NRT (65).

As previously indicated, mass media campaigns have a critical role in increasing the potential impact and reach of cessation services such as tobacco-user support (70,73,74). As well, continual engagement with the tobacco user throughout their cessation efforts would increase cessation success and maintenance of abstinence (83).

The Ontario context

In Ontario, the primary telephone quit line available is the Smokers' Helpline (SHL) and its Internet-based counterpart, Smokers' Helpline Online (SHO), which provides services and also virtual group support through its registry and moderated web forum. These services are administered by the Canadian Cancer Society (105).

Cessation – Intervention Areas

Tobacco User Support System

Direct-to-tobacco-user cessation services

Cessation – Intervention Areas

Direct-to-tobacco-user cessation services

Cessation interventions in primary care and other health care settings

Many cessation interventions also have an Internet presence that complements the primary delivery mediums. These are either formal websites or informal integration with popular social networking websites. For example, Driven to Quit has a fan page on Facebook (77). Numerous informal (un-sponsored) and undocumented, Internet-based support forums also exist on social networking websites. Lastly, Ontarians are not limited to accessing Internet-based (or telephone and text messaging) cessation programs that are physically or administratively based in Ontario.

Cessation medications including NRT are not presently covered by the Ontario Drug Benefit (ODB) plan.

However, groups such as the Ontario Medical Association (OMA) have called for the inclusion of these medications because it will allow greater access to stop smoking medications for those with low income (e.g., those on welfare) (106). Reimbursement for smoking cessation pharmacotherapies has been shown to lead to a 1 to 2% reduction in smoking prevalence in the first 2 years after the implementation of such a policy (107). Additionally, reimbursement of smoking cessation pharmacotherapies has been shown to be effective in enhancing the odds of successful cessation (108).

The OMA has also called for NRT to be exempt from the federal GST (106). Provision of free NRT through various methods of distribution is provided, along with behavioural support, under limited research initiatives such as the Smoking Treatment for Ontario Patients (STOP) study (65).

Recommendations

Direct Support

[7.3] Enhance systems of telephone, text messaging and Internet-based cessation support services that would entail:

[a] Integration with the overall Tobacco-User Support System.

[b] Integration with the cessation mass media campaign.

[c] Capability for continual engagement with smokers.

[7.4] Provide free direct-to-tobacco-user smoking cessation medication in combination with varying amounts of behavioural support where indicated and appropriate.

Cessation interventions in primary care and other health care settings

Evidence to guide action

Cessation interventions are effective when provided intensively in the primary care setting, such as family physician offices, emergency rooms, and walk-in clinics (109). Techniques such as the Five A's (ask, advise, assess, assist, arrange) and FRAMES (feedback about personal risk, responsibility of patient, advice to change, menu of strategies, empathetic style, promote self-efficacy) are effective cessation interventions for patients who are ready to quit (110). The effectiveness of offering cessation in the primary care setting is recognised by national tobacco control strategies such as the US (31) and Australia (35), UK (111) and New Zealand (112).

In addition to the primary care setting, cessation interventions (including behavioural support and provision of medication or NRT) have been found to be effective in a

broad range of settings and situations and when delivered by a variety of professionals. For example:

- During pregnancy (113-115)
- In workplaces (116)
- From dentists (117), pharmacists (118) and nurses (119)
- Targeted at hospitalized patients (120-122), cardiac patients (123-125) and preoperative patients (126-130)

Although these interventions are effective in these specific situations, challenges remain in increasing reach (utilization) and achieving continuity of care within the health care system and cessation services. Fiore et al. outline an approach to integrate cessation intervention into primary care and health care systems such that they are a routine part of receiving health care (131). These strategies were considered and expanded in the Agency for Healthcare Research and Quality's (AHRQ) updated *Supported Clinical Practice Guidelines for Treating Tobacco Use and Dependence* (30). The promising system-level strategies identified from both include:

- Using clinical structure to routinely assess tobacco-use status and provide assistance
- Obtaining performance feedback using clinical-information systems
- Provision of cessation interventions at no cost to the client (i.e., fully covered by insurance)
- Including tobacco cessation treatment into the standard of care for health care professionals through the accreditation body

The AHRQ guidelines also call for clinician performance evaluations to be a part of the delivery of cessation intervention. This would be supported with sufficient communication of responsibility and training (30).

In summary, the critical considerations in enhancing tobacco-use cessation in the primary-care and health care settings are:

- Patients are systematically screened for tobacco use at every point of contact within the continuum of health-related services that they access (e.g., from a family physician, dentist, pharmacist, occupational nurse, etc.)
- Motivated tobacco users are able to access (or are referred to) cost-effective and tailored cessation services at any point (e.g., from a family physician, dentist, pharmacist, occupational nurse, etc.)
- Tobacco users are linked within a system to maintain engagement with the different components of the cessation system throughout their process of cessation (e.g., the Tobacco-User-Support-System discussed in Recommendation 2 above)

To support of the above paradigm, there is a need to develop leaders in cessation and an expansion in the number of health professionals able to deliver high quality cessation intervention in all health care locations across the continuum of care (132); for example, nursing (110,133), pharmacy (134), and dentistry (135,136).

The Ontario context

The systematized tobacco cessation approach in primary care and other health care settings, as outlined above, does not exist in Ontario. However, some individual components do exist such as the Training Enhancement in Applied Cessation Counselling and Health (TEACH) program for University of Toronto accredited training of health care professionals in cessation interventions (137). As well, the Ottawa Model for Smoking Cessation has succeeded in institutionalizing a systematic approach to tobacco cessation into the hospital settings where it is deployed (138).

Cessation – Intervention Areas

Cessation interventions in primary care and other health care settings

Cessation – Intervention Areas

Cessation interventions in primary care and other health care settings

Role of pharmaceutical companies

Practitioners may also obtain training through the Program Training and Consultation Centre (a part of the Smoke-Free Ontario Strategy).

Tobacco cessation is still not mandated in undergraduate professional programs in medicine, dentistry, nursing or pharmacy. Despite demonstrated cost-effectiveness and proven health benefit, tobacco cessation as a standard of care is still some time away. Stop smoking medications are not covered under the Ontario Drug Benefit. Therefore, its reach is limited in populations who cannot afford that type of treatment, even though these populations are most likely to reap the greatest benefits to their health and their finances. Currently, there are fee codes within the Ontario Health Insurance Plan (OHIP) fee schedule that compensate family physicians for cessation counselling but lack of coverage for stop smoking medications; this is akin to physicians being compensated to advise patients with hypertension on lifestyle changes without the use of effective medications.

Recommendations

Cessation in Other Settings

[7.5] Systematize, expand, support, and tailor cost-effective and evidence-based cessation policies, services and supports across health care and public health settings such as primary health care, hospitals and long term care homes.

[7.6] Create accountability mechanisms to ensure that smokers are asked, advised and assisted to quit at every point of contact with the health care system (local health integration networks, hospitals, primary care providers, specialty care, home care, etc.).

[7.7] Provide free smoking cessation medications for individuals on Ontario Drug Benefit, with the dose and duration determined by the presence of co-morbidity and end organ damage as assessed by their health care provider.

[7.8] Target subpopulations that are at high risk for tobacco related disease or have decreased access to tobacco cessation services in order to provide services that address their specific needs. Subpopulations may include people in addiction and mental health treatment settings including those struggling with problematic gambling.

Recommendation

Cessation Training

[7.9] Support and enhance training and professional development for all tobacco control practitioners through existing resources such as the Program Training and Consultation Centre (PTCC) and the Training Enhancement and Applied Cessation Counselling and Health (TEACH) program.

Role of pharmaceutical companies

Evidence to guide action

Pharmaceutical companies play an important role in developing cessation medications and NRTs. They are also actively involved in mass media public education to motivate and support quit attempts, support research into systems of cessation for high-need populations and sponsor training and other capacity building activities. Pharmaceutical companies, while motivated as all private companies are to create profit, are partners in health care. While the tobacco companies are in a business that contributes to ill health, the pharmaceutical companies have an interest in prevention, treatment and management of the chronic and acute diseases caused by tobacco companies.

There is a need to define roles that pharmaceutical companies can play in the development of comprehensive tobacco control in Ontario. These companies already work with non-government partners in various ways. Tobacco control leaders should engage the pharmaceutical industry in defining appropriate roles. Some possible points of discussion include:

- Development of new tobacco-cessation pharmaceuticals
- Arm's-length funding of research, training programs, and partnership development
- Provision of product for various programs or research initiatives.

Recommendation

Pharmaceutical Companies

[7.10] Engage pharmaceutical companies to better understand their potential contribution to a tobacco-use cessation system for Ontario.

Social-ecological approaches to cessation

This chapter has, thus far, focused on the individual or population as the target of cessation programs and policies. Indeed, the evidence presented demonstrates that they are efficacious. However, emerging research shows that there may be considerable benefit on exploring a social-ecological approach to address health issues such as tobacco use (139).

A social-ecological approach attempts to understand the impact of an individual's environment and social network in health behaviour. Networks take on properties that are not apparent and cannot be explained by looking at individual parts. To understand these properties, the research lens must be widened to encompass whole groups of individuals and their interconnections (139). The social-ecological approach has been used to explain the propagation of sleep loss among adolescent peer groups (140), drug use (141,142), depression (143), alcohol consumption (144), and even happiness (145). More importantly, this approach facilitates the development of interventions that consider the important role of network properties on individual behaviour, for example, the role of peer pressure in alcohol consumption among adolescents.

In tobacco use behaviour, the social-ecological approach can expand on past research on the dyadic ties between initiation and cessation in youth populations (146). For example, Christakis et al. have documented the role of peer pressure on an individual's motivation to quit, the role of educational attainment in one's tendency to emulate peers (cessation behaviour), the effect of cascading behaviour change, and the development of self-reinforcing norms within groups that augment cessation behaviour at the individual level (146). Cessation approaches using network phenomena may be used to spread positive health behaviour and augment existing population interventions such as taxation and media campaigns (146). Lastly, the social-ecological approach has been investigated in blue-collar, workplace settings, where workers share a common social context (147,148) as well as individual traits such as income and education.

Cessation – Intervention Areas

Role of pharmaceutical companies

Social-ecological approaches to cessation

Recommendation

Innovative Approaches

[7.11] Support research and development of innovative social-ecological approaches to smoking cessation in various settings, including workplaces and community-based organizations.

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CHAPTER 8

Tobacco-Related Disparities and Equity

Abstract

Health equity is an important goal for public health. Reducing tobacco-related disparities (the unequal or unfair burden of illness borne by some sub-populations) is part of achieving health equity. Universal interventions, particularly those related to the price of tobacco, can reduce tobacco-related health inequity. Focused interventions should be chosen by carefully examining existing population-level policies and programs to ensure that those disadvantaged by social inequalities receive a fair and equitable share of the projected benefits, or do not experience harmful, unintended consequences as a result of those interventions. Importantly, tobacco use by certain groups involves a variety of factors, including social, economic, political and historical realities. Tobacco use is not simply a "lifestyle" choice, but is a risk behaviour shaped by physiological processes as well as social determinants of health. These relate to the natural history of tobacco use, and how it interacts with life stressors, societal and cultural norms, the built environment, social and economic policies, and more.

While additional work may be required to identify the impact of interventions on particular "at risk" populations, this report lays out a framework for tobacco control which, if implemented comprehensively and with intensity, will begin to address Ontario's tobacco-related inequities. This framework includes an appropriate balance between universal and focused approaches. Finally, there is a need to look at the broader context within which these groups experience tobacco use and exposure, and to link comprehensive tobacco control with a health equity agenda which addresses the underlying determinants of tobacco use and explores the impact of a range of policy options (1). Encouraged is a flexible and evolving approach where an explicit eye to equity is applied to advance the quality and interpretation of available data along with our knowledge of ways to reduce the tobacco-related burden for the entire Ontario population, and tobacco-related inequities.

Goal: To reduce tobacco-related disparities – both the unequal distribution of disease and the inequitable application and impact of interventions – while reducing the overall burden of tobacco, as key strategy for achieving health equity in Ontario.

Methods

Evidence to guide the development of this chapter was gathered from the published, peer-reviewed literature and other reports such as evidence summaries in tobacco control and equity. The published literature was searched using Medline for articles published between 1999 and the present. Search terms included "tobacco-related disparities," "equity" and "social determinants of health." Also reviewed were public reports by credible sources, including the Ontario Tobacco Research Unit (OTRU), Cancer Care Ontario (CCO), the Centers for Disease Control and Prevention (CDC), and the UK National Health Service strategy for tobacco control. Smoke-Free Ontario – Scientific Advisory Committee (SFO-SAC) members made suggestions and

provided citations based on their knowledge of the published and unpublished literature. Recent reports from other jurisdictions, including the US, UK and Australia, were also used as part of the evidence base.

Introduction

Public health has the dual goals of improving the overall health of the population and reducing health inequities. Addressing inequities may be the best way to improve population health. Further, this resonates with Canadian values about equitable access to health care and ensuring that minority groups of any description are not systematically disadvantaged. Given growing interest and commitment to address health inequities, it is strongly suggested that the next stage of Ontario's strategy to reduce tobacco use and exposure incorporate equity and tobacco-related disparity into the design, implementation, monitoring and evaluation of all comprehensive tobacco control-related activities. As studies have shown that as much as 50% of the difference in overall mortality between the highest and lowest social strata of developed societies can be attributed to tobacco use and exposure (2), a well-designed and executed comprehensive tobacco control (CTC) strategy with both universal and focused interventions has great potential to reduce the gradient in health inequalities across these social groupings.

Why Address Tobacco-related Disparities and Equity?

Health inequalities are the differences, variations and disparities in the health achievements of individuals and groups (3). A subset of health inequalities are "health inequities." These are health inequalities that are deemed to be unfair or unjust (4). Within comprehensive tobacco control, health inequities result from "tobacco-related disparities." Tobacco-related disparities are "differences in patterns, prevention, and treatment of tobacco use; differences in the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure" (5).

Promoting equity in health and its social determinants has been identified as an important goal of public health, at international (6), national (7) and provincial levels (8). Virtually every recent population health strategy in Canada has emphasized the importance of taking action to reduce systematic differences in health status. Not only is there evidence that egalitarian societies tend to have healthier overall populations (9-11), but the very existence of inequalities in health and health care is inconsistent with Canadian values. In particular, Canadians support the equitable distribution of health care resources, in a manner that does not systematically disadvantage certain groups (12,13).

Tobacco-related disparities account for a large part of the differences in health outcomes seen among different populations (14-16). In Canada, the groups with the highest rates of tobacco use, such as those with lower income, Aboriginal peoples, those with mental health concerns and others, also routinely have the poorest health and highest rates of premature illness and death (7). Reducing tobacco use, especially among those with the highest rates of use and consumption levels and those with concomitant risk conditions, is an important way to reduce social inequalities in health. Addressing tobacco-related disparities is an action that key stakeholders have identified as a priority for CTC in Ontario (17).

Historically, the stated goal of the Smoke-Free Ontario (SFO) strategy was to reduce the total number of people who use or are exposed to tobacco, given available resources. In contrast, the proposed recommendations in this report seek to include equity considerations, where certain groups may be prioritized for

interventions based on concepts of what is unjust, unfair, avoidable and developed through societal processes (13,18-21). Addressing such groups in the context of a comprehensive and universal strategy can be a key to improving population health outcomes, particularly where negative health behaviours are concentrated in certain populations.

Another difference between the current proposals and previous strategies is the present focus on reducing the health damage caused by tobacco use, whereas the previous SFO strategy focused on reducing the prevalence of tobacco use across Ontario. Prevalence is defined as the total number or proportion of smokers in a population at a given point in time (point prevalence) or over a period of time (period prevalence) (22). Communicating a single (average or net) prevalence value for the population as a whole is generally a valid, but highly limited, approach because it masks areas of success and failure (23). Furthermore, net prevalence may not even be a valid measure of population prevalence if it relies on sources of data which systematically and persistently exclude the very people at the very highest risk from the sampling frames.

Despite limitations in data sources and manner of reporting for many full-population sources, there is evidence that some relatively small sub-populations have substantially higher prevalence rates and higher risks for tobacco-related harm than the population as a whole. This can be as a result of initiation earlier in life, heavier consumption, greater tobacco smoke exposure and longer duration of tobacco use. Furthermore, some populations may be left behind by population health interventions that benefit the majority (23). Modest improvements in small, high-risk populations can have disproportionate benefits in reducing the total cumulative harm caused by tobacco.

Why Address Tobacco-related Disparities and Equity?

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

Equity was not previously an explicit focus of Ontario's strategy to address tobacco use and exposure. This report and the associated recommendations present an opportunity to address equity in consideration of the best evidence available. For this reason, equity appears as an element in the long-term outcomes in the logic models for each of prevention, protection, and cessation goal areas (See Appendix B).

Recommendation

Disparities and Equity

[8.1] Incorporate equity considerations into the renewal of Ontario's strategy to reduce tobacco use and exposure, and into all future phases of comprehensive tobacco control in Ontario.

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

The first step in incorporating equity into the renewed CTC strategy in Ontario is to seek to identify and define groups who may be at higher risk or systematically disadvantaged or bear a higher burden of poor health related to tobacco use and exposure. To do this, it is necessary to consider the impact of the social determinants of health, including income and social status, social support networks (24), employment, education, social and physical environments and other factors such as Aboriginal identity and to complement this with considerations of age and gender. The next steps in addressing equity include identification of the underlying drivers and causal pathways, and the identification of opportunities for intervention and for ensuring that interventions do not systematically leave any group behind. The overarching goal is to achieve a 'levelling up' in which all groups receive the benefits and gains that we know can be achieved through comprehensive tobacco control efforts (6,25).

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

Socioeconomic status

Socioeconomic status

The positive association between socioeconomic status and health is well established, and supported by a massive body of cross-sectional and longitudinal studies from many countries, including Canada **(26-28)**. Importantly, this robust association displays a remarkably consistent gradient extending from the least well-off right up to the most well off **(29)**.

FIGURE 8.1: Smoking prevalence, by income quartile, ages 12+, Canada, 1994 and 2005

Source: Adapted from Lee et al, 2009 **(36)**.

Tobacco use has been implicated as an important driving force (or mediator) in this relationship. First, smoking is clearly correlated with socioeconomic status; there is a significantly higher prevalence of tobacco use in low-income groups **(30-34)**. This is certainly seen in Ontario **(35)** and Canada (Figure 8.1) **(36)**, mirroring what is found in the US **(37)**.

Second, the prevalence of tobacco-related health problems is associated with income level, with the poor having higher rates of lung cancer **(38)** and chronic obstructive pulmonary disease (COPD) **(39)**. However, within non-smokers COPD does not appear to be related to income which indicates that smoking status largely drives the association between income and COPD **(40)**. Low income is also associated with greater involuntary exposure to tobacco smoke **(41)**.

Smoking may account for most of the difference in health outcomes seen between social groupings **(2,16,42)**. Smoking-related death rates are significantly higher in low-income groups than in wealthier social groups **(42)**. England's Department of Health recently identified smoking as "the biggest single cause of inequalities in death rates between rich and poor in the UK" **(43)**. It is clear that reducing the burden of tobacco use in populations disadvantaged by low income can be an important step towards achieving health equality for these groups.

Multiple causal mechanisms are likely considering the challenges faced by low income people, their family members and social networks. These factors include the stress of poverty, which may be exacerbated by "tobacco-related poverty" where income used for tobacco means less for food, housing and other basic necessities **(44)**. Social exposure to tobacco use may play a role in perpetuating smoking within socially disadvantaged clusters **(24)**. Industry may also contribute to on-going tobacco use: evidence from the US suggests that tobacco advertisements tend

to be more present in low-income neighbourhoods (45) and the tobacco industry often specifically targets low-income communities (46).

Interventions to reduce smoking, particularly taxes on tobacco products, have a greater effect on low-income groups than high-income groups; hence, can operate to reduce tobacco-related disparities. Despite some early studies to the contrary (37), increases in cigarette price through taxation clearly have a greater effect on low-income than high-income groups. Low-income smokers are more sensitive to price increases than high-income smokers. In a systematic review, Thomas et al. found that the burden of evidence supports tax increases as a means of reducing tobacco-related disparities (47). However, not all poor smokers will quit, and unintended consequences of price increases must be considered and addressed.

