
# MIDWIVES AND WOMEN AUDIT-C INTERVENTION PROJECT REPORT

## CRITICAL LITERATURE REVIEW, QUALITATIVE DATA, PRE & POST-INTERVENTION RESULTS

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# Contents

# EXECUTIVE SUMMARY

The Midwives and Women AUDIT-C Intervention project set out to review the evidence related to alcohol risk screening tools in pregnancy and brief interventions; collect qualitative data from women and midwives regarding knowledge and attitudes about discussing alcohol use in pregnancy; and to develop an intervention to trial in a setting where pregnant women regularly come into contact with midwives, and then evaluate the intervention using three impact measures.

### *Outcome of the Critical Literature Review*

The critical review established that the AUDIT-C alcohol risk screening tool is highly suitable for assessing alcohol risk in the prenatal setting. Further, that following alcohol use risk assessment, although individual women's knowledge of alcohol-related harm is a mediator of the duration or scope of a brief intervention, this is still warranted even for a zero score assessment outcome. Overall, brief intervention is noted as an appropriate and effective means of providing timely and relevant educative messages to women in the prenatal setting, is acceptable to women and is highly suited to midwifery led encounters with women.

This evidence provides a supportive mechanism to promote the NHMRC guideline that 'no alcohol in pregnancy is the safest option'. As part of a comprehensive public health strategy, this Guideline should be consistently reinforced by all health care professionals who come into contact with pregnant women.

### *Qualitative Results – Women*

The results of qualitative data collection with women and midwives was consistent with other evidence regarding the benefit of routine screening for alcohol use in pregnancy and the provision of brief intervention to all women, regardless of perceived levels of risk, education or age.

Importantly, women involved in the qualitative study confirmed the acceptability of the AUDIT-C screening process, and the screening questions as fair and reasonable. The results contribute further evidence to dispel concerns midwives or other health professionals may have about using the AUDIT-C risk screening tool or discussing alcohol use with women.

Women also consistently reported wanting to know more details about the impact of alcohol in pregnancy on their baby's development. AUDIT-C screening is not only an opportunity to educate women, but to empower them in their decision making about alcohol consumption through the provision of clear and consistent information they can share with their partners, families and friends.

### *Qualitative Results - Midwives*

Also consistent with previous evidence, was midwives identification in this study of a need for upskilling in the use of AUDIT-C and brief intervention to ensure their competency and confidence in both. As such, the development of a Learning Guide to promote use of AUDIT-C alcohol risk screening tool and brief intervention was confirmed and this work was undertaken.

### *Medical Record Review – Pre-intervention*

Pre-intervention medical record review results clearly demonstrated that while at least half of women were being asked a general question about alcohol use in pregnancy during a booking in or first antenatal visit with a midwife at the trial site, despite the availability of the AUDIT-C screening tool in the standard WA Health Women Held Pregnancy Record (WHPR) from late 2014, the screening tool was not being widely or consistently used by midwives or other health professionals during women's pregnancy care. The pre-intervention results supported the need for a targeted intervention aimed at midwives and other health professionals to highlight use of the AUDIT-C screening tool and brief interventions as an integral component of the WHPR.

### *Medical Record Review – Post-intervention*

Once the AUDIT-C Learning Guide was developed, it was implemented at the trial site in late 2016 and three evaluation measures were used to collect impact data. From the post intervention results, it was reasonable to conclude that the AUDIT-C intervention had a positive and meaningful impact on the use of the AUDIT-C screening tool by midwives at the trial site.

Further, post-intervention women's survey data confirmed pre-intervention qualitative data that women find questions about alcohol use in pregnancy acceptable. Even so, the survey results demonstrated that women are not consistently being asked all three AUDIT-C questions, and this was confirmed by the post-intervention medical record review results. Finally, while a midwives post intervention evaluation survey was distributed at the trial site, data analysis from the returned surveys was limited by a small sample (n=14) of a about 80 FTE midwives employed. From this sample, there was consistently strong/very strong agreement regarding the acceptability and usefulness of the AUDIT-C Learning Guide in improving midwives understanding and use of the AUDIT-C screening tool.

