SCREENING AND RECORDING OF ALCOHOL USE AMONG WOMEN OF CHILD-BEARING AGE AND PREGNANT WOMEN

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ABSTRACT

A woman's alcohol use during pregnancy is one of the top preventable causes of birth defects and developmental disabilities that are known as fetal alcohol spectrum disorders (FASD). The social and economic burden of FASD is substantial. Lifetime direct tangible costs per individual related to health care, education and social services in Canada have been estimated to be $1.4 million.

Screening women of child-bearing age and pregnant women and recording their alcohol consumption is a practical process to identify and evaluate women at-risk and to identify potentially exposed infants.

The FASD Advisory Workgroup proposes the following three levels of screenings which should be done on consenting women:

- **Level I screening** involves practice-based approaches that can be used by health care providers when talking to women about alcohol use, such as motivational interviewing and supportive dialogue.

- **Level II screening** includes a number of structured questionnaires that can be used with direct questioning (TLFB) or indirect / masked screening (AUDIT, BMAST / SMAST, CAGE, CRAFFT, T-ACE, TWEAK).

- **Level III screening** includes laboratory-based tools that can be used to confirm the presence of a drug, its level of exposure and determine the presence of multiple drugs.

There are challenges and limitations in the use of the screening and assessment tools outlined. For example, the single question about alcohol use and the various questionnaires rely on a woman to provide details about her alcohol use. There is no consensus on the appropriate screening to use across Canada as each provincial / territorial jurisdiction, health care organization and health care provider uses a variety of formal and informal screening tool. In addition, there are inconsistent processes across Canada for the recording of the alcohol use in a woman's chart and the transfer of the information to the infant and the child's health records.

The FASD Advisory Workgroup proposes eleven recommendations to improve the screening and recording processes for alcohol use in women of child-bearing age and pregnant women.

General Recommendations

1. Recognizing the importance of the health care provider as an effective resource for harm reduction, it is essential that adequate community resources be made available for women who require interventions beyond primary interaction.

2. That research on the effects of alcohol use be expanded to ensure there is sufficient comparative evidence showing the effectiveness of screening tools with particular cultural groups.

3. That a public education / awareness program be initiated to inform women they should expect to be asked about the frequency and amount of alcohol use and ensure that this information is transmitted to all health care providers involved in their care.

Recommendations Relative to Screening for Alcohol Use:

4. That health care providers use a standardized, universal set of questions routinely during regular health exams that will include at least Level I screening.

5. That Level II be adopted as the standard screening process to identify alcohol use in all women of child-bearing age and pregnant women.

6. That health care providers be aware of the risk factors that may inform their clinical impression in combination with other psychosocial assessment.

7. That health care providers access on-line training tools for screening of FASD offered by Best Start, Ontario's maternal, newborn and early child development resource centre (www.beststart.org), and other resources offered by programs such as PRIMA (www.addictionpregnancy.ca), AADAC (www.aadac.ca) and Motherisk (www.motherisk.org). Resources are also available from Healthy Choices in Pregnancy program in British Columbia (www.hcip-bc.org/resources_for_practice/default.htm) and from the Canadian Centre for Substance Abuse (www.ccsa.ca/toolkit/introduction.htm).

8. That health care providers use Level III screening methods when there is discordance between Level I and Level II screening results (e.g. frequency, perception of risk), or when there are doubts unresolved by Levels I and Level II screening.

Recommendations Relative to Recording Alcohol Use:

9. That the frequency and amount of alcohol use be recorded in a woman's chart on a routine basis and not only in relation to pregnancy.

10. That the information relative to frequency and amount of alcohol use be recorded in the woman's chart and that this information be transferred to appropriate health care providers and health records to ensure a continuum of care.

11. That information relative to frequency and amount of a woman's alcohol use during pregnancy be routinely recorded in her newborn's chart and in her child's health records.

With this consensus report, the FASD Advisory Workgroup aims to support health care professionals in their role for the screening and recording of alcohol use in all women of child-bearing age and pregnant women. From this document, health care providers will recognize the importance of routinely asking women about alcohol consumption, understand the need for and effectiveness of using a screening tool to ask women about alcohol use; recognize the importance of recording information about a woman's alcohol consumption before, during and after pregnancy; offer brief interventions to a woman who is identified as drinking alcohol during pregnancy or while planning a pregnancy; and ensure appropriate documentation in a newborn record and a child's health record.

1. Introduction

Women's use of alcohol is an important public health and social issue in Canada. As alcohol use during pregnancy is one of the leading preventable causes of birth defects and developmental delays in Canadian children. The adverse effects of alcohol exposure during pregnancy include fetal alcohol syndrome (FAS), partial FAS, alcohol-related birth defects (ARBD) and alcohol-related neurodevelopmental disorders (ARND). These are diagnostic terms used to describe conditions along this spectrum. Fetal alcohol spectrum disorder is an umbrella term used to describe all of the above related conditions.[1]

Lemoine and colleagues first recognized a variety of birth defects and developmental disabilities in offspring born to alcoholic mothers in 1968.[1,2] The specific pattern of birth defects associated with FAS consists of facial and physical anomalies, impaired pre-natal or post-natal growth (or both), and central nervous system or neurobehavioral disorders. There is evidence

that alcohol acts through multiple mechanisms, and a range of disabilities has been observed as a result of damage during fetal development that varies according to the timing, degree and pattern of exposure.[1]

The diagnosis of FASD is complex. Because it carries lifelong consequences, early recognition of FASD can result in a better outcome for the baby who receives a diagnosis. It is of utmost importance to raise awareness of the impact of alcohol use and to encourage the use of effective screening tools and recording processes in order to reduce the incidence of FASD.

In 1979, the Canadian Task Force on the Periodic Health Examination found there was fair justification for recommending the inclusion of counselling to reduce the alcohol intake of pregnant women in the periodic health examination. This was based on evidence that counselling proved effective in reducing the amount of drinking in pregnant women and the rate of morbidity in their offspring.[3] The evidence compiled since 1979 supports this original recommendation.

In order to provide prevention and intervention programs and strategies to reduce the incidence of FASD, maternal alcohol consumption must be identified. Asking questions about alcohol use during pregnancy is necessary for gathering accurate and reliable information that will initiate an appropriate intervention program, as well as early diagnosis of babies affected by prenatal alcohol exposure.

Health care professionals play a critical role in screening women for alcohol use during pregnancy. There is general agreement that improvements in the use and implementation of screening tools for alcohol use among women will have a significant impact in decreasing the incidence of FASD. However, there are currently no standard screening approaches or tools available in the clinical setting in Canada and there are no processes in place to ensure consistency in the recording of this information.