In terms of interventions beyond price, recent studies on the impact of anti-tobacco advertising have demonstrated benefits for both low and high income smokers (48,49). Research finds that a well-crafted campaign designed to reach all groups works well, including specific population groups (50).

Present patterns of higher smoking-related burden in lower socioeconomic groups are consistent with the "diffusion of innovation theory" wherein the earliest adopters of smoking were an urban, affluent, educated and professional class, with low income, lower education, rural and remote characteristics typically seen in the late adopters who followed. Now such a diffusion of innovation is occurring for cessation, with the least advantaged segments of society being later to "adopt" smoking cessation and the services and resources to support it (51,52). Additionally, lower socioeconomic status smokers have been found to be just as likely to attempt to quit as higher socioeconomic status smokers, but are less likely to succeed (30,53,54). There is some evidence that high-income smokers make greater use of cessation pharmacotherapy (55). There is a need to consider the range of access and other challenges faced by lower income people in designing accessible low barrier cessation services as envisioned in Chapter 7 – Cessation.

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

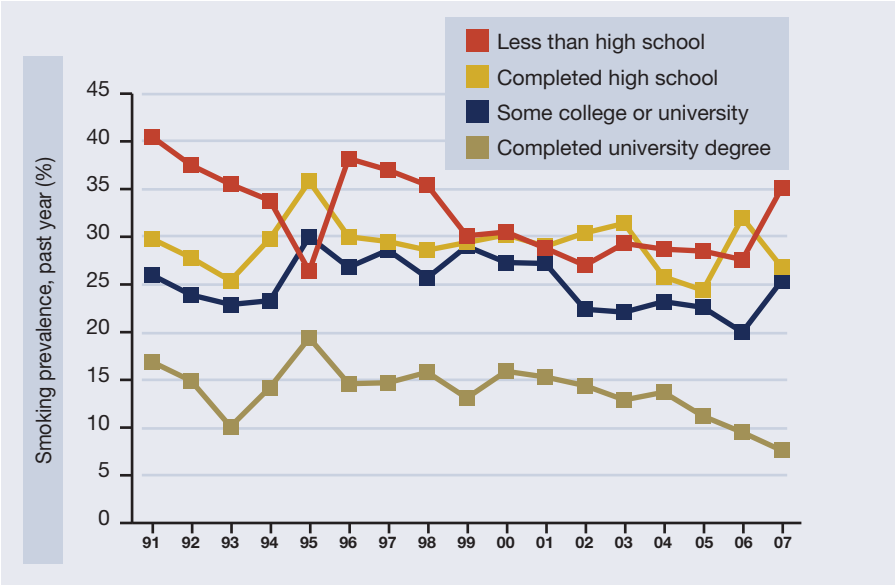
Socioeconomic status

Educational attainment

Educational attainment

Although educational attainment is closely linked to income, it is a separate societal construct. A strong, independent inverse relationship between smoking status and years of education has been consistently found (56). This gradient is seen in the US and elsewhere (32). Studies from New Zealand suggest that smoking plays a leading role in mortality differences by educational level (57), demonstrating the difficulty in separating cause from effect. In Ontario, the gradient in smoking status by education has been evident, with a marked difference between those who have completed a university degree compared to other groups (Figure 8.2). Further, the differences between different groups may be growing (58) consistent with a diffusion of innovation cited above.

FIGURE 8.2: Current smoking prevalence by educational attainment, age 18+, Ontario, 1991-2007



Source: Adapted from CAMH Monitor eReport: Addiction and mental health indicators among Ontario adults 1977-2007, 2007 (59).

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

Educational attainment

Work-type

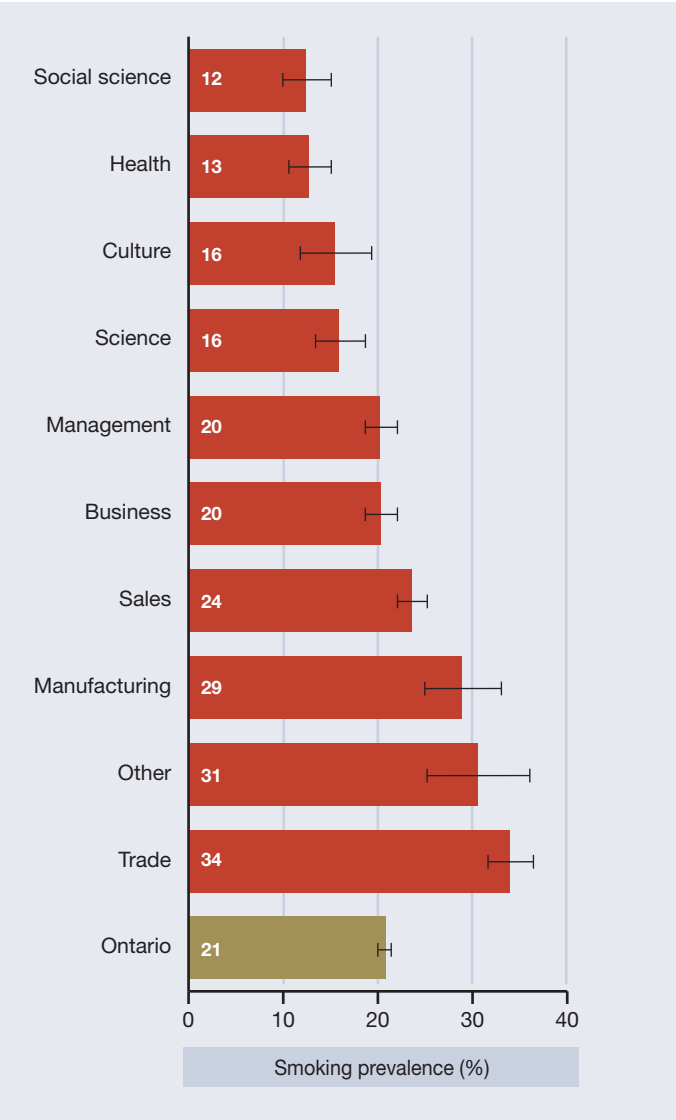
There is a paucity of research on the impact of interventions to reduce tobacco-use and exposure in groups with different educational levels. Smokers with lower educational attainment may be less likely to obtain information about smoking from books, pamphlets or magazines, and less likely to recall cigarette package warnings (60). Those with a higher education level appear to be more likely to use cessation medications (55) as noted. An analysis of tobacco control policies in 18 European countries suggests that high- and low-educational attainment smokers benefited equally within a comprehensive tobacco control policy (61).

Work-type

In Canada, research on smoking status by type of work has been challenged by inconsistent definitions. However, there is a clear trend of higher tobacco use in blue-collar workers (Figure 8.3).

This matches other jurisdictions, where smoking prevalence and intensity is lowest among white-collar workers and highest among blue-collar workers (30,62). There has been a decline in smoking prevalence and daily consumption in most workers, with the exception of those engaged in outdoor blue-collar work (63,64). White-collar workplaces have been earlier to adopt smoke-free policies and may have provided better supplemental health coverage to enable cessation (63,64). This could include smoking cessation, and onsite occupational health and safety programs. The self-employed, those employed in small companies and the under- and unemployed may have less access to these supports. In addition, current efforts to limit smoking in workplaces have not addressed all work-types uniformly (65). For example, unenclosed workspaces are not considered within the *Smoke-Free Ontario Act.* Workplaces may be an important area for prevention campaigns as well as cessation provision (66), particularly for individual and group counselling and NRT (67).

FIGURE 8.3: Current smoking prevalence by occupation, ages 15-75, Ontario, 2007-08



Source: Adapted from Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 (35).
Note: Horizontal lines represent 95% confidence intervals.

Geography

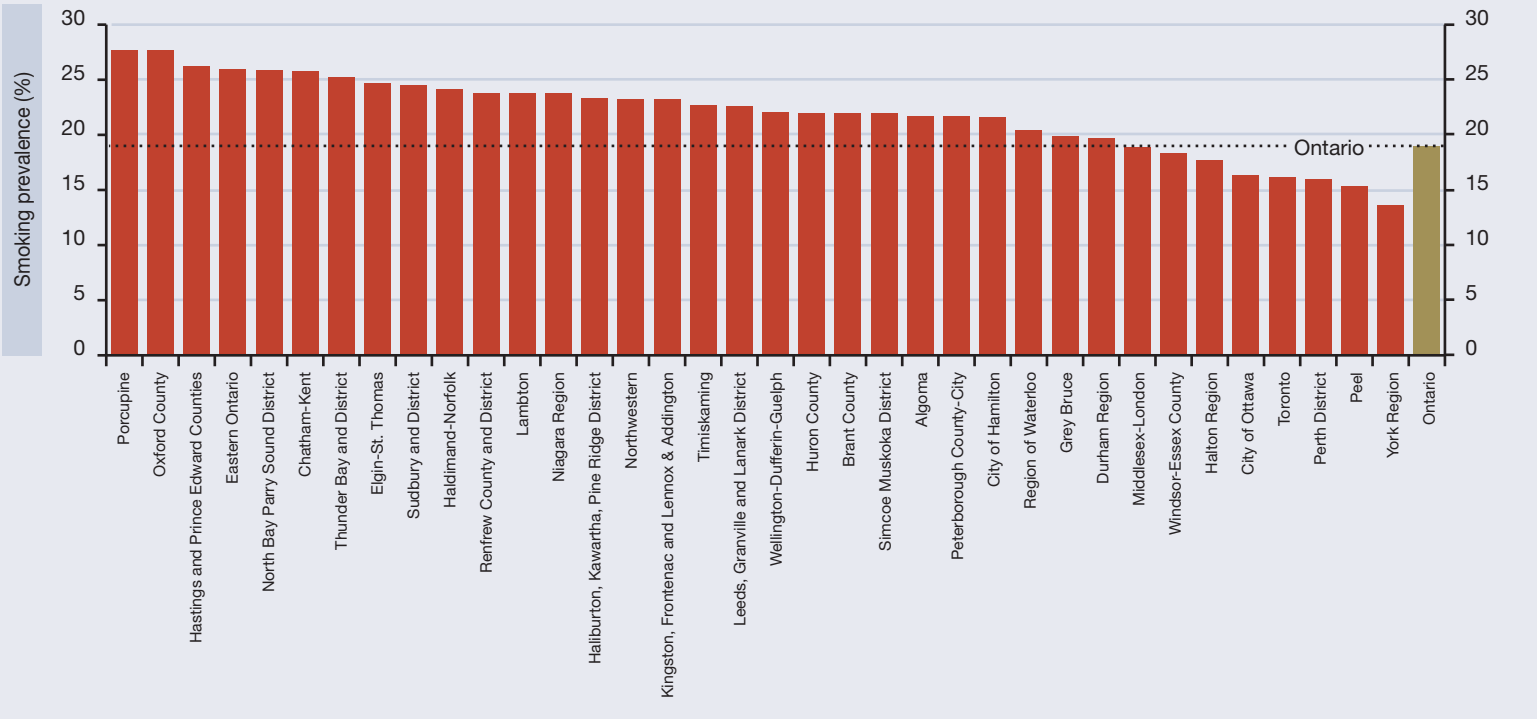
Significant differences in prevalence of smoking are seen across Ontario, from a high of 28% in Porcupine Public Health Unit to a low of 14% in York Region Public Health Unit (Figure 8.4). Factors that could help explain this large variation include the average income of residents, the proportion who are Aboriginal, the mix of occupations, and even age structure. Regional differences underscore the importance of understanding tobacco control in the community context and supporting local action to create and enable change.

Age and gender

The highest rates of tobacco use across the lifespan are in youth and young adults, especially males. (Figure 8.5) Women also experience the highest rates of use during this period of their lives. Addressing tobacco use among youth and young adults is of particular interest, given that early initiation predicts more years of use, higher levels of consumption and a lower probability of quitting. Among 21 to 39-year-olds, initiation during early adolescence was associated with a higher level of daily consumption and a lower probability of quitting **(68)**.

The drivers behind youth initiation, uptake and regular use include age-related distortions in risk perception coupled with an attractive addictive agent and clever marketing practices by the industry, including package design, despite promotional bans **(69)** (See also Chapter 4). The family context, the neighbourhood and environmental factors all play a role in influencing smoking in youth and young adults **(70,71)**. Parental occupation may also play a large role in influencing adolescent tobacco-related behaviours **(71)**.

FIGURE 8.4: Current smoking prevalence, by public health unit, ages 12+, Ontario, 2007-08



Source: Adapted from Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 **(35)**.

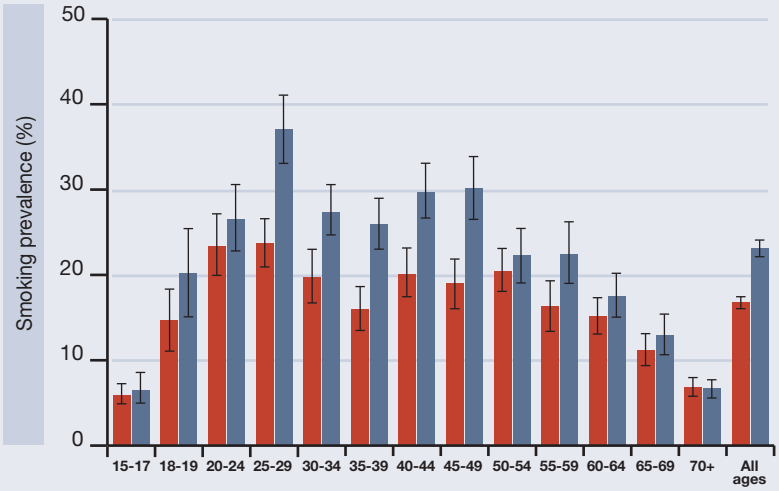
Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

Age and gender

Specific interventions related to youth and young adults are covered in detail in Chapter 6. The most studied intervention has been taxation with respect to the positive impact on youth and low-income groups (in part because of the inherent interest in income in relation to price-elasticity). Youth have been found to be more sensitive to increases and decreases in the price of tobacco than older smokers. Hence, taxes are an effective universal intervention **(72)**. Chapter 4 addresses pricing interventions.

Considering sex and gender, in virtually all age groups in the jurisdictions examined, men account for a greater proportion of current smokers than women, and Ontario is no exception **(58,73)** (see Figure 8.5).

FIGURE 8.5: Current smoking prevalence by age and sex, ages 15+, Ontario, 2007-08



	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	All ages
Female	6	15	23	24	20	16	20	19	21	16	15	11	7	17
Male	6	20	27	37	27	26	30	30	22	23	17	13	7	23

Source: Adapted from Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 **(35)**. Note: Vertical lines represent 95% confidence intervals.

It is beyond the scope of this chapter to review all of the potential drivers behind these gender-specific differences in tobacco use although one might postulate differences in risk perception, differing responses to the addictiveness of tobacco, social context and norms, gender-specific marketing strategies and other factors. Although male and female youth begin smoking at similar rates **(74,75)** the difference between genders begins to widen as teens move into adulthood **(58)**. Women tend to quit sooner than men, and also consume less tobacco than men (See also Chapter 7). Furthermore, men working in male-dominated, blue-collar industries, such as construction, may be particularly disadvantaged (see above).

Although tobacco use rates are lower in women than in men across much of the lifespan, concerns have been raised about women who start smoking between the age of 20 to 24 years and their increased risk of becoming highly addicted **(33)**. Another important consideration is that the highest prevalence of smoking – for both men and women – is during the child-bearing years. Efforts to reduce smoking in these peak years will benefit both mother and child in many ways, such as by reducing the likelihood of low birth weight and its attendant consequences, and by reducing the exposure of children to tobacco smoke in the home. Of Ontario women who gave birth in the year prior to the 2006 Maternal Experiences Survey, 20% smoked immediately before the pregnancy, and roughly a quarter lived with a smoker **(76)**. Those rates are higher than the average female prevalence at all ages, even though lower than for same-age women not bearing children.

Pregnancy-related smoking prevalence rates are also not homogeneous for all population subgroups. For example, nationally:

- Younger mothers (15–19 years) reported the highest proportion of pre-pregnancy smoking with 55% having smoked daily or occasionally

- Pre-pregnancy smoking also varied by educational level: 47% of women with less than a high school education reported smoking either daily or occasionally, compared with 8% of women with a university degree **(76)**

There is some evidence that disadvantaged women may be further stigmatized by interventions such as smoking restrictions that force them into public view **(77-80)**. A low barrier smoking cessation system, with easy access to online support and direct to client nicotine replacement therapy (NRT) as proposed in Chapter 7 will help to increase access to these services for harder-to-reach men and women.

Aboriginal status

Although Aboriginal people represent a small proportion of Ontario's population, they have a high burden of tobacco use and exposure **(81)**. In Canada, 60% of people who identify themselves as Aboriginal were current smokers, and in some communities, the youth smoking rate exceeds 80% **(82)**. In the Canadian Community Health Survey, which does not cover on-reserve populations, Aboriginal people had a non-age adjusted average daily smoking prevalence of 40% **(34)**. Comparable data for Ontario are lacking.

Taxation on tobacco has been studied in this context and shown to be effective in reducing tobacco-use in Aboriginal communities in New Zealand and Australia **(83)**. However, in Canada, tobacco taxes generally do not apply to Aboriginal people who purchase cigarettes on reserve. Studies from New Zealand suggest that culturally appropriate media campaigns and cessation support can be effective **(83)**.

Examples in Ontario from Aboriginal communities have recently been highlighted as models of tobacco-cessation programs. Sacred Smoke, operating at Wabano Centre for Aboriginal Health, and Sema Kenjigewin Aboriginal Tobacco Misuse Program, from Anishnawbe Mushkiki, both attempt to address emotional, physical, social and mental needs of Aboriginal smokers in a holistic sense. They were designed with Aboriginal cultural and social relevance in mind and explicitly incorporate Aboriginal values into the curriculum, teaching strategies and counselling techniques. They pay close attention to literacy levels, lifestyle factors, community behaviour and family income levels **(84)**. Finally, Aboriginal youth strategies that are linked with athletics may be effective, although few studies have been carried out as yet **(85,86)**.

Within Canada, even without targeted promotion, Aboriginal smokers appear to use quit-lines at the same rate as other smokers, with the same success rates **(87)**.

*Many Aboriginal smokers demonstrate interest in cessation and attempt to quit, but often face barriers to accessing physician and other services which would facilitate access to counselling and prescriptions for cessation aids **(88)**.*

Numerous issues require sensitive consideration. These include the traditional use of tobacco, the history of colonialism and its impact on the relationship between Aboriginal communities and government, and how this might impact on tobacco use, the challenge of curbing contraband production and the need to address other social determinants of health. It should be noted that Ontario has an Aboriginal Tobacco Strategy.

Mental health status

The association between poor mental health status and smoking is well documented, particularly with respect to depression and schizophrenia **(89)**. In a nationally representative US survey in 1991-1992, persons with a mental-health disorder in the past month consumed over 44% of all cigarettes

Applying an Equity Lens to Comprehensive Tobacco Control in Ontario

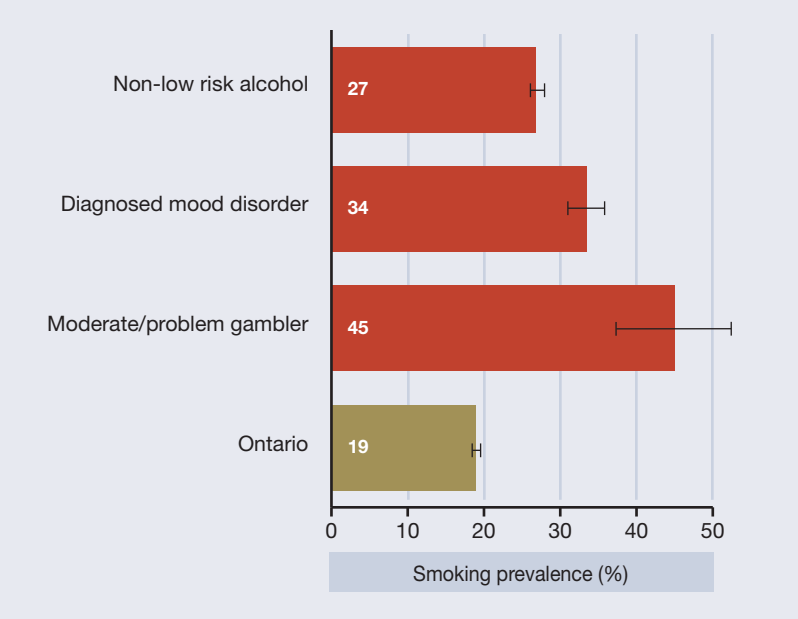
Age and gender

Aboriginal status

Mental health status

smoked (90). This association is likely due to a combination of genetic factors, the environment, behavioural responses to anxiety and depression and the use of cigarettes as rewards to shape behaviour in institutions (91). In Ontario, those who report addictions and those with diagnosed mood disorders appear to have higher rates of smoking (Figure 8.6). Many people living with mental illness want to quit smoking (92), and may in fact have high rates of successful cessation (90,93). Although initial studies and case reports raised concerns that quitting could increase the recurrence of depression (94), subsequently it appeared that history of depression was a stronger predictor of recurrence (95). Randomized clinical trials of interventions in depressed smokers demonstrated that they could be effective and did not have a negative impact on mental health recovery (96,97). Mental health programs that include smoking cessation, particularly those that are tailored to the individual, may be effective in addressing this disparity (98,99).

