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OVERVIEW

We will review the following:

1. Background on Tobacco Smoking in Children and Adolescents
2. Methods for Guideline Development
3. Recommendations and Key Findings
4. Implementation of Recommendations
5. Conclusions
6. Questions and Answers

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CTFPHC BACKGROUND

CTFPHC Working Group Members:

The Tobacco Working Group included members from the Canadian Task Force on Preventive Health Care (CTFPHC), the Public Health Agency of Canada (PHAC), and the Evidence Review Synthesis Centre (ERSC) at McMaster University.

Task Force Members:

- Brett Thombs (Chair)
- Kevin Pottie
- Patricia Parkin
- Marcello Tonelli

Public Health Agency of Canada:

- Alejandra Jaramillo Garcia*
- Dana Reid*
- Kata Morisette*

Members of the McMaster Evidence Review and Synthesis Centre:

- Leslea Peirson*
- Muhammad Usman Ali*
- Donna Fitzpatrick-Lewis*
- Meghan Kenny*

- Parminder Raina*
- Sharon Peck-Reid*
- Maureen Rice*
- Diana Sherifali*
- Rachel Warren*

*non-voting member

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Tobacco Smoking Prevention and Treatment in Children and Adolescents: Overview

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BACKGROUND

The global tobacco epidemic is one of the largest public health threats; killing up to half of its users globally. Tobacco users who die prematurely deprive their families of income, raise the cost of health care, and hinder economic development. In 2002, the annual cost of tobacco use to Canadian society was estimated at $17 billion dollars.

Eighteen percent of Canadian youth have tired cigarettes. It has been shown that an individual who starts smoking as a child or youth is less likely to quit later in life than individuals who start smoking as adults. Approximately 3% of 6th graders have tried cigarettes with the number increasing to 36% for 12th graders.

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GUIDELINE SCOPE

This guideline presents evidence-based recommendations for the prevention and treatment of tobacco smoking in children and youth (5-18 years). The CTFPHC has not previously made recommendations on this topic.

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TOBACCO SMOKING PREVENTION AND TREATMENT IN CHILDREN AND ADOLESCENTS

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METHODS OF THE CTFPHC

The CTFPHC is an independent panel of clinicians and methodologists with expertise in prevention, primary care, literature synthesis, and critical appraisal. The mandate of the CTFPHC is to apply the latest evidence in preventive health care research to primary care practice and policy across Canada.

The Tobacco Working Group is composed of 4 CTFPHC members who are supported by PHAC science officers to establish key research questions, an analytical framework, and clinical and patient outcomes.

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The Evidence Review and Synthesis Centre (ERSC) at McMaster University independently undertook a systematic review of literature based on this analytical framework, and prepared a systematic review of the evidence with GRADE tables. The ERSC consulted with field experts during this process and participated in working group and CTFPHC meetings.

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CTFPHC REVIEW PROCESS

The CTFPHC review process is composed of an (i) internal review process and an (ii) external review process. The internal review process involves the guideline working group, the full CTFPHC, PHAC science officers, and ERSC staff.

The external review process involves the review of the guidelines by key stakeholders from generalist and disease specific organizations, and federal, provincial and territorial stakeholder groups. The Canadian Medical Association Journal (CMAJ), where most of the CTFPHC guidelines are published, undertakes its own independent peer review journal process.

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RESEARCH QUESTIONS

The systematic review for tobacco prevention and treatment included 5 key questions, 4 sub questions, and 2 contextual questions. The key questions were structured to provide evidence on effectiveness of preventing tobacco use in youth, reducing tobacco use as adults, and the incidence of adverse effects of treatment and achieving smoking cessation,. Cost-effectiveness, feasibility, values and preferences, and barriers to implementation of screening were explored through contextual questions.

Outcomes of interest include incidence of tobacco smoking, incidence of stopping tobacco smoking, prevalence of adult tobacco smoking, and harms of treatment.