In a study that involved the collection of information from Canadian health care professionals, the majority of health care professionals (93.6%) reported that they routinely discussed current drinking patterns with pregnant patients. However, only 62% reported using a standardized screening tool.[4] Within the framework of a project funded by the Public Health Agency of Canada, the Society of Obstetricians and Gynaecologists of Canada established the FASD Advisory Workgroup in June 2007. The purpose of this multi-stakeholder group, that includes individuals with expertise in FASD, is to analyze current screening tools and available recording systems and to make recommendations on the most appropriate screening and recording process for implementation in the clinical setting. This initiative is an important component of the multi-faceted approach implemented by the Public Health Agency of Canada to decrease the incidence of FASD.

The intent of this report is to provide an overview of the tools and processes available for the screening of alcohol use in women of child-bearing age and pregnant women. The authors provide practical tips and wording to use when interacting with mothers or expecting women.

2. Scope of the Problem

Approximately 20% of women report that they consume some alcohol during pregnancy.[5] A Health Canada study reveals that women most likely to miss being identified include those over 35 years of age, social drinkers, those who are highly-educated, those with a history of sexual and emotional abuse, and those of high socioeconomic status.[4]

It is estimated that the prevalence of FASD is 9.1 per 1000 live births in the United States.[1] Prevalence studies in some Aboriginal communities in Canada indicate prevalence rates as high as 190 per 1000 live births. It is generally recognized that prevalence rates are higher in any community where women of childbearing age regularly consume alcohol.[6]

Data from the 2003 Canadian Perinatal Health Report indicate that 14.6% of children under the age of 2 years have mothers who reported alcohol use during pregnancy.[4] Most early research has focused on pregnant drinkers with heavy alcohol use or dependence problems, as it was thought that only heavy or binge drinking could harm the developing fetus.[7] Sokol et al originally defined risk drinking in pregnancy as an average of two or more drinks daily.[8] However, the definition of risk drinking has changed over the years with recent research

suggesting adverse outcomes associated with much lower levels of alcohol consumption.[9]

Children affected by prenatal alcohol exposure may present with prenatal or postnatal growth deficit but many can have normal growth. Many have other physical features including characteristic facial anomalies that are important diagnostically. The most serious consequence of prenatal exposure to alcohol has to do with the effect of alcohol on the developing brain. Children who are exposed are at risk for significant learning, behavioural and cognitive deficits.[1]

A study by Stade et al reports that the burden of prenatal exposure to alcohol on children and their families is profound. This study shows that children and youth with FASD have significantly lower health and quality of life outcomes than children and youth from the general Canadian population. Children with FASD struggle with depression and anxiety; experience difficulties in social interactions and relationships; and are often seen as "bad children".[10]

The economic burden of FASD is substantial. Lifetime direct tangible costs per individual related to health care, education and social services in Canada have been estimated to be $1.4 million.[11] Stade et al report the societal costs associated with FASD include: direct costs (i.e. medical, education, social services), out-of-pocket costs, and indirect costs (i.e. productivity losses). The total adjusted expenditure per child with FASD is estimated to be $14,342 per year. The severity of a child's condition, the age of a child, and geographical setting are important determinants of costs. It is estimated that the cost of FASD annually to Canada of those 1 to 21 years old is $344,208,000.[12]

3. The Screening Process

Pregnant women should be informed that no safe level of alcohol consumption during pregnancy has been established. The Public Health Agency of Canada recommends abstaining from alcohol use during pregnancy. Women who have consumed small amounts of alcohol before they knew they were pregnant can be reassured that the risk to their baby is small if they abstain from further alcohol consumption, eat a balanced and nutritional diet, and adopt a healthy lifestyle, throughout the course of their pregnancy.

Some groups and health professionals still maintain that there are safe guidelines for drinking while pregnant, but the safety of mild drinking cannot be proven.[19] While a systematic review of the effects of pre-natal exposure to low levels of alcohol by Henderson et al[13] indicated no significant effects on physical development pre- or post-natally, a meta-analytical review of the research literature by Testa et al[14] indicated significant effects on mental development at age 12 months. Therefore, abstaining from alcohol use is the only responsible approach for women who are, or may become pregnant.

While the importance of the health care provider as an effective information resource for harm reduction is recognized, it is essential that adequate community resources also be made available for women who require interventions beyond this primary interaction.

Screening for alcohol use in childbearing women should be part of a comprehensive psychosocial assessment. Psychosocial risk factors for substance use may be part of many Canadian women's life experiences.

The ALPHA form (Antenatal Psychological Health Assessment) is a validated ante-natal psychosocial assessment form available at http://dfcm19.med.utoronto.ca/research/alpha.

The ALPHA form contains questions relating to family factors (social support, recent stressful life events, the relationship of the couple, etc.), maternal factors (self-esteem, mood disorders, relationship with parents, etc.), substance abuse issues (including partner's substance use, poly-drug use, etc.), and family violence (childhood Experience of family violence, childhood sexual abuse, intimate partner violence, etc.). The form is available as either a self-completing or provider-completing version for each use. By asking a woman about the totality of her psychosocial health, a provider can better understand the issues that may lead to alcohol use. Additionally, by using a standardized psychosocial assessment instrument, which includes a section on substance use, the woman may feel less vulnerable responding to personal questions.

3.1 Maternal Alcohol Screening

The Canadian guidelines for diagnosis of fetal alcohol spectrum disorder recommends the screening of all pregnant and post-partum women for alcohol use.

What ? A process to identify and evaluate alcohol use that might put the mother-child well-being at risk.

Who ? Women who are pregnant or of child-bearing age.

Why ? Improved maternal-child health outcomes through:

- ✓ Early identification and reduction of problem maternal drinking
- ✓ Recording of maternal alcohol history on a newborn's birth record and in a child's health record
- ✓ Early identification of exposed infants
- ✓ Earlier diagnosis of FASD.

Maternal alcohol screening and recording by health care providers could lead to a reduction of primary FASD disabilities as well as reduction of secondary disabilities often related to FASD in the absence of diagnosis and appropriate interventions.

"The earlier in pregnancy a woman can stop drinking, the better the outcome; the younger the age at which the affected child is identified, the lower the frequency of secondary disabilities."

Source: Helen Barr, Ann Streissguth. Identifying Maternal Self-Reported Alcohol Use Associated with Fetal Alcohol Spectrum Disorders. Alcohol Clini Res. Vol 25, No. 2. 2001.

