

**Smoking Cessation in Canada: Practice-informed
Research Agenda
August 4, 2010**

Please Note: This document is intended to capture ongoing input and feedback from the CAN-ADAPTT network and partners in identifying practice-informed research gaps. This document will continue to be updated over 2010 as additional input is received.

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Executive Summary

One of the main objectives of the CAN-ADAPTT project is the development of a research agenda in key areas of smoking cessation that bridges the gaps between clinical practice, research and theoretical frameworks. Using a practice-informed approach, the research agenda will contribute to both clinical and population-based approaches of smoking cessation in Canada.

This document, in draft format, aims to summarize gaps in knowledge and research, highlighting those identified by CAN-ADAPTT network members and stakeholders as being priorities. The five topic areas highlighted as research priorities are a result of network feedback gained through an online survey conducted in spring, 2010, in which respondents were asked to select topic areas that they thought were the most significant priorities for further research in Canada. These priorities provide a basis for exploration into how practitioner-initiated research questions can be investigated.

The five general topic areas prioritized in order of highest priority, and outlined in this draft are summarized in the Table 1, below.

Table 1. Top Five Priorities Identified by Network Respondents

Topic Areas	% of respondents prioritizing
Combination therapy	42%
People making repeat attempts to quit	40%
Children, adolescents, and youth	35%
Psycho-social treatments/ counselling	35%
Screening, assessment, advice, follow-up	34%

This research agenda is informed by both internal and external sources. Internal sources include vehicles of communication available for CAN-ADAPTT network members to identify research questions or gaps in knowledge such as the member online survey and discussion board. External sources include existing guidelines and reports that have identified significant gaps in research.

Moving forward, gaps in knowledge will be prioritized through an iterative process involving CAN-ADAPTT members and Executive committee. A wide range of sources will be consulted to compile the final version of this research agenda.

The following table summarizes all areas of research or knowledge gaps identified by internal or external sources, with the prioritized topics in boldface. Topic areas are categorized according to five broad themes, which are: provider approaches; organization-level approaches; approaches that address specific populations; policy and population-level approaches; and “other” topics.

Table 2: Topic Areas by Broad Theme

<u>Themes</u>	<u>Topic Areas where Gaps have been Identified</u>
Provider Approaches	Clinical interventions; intensity of interventions; screening, assessment, advice and follow-up; counselling medication; combination therapy.
Organizational-level	Clinician type; systems; cost effectiveness.
Specific Populations	HIV positive smokers; hospitalized smokers; LGBTTQ smokers; smokers with medical co-morbidity; older smokers; smokers with psychiatric and substance use disorders; people making repeat attempts to quit ; ethnic groups/new Canadians; Aboriginal populations; women/sex differences and gender influences; children, adolescents and youth ; light smokers; non-cigarette tobacco users; pregnant and pre/post-natal smokers; weight gain after stopping smoking; military members; contraband tobacco.
Policy and Population-level approaches	Economics; tobacco industry practices.
Other	Neurological/genetics.

Introduction

About CAN-ADAPTT

The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT) is a Practice-Based Research Network (PBRN) committed to facilitating research and knowledge exchange among those who are in positions to help smokers make changes to their behaviour (e.g., practitioners, healthcare/service providers) and researchers in the area of smoking cessation.

CAN-ADAPTT is designed to engage practitioners and health care/service providers in a “bottom-up” process whereby research questions arise from front-line practice, positioning the research to produce results that are clinically relevant and readily usable to those in a position to help smokers.

Vision: National access to evidence-informed practice guidelines

Our vision is to see a Canada where those who are in positions to help smokers make changes to their behaviour (e.g., practitioners, healthcare/service providers) have easy access to the tools needed to deliver up-to-date evidence-based smoking cessation interventions, ultimately helping reduce the prevalence of tobacco use and dependence.

Overall Goal: Building bridges between research and practice

The overall goal of CAN-ADAPTT is to facilitate research and knowledge exchange among practitioners and health care/service providers and tobacco control researchers to inform the development of a dynamic set of cessation guidelines for use in clinical practice and population-based strategies within Canada.

CAN-ADAPTT's Main Objectives

1. **National Network:** To create a national network of smoking cessation researchers, policy/decision- makers and practitioners/providers to inform smoking cessation research and practice.
2. **Research Agenda:** *To develop a practice-informed research agenda in key areas of smoking cessation that bridges the gaps between clinical practice, research and theoretical frameworks.*
3. **Knowledge Translation:** To translate research findings into a dynamic set of evidence-based guidelines on smoking cessation (i.e., Wiki-guidelines).
4. **Dissemination and Engagement:** To disseminate findings and engage stakeholders from national and professional organizations to promote the adoption of the Wiki-guidelines.
5. **Collaboration:** To collaborate with other projects in tobacco control.
6. **Evaluation:** To evaluate the system and population impacts of the proposed practice-based research network.

Research Agenda Development Process

This report contains an overview of topics for potential exploration in future research endeavours, with particular attention being paid to those prioritized by network members. What follows in this section is a description of the method used to develop this draft research agenda.

First of all, a range of key sources were analyzed for research or knowledge gaps. Sources include practitioner knowledge exchange forums, existing guidelines and reports, and stakeholder opinion and feedback (see Tables 3 and 4 for internal and external sources, respectively).

Next, network feedback was gained through an online survey, conducted April 14 to May 17, 2010, in which all network members were invited to participate. There were 111 respondents (or about 20% of members, during the period) who provided feedback on topic areas of smoking cessation.

In the survey, each respondent was asked to choose five topic areas from a list of 27, that they thought were the top priorities for further research in Canada. The 27 topics were, by no means, an exhaustive list, but were broad topics roughly following the themes listed in CAN-ADAPTT guideline (version 1.0). The top five research priorities highlighted in this draft research agenda provide a basis for exploration into addressing practitioner-initiated research questions. The survey and summary of results are available in the Appendix.

Going forward, the development of this research agenda will consist of an iterative process of priority identification with both CAN-ADAPTT network members and the Executive Committee of CAN-ADAPTT.

Sources Informing the Research Gaps

The internal and external sources consulted to compile knowledge or research gaps were scanned for reference to research needs. Such references took a variety of forms: explicitly identified “research gaps” or “evidence gaps” or “knowledge needs” or “areas of future research,” as well as less direct references.

Internal Sources

Internal sources included any method of communication available for network members to provide feedback and identify gaps in knowledge/areas for future research. This included network member communications such as the CAN-ADAPTT discussion board as well information shared through surveys/evaluation forms at various CAN-ADAPTT forums. The complete listing of all internal sources included can be found in Table 3 below.

External Sources

CAN-ADAPTT’s guideline was initially developed from a compilation of existing smoking cessation guidelines. These existing guidelines were examined for pertinent research questions, explicitly identified gaps and recommendations related to tobacco control. In addition, the Report on the Canadian Tobacco Control Research Summit has been included to address any research gaps specific to the Canadian context, which were not previously identified.