The post-intervention random medical record review to identify AUDIT-C scores showed a significant increase in occasions of an AUDIT-C score recorded in medical records following the intervention at the trial site, to 48 per cent of the records randomly review. This was a 32 per cent increase from the final pre-intervention review of medical records conducted in 2016, when only 21/131, or 16 per cent of randomly selected records had an AUDIT-C score recorded. As such a 3 fold increase in the percent of records recording AUDIT-T or a 200% difference in records recording AUDIT-C in the post compared with the pre intervention period was achieved with a simple education tool.

While the midwives evaluation returns were low, questions were included which related to the key issues identified in a 2014 study which investigated midwives knowledge and attitudes. As such, the limited midwives survey data in this study confirmed the relevance of Payne and colleagues (2005) recommendation of a need for professional development in this topic. Available results from the current study indicated midwives had improved confidence in discussing alcohol use with women and providing brief interventions after using the AUDIT-C Learning Guide.

Finally, although the medical record review did not provide clear or consistent evidence of alcohol related brief interventions being provided following AUDIT-C screening, the women's survey results showed that around half of participants recalled being given verbal advice and/or written information

about alcohol use by a midwife during an antenatal visit. This outcome was consistent with the post-intervention record review data which showed at least one pregnancy related AUDIT-C score recorded in almost half of the medical records reviewed. From this, it can be inferred that when AUDIT-C alcohol risk screening takes place, that women are likely to be provided with a brief intervention, which contributes to reinforcing the 'no alcohol in pregnancy is the safest option' guideline.

However, as the goal is to achieve routine alcohol risk screening of all pregnant women, with a minimum of one pregnancy AUDIT-C score recorded in a pregnancy record, there remains substantial room for improvement in this aspect of clinical practice.

## Recommendations to Nursing and Midwifery Office and SOSU

The following recommendations are proposed as required to progress the uptake of routine alcohol risk screening as standard practice in all WA Health maternity services, or provided on behalf of WA Health (such as non-government and community controlled health services). These are:

- A Standard of Care/policy is implemented in all WA Health maternity services to promote AUDIT-C scores being administered and recorded in the Women Held Pregnancy Record (WHPR), or other record of pregnancy care, at two visits during pregnancy (for example, first and last visit) as a consistent means of collecting reliable mandatory alcohol data items.
- The WHPR personal/patient history item wording on page 5 which currently refers to '*alcohol, other drug use [refer to screening tool]*' be altered to state '*completion of AUDIT-C alcohol risk screening required (pages 19-20)*'. Additionally, consideration is given to separating the questions related to alcohol and other drugs. The combination of these two issues when there is currently no screening tool available to screen for 'other drug use' may be confounding efforts to promote routine alcohol risk screening.
- The AUDIT-C Learning Guide is a required component of hospital and other health services induction processes, for all health professional staff likely to provide care to pregnant women. The guide is relevant to: midwives, nurses, general practitioner/specialist obstetricians, and Aboriginal Health Workers.
- Consideration is given in the Standard of Care/policy to directing maternity services to facilitate women's self-completion of an AUDIT-C alcohol risk assessment for one of the three occasions indicated in the standard AUDIT-C risk assessment tool record in the WHPR. This might occur, for example, ~32-34 weeks of pregnancy. Self-completion might occur using a paper copy which women would complete while waiting for their appointment, handing the completed assessment to the midwife (or other health professional) for attachment to the paper copy to the WHPR. Self-completion may promote women's knowledge and understanding of remaining alert to alcohol use, and would reduce the burden to undertake the recommended three AUDIT-C alcohol risk screenings during antenatal clinic visits. This approach might also be less confronting for women while still providing an opening for discussing alcohol use at an antenatal appointment.
- AUDIT-C Learning Guide Midwives Evaluation is implemented at all maternity services to measure the utility and acceptability of the Guide. Additionally, consideration is given to undertaking further medical record reviews at the trial site to establish if the trend towards an increase in prevalence of AUDIT-C scores described in the Intervention Results, remains on track.