3.2 Benefits of Identification of Problem Maternal Alcohol Consumption

- Identification of women who would benefit from information about Health Canada's recommendations regarding safe drinking levels pre-pregnancy and abstinence during pregnancy.
- Identification of pregnant women who could benefit from information about FASD and the possible effects of pre-natal alcohol exposure.
- Identification of pregnant women or women of child-bearing age who should be referred for varying levels of drug and alcohol services – assessment, counselling, detox or inpatient treatment.
- Referral of women who's drinking might be related to depression, abuse or other mental health issues to the appropriate mental health service.

4. Level I Screening - Practice-based Screening

Recent surveys of health professionals indicate that some clinicians feel uncomfortable asking about alcohol use.[15,16] They may avoid the subject of alcohol use entirely because they do not know how to identify women who engage in at-risk drinking without embarrassing or offending their clients who are not consuming alcohol. Others lack knowledge of the alcohol treatment and counselling services that are available or reside in areas that simply lack adequate services. Still others may hesitate to screen because they are pressed for time and screening for alcohol use may seem to be beyond the scope of their practice. Screening for alcohol use need not be complicated, time consuming, or difficult. One or two interview questions concerning alcohol use have been shown to be an effective way to screen women by identifying those who are drinking and in need of education or intervention.[17,18] Most pregnant women appreciate their practitioner's concern for their health and the health of their unborn baby. Women are especially open to changing their lifestyle when they are pregnant if they know that it will help their baby.

This offers practitioners an opportunity in terms of motivating women to change at-risk behaviours. Practitioners should inquire about a woman's alcohol consumption and provide information about the effects of alcohol on the unborn baby at the very first pre-natal visit or at a preconception counselling visit.

Many women do not know that alcohol could affect their unborn child. They may have been told in the past by friends, relatives, or even other health providers that drinking moderately during pregnancy was acceptable. Many people are not aware of recent research studies of large population samples of pregnant women that prove a dose-response effect of pre-natal alcohol exposure. The children of mothers who drank at low levels (less than one drink a day) were shown to be at significant risk for problem behaviour.[9] This does not mean that a woman who is drinking at low levels will necessarily have a child with behavioural problems, but it does mean that they increase the probability of a problem.

There are several approaches that health care providers can use when talking to women about alcohol use during pregnancy. The initial inquiry can be included as part of routine pre-natal questioning regarding a healthy lifestyle during pregnancy in terms of nutrition, exercise, and the avoidance of environmental toxins such as nicotine and second-hand smoke. Some physicians choose to have women fill out written questionnaires while they are waiting in the office. Health providers may include one or more questions regarding alcohol or they may embed standardized alcohol screens in their questionnaires. For the practitioner who chooses to use the single question method, the following are questions identified as being effective for establishing a rapport and introducing a discussion about alcohol use:

"When was the last time you had a drink?"
"Do you ever enjoy a drink or two?"
"Do you sometimes drink beer, wine or other alcoholic beverages?"
"Do you ever use alcohol?"
"In the past month or two have you ever enjoyed a drink or two?"

If the woman indicates she does not consume alcohol, then positive reinforcement of her lifestyle choice is beneficial. Research shows that it is helpful to provide brochures and other information about a healthy lifestyle during pregnancy that *includes* details about alcohol abstinence and the effects of alcohol on the fetus.[19,20] Any written information should be provided in a way that is linguistically and culturally sensitive.

If a woman indicates that she does consume alcohol, then a second stage of screening is necessary. This can be done using standardized screening questionnaires such as the T-ACE or TWEAK. Practitioners can also use this opportunity to help pregnant women who are using alcohol with a *brief intervention* (BI) in the office.

Research has shown that BIs can be very useful in helping pregnant women who drink mild-to-moderate amounts of alcohol to reduce their alcohol intake during pregnancy. BI's are cost effective and can be implemented in a variety of clinical settings.

BI's normally include four components:

1) assessment and direct feedback after assessment;
2) goal setting through establishing contracts;
3) positive reinforcement; and
4) education through pamphlets and hand-outs for self-help.[21]

4.1 Motivational Interviewing

Motivational interviewing is a relational model that is based on collaboration between the health professional and the woman seeking care. Research shows it to be especially effective in an office setting when health providers are helping women who are drinking when pregnant, but not addicted to alcohol.[22] Women who are alcohol dependent can be more resistant to change and should be referred to counsellors who can devote the time it takes to establish a collaborative relationship.

4.2 Supportive Dialogue

A woman-centered approach has been found to be effective in engaging a woman in the decision to change behaviours. A non-judgmental approach is especially helpful for women who drink heavily and who may have other problematic substance use issues. Engaging a woman in the decision-making concerning her own care can increase her will to change while minimizing resistance. Open-ended questions allow the woman to expand on her life circumstances. Practitioners might begin by simply asking a woman what she has heard about using alcohol during pregnancy. They can use this as an opportunity to provide information as well as to correct any misinformation.

This can be followed by questions such as:

"Can you tell me a bit about your drinking patterns before you knew you were pregnant?"
"Have you been able to stop or cut down since you found out?"
"Do you have any concerns about your drinking?"

The woman may have concerns about drinking before she knew she was pregnant and it is at this time that the practitioner can reassure her that if she cuts down or stops, she can help her baby. It is also at this time that the practitioner can offer help on how to cut down or to stop drinking.

4.3 Interview Techniques for Effective Engagement - "Do's and Don'ts"

Due to concerns surrounding fear, guilt and stigma, it is essential to utilize effective interview techniques to engage women of childbearing age in order to obtain an accurate alcohol use report. These include empathetic listening, and non-judgemental, non-confrontational questions that are woman-centered. The following examples suggest interview techniques for effective engagement.[23]

The following is an example of an introductory statement that can be used in women of child-bearing age:

> "I want to ask you a series of questions today about your lifestyle. I ask all my patients these questions because it helps me to get a better understanding of what your day-to-day life is like (in terms of diet, exercise and other lifestyle issues). It will help me to know you, and that will help me to provide better care."

The following is an example of an introductory statement for pregnant women:

> "I ask all my patients these questions because it is important to their health and the health of their babies."

Unless otherwise reported, assume use of alcohol by all women. Try to pose questions in the past tense to avoid triggers associated with the stigma of alcohol use during pregnancy.

> "In a typical week, how many occasions did you usually have something to drink?"

Avoid questions such as:

> "Do you drink often?"
> "How much are you drinking?"

To encourage more accurate reporting, one can suggest high levels of alcohol consumption:

> "And on those days, would it be something like 3 to 4 drinks or about 8 to 10 drinks?"

It is important to avoid questions that require a "yes" or "no" response. It is preferable to ask open-ended questions to open a dialogue, such as:

> "What do you know about the effects of drinking in pregnancy?"