Table 3. Internal Sources

Abbreviation used	Source
<i>Discussion Board</i>	CAN-ADAPTT's guideline discussion board; a practice-informed on-line forum
<i>Grant Applications</i>	Successful seed grant applications; see bibliography for complete listing.
<i>Annual General Meeting (AGM)</i>	Annual General meeting/Guideline Review Meeting; participant evaluation/feedback forms
<i>TTR</i>	Transdisciplinary Tobacco Rounds; participant evaluation/feedback forms
<i>Survey</i>	Research agenda survey of the CAN-ADAPTT network

Table 4. External Sources

Abbreviation used	Source
<i>US</i>	U.S. Department of Health and Human Services. Clinical practice guidelines for treating tobacco use and dependence: 2008 update.
<i>RNAO</i>	Registered Nurses Association of Ontario Guidelines: Integrating smoking cessation into daily nursing practice. (2007, March).
<i>ICSI</i>	Institute for Clinical Systems Improvement (ICSI). (2004, June). Tobacco use prevention and cessation for infants, children and adolescents. & Institute for Clinical Systems Improvement (ICSI). (2004, June). Health care guideline: Tobacco use prevention and cessation for adults and mature adolescents.
<i>NZ</i>	New Zealand Guidelines: Ministry of Health. New Zealand Smoking Cessation Guidelines. Wellington: Ministry of Health, 2007.
<i>Community Guide</i>	US Community Prevention Guidelines: The guide to community preventive services : what works to promote health? / Task Force on Community Preventive Services; edited by Stephanie Zaza, Peter A. Briss, Kate W. Harris. p. cm.
<i>CTCRS</i>	Towards a Coordinated Research Agenda to Reduce Tobacco-Related Problems in Canada. Report on the Canadian Tobacco Control Research Summit.

Research Themes

Areas for future research, including those prioritized by network members, have been categorized according to these themes and as illustrated in Figure 1:

- Provider approaches;
- Organizational-level approaches;
- Approaches that address specific populations;
- Population and policy level approaches.

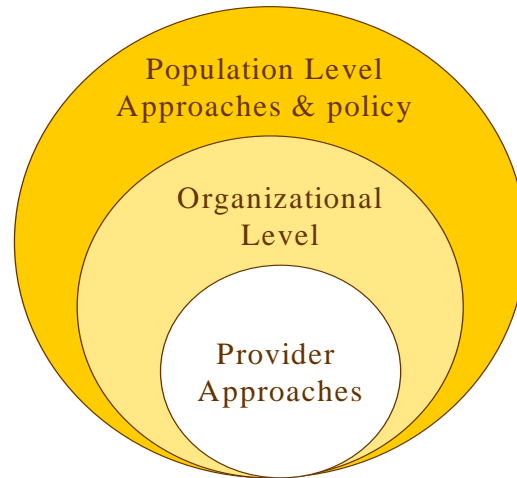


Figure 1. Research agenda framework

The following sections (of Provider Approaches; Organizational-level; Specific Populations; Population-level Approaches & Policy; and Other) briefly list their corresponding research gaps. Any topic areas prioritized as a research gap by the network will be highlighted and noted as such.

Priority topic areas outlined in this report each include a list of specific research questions related to that topic. Non-priority topics are included in each section with a summary of their respective research questions, for the purposes of providing a comprehensive overview of all research or knowledge gaps uncovered by the CAN-ADAPTT project.

The five topic areas prioritized by the network are rank-ordered in the Table 5, below.

Table 5. Top Five Priorities Identified by Network Respondents

Topic Areas	% of respondents prioritizing
Combination therapy	42%
People making repeat attempts to quit	40%
Children, adolescents, and youth	35%
Psycho-social treatments/ counselling	35%
Screening, assessment, advice, follow-up	34%

Section 1: Provider Approaches

1.1 Priority Area: Psychosocial/ Counselling

Sources identified a range of research gaps associated with counselling. The US Clinical Practice Guidelines (US CPGs) call for further understanding of the mechanisms through which counselling interventions exert their effects. The need for evaluation of the effectiveness of tobacco use interventions in general is echoed with specific reference to counselling; the US CPGs, for example, call for further research on the relative effectiveness of specific counselling interventions, both in general and in terms of specific patient populations. Research is also needed to identify optimal methods of increasing the acceptability, appeal and uptake of different counselling methods. The specific research questions or gaps identified are listed below.

Specific Research Questions/Gaps:

1. Effectiveness of intensive inpatient treatment programs (US)
2. Mechanisms through which counselling interventions exert their effects (US)
3. Optimal methods to decrease barriers and increase the appeal and use of effective counselling treatments (US)
4. Effectiveness of specific counselling interventions among various patient populations (those with cancers; chronic obstructive pulmonary disease [COPD]) (US).
5. When should the topic of smoking be raised if a client is dealing with multiple stressors? When is the optimal time to advise someone to quit and how does a professional recognize this "optimal time"? (Discussion Board)
6. What if your treatment facility is smoke-free and clients are provided NRT; however, some clients have privileges that allow them to leave the premises and go down the street and smoke? How do you prevent these clients from smoking? (Discussion Board)
7. Which nicotine withdrawal assessment scales are being used in practices? The Minnesota Nicotine Withdrawal Scale has recently come to my attention (Discussion Board)
8. Social network research and how this can be used in practice (AGM)
9. Research on the social impact of smoking withdrawal (what has been successful in assisting people to maintain their social network?) (AGM)
10. Efficacy of smoking cessation programs and referrals to programs (AGM)
11. What is the impact of motivational interviewing administered via life coaching skills on: smoking cessation; average number of cigarettes smoked per day; self-esteem; and self-efficacy to quit smoking among young adults who smoke? (Grant application)
12. Optimal timing and length of counselling and medication interventions (e.g., timing and spacing of post-quit counseling sessions) (US)

1.2 Priority Area: Screening, Assessment, Advice & Follow-up

Sources identified a series of research gaps pertaining to clinical interventions to address tobacco use. These gaps encompass conceptual underpinnings of clinical interventions, clinical approaches or aspects relating to effectiveness, treating tobacco use,

Specific Research Questions/Gaps: conceptual underpinnings of clinical interventions

1. Effectiveness of tailoring (US)
2. Relative effectiveness of clinical interventions that encourage reduction of tobacco use, versus those that encourage full cessation. (AGM)
3. Whether treatment adjustment based on specialized assessments can improve long-term abstinence rates (US)
4. Methods to increase the appeal and utilization of intensive treatments (US)
5. Effectiveness/efficacy of interventions and referrals to programs (TTR, AGM)

Specific Research Questions/Gaps: clinical approaches, aspects of intervention design, or the relative effectiveness of clinical activities

1. Effectiveness of MI and related techniques, including the impact of brief motivational interviewing strategies delivered in primary care settings (US)
2. What is the impact of motivational interviewing administered via life coaching skills on: smoking cessation; average number of cigarettes smoked per day; self-esteem; and self-efficacy to quit smoking among young adults who smoke? (Grant application)
3. Effectiveness of physiological monitoring and biological marker feedback to motivate smokers to quit and increase abstinence rates (US)
4. Effectiveness of motivational interventions, cigarette fading, and physiological feedback of smoking effects (US)
5. Effectiveness of fax-to-quit and other programs designed to increase quitline use (US)
6. Relative effectiveness of different types of self-help interventions including computer-based interventions (US)
7. Whether working to change the social network can improve abstinence rates (eg. other household smokers, teaching quitting support, encouraging smoke-free home) (US)
8. Effectiveness of family systems interventions as a means to increase support (US)
9. Effective features of web assisted interventions/WATIs (US)
10. Effectiveness of computer-delivered interventions as a format vs. the effect of the content of the intervention (US)
11. Effectiveness of Allen Carr's method (NZ)
12. What is the effectiveness of alternative treatments such as hypnosis and laser etc.? (TTR; Discussion board)

Specific Research Questions/Gaps: Screening, assessment, and follow-up

1. Disparities in screening and assessment in specific populations (US)
2. Can treatment adjustment based on specialized assessments improve long-term abstinence rates? (US)
3. How to address the lack of long term follow-up and engagement of smokers (AGM)
4. Lack of long term follow-up engagement of smokers (AGM)
5. Other screening methods for tobacco addiction other than the Fagerstrom Test and Heavy Smoking Index. (Survey)

Please see the section “People Making Repeat Attempts to Quit” for related research gaps relating to relapse prevention.