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# MIDWIVES AND WOMEN AUDIT-C INTERVENTION PROJECT

Midwives are expected to routinely use screening tools to establish the presence of known pregnancy risk factors (alcohol, smoking, domestic violence, mental health). Previous research conducted with midwives in Western Australia indicated that while their knowledge of alcohol use in pregnancy and Fetal Alcohol Spectrum Disorder (FASD) was good, a lack of confidence with using alcohol-related risk assessment tools and providing responsive advice as a brief intervention was reported.

The Midwives and Women AUDIT-C Intervention project was funded by the WA Department of Health. The primary aim was to translate existing evidence into a learning format which midwives (and other health professionals) could draw on to guide them in conducting alcohol risk screening and brief educational interventions as an integral aspect of pregnancy care. Routine adoption of alcohol risk screening during pregnancy may contribute to reducing the incidence of FASD.

The AUDIT-C alcohol risk screening tool is one of a range of validated risk screening templates included in the WA Health Women Held Pregnancy Record (WHPR). The WHPR provides women with a detailed record of their pregnancy care, and is retained by each woman up to the time of childbirth. Following childbirth, the WHPR is stored as the woman's comprehensive medical record of her pregnancy and birth care. Medical records are an important source of information in any future diagnostic or clinical assessment processes where diagnosis requires confirmation of pregnancy related exposures or interventions.

Post pregnancy maternal recall of prenatal alcohol use is not always available. Routine use of a validated risk assessment screening tool, with screening results clearly noted in women's pregnancy medical records is an important contribution to enabling future FASD diagnosis.

The rationale for recording multiple AUDIT-C alcohol risk assessment scores in each woman's WHPR is to track any changes in alcohol use *over the whole course of pregnancy*. The FASD Diagnostic Tool (2016) specifically refers to an AUDIT-C score as a valid indicator of confirmed prenatal alcohol exposure, an important indicator in the FASD diagnostic process.

The evidence base for clinically relevant mechanisms to enable screening for alcohol use in pregnancy was set out in a critical review of the literature (Section One). The review synthesised the evidence demonstrating the effectiveness of screening tools for assessing alcohol use combined with responsive brief interventions during the prenatal care of women, noting that screening and brief intervention is cost- and clinically effective in primary care settings, including maternity services.

Midwives currently providing pregnancy care and women with recent experience of prenatal care were also interviewed to collect their views and ideas on the acceptability of the AUDIT-C screening tool, and, education/information related to alcohol use in pregnancy. Results from qualitative data collection are reported in Section Two.

The review evidence together with the outcomes of the qualitative data were applied to the development of an AUDIT-C Learning Guide. The AUDIT-C Learning Guide content was reviewed by an Expert Group comprising: midwifery educators and clinicians, senior midwifery managers, and, a consumer representative. The AUDIT-C Learning Guide was then trialled and evaluated as a prenatal intervention at a maternity hospital (the trial site) located in the metropolitan area of Western Australia.

Pre- and post-intervention data collected from randomly selected medical records ascertained patterns of AUDIT-C alcohol risk screening outcomes over a three year period. The data provided a baseline of frequency of screening for alcohol use prior to introduction of the WHPR and any frequency changes evident prior to the Midwives and AUDIT-C intervention. Pre intervention data is reported in Section Three. Post-intervention data is reported in Section Four, and demonstrates a positive change in frequency of recording AUDIT-C scores at the trial site following the introduction of the AUDIT-C Learning Guide. What is less clear is whether the change was a direct result of the Learning Guide itself, or, if this was associated with the face-to-face presentations promoting availability of the Learning Guide at the trial site.

The AUDIT-C Learning Guide provides midwives and other health professionals who have contact with pregnant women with clear guidance about routine screening for alcohol use in pregnancy and associated education for women to alert them to the harmful effects of alcohol use.

The AUDIT-C Learning Guide is available from WA Health as a professional development resource for all health professionals who come into contact with pregnant women, including: general practitioners, obstetricians, nurses, and Aboriginal Health Workers, all of who can access the Learning Guide without being employed by WA Health.