In cases of confirmed or suspected history of past alcohol dependency / abuse, the following questions are suggested[17]:

> "Have you ever had a drinking problem?" followed by
> "When was your last drink?"

Avoid statements that increase guilt in women who admit to continued alcohol use:

> "You can have a healthier baby if you stop drinking for the rest of the pregnancy."

Avoid statements such as:

> "You may have already hurt your baby."

5. Level II Screening - Structured Questionnaires

5.1.1 Direct Questioning

5.1.2 Time Line Follow Back Tool (TLFB)

The timeline follow-back method (TLFB) is an assessment interview developed to assist individuals in their recollection of alcohol consumption.[24] As risky (high-volume / binge) drinking can occur in the absence of any alcohol problems, direct questions regarding the quantity and frequency (QF) of alcohol intake in the TLFB method aim to identify risky drinkers. This interview can assist in identifying women who

would be otherwise missed by indirect questions focusing on the consequences of heavy drinking.

The TLFB provides information on various characteristics of a given patient's drinking habits – the average number of drinking days at higher levels of alcohol consumption, the number of abstinent days, the mean number of drinks per drinking day, the maximum number of alcoholic beverages consumed, and temporal patterns such as weekend versus weekday drinking. From this information, alcohol exposure can be examined, based on the dose of daily exposure and the period of fetal development during which the exposure occurred.[25]

The TLFB is considered a useful and accurate retrospective assessment of drinking and has been shown to be both highly reliable and valid when individually administered by an interviewer over the telephone.[26,27] Sacks et al also reliably assessed substance use in psychiatric populations using the TLFB method.[28] Moreover, this method is quite reliable when administered to various patient groups cross-culturally and with abuse of recreational drugs, other than alcohol.[27]

5.2 Indirect / Masked Screening

Direct questions about quantity and frequency may pose challenges to the pregnant patient due to the stigma associated with alcohol use. In order to overcome issues of possible under-reporting and denial of alcohol exposure in early pregnancy, brief screening instruments that include masked questions regarding alcohol intake were developed and are outlined in this section.

5.2.1 The AUDIT Tool

The Alcohol Use Disorders Identification Test (AUDIT) includes 10 questions that may be used to obtain more qualitative information about a patient's alcohol consumption. Validated in 6 countries, the AUDIT is useful for identifying hazardous and dependent drinking as it asks about quantity and frequency of alcohol use, drinking behaviour (i.e. binge drinking), and alcohol-related problems or reactions. An important limitation is the lack of a cut-off point indicating harmful use. A score of 8 is associated with problem drinking, while 13 or more is indicative of alcohol dependence.

Relevant Research

- The AUDIT tool was found to be somewhat less sensitive to female alcohol abuse and dependence than the TWEAK (sensitivity of 65% and specificity of 94% for alcohol dependence and a very low sensitivity of 42% and specificity of 97% for any type of alcohol use).[29]

- As a self-administered questionnaire completed by a woman waiting for her appointment, the AUDIT offers the advantage of obtaining specific information regarding her alcohol consumption and any presence of dependence symptoms.

- Compared to T-ACE, the AUDIT tool was found to be slightly less sensitive to pre-natal alcohol consumption in a sample of pregnant women.[30,31]

- Given that the AUDIT questionnaire has been well-validated in the male population, Torres and colleagues investigated its usefulness in female patients to determine the test cut-off point for the diagnosis of alcohol problems in women. From the 414 women recruited, the AUDIT tool was determined to be a questionnaire with good psychometrics properties and valid for detecting dependence and risk alcohol consumption in women.[32]

5.2.2 The BMAST Tool / SMAST Tool

The Michigan Alcoholism Screening Test (MAST) is a long questionnaire of 25 questions about drinking behaviour and alcohol-related problems that was originally developed for use with men. There are several variations of MAST, including modified versions such as brief MAST (BMAST) and short MAST (SMAST). The main disadvantage of these tests is their focus on the lifetime use of alcohol rather than recent use which subsequently limits their ability to detect problem drinking at an early stage.

Scoring: <3 points (non-alcoholic); 4 points (suggestive of problem drinking); 5 or more points (indicates alcohol dependence).

Relevant Research

- The BMAST was shown to be relatively less sensitive in detecting alcohol problems in female drinkers compared to men using a cut-off point of 6, in the non-Caucasian American population.[33]

- Both CAGE and the brief MAST questionnaires performed effectively in screening for significant alcohol problems in a high-risk sample composed of relatives of alcoholic subjects and also in a community sample consisting of families not selected for alcohol dependence disorder.[34]

- As serious mental illnesses are frequently diagnosed along with alcohol dependence ("dual diagnosis"), it is important for clinicians to be able to recognize the presence of alcohol dependence in people with mental illnesses. Breakey et al utilized the CAGE and the SMAST, and a clinical DSM-III-R diagnosis of alcohol use disorder and found that both had good sensitivity. The addition of either screener enhanced the clinicians' ability to detect alcohol use disorders.[35]

- The T-ACE, the AUDIT and the SMAST tools were completed by 350 women initiating pre-natal care at a Boston hospital to compare their accuracy with clinical predictors in the identification of prenatal alcohol use. The T-ACE, the AUDIT and clinical predictors alone correctly identified 65 to 70% of current drinkers, whereas the SMAST alone performed only slightly better than chance. The predictive ability of the T-ACE was further improved with the addition of clinical predictors.[36]

- The standardized evaluation of alcoholism and other psychopathologies in (non-pregnant) minority populations, particularly American Indians, has long been questioned. This study investigated the validity of SMAST in two distinct American Indian tribal groups from large community representative samples of 456 South Western and 214 Plains Indians. The SMAST cut-off score of greater than or equal to 3 had a sensitivity of 86% to 95%, but had lower specificity (23%-47%). Authors concluded that the SMAST is not a valid tool for the screening of alcohol use in these two tribal populations due to the highly elevated and different thresholds required from one population to the next.[37]

5.2.3 The CAGE Tool

One of the oldest brief screening instruments, the CAGE (Cut-down, Annoy, Guilty, Eye-Opener) questionnaire has been widely used in a range of cultures worldwide and is popular for screening in the primary care setting.[38] This 4-item screening instrument is designed to identify and assess potential alcohol abuse and dependence. However, it primarily focuses on the consequences of drinking rather than the quantity or frequency of alcohol use, levels of consumption, or episodes of binge drinking - all factors that help identify patients in the early stages of problem drinking. An affirmative response to 2 or more questions is an indication that a more thorough assessment is warranted.