Specific Research Questions/Gaps: intensity, frequency, or timing of interventions

1. Effects of treatment duration, timing, and spacing of sessions (i.e., the number of days or weeks over which treatment is spread). Does front loading sessions (having the majority of the sessions during the first few weeks of a quit attempt) or spacing sessions throughout the quit attempt yield better long-term abstinence rates? (US)
2. The frequency and timing of health professional interventions when it comes to the effectiveness of brief provider interventions, by more than one type of clinician.” (Discussion Board)

1.3 Priority Area: Combination Therapy

The US guideline states that there is evidence to support the effectiveness of both counseling and medication and indicates one research question related to this topic. Others may refer to combination therapy as the use of multiple NRT or medication

Specific Research Questions/Gaps: Counselling and Medication

1. Optimal timing and length of counselling and medication interventions (e.g., timing and spacing of post-quit counseling sessions) (US)
2. Effectiveness and acceptability/appeal of different counselling formats and techniques (e.g., computer-based counseling, quitline counseling, motivational interviewing) (US)
3. Strategies to address misconceptions about effective counseling and medication treatments (US)
4. Relative cost-effectiveness of various treatment combinations (US)

Specific Research Questions/Gaps: Medication or NRT

1. Lack of awareness among health practitioners that they can recommend multiple types of NRT and other methods of cessation (Survey)

2. Hesitancy among health practitioners to practice combination therapy as it goes against product labels (Survey)

1.4 Other Provider Approaches

Though not selected by the network as one of the top research priorities, other provider-level approaches include medication. A summary of its research gaps are included below.

Medication

Other provider approaches not as highly prioritized by the network includes those referring to the use of medication. Sources identified research gaps associated with the effectiveness and safety, timing, and accessibility of medication use. There was also some question in the research agenda survey, for example, as to the safety of Champix.

Further evidence is needed on the relative effectiveness and safety of approved medications, in general and specific to certain subpopulations and circumstances, such as with women, older smokers, for different levels of nicotine dependency, and for off label use, for example.

Regarding the timing of medication use, sources suggested that further research is needed to clarify the optimal timing of medication use.

Section 2: Organizational Level

Organizational level topic areas were not selected as one of the top priorities for research among the survey network, however, a brief summary of these topics is included below to provide a more comprehensive context.

Clinician Type

Sources identified a need for further research on the relative effectiveness of interventions led by different types of clinicians, with the type and intensity of intervention held constant.

A need for further research on the appropriateness of recommendations by non-health care professionals for NRT use was also identified, as previously noted (section 1.5).

Systems

Sources suggested a need for further evaluation of the effectiveness of training programs – specifically, the relative merit of different formats and content of training (e.g. continuing education, interactive learning) and the relative merits of training clinicians from different disciplines (e.g. nursing, psychology, dentistry, pharmacy and social work).

Sources also suggested a need for further research into systems-level innovations designed to increase or improve provider use of tobacco use interventions. Suggested topics of research include:

- The effectiveness of audit and feedback, reminder systems, financial incentives, and recruitment of opinion leaders as a means of increasing provider uptake.
- Exploration of other possible determinants of buy-in among healthcare workers.
- The development of novel ways to address systemic barriers that prevent clinicians from delivering effective tobacco control interventions.
- Knowledge sharing of effective practices, between health practitioners/peers (Survey).
- The evaluation of the relationship between provider attitudes and tobacco use recommendations.
- Are quitlines utilized to their maximum benefit by practitioners and tobacco users? Is more government funding needed to meet frontline needs? (Survey)
- Smoking/non-smoking policies in hospitals (Survey).
- Sources also noted a need for further research into the effectiveness of efforts to increase consumer knowledge and access (campaigns, etc.).

A programmatic gap identified was the need for further education about addiction among primary care providers. One source suggested possibly expanding practitioners' job descriptions to include tobacco control as an integral part of practice.

Cost Effectiveness

Sources identified a need for further research into the relative cost-benefit and cost-effectiveness of different tobacco use interventions. Also required is research on the relationship between the cost (to user) of different treatment options (e.g. NRT) and the use and success of these treatments.

Some survey respondents also noted the need for medical coverage or funding for smokers to access NRT and smoking cessation medication.

Section 3: Specific Populations

3.1 Priority Area: Children, Adolescents and Youth

Regarding children, adolescents and youth, there are research gaps related to the effectiveness of therapeutic approaches and the safety and effectiveness of medications.

Specific Research Questions:

5. Effectiveness of using the 5A's in paediatric clinics to treat both adolescents and parents (US)
6. Safety and effectiveness of medications in adolescents, including bupropion SR, NRT, Varenicline, and a nicotine vaccine (US)
7. Effectiveness of counselling interventions designed specifically to motivate youth to stop using tobacco (US)
8. Effectiveness of child-focused versus family-focused or peer-focused interventions as well as interventions accessed via the Internet, quitlines, and school-based programs. (US)
9. Strategies for increasing the efficacy, appeal, and reach of counselling treatments for adolescent smokers (US)
10. More research is needed on teen cessation: how to motivate and support teens to quit tobacco; best practice interventions with youth; effective youth cessation interventions; use of smoking cessation aids in teens (TTR)
11. Guidelines for youth need to be tailored to their specific situation (AGM)

3.2 Priority Area: People Making Repeat Attempts to Quit

Both external and internal sources identified a need for further evaluation of the effectiveness of interventions targeting relapse – specifically, their optimal format (in person via telephone), content, and timing. These research questions are outlined in detail below.

Specific Research Questions:

1. Optimal timing and types of relapse prevention interventions (US)
2. Effectiveness of various formats for relapse prevention treatments (e.g., effectiveness of telephone contacts in reducing the likelihood of relapse after a minimal intervention). (US)
3. Interventions to prevent relapse in individuals who have recently quit smoking (RNAO)

Research questions relating to relapse prevention can also be found under the theme of Provider Approaches in the priority topic area of “Screening, Assessment, Advice and Follow-up”.

3.3 Other Specific Populations

Although not in the top five research priorities, the specific populations in Table 6 are recognized to have research or knowledge gaps, which are included in this report for comprehensiveness.

Table 6. Other Specific Populations Requiring Research

Other Specific Populations
HIV-positive Smokers
Hospitalized Smokers
LGBTQ
Medical Co-morbidity
Older Smokers
Psychiatric and Substance Use Disorders
Ethnic Groups/ New Canadians
Aboriginal Populations
Women/ Sex Differences and Gender Influences
Light Smokers
Non-Cigarette Tobacco Users
Pregnant and Pre/Post-natal Smokers
Weight Gain After Stopping Smoking
Contraband Tobacco
Rural Populations

Sources identified a series of research gaps with regards to specific populations, calling for additional research into population-based disparities in screening, assessment and treatment for tobacco use. Research is also needed to determine which populations stand to benefit from specially targeted interventions, and to determine which tactics are most effective. For such programs that are currently in place, proper evaluation is necessary to ensure that needs are being met.