The evidence review and qualitative data together with input from an Expert Group informed development of a self-directed learning guide for midwives to support their professional development in understanding and applying knowledge related to screening for alcohol use in pregnancy.

Finally, the Midwives AUDIT-C Learning Guide was implemented at the trial site (Armadale Health Service). Pre and post intervention medical record reviews were conducted to determine the impact of the AUDIT-C Learning Guide in promoting routine use of the AUDIT-C risk screening process by midwives, and the results are reported in Sections Three and Four. This impact measure was supported by collection of brief surveys completed by women attending the antenatal clinic during the intervention trial, and midwives evaluation responses, with these results reported in Section Four.

All aspects of the Midwives and Women AUDIT-C Intervention project conducted 2014-2017 are reported in this combined report, together with recommendations set out in the Executive Summary to guide further development of capacity in the public health system to effectively risk screen for alcohol use in pregnancy.

# SECTION ONE

## Critical Review of the Literature: Alcohol Screening and Brief Intervention for Pregnant Women

### 1. Screening tools, brief intervention and motivational interviewing

#### *1.1 Background*

For pregnant women, there is a clear benefit in changing behaviour related to alcohol use. Alcohol is well documented as a tetrogenic substance capable of causing permanent and irreversible harms in the developing fetus. These harms are referred to as Fetal Alcohol Spectrum Disorder (FASD). There is no known safe level of alcohol consumption in pregnancy, hence the Australian National Health and Medical Research Council's (NHMRC) Guideline 4, 'that no alcohol in pregnancy is the safest option'[1]. The prevalence of FASD has not been fully determined in the Australian population. Equivocal prevalence has been due to a lack of routine screening for alcohol use in prenatal care and a lack of diagnostic capability in all jurisdictions. Both of these circumstances have only recently been rectified to some extent in the Australian context.

In Western Australia (WA) with the implementation of the Women Held Pregnancy Record (WHPR) as a standard antenatal record in the public health system, combined with the release of the 2016 Australian FASD diagnostic tool[2], opportunity for more accurate determination of FASD prevalence has improved. Also in WA, the Midwives Notification Form 2 (Form MR15), used to collect detailed data on all births in WA for entry into the WA Health perinatal statistics data base, did not previously collect alcohol use in pregnancy data. This was rectified in 2017, with the inclusion of alcohol use data capture on the Midwives Notification Form. These change will enhance future capacity to undertake data linkage to establish a more accurate FASD prevalence in WA. Agreement is still being reached at a national level to determine alcohol use data capture in the National Perinatal Minimum Data Set.

Internationally, Fetal Alcohol Syndrome is considered the severest form of FASD. While this term is no longer used in Australia, FAS has been identified to be clearly understood as a diagnosis among health professionals broadly, including those involved in the care of pregnant women. However, the spectrum of disorders (collectively referred to as FASD) caused by exposure to alcohol in utero are less well understood across all health professional groups[3 4].

The AUDIT-C alcohol risk screening tool has been incorporated into the WHPR as the principle alcohol screening tool for use in prenatal services and includes brief intervention (BI) prompts to alert health professionals to discuss with women and low to moderate risk alcohol use identified within the usual course of prenatal care. As pregnant women identified at higher risk of alcohol related harm or dependency require more intensive support and referral to specialist services for diagnostic assessment[5] the AUDIT-C indicates the appropriate clinical pathway if routine alcohol risk screen identifies high risk alcohol use.

Overall, alcohol risk screening and BI for alcohol related risk has been identified as a cost-effective and workable preventive approach in primary care settings, including prenatal services[6]. The features which support screening and brief intervention in primary care settings are also applicable to prenatal midwifery-led care; less acuity, regular follow-up appointments, and (potentially) longer term relationships. However, similar barriers to other health care providers' routine use of screening tools

are relevant; lack of time, training and resources, and concerns regarding patient reactions. The key findings of O'Donnell and colleagues systematic review of reviews considered the impact of brief interventions in primary health