

Do Canadian Prenatal Records Support Evidence-Based Practices to Reduce Maternal Smoking?

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Abstract

Objectives: Maternal smoking remains the most important modifiable risk factor for adverse perinatal outcomes. Integrating evidence-based screening questions and intervention guides for maternal smoking into standardized prenatal records may improve the identification and treatment of pregnant smokers. This study sought to identify and compare how prenatal records across Canadian provinces and territories currently address the issue of maternal tobacco use.

Methods: Content analysis of prenatal record forms from 11 provinces and territories was used to identify assessment questions and intervention prompts related to maternal smoking or exposure to environmental tobacco smoke. Findings were evaluated in light of current best-practice recommendations for maternal smoking cessation and prevention of relapse.

Results: The content of prenatal records related to maternal smoking varies widely among Canadian provinces and territories. Most of the prenatal records surveyed lacked prompts to support key practices for the effective screening and treatment of maternal tobacco dependence, such as providing multiple response options to determine whether the pregnant woman or her partner smokes, monitoring maternal smoking patterns throughout the course of pregnancy, and referring pregnant smokers to specialized resources for smoking cessation.

Conclusion: Simple changes to Canadian prenatal record forms may lead to improved population-wide screening and counselling of pregnant smokers.

Résumé

Objectifs : Le tabagisme maternel demeure le plus important facteur de risque modifiable en ce qui concerne les issues périnatales indésirables. L'intégration de questions de dépistage et de guides d'intervention factuels visant le tabagisme maternel aux dossiers prénatals standardisés pourrait améliorer l'identification et la prise en charge des fumeuses enceintes. En ce qui concerne les provinces et les territoires du Canada, la présente étude a tenté de

déterminer et de comparer la façon dont les dossiers prénatals traitent actuellement de la question du tabagisme maternel.

Méthodes : Une analyse du contenu des formulaires de dossier prénatal issus de 11 provinces et territoires a été utilisée pour identifier les questions d'évaluation et les incitations à l'intervention associées au tabagisme maternel ou à l'exposition à la fumée de tabac ambiante. Les résultats ont été évalués en fonction des recommandations actuelles quant aux pratiques optimales pour ce qui est de l'abandon du tabagisme chez les femmes enceintes et la prévention de la rechute.

Résultats : Le contenu des dossiers prénatals associé au tabagisme maternel varie grandement d'une province et d'un territoire à l'autre au Canada. La plupart des dossiers prénatals sondés ne comptaient pas d'incitations à soutenir les pratiques clés nécessaires au dépistage et à la prise en charge efficaces de la dépendance au tabac chez les femmes enceintes, telles que l'offre de multiples options de réaction afin de déterminer si la femme enceinte ou son partenaire fume, le suivi des habitudes maternelles quant au tabagisme tout au long de la grossesse et l'orientation des fumeuses enceintes vers des ressources spécialisées en abandon du tabagisme.

Conclusion : L'apport de simples modifications aux formulaires canadiens de dossier prénatal pourrait mener à l'amélioration du dépistage et du counseling des fumeuses enceintes à l'échelle de la population.

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INTRODUCTION

Smoking during pregnancy remains the most important modifiable risk factor for adverse perinatal outcomes.^{1,2}

Infants exposed to tobacco smoke in the home are at additional risk for sudden infant death syndrome, exacerbated asthma, and respiratory tract infections.³ Pregnancy is an opportune “teachable moment” for smoking cessation because of maternal motivation to protect the fetus, social pressures to abstain from smoking when pregnant, increased contact with health professionals, and pregnancy-induced aversion to the taste and smell of cigarettes.^{4,5} However, identifying pregnant smokers for targeted intervention is challenging because of maternal underreporting

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of tobacco use⁶ and the reluctance of clinicians to identify and discourage maternal smoking during routine perinatal care.^{7,8}

Strategies to improve screening for maternal smoking include routinely asking all pregnant women about tobacco use, using multiple-response formats to explore smoking behaviours, documenting smoking status at every prenatal visit, and inquiring about smoking behaviours of partners.^{9–11} Tailoring smoking cessation and relapse prevention interventions requires further assessment of the pregnant woman's level of nicotine dependence, motivations to quit and remain abstinent, life stressors that may influence smoking patterns, and social supports for smoking cessation.^{12–14} Evidence-based practices to help pregnant smokers stop smoking and remain abstinent include providing information about the importance of stopping for the health of both the pregnant woman and her baby, teaching cognitive-behavioural strategies for smoking cessation, involving women's partners in cessation interventions, and considering nicotine replacement therapy for pregnant smokers who are otherwise unable to stop.^{10, 15–18}

Completion of provincial or territorial prenatal records is mandatory for all obstetrical care providers in Canada. Since reminder systems for clinicians increase the use of evidence-based practices in routine preventative care,^{19,20} the assessment and treatment guides embedded in these forms are critical. The objective of this descriptive study was to identify and compare how mandatory prenatal records throughout Canada currently address the risk factor of maternal smoking.