Table 7 lists research gaps identified that are specific to certain population subgroups. The gaps identified underline the importance of investigating different variables across populations – the physiological, physical, social, and behavioural variations that influence a range of clinical choices pertaining to tobacco control, including optimal medication type and dosing, choice of counselling/behavioural intervention, and source and timing of intervention.

Table 7. Research gaps in specific populations

HIV Positive Smokers		
	Effectiveness of medications and counselling/behavioural interventions, including tailored interventions	US, Discussion board
	Effectiveness of MI and educational approaches in increasing motivation to quit	US, Discussion board
	Effectiveness of community and social support networks in bolstering quitting motivation and improving treatment outcomes	US
	Lack of clinical guidelines to direct providers' delivery of tobacco control care to HIV+ patients	Discussion boards
	Programmatic gap: primary care providers may not prioritize smoking cessation when treating HIV+ patients	Discussion board
Hospitalized Smokers		
	Effectiveness of interventions provided by different hospital personnel, including nurses and respiratory therapists	US
	Effectiveness of counselling and medications	US
	Relapse prevention once the patient leaves the hospital	US
	Safety/risks/benefits of NRT use in perioperative patients	Discussion board
LGBTTQ		
	Accessibility and acceptability of tobacco dependence interventions	US
	Rates of intervention use and effectiveness of both medications and counselling treatments	US
	Effectiveness of tailored interventions	US
	Young adults and youth in this population	Survey
Medical Co-morbidity		
	Effectiveness of counselling and cessation medications among individuals with diabetes, asthma and obesity	US, Discussion board
	Impact and effectiveness of specialized assessment and tailored interventions in these populations	US
	Treating individuals with eating disorders	Survey
	Treating individuals with COPD or lung health disorder	Survey
Older Smokers		
	Effectiveness of tailored as well as general counselling interventions for older smokers in promoting tobacco abstinence	US, Discussion board

	Effectiveness and side effects of medication	US, Discussion board
	Effective methods to motivate older smokers to make a quit attempt	US, Discussion board
Psychiatric and substance use disorders		
	Relative effectiveness of different dependence medications and counselling strategies in patients with psychiatric comorbidities, including depression	US, AGM
	Effectiveness and impact of tobacco dependence treatments in combination with other (non-tobacco) chemical dependency treatments	US, Discussion boards
	Importance and effectiveness of specialized assessment and tailored interventions in these populations	US
	Impact of stopping tobacco use on psychiatric disorders and their management	US
	Research on interrelationships among tobacco and other substances and behaviours	CTCRS
	Other substance use as possible co-determinant linkages with addiction trajectories	CTCRS
	Lack of clinical practice guidelines	AGM
Ethnic Groups / New Canadians		
	Effectiveness of specific tobacco dependence interventions in these populations	US
	Effectiveness of culturally adapted versus generic interventions for different racial and ethnic minority populations	US
	Identification and development of interventions to address the specific barriers or impediments to treatment delivery, use, or success (e.g., SES, inadequate access to medical care, treatment misconceptions, not viewing tobacco use as problematic)	US
	Identification of motivators of cessation that are especially effective with members of racial and ethnic minority populations (e.g., fear of illness requiring long-term care and disability)	US
Aboriginal Populations		
	Exploration of ways to integrate traditional practices and spirituality into tobacco use interventions	CTCRS

	Gather surveillance data at the local/regional levels and with off-reserve, non-status and Métis	CTCRS
	Learn more about health service provider practices pertaining to tobacco use	CTCRS
	Identify sources of resiliency in the aboriginal context	CTCRS
	Evaluate successful programs to identify sources of success	CTCRS
	Increase biomedical knowledge about Aboriginals and tobacco, e.g. incidence of smoking-related diseases	CTCRS
	Research effective dissemination practices	CTCRS
Women/sex differences and gender influences		
	Investigate differences in the effectiveness of tobacco dependence treatments, including counselling and the effectiveness of Varenicline and combination medications	US
	Impact of gender-specific motives that may increase quit attempts and success (e.g., quitting to improve fertility and reproductive health, pregnancy outcomes, physical appearance, and osteoporosis)	US
	Explore:	
	Gender differentials in tobacco use onset, maintenance, and cessation	CTCRS
	Gender and addiction processes	CTCRS
	Gender differences and effects of tobacco exposure	CTCRS
	Gender differences and disease processes	CTCRS
	Differential effects of social context and tobacco use	CTCRS
	Differential effects of NRT and pharmacologic agents	CTCRS
	Research on dissemination of gender-specific information to clinicians	CTCRS
	Research effective ways to integrate tobacco control in perinatal care	CTCRS
	Evaluation of effects of taxation and pricing on tobacco use, with attention to gender differences	CTCRS
	Development of sex and gender-sensitive indicators for population and systems level analysis	CTCRS
	Developing an improved understanding of gendered approaches to:	CTCRS
	Harm reduction	CTCRS
	Marketing (by tobacco companies)	CTCRS
	Occupational and other sources of ETS	CTCRS
Light Smokers		
	Investigate the effectiveness of counselling and medication interventions specifically targeted at lighter smokers	US

	Evaluate the effectiveness of generalized counselling and medication interventions among lighter smokers	US
Non-cigarette tobacco users		
	Evaluation of treatment effectiveness among users of non-cigarette tobacco products, especially among users of pipes, cigars, and hookahs.	US, TTR, Discussion board
	Advice and counselling treatments	
	Medication	
	Medication combined with counseling and behavioural therapies	
	Effectiveness of medication and counselling interventions with individuals who both smoke cigarettes and use non-cigarette tobacco products	US
Pregnant and pre/ post-natal Smokers		
	Effectiveness of different types of counselling, behavioural therapies, and motivational interventions for pregnant women in general and in high prevalence populations	US
	Evaluation of the safety and effectiveness of medication during pregnancy, breastfeeding	US
	Relapse prevention with pregnant women and women who have recently given birth	US
	Development of strategies for linking preconception, pregnancy and postpartum interventions	US
	Effects of smoking during fertility treatment and the effects and effectiveness of cessation interventions on the infertile population, both men and women	US
	Additional research on pre and post natal exposure and impacts	CTCRS
	Differential effects on male and female, e.g., cognition, growth, MAI outcomes	
	Impact on offspring in their likelihood of smoking and genetic effects	
Weight gain after stopping smoking		
	Evaluate the effectiveness of weight control measures during quit attempts and the effect on tobacco abstinence and weight	US
	Optimal “dose” and timing of exercise to minimize weight gain and treatment outcomes	US
	Evaluate the effectiveness of medications to control weight gain during quit attempts	US

	Evaluate impact of weight gain concerns on specific populations, including adolescents who smoke and ethnic/minority women	US
	Evaluate strategies to increase adherence to exercise as part of cessation interventions that include efforts to decrease weight gain	US
Military Members		
	Identify the variables that have the greatest impact on smoking uptake and cessation among military members	Grant application
Contraband Tobacco		
	Evaluate the prevalence of contraband tobacco use among inpatients in substance abuse programs	Grant application
	Evaluate the relative probability that contraband smokers will attempt to quit	Grant application
Rural Populations		
	How to provide effective education and intervention to rural populations where there is a higher rate of smoking	Survey

Section 4: Population Level Approaches & Policy

Although topics within population level approaches were not selected as a priority for research by the network, a brief summary of these topics are included here.