FIGURE 8.6: Current smoking prevalence, by selected risk factors, ages 12+, Ontario, 2007-08



Source: Adapted from Evidence to Inform Smoking Cessation Policymaking in Ontario, 2009 (35). Note: Horizontal lines represent 95% confidence intervals.

Tobacco-related Disparities and Equity – Interventions

The great deal of heterogeneity in the studies cited above makes it difficult to examine the overall impact of interventions on tobacco-related disparities. Thomas et al conducted a rigorous systematic review of 84 studies, and concluded that universal (population-level) tobacco control interventions may benefit disadvantaged groups, and hence, reduce tobacco-related inequity and rates in these high-prevalence groups (100). The evidence is strong for price-related interventions, primarily taxes (101), which have a greater impact on low-income sub-populations in terms of reducing tobacco use (102). It is recognized that although these interventions may be regressive in economic terms they are also ethically justifiable because of the positive health consequences (103). Importantly, surveys done in New Zealand suggest that there is a high degree of support amongst smokers, regardless of income level, for increases in tobacco taxes if the additional funds are dedicated to cessation assistance (104,105). Tobacco-related price interventions including taxation, minimum pricing and addressing contraband use are discussed in greater detail in Chapter 4.

Regarding other universal interventions, one has to consider whether policies with universal intent have reached all high-risk subgroups. One example is that certain occupational groups have not yet benefited from bans and other interventions in the workplace (e.g., outdoor) or benefited only more recently with maximum effects possibly yet to be observed (e.g., hospitality industry; some health care facilities). Ontario should both lead in producing and follow closely the evolving world literature on settings and populations which have been difficult to study and reach with health-related preventive interventions (30,62).

In terms of the appropriate balance between universal and focused interventions, there is a growing consensus that both universal and focused interventions are required (23,106). Focused interventions can be chosen by examining who is missed by universal interventions. These include groups that have lower uptake of universal interventions due to the nature of the group or the intervention, such as Aboriginal people who may be missed by taxation interventions or those with mental health or addictions issues who experience multiple barriers to accessing cessation services. Recognizing that those who are left behind represent the unintended consequences of universal interventions (107), specific intervention strategies are then designed to close the gaps in the population level strategies – for example working with First Nations leadership to explore tax agreements, or increasing access to cessation services for people with mental health and addiction issues. Also, some groups may be further disadvantaged or marginalized due to changes in their environment related to the intervention itself. Finally, groups can be missed through "tobacco-related poverty" where increased funds used for tobacco means fewer resources are available for food, housing and other basic necessities (44). On the other hand, measures which promote cessation, including increasing tobacco tax, will help people to move out of this condition (16,108).

Given that price has a well-recognized and beneficial impact on reducing tobacco use for socially disadvantaged groups, this is an important intervention. However, to mitigate the potential regressive nature of the intervention from a tax perspective, it is important to ensure that a portion of the revenue generated by tobacco tax increases is dedicated to interventions – such as focused cessation interventions – for those groups who may be left behind.

Recommendation

Targeted Interventions

[8.2] Use a portion of the additional revenue generated by increasing taxation on tobacco to allocate resources to interventions directed at sub-populations that do not optimally benefit from universal interventions.

Determining Interventions

Health promotion and prevention programs that are community-based have been recommended by the Centers for Disease Control Task Force on Community Preventive Services (109). Important aspects of such programs include engaging community coalitions, implementing interventions outside of health-care settings, and consideration of cultural competency (110). The American Legacy Foundation used this approach in supplying grants to organizations that work with priority populations to build capacity to address tobacco-related disparities at the grassroots level (111). A recent study from Ohio suggests factors that improve the likelihood of success of community-based programs include forming close partnerships early in the planning stage, strong government support and a regionalized structure (112). Although evidence on the impact of such community approaches is limited, it is a logical extension of the approach of smaller-scale programs (66) and closely resembles the design of community-based participatory research (113,114).

Discussion

Recommendation

Community Involvement

[8.3] Involve members of identified priority communities in the conceptualization, design and implementation of interventions that will form Ontario's renewed strategy to reduce tobacco use and exposure in support of reducing tobacco-related inequities.

Discussion

Whereas in 2007/08, the prevalence of daily smoking in Ontario for age 12+ was 19% (35), this core indicator of progress for the Smoke-Free Ontario hides the disparities that exist in the prevalence of smoking and burden of tobacco-related illness between populations.

As with other behaviours that carry a health risk, tobacco use is not equally distributed throughout the population.

Moreover, the harm caused by tobacco use is not the same for all people, as it varies with pre-existing health conditions and other health behaviours. In Ontario, higher rates of current or daily smoking have been found to be more common in certain sub-populations.

The examples of disadvantaged population subgroups are not exhaustive and not intended to be the only groups identified in future efforts on tobacco control. Rather, these examples illustrate disparities that exist using available data, and serve to illustrate how there are common causal threads underscoring tobacco-related burden as this relates to social determinants of health (115).

Future efforts should be encouraged to adapt and extend our approach in a number of ways. First, there are many possible ways to operationalize the definition of health inequity in order to identify those at greatest risk. The populations discussed in this chapter were selected based on an understanding of international literature on health inequity as well as a sense of what is just and fair, and both of these approaches lead to a focus on socially and economically disadvantaged groups (6,7,21). Existing data suggest that these populations carry a high burden of tobacco-related illness in Ontario (35). An examination of what other jurisdictions have chosen to focus on fits this selection (1,107,116,117). Not unexpectedly, the sub-populations identified align with the central public health concept of the social determinants of health and other public health approaches to chronic disease areas (118). As progress is made in the focused interventions towards groups identified in this chapter, it will also be possible to identify interventions towards other sub-populations who may be systematically disadvantaged and at risk of tobacco-related illness. These include Francophone populations with higher tobacco use rates (119), those with other addictions including problematic gambling (120), men who have sex with men (121,122), and children exposed to tobacco smoke (123,124). The principles of health equity and the recommendations in this chapter are broadly applicable, and should be considered when developing tobacco control strategies and programs.

A second area of adaptation we would encourage is to ensure that the breadth and quality of our data sources evolve in concert with our understanding of health disparity and potential opportunities for intervention. Our understanding of tobacco-related health disparity and how to mediate the association is necessarily limited by its reliance on existing data, scientific knowledge and beliefs. Population-wide data sources available to

inform and evaluate Ontario tobacco control efforts have known and recurring limitations, which include poor coverage of specific groups. Examples of these include systematic under-sampling (or even exclusion) of Aboriginal populations, the homeless or those residing in institutions, remote populations and those who speak neither official language. In addition, such groups are less likely to be able to advocate for their inclusion into such surveys. Even where included, population-wide data often have very little precision to study, specifically, population groups who make up small percentages of the whole: This which speaks to the need to develop innovative combinations of both broad and focused surveillance data. More information about how to make interventions most effective will be generated both from the initiatives in Ontario, and from new research and data from other jurisdictions. While this new information will inform policy recommendations, the basic equity model outlined in this chapter will remain regardless of changes in the delivery of interventions.

Related to the issue of quality of data and interpretation is recognition that much of the data presented in this chapter have focused on the prevalence of tobacco use, where the true area of concern is tobacco's burden. Burden, the impact on health of tobacco use, in terms of likelihood and severity of outcomes, is a function of several factors – the timing of initiation of tobacco use, consumption level and how this changes over time, products used, how products are used (i.e. smoking typography) and the presence of co-morbid conditions **(125)**. Therefore, differences in prevalence (especially at the net population level) do not fully reflect the burden of tobacco use and exposure. Parallel drops in prevalence rates across sub-populations ignore the fact that differences in the relative proportion of tobacco users in sub-populations actually may get larger rather than smaller. Even where similar changes occur in parallel across diverse groups (e.g., a decline of two absolute percentage points in all groups) this can result in a widening of the difference between high and low risk populations in terms of the relative risk of disease outcomes due to smoking.

Conversely, parallel declines in smoking prevalence (i.e., similar for all groups) can also result in a narrowing of differences in disease burden across groups with higher and lower smoking prevalence. Higher smoking prevalence populations also tend to have higher consumption levels (and higher absolute tobacco-related disease risk), and so achieving the same reductions in prevalence may result in disproportionately large gains in terms of reducing smoking-related health consequences in the population. Similarly, reducing prevalence in populations who simultaneously experience high rates of other chronic disease risk factors, and high rates of co-morbid conditions (e.g., infectious and circulatory diseases, diabetes risk factors, crowding, poorer nutritional status) may make a very large contribution to overall health burden due to elimination of the synergistic interaction between tobacco use and these co-morbidities. If reductions in prevalence are associated with cessation happening at earlier ages, the real health gains may be even greater still.

Therefore, the prevalence of smoking, accumulated years of smoking, heaviness of smoking and presence of complex health problems with multiple co-morbidities are all important factors in determining population

disease burden beyond the absolute number of individuals in each group. All of these factors should be considered when identifying, weighing, and evaluating tobacco control programs and interventions.

Finally – and very importantly – this section so far has addressed subpopulations of interest defined by one factor or characteristic at a time (for the sake of simpler communication) where it is recognized that these (and other) determining factors intersect and interact with each other in complex ways. There are significant overlaps in factors such as age, occupation, income and educational attainment, which intersect with differences in health-care service and protective policy coverage. The most successful identification of groups at high risk of tobacco-related disease burden (and great opportunity to reduce health burden) will consider multiple factors simultaneously. This work must be facilitated through the development of robust data sets which allow multi-variable analyses to identify the combinations of characteristics which are the best predictors of having a high burden or high-risk level, controlling for other factors. Existing analyses of available data often lack equity considerations **(115)**, and, as per calls from a variety of academics, further research is necessary in this area **(126,127)**. The identification of disadvantaged groups and of their specific characteristics will be influenced as such data sets are developed, and targeted interventions may be adapted according to newfound disparities in equity between groups.

Recommendation

Evaluation and Monitoring

[8.4] Ensure monitoring and surveillance of tobacco-related disparities, and that evaluation of policies and services, capture the differential impact on sub-populations.

Conclusions

Given that more than fifty percent of the difference in mortality between those in the highest and lowest social groupings may be attributed to tobacco use and exposure **(16)**, a comprehensive tobacco control strategy which includes both universal and focused interventions could go a long way towards addressing the health inequalities that exist between social groups. Other jurisdictions such as England and Australia also focus on reducing tobacco-related disparities **(43,128)**. A systems-oriented, comprehensive approach incorporating both population-wide and focused interventions will help to address the needs of all Ontarians. To this end, equity-related considerations have been woven throughout this report and include:

- Ensure that equity is incorporated as a core element of the Ontario CTC strategy
- Include members of communities at greatest risk of tobacco-related burden of illness and socioeconomic disadvantage in the conceptualization, design and implementation of CTC interventions in their communities
- Ensure that the approach to addressing tobacco related inequities is based on “levelling up” by recommending targets which increase the proportion of nonsmokers in systematically disadvantaged groups
- Through the expansion of smoke-free spaces, protect those who may be vulnerable and unable to protect themselves, including the not-yet-born, young children, nonsmoking youth and adults
- By increasing price through addressing taxes and contraband, aim to reduce smoking prevalence in low income, cost-conscious groups such as youth and young adults

- Allocate incremental revenue generated by tobacco taxation to interventions directed at sub-populations that do not optimally benefit from universal interventions
- Reduce the impact of the industry on susceptible populations such as youth and low income individuals by implementing a comprehensive tobacco industry de-normalization campaign, plain and standardized packaging, closing existing loopholes in tobacco product advertising and promotion (and other recommendations)
- Reduce the likelihood of initiation, uptake and on-going use of tobacco products in youth and young adults who are known to be vulnerable to tobacco initiation and life-time addiction
- Increase access to cessation services by creating low barrier and personalized approaches to cessation support services in a range of settings across the health system continuum
- Reduce financial barriers to accessing cessation supports by providing free direct-to-tobacco user smoking cessation medication and free NRT to people on Ontario Drug Benefit, in combination with varying amounts of behavioural support
- Meet the specific needs of higher risk populations through targeted cessation interventions
- Capture the differential impact of tobacco use and comprehensive tobacco control interventions on higher-risk populations by ensuring that monitoring and surveillance systems, and evaluation of policies and services are set up to capture these populations
- Create opportunities to redress tobacco-related harms through tobacco-industry litigation

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MOBILE
AUCTION
TECH
MEDIA
NEWS
SEO
BLOG
SOCIAL
INTERNET

CHAPTER 9

Key System Enablers in Tobacco Control

Abstract

This chapter describes the inter-related functions essential to achieving effective comprehensive tobacco control as laid out in the other chapters of this report. Effective CTC requires: strong sustained leadership and durable partnerships; policy, programs and use of mass media for social marketing; and adequate and reliable funding. Underpinning all this must be a learning system to support continual renewal and improvement of the strategy and its interventions. The learning system consists of capacity-building infrastructure, surveillance, evaluation and research. The chapter concludes with consideration of Ontario's role in the regional and global effort to control the tobacco epidemic.

Goal: Ontario will be a recognized leader in the design and implementation of an evidence-informed comprehensive tobacco control strategy and system in order to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

Methods

The Smoke-Free Ontario – Scientific Advisory Committee (SFO-SAC) approach to gathering evidence to inform recommendations on system enablers included several prongs:

- Searches of multiple on-line databases using the terms "tobacco control" OR "tobacco" AND "leadership" OR "partnership" OR "funding." Search criteria included English-only publications, years 2000 to 2010, and scholarly sources including peer-reviewed journals, but excluding book reviews, dissertations and newspapers. References were reviewed by most recent and relevance rank. Reviews and population-level studies were identified, including longitudinal and cross-sectional observational studies of US national and state-level comprehensive tobacco control (CTC) campaigns. Case studies were also reviewed. Features such as "cited in" were used to identify related publications.
- Use of standard and commonly used internet search engines and within-site searches for public reports from credible sources such as the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) and Smoke-Free Future – A comprehensive tobacco control strategy for England. Ontario Tobacco Research Unit (OTRU) Monitoring Reports were also reviewed.
- Consultation with Ontario tobacco control stakeholders to situate the evidence in the Ontario context.
- International Expert Panel (IEP) members (see acknowledgements for list of members) and SFO-SAC scientists provided additional citations based on expertise and knowledge of the published and grey literature.

The peer-reviewed published literature in this area is comprised mainly of case studies and studies which use longitudinal observational and other quasi-experimental designs. Meta-analyses, reviews and modelling studies were reviewed when available. Expert opinion was provided by SFO-SAC scientists and the IEP on interpretation of published studies.

Introduction

System enablers are those inter-related functions or capacities that support an effective comprehensive tobacco control strategy (1). Descriptions of these functions were derived from the Primary Prevention of Chronic Diseases in Canada: A Framework for Action (1).[11] The SFO-SAC logic models include these functions as important inputs into the overall strategy (Appendix B).

Evidence to Guide Action – Enabling System

Five key system enablers were identified:

- Leadership, including partnership and coalition-building
- Support for development and implementation of policies, programs and social marketing
- Funding
- Capacity-building infrastructure, surveillance, evaluation and research – a comprehensive tobacco control Learning System
- Ontario's role in a global tobacco economy

Elements of a successful and sustainable strategy

According to the *CDC Best Practices for Comprehensive Tobacco Control Programs 2007,* the elements of a successful CTC strategy include state (provincial) and community interventions (including policy and program interventions), health-communication interventions (including tobacco industry denormalization), cessation interventions, surveillance and evaluation. In addition, various administration and management activities are required as listed below (2).

CDC Best Practices – Management and Administration Activities

- Engaging in strategic planning to guide program efforts and resources to accomplish their goals
- Recruiting and developing qualified and diverse technical, program and administrative staff
- Awarding and monitoring program contracts and grants, coordinating implementation across program areas and assessing grantee program performance
- Developing and maintaining a real-time fiscal-management system that tracks allocation and expenditure of funds
- Increasing capacity at the local level by providing ongoing training and technical assistance
- Creating an effective communication system internally, across chronic disease programs and within local coalitions and partnerships
- Educating the public and decision-makers on the health effects of tobacco and evidence-based effective program and policy interventions

Source: CDC Best Practices for Tobacco Control Programs, 2007 (2, p.48).

11 Further detail on these functions can be found at the CDPAC website http://www.cdpac.ca/media.php?mid=451 and in the glossary of this report (see Appendix A).

Leadership for Comprehensive Tobacco Control

Strong and sustained leadership

Leadership includes the capacity to set a vision, identify goals, objectives and outcomes, set targets, plan and manage partner relationships and provide oversight and accountability including performance management (1). The WHO Framework Convention on Tobacco Control (FCTC) states that "strong political commitment is necessary to develop and support… comprehensive multi-sectoral measures and co-ordinated responses" (3-5). According to the CDC, "State capacity and infrastructure, including clear leadership and dedicated resources are essential to the development and implementation of a strong strategic plan that includes the identification and elimination of tobacco-related disparities" (2, p.24). Case studies stress the importance of strong, experienced and committed leadership to develop a strategy and plan, build partnerships, negotiate the policy environment and "get things done" (6). The IEP stated that leadership is critical at all levels (i.e., political, public service, non-government organization — NGO), but in CTC it is perhaps most critical at the highest political level (7) and includes a strong and visible leadership presence.

The Ontario government has the legislative authority under the *Health Protection and Promotion Act* (HPPA) to require Boards of Health to provide comprehensive tobacco control programming within the Chronic Disease Prevention mandatory programs. In the development of the new Ontario Public Health Standards (OPHS), the Ministry of Health Promotion and Sport (MHPS) played a leadership role by setting goals, objectives and outcomes of the Chronic Disease Prevention Standard which includes the Tobacco Compliance Protocol (8). Concepts of leadership, coordination and collaboration are integrated in the comprehensive tobacco control protocol and associated guidance document.

Whole-of-government approach

Jurisdictions, such as the UK, have recognized the need for cross-governmental leadership in comprehensive tobacco control. Recognizing the importance of a whole-of-government approach, the UK Smoke-Free Future strategy clearly indicates the Cabinet Sub-Committee on Health and Wellbeing is responsible for "driving and monitoring progress" (9). Ontario stakeholders also recommend the creation of an inter-ministerial steering committee to provide government leadership and leverage capacity within and across multiple ministries (10).

Strong sustained partnerships

Partnerships and shared leadership with civil society especially with non-governmental organizations (NGO) are important to generate and sustain momentum in comprehensive tobacco control (11,12). At a global level, civil society organizations helped to mobilize and influence countries during the negotiation of the FCTC and counter pressure from the tobacco industry and its allies (13), while at the local level community advocates played an essential role in mobilizing to create policy change (12).