Relevant Research

- The mode of administration for the CAGE tool (as a self-report, or as part of a clinical / medical interview) was not shown to have an influence on accuracy of the outcome.[39]

- Two large studies of disadvantaged, minority, obstetric patients reported that the calculated sensitivity and specificity of the T-ACE and TWEAK were superior to the CAGE in identifying risk drinking (defined as 1 ounce or more of alcohol consumption per day).[40]

- The CAGE tool shows less sensitivity for assessing dependence or harmful drinking in non-Caucasian women.[33]

- Due to its lack of ability in distinguishing between heavy and non-heavy drinkers in the general population, clinical use of the CAGE tool is recommended among individuals previously identified as alcohol users rather than screening individuals in the general population.[41]

- The CAGE tool outperformed both the BMAST and the AUDIT in predicting lifetime alcohol dependence (highest sensitivity at 84%; specificity at 90%) in trauma center populations. It should be used in combination with alcohol testing to identify patients at risk of alcohol use problems.[42]

5.2.4 The CRAFFT Tool

Researchers at the Children's Hospital in Boston refined a brief questionnaire, called CRAFFT (Car, Relax, Alcohol, Forget, Friends, Trouble) that primary care physicians can use to screen for alcohol or substance abuse problems in adolescents. By drawing on situations that are more suitable to this age group, the purpose of this tool is to identify which teens require more time for comprehensive evaluation such as a diagnostic interview. This test can be administered by any health care professional who can maintain confidentiality and can refer the teen to appropriate resources. A score of two or more positive items usually indicates the need for further assessment. The CRAFFT screening tool is included in a policy statement issued by the American Academy of Paediatrics, and has been part of a national case-based training curriculum in some paediatric residency programs.

Relevant Research

- To validate the CRAFFT instrument, project investigators interviewed and screened 538 adolescents at a Boston outpatient adolescent clinic and compared their CRAFFT scores with scores on 2 longer questionnaires that previously had been shown to reliably identify adolescents with substance abuse problems or diagnoses. Findings: A score of 2 or more proved to be the optimal cut-off for identifying adolescents with alcohol or drug problems(sensitivity at 0.76; specificity at 0.94), while a score of 4 or higher indicated that the adolescent may be dependent on drugs or alcohol (sensitivity at 0.92; specificity at 0.80). The investigators concluded that the CRAFFT screening tool offers primary care providers a valid and practical means of quickly identifying adolescent patients who need more comprehensive assessment or referral to substance abuse treatment.[43]

- A second study by the same authors compared the validity of the CRAFFT questionnaire, the AUDIT tool, the Problem Oriented Screening Instrument for Teenagers substance use/abuse scale (POSIT), and the CAGE tool among adolescents from a hospital-based adolescent clinic. Findings: Sensitivities (95% confidence intervals) were AUDIT 0.88 (0.83-0.93), POSIT 0.84 (0.79-0.90), CAGE 0.37 (0.29-0.44), and CRAFFT 0.92 (0.88-0.96); specificities were AUDIT 0.81 (0.77-0.85), POSIT 0.89 (0.86-0.92), CAGE 0.96 (0.94-0.98), and CRAFFT 0.64 (0.59-0.69). Authors concluded the AUDIT, POSIT, and CRAFFT have acceptable sensitivity for identifying alcohol problems or disorders in this age group but the CAGE is not recommended for use among adolescents.[44]

5.2.5 The T-ACE Tool

As the first validated screening questionnaire for risk drinking developed for pregnant women, the T-ACE (Tolerance, Annoyed, Cut down, Eye-Opener) has been established as a highly effective screening tool, and is regularly used by practitioners as part of routine care.[45] Any woman who answers “more than two drinks” on the tolerance question, “how many drinks does it take to make you feel high?” is scored 2 points. Each “yes” to the additional 3 questions scores 1. A score of 2 or more out of 5 indicates risk of a drinking problem, and the woman should be referred for further assessment.

Relevant Research

- The first study looked at a population of African-American inner-city women and found T-ACE (76% sensitivity and 79% specificity) to be superior to both MAST (76% sensitivity and 76% specificity) and CAGE (59% sensitivity and 82% specificity) in identifying pre-natal risk drinking.[45]

- Chang et al subsequently tested the T-ACE as a self-administered, independent screening tool embedded in a health-habits survey with questions about smoking, stress, weight, and

dietary habits. This was tested in a more socially and ethnically diverse obstetric population initiating pre-natal care at the Women's Hospital in Boston.[46] They compared the sensitivity and specificity of the T-ACE with the sensitivity and specificity of three other popular methods of screening for alcohol use in other clinical settings, including the AUDIT[47] and the SMAST[48], and a review of the patient's medical record. Researchers gave each participant the AUDIT and SMAST independently as well as reviewed the participant's medical record. T-ACE was found to be more accurate than AUDIT in detecting current risk drinking behaviour, as well as a past history of alcoholism.[46]

- The T-ACE was more effective in identifying at-risk women for pre-natal alcohol use than medical records.[49]

- The T-ACE demonstrates acceptability and accuracy in identifying a range of alcohol-use levels in diverse obstetric populations.

- The "hold" version of the tolerance question was examined by Russell et al who gave it a positive scoring when women reported being able to consume more than 5 drinks without passing out. The T-ACE performed even better with increased sensitivity (91%) and specificity (81%). More recent studies using a cut-off point of ≥2 for T-ACE very clearly distinguished the women at risk of pre-natal alcohol use from those who are not (88% sensitivity and 79% specificity).[50]

5.2.6 The TWEAK Tool (Tolerance, Worry, Eye-opener, Amnesia, Cut down)

TWEAK (Tolerance, Worry, Eye-opener, Amnesia, Cut down) is a 5-item screening tool that combines questions from other tests including MAST, CAGE, and T-ACE, which were found to be effective in identifying at-risk drinkers.[51] These questions address tolerance, feeling the need to cut down on drinking, and having close friends or relatives worry or complain about the drinking.[52]

On the tolerance question, 2 points are given if a woman reports that she can consume more than 5 drinks without falling asleep or passing out ("hold version") or reports that she needs 3 or more drinks to feel the effect of alcohol ("high version"). A positive response to the worry question yields 2 points and positive responses to the last 3 questions yield 1 point each. Scored on a 7-point scale, a woman who has a total score of 2 or more points is likely to be an at-risk drinker.