Population level approaches

Sources identified a lack of knowledge about the effectiveness of tobacco use initiatives implemented at a population level, specifically:

- Cessation series/contests;
- Education and awareness campaigns about exposure to SHS/ETS in workplace;
- Interventions that promote healthy lifestyles (such as healthy eating/active living campaigns and activities).

Further research is also needed to apply our understanding of the determinants of health to a number of population-level factors associated with tobacco use.

Potential research questions include:

- How should the determinants of health model shape the development and implementation of tobacco use interventions?
- How do the determinants of health effect tobacco use interventions?
- How are the determinants of health related to tobacco use onset patterns?

The CTCRS report also cited the need for further research into factors that are possibly protective against tobacco use – in particular, for research at the population level to identify and define social and genetic sources of resilience.

Participants in the discussion board and Transdisciplinary Tobacco Rounds identified a need for further research into the availability of contraband tobacco products and tobacco use at the population level.

Programmatic gaps also identified population level education/awareness campaigns addressing misconceptions about effective counselling and medication treatments.

Economics

The CTCRS identified a need for further modeling of the economic implications of tobacco use – in particular, longitudinal analysis of the direct and indirect costs of tobacco consumption, on the one hand, and tobacco control policies, on the other hand. Other economic issues requiring further research include:

- Demand-side
 - Price elasticity patterns specific to subgroups of the population, such as youth/low income individuals/women.
 - Evaluation of the comprehensive impact of taxation.
- Supply-side
 - Market organization of tobacco production and marketing.

- Effectiveness of financial incentives to suppliers and retailers.
- Issues of regulatory capture, e.g., tobacco industry response to tobacco control.
- Issues of information control, e.g., tobacco industry response to research (academic capture) and information dissemination (advertising, publishing)
- International economic impacts of tobacco industry

Tobacco Industry practices

The CTCRS report identified a need for research on strategies and tactics relating to a number of tobacco industry practices, including:

- Product modification and measures taken by companies to increase the toxicity, palatability, and appeal of tobacco products, as well as novel sources of addictions (e.g. Nicotine lollipops).
- Labelling practices: This topic was also invoked by a discussion board participant, who pointed out that the nicotine content posted on the cigarette package is misleading, as cigarettes are designed to be "elastic" in that the way a cigarette is smoked can titrate nicotine delivery.
- Companies' legal tactics and cost recovery practices.

The CTCRS report emphasized the importance of drawing on a range of analytical perspectives to inform the analysis of tobacco industry tactics. Political science, economics, public relations, natural sciences, and marketing were cited as specific disciplines to engage in future research activities. The report also suggested taking a global perspective on tobacco industry practices, and examining the impact of international trade and treaties, as well as flows of advertising and goods across borders.

Another area of research suggested by the CTCRS report is the development of tactics to use to reorient the tobacco industry towards alternative profit streams and engaging industry in the promotion of population health goals.

Section 5: Other

Although not included in the research agenda survey to the network, mention of research questions not encompassed by Provider, Organizational, Population Level approaches or by Specific Populations are included here.

Neurological/Genetic

Sources identified the need for a better understanding of neurological and genetic factors that influence tobacco use. The CTCRS report in particular called for renewed emphasis on the search for genes, starting with better and more expansive phenotyping of smokers.

Programmatic gap: A participant in the transdisciplinary tobacco rounds suggested that clinicians require a better understanding of the brain mechanisms related to tobacco use, and called for actionable advice for clinicians on helping the brain remodel.

References

AGM

CAN-ADAPTT's Annual General Meeting/Guideline Review Meeting; Attendee evaluation/feedback forms

Community Guide

The guide to community preventive services: what works to promote health? / Task Force on Community Preventive Services; edited by Stephanie Zaza, Peter A. Briss, Kate W. Harris. p. cm.

<http://www.thecommunityguide.org/tobacco/#initiation>. Accessed: July 29, 2008, 3:45 pm

CTCRS

Towards a Coordinated Research Agenda to Reduce Tobacco-Related Problems in Canada. Report on the Canadian Tobacco Control Research Summit. April 19-21, 2002, Ottawa, Canada. Strachan-Tomlinson: June 5, 2002.

Discussion Board

The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT): Guidelines Discussion Board. Available at: <http://www.can-adaptt.net/support/default.aspx>.

Executive Committee

CAN-ADAPTT's Executive committee members: Tupper Bean, Rosa Dragonetti, Charl Els, Roberta Ferrence, Cameron Norman, Paul MacDonald, Peter Selby, Michele Tremblay, Laurie Zawertailo.

Grant Applications

Arbour, K.P.A. Translating research into practice: Lessons on integrating physical activity into smoking cessation counselling in women with severe mental illness. Submitted 2008.

Barrett, S.P. The effects of tobacco and nicotine on cigarette craving and withdrawal in psychotic and non-psychotic smokers. Submitted June 2009.

Brule, J. Smoking cessation counselling practices among Quebec optometrists: a survey on their beliefs, practices and needs in terms of training and educational tools. Submitted June 2009.

Callaghan, R. Contraband Tobacco and Smoking Cessation Outcomes in Substance-Abuse Treatment. Submitted December 2009.

DeVillaeer, M.R. Survey of Ontario Addiction Treatment Programs. Submitted June 2009.

Els, C. Fundamentals of Tobacco Control for Canadian Students in the Health Disciplines: a Publication Proposal. Submitted December 2009.

Garcia, J.M. Practice-based evidence for evidence-informed smoking cessation interventions: A community-based approach to theory building, evaluation and capacity building. Submitted June 2009.

Irwin, J.D. A Pilot Project Assessing Motivational Interviewing via Co-Active Life Coaching as an Intervention for Smoking Cessation. Submitted December 2009.

Kennedy, R.D. Smoking Cessation Referrals and Optometrists – Assessing Practices and Opportunities in Canada. Submitted 2008.

Khara, M. Promoting smoking cessation among surgery patients: A pilot trial. Submitted 2008.

Murray, C.L. and Small, S.P. The Experience of Smoking or Quitting Smoking for Pregnant Women. Submitted 2008.

Nelson, C. An Analysis of Smoking Patterns and Cessation Efforts Among Canadian Forces Veterans: An Exploration of the Transtheoretical Model. Submitted December 2009.

NZ

Ministry of Health. New Zealand Smoking Cessation Guidelines. Wellington: Ministry of Health, 2007.

RNAO

Registered Nurses Association of Ontario. (2007, March). Integrating smoking cessation into daily nursing practice.

TTR

CAN-ADAPTT's Monthly Transdisciplinary Tobacco Rounds; Attendee evaluation/feedback forms.

US

U.S. Department of Health and Human Services. Clinical practice guidelines for treating tobacco use and dependence: 2008 update. Accessed at <http://www.surgeongeneral.gov/tobacco/> on July 25, 2008 at 12:55pm.