Leadership for Comprehensive Tobacco Control

Strong sustained partnerships

Advocacy groups and community partners have an important role to play in getting the message out and building momentum to support social action and local policy change. Evidence from Ontario confirms this. Ontario Campaign for Action on Tobacco (OCAT) engaged in a decade of work to support the development and implementation of smoke-free by-laws across Ontario. Among other constructive partnerships of the Ontario Tobacco Strategy (OTS) have been the Media Network and the Ontario Tobacco-Free Network (OTN) **(14)**. Each made important contributions to the infrastructure of Ontario's tobacco control strategy in the period 1999 to 2004, particularly in the area of promoting municipal by-laws to establish smoke-free areas **(15)**. The Canadian Cancer Society has been the sponsor of the Smokers' Helpline **(16)**, Heart and Stroke Foundation of Ontario has played a critical role in mass media public education efforts, and the Lung Association has spearheaded youth oriented initiatives in tobacco control including school-based programs and youth advocacy training. More recently, the Tobacco Control Advisory Networks (TCANs) have been a constructive partnership of NGOs and public health units (PHUs).

*Several jurisdictions actively encourage local partnerships with community organizations (e.g., to create local "smoke free alliances") recognizing that the commitment, effort and innovation to be found at the local level are essential ingredients in the success achieved in tobacco control over the past decade **(9)**.*

The importance of partnerships was consistently raised by stakeholders and echoed by reports from the literature.

Partnerships were also key to the development and implementation of the highly influential American Stop Smoking Intervention Study (ASSIST). This large-scale natural experiment compared ASSIST states to non-ASSIST states in terms of strength of tobacco control resources, capacity and program efforts, policy outcomes and overall adult-smoking prevalence. At the end of the study period, ASSIST states had statistically significant lower adult-smoking prevalence than non-ASSIST states. ASSIST would not have come about without a strong and sustained leadership coalition. Leadership was achieved through partnerships which included the National Cancer Institute (NCI), the American Cancer Society and government at all levels. The program was sustained and transferred to the CDC and led to the national tobacco control program that is still running. Programs in California, Massachusetts and Ontario were all based on the ASSIST model **(17-19)**.

In ASSIST, coalitions also played an important role in anticipating and defending against countervailing measures by the tobacco industry which included actively opposing tobacco control efforts and significant investment in product promotion **(17)**. The ASSIST experience highlights that tobacco control does not occur in a vacuum and leadership needs to anticipate and deal with a negative response from the industry and related forces.

In Ontario, stakeholders noted a success factor in the previous strategy was that many organizations took on various leadership roles when needed **(10)**.

Recommendations

Leadership and Partnership

[9.1] Foster and sustain commitment at every level and across all of government to lead, coordinate, monitor and ensure accountability for outcomes in comprehensive tobacco control.

[9.2] Foster and sustain coalitions to sustain the vision, innovate and promote tobacco control initiatives at local and provincial levels.

[9.3] Foster and sustain partnerships between government and non-government organizations, the public health system, the health care system and others in order to coordinate and deliver the programmatic and social marketing interventions required to eliminate the burden of tobacco use in Ontario.

[9.4] Leadership must anticipate and manage the countervailing efforts of the tobacco industry.

Support for Development of Policies, Programs and Social Marketing

Policy development

The most powerful tools in tobacco control are of a policy nature, the most prominent examples being tobacco taxation and smoke-free stipulations (20). Policy development requires:

- The capacity to use surveillance, evaluation, monitoring and research information in order to identify policy development and policy refinement needs
- The ability to identify and assess the relative costs and effects of policy alternatives for meeting these needs; consultation with a broad range of stakeholders to determine feasibility
- The capacity to prepare policy briefs and cabinet submissions
- The willingness to engage in demonstration projects to test the potential of promising and innovative policy interventions
- The willingness to anticipate and manage the negative response from the tobacco industry

In addition, good policy development requires the capacity to use monitoring, evaluation and surveillance data (evaluative information) including surveillance of the tobacco industry's activities, to assess the success of chosen policy alternatives in meeting policy needs in a timely fashion and to refine and change policies if needed.

Program development

Program development requires the capacity to plan and design program interventions at the local, regional and provincial levels. Steps include:

- Identification of needs (using various surveillance, evaluation and needs assessment tools)
- Review of scientific and practice-based evidence for potential program interventions
- Identification of mechanisms of change likely to work under the relevant contexts
- Intervention design, implementation and monitoring
- Evaluation of effects
- Engagement in continuous learning to refine and improve the program

Furthermore, there is a need for local, regional and provincial CTC staff to have capacity for planning and execution supported by enabling system components such as surveillance, evaluation, monitoring, research and knowledge exchange and support in program design. Programs that are successful in one jurisdiction within Ontario should be supported with funding and transferred to other jurisdictions.

Media and social marketing

Social marketing, the strategic use of media for planned social change, is a key aspect of CTC. Paid media, earned media and new forms of media (e.g., use of web 2.0) are components of a social marketing strategy. NCI Monograph 19 reviews the evidence of effectiveness of mass media as a population strategy to reduce tobacco use. The report concludes that the preponderance of evidence suggests that mass media can be effective in reducing tobacco use (21).

All intervention areas considered in this report (addressing the disease vector, protection, prevention and cessation) require complementary social marketing strategies to build awareness and inspire voluntary action which precedes policy change. In addition, IEP recommends that tobacco industry denormalization (TID) be a priority for Ontario (7); TID is most effectively addressed with social marketing techniques.

Enabling excellence in this area requires:

- Consistent funding to achieve an adequate dose and penetration
- Support to local, regional and provincial staff in identifying marketing needs
- Design strategies for earned and purchased media
- Co-ordination amongst media efforts, and between media, policy and program interventions
- Evaluation of the effectiveness of these activities

Recommendation

Policy, Program, and Social Marketing Support

[9.5] Ensure those responsible for developing and implementing comprehensive tobacco control policies, programs and social marketing interventions have adequate resources, capacity and support to design and implement activities effectively.

Funding

Comprehensive tobacco control is effective

"Evidence-based, state-wide tobacco control programs that are comprehensive, sustained and accountable have been shown to reduce smoking rates, tobacco-related deaths and diseases caused by smoking" (2, p.7).

Comprehensive tobacco control programs have been shown to be effective in reducing adult and youth smoking rates (17,22,23). Studies include evaluations of large multi-state interventions such as the ASSIST program (17-19,24), US state tobacco control programs including California (25), Massachusetts (26), Florida (23) and the National "truth" Campaign (27).

Comprehensive tobacco control programs have also been shown to be effective in reducing the burden of illness attributable to tobacco. Compared to the rest of the US, per capita cigarette consumption (see Figure 2.2) and age-adjusted rates of death from heart disease in California fell significantly from 1980 to 1997 in relation to California Tobacco Control Program (CTCP) (28). Furthermore, changes in the rate of death from heart disease were associated with changes in cigarette consumption. A second study comparing cancer-registry data for lung, prostate and a variety of other cancers showed that, after a one year lag, lung cancer rates fell significantly in the years that followed the implementation of the CTCP compared to the pre-CTCP rates (29). A time-series analysis comparing California with 38 control states between 1989 and 2004 estimated that California's CTC program was associated with substantially less cigarette consumption and health care expenditures that were $86 billion (95% CI $28B - $151B) lower than would have been expected without the program — a 50-to-1 return on investment (30).The effectiveness of comprehensive tobacco control is further supported by studies that demonstrate large scale effects of key policy interventions such as smoke-free stipulations. A systematic review and meta-analysis which examined the association between the introduction of smoke-free by-laws and hospitalization for acute myocardial infarction (AMI) demonstrated that the AMI risk decreased by 17% overall following the intervention, with the greatest effect among young people and nonsmokers (31). In Ontario "crude rates of admission to hospital because of cardiovascular conditions decreased by 39% (95% CI 38%–40%) and admissions because of respiratory conditions decreased by 33% (95% CI 32%–34%) during the ban period affecting restaurant settings" (32, p. 761).

In addition, several modelling studies based on cessation or smoke-free by-laws predict significantly reduced hospitalizations and health care costs within the first year for AMI (31,33-35) low birth weight (LBW) (36) and congestive heart failure (CHF) (37) (also, see Chapter 10.)

Is there a dose-response effect?

Several published reports demonstrate a dose-response effect between funding levels and program outcomes.

For example, a pre/post quasi-experimental design study looked at trends in youth-smoking prevalence in relation to the "dose" of the "truth" campaign. Results showed that "smoking prevalence among all students declined from 25% to 18%" after the campaign commenced and that "there was a statistically significant dose–response relationship between truth-campaign exposure and current youth-smoking prevalence (odds ratio [OR] = 0.78; 95% confidence interval [CI] = 0.63, 0.97; p<.05.)" (38, p.428). Another study used survey data to examine the relationship between state-level expenditure and quit attempts in college students and found that a "higher level of state spending on tobacco control programs was associated with a statistically significant increase in the probability of… at least one quit attempt" (39). Also, in their observational study of declines in cardiovascular mortality in California between 1989 and 1997, Fichtenberg and Glantz noted that the decline commenced about a year after program initiation, consistent with a lag phase, then slowed after the program was cut back in 1992 (28).

Impact of funding reductions

Several published reports describe the impact of funding reductions on rates of decline in tobacco use and related variables **(25,28,40-44)**. As mentioned earlier, although "rates of decline in per-capita cigarette consumption and mortality from heart disease in California… were greater" following the introduction of California's Tobacco Control Program in 1989, these rates of decline slowed after program cutbacks beginning in 1992 **(28, p.1772)**. In Florida, reductions in tobacco control funding resulted in declines in recall of the "truth" campaign and the nonsmoking intentions of youth **(44)**. In addition, Chapter 2 documents how comprehensive tobacco control funding cuts in Massachusetts flattened or reversed trends of significant declines in smoking and cigarette purchasing by youth achieved during a period of full funding. Other examples of the impact of funding cuts on youth smoking can be found in the OTRU Monitoring Update, January 2010 **(45)**.

Controlling for factors other than CTC

Factors such as taxation and cross border sales can also impact trends in tobacco use and related health outcomes, and it is important to try to differentiate these from funding level effects. Two studies analyzed the impacts of tobacco control expenditures on: 1) aggregate tobacco sales for the period 1981 to 2000 and 2) adult-smoking prevalence over the period 1985 to 2003 while controlling for these potentially confounding variables. Both studies demonstrated that increases in funding for state tobacco control programs reduced tobacco sales and adult-smoking prevalence even when controlling for cigarette excise taxes, cross border cigarette sales, "time-varying state factors (such as unemployment, disposable income and drop-out rates)", state-specific indicator variables and time trends **(46,47)**. Also, the impact of tobacco control funding on tobacco sales appeared to be cumulative such that earlier years' investments contributed to ongoing reductions in tobacco-use rates **(46)**. These studies also estimated the impact on the number of smokers of funding at the CDC-recommended minimum and optimum per-capita levels. Significant reductions in smokers would be anticipated given minimum and optimum funding levels.

Timeframe and the cumulative nature of the investment

Several studies have found that the impacts of tobacco control program funding are cumulative, and, although benefits in terms of low birth weight and reduced hospitalization for AMI and stroke can be seen within the first year, there may be lags between investment and achieving the full benefit of all outcomes. While the full impact of funded initiatives develops over several years, well-executed programs (such as that pioneered in California) lead to reductions in smoking, disease and associated health costs within a year.

Recommendation

Funding

[9.6] Fund the Ontario comprehensive tobacco control program consistently at levels required to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

Ontario Comprehensive Tobacco Control Learning System

Technical assistance to strengthen tobacco control capacity

"Because it takes time and resources to establish the capacity needed to implement effective interventions, it is critical to sustain an established infrastructure" **(2, p.48)**.

Activities directed at increasing capacity at the local level by providing ongoing training and technical assistance and coordination are required (2). "Technical Assistance usually involves assessing an organization's need, then providing tailored assistance by an expert to help build the identified capacity" (48, p.548). These capacities can include individual, organizational or system-wide capacity such as increasing knowledge and skills on tobacco-related issues, fostering leadership among the workforce and increasing organizational support and strengthening partnerships between and among tobacco control organizations (48).

Ontario has a reasonably well-developed tobacco control infrastructure consisting in part of tobacco control resource centres and OTRU. This system provides scientific and practice-based evidence, surveillance and monitoring data, evaluation and evaluation support, knowledge exchange, training, tools, and technical supports to tobacco control intermediaries. The Smoke-Free Ontario strategy currently has four resource centres housed within provincial agencies and organizations:

- Program Training and Consultation Centre (PTCC)/Media Network at Cancer Care Ontario (CCO)
- Youth Advocacy Training Institute (YATI) at the Ontario Lung Association
- Smoking and Health Action Foundation (SHAF), Non-Smokers' Rights Association (NRSA)
- Training Enhancement in Applied Cessation Counselling and Health (TEACH) at the Centre for Addiction and Mental Health (CAMH)

This cluster of provincial support programs assists Ontario health intermediaries to build their capacity for tobacco control through provision of extensive training and technical assistance and resource support. The Smoke-Free Ontario Training and Technical Assistance Working group (comprised of the resource centres cited above) plans collectively on an annual basis, met quarterly to discuss operational issues and works with Tobacco Control Area Network coordinators and local tobacco managers to support their technical assistance needs. OTRU is represented in this task group. Members of this group are also involved with the current provincial planning group: the Tobacco Stakeholder Advisory Group (TSAG).

To build capacity to implement the renewed strategy, Ontario requires an enabling system plan which:

- Delineates roles, responsibilities and accountabilities
- Examines new and existing aspects of the strategy
- Identifies the capacity building and timing requirements for implementing these changes and refreshing existing elements

This plan would also specify appropriate mechanisms for engagement, audiences and tactics, and outline knowledge development and exchange requirements.

Ontario Comprehensive Tobacco Control Learning System

Technical assistance to strengthen tobacco control capacity

Surveillance, evaluation and research

Surveillance

According to the CDC, "a comprehensive tobacco control program must have a system of surveillance and evaluation that can monitor and document short-term, intermediate, and long-term intervention outcomes in the population to inform program and policy direction, as well as to ensure accountability to those with fiscal oversight" **(2, p.44)**. Moreover, "surveillance is the process of monitoring tobacco-related attitudes, behaviours and health outcomes at regular intervals of time" **(2, p.44)**. It is an important aspect of CTC and can be an agent for change **(49)**. OTRU provides access to ongoing surveillance of CTC in Ontario through its annual monitoring report series. Analyzed data are accessible to policymakers, practitioners and researchers through OTRU's Tobacco Informatics Monitoring System (TIMS). The monitoring reports and TIMS use data from several population surveys and administrative data sources. These include the Canadian Community Health Survey (CCHS); Canadian Tobacco Use Monitoring Survey (CTUMS); Youth Smoking Survey (YSS), Centre for Addiction and Mental Health Monitor (CAMH-M), Ontario Smoking, Drug Use and Health Survey (OSDUHS) and the longitudinal Ontario Tobacco Survey (OTS).

Evaluation

Adequate evaluation helps to inform the ongoing renewal and cost-effectiveness of the strategy and its sub-components. Ontario stakeholders identified the vitally important role of evaluation, research and monitoring in producing evidence to support CTC **(10)**.

OTRU provides evaluation services and products including monitoring and assessment of the Smoke-Free Ontario strategy, formative and outcome evaluation of programs and activities conducted under the auspices of the Smoke-Free Ontario strategy, quality assurance assistance with self-evaluation of these programs, development of the Performance Indicators Monitoring System (PIMS); documentation of Smoke-Free Ontario programs, assessment of use of evidence and enhancement of Ontario's capacity to conduct research, monitoring, and evaluation, in addition to planning and program development based on scientific evidence (**www.otru.org/evaluation.html**).

"Evaluation planning should be integrated with program planning. A comprehensive state tobacco control plan requires appropriate surveillance and evaluation data systems" **(2, p.44)**. The CDC Best Practice Guidelines state, "surveillance and evaluation systems must have first priority in the planning process" **(2, p.44)**. In addition, there must be capacity to make use of evaluative information which supports setting targets and short- and long-term indicators, accountability for interventions and strategy and an annual report card of the CTC strategy in Ontario. Additional economic evaluation to demonstrate the effectiveness of the strategy and make appropriate adjustments would also be helpful. Exemplars of well-developed and well-executed state

evaluation programs include both the California and New York State TCPs. For example, California monitors tobacco use through four different surveys. These instruments are also adapted for specific populations such as Asian Indian, lesbian, gays, bisexuals and transgender, and active duty **(50)**. California also produces biannual reports on its in-school Tobacco Use Prevention Education (TUPE) programs **(50)**. Similarity, New York State commissions independent, biannual evaluation of it tobacco control program and annual reports on its tobacco enforcement program **(51)**.

Research and innovation

Ontario-based researchers have made substantial contributions to global knowledge in CTC. University-based researchers (from Ottawa, Waterloo, Toronto, McMaster, Brock and Lakehead) have contributed in areas as diverse as tobacco control policy; second hand smoke (SHS) exposures; packaging and marketing; hospital and community-based cessation programs; use of Internet to support cessation; improved understanding of youth initiation and uptake in school and university settings; school- and campus-based tobacco control; genetics and neurobiology of tobacco dependence; neurobiological correlates of co-morbid depression and tobacco dependence; smoking behaviour in methadone maintenance patients; the International Tobacco Control project; the economics of tobacco use; and tobacco control in developing countries and monitoring of tobacco industry marketing, public relations and political activities.

Ontario is well known and well placed to play a role internationally. Ontario has the depth and breadth to contribute to a global understanding of what works and how it works in eliminating the tobacco epidemic.

Summary – Ontario Tobacco Control Learning System

Ontario Comprehensive Tobacco Control Learning System

Surveillance, evaluation and research

The idea of a learning system is to bring together the elements of the comprehensive tobacco control enabling infrastructure — scientists, practitioners, policy-makers and those providing technical assistance and capacity-building, surveillance, program monitoring, and evaluation — to foster and enable continuous learning, innovation, experimentation and excellence. The concept of a learning system builds on the notion of comprehensive tobacco control as a complex adaptive system **(52)**.

> "Systems thinking has the potential to transform tobacco control research, practice and policy by improving collaboration and by providing a more dynamic and adaptive evidence base for practice and a deeper knowledge about the impact of tobacco prevention and control activities. Systems organizing encourages the transformation to a systems culture by addressing the core issues: vision and paradigm, barriers, leadership, and the need for an ongoing learning environment for systems thinking. System networks of tobacco control stakeholders form a foundation for a systems environment in tobacco control, replacing 'silos' with linkages of people and resources that transcend geography and discipline. Systems knowledge management and translation form a key component of systems approaches for tobacco control, examining purpose, people, process, and products within a broader knowledge infrastructure" **(52, p.5)**.

Many elements of the learning system are already in place. These include research, evaluation, surveillance, monitoring, capacity-building, training and technical assistance. Scientists, policymakers and practitioners are already connected in various networks, including the four resource centres, OTRU, Canadian Action Network for the

Ontario Comprehensive Tobacco Control Learning System

Surveillance, evaluation and research

Accountability and Performance Management

Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT), and the communities of practice for regional action planning. By strengthening and coordinating these elements, Ontario can support and enable rapid innovation, experimentation and feedback to continuously inform the renewal of comprehensive tobacco control policies and practice.

Recommendation

Learning System

[9.7] Optimize and sustain the comprehensive tobacco control learning system infrastructure which makes Ontario a leader in intervention research, development, and dissemination; as well as continuous improvement of comprehensive tobacco control through research, evaluation, performance monitoring, surveillance of outcomes, and continuous quality improvement.

Accountability and Performance Management

Embedded throughout this report are recommendations regarding accountability. A complete accountability framework requires systems to ensure that performance, evaluation, and surveillance results are embedded in management and policymaking structures so that they become routine inputs into management and policy decisions. The learning system proposed in this report (above) is a central component of a comprehensive accountability system which uses streams of evaluative information to constantly improve program management and to inform decision-making.

Recommendation 7.6 in Cessation, Chapter 7, specifically refers to the need to create accountability mechanism across the whole health care system to ensure that smokers are asked, advised and assisted to quit at every point of contact (local health integration networks (LHINs), hospitals, primary care provider, specialty care, home care etc.) Accountability agreements with LHINs, hospitals, and other health care service organizations present one mechanism to achieve this objective. Recommendation 9.7 (above) speaks to the need for research, evaluation, performance monitoring and surveillance of outcomes to ensure continuous quality improvement, and reflects the need for a fully developed performance management system which includes evaluation planning.