The systematic review was based on the 2012 United States Preventive Services Task Force review for the same topic. For more detailed information please access the systematic review at www.canadiantaskforce.ca

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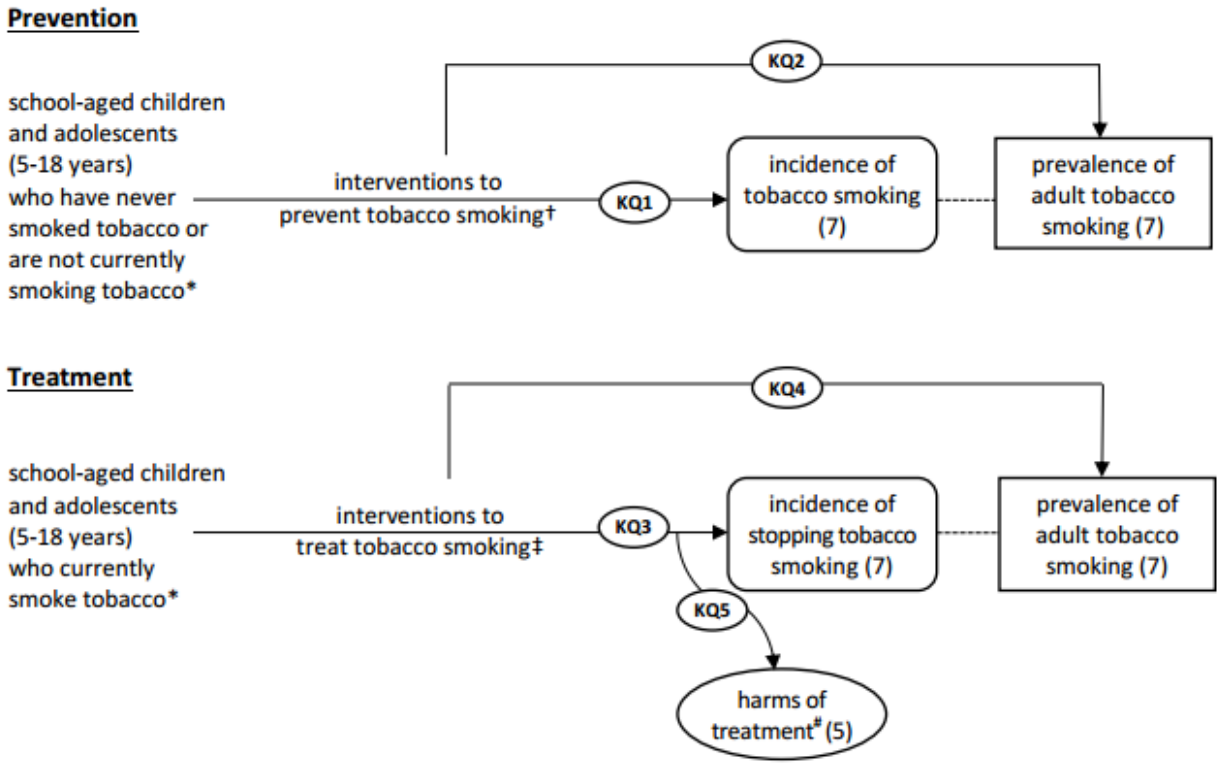
ANALYTIC FRAMEWORK: PREVENTION AND TREATMENT



The analytical framework outlines the scope of the evidence review and guideline recommendations. The purpose of the analytical framework is to show practicing physicians what the guideline includes and does not include and to visually display the relationship between the key concepts.

For prevention, the guideline applies to youth and adolescents ages 5-18 years who have never smoked tobacco or are not currently smoking tobacco. For treatment, the guideline applies to youth and adolescents ages 5-18 years who currently smoke tobacco.

As outlined in the analytical framework, this guideline looks at the impact of both prevention and treatment on primary outcomes (e.g., reduction of incidence of tobacco smoking (for prevention), smoking cessation (for treatment) and prevalence of tobacco

use in adulthood (for prevention and treatment).) as well as associated adverse effects (e.g., harms of treatment, such as anxiety and discomfort).