Relevant Research

- The TWEAK was first tested in three male and female samples randomly selected from three groups: 1) alcoholics in treatment at a county medical center; 2) patients at two primary health care centers; and 3) the general population of the Buffalo, New York, metropolitan area.[53] Subsequent evaluation of the TWEAK has revealed its promise as a screening tool for identifying pregnant women who are at-risk drinkers, defined as those consuming 1 ounce of alcohol or more daily.[50,31,29]

- In a study of 4,743 African-American women of low socioeconomic status who were also given the MAST, the CAGE, and the T-ACE tolerance question, the calculated sensitivity and specificity of the TWEAK were 79% and 83%, respectively, in contrast to the calculated 70% sensitivity and 85% specificity of the T-ACE.[50]

- The utility of items included in the TWEAK was demonstrated in studies of obstetric and gynecologic outpatients, the general household population, hospital in-patients and in emergency room settings. Chang et al assessed the efficacy of TWEAK to identify alcohol use in pregnant patients.[30] They found that TWEAK performed similar to T-ACE in detecting a range of drinking patterns from moderate to high-risk drinking, but performed better than T-ACE in predicting lifetime ethanol diagnosis and risk drinking. It is well-documented that the TWEAK questionnaire has an approximately 90% sensitivity and

78% specificity to detect women who are problem drinkers and is therefore considered to be more appropriate for use during pregnancy.

- Subsequent research suggests that TWEAK is well-established as a sensitive instrument for detecting alcohol problems not only among pregnant women, but in the general population as well using different cut-off points.[33]

It is important to note that many of the studies investigating the TWEAK's performance have relied on the older definition of risk drinking (≥1 ounce alcohol daily) rather than the current definition (≥0.5 ounce alcohol daily). Nonetheless, it offers another option for clinicians.

The TWEAK screening tool is recommended for use with pregnant women by:

- Institut national de santé publique du Québec (April & Bourret, 2004).
- Alberta Alcohol and Drug Abuse Commission (AADAC) (Watkins, 2004).
- United States National Institute on Alcohol Abuse and Alcoholism (Allen, 2003).

TABLE 1 Structured Questionnaires (Indirect / Masked Screening)

Tool	Advantages	Limitations	Validation
AUDIT	• 10 item questions (2 minutes) • Easy to administer • Detects problem drinking; dependence / abuse • Validated for cross-cultural applicability and ability to identify people who have problems with alcohol but who may not be dependent • Shown to be especially useful when screening women, minorities and adolescents.[54,55]	• Not well examined in prenatal settings • Less sensitive to female alcohol abuse and dependence than the TWEAK.[29] • Definition of a positive score on the AUDIT for drinking pregnant women remains to be established • Developed for use in men and therefore less effective in identifying drinking problems among women • Fails to distinguish between problem drinking and dependence	Validated for use in women
BMAST	• 10 item questions (2 minutes) • Detects harmful use of alcohol	• Focuses on lifetime rather than current drinking[47]	Validated for use in women

Tool	Advantages	Limitations	Validation
CAGE	• Routinely incorporated into clinical assessments as it is short and very easily administered (takes ≤1 min) • Validated for use in general population (primary setting), minority ethnic groups, and adolescents • Detects alcohol dependence / abuse • Has been proven effective for detecting a range of alcohol problems	• No cut-off point to differentiate dependence and abuse • Focuses on lifetime rather than current drinking [47] • Developed for use in men and therefore less effective in identifying drinking problems among women	Validated in women of childbearing age, including pregnant women
CRAFFT	• Validated as the most sensitive tool for detecting a range of alcohol problems among adolescents	• Limited research conducted specifically in pregnancy	Validated for use in adolescents
T-ACE	• Instrument developed specifically for use with pregnant women • Questions are easy to remember and score and can be asked by an obstetrician or a nurse (1 min)	• Emerging research suggests TWEAK outperforms the T-ACE • Validity of the tool varies across different ethnic populations	Validated for use in pregnant women
TWEAK	• Instrument developed specifically for use with pregnant women • Short and very easily administered (takes ≤1 min) • Optimal tool for racially diverse groups, superior in sensitivity compared to other tools as it has been extensively validated in different obstetric populations.[29] • Emerging research suggests TWEAK outperforms the T-ACE	• Validity of the tool varies across different ethnic populations	Validated for use in pregnant women

TABLE 2 Summary of Provincial Prenatal Records in Canada

Maternal Alcohol Use Screening Questions

Summary of Drinking Patterns											
	NWT	**BC**	**AB**	**SK**	**MN**	**ON**	**QC**	**NB**	**NS**	**PEI**	**NFLD**
Drinking Patterns											
"Amount"				X	X	X	X	X			
"Frequency"					X						
# drinks/day				X	X	X	X	X	X	X	
# drinks/wk			X								
#drinking days/wk					X	X		X		X	
Max # per occasion		X	X								
Quit Date			X		X	X		X			
T-ACE Score	X		X		X					X	X
TWEAK Score		X									

TABLE 3 Use of Tools in the International Environment

Countries	General Population Screening	Special Population Screening (Pregnancy)
United Kingdom	CAGE	
Scotland	AUDIT	TWEAK
Australia	CAGE followed by TLFB or QF; AUDIT; TWEAK	TWEAK followed by AUDIT
Indigenous Australians	AUDIT CAGE	AUDIT CAGE
United States	CAGE AUDIT BMAST	T-ACE, TWEAK, CAGE in combination with TLFB and QF

5.3 Summary: An Overview of Findings

- The T-ACE and TWEAK tools were developed specifically to identify at-risk drinking in pregnant women. Common to both, the tolerance question appears to be most sensitive for indicating problem drinking in women as it places less emphasis on issues of guilt related to drinking. There are two different versions of the tolerance question, with one focusing on the number of drinks to feel "high": "How many drinks does it take to make you feel the first effect of alcohol?" while the second focuses on the number of drinks one can "hold":

  > The **high** question works well for women who often have 3 or 4 drinks at most but never to the point of passing out. On the other hand, the **hold** question detects binge drinking patterns where large amounts of alcohol are consumed.

- Overall, the TWEAK questionnaire appears to be superior for identifying heavy drinking patterns, alcohol dependence or abuse across a range of socio-economically and ethnically diverse populations**.** A cut-off point of 2 or more was found to have optimal sensitivity and specificity for detecting alcohol problems in women with sensitivities ranging from 89%-91% and specificity ranging from 77%-87%.[29]

- However, since both of these tools fail to provide a picture of the woman's pattern of consumption, a positive screen may be supplemented by the TLFB tool which includes quantity-frequency questions.

5.4 Knowledge Gaps and Challenges of Structured Questionnaires

- There is no consensus on the appropriate questionnaire to use across Canada as each provincial / territorial jurisdiction, health care organization and health care provider uses a variety of formal and informal screening questionnaires. It is interesting to note that only 6 of the 11 provinces have a screening tool; however, some provinces use tools that do not ask specific questions in the screening process.