Importantly, the Ontario Public Health Standards (OPHS) including the Population Health Assessment Protocol, Chronic Disease Prevention Standard and Tobacco Compliance Protocol (2008) have specific requirements for boards of health which include:

- Assessment and surveillance activities
- Health promotion and policy development with various partners and in a variety of settings including schools and workplaces
- Collaboration with local food premises to provide information and support environmental changes through policy development related to… protection from environmental tobacco smoke
- Working with municipalities to support healthy public policies and the creation or enhancement of supportive environments in recreational settings and the built environment regarding topics including comprehensive tobacco control Increasing the capacity of community partners to coordinate and develop regional/local programs and services related to comprehensive tobacco control
- Providing of tobacco use cessation programs and services for priority populations

- Increasing public awareness of… comprehensive tobacco control
- Providing advice and information to link people to community programs and services, and,
- Implementing and enforcing the *Smoke-Free Ontario Act* in accordance with provincial protocols, including but not limited to the Tobacco Compliance Protocol, 2008 (or as current)

Guidance documents for comprehensive tobacco control by professional staff of local boards are available.

This renewal of comprehensive tobacco control in Ontario presents an opportunity for developing an accountability and performance management framework across a whole of government approach. The program logic models and suggested goals, targets and indicators present a starting point for the development of such a framework.

Ontario's Role within a Regional and Global Tobacco Control Framework

Canada has ratified the WHO FCTC. As a large and populous province within Canada, Ontario has an important role to play in contributing to Canada's obligations under the FCTC **(3,5)**. In addition, given the extent of cross-border tobacco traffic between Ontario, Quebec and New York State, and actions being taken by those jurisdictions on contraband now **(53)**, Ontarians would benefit from stronger collaboration with Quebec and NYS, focused specifically on addressing the contraband problem.

Recommendations

Global Leadership

[9.8] Demonstrate leadership within Canada in achieving and exceeding the World Health Organization's Framework Convention on Tobacco Control provisions in Ontario.

[9.9] Collaborate with Quebec and New York State to address the contraband problem.

Accountability and Performance Management

Ontario's Role within a Regional and Global Tobacco Control Framework

WHO's Framework Convention on Tobacco Control **(3, p.v)**

Core demand reduction provisions

- Price and tax measures to reduce the demand for tobacco
- Non-price measures to reduce the demand for tobacco, namely:
  - Protection from exposure to tobacco smoke
  - Regulation of the contents of tobacco products
  - Regulation of tobacco product disclosures
  - Packaging and labelling of tobacco products
  - Education, communication, training and public awareness (including efforts directed at primary prevention)
  - Tobacco advertising, promotion and sponsorship
  - Demanding reduction measures concerning tobacco dependence and cessation

Core supply-reduction provisions

- Illicit trade in tobacco products
- Sales to and by minors
- Provision of support for economically viable alternative activities

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CHAPTER 10

The Case for Comprehensive Tobacco Control: Reprise

Abstract

Tobacco use is a major cause of illness and economic loss in Ontario (approximately $7.7 billion annually, see Chapter 1). The evidence demonstrates that a renewed comprehensive tobacco control strategy (CTC) will produce immediate and long-term benefits and presents a moral, legal, and economic imperative to government. Ontario has many existing strengths in tobacco control on which to build. CTC must be advanced on all fronts to be effective. A summary of goals and recommendations is presented.

Renewed Comprehensive Tobacco Control (CTC) Will Produce Major Health and Economic Benefits for Ontarians

There is no doubt that tobacco use is a major cause of illness and death and that it has a dramatic impact in Ontario. A summary of conditions attributable to tobacco includes cancers in 19 sites, 12 respiratory conditions, three cardiovascular diseases, and six conditions related to pregnancy and infant death (see Chapter 1, Table 1.1). This can be considered a conservative tally as it is limited to the conclusions of authoritative scientific panels reviewing large volumes of evidence. New conditions, notably breast cancer, are being added to the list continually. Many of conditions, including lung cancer, cervical cancer, coronary heart disease (CHD) and stroke, result from both smoking and exposure to secondhand smoke (SHS).

The cost of this long list of diseases and conditions attributed to tobacco has been estimated at $7.7 billion annually for the Ontario economy (Figure 1.1). The two major contributors to this immense sum are:

- Health care costs of $1.9 billion
- Lost productivity from sick and dying workers of $5.8 billion

Reduced tobacco use will result in better health; this in turn will diminish the need for health care services attributable to tobacco. In 2002, for example, tobacco accounted for 10.3% of hospital days (1). The cost of this, as well as doctor visits, medications and other forms of care and the time spent on tobacco-caused diseases can be redeployed to care for other, less preventable, conditions. This would contribute to result in shorter wait times for various hospital and medical issues.

There are many examples of how reduced tobacco use can benefit health care. Consider just two:

- Faster recovery from surgery of nonsmokers compared to smokers
- Fewer emergency room visits by children suffering from asthma due to exposure to SHS

At the same time that health care costs are reduced through less tobacco use, productivity will be increased as workers spend less time off the job, whether due to illness or early death.

The Case for CTC in Ontario:

- Tobacco use costs Ontario an enormous number of dollars and lives each year
- Effective methods for reducing tobacco use are known
- If implemented as recommended, tobacco control will more than pay for itself
- Illness will be reduced and lives will be saved
- The health care system will benefit from reduced costs and shorter waiting times

Renewed CTC Will Show Benefits Quickly

It has been demonstrated that reduced tobacco use will mean a healthier population with fewer reasons to use health-care facilities. Many Ontarians might imagine there will be a long delay before any savings are realized, but this is not the case. Within one year, hospitalizations for stroke and heart attack are reduced (2), as is the incidence of lung cancer (3). Even more impressively, low birth weight deliveries are reduced if the pregnant mother stops smoking in the first trimester of pregnancy (4).

Parallel early gains in productivity can also be expected from reduced tobacco use. Reduced tobacco use – particularly through cessation – will produce the greatest gains for smokers (see Chapter 7). But early gains can also be expected from measures to protect nonsmokers (see Chapter 6). Protection benefits the entire population, and it does so almost immediately: it ensures healthier air for the 11 million Ontarians who are nonsmokers while it supports and encourages cessation by the two million who are smokers (5).

Renewed CTC is a Moral, Legal and Economic Imperative

The health and economic benefits of reduced tobacco use are readily demonstrated, and provide strong incentive for government to act. Beyond these arguments, there is a moral and legal duty on the part of public health officials to protect the public from known risks when there are remedies available. The fact that health is a core value for Canadians adds weight to this duty.

To reiterate:

- The hazards of smoking are substantial, well documented, and widely known (see Chapter 1, Table 1.1)
- There is no safe level of smoking, even for experimenters (see Chapter 5)
- There is no known safe level of exposure to tobacco smoke (see Chapter 6). Thirdhand smoke can be considered secondhand smoke in a more durable form
- Affordable and effective interventions are available to address the tobacco use epidemic (see the recommendations that follow)

Modeling by Cancer Care Ontario in 2002 demonstrated the potential impact of just one type of intervention – increasing the price of cigarettes through taxation (Figure 10.1). Real tobacco prices (after accounting for inflation) in Ontario increased 48% from 2002 to 2006 (Table 10.1), suggesting that some reduction in mortality will follow. However, it will be less than indicated in Figure 10.1 since a) the increase was distributed over four years whereas the modelling assumed a single-year increase and, more importantly, b) the price of cigarettes was effectively lowered below the level shown in Table 10.1 by discount cigarettes and contraband (see Chapter 4).

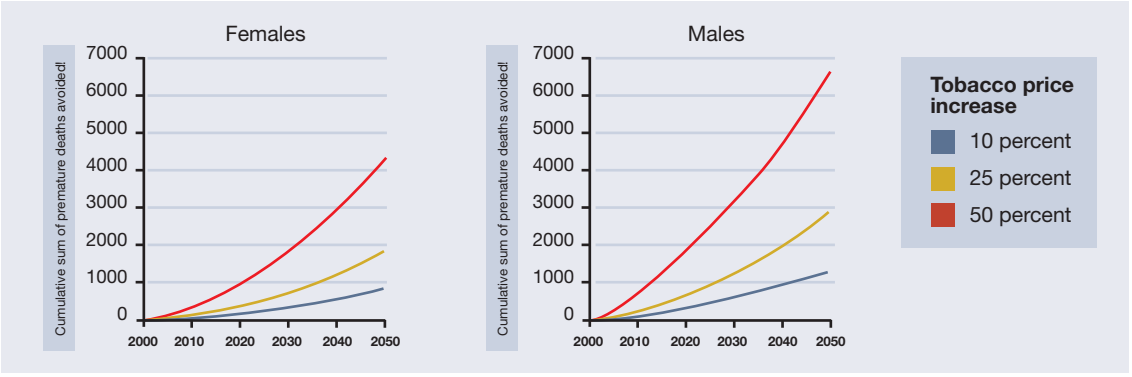
While the impact of the 2002-06 tax increases was perhaps less than it might have been, the substantial size of the tax increase demonstrated that government acted in 2002 on its duty to protect. In contrast, real cigarette prices increased only 4% between 2006 and 2010 (Table 10.1).

Renewed CTC Will be Efficacious as it Builds on Existing Strengths

Earlier chapters in this report describe the gains made under the Ontario Tobacco Strategy (OTS) and the Smoke-Free Ontario strategy. These gains mean not only that the overall burden of tobacco use has been substantially reduced, but also that there is a solid foundation on which to build renewed CTC. This foundation includes momentum, human capital, infrastructure, and new understanding:

- Action is needed to address faltering CTC in Ontario, as indicated by a slowing in the decline of smoking by both adults (see Chapter 7) and youth (see Chapter 5). However, the positive trends have been underway for some years (see Figure 2.3) and have been interrupted only recently. Momentum will be easier to restore if action is taken soon.

FIGURE 10.1: Cumulative mortality reduction in Ontario adults under 65 years of age after three levels of tobacco price increase, by sex, 2002-2050



Source: Adapted from Cancer Care Ontario, Tobacco or Health in Ontario, 2002 (6).

TABLE 10.1: Cost of 200 cigarettes in Ontario, 2002, 2006 and 2010

Year	Price of 200 cigarettes*	Consumer price index, all items (Ontario)**	Price of cigarettes in 2002 dollars	Real increase over previous period
2002	$42.26	100	$42.26	--
2006	$67.97	108.8	$62.47	47.8%
2010	$74.49	114.8	$64.89	3.8%

Source: Custom analyses prepared for this report from *Cigarettes prices in Canada, 2010 (7); **Consumer price index, by province, 2010 (8).

Renewed CTC Will be Efficacious as it Builds on Existing Strengths

- The *Smoke-Free Ontario Act (SFOA)* has been effective in supporting prevention and providing protection in many settings. The Act has been well supported by the public, who also support further reductions in SHS (Chapter 6). Moreover, it is now known that such legislation encourages cessation as well as ensuring healthier environments (5). An expanded *SFOA* can be expected to achieve similar gains, and to achieve them in a cost-effective and rapid manner.

> "Actions are urgently needed to curtail the public health catastrophe in Ontario caused by tobacco products. This report spells out these actions as recommendations. If implemented, they will pay dividends. Ontarians will be healthier and more productive. Unnecessary costs to the economy will be avoided, freeing up resources to provide other benefits to the people of Ontario….
>
> A piece-meal approach will not work. Only a comprehensive approach incorporating all of the components outlined in this report will show that the Government of Ontario is serious about tobacco control."
>
> Source: Expert Panel on the Renewal of the Ontario Tobacco Strategy, *Actions Will Speak Louder Than Words,* 1999, p.33.

- There is infrastructure and human capital in place to implement a reinvigorated CTC. Infrastructure development and capacity-building featured strongly in the early years of CTC in Ontario, and have often been noted favourably by the Ontario Tobacco Research Unit (OTRU) in its annual monitoring reports (e.g., OTRU Monitoring Report 9 No 4, Mar 2004; OTRU Monitoring Report 13 No 3, Feb 2009). These resources include: experienced non-governmental organizations (NGOs), the local health integration networks (LHINs), Tobacco Control Area Network (TCAN), OTRU, the resource centres including PTCC and the Media Network, and the Tobacco Strategy Advisory Group (TSAG). This report includes an analysis of system enablers including infrastructure and human capital (see Chapter 9).
- Since the 1999 Expert Panel report urging action on CTC (9), an extensive body of knowledge has been developed on CTC in Ontario and elsewhere. This report summarizes the most salient lessons on prevention (see Chapter 5), protection (see Chapter 6), and cessation (see Chapter 7). It offers recommendations (see below and individual chapters) and lays out an approach to CTC in logic models (see Appendix B). This knowledge was developed through extensive literature search and consultation and was reviewed and informed by the International Expert Panel (see Chapter 3).
- Lessons from CTC in Ontario and elsewhere have led to a new appreciation of the need to directly address the disease vector and equity. Both factors were often overlooked by earlier interventions in Ontario. Now there is new acknowledgment of the importance of the supply side of the tobacco epidemic, leading to labelling it as the disease vector, which, like H1N1, has a shifting, drifting nature.[12] New approaches are proposed for addressing the vector directly (Chapter 4 and all logic models, Appendix B). These include a recognition that tobacco control cannot focus solely on smoking cigarettes. Similarly, there is a new recognition of the importance of equity and the need to address and reduce health inequities through CTC in Ontario (Chapter 8 and all logic models, Appendix B). Finally, there are new

12 New York State has adopted similar usage for its tobacco control program (10).

possibilities in Ontario for building an infrastructure through a common chronic disease prevention framework, thereby contributing to mutually reinforcing activity on multiple risk factors.

Renewed CTC Will Work when it Advances on All Fronts

The "comprehensive" part of CTC refers to a wide variety of mutually reinforcing interventions by multiple actors at many levels - a combination of program, policy and mass media interventions, delivered in locales such as communities, schools, workplaces, and health care settings, addressing both the general population and a variety of specific groups. It involves intensive, widespread and coordinated efforts among interventions (illustrated by the CTC logic models in Appendix B).

The essence of comprehensiveness is that the recommendations made by SFO-SAC (listed below) should be taken as a complete and interlocking set. Selectively choosing interventions will lead to less than fruitful results, as synergy will not happen.

The learning system approach proposed here (Chapters 5-7) will ensure an ongoing, focused approach to CTC in Ontario that is forward looking and adaptable to the changing tobacco problem and constantly improving (Chapter 9).

The conclusion of the Expert Panel, made 10 years ago, remains valid today (see box).

Renewed CTC: SFO-SAC Goals and Recommendations

Chapter 2: Comprehensive Tobacco Control: Action Informed by Evidence

RECOMMENDATION

Comprehensive Tobacco Control

[2.1] Build on and expand comprehensive tobacco control in Ontario as a fully integrated, multi-level, comprehensive, coordinated and intense strategy.

Chapter 4: Confronting the Disease Vector in Tobacco Control

Goal: To minimize the ability of the tobacco industry to market, promote and sell tobacco products.

RECOMMENDATIONS

Taxation and Price

[4.1] Implement a substantial increase in provincial tobacco taxes.

[a] Commit to regular cigarette tax increases to address inflation and tax increases in other provinces.

[b] Dedicate and invest a proportion of provincial cigarette taxes into comprehensive tobacco control efforts.

[c] Establish a minimum retail market price for tobacco products.

[d] Implement recommendations 4.1, 4.2, and 4.3 concurrently.

Contraband

[4.2] Implement tax markings/stamps, a tracking and tracing system and enhanced enforcement (border controls, investigations, intelligence, inspections and seizures) for tobacco products.

[4.3] Engage and work with First Nations leadership and communities to reduce commercial tobacco use among First Nations people, reduce the sales of tax-exempt tobacco to ineligible individuals, and develop and implement strategies to address the production, distribution and sale of contraband tobacco.

Tobacco Industry Denormalization

[4.4] Develop and implement a sustained tobacco industry denormalization campaign.

Renewed CTC: SFO-SAC Goals and Recommendations

[4.5] Divest provincial pension plans and other investments of tobacco holdings and amend legislation to allow other institutions (e.g., Ontario universities, hospitals) to divest their tobacco holdings.

Packaging and Health Warnings

[4.6] Mandate plain and standard packaging (including onserts and inserts).

[4.7] Refresh the tobacco product health warning system in a timely and continuous manner, ensure that a 1-800 cessation helpline number is included as part of the health warning system, and align mass media campaigns with these warnings.

Product Regulation

[4.8] Prohibit the approval, selling and marketing of any new* tobacco or non-therapeutic nicotine product unless there is unequivocal scientific evidence of a net-positive health benefit at the population level.

* New products include brand extensions, changes to name or packaging and new forms of tobacco.

Retail Distribution

[4.9] Employ licensing strategies, zoning by-laws, and move toward a system of designated sales outlets as a mechanism to continuously reduce the number of tobacco retailers and locations permitted to sell tobacco products.

[4.10] Extend the prohibition of the retail sale of tobacco products to match or exceed those of the leading Canadian provinces.

Marketing and Promotion

[4.11] Close existing loopholes on tobacco product advertising and promotion.

Industry Accountability

[4.12] Legislate tobacco manufacturer reporting requirements that match or exceed what is currently required by the Federal government.

[4.13] Implement tobacco-industry surveillance, monitoring and intervention development functions to address and plan for mitigation of tobacco industry activities.

[4.14] Require, by statute, that tobacco manufacturers (including importers selling tobacco products in Ontario) meet stated annual reductions in the number of under-aged tobacco users in Ontario. Substantial penalties, based on the revenue gained by tobacco companies over a smoker's lifetime, should be applied if the stated goals are not met. Funds should be directed to tobacco control activities.

Industry Litigation

[4.15] Identify public health provisions that should be included in a judgment or settlement resulting from tobacco-industry litigation.

Chapter 5: Prevention of Tobacco Use Among Youth and Young Adults

Goal: To prevent the uptake of tobacco use among youth and young adults in Ontario, where uptake encompasses all stages of smoking, initiation and progression.

RECOMMENDATIONS

Media and Social Marketing

[5.1] Implement media and social marketing strategies using traditional and non-traditional media (e.g., viral and interactive media channels) that denormalize the tobacco industry, highlight the social unacceptability of tobacco use, identify resources available to youth and young adults who want to quit and encourage youth and young adults to refrain from tobacco use.

[5.2] Require adult ratings for movies (18A) and video games (Mature) with any tobacco imagery.

Movies and Video Games

[5.3] Require ads that aim to denormalize tobacco companies and change social norms related to tobacco products and their use preceding movies and video games that contain tobacco imagery, as well as warnings on movie and video game packaging.

Policy Enforcement

[5.4] Develop, implement and enforce comprehensive tobacco control policies within and across settings (e.g., schools, colleges, universities and communities).

Program Alignment

[5.5] Align cessation and prevention programs in schools, colleges, universities and communities with other activities (e.g., media and social marketing, policy interventions) within the provincial tobacco control strategy.

High Risk Youth and Young Adults

[5.6] Target program interventions to the schools, colleges, universities and workplaces where youth and young adults are at greatest risk for tobacco use.

Evaluation and Monitoring

[5.7] Further develop and implement an integrated system of intervention development, evaluation and surveillance that is applicable province-wide and at the local level, to:

[a] Identify high-risk environments and at-risk sub-populations.

[b] Guide the implementation of evidence-based prevention initiatives (programs and policies).

[c] Evaluate the impact that changes in programs and policies have on youth and young adult smoking behaviour over time.

Retail Access and Compliance

[5.8] Implement revised and more rigorous (realistic) compliance protocols with tobacco retailers regarding sales to underage consumers.

Cessation Assessment and Early Intervention

[5.9] Ensure smoking status is assessed and cessation services are provided in all settings (e.g., social, school and health care) providing services to youth and young adults.

Chapter 6: Protection from Tobacco Smoke and Social Exposure to Tobacco Use

Goal: To protect Ontarians from all physical and social exposure to tobacco products.

RECOMMENDATIONS

Smoke-free Policies

[6.1] Amend the *Smoke-Free Ontario Act* and Regulation to eliminate smoking of tobacco products and combustible waterpipe preparations in priority settings including:

[a] Unenclosed restaurant and bar patios (including nine metres from the perimeter of the patio).

[b] Not-for-profit multi-unit dwellings.

[c] Selected outdoor public places such as doorways to public and commercial buildings (within nine metres), transit shelters, provincially regulated parks and playgrounds, outdoor sports facilities, beaches, sidewalks and public events such as parades and outdoor entertainment venues.