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RESEARCH QUESTIONS

Stage 1: Prevention

To explore the effectiveness of prevention, the CTFPHC formulated the following key research questions (KQ1) Are behaviourally-based interventions that are designed to prevent tobacco smoking effective in preventing children/youth from trying or taking up tobacco smoking?; and (KQ2) Are behaviourally-based interventions designed to prevent tobacco smoking in children/youth effective in reducing tobacco smoking during adulthood?.

Stage 2: Treatment

To explore the benefits and harms of treatment, the CTFPHC formulated the following three research questions: (KQ3) Are behaviourally-based and non-pharmacological alternative and complementary interventions effective in achieving smoking cessation?: (KQ4) Are behaviourally-based and non-pharmacological alternative and complementary interventions effective in reducing future tobacco smoking in adulthood?; and (KQ5) What if any, adverse effects are associated with behaviourally-based and non-pharmacological alternative and complementary interventions designed to help children/youth stop ongoing tobacco smoking?.

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Eligible Study Types

Screening KQ1 & KQ2

The primary population of interest for the tobacco prevention and treatment guideline was school-age children (5-12 years) and adolescents (13-18 years). The CTFPHC examined combustible tobacco products (e.g. cigarettes) excluding smokeless tobacco products or e-cigarettes).

Randomized control trials (RCTs) that had a minimum of 30 participants per arm/group of interest for baseline measures were eligible for review. Uncontrolled observational studies, case series and case reports reporting treatment outcomes for tobacco were excluded due to their inability to adequately determine or account for the effects of an intervention. Studies in both English and French were included, however only French.

studies published after 2012 were included. Benefit outcomes explored included incidence of tobacco smoking and prevalence of adult tobacco smoking.

Treatment KQ3, KQ4, & KQ5

The primary population of interest for the tobacco prevention and treatment guideline was school-age children (5-12 years) and adolescents (13-18 years). The CTFPHC examined combustible tobacco products (e.g. cigarettes) excluding smokeless tobacco products or e-cigarettes).

For benefits, RCTs that had a minimum of 30 participants per arm/group of interest for baseline measures were eligible for review. For harms, no conditions regarding sample size were included and RCTs or comparative observational designs were eligible for review. Outcomes for benefits included incidence of stopping tobacco smoking and prevalence of adult tobacco smoking. Outcomes for harms included adverse effects of interventions (e.g., anxiety, pain, discomfort, infection).

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HOW DOES THE CTFPHC GRADE EVIDENCE?

The CTFPHC utilizes the GRADE system for providing clinical practice guideline recommendations based on a systematic review of the available evidence. The **GRADE** acronym stands for: **G**rading of **R**ecommendations, **A**ssessment, **D**evelopment and **E**valuation.

The GRADE system is composed of two main components:

1. **The quality of the evidence**: The quality of the evidence measures the degree of confidence that the available evidence correctly reflects the theoretical true effect of the intervention or service. It is graded as high, moderate, low or very low based on how likely further research is to change our confidence in the estimate of effect.
2. **The strength of recommendation:** The strength of the recommendation (strong/weak) is based on the quality of supporting evidence, the degree of uncertainty about the balance between desirable and undesirable effects, the degree of uncertainty or variability in values and preferences, and the degree of uncertainty about whether an intervention represents a wide use of resources.

How is the Strength of Recommendations Determined?

The strength of the recommendations (strong or weak) is based on four factors:

1. The quality of the supporting evidence
2. The certainty about the balance between desirable and undesirable effects
3. The certainty or variability in the values and preferences of individuals
4. The certainty about whether the intervention represents a wise use of resources

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INTERPRETATION OF RECOMMENDATIONS

Implications	Strong Recommendation	Weak Recommendations
For patients	Most individuals would want the recommended course of action; Only a small proportion would not.	The majority of individuals in this, situation would want the suggested course of action but many would not.
For clinicians	Most individuals should receive the intervention.	Recognize that different choices will be appropriate for individual patients; Clinicians must help patients make management decisions consistent with values and preferences.
For policy makers	The recommendation can be adapted as, policy in most situations.	Policy making will require substantial debate and involvement of various stakeholders.