METHODS

In early 2005, we obtained the prenatal records in use in each of Canada's ten provinces and three territories from provincial health authorities or other professional contacts. Most of the prenatal records were provincially regulated; New Brunswick's form was regionally based. As the territories of Nunavut and Yukon used the prenatal records of an adjacent province or territory, 11 different prenatal record forms were assessed.

Each author independently extracted all written content related to maternal tobacco use and exposure to environmental tobacco smoke. The items were categorized into assessment questions and intervention prompts, compared among Canadian provinces and territories, and evaluated in light of better-practice recommendations.^{10,11,16,21,22}

RESULTS

General

Revision dates for the prenatal records ranged from 1998 to 2005, with the date of latest revision not indicated on three records. Prenatal records varied considerably in the wording and frequency of items related to maternal smoking; the number of references to tobacco use found on each prenatal record ranged from two to eight. More items assessed maternal tobacco use ($n = 36$) than prompted intervention ($n = 16$). The only item common to all 11 prenatal record forms was a question in the initial obstetrical history asking whether or not the patient was a smoker (Table).

Assessment of Smoking Behaviour

Questions on the prenatal record forms assessing tobacco use addressed four distinct issues: maternal smoking status, level of cigarette consumption, date of quitting, and exposure to second-hand smoke. Smoking status was consistently documented using a dichotomous "yes or no" response. Six records (55%) allowed for a further distinction between current and former smokers and non-smokers by asking about pre-pregnancy smoking status or quit date, or both. Nine records (82%) assessed maternal cigarette consumption in the initial prenatal history using the prompt "amount" or "number of cigarettes/day." However, only two records (18%) had a system for reassessment of maternal tobacco use, by including an entry to document "number of cigarettes/day" at each subsequent prenatal visit. Three records (27%) also included a question assessing maternal exposure to second-hand smoke (yes or no), but none of these asked about the source or location of the exposure.

None of the 11 prenatal record forms directly queried the smoking status of women's partners, or prompted documentation of other psychosocial factors known to influence maternal smoking behaviours, such as motivation to quit, smoking triggers, or quit supports (Table).

Intervention Prompts

Four types of prompts for clinician interventions were identified on the records: including smoking in a reminder list of prenatal risk factors, incorporating smoking into a prenatal risk assessment score, listing tobacco use as a potential clinician-patient discussion topic, and suggesting referrals of smokers to public health services. Six prenatal records (55%) reminded clinicians to address maternal tobacco use by including smoking in a summary of obstetrical risk factors or adding "smoker at any time during pregnancy" into a fetal risk scoring system to be completed for each patient. The most common intervention prompt, found on seven records (64%), was including smoking in a checklist of

Maternal smoking assessment questions and intervention guides on Canadian prenatal record forms*

Assessment questions		Prenatal records surveyed (n = 11)										
		1	2	3	4	5	6	7	8	9	10	11
Smoking status	At first prenatal visit	x	x	x	x	x	x	x	x	x	x	x
	Pre-pregnancy	x	x	x					x			
Cigarette consumption	At first prenatal visit	x	x	x	x	x	x		x	x	x	
	Pre-pregnancy	x	x	x					x			
	At each follow-up visit			x		x						
Quit date				x	x		x					
Exposure to second-hand smoke		x		x	x							
Intervention prompts												
“Smoking” included in reminder list of risk factors		x			x	x					x	
Add “smoking” to prenatal risk assessment score									x	x		
Discussion topics	Smoking	x	x		x	x		x		x		x
	Second-hand smoke							x				
	Smoke-free home							x				
Refer smokers to public health nurse		x	x									

*Forms surveyed and date of latest revision (not in order of presentation in table): North West Territories Prenatal Record (not dated); British Columbia Antenatal Record Part 1 (Feb. 2003); Alberta Prenatal Record, Page 1 (July 2003), Saskatchewan Prenatal Record (2004); Manitoba Prenatal Record (Aug. 2000); Ontario Antenatal Record 1, Antenatal Record 2 (Aug. 1999); Quebec Obstetrical File 1, Obstetrical File 2 (Oct. 2004); New Brunswick Prenatal Record, Part 1 (not dated); Nova Scotia Prenatal Record 1 (July 2003); Prince Edward Island Prenatal Record – Part 1, Prenatal Record – Part 2, Maternal Database (not dated); Newfoundland and Labrador Prenatal Record (March 1998).