Appendix A: Methodology

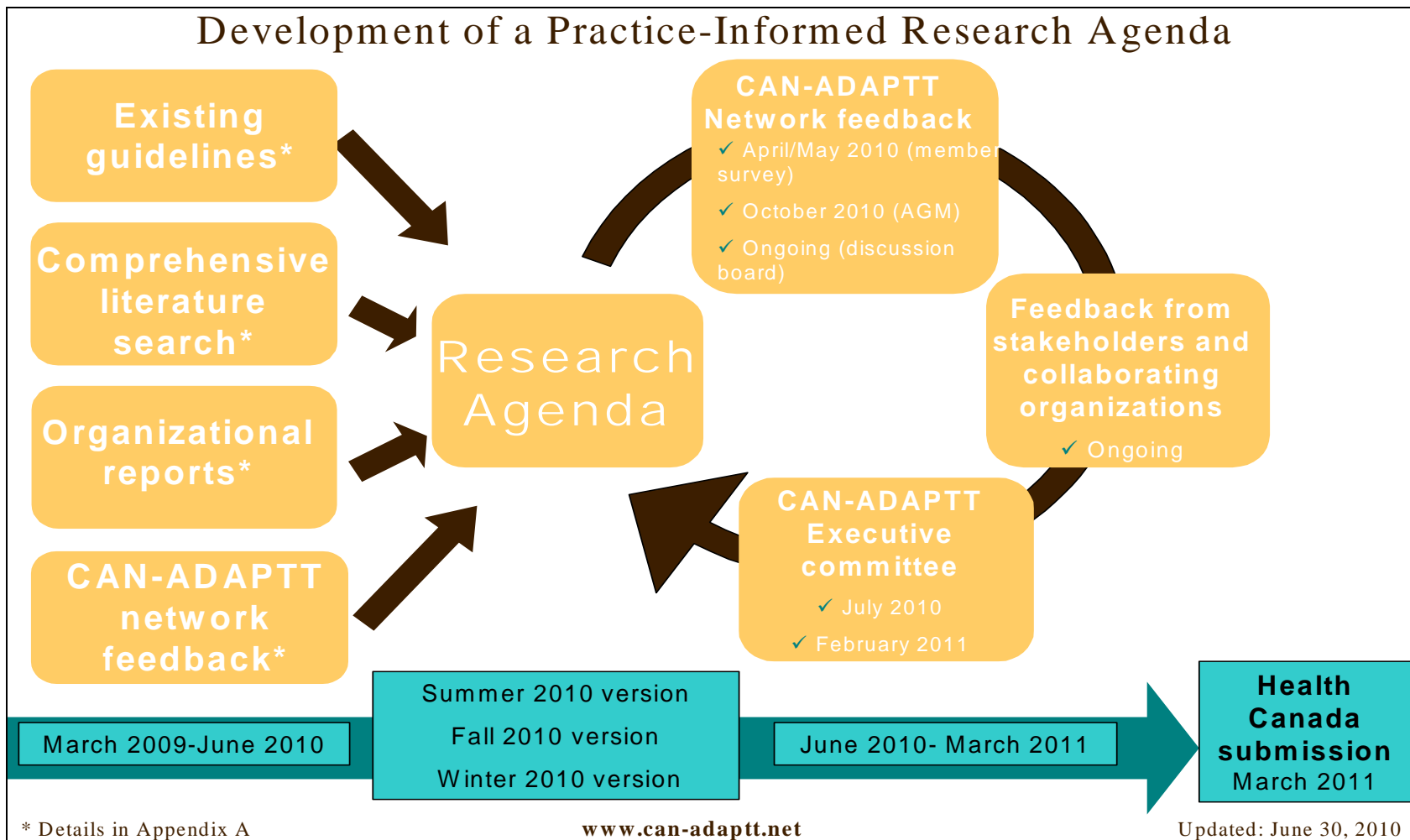


Figure 1. Development of a Practice-Informed Research Agenda

Overview of Methodology

In order to ensure that the CAN-ADAPTT research agenda captures/identifies the key priorities and is reflective of the Canadian experience in the provision of smoking cessation programs and resources, the CAN-ADAPTT team integrated a number of different sources of information (as shown in figure 1). This comprehensive approach integrates current gaps identified in the clinical practice guidelines review conducted by CAN-ADAPTT, the experience of the CAN-ADAPTT Network and Partners, results from a recent literature search (including organizational reports), and input from our Executive Committee.

Existing Guidelines

All existing guidelines, which were included in the development of CAN-ADAPTT's guideline (as listed below), were examined for pertinent research questions, explicitly identified gaps and recommendations related to tobacco control.

- U.S. Department of Health and Human Services Public Health Service. (2008, May). Clinical practice guideline: Treating tobacco use and dependence: 2008 update.
- Ministry of Health. (2007, August). New Zealand smoking cessation guidelines. Wellington: Ministry of Health.
- Registered Nurses Association of Ontario (RNAO). (2007, March). Integrating smoking cessation into daily nursing practice.
- Institute for Clinical Systems Improvement (ICSI). (2004, June). Tobacco use prevention and cessation for infants, children and adolescents.
- Institute for Clinical Systems Improvement (ICSI). (2004, June). Health care guideline: Tobacco use prevention and cessation for adults and mature adolescents.
- US Community Prevention Guidelines. The guide to community preventive services: what works to promote health? / Task Force on Community Preventive Services; edited by Stephanie Zaza, Peter A. Briss, Kate W. Harris. p. cm.

Comprehensive Literature Search

In March 2010, a literature search was conducted through Ovid Medline using a series of relevant search terms to identify research gaps discussed in the published research literature. No date limits were used in the initial phases of the literature search. The Medical Subject Heading (MeSH) term "tobacco use cessation" was combined with a series of broad key words: "research agenda", "research gaps", "future areas of research", "future research", "more research", "implications for research" or "studies are needed". Careful review of the terms and the indexing was conducted to ensure the search strategy would capture appropriate results. The search was limited to the English language literature.

The initial literature search using the terms described above yielded a total of 131 results. The abstracts of these 131 articles were reviewed separately by two individuals to identify sources of particular interest, which would then be retrieved for full-text review. Of the 38 articles selected for full-text review, 25 were available in local academic libraries. Of the 25 articles retrieved, three were ultimately eliminated for being non-relevant or non-timely. Findings from a total of 22 articles were incorporated into this research agenda.

Search Info

Search term:	"research agenda"[text words] OR "research gaps"[text words] OR "future areas of research"[text words] OR "future research" [text words] OR "more research" [text words] OR "implications for research" [text words] OR "studies are needed" [text words] AND tobacco use cessation [Mesh]
Date of search:	Mar-10
Number of results:	131
Number of articles ID'd for retrieval:	38
Number retrieved:	25
Number deemed relevant	22

Organizational Reports

A targeted search was performed for relevant, existing reports within Canadian Government, advocacy groups and other organizations as listed below.

- Health Canada
- Provincial/Territorial Ministries of Health
 - Alberta: Health and Wellness
 - British Columbia: Ministry of Health Services
 - Manitoba: Manitoba Health
 - New Brunswick: Department of Health
 - Newfoundland and Labrador: Health and Community Services
 - Northwest Territories: Department of Health and Social Services
 - Nova Scotia: Department of Health
 - Nunavut: Department of Health and Social Services
 - Ontario: Ministry of Health and Long-Term Care
 - Prince Edward Island: Department of Health
 - Québec: Santé et Services Sociaux
 - Saskatchewan: Saskatchewan Health
 - Yukon: Department of Health and Social Services
- Canadian Institutes of Health Research
- Public Health Agency of Canada
- Youth Tobacco Cessation Collaborative
- Canadian Lung Association
- Canadian Council for Tobacco Control
- Heart and Stroke Foundation
- Canadian Cancer Society
- Physicians for a Smoke Free Canada
- Action on Smoking and Health
- Non-smokers' Rights Association

CAN-ADAPTT Network feedback (“Internal Sources”)