This is a standard GRADE table which outlines how weak or strong recommendations should be interpreted and implemented by different groups or stakeholders. It is important to consider the strength of the recommendations when interpreting the CTFPHC guidelines for implementation in clinical practice, for policy, or for patients in decision making.

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Tobacco Smoking Prevention and Treatment in Children and Adolescents

RECOMMENDATIONS & KEY FINDINGS

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TOBACCO SMOKING IN CHILDREN AND ADOLESCENTS: PREVENTION RECOMMENDATIONS

These guidelines provide recommendations for practitioners on preventive health screening in a primary care setting.

We recommend asking children and youth (5-18 years) or their parents about tobacco use by the child or youth and offering brief information and advice as appropriate during primary care visits to prevent initiation of tobacco smoking (Weak recommendation; low quality evidence).

Remarks: This recommendation applies to children and youth (5-18 years) who do not currently smoke tobacco (includes never or former smokers), do not have cognitive deficits, do not have mental or physical health issues, and/or do not have a history of alcohol or drug abuse.

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TOBACCO SMOKING IN CHILDREN AND ADOLESCENTS: TREATMENT RECOMMENDATION

We recommend asking children and youth (5-18 years) or their parents about tobacco use by the child or youth and offering information and brief advice, as appropriate, during primary care visits to treat tobacco smoking among children and youth who have smoked in the last 30 days (Weak recommendation, low quality evidence)

Remarks: This recommendation applies to children and youth (5-18 years) who have smoked tobacco within the past 30 days, do not have cognitive deficits, do not have mental or physical health issues, and/or do not have a history of alcohol or drug abuse.

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RATIONALE FOR RECOMMENDATIONS

The recommendations are in favour of low-intensity, behavioural preventive and treatment interventions for children or youth, because of the potentially moderate

reduction in smoking initiation, modest increase in the likelihood that youth will stop smoking, similar size effect of low and high intensity interventions, high likelihood that harms of preventive or treatment interventions are minimal, and that stakeholders find interventions important and acceptable.

The recommendations on both prevention and cessation are based on limited evidence, and, thus, are weak because of low certainty that the evidence reflects the true effect of behavioural interventions, for either prevention or treatment of smoking, and a lack of evidence that any benefit, if present, would be sustained or have longer-term health benefits.

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COMPARISON OF PREVENTION AND TREATMENT FOR TOBACCO SMOKING RECOMMENDATIONS

This table compares the current CTFPHC guideline with The Canadian Paediatric Society (CPS; 2016), US Preventive Services Task Force (USPSTF; 2013), the Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT; 2011), American Academy of Pediatrics (AAP; 2009), New Zealand Ministry of Health (2007), and the U.S. Institute for Clinical Systems Improvement (2013) prevention and treatment guidelines.

The 2016 CPS prevention guideline recommends asking children, youth and families about tobacco use and exposure and providing age-appropriate information and counselling to prevent initiation as part of routine health care. The CPS 2016 treatment guideline recommends offering counseling for smoking cessation, staying aware of research on pharmaceutical cessation interventions for teens and adults, and prescribing effective medications, as indicated, in combination with counselling.

The 2013 USPSTF prevention guideline recommends providing interventions, including education or brief counselling, to prevent initiation of tobacco use in school-aged children and adolescents. The USPSTF does not have recommendations for or against treatment.

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The 2011 CAN-ADAPTT prevention guideline recommends obtaining information about tobacco use on a regular basis, and providing counselling that supports abstinence from tobacco to children and adolescents. The 2011 CAN-ADAPTT treatment guideline recommends providing counselling that supports tobacco cessation among children and adolescents who use tobacco.

The 2009 AAP prevention guideline recommends screening for tobacco use and tobacco smoke exposure, and counseling children and parents about the harms of

tobacco at most visits. The 2009 AAP treatment recommendation suggests providing advice to tobacco users about cessation strategies and resources at most visits.