- There are inconsistent recording processes across Canada. The information collected in the clinical setting by the health care professional is not consistently noted in all records of the women and not necessarily connected to the records of the child.

- Health care professionals are not trained in motivational interviewing techniques. Motivational interviewing is a scientifically tested method of counselling people in the treatment of lifestyle problems and motivates them to change their behaviour without evoking resistance.

- Health care professionals may not be motivated to screen for alcohol use if there are no facilities or programs available to refer the woman for intervention and / or counselling on alcohol use.

6. Level III Screening - Laboratory-based Screening Tools

6.1 Biological Markers

Unlike brief questionnaires, biochemical markers address concerns of many researchers who feel that self-reporting underestimates alcohol consumption. In the pregnant patient, current alcohol use can be detected by urine toxicology, blood, saliva or breath, to follow-up a positive interview screen. Gamma-glutamyl transferase (GGT) and carbohydrate-deficient trans-ferin (CDT) have been used as biochemical measures of detecting long-term heavy drinking.[56,57,58] they are not specific. Among the benefits of toxicology tests is that they confirm the presence of a drug and determine the use of multiple drugs. The disadvantages include the high costs associated with lab analysis.

There are limitations to lab testing - alcohol, which is the most widely used substance and has the greatest impact on the fetus, is hard to detect due to its short time in the blood streams so negative results do not rule out alcohol / substance use; a positive test fails to reveal information regarding pattern of drug use; urine toxicology is

also limited by the short window of appearance. Fatty acid ethyl esters (FAEEs) are metabolic products that result from the interaction between alcohol and fatty acids. FAEEs can be detected in blood, hair, placenta, cord blood, and meconium (i.e. first stool of newborns).

Over the last few years, a revolutionary test using adult hair has been developed and validated to measure FAEEs. The test can accurately separate chronic alcohol abuse from moderate and non-drinking status. Six centimetres of hair are needed, representing 6 months of growth of hair (hence, the recent 6 months in the life of the individual).[57,58]

The following are the cut-offs for the test:

- FAEE levels above 1 ng/mg are 100% specific for regular, excessive alcohol consumption. At this level 25% of chronic alcohol abusers will test below (i.e. 75% sensitivity).

- FAEE levels between 0.5-0,99 ng/ml are 90% specific for regular, excessive alcohol consumption. At this level 10% of chronic alcohol abusers will be missed, and 10% of moderate drinkers will show results in this range.

- FAEE levels below 0.49ng/mg indicate no evidence of excessive alcohol consumption (up to 2 drinks per day).

- FAEE levels between 0.2-0.4ng/mg mean no evidence of alcohol consumption.[59]

6.2 Knowledge Gaps and Challenges of Laboratory-based Screening Tools

- Traditional methods of measuring alcohol in blood or through breath test reflect only drinking in the last few hours, and hence do not assist in defining problem drinking.

- There are limitations of laboratory testing as negative results do not rule out alcohol use. The hair test overcomes this shortcoming, as a level above 0.5 ng/mg would not miss excessive drinkers, and levels below 0.49 ng/mg indicate no evidence of excessive alcohol drinking. These characteristics make the test very relevant in the context of drinking patterns associated with FASD.

- While positive test results provide separation between excessive alcohol consumption and milder intake, information regarding pattern of alcohol use (e.g. binge vs. chronic continuous use) is not revealed.

- Laboratory tests of liver function usually only identify those patients with long-term use in whom secondary symptoms have occurred, e.g. liver function tests.

- Urine toxicology has no value in identifying teratogenic effects that occur early in pregnancy.

- The hair test has been found to accurately separate chronic alcohol abuse from moderate-non drinkers and is likely to become gold standard of corroborating alcohol use.

- Ethical considerations: as with any other test, respect to the autonomy of the woman, to her rights for confidentiality and for refusal, must be strictly adhered to.

7. Challenges of Implementation of Screening and Assessment Tools

The task of identifying and managing health issues in a pregnant woman who uses alcohol during pregnancy can be difficult. Universal ***screening*** would mean that all child-bearing women will be asked about the amount of alcohol they consume. A positive response to the screening question(s) should be followed by further in-depth ***assessment***.

7.1 Level 1: Screening with Interviewing Techniques

Asking a woman a single question about alcohol use is the first step in the screening process. A woman may admit to drinking on occasion or deny any use of alcohol. Any denial of use should be sieved through the provider's impressions of the woman, ascertained by a non-judgmental observation of her body language, general

deportment, and eye contact, as well as through past interactions with her. Asking about alcohol use at other times during the pregnancy would be prudent.

7.2 Level II: Screening/Assessment with Standardized Questionnaires

The least challenging (Level II) screening strategy would be the use of open-ended interviewing techniques (the Timeline Follow Back Method and Quantity-Frequency Tool), wherein the provider asks the woman to provide details about her recent consumption of alcohol. If the provider is respectful and non-judgemental, a woman will often respond positively. However, women may not accurately recall the amount or frequency of their alcohol consumption. Women may also underestimate, minimize or deny their alcohol intake. The provider must also clarify the amount of alcohol in a standard drink and ask for details on amounts consumed (e.g., a bottle of wine can vary in size). Consequently, a screening interview may not elicit an accurate record of alcohol consumption and medical records may not be accurate.

Standardized questionnaires (AUDIT, BMAST, CAGE, TWEAK, T-ACE, CRAFFT) are sometimes used as screening tools and can also be used for further in-depth assessment of alcohol consumption. However, the questionnaires have limitations because they do not perform equally well in heterogeneous populations. They do provide a structured way to elicit alcohol consumption, yet require that providers know their individual components and also know the scoring system.

Some providers include a questionnaire for completion by the woman in the waiting room. There are difficulties with this approach; for example, if the woman is not literate, speaks English as a second language, is accompanied by her spouse, or is lacking privacy. The responses on these "pen and paper" versions need to be reviewed carefully with the woman during a pre-natal visit, wherein the provider can observe the woman's responses. The questionnaires also need to be used in a respectful and non-judgemental manner in order to engage the pregnant woman. Some questionnaires, e.g. the T-ACE, have been validated in pregnant populations but the overlay of cultural, ethnic and socio-economic factors may interfere with their accuracy. The ideal screening test should be both highly sensitive and highly specific. However, there is often a trade-off between sensitivity and specificity for any given test. A tool with high **sensitivity** will identify all pregnant women with problematic alcohol consumption (a positive result) while a tool with high **specificity** will exclude all women who are not consuming risky levels of alcohol, (a negative test result).[60] Typically, given the importance of identifying problematic alcohol use, priority is placed on high sensitivity. In communities with a paucity of resources for follow-up, a tool with high specificity may prove more cost-effective, as false positive scores are reduced.