[d] Hotels, motels, inns and bed and breakfasts.

[e] Vehicles that carry nonsmokers at any time.

Renewed CTC: SFO-SAC Goals and Recommendations

Media and Social Marketing

[6.2] As part of a comprehensive tobacco control program, implement media and social marketing strategies that increase public awareness and knowledge of the health effects of exposure to secondhand smoke and social exposure to tobacco use, and that influence social norms supportive of tobacco-free living.

Social Action

[6.3] Develop a province-wide program to enable implementation of grassroots local action initiatives (e.g., partnerships, community mobilization and innovative interventions) that address social norm change and protection from exposure to tobacco smoke.

Smoke-free Compliance and Enforcement

[6.4] Continue to promote, enforce and monitor compliance with the *Smoke-Free Ontario Act.* Consider enforcement approaches to maximize compliance and enforcement activities by setting (e.g., schools, bars, etc.) and additional policy promotion.

Learning System

[6.5] Continue to support research, surveillance, evaluation and monitoring of provincial and local initiatives, program and policy experiments related to protection from exposure to tobacco products and social norm change. Enhance the capacity to use findings to foster learning and innovation at the provincial, regional and local levels.

Professional Development

[6.6] Develop, evaluate and implement guidelines, training programs and incentives to promote brief interventions by health professionals with their patients that aim to protect nonsmokers, especially children and pregnant women, from secondhand smoke.

Chapter 7: Cessation

Goal: To reduce the health and economic burden from tobacco industry products, at an individual and societal level, through cessation interventions.

RECOMMENDATIONS

Media Campaign

[7.1] Implement a sustained and intensive mass media campaign to encourage smokers to quit, either on their own or with help.

Tobacco-User Support System

[7.2] Create a Tobacco-User Support System to operationalize the concept that there is "no wrong door" for access to cessation support services. The system will reach out to tobacco users, understand, support and address their needs, and improve interventions through its various components.

Direct Support

[7.3] Enhance systems of telephone, text messaging and Internet-based cessation support services that would entail:

[a] Integration with the overall Tobacco-User Support System.

[b] Integration with the cessation mass media campaign.

[c] Capability for continual engagement with smokers.

[7.4] Provide free direct-to-tobacco-user smoking cessation medication in combination with varying amounts of behavioural support where indicated and appropriate.

Cessation in Other Settings

[7.5] Systematize, expand, support, and tailor cost-effective and evidence-based cessation policies, services and supports across health care and public health settings such as primary health care, hospitals and long term care homes.

[7.6] Create accountability mechanisms to ensure that smokers are asked, advised and assisted to quit at every point of contact with the health care system (local health integration networks, hospitals, primary care providers, specialty care, home care, etc.).

[7.7] Provide free smoking cessation medications for individuals on Ontario Drug Benefit, with the dose and duration determined by the presence of co-morbidity and end organ damage as assessed by their health care provider.

[7.8] Target subpopulations that are at high risk for tobacco related disease or have decreased access to tobacco cessation services in order to provide services that address their specific needs. Subpopulations may include people in addiction and mental health treatment settings including those struggling with problematic gambling.

Cessation Training

[7.9] Support and enhance training and professional development for all tobacco control practitioners through existing resources such as the Program Training and Consultation Centre (PTCC) and the Training Enhancement and Applied Cessation Counselling and Health (TEACH) program.

Pharmaceutical Companies

[7.10] Engage pharmaceutical companies to better understand their potential contribution to a tobacco-use cessation system for Ontario.

Innovative Approaches

[7.11] Support research and development of innovative social-ecological approaches to smoking cessation in various settings, including workplaces and community-based organizations.

Chapter 8: Tobacco-related Disparities and Equity

Goal: To reduce tobacco-related disparities – both the unequal distribution of disease and the inequitable application and impact of interventions – while reducing the overall burden of tobacco, as key strategy for achieving health equity in Ontario.

RECOMMENDATIONS

Disparities and Equity

[8.1] Incorporate equity considerations into the renewal of Ontario's strategy to reduce tobacco use and exposure, and into all future phases of comprehensive tobacco control in Ontario.

Targeted Interventions

[8.2] Use a portion of the additional revenue generated by increasing taxation on tobacco to allocate resources to interventions directed at sub-populations that do not optimally benefit from universal interventions.

Community Involvement

[8.3] Involve members of identified priority communities in the conceptualization, design and implementation of interventions that will form Ontario's renewed strategy to reduce tobacco use and exposure in support of reducing tobacco-related inequities.

Evaluation and Monitoring

[8.4] Ensure monitoring and surveillance of tobacco-related disparities, and that evaluation of policies and services, capture the differential impact on subpopulations.

Renewed CTC: SFO-SAC Goals and Recommendations

Chapter 9: Key System Enablers in Tobacco Control

Goal: Ontario will be a recognized leader in the design and implementation of an evidence-informed comprehensive tobacco control strategy and system in order to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

RECOMMENDATIONS

Leadership and Partnership

[9.1] Foster and sustain commitment at every level and across all of government to lead, coordinate, monitor and ensure accountability for outcomes in comprehensive tobacco control.

[9.2] Foster and sustain coalitions to sustain the vision, innovate and promote tobacco control initiatives at local and provincial-levels.

[9.3] Foster and sustain partnerships between government and non-government organizations, the public health system, the health care system and others in order to coordinate and deliver the programmatic and social marketing interventions required to eliminate the burden of tobacco use in Ontario.

[9.4] Leadership must anticipate and manage the countervailing efforts of the tobacco industry.

Policy, Program, and Social Marketing Support

[9.5] Ensure those responsible for developing and implementing comprehensive tobacco control policies, programs and social marketing interventions have adequate resources, capacity and support to design and implement activities effectively.

Funding

[9.6] Fund the Ontario comprehensive tobacco control program consistently at levels required to eliminate the burden of tobacco use rapidly, equitably and cost-effectively.

Learning System

[9.7] Optimize and sustain the comprehensive tobacco control learning system infrastructure which makes Ontario a leader in intervention research, development, and dissemination; as well as continuous improvement of comprehensive tobacco control through research, evaluation, performance monitoring, surveillance of outcomes, and continuous quality improvement.

Global Leadership

[9.8] Demonstrate leadership within Canada in achieving and exceeding the World Health Organization's Framework Convention on Tobacco Control provisions in Ontario.

[9.9] Collaborate with Quebec and New York State to address the contraband problem.

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Appendix A: Glossary of Terms and Acronyms

The following is a list of terms and acronyms used in the report, *Evidence to Guide Action: Comprehensive Tobacco Control in Ontario.* Sources include, but are not limited to the OTRU Glossary (http://glossary.otru.org/) and the Chronic Disease Prevention Alliance of Canada (http://www.cdpac.ca/media.php?mid=386).

Aboriginal peoples: is a collective name for the original peoples of North America and their descendants. The Canadian constitution recognizes three groups of Aboriginal people: Indians (commonly referred to as First Nations), Métis and Inuit. These are three distinct peoples with unique histories, languages, cultural practices and spiritual beliefs. More than one million people in Canada identify themselves as an Aboriginal person, according to the 2006 Census.

Advocacy: the act of supporting or arguing in favour of a cause, policy or idea. It is undertaken to influence public opinion and societal attitudes or to bring about changes in government, community or institutional policies.

AHRQ: Agency for Healthcare Research and Quality

Air quality: relative healthiness of the air for breathing as determined by the presence or absence of harmful pollutants, e.g., second hand smoke

Alliance: a partnership among two or more parties that pursue a set of agreed upon goals. Alliance building often involves negotiation among the different partners in the definition of goals and ethical ground rules, joint action areas, and agreement on the form of cooperation reflected in the alliance.

BAT: British American Tobacco

CAMH: Centre for Addiction and Mental Health

CAN-ADAPTT: Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment

Capacity building: capacity building refers to the development, fostering and support of resources and relationships for chronic disease prevention at individual, organizational, inter-organizational and systems levels. "The contemporary view of capacity-building goes beyond the conventional perception of training. The central concerns of management – to manage change, to resolve conflict, to manage institutional pluralism, to enhance coordination, to foster communication, and to ensure that data and information are shared – require a broad and holistic view of capacity development. This definition covers both institutional and community-based capacity building. One of the key requirements in this regard is to recognize that the social whole is more than the sum of its individual components."

CCHS: Canadian Community Health Survey

CDC: Centers for Disease Control and Prevention

CHD: Coronary heart disease

CIAA: Clean Indoor Air Act

Collaboration: a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own visions of what is possible. Collaboration involves joint problem solving and decision making among key stakeholders in a problem or issue. Four features are critical to collaboration:

- The stakeholders are interdependent
- Solutions "emerge" by dealing constructively with differences
- Decisions are jointly owned
- Stakeholders assume collective responsibility for the future direction of the domain

In collaboration it is normal to have a lack of clarity about who is a stakeholder, disparity of power and/or resources among stakeholders, complex problems that are not well defined, scientific uncertainty, differing perspectives that lead to adversarial relationships, and dissatisfaction with previous and existing approaches and processes. Collaboration is a distinctly different process than coordination and cooperation. Collaboration is an emergent and evolving process of building substantive agreement. Coordination involves formalized, defined relationships among organizations.

Consensus: a substantial agreement measured by the degree of consensus that has been achieved by asking participants to agree that they can live with and support the concept both internally and externally.

Cooperation: involves informal trade-offs and agreements established in the absence of formal rules. Both coordination (formalized process) and cooperation (informal process) often occur as part of a collaborative process. Once initiated, collaboration creates a temporary forum within which participants can seek consensus about a problem, invent mutually agreeable solutions and develop collective actions for implementation.

COPD: Chronic obstructive pulmonary disease

Cotinine: a by-product of nicotine metabolism that is detectable in the blood, urine, or saliva for several days after tobacco use or exposure. Cotinine is used as an indicator of primary or secondary tobacco smoke exposure. Cotinine may also be detected in users of nicotine replacement therapies.

CTC: Comprehensive tobacco control

CTCP: California Tobacco Control Program

CTP: Community Transition Program

CTUMS: Canadian Tobacco Use Monitoring Survey

Current smoker (CTUMS/YSS): someone who has smoked in the last 30 days and has smoked 100 or more cigarettes in his/her life (Chapter 5).

Determinants of health: the range of personal, social, economic and environmental factors which determine the health status of individuals or populations. The factors which influence health are multiple and interactive. Health promotion is fundamentally concerned with action and advocacy to address the full range of potentially modifiable determinants of health - not only those which are related to the actions of individuals, such as health behaviours and lifestyles, but also factors such as income and social status, education, employment and working conditions, access to appropriate health services, and the physical environments. These, in combination, create different living conditions which impact on health. Achieving change in these lifestyles and living conditions, which determine health status, are considered to be intermediate health outcomes.

Efficiency: maximizing outcomes in relation to resources expended

Enabling: in health promotion, enabling means taking action in partnership with individuals or groups to empower them, through the mobilization of human and material resources, to promote and protect their health. The emphasis in this definition on empowerment through partnership, and on the mobilization of resources draws attention to the important role of health workers and other health activists acting as a catalyst for health promotion action, for example by providing access to information on health, by facilitating skills development, and providing access to information on health, by facilitating skills development, and supporting access to the political processes which shape public policies affecting health.

Evidence-based decision making: the aim of evidence-based decision making (EBDM) is to ensure that decisions about health and health care are based on the best available knowledge. To use EBDM one must first assess what constitutes evidence, both in relation to health-enhancing interventions and to organizational or policy level decision making. One also needs to explore the availability and accessibility of reliable information

and knowledge that identifies how interventions, practices and programs affect health outcomes. A second use of EBDM is to explore what is preventing change from taking place in the health system (in practice and policy) when there is clear evidence that change is necessary and desirable. An EBDM framework also examines the length of time the health system takes to adopt existing information about the interventions that work, and their degree of success.

Evidence-informed practice: integration of the best available evidence with professional expertise to make decisions.

Experimental smoker (CTUMS): there are no questions about puffing in CTUMS, so the definition is not exactly the same. The experimental smokers are those who have smoked less than 100 cigarettes in their life and have either smoked a whole cigarette over 30 days ago or smoked in the last 30 days (Chapter 5).

Experimental smoker (YSS): a person who has smoked in the last 30 days and has ever smoked a whole cigarette but has not smoked 100 or more cigarettes (Chapter 5).

Experimental smoker/puffer (YSS): a person is either an Experimental Smoker or a Puffer (Chapter 5).

FCTC: World Health Organization's Framework Convention on Tobacco Control

Health equity: the absence of systematic and potentially remediable differences in one or more aspects of health across populations or population groups defined socially, economically, demographically, or geographically.

Health inequalities: differences in health status or in the distribution of health determinants between different population groups. For example, differences in mobility between elderly people and younger populations or differences in mortality rates between people from different social classes.

Health inequities: health inequalities that are considered unjust and unfair.

Health promotion: the process of enabling people to increase control over and to improve their health (Ottawa Charter for Health Promotion. WHO Geneva, 1986). Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action. The Ottawa charter identifies three basic strategies for health promotion. These are advocacy for health to create the essential conditions for health indicated above; enabling all people to achieve their full health potential; and mediating between the different interests in society in the pursuit of health. These strategies are supported by five priority areas as outlined in the Ottawa Charter for health promotion:

- Build healthy public policy
- Create supportive environments for health
- Strengthen community action for health
- Develop personal skills, and
- Re-orient health services

For health promotion in the 21 century the Jakarta Declaration (July 1997) identified five priorities:

- Promote social responsibility for health
- Increase investments for health development
- Expand partnerships for health promotion
- Increase community capacity and empower the individual
- Secure an infrastructure for health promotion

Healthy public policy: is characterized by an explicit concern for health and equity in all areas of policy, and by an accountability for health impact. The main aim of healthy public policy is to create a supportive environment to enable people to lead healthy lives. Such a policy makes healthy choices possible or easier for citizens. It makes social and physical environments health enhancing. The Ottawa Charter highlighted the fact that health promotion action goes beyond the health care sector, emphasizing that health should be on the policy agenda in all sectors, and at all levels of government. One important element in building healthy public policy is the notion of accountability for health. Governments are ultimately accountable to their people for the health consequences of their policies, or lack of policies. A commitment to healthy public policies means that governments must measure and report on their investments for health, and the subsequent health outcomes, and intermediate health outcomes of their investments and policies in a language that all groups in society readily understand. Closely related to the health promotion concept of healthy public policy is the strategy of investment for health. Investment for health is a strategy for optimizing the health promoting impact of public policies.

HST: Harmonized Sales Tax

IEP: International Expert Panel

Integrated chronic disease prevention: although a marked elevation of a single risk factor significantly predicts individual's ill health, the societal burden from non-communicable disease (NCD) results from the high prevalence of multiple risk factors related to general lifestyles. Community-based activities are required with an integrated public health approach that is targeted to the population, in addition to those at high risk. "No longer can each chronic illness be considered in isolation. Awareness is increasing that they share common, usually related risk factors, and that integrated strategies can be effective for many different conditions."

- Within the context of NCD prevention and control, the term integration has several meanings. The classical definition involves determination and confrontation of common risk factors, rather than the process of attacking many individual diseases separately.
- Integrated NCD prevention program aims at intervention that addresses the common risk factors by the health system and other existing community structures, rather than an outside prevention program.
- Another meaning of the term integration for NCD prevention and control denotes a comprehensive approach which combines varying strategies for implementation. These include policy development, capacity building, partnerships, and informational support at all levels.
- Integration calls for intersectoral action to implement health policies is another aspect of integration needed to address the major determinants of health that fall outside the remit of the health system.
- Integration also refers to efforts to combine population and high risk approaches by linking prevention actions of various components of the health system, including health promotion, public health services, primary care and hospital care.
- Integration does not preclude meeting the unique needs of particular populations. However, when NCD prevention and control programs have been established by addressing different diseases, eventually a balance among them should be achieved.

MHPS: Ministry of Health Promotion and Sport

MSA: Master Settlement Agreement

MTCP: Massachusetts Tobacco Control Program

Multi-unit dwelling (MUD): place of residence, e.g., apartment building or condominium, housing persons in separate units which are subjected to a common flow of air. Additional note: "common flow of air" includes building spaces and not necessarily shared ventilation systems. As such multi-unit dwellings may include apartment buildings, condominiums, semi-detached homes, town houses, or row houses.

Network: individuals, groups and organizations working collaboratively in support of mutually agreed upon goals, principles and benefits. In an effective network:

- A framework is in place for how things work
- Everyone is connected to everyone else
- Organizations, groups and individuals are actively involved
- People work together collaboratively
- What happens inside the network is based on mutually agreed goals, principles and benefits

Nicotine addiction: continued use of tobacco or nicotine products despite known harms to health, well being, or interpersonal relationships. One can be addicted without being physically dependent.

Nicotine dependence: physical dependence on a nicotine or tobacco product manifested as either a withdrawal syndrome upon abrupt discontinuation or tolerance to the effects produced by a given does. One can be physically dependent without being addicted.

Non-therapeutic nicotine product: any nicotine-containing product not intended for cessation or other therapeutic use, e.g., nicotine hand gel, nicotine water, e-cigarettes.

NRT: Nicotine replacement therapy

NSRA: Non-Smokers' Rights Association

NYSTCP: New York State Tobacco Control Program

OAHPP: Ontario Agency for Health Protection and Promotion

ODB: Ontario Drug Benefit

ODUHS: Ontario Drug Use and Health Survey

OFRB: Ontario Film Review Board

OHIP: Ontario Health Insurance Plan

OMA: Ontario Medical Association

OSDUHS: Ontario Student Drug Use and Health Survey

OTRU: Ontario Tobacco Research Unit

OTS: Ontario Tobacco Strategy

OTS: Ontario Tobacco Survey (Chapter 2, p. 7)

PHU: Public health units

PM: Philip Morris

Population health: is an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups. In order to reach these objectives, it looks at and acts upon the broad range of factors and conditions that have a strong influence on our health.

Population health approach: recognizes that health is a capacity or resource rather than a state, a definition which corresponds more to the notion of being able to pursue one's goals, to acquire skills and education, and to grow. This broader notion of health recognizes the range of social, economic and physical environmental factors that contribute to health. The best articulation of this concept of health is "the capacity of people to adapt to, respond to, or control life's challenges and changes"

Prevalence of tobacco use: the total number of smokers that are present in a population at a given point of time (point prevalence) or over a period of time (period prevalence).

Prevention: covers measures not only to prevent the occurrence of disease, such as risk factor reduction, but also to arrest its progress and reduce its consequences once established. Primary prevention is directed towards preventing the initial occurrence of a disorder. Secondary and tertiary prevention seek to arrest or retard existing disease

and its effects through early detection and appropriate treatment; or to reduce the occurrence of relapses and the establishment of chronic conditions through, for example, effective rehabilitation. Disease prevention is sometimes used as a complementary term alongside health promotion. Although there is frequent overlap between the content and strategies, disease prevention is defined separately. Disease prevention in this context is considered to be action, which usually emanates from the health sector, dealing with individuals and populations identified as exhibiting identifiable risk factors, often associated with different risk behaviours.

Program logic model: often used as a guide for program planning and evaluation. A program logic model describes the flow of inputs to systems, interventions, outputs, as well as short and longer term impacts and outcomes, and other factors that will impact on programs achieving outcomes.

Public health: the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society. Public health is a social and political concept aimed at the improving health, prolonging life and improving the quality of life among whole populations through health promotion, disease prevention and other forms of health intervention. A distinction has been made in the health promotion literature between public health and a new public health for the purposes of emphasizing significantly different approaches to the description and analysis of the determinants of health, and the methods of solving public health problems. This new public health is distinguished by its basis in a comprehensive understanding of the ways in which lifestyles and living conditions determine health status, and a recognition of the need to mobilize resources and make sound investments in policies, programs and services which create, maintain and protect health by supporting healthy lifestyles and creating supportive environments for health. Such a distinction between the "old" and the "new" may not be necessary in the future as the mainstream concept of public health develops and expands.