The New Zealand Ministry of Health has not published a prevention recommendation. The 2007 New Zealand Ministry of Health treatment recommendation suggests giving brief advice to stop smoking to all people who smoke, providing evidence-based cessation support for people who express a desire to stop smoking, and recommending smoking cessation treatments of proven effectiveness to people interested in stopping smoking.

The 2013 US Institute for Clinical Systems Improvement prevention recommendation suggests establishing tobacco use status for all patients and reassess at every opportunity, as well as enforcing non-users to continue avoiding tobacco products. For treatment they recommend ongoing cessation services to all tobacco users.

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KNOWLEDGE GAPS

There is a lack of high-quality RCTs that examine the short and long-term benefits of behavioural tobacco prevention and treatment interventions for children and adolescents. More research is needed to identify the characteristics of the most effective interventions, including factors such as the type of advice provided, duration of the intervention, type of provider, and contact time needed. There is no conclusive evidence in either adults or youth on the potential harmful effects of e-cigarettes or whether they can be used in smoking cessation. Further research is needed to assess the benefits and harms of interventions in at risk populations.

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Tobacco Smoking Prevention and Treatment in Children and Adolescents

IMPLEMENTATION OF RECOMMENDATIONS

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CONSIDERATIONS FOR IMPLEMENTATION

The CTFPHC encourages primary care practitioners to implement procedures to assess smoking risk and/or status in a child or youth. If the practitioner determines a likely need for a prevention or cessation intervention then they should ask if the child/youth and/or

parent would consider having a brief conservation that may help the child/youth either prevent the uptake of smoking or stop smoking.

Most children and youth and their parents/caregivers would want the child or youth to receive the recommended course of action. However, since this a weak recommendation, many children and youth and their parents or caregivers may not want to receive the recommended course of action.

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CONSIDERATIONS FOR IMPLEMENTATION

For those who consent, primary care practitioners (family physicians, nurses, or other appropriate members of the health care team) should offer them brief information and advice at appropriate primary care visits. Appropriate primary care visits include scheduled health supervision visits, visits for immunizations or medication renewal, episodic care or acute illness, and other visits. Brief information and advice may include verbal communication of up to five minutes to discuss patient attitudes and beliefs, risks of smoking, and/or strategies for dealing with the influence of peers. Sharing of printed or electronic material (brochures, newsletters and interactive computer programs) could be considered.

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VALUES AND PREFERENCES

CTFPHC did not conduct a full systematic review of the evidence on parental preferences or values. Due to resource limitations neither youth nor clinician preferences were examined. The CTFPHC recruited parents of school-aged children and youth (smokers and non-smokers) for a focus group (n=10) and subsequent survey (n=13). Parents agreed it is important to offer prevention and treatment interventions, but would want to be informed about the components of the offered interventions. Some parents questioned primary care settings as the best place for behavioural interventions. The CTFPHC acknowledges that better data is needed on the values and preferences of children and youth for tobacco prevention and treatment.

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KT TOOLS

The CTFPHC creates KT tools to support the implementation of guidelines into clinical practice. A clinician FAQ has been developed for the tobacco prevention and treatment

guideline. This tool is freely available for download in both French and English on the website: www.canadiantaskforce.ca

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Tobacco Smoking Prevention and Treatment in Children and Adolescents

CONCLUSIONS

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Key Points

We recommend asking children and youth (5-18 years) or their parents about tobacco use by the child or youth and offering brief information and advice as appropriate during primary care visits to prevent initiation of tobacco smoking

We recommend asking children and youth (5-18 years) or their parents about tobacco use by the child or youth and offering information and brief advice, as appropriate, during primary care visits to treat tobacco smoking among children and youth who have smoked in the last 30 days

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More Information

For more information on the details of this guideline or to access the KT tool please refer to the website www.canadiantaskforce.ca**.**

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Questions and Answers

Thank you