In the absence of a "gold standard", clinicians are limited by the characteristics of a particular tool. The challenge for providers is the variability in screening instruments to detect women at-risk and to eliminate false positives, especially in different subpopulations of women, e.g., immigrant or refugee women.[61] Additionally, providers need to ask the questions with cultural competency and sensitivity to each woman's circumstance.

7.3 Level III: Assessment for Biological Markers

In-depth biomedical assessment with a laboratory-based test, such as maternal hair testing for FAEE (fatty acid ethyl esters), provides quantifiable results that can inform the clinician about the woman's alcohol consumption. However this test can be invasive for women. Full and informed consent must be obtained before this test is conducted. Although hair-testing offers a more accurate understanding of the woman's alcohol use, it is not available in all centres and its clinical use is not yet wide-spread. Currently hair testing is usually ordered for legal reasons. Additionally, some providers may be disinclined to use such tests because of a woman-centered philosophy towards caring for pregnant women, which advocates belief in a woman and acceptance of her reports of alcohol use as the truth.

7.4 Summary

The task of identifying and managing a pregnant woman who uses alcohol during pregnancy can be difficult. Each level of screening or assessment presents some challenges and limitations. A

negative response to screening questions does not warrant further investigation, although it is prudent to ask about alcohol use during each trimester. A positive response to screening for alcohol consumption should be followed by further assessment and recording as well as providing assistance and resources as required.

As recommended by the Public Health Agency of Canada, and as reflected in the goal of this project, there is a need for the development and validation of screening tools that are specific and sensitive to pre-natal alcohol exposure. These tools should be adaptable for use in various contexts, they should be culturally appropriate and they should lead to further assessment. Additionally, providers must be trained to accurately record the alcohol history of the mother, which can facilitate diagnostic referral of the infant if necessary.

8. Recording Alcohol Use

Specific recommendations for documentation of alcohol and other substance use during pregnancy on the maternal, newborn and child health records are crucial.

Primary health care providers (family doctors, nurse practitioners, midwives, family practice nurses, public health nurses, physician assistants etc.) are encouraged to include questions about alcohol and other substance use a routine part of well-woman visits (Pap smears, birth control renewals, annual checkups etc.). Ideally this information is gathered in contexts before, during and after pregnancy.

The answers to screening questions regarding alcohol use should always be documented in the chart for future reference. Recording alcohol use in pregnancy is important for the woman, her developing fetus, the newborn infant and the child who may have fetal alcohol spectrum disorder. It is useful to ask these questions at multiple visits so that they become part of the standard of care. In this way, pregnant women will not feel stigmatized by questions that are only linked to their pregnancy. Documentation should be on the *Standardized Antenatal Record* so that obstetrical providers and hospital labour and delivery staff are able to access the information. Tables 2 and 3 summarize the current Canadian and international practices in recording alcohol use. Equally important is the recording of important risk factors present during the pregnancy on the chart of the newborn infant. Contents of the newborn's hospital or midwifery care chart should be easily and routinely available to the family physician or paediatrician caring for the infant. Subsequently, the relevant information about maternal alcohol and substance use is available to be transferred to the child's health record.

It is important to note that there is some sensitivity surrounding a woman's consent to the recording of this information in her and her child's health records, as a woman is aware of the potential discriminatory actions of hospital staff and others in response to her use of alcohol use during pregnancy.

The diagnosis of FASD is challenging and not always possible in the immediate newborn period. Many children do not have the typical facial features of FASD. Some children will present with developmental delays in the toddler period, behavioral issues in the preschool period or learning difficulties in the childhood years. Health care practitioners providing care for children and adolescents must consider FASD in the differential diagnosis of any cognitive or emotional problem.

8.1 Benefits of Recording Maternal Alcohol History on Infant Birth Records

- Identification of infants who might be at-risk for FASD through the recording of specific information regarding maternal drinking.
- Earlier and more accurate FASD diagnosis in terms of ARND and PFAS.
- Earlier implementation of appropriate interventions.
- Decreased levels of secondary disabilities related to in-utero exposure to alcohol.

9. Recommendations

The implementation of a consistent and effective screening process for the assessment of pre-natal alcohol exposure is an important measure and allows the establishment of a blueprint for early intervention. The following recommendations are intended to improve the screening process and recording process for alcohol use in women of

child-bearing age and pregnant women, thereby improving diagnosis and intervention for all women and their families.

9.1 General Recommendations

1. Recognizing the importance of the health care provider as an effective resource for harm reduction, it is essential that adequate community resources be made available for women who require interventions beyond a primary interaction.

2. That research on the effects of alcohol use be expanded to ensure there is sufficient comparative evidence showing the effectiveness of screening tools with particular cultural groups.

3. That a public education / awareness program be initiated to inform women they should expect to be asked about the frequency and amount of alcohol use and ensure this information is transmitted to all health care providers involved in their care.

9.2 Recommendations Relative to Screening for Alcohol Use:

4. That health care providers use a standardized, universal set of questions routinely during regular health exams that will include at least Level I screening.

5. That Level II be adopted as the standard screening process to identify alcohol use in all women of child-bearing age and pregnant women.

6. That health care providers be aware of the risk factors that may inform their clinical impression in combination with other psychosocial assessment.

7. That health care providers access on-line training tools for screening of FASD offered by Best Start, Ontario's maternal, newborn and early child development resource centre (www.beststart.org), and other resources offered by programs such as PRIMA (www.addictionpregnancy.ca) and Motherisk (www.motherisk.org). Resources are also available from Healthy Choices in Pregnancy program in British Columbia (www.hcip-bc.org/resources_for_practice/default.htm) and from the Canadian Centre for Substance Abuse (www.ccsa.ca/toolkit/introduction.htm).

8. That health care providers use Level III screening methods when there is discordance between Level I and Level II screening results (e.g. frequency, perception of risk), or when there are doubts unresolved by Levels I and II.

9.3 Recommendations Relative to Recording Alcohol Use:

9. That the frequency and amount of alcohol use be recorded in a woman's chart on a routine basis and not only in relation to pregnancy.

10. That the information relative to frequency and amount of alcohol use be recorded in the woman's chart and that this information be transferred to appropriate health care providers and health records to ensure a continuum of care.

11. That information relative to frequency and amount of a woman's alcohol use be routinely recorded in her newborn's chart and in her child's health records.

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