Puffer (YSS): a person who has tried smoking, but has never smoked a whole cigarette

RICO: Racketeer Influenced and Corrupt Organizations Act

Second hand smoke (SHS): tobacco smoke inhaled by persons who are not actively engaged in smoking, which contains numerous harmful chemicals causing serious health problems, e.g., sudden infant death syndrome in infants, asthma and respiratory infections in children and lung cancer in adults, and for which there is no safe level of exposure. *Synonyms: Environmental tobacco smoke (ETS), tobacco smoke, tobacco smoke pollution*

SFOA: *Smoke-Free Ontario Act*

SFO-SAC: Smoke-Free Ontario – Scientific Advisory Committee

SHAPES: School Health Action Planning and Evaluation System

SHL: Smokers' Helpline

SHO: Smokers' Helpline Online

Smoke-free: healthier environmental conditions created by prohibiting smoking in, around or near certain locations, e.g., airports, bars, workplaces. *Synonym: tobacco-free*

Smoke-free air: is air that is 100% smoke free. This definition includes, but is not limited to, air in which tobacco smoke cannot be seen, smelled, sensed or measured. The convention notes it is possible that constituent elements of tobacco smoke may exist in air in amounts too small to be measured. Attention should be given to the possibility that the tobacco industry or the hospitality sector may attempt to exploit the limitations of this definition.

Social housing: affordable housing operated by non-profit or co-operative agencies and funded by a legally prescribed government program. Since it doesn't change hands, this housing remains affordable over time.

STOP: Smoking Treatment for Ontario Patients

Susceptible to smoking: Someone at high risk to begin smoking; defined only for those who have never tried smoking; Not Susceptible to Smoking = Responded "Definitely Not" to all three susceptibility questions (otherwise the person is classified as susceptible):

- "Do you think in the future you might try smoking cigarettes?"
- "If one of your best friends was to offer you a cigarette would you smoke it?"
- "At any time during the next year do you think you will smoke a cigarette?"

Systems change: in the context of the Alliance, systems change refers to achieving comprehensive, sufficiently resourced, sustainable, and integrated systems of research, surveillance, policies and programs that maintain health and prevent chronic disease. The system will link together and build upon existing initiatives in a coordinated and synergistic way. The system will be broader than just the health sector, and will include other relevant sectors such as transportation, education, social services, recreation, and others. System development will proceed within Canadian society that values health as a fundamental goal and right. An Implementation Framework containing a logic model and a perspective on the functions and subsystems that need to be better defined, funded, implemented and monitored is under development and will guide CDPAC strategy and actions.

TC: Tobacco control

TCA: Tobacco Control Act

TCAN: Tobacco Control Area Network

TEACH: Training Enhancement in Applied Cessation Counselling and Health

TEO: Tobacco Enforcement Officer

Third hand smoke (THS): a relatively new concept in tobacco control referring to residual tobacco smoke left on surfaces, e.g., clothing, furniture, walls, after the smoked tobacco product is extinguished, which contains many of the toxic chemicals found in secondhand smoke and upon exposure leaves biomarkers, e.g., cotinine, in urine, including the urine of infants and children (see also Off-Gassing).

TID: Tobacco industry denormalization

Tobacco products: any smoked or smokeless product that contains tobacco and is intended for consumption, e.g., cheroot, chew, cigar, cigarette, cigarillo, loose tobacco, plug, scrap, snuff, snus, spit tobacco, tobacco stick, twist

> *Consider also:* **Tobacco product accessories:** paraphernalia associated with tobacco products, e.g., ashtrays, lighters, matches, which are sometimes labelled with a tobacco-related brand name, logo or colour scheme

Tobacco-related disparities: differences in patterns, prevention, and treatment of tobacco use; differences in the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups, and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure.

Tobacco use: any use by any mode of administration of tobacco products.

TPIR: Tobacco Products Information Regulations

TRDRP: Tobacco Related Disease Research Program

TSAG: Tobacco Strategy Advisory Group

TTP: Tobacco Transition Program

TUSS: Tobacco User Support System

Waterpipe: smoking device consisting of a bowl mounted on a vessel of water, which is provided with a long tube and so arranged that the smoke is drawn through the cooling water and up the tube to the mouth, types being bong, hookah, hubble bubble, narguile, shisha.

WHO: World Health Organization

YAA: Youth Action Alliances

Young adult: persons between the ages of 18 and 29 years, inclusive.

Youth: the collective term for young persons, sometimes defined as 12 to 17 years old, a group that is at risk for smoking initiation.

YSS: Youth Smoking Survey

Appendix B: Tobacco Control Logic Models Recommended by SFO-SAC

Notes to logic models:

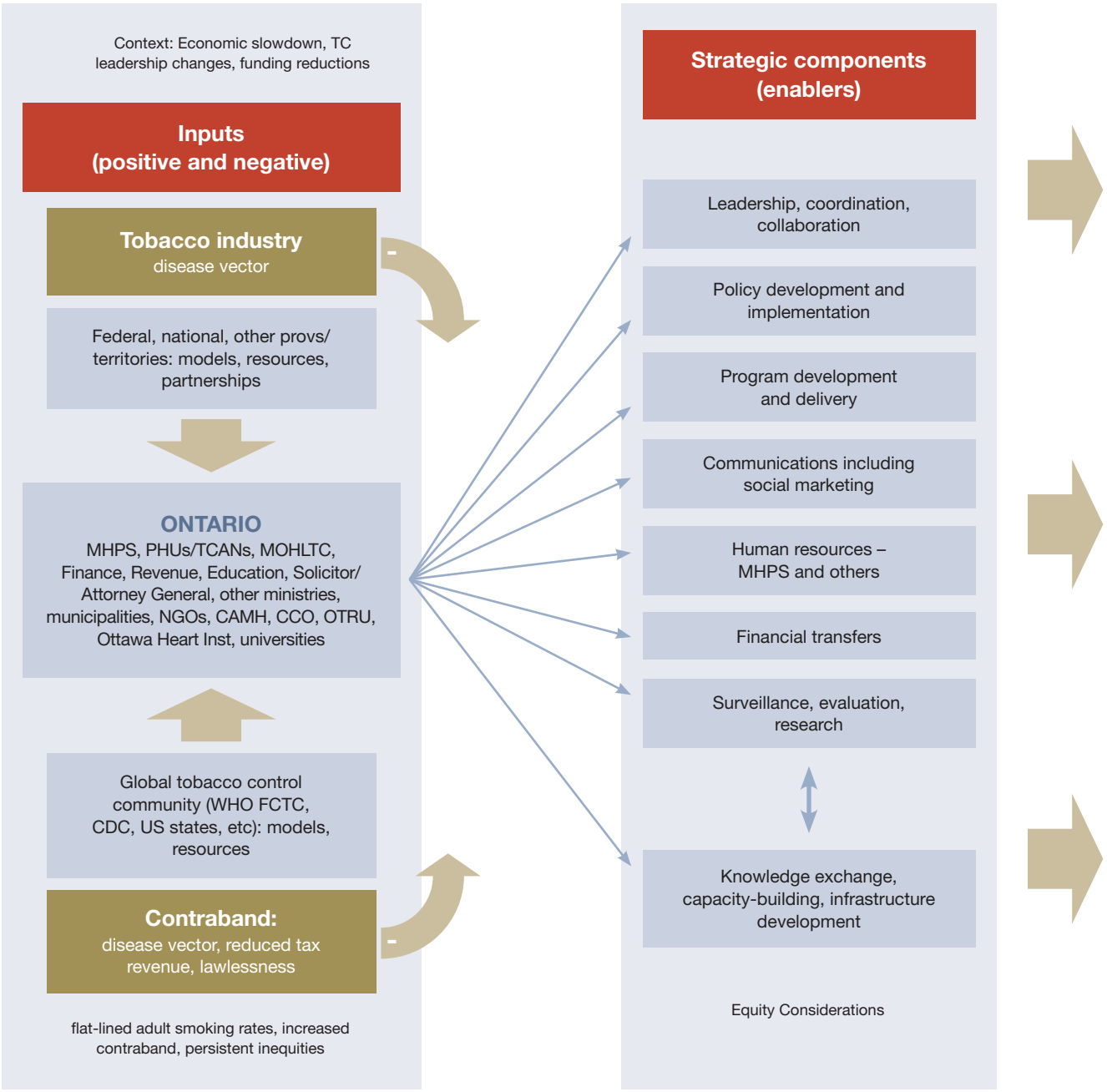
1. These are conceptual planning models that represent the high-level components of an effective comprehensive tobacco control (CTC) strategy, and the main interrelationships of those components. It is not feasible to include all components in complete detail, or to show all relevant relationships. Such further detail can be added when these models are elaborated to focus on a particular policy, program, or service – which is an important subsequent use of the models.

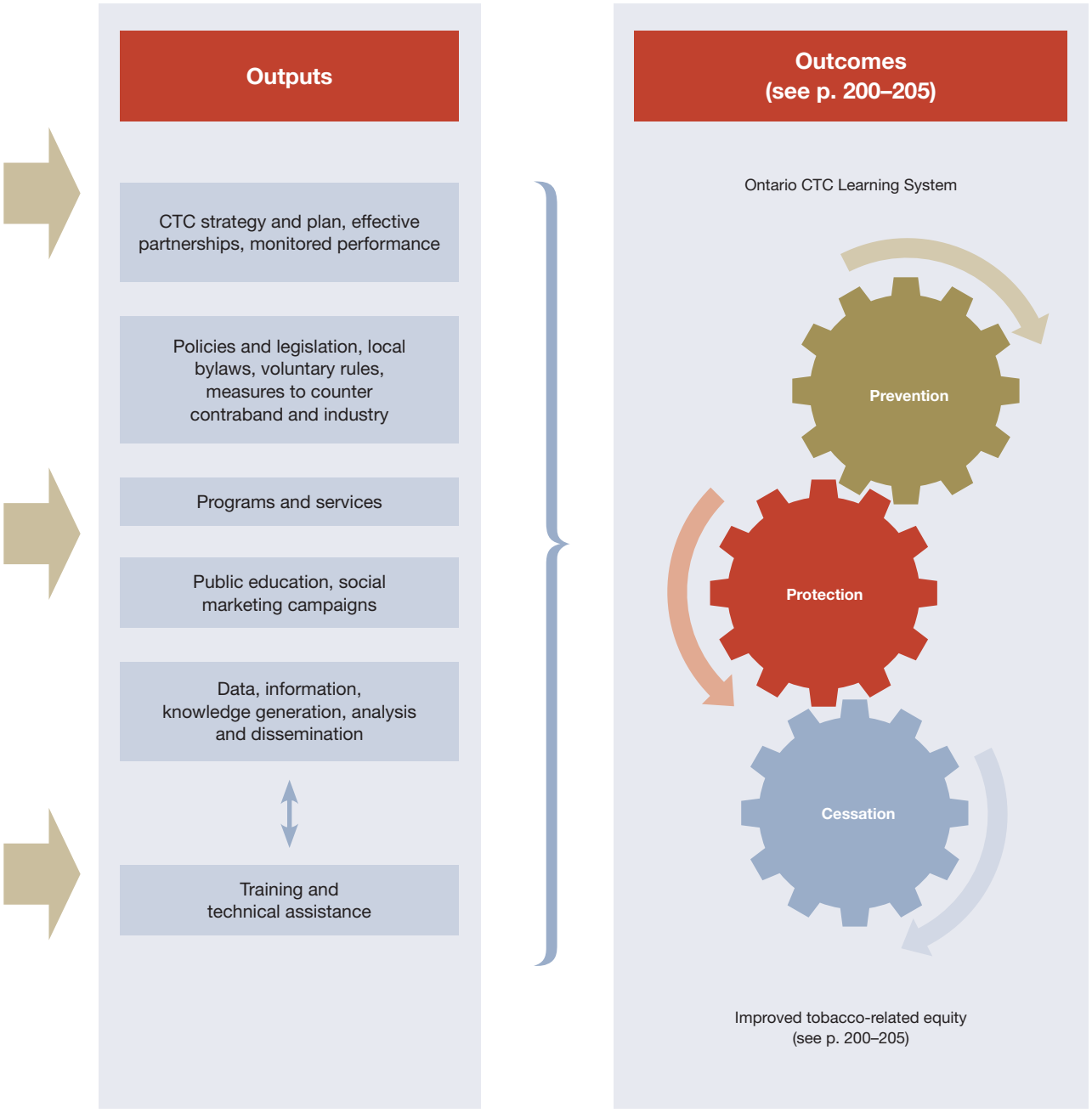
2. A systems approach has been adopted, showing inputs, strategic components (enablers), and outputs, which result in the critical CTC outcomes. These elements are described on the following page. The outcomes – youth focus (prevention), protection, and cessation – have these inputs, enablers, and outputs in common, and are shown in detail on pages 200–205, respectively.

3. A critical implication of these models is the mutually reinforcing nature of prevention, protection, and cessation as outcomes (see graphic on the right of the first figure). Failure to achieve any one of these outcomes will impact negatively on the achievement of all. By extension, failure to provide a key output will jeopardize the entire CTC effort. Outputs and outcomes are intimately related and cannot be picked apart.

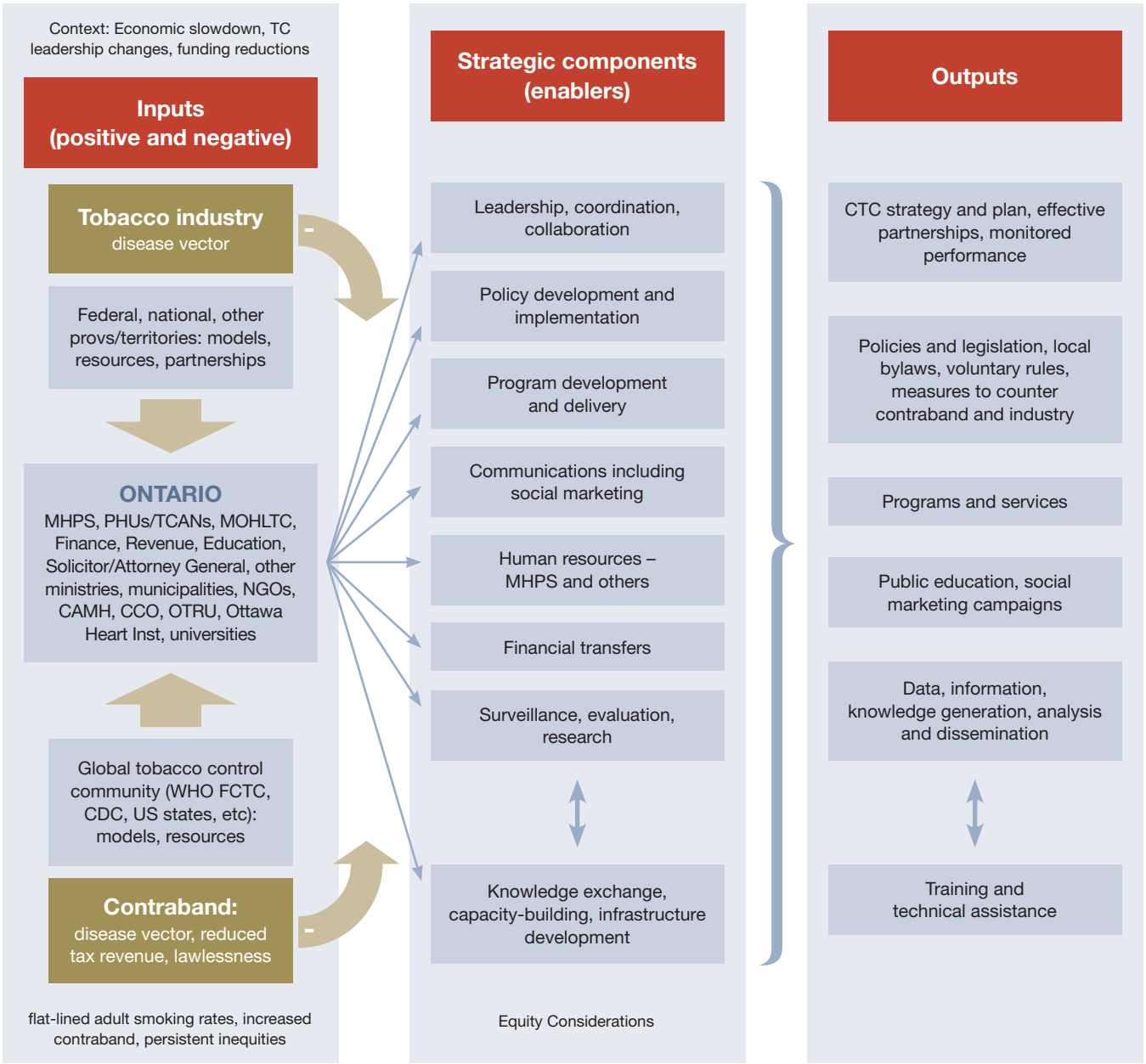
4. As in any working system, feedback loops are essential to both maintain stability and guide innovation. For simplicity's sake, only a few of these appear in the models. The critical feedback loops originate with Surveillance, evaluation, research, and Information analysis and dissemination.

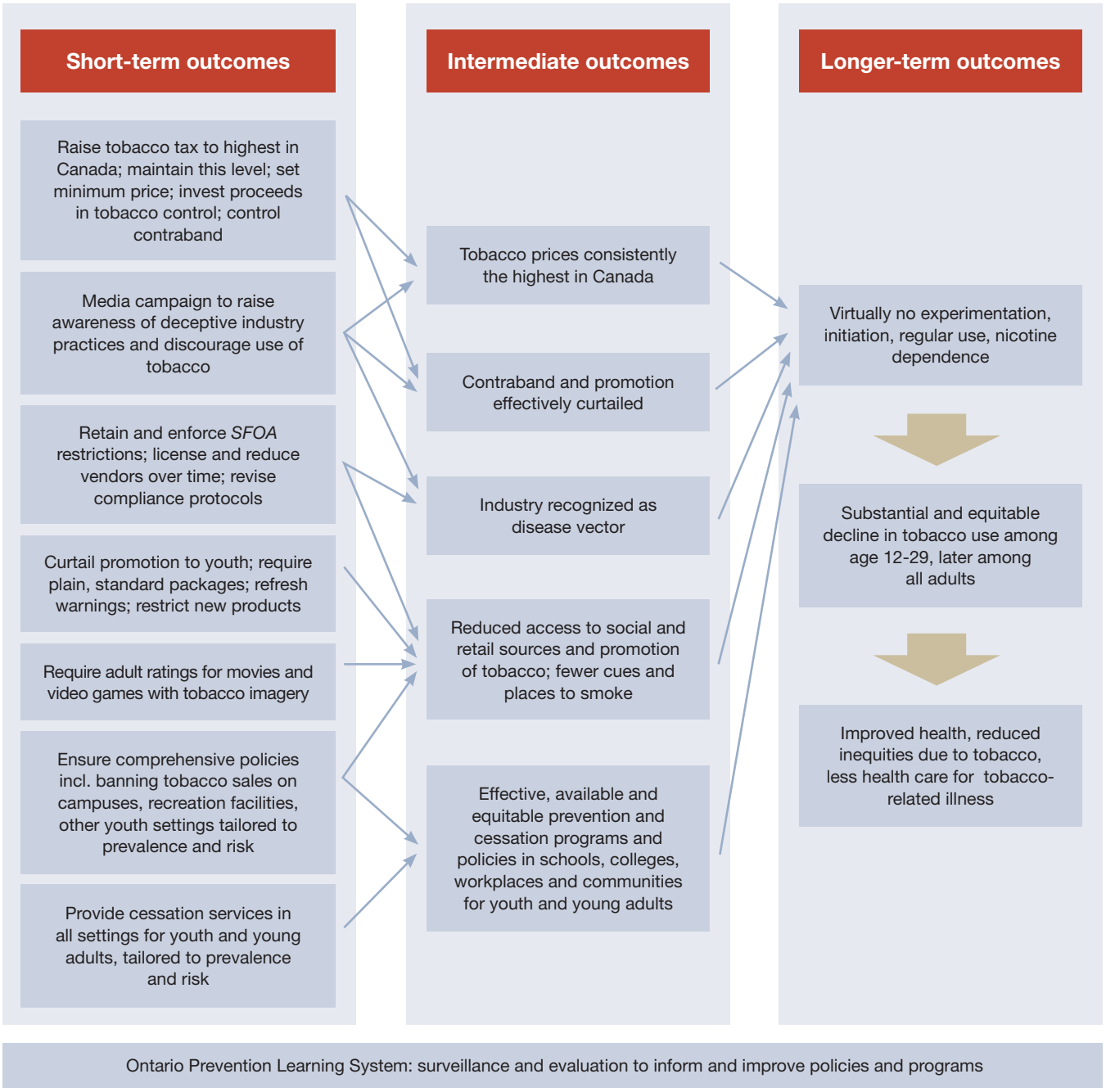
Strategy for Comprehensive Tobacco Control in Ontario Recommended by SFO-SAC
Goal: To eliminate tobacco-related illness and death in Ontario – rapidly, equitably, and cost-effectively