- CAN-ADAPTT’s guideline discussion board; a practice-informed on-line forum. Accessible at: <http://www.can-adaptt.net/support/default.aspx>
- Annual General meeting/Guideline Review Meeting (October 1st, 2009, Montreal); participant evaluation/feedback forms

- *“Based on your own clinical/professional experiences, what are the gaps in smoking cessation research and/or current clinical practice guidelines that are of highest priority? (Please describe)”*
- Transdisciplinary Tobacco Rounds; participant evaluation/feedback forms (January 2009 – February 2010).
 - *“Based on your own clinical/professional experiences, what are the gaps in smoking cessation research and/or current clinical practice guidelines that need to be addressed? (Please describe)”*
- Successful CAN-ADAPTT seed grant applications;
 - Arbour, K.P.A. Translating research into practice: Lessons on integrating physical activity into smoking cessation counselling in women with severe mental illness. Submitted 2008.
 - Barrett, S.P. The effects of tobacco and nicotine on cigarette craving and withdrawal in psychotic and non-psychotic smokers. Submitted June 2009.
 - Brule, J. Smoking cessation counselling practices among Quebec optometrists: a survey on their beliefs, practices and needs in terms of training and educational tools. Submitted June 2009.
 - Callaghan, R. Contraband Tobacco and Smoking Cessation Outcomes in Substance-Abuse Treatment. Submitted December 2009.
 - DeVillaeer, M.R. Survey of Ontario Addiction Treatment Programs. Submitted June 2009.
 - Els, C. Fundamentals of Tobacco Control for Canadian Students in the Health Disciplines: a Publication Proposal. Submitted December 2009.
 - Garcia, J.M. Practice-based evidence for evidence-informed smoking cessation interventions: A community-based approach to theory building, evaluation and capacity building. Submitted June 2009.
 - Irwin, J.D. A Pilot Project Assessing Motivational Interviewing via Co-Active Life Coaching as an Intervention for Smoking Cessation. Submitted December 2009.
 - Kennedy, R.D. Smoking Cessation Referrals and Optometrists – Assessing Practices and Opportunities in Canada. Submitted 2008.
 - Khara, M. Promoting smoking cessation among surgery patients: A pilot trial. Submitted 2008.
 - Murray, C.L. and Small, S.P. The Experience of Smoking or Quitting Smoking for Pregnant Women. Submitted 2008.
 - Nelson, C. An Analysis of Smoking Patterns and Cessation Efforts Among Canadian Forces Veterans: An Exploration of the Transtheoretical Model. Submitted December 2009.
- Research agenda survey of the CAN-ADAPTT network, online April 14 – May 17, 2010 (See Appendix B)

Appendix A: Methodology

Appendix B: CAN-ADAPTT Network Member Survey (April 2010)

The following is a copy of the research agenda survey distributed to the CAN-ADAPTT Network in April 2010.

CAN-ADAPTT invites your input to identify areas in tobacco use cessation that lack sufficient knowledge and/or evidence.

Your feedback is very important to us. We will integrate the results of this survey into the CAN-ADAPTT Research Agenda on tobacco use cessation in Canada for submission to Health Canada and for circulation to the network.

Please read through and answer the following five questions.

1. Regarding tobacco use cessation, would you say you are predominantly a...

- Health/medical practitioner;
- Researcher; or
- Policy maker/advocate?

2. Please identify what you think should be priority research areas for tobacco use cessation in Canada. Please select your top 5 choices.

Clinical Management

- Screening/assessment/advice/follow-up
- Psychosocial treatments/counselling
- NRT
- Intensity of interventions
- Medications
- Combination therapy

Health Systems

- Clinician types/Clinician reminders
- Cost-effectiveness of interventions
- Health insurance coverage

Specific Populations

- Children and adolescents
- Aboriginal groups
- Those using mental health services
- Light smokers
- Ethnocultural groups and new Canadians
- People making repeat attempts to quit
- Non-cigarette tobacco users
- Hospitalized patients
- Pregnant/breastfeeding smokers
- Patients with cardiovascular disease

Prevention & Population-level Approaches

- Provincial and community-level programs
- Tobacco-related disparities
- Access to tobacco products
- Surveillance/evaluation of programs
- Contraband tobacco
- Environmental tobacco smoke (eg. smoking bans)
- Health communication/counter-marketing
- Price

Appendix B: CAN-ADAPTT Network Member Survey

Other (please specify):

3. In your professional experience, how does lack of research in these areas pose a barrier to the delivery of effective tobacco use cessation (i.e. in your practice; in your policy setting; or in your research)?

4. Do you know of any sources of information we should be made aware of, regarding knowledge gaps in tobacco use cessation?

For example:

- research agendas developed in the past;
- reports, policy papers or other documents identifying gaps;
- upcoming research that would inform a gap.

5. Would you like to be contacted in the future by CAN-ADAPTT staff, regarding the knowledge gap(s) you identified?

- Yes, please.
- No, thank you.

6. Please provide your contact information below.

Name:

Company:

Address:

Address 2:

City/Town:

State:

ZIP/Postal Code:

Country:

Email Address:

Phone Number:

You've reached the end of the survey. Thank you for your feedback!

Appendix C: CAN-ADAPTT Network Member Survey Results

Summary of Findings

A total of 111 respondents, the majority being health practitioners, gave feedback on priority areas of smoking cessation requiring further research.

Of the 27 given topic areas, the three most often identified research priorities are: “Combination therapy”, being selected by 42% of respondents; followed by “People making repeat attempts to quit” (40%); “children/adolescents” and “psycho-social treatments/counselling” (each at 35%); and “Screening, assessment, advice, follow-up” (34%).

The lack of knowledge or research in smoking cessation impacted respondents’ professional practice. Some of the broad themes under which respondents reported being affected are: advocating for or informing effective treatment programs/interventions; Smokers’ limited access to affordable cessation medications (e.g. NRT); lack of effective cessation programs for specific populations; and lack of practitioners’ knowledge on evidence-based smoking cessation interventions.

Introduction

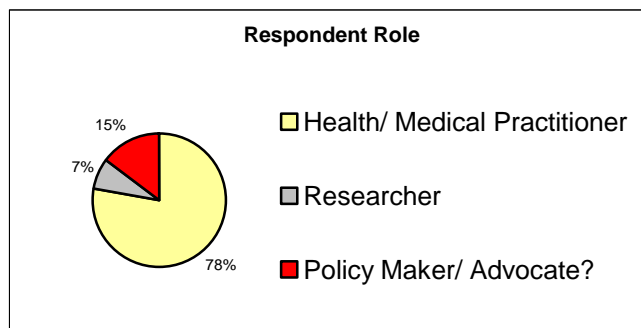
The development of a practice-informed research agenda is one of five main objectives of the CAN-ADAPTT project and in order to meet this objective, CAN-ADAPTT network members were invited to complete an online survey determining main areas of research priority. There were 111 respondents (or about 20% of members, at the time) who provided feedback on key areas of smoking cessation. Survey data were collected from April 14th to May 17th, 2010.

Findings from this survey will contribute to the completion of CAN-ADAPTT’s research agenda. This research agenda will include clinical and population-based approaches for smoking cessation in Canada and will be informed by other internal as well as external sources. The final research agenda will be shared with Health Canada to help inform research priorities and will also be disseminated online via the CAN-ADAPTT network.

Respondent Composition

The majority (78%) of the 129 respondents to this question self-identified as healthcare or medical practitioners.