potential discussion topics. One prenatal record subsumed “smoking,” “second-hand smoke,” and “smoke-free home” under the broader discussion topic of “tobacco.” Guidelines for specific content to be addressed during counselling for smoking cessation (e.g., strategies for cutting down, quitting, or negotiating household no-smoking rules) were not provided on any of the records. Only two records (18%) explicitly prompted referral of pregnant smokers to specialized resources (public health nurses in both cases) for smoking cessation interventions.

Two prenatal records (18%) contained no intervention prompts. None of the records prompted inclusion of women’s partners in smoking-cessation interventions or any reference to nicotine replacement therapy.

DISCUSSION

Standardized prenatal records are potentially powerful tools for guiding evidence-based practices to reduce maternal tobacco use in Canada. Our findings reveal that, in general, current Canadian prenatal records do not support effective screening for, and management of, maternal smoking. Whereas all the prenatal records queried whether or not the pregnant patient was a smoker, further assessment of maternal smoking behaviours was limited. Women who

stop smoking before becoming pregnant, who quit spontaneously during pregnancy, who reduce rather than stop smoking, who live with a partner who smokes, or who smoke heavily represent distinct sub-populations with different intervention needs.^{10,13,16} The majority of the prenatal records had no mechanism for ongoing monitoring of maternal smoking patterns, although maternal motivation to stop smoking is recognized as a dynamic process that may shift over the course of pregnancy and after delivery.^{12,17,18}

Only three (27%) of the records prompted the clinician to assess the smoking patterns of others in the household. An exclusive focus on the pregnant woman provides no insight into the interplay of social factors that influence maternal smoking choices. Specific prompts for interventions with smokers were noticeably absent from the records, despite the demonstrated effectiveness of even brief clinician counselling in reducing prenatal smoking and improving fetal outcomes.^{21,23} Current evidence recommends offering all pregnant smokers extended psychosocial support in addition to nicotine replacement therapy, which is recommended for those who are otherwise unable to quit.^{15,22} Busy clinicians may hesitate to ask about complicated behaviours such as substance use during prenatal care

because they lack knowledge about cessation techniques, are not familiar with relevant community resources, or are concerned about the time required to address an addictive habit.^{7,8,24} Embedding treatment guides for tobacco dependence in mandatory reporting systems such as provincial prenatal records may help compel clinicians to intervene when caring for pregnant smokers.

A number of minor modifications to prenatal records could be made to enhance clinician screening and treatment of maternal tobacco use. For example, using multiple response options to document women's smoking status (e.g., never smoked, stopped smoking before pregnancy, stopped smoking after becoming pregnant, still smoking but have cut down) encourages more complete disclosure of smoking patterns and signals that the clinician understands smoking choices as more complex than a simple decision to quit or not. Recording maternal cigarette consumption at each prenatal visit would support monitoring of tobacco use throughout the course of pregnancy, provide repeated opportunities for smoking disclosure by women, and allow ongoing reinforcement of attempts to stop smoking. Asking about a partner's smoking patterns would provide critical information for engaging the partner's support in quitting and for discussing the prevention of relapse among women who live with a smoking partner. Finally, a small toolbox containing brief instructions for evidence-based smoking cessation guidelines such as the internationally recognized "5 A's" (*Ask* about tobacco use, *Advise* to quit, *Assess* willingness to quit, *Assist* in attempts to quit, *Arrange* follow up)²² could be added to the prenatal record forms.

The main limitation of this study is the exclusive focus on the written content of the Canadian prenatal records surveyed. Assessment of the extent to which the probes on prenatal records prompt clinicians to obtain adequate histories of maternal smoking and to support women in their efforts to quit was beyond the scope of this study. We also evaluated the prenatal records in relation to recent evidence and best-practice guidelines, which in some instances have been released since the most recent revisions of some forms (e.g., guidelines on nicotine replacement therapy during pregnancy). However, variations in the content of the prenatal records point to uneven uptake of the available tobacco control evidence at the provincial and territorial level. Although several provinces had recently revised their prenatal records, newer prenatal records did not necessarily have more or better items related to maternal tobacco use. National organizations such as the Society of Obstetricians and Gynaecologists of Canada (SOGC) may play a leadership role in defining optimal prenatal record content related to maternal tobacco use and in harmonizing prenatal record forms across Canada.

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