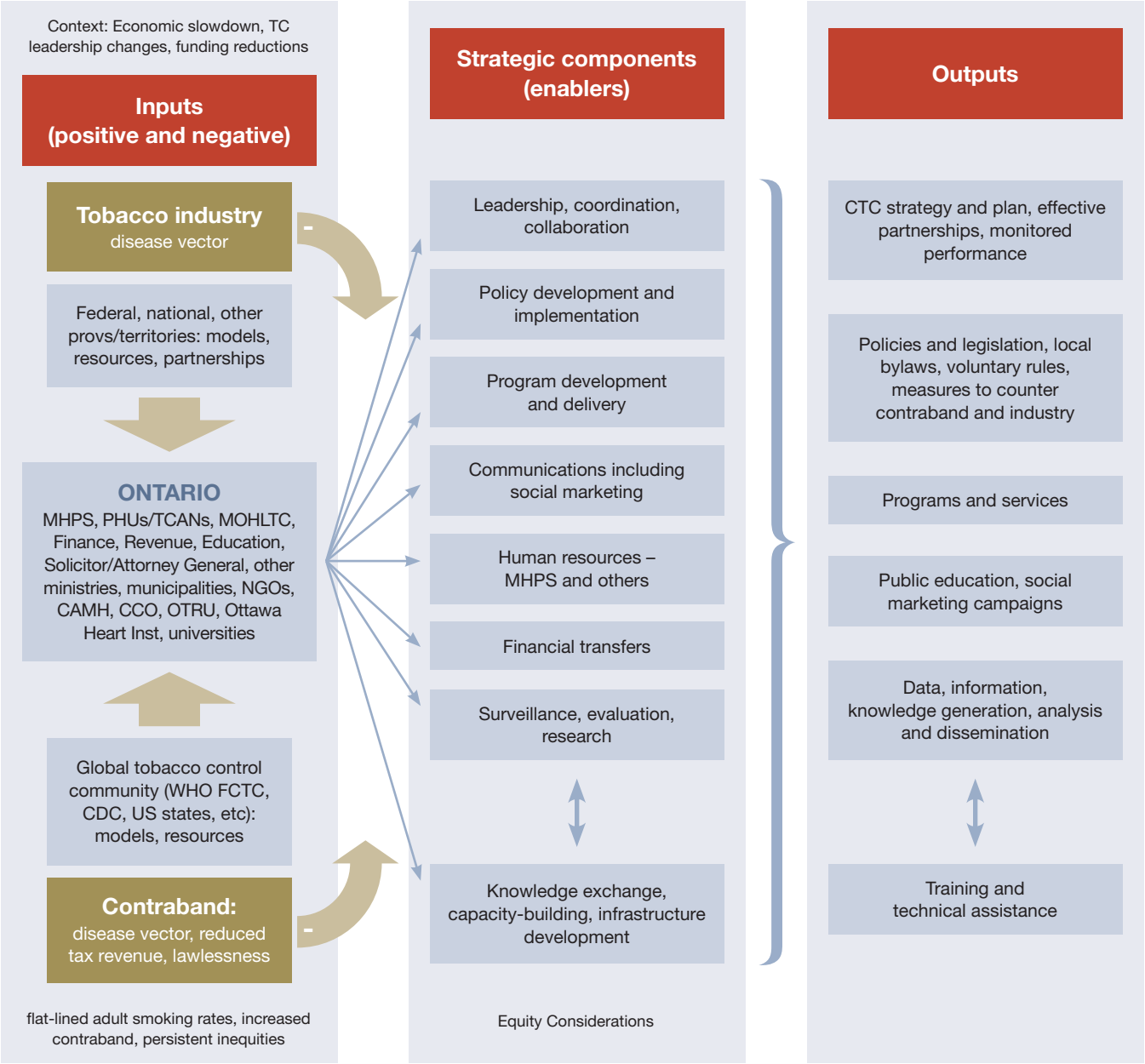

Outputs
CTC strategy and plan, effective partnerships, monitored performance
Policies and legislation, local bylaws, voluntary rules, measures to counter contraband and industry
Programs and services
Public education, social marketing campaigns
Data, information, knowledge generation, analysis and dissemination
Training and technical assistance
Outcomes
(see p. 200–205)
Ontario CTC Learning System
Prevention
Protection
Cessation
Improved tobacco-related equity
(see p. 200–205)

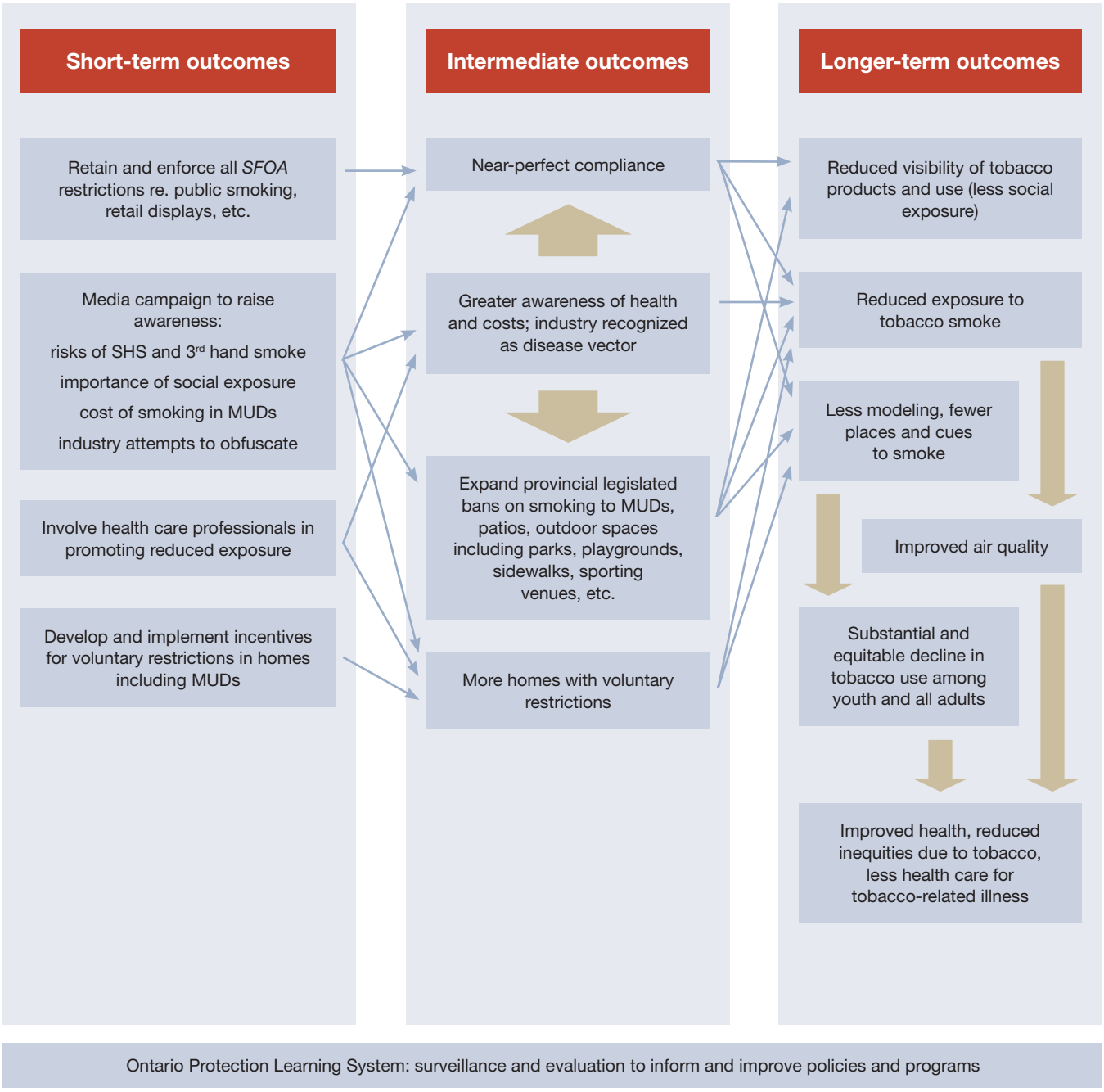
Prevention Strategy Recommended by SFO-SAC
Goal: To prevent uptake of tobacco use among youth and young adults.




Short-term outcomes
Intermediate outcomes
Longer-term outcomes
Raise tobacco tax to highest in Canada; maintain this level; set minimum price; invest proceeds in tobacco control; control contraband
Media campaign to raise awareness of deceptive industry practices and discourage use of tobacco
Retain and enforce SFOA restrictions; license and reduce vendors over time; revise compliance protocols
Curtail promotion to youth; require plain, standard packages; refresh warnings; restrict new products
Require adult ratings for movies and video games with tobacco imagery
Ensure comprehensive policies incl. banning tobacco sales on campuses, recreation facilities, other youth settings tailored to prevalence and risk
Provide cessation services in all settings for youth and young adults, tailored to prevalence and risk
Tobacco prices consistently the highest in Canada
Contraband and promotion effectively curtailed
Industry recognized as disease vector
Reduced access to social and retail sources and promotion of tobacco; fewer cues and places to smoke
Effective, available and equitable prevention and cessation programs and policies in schools, colleges, workplaces and communities for youth and young adults
Virtually no experimentation, initiation, regular use, nicotine dependence
Substantial and equitable decline in tobacco use among age 12-29, later among all adults
Improved health, reduced inequities due to tobacco, less health care for tobacco-related illness
Ontario Prevention Learning System: surveillance and evaluation to inform and improve policies and programs

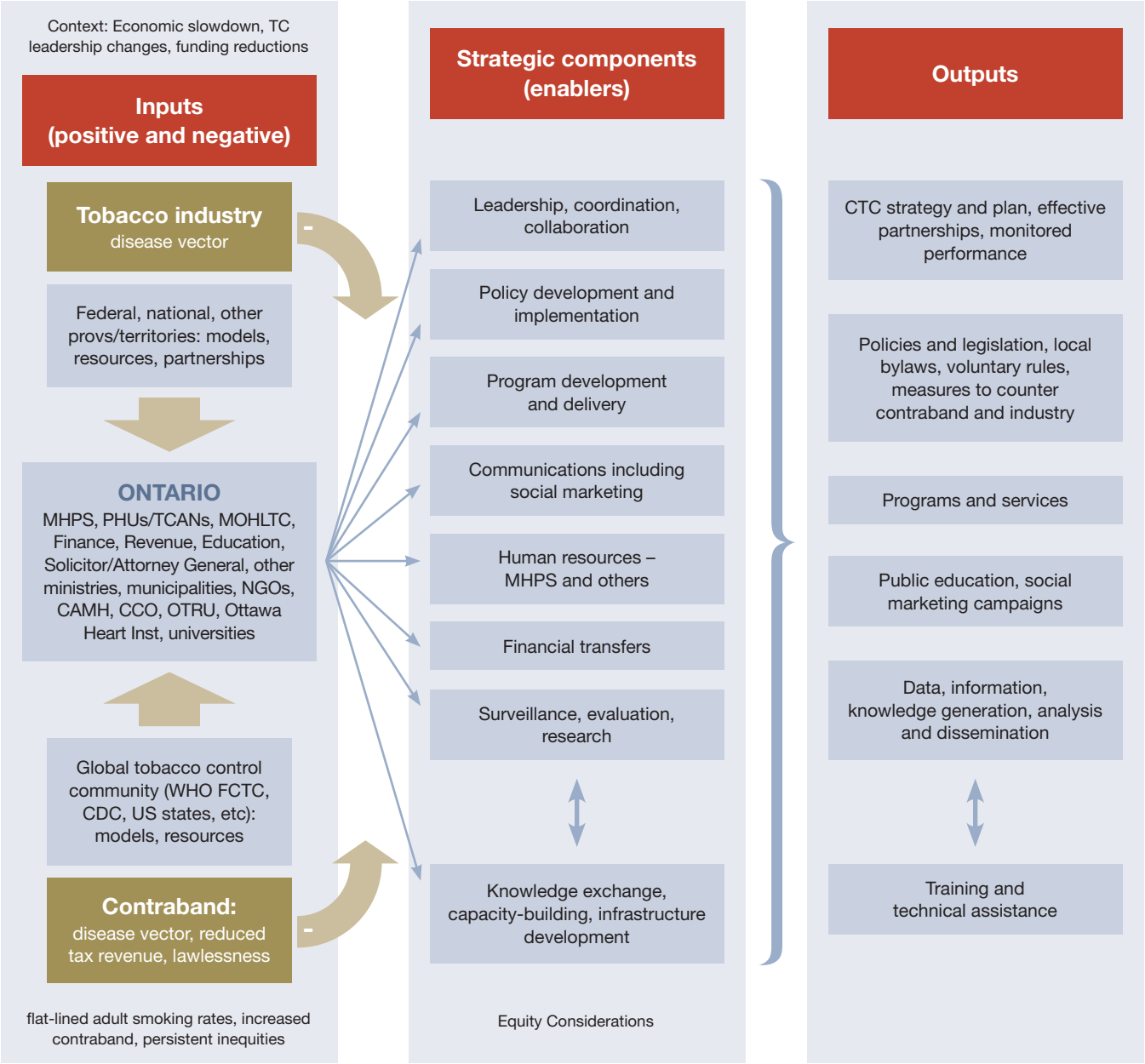
Protection Strategy Recommended by SFO-SAC
Goal: To protect Ontarians from all physical and social exposure to tobacco products

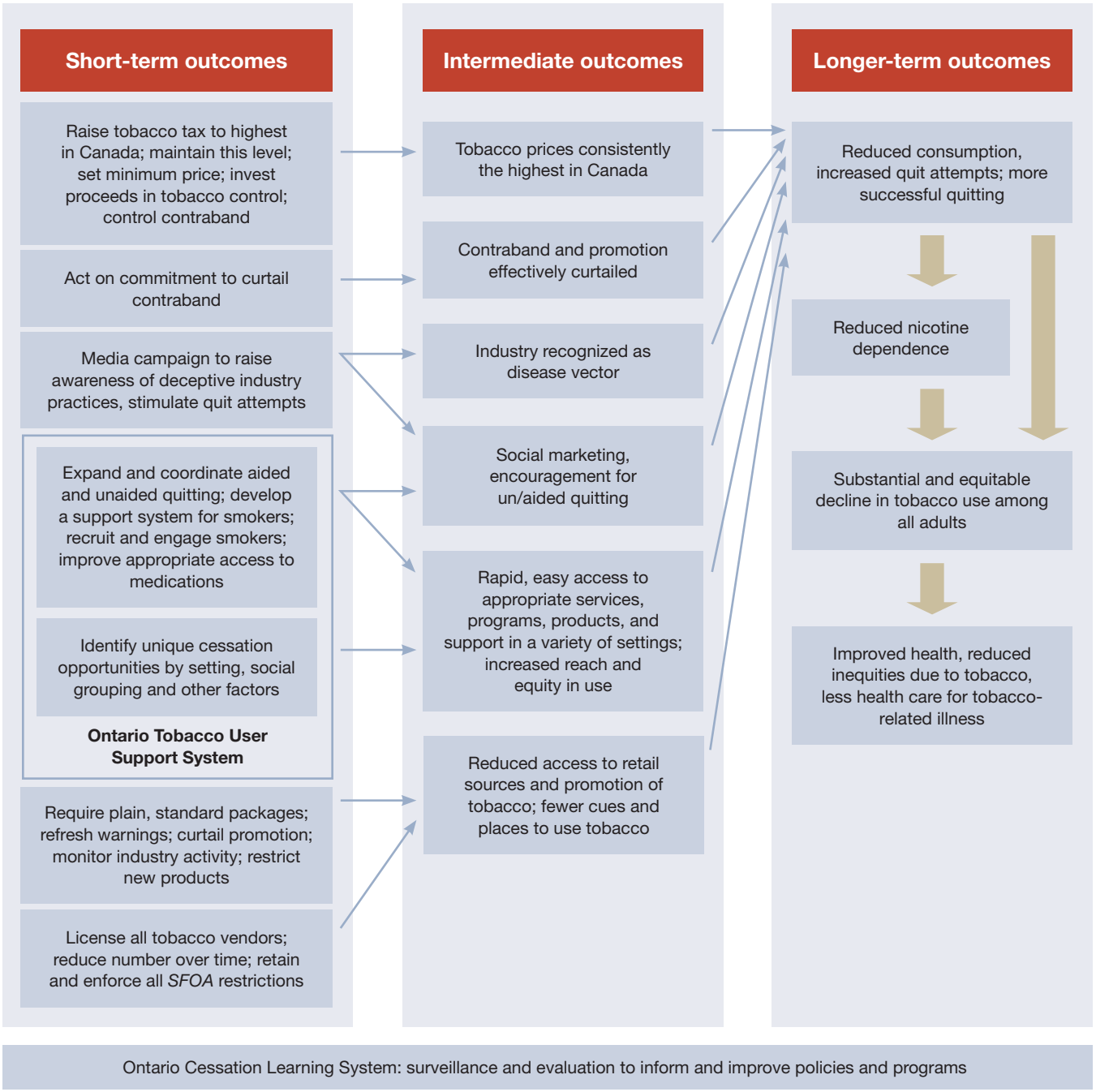



Short-term outcomes
Intermediate outcomes
Longer-term outcomes
Retain and enforce all *SFOA* restrictions re. public smoking, retail displays, etc.
Media campaign to raise awareness:
risks of SHS and 3rd hand smoke
importance of social exposure
cost of smoking in MUDs
industry attempts to obfuscate
Involve health care professionals in promoting reduced exposure
Develop and implement incentives for voluntary restrictions in homes including MUDs
Near-perfect compliance
Greater awareness of health and costs; industry recognized as disease vector
Expand provincial legislated bans on smoking to MUDs, patios, outdoor spaces including parks, playgrounds, sidewalks, sporting venues, etc.
More homes with voluntary restrictions
Reduced visibility of tobacco products and use (less social exposure)
Reduced exposure to tobacco smoke
Less modeling, fewer places and cues to smoke
Improved air quality
Substantial and equitable decline in tobacco use among youth and all adults
Improved health, reduced inequities due to tobacco, less health care for tobacco-related illness
Ontario Protection Learning System: surveillance and evaluation to inform and improve policies and programs

Cessation Strategy Recommended by SFO-SAC

Goal: To reduce the burden from tobacco products by cessation interventions




Short-term outcomes
Intermediate outcomes
Longer-term outcomes
Raise tobacco tax to highest in Canada; maintain this level; set minimum price; invest proceeds in tobacco control; control contraband
Act on commitment to curtail contraband
Media campaign to raise awareness of deceptive industry practices, stimulate quit attempts
Expand and coordinate aided and unaided quitting; develop a support system for smokers; recruit and engage smokers; improve appropriate access to medications
Identify unique cessation opportunities by setting, social grouping and other factors
Ontario Tobacco User Support System
Require plain, standard packages; refresh warnings; curtail promotion; monitor industry activity; restrict new products
License all tobacco vendors; reduce number over time; retain and enforce all SFOA restrictions
Tobacco prices consistently the highest in Canada
Contraband and promotion effectively curtailed
Industry recognized as disease vector
Social marketing, encouragement for un/aided quitting
Rapid, easy access to appropriate services, programs, products, and support in a variety of settings; increased reach and equity in use
Reduced access to retail sources and promotion of tobacco; fewer cues and places to use tobacco
Reduced consumption, increased quit attempts; more successful quitting
Reduced nicotine dependence
Substantial and equitable decline in tobacco use among all adults
Improved health, reduced inequities due to tobacco, less health care for tobacco-related illness
Ontario Cessation Learning System: surveillance and evaluation to inform and improve policies and programs

Ontario
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