Appendix C: CAN-ADAPTT Network Member Survey Results



Q1.Regarding tobacco use cessation, would you say you are predominantly a... (n=129)

The Priority Research Areas

The topic areas most often identified as being a priority area of research were: combination therapy; people making repeat attempts to quit; children/adolescents; and psychosocial treatments/counselling, with approximately four in ten respondents choosing these topics.

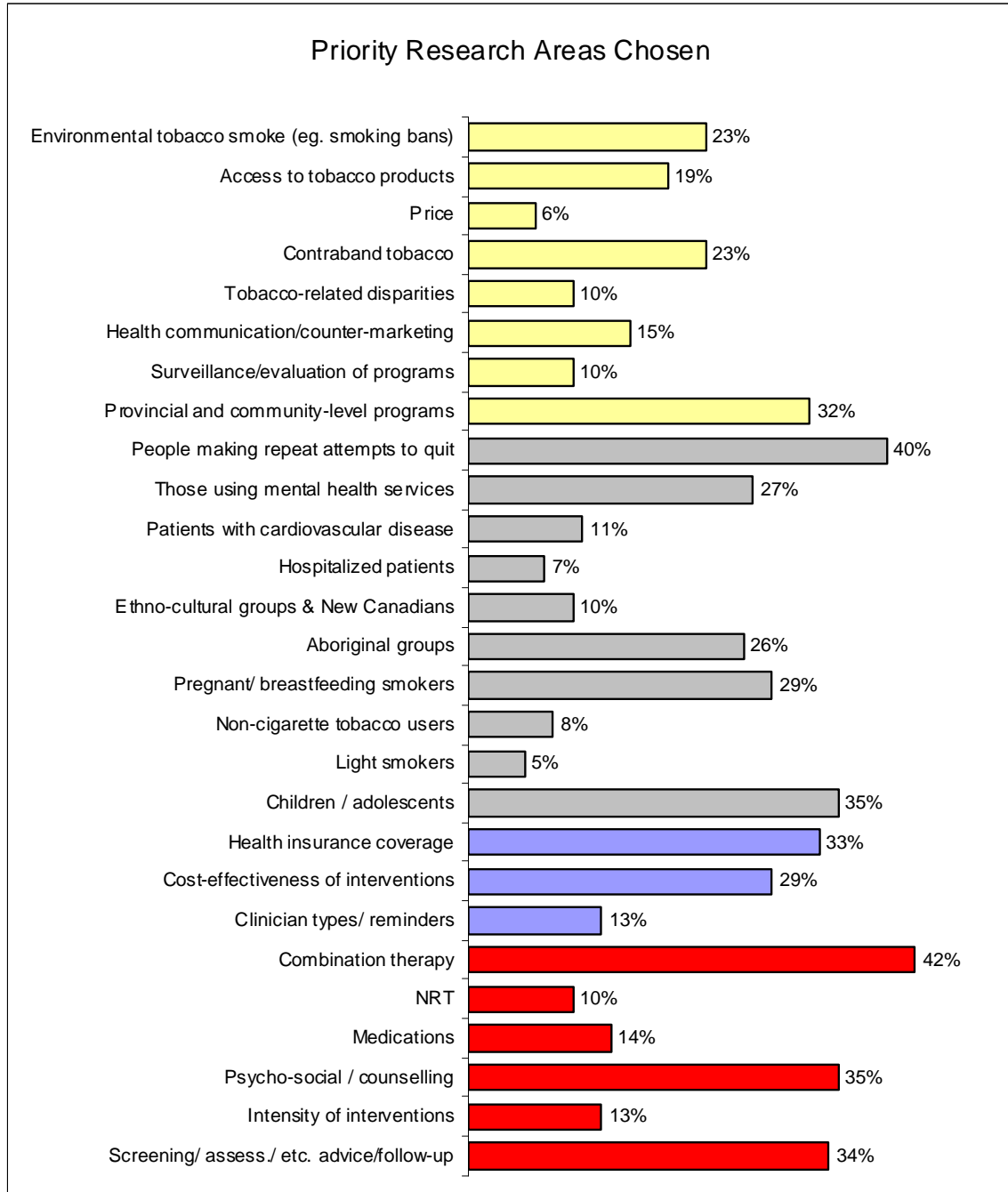
Top Ten Priority Areas Chosen by Respondents

Priority Area	% of respondents	Total count
Combination therapy	42%	47
People making repeat attempts to quit	40%	44
Children and adolescents	35%	39
Psycho-social treatments/ counselling	35%	39
Screening, assessment, advice, follow-up	34%	38
Health insurance coverage	33%	37
Cost-effectiveness of interventions	29%	32
Pregnant/ breastfeeding smokers	29%	32
Those using mental health services	27%	30
Aboriginal groups	26%	29

Q2. Please identify what you think should be priority research areas for tobacco use cessation in Canada. Please select your top 5 choices. (n=111)

Appendix C: CAN-ADAPTT Network Member Survey Results

The 27 research areas listed in the survey spanned across broad topics of: prevention/ population-level approaches, specific populations, health systems, and clinical management, as grouped in the graph below with the corresponding proportion of respondents choosing that topic area.



Appendix C: CAN-ADAPTT Network Member Survey Results

Q2. Please identify what you think should be priority research areas for tobacco use cessation in Canada. Please select your top 5 choices. (n=111)

Other Research Priorities Identified by Respondents

Not all possible topics of smoking cessation requiring further research could be included in the survey. Respondents to the survey identified “other” areas or specific populations requiring further knowledge/research development:

- Youth/young adults
- LGBT young adults
- Rural populations; rural women
- COPD populations
- Smokers with lung health issues
- Smokers with eating disorders
- Smoking among the elderly population
- Individuals with alcohol and other drug addictions in rehabilitation/treatment
- Quitlines’ usage and funding/resources
- Suicide risk and Champix
- Policies supporting cessation

Lack of Research Affecting Delivery of Services

The lack of research or knowledge in areas of smoking cessation affects professionals in their work in various ways, ranging from access to funding for programs to finding effective cessation programming for certain populations. Some comments grouped under key themes are summarized below.

Key Themes: How Lack of Research Affects your Professional Practice
Challenges in advocating for/informing the development of effective strategies/programs/interventions <ul style="list-style-type: none"> • “Without evidence-based research, decision-makers will not accept or approve new practices for implementation”. • “Need data to support changes in professional practice”.
Smokers' limited access to affordable cessation medications (e.g. NRT) <ul style="list-style-type: none"> • “If we give them counselling and they can’t afford the meds then we are not setting them up to be successful”. • “Patients often know more about contraband tobacco than clinicians”.
Lack of cessation services available to smokers (general) <ul style="list-style-type: none"> • “Lack of psychosocial treatment and support available to patients”.
Lack of effective cessation programs for specific populations <ul style="list-style-type: none"> • “It is challenging to plan and implement programs for young adults when there is not a lot out there to point me in the right direction”.
No sufficient evidence for providing cessation medication to specific populations <ul style="list-style-type: none"> • “...what works and doesn’t work with young adults, LGBT community, Aboriginal and ethnic populations, and those using mental health services”.
Lack of practitioners' knowledge on evidence-based smoking cessation interventions

Appendix C: CAN-ADAPTT Network Member Survey Results

- "...the barrier is the transmission of the research findings to the practice sites".

Q3. In your professional experience, how does lack of research in these areas pose a barrier to the delivery of effective tobacco use cessation (i.e. in your practice; in your policy setting; or in your research)? (n=57)