Do Canadian Prenatal Record Forms Integrate Evidence-based Guidelines for the Diagnosis of a FASD?

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ABSTRACT

Objectives: Prenatal alcohol exposure is a significant public health issue with lifelong psychological, emotional and financial costs associated with caring for an affected individual. In 2005, the Public Health Agency of Canada and Health Canada's First Nations and Inuit Health Branch developed evidence-based guidelines for the diagnosis of a Fetal Alcohol Spectrum Disorder (FASD). We examined the extent to which prenatal records across Canadian provinces and territories currently integrate key recommendations from these guidelines.

Methods: A content analysis of prenatal record forms retrieved from each Canadian province and territory (N=12) was conducted to identify all questions or intervention prompts related to prenatal screening, exposure assessment, counseling or referral for maternal alcohol use during pregnancy. Findings were reviewed in relation to recommendations extrapolated from the Canadian guidelines and the FASD literature.

Results: All the prenatal record forms contained questions to assess maternal alcohol use during pregnancy. However, the dimensions of alcohol consumption assessed and the format, wording and number of items related to each dimension varied markedly across provinces/territories. Only five prenatal record forms included a validated screening tool to identify risky alcohol drinking behaviour. Most of the forms lacked prompts to encourage providers to intervene or refer pregnant clients with high-risk drinking behaviour.

Conclusion: Integration of the Canadian recommendations into Canadian prenatal record forms may be an effective public health strategy for helping identify pregnancies at high risk for alcohol exposure, reducing the incidence of a FASD through appropriate prenatal intervention and referral, and facilitating early diagnosis of a FASD.

Key words: Fetal alcohol syndrome; prenatal care; evidence-based medicine; practice guidelines; prenatal exposure delayed effects

La traduction du résumé se trouve à la fin de l'article.

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Maternal alcohol use during pregnancy can have a devastating lifelong impact on the developing fetus. Fetal Alcohol Spectrum Disorder (FASD) refers to Fetal Alcohol Syndrome (FAS) and all other diagnoses (e.g., Fetal Alcohol Effects (FAE), Partial Fetal Alcohol Syndrome) which define the continuum of effects caused by prenatal exposure to alcohol.¹ FAS represents the most severe spectrum of preventable disabilities and is characterized by growth deficiency, dysmorphology, and a complex pattern of behavioural and cognitive difficulties.²⁻⁴ Prevalence rates of FASD reported in the literature, which includes the diagnosis of FAS, are mere estimates and vary based on methods used, for instance, passive surveillance, clinic-based studies, and active case ascertainment.⁵ The Canadian prevalence rate for a FASD is believed to be about 9 per 1000 with an estimated 3,000 babies being born each year with a FASD.⁶ Higher rates of full FAS have been reported among the offspring of chronically alcoholic women (25 per 10,000),⁷ and the rate of FAS across isolated North American Aboriginal populations may vary up to 100-fold.^{8,9}

Prenatal alcohol exposure exacts a heavy burden of psychological, emotional and financial costs to the affected individual, their caregivers and society.¹⁰⁻¹³ The estimated direct costs and productivity losses for an individual with FAS/FAE from birth to 65 years is \$844,066.¹⁴ Given a rate of 1 FASD case per 100 pregnancies, the annual cost of FASD is estimated at \$4 billion.¹⁵

In 2005, a pan-Canadian FASD initiative, undertaken by the Public Health Agency of Canada and Health Canada's First Nations and

Inuit Health Branch, developed Canadian guidelines to promote a uniform approach to screening, diagnosing and reporting a FASD.¹⁶ All Canadian provinces and territories require prenatal care providers to use standardized, government-issued prenatal record forms to ensure systematic monitoring and documentation of health risk factors during routine prenatal care. Integration of the FASD Canadian guidelines into provincial prenatal records across Canada could help facilitate population-wide surveillance of high-risk drinking behaviour during pregnancy, referral for appropriate counseling and treatment, and early diagnosis of a FASD. The purpose of this study was to appraise the extent to which prenatal record forms from different provinces and territories currently reflect recommendations related to alcohol use screening, exposure assessment, intervention and referral endorsed in the Canadian guidelines for the diagnosis of FASD.

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Table 1. Extent to Which Canadian Prenatal Record Forms Integrate Key Recommendations from Canadian Guidelines for the Diagnosis of FASD

	Provinces and Territories (revision date)											
	AB (2007)	BC (2007)	MB (2000)	NB nd	NL (2004)	NWT nd	NS (2007)	ON (2005)	PEI (2005)	QC (2004)	SK (2004)	NU (2007)
Recommendations												
Prenatal Screening for Maternal Alcohol Use												
Pre-pregnancy use of ETOH	x!	x			x							
Validated screening tool (e.g., T-ACE or TWEAK)		x†	x*		x‡	x*			x*			
Screened for one or more interrelated risk factors which predict alcohol consumption during pregnancy	x	x	x	x	x	x	x	x	x	x	x	x
Assessment of Alcohol Exposure												
Quantity of ETOH consumed	x	x	x					x!	x		x	
Type(s) of ETOH consumed												
Pattern of drinking, i.e., binge drinking	x	x										x
Frequency of ETOH use, i.e., daily	x		x						x			
ETOH presently consumed	x	x	x	x	x	x	x	x	x	x	x	x
ETOH quit date	x	x	x									
Source of information: Confirmed vs. speculative (e.g., self-report, legal and medical records, or clinical observation)												
Intervention and Referral												
Advise abstinence throughout pregnancy			x						x			
Offer early, brief intervention			x		x				x			
Referral to specialized resources			x		x				x			

Note: FASD = Fetal Alcohol Spectrum Disorder; nd = Not Dated; AB = Alberta; BC = British Columbia; MB = Manitoba; NB = New Brunswick; NL = Newfoundland and Labrador; NWT = Northwest Territories; NS = Nova Scotia; ON = Ontario; PEI = Prince Edward Island; QC = Quebec; SK = Saskatchewan; NU = Nunavut; ETOH = Alcohol; T-ACE = Tolerance, Annoyed, Cut-down, Eye-opener; TWEAK = Tolerance, Worry, Eye-opener, Amnesia, Cut-down

! Included in an accompanying questionnaire

* T-ACE

† TWEAK

‡ Modified version of T-ACE

METHODS

In late 2007, prenatal record forms were obtained from each of Canada's 10 provinces and 3 territories through health authorities or other professional contacts. One province (British Columbia) and territory (Yukon) shared the same prenatal record form, for a total of 12 different prenatal record forms. All written items (e.g., assessment questions, intervention prompts, instruction guides) related to screening, exposure assessment or interventions for maternal alcohol use were extracted from each prenatal record form, categorized and compared across provinces/territories. The extracted items were evaluated for their coherence with evidence-based recommendations drawn from the Canadian guidelines for diagnosis of a FASD and the broader FASD literature. Three recommendations are not explicitly stated in the Canadian guidelines but are strongly supported by evidence, namely screening for pre-pregnancy use of alcohol; assessing exposure by inquiring about alcohol quit date; and referring a pregnant client who drinks during pregnancy to appropriate counseling and treatment. The specific recommendations examined and their supporting literature are summarized in Appendix 1. All data were extracted and evaluated by the first author (SP) and findings were double-checked for accuracy by a research assistant and the second author (SS).

RESULTS

Revision dates for the prenatal record forms ranged from 2000 to 2007; two forms did not indicate their latest date of revision. Items on the forms related to screening, exposure assessment, and/or intervention for maternal alcohol use varied markedly across provinces and territories. Findings are summarized in Table 1.

Prenatal screening for maternal alcohol use

To gather reliable information about alcohol exposure during pregnancy, the Canadian guidelines assert that health care providers

must inquire about alcohol use prior to pregnancy recognition.¹⁶ Only 2 of the 12 prenatal record forms (13%) specifically queried about pre-pregnancy alcohol use, using wording such as "before pregnancy". One of these forms (NL) prompted a simple "yes" or "no" response, whereas the other (BC) inquired about additional dimensions of pre-pregnancy alcohol consumption (e.g., average volume of consumption). One prenatal record form (AB) does not directly query about pre-pregnancy alcohol use but is accompanied by a questionnaire to facilitate data collection which links to the form. In this questionnaire, women are asked about drinks per week, number of drinks per day, and number of drinks per month in relation to "before I knew I was pregnant".

According to the Canadian guidelines, all pregnant women should be screened for alcohol use using validated screening tools such as the T-ACE (tolerance, annoyed, cut-down, eye-opener) or TWEAK (tolerance, worry, eye-opener, amnesia, cut-down).¹⁵ However, only 5 prenatal record forms (41%) included a validated screening tool to identify risk drinking during pregnancy as part of their screening questions (MB, NL, NWT, PEI) or in an accompanying guide on prenatal assessment (BC). Of these, 4 prenatal record forms used the T-ACE or a modified version of the T-ACE and 1 used the TWEAK. Four of these five prenatal record forms provided a check box for the prenatal care provider to record the risk score derived from the screening tool.

The Canadian guidelines also recommend that health care professionals screen for additional factors that may predict alcohol-exposed pregnancy.¹⁶ All the prenatal record forms contained questions assessing known predictors of maternal alcohol use such as maternal age, previous history of prenatal drug or alcohol use, access to prenatal care, and significant psychosocial stressors. Four forms (33%) contained an antenatal risk assessment score that included alcohol use as a risk factor in the pregnancy profile. Three prenatal record forms (25%) included supplemental

Table 2. Rate of Maternal Alcohol Consumption during Pregnancy,* by Province/Region, Canada, 2000-2001, 2003 and 2005

Province/Region	Mothers* Who Reported Drinking Any Alcohol during Pregnancy					
	2000-2001		2003		2005	
	Rate (%)	95% CI	Rate (%)	95% CI	Rate (%)	95% CI
Newfoundland and Labrador	4.9#	(1.5-8.2)	†		4.1#	(0.9-7.3)
Prince Edward Island	†		†		†	
Nova Scotia	6.6	(3.7-9.4)	9.3	(5.2-13.3)	8.6	(4.4-12.9)
New Brunswick	6.6	(3.4-9.9)	7.9	(3.8-12.0)	5.4#	(1.7-9.1)
Quebec	22.4	(19.0-25.7)	26.9	(23.0-30.8)	17.7	(15.1-20.2)
Ontario	10.2	(8.7-11.7)	10.1	(8.5-11.7)	9.7	(8.1-11.4)
Manitoba	5.0	(2.3-7.6)	6.1	(3.1-9.0)	5.8	(3.1-8.4)
Saskatchewan	8.3	(5.0-11.6)	6.6	(4.0-9.2)	7.2	(4.0-10.4)
Alberta	7.9	(5.5-10.5)	5.5	(3.3-7.7)	5.9	(3.7-8.1)
British Columbia	10.3	(8.0-12.7)	9.5	(6.9-12.1)	8.9	(6.3-11.4)
Territories**	7.6	(5.0-10.3)	8.9	(3.4-14.5)	6.0	(2.8-9.2)
CANADA	12.2	(11.1-13.2)	12.4	(11.3-13.6)	10.5	(9.5-11.4)

Source: Statistics Canada. Canadian Community Health Survey, 2000-2001, 2003, 2005.

* Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated," and refusal to answer.

High level of sampling variability.

† Estimates not shown because sample size was less than 10.

CI Confidence interval

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questionnaires that provide a more in-depth assessment of psychosocial issues.

Assessment of alcohol exposure

As the single most important risk factor for FASD is high blood-alcohol concentration, optimal screening for prenatal maternal alcohol use should involve a comprehensive assessment of fetal alcohol exposure including duration of exposure (i.e., total days exposed), dose or magnitude of exposure, and the cumulative dose (i.e., total drinks during pregnancy).¹⁶⁻²⁰ Accordingly, the Canadian guidelines recommend assessment and documentation of the amount and type(s) of alcoholic drinks consumed, the pattern of drinking, the frequency of drinking, and the quit date in the maternal history. All 12 prenatal record forms included at least one question about maternal alcohol consumption. However, there were considerable differences in the format, wording, and number of items related to the different dimensions of alcohol consumption assessed (e.g., average volume of consumption and patterns of drinking). For instance, 6 prenatal record forms (50%) additionally inquired about quantity of alcohol used per drinking episode and 3 forms (25%) included questions about the frequency of alcohol use (e.g., "how many days a week do you consume alcohol?"). Questions related to quantity and frequency of alcohol use were predominantly open-ended with only 1 form (AB) providing ordered response choices. Just 3 prenatal record forms (16%) assessed the drinking pattern either by asking specifically about binge drinking (BC), including the question "how often do you have 3 or more drinks per day?" (AB), or by directing the prenatal care provider to "query patterns of alcohol usage" (NU). None of the prenatal record forms guided prenatal care providers to inquire about the type(s) of alcoholic drinks consumed. Only 2 of the 12 prenatal record forms (17%) were designed to prompt the prenatal care provider to reassess for alcohol use over the course of pregnancy (BC, NWT). Finally, only 3 of the prenatal record forms (25%) contained items assessing whether and when the woman stopped drinking during their pregnancy, using either a check box indicating "quit" (AB, MB) and/or querying the exact day/month/year of the "quit date" (BC).

Key to establishing an accurate diagnosis of a FASD is confirmation of prenatal maternal alcohol consumption via documentation of the source of information (e.g., reliable clinical observation,

maternal self-report, medical records, or other social, legal or medical problems related to drinking during pregnancy).¹⁶ None of the prenatal record forms required the prenatal care provider to document the data sources for their assessment of maternal risk behaviour for alcohol exposure during pregnancy.

Intervention and referral

Given inconsistent findings with regards to adverse effects of low to moderate alcohol use during pregnancy, the axiom no amount of alcohol is considered safe during pregnancy is not universally accepted.²¹ However, the Canadian guidelines recommend that health care providers advocate abstinence from alcohol during pregnancy to all women.¹⁶ Seven prenatal record forms (58%) listed alcohol use as a potential discussion topic during prenatal care visits, but provided no written prompts to advise abstinence from alcohol throughout the pregnancy. However, 2 forms (MB, PEI) (16%) included an algorithm to screen for alcohol use that instructs the prenatal care provider to "promote zero tolerance for alcohol when planning or during pregnancy" for clients who responded "no" to the question "do you use alcohol?" (i.e., low-risk women).

All pregnant women identified as at risk for heavy alcohol use should receive early brief intervention or be referred for appropriate counseling and treatment to improve outcomes for the mother and baby.¹⁶ Only 3 prenatal record forms (25%) specifically prompted the prenatal care provider to intervene for maternal risk drinking, following risk classification for heavy alcohol using an antenatal risk assessment score or a screening tool for alcohol use such as the T-ACE (MB, NL, PEI). Two of these forms (MB, PEI) embed a "screening for alcohol use" algorithm that guides the referral process, prompting urgent referral to specialized resources for high-risk mothers and brief interventions for the mothers deemed 'at risk.' Of note, none of the 12 prenatal record forms specifically prompted the prenatal care provider to refer the child of the index pregnancy or their sibling(s) for FASD screening and diagnosis when there was evidence of significant fetal exposure to alcohol.

DISCUSSION

All the provincial/territorial prenatal record forms examined in this study met the Canadian guidelines' recommendation to ask all pregnant women whether or not they drink alcohol during pregnancy. The most recent data from the Canadian Community

Health Survey indicate that although rates of maternal alcohol use are declining, 11% of Canadian mothers surveyed in 2005 reported drinking during pregnancy, with regional rates ranging from 4% (NL) to 18% (QC)²² (Table 2). Therefore it is particularly important that prenatal record forms across provinces and territories continue to adhere to this recommendation. A randomized controlled trial of brief intervention for prenatal alcohol use reported an overall decline in consumption of alcohol, even among the control group women who only received an assessment of alcohol use.²³ Such potential behaviour change simply from the effect of being assessed for alcohol exposure underscores the importance of asking all pregnant women about their history of alcohol use before and during pregnancy.

All provincial and territorial prenatal record forms included items screening for one or more interrelated health or lifestyle factors predictive of higher alcohol consumption during pregnancy. However, their interrelationships and interactive effects may not be appreciated by prenatal care providers if these items are not specifically linked together on the prenatal record forms. Prenatal care providers unfamiliar with issues of FASD are less likely to undertake a comprehensive review of alcohol exposure risk factors²⁴ or use their assessment of key predictors to determine risk for alcohol consumption and appropriately intervene.

A minority of the prenatal record forms specifically queried pre-pregnancy alcohol use or when the woman stopped drinking during pregnancy. Since pregnancy recognition may not occur until at least five weeks of pregnancy,²⁵ women who binge drink before pregnancy recognition²⁶ may remain unrecognized as carrying a fetus at risk for alcohol exposure.

Determination of level of risk drinking during pregnancy is likely being underestimated across Canada as less than half of the prenatal record forms include a validated screening tool such as the T-ACE or TWEAK to identify risk drinking during pregnancy. Most of the prenatal records examined did not include questions related to amount and type(s) of alcoholic drinks consumed, the pattern of drinking, or the frequency of maternal drinking to determine the level of risk drinking during pregnancy. Furthermore, they did not include prompts to encourage prenatal care providers to intervene or refer clients with identified or suspected high-risk drinking behaviour. Failure to identify risk drinking during pregnancy or to appropriately intervene may increase the affliction of disability to the alcohol-exposed fetus. Pregnancy has been identified as an opportune "teachable moment" to adopt risk-reducing health behaviours such as reduction or abstinence from alcohol, to improve maternal health and protect the well-being of the fetus.^{27,28} Early detection of maternal alcohol consumption during pregnancy through screening and engaging women who are not dependent on alcohol in drinking reduction or abstinence and referring women who are dependent on alcohol to specialized treatment programs may substantially reduce the risk of a FASD.^{29,30}

The study findings indicate that current evidence-based recommendations related to the prevention and diagnosis of FASD have not been consistently integrated into prenatal record forms across Canadian provinces and territories. Research currently underway has revealed that the participants and processes involved in the revision of prenatal record forms vary considerably across Canadian jurisdictions, and the inclusion (or not) of specific prenatal screening questions may be influenced by such diverse factors as

feasibility, cost or population needs.³¹ More information about contextual factors such as provincial rates of maternal risk drinking and FASD, marketing of alcohol, and the presence or influence of provincial FASD committees is needed to better understand the uptake of research evidence related to screening and interventions for maternal alcohol consumption into provincial/territorial prenatal record forms.

Simple changes to the prenatal record, such as inclusion of an alcohol screening tool, may facilitate population-wide identification for prenatal alcohol exposure and implementation of strategies to promote risk-reducing health behaviours. The Canadian Medical Association has recently resolved to develop a standardized national prenatal form,³² providing a window of opportunity to harmonize the content in provincial and territorial prenatal record forms with respect to evidence-based recommendations set forth in the Canadian guidelines and the FASD literature. A consensus report recently approved by the FASD Advisory workgroup³³ offers additional direction for the adoption of a standardized screening process and universal questions to include in the prenatal records. Empirical research is needed to identify optimal strategies to promote integration of the Canadian guidelines into standardized prenatal records, as well as to evaluate the impact of the use of these new standardized prenatal records on improving the health and well-being of both the mother and the unborn child.

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Appendix 1. Evidence-based Recommendations for Screening of Alcohol Use, Exposure Assessment, and Intervention or Referral for Maternal Alcohol Use in Canada

Evidence-based Practices	Comments/Recommendations in the Canadian Guidelines	Supporting Literature
<i>Prenatal Screening for Maternal Alcohol Use</i>		
Screen for pre-pregnancy use of ETOH	<p>Comment: "Special attention must be paid to inquiring about maternal alcohol use before the woman recognized that she was pregnant. Some women do not consider that their prior drinking is important and many underreport it".^{16, p.511}</p>	<p>Approximately one third to half of all pregnancies are not planned.²⁶ Among those not planning a pregnancy, alcohol use is higher during pre-pregnancy recognition.²⁶ At pregnancy recognition, a majority of women change their pattern of drinking.³⁴ However, this may not occur until five weeks of pregnancy,²⁵ putting the fetus at risk for exposure during the early stages of embryonic development.²⁶</p>
To identify risk drinking, use validated screening tool such as:	<p>Recommendation 1.1: "All pregnant and post-partum women should be screened for alcohol use with validated screening tools (i.e., T-ACE, TWEAK) by relevant health care providers".^{16, p.54}</p>	<p>Given the stigma associated with maternal alcohol consumption, pregnant women may deny alcohol use or underreport the quantity or frequency of alcohol consumed.^{34,35} The T-ACE scale offers the best balance of sensitivity and specificity for identifying alcohol use among diverse groups of pregnant women.³⁵⁻³⁸ The TWEAK has performed better than other screening tools in identifying women with alcohol abuse or dependence³⁶ and shows promise in identifying risk drinking during pregnancy.³⁹ Women, regardless of race or economic status, should be screened to identify risk behaviours related to alcohol use and receive early brief intervention to improve their own health status as well as that of their unborn child.⁴⁰</p>
• T-ACE		
• TWEAK	<p>Comment: "There is moderate evidence to support the use of T-ACE and TWEAK to identify women who would benefit from intervention for alcohol use during pregnancy".^{16, p.56}</p>	<p>Identification of risk factors associated with alcohol consumption may help to improve the detection of alcohol use during pregnancy. In the review of literature included in the Canadian guidelines, risk factors for prenatal alcohol exposure included higher maternal age, lower educational level, prenatal exposure to cocaine and smoking, custody changes, lower socio-economic status, paternal drinking and drug use at the time of pregnancy, reduced access to prenatal and postnatal care and services, inadequate nutrition, poor developmental environment (e.g., stress, abuse, neglect), untreated or under-treated mental health concerns, social isolation, and histories of severe childhood sexual abuse.^{16 p.51-52} Societal factors, such as loose social organization or integration,^{41,42} may also influence patterns of drinking. These factors, along with longstanding nutritional and genetic factors, may explain the seemingly higher incidence of FAS within specific socio-economic groups.^{43,44}</p>
Screen for one or more interrelated risk factors which predict alcohol consumption during pregnancy	<p>Recommendation 5.3: "Hearsay, lifestyle, other drug use or history of alcohol exposure in previous pregnancies cannot, in isolation, be informative of drinking patterns in the index pregnancy. However, co-occurring disorders, significant psychosocial stressors and prenatal exposure to other substances (e.g., smoking, licit or illicit drugs) in the index and previous pregnancies should still be recorded, based on known interactive effects of these variables on the severity of pregnancy outcomes for both the mother and her offspring".^{16, p.511}</p>	<p>A dose-response relationship exists between prenatal alcohol exposure and growth. Growth deficit, a characteristic of FAS, is directly related to the amount of alcohol consumed.⁴⁵</p>
<i>Assessment of Alcohol Exposure</i>		
Average volume (i.e., quantity) of alcohol consumption	<p>Comment: High blood-alcohol concentration is the most significant risk factor influencing the potential impact maternal alcohol consumption may have on the fetus.¹⁶</p>	
	<p>Recommendation 5.2: "The number and type(s) of alcoholic beverages consumed (dose), the pattern of drinking and the frequency of drinking should all be documented if available".^{16, p.511}</p>	<p>Alcohol content and drink size impact blood-alcohol concentration.⁴⁶ The alcohol content depending on type of alcohol beverage consumed can vary^{46,47} and range between 4.2% (e.g., beer) to 40% (e.g., distilled spirits) alcohol by volume.⁴⁶ Significant variation in drink size, particularly for spirits and wine, has been demonstrated with measures to improve precision of alcohol intake (e.g., use of measured drinks). Among women, monthly alcohol intake was reported to be 30.3% more with the use of measured drinks.⁴⁶ Identification of drink size facilitates identification of high-risk drinkers and prevents misclassification of binge drinkers.⁴⁶ The type of alcoholic beverage should also be ascertained to better estimate alcohol consumption and identify high-risk drinkers.^{46,48}</p>
Type(s) of alcohol and drink size	<p>Recommendation 5.2: Same as above.^{16, p.511}</p>	<p>Fetal blood alcohol concentration is related to many factors such as maternal patterns of alcohol consumption (e.g., binge drinking – that is, four or more drinks per occasion), and frequency of alcohol use.^{19,20} Binge drinking may be more harmful than consuming the same amount of alcohol spread over time⁴⁹ as the fetus is exposed to considerably higher peak blood alcohol concentrations during binge drinking.¹⁹ Assessment of patterns of alcohol exposure should be trimester-specific, as outcomes of fetus will differ. For instance, alcohol consumption in early pregnancy increases the risk of having a low birthweight infant.⁴⁵</p>
Patterns of drinking (i.e., binge) and frequency (i.e., daily)	<p>Recommendation 5.2: Same as above.^{16, p.511}</p>	

Appendix 1, continued

Evidence-based Practices	Comments/Recommendations in the Canadian Guidelines	Supporting Literature
ETOH quit date	Comment: "Stopping drinking at any time during pregnancy will reduce risk of adverse effects of prenatal alcohol exposure". ^{16, p. 56}	Same as above. Quit date potentially provides information about alcohol intake during the pregnancy pre-recognition time period.
Document and confirm risk for prenatal alcohol exposure	Recommendation 5.1: "Prenatal alcohol exposure requires confirmation of alcohol consumption by the mother during the index pregnancy based on reliable clinical observation, self-report, reports by a reliable resource or medical records documenting positive blood alcohol, alcohol treatment or other social, legal or medical problems related to drinking during pregnancy". ^{16, p.511} Comment: "Often women will not accurately recall the amount or frequency of alcohol consumption during pregnancy. Some women may also underestimate consumption level or deny that they drank alcohol during pregnancy. Medical records are known to be incomplete with respect to maternal alcohol history". ^{16, p.515}	Difficulties with diagnosing a FASD relates to inaccurate and/or lack of information about maternal alcohol use during pregnancy. ⁵⁰ Less than 1% of the medical charts contain data that can be used to determine alcohol use during pregnancy. ¹⁸ In certain instances, discrepancies are noted between information recorded in the prenatal record forms, and medical chart. ¹⁸ If information pertaining to maternal history of alcohol use is clearly documented and consistent information is noted when reviewing the medical chart, assessment for level of risk of exposure would be confirmed. However, in the majority of cases, documentation is poor. ¹⁸ Prenatal records may not be completed in their entirety or inconsistencies may be identified when comparing various parts of the maternal chart. Alternatively, disparities may exist between the woman's self-report (i.e., denies use) and clinical observations or reports from the partner, friend, or family member. In these instances, level of risk of exposure would be speculative. Some diagnosticians use confirmed, unknown or absent prenatal alcohol exposure as a way of differentiating clinically meaningful exposure to rank risk of prenatal alcohol exposure. ⁵⁰
Intervention and Referral Advocate abstinence	Recommendation 1.2: "Abstinence should be recommended to all women during pregnancy, as the mother's continued drinking during pregnancy will put the fetus at risk for effects related to prenatal alcohol exposure". ^{16, p.54}	There is no "safe" level of alcohol intake during pregnancy, as research findings are equivocal when examining exposure to low to moderate alcohol levels during pregnancy. ^{45,47,51} Health Canada advises that women who are or may become pregnant abstain from alcohol use. FASD is preventable if women abstain from consuming alcohol during pregnancy. ^{45,47,52}
Offer early, brief intervention	Recommendation 1.1: Women at risk for heavy alcohol use should receive early brief intervention (i.e., counseling). ^{16, p.54}	Brief interventions involve a time-limited (e.g., 5-10 minutes) patient education and self-help preventive strategy. Brief interventions with women who screened positive for mild to moderate drinking problems during pregnancy have demonstrated effectiveness in reducing alcohol use pre- and postnatally, ^{23,39,53-57} and improving neonatal outcomes. ⁵⁷ Brief intervention that includes partner participation, as identified by the woman, in the session may be effective for those women who drink more prenatally. ²³ The cost-effectiveness of brief intervention for pregnant women with drinking problems has not been studied.
Refer pregnant client who drinks during pregnancy	Comment: "The purpose of screening should be to facilitate referral to a diagnostic clinic and highlight the need for referral and support for the birth mother". ^{16, p.56}	Some women who screened positive for drinking problems during pregnancy may require referral for alcohol counseling which includes setting drinking limits and identification of strategies to avoid behavioural triggers for risk drinking. ⁵⁵ Counseling every 2 to 4 weeks throughout gestation, as well as access to consultation with social workers and psychiatrist – and for those who failed to return for follow-up, a telephone call or home visit by a local antenatal nurse – was effective in reducing drinking by at least 50% in 55 of the 85 women identified as having problem drinking behaviour (n=29 alcoholics, n=30 heavy drinkers, and n=26 moderate drinkers). ⁵⁸ In the group of women who reduced drinking, 40% of infants developed fetal damage compared to 85% in the group of women with no decrease in alcohol consumption during pregnancy. ⁵⁸ The cost-effectiveness of referrals (i.e., counseling) for pregnant women with drinking problems has not been studied.

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RÉSUMÉ

Objectifs : L'exposition prénatale à l'alcool est une importante question de santé publique, entraînant des coûts financiers, émotionnels et psychologiques associés aux soins à donner à une personne affectée, et ce, pendant toute une vie. En 2005, l'Agence canadienne de la santé publique et la Direction générale de la santé des Premières nations et des Inuits (DGSPNI) ont élaboré des lignes directrices fondées sur des données probantes pour le diagnostic de l'ensemble des troubles causés par l'alcoolisation foetale (ETCAF). Nous avons examiné la mesure dans laquelle les dossiers prénataux des provinces et des territoires canadiens intègrent actuellement les recommandations clés de ces lignes directrices.

Méthodes : Nous avons mené une analyse du contenu des formulaires prénataux récupérés dans chaque province et territoire du Canada (N=12) afin de déterminer toutes les questions ou les moteurs d'intervention liés au dépistage prénatal, à l'évaluation de l'exposition, à la consultation ou à la recommandation en ce qui a trait à la consommation d'alcool pendant la grossesse. Nous avons examiné les résultats en relation avec les recommandations extrapolées des lignes directrices canadiennes et de la documentation sur l'ETCAF.

Résultats : Tous les formulaires prénataux contenaient des questions visant à évaluer la consommation d'alcool par la mère pendant la grossesse. Toutefois, l'ampleur et la forme consommation d'alcool évaluée, le vocabulaire et le nombre d'articles associé à chaque forme, variaient considérablement entre les provinces et les territoires. Seulement cinq formulaires prénataux comprenaient un outil de dépistage validé permettant de déterminer la présence d'un comportement associé à une consommation d'alcool à risque. Nous avons pu noter l'absence de messages-guides dans les formulaires pour encourager les fournisseurs de soins à intervenir ou à diriger les clientes enceintes présentant une consommation d'alcool à risque élevé.

Conclusion : L'intégration des recommandations canadiennes dans les formulaires prénataux serait une stratégie de santé publique efficace pour aider à déceler les grossesses présentant un risque élevé d'exposition à l'alcool, à réduire l'incidence d'ETCAF grâce à une intervention prénatale et à des recommandations, et à faciliter le diagnostic précoce de l'ETCAF.

Mots clés : syndrome d'alcoolisme foetal, soins prénataux, médecine fondée sur des preuves, lignes directrices sur la pratique, effets retardés de l'exposition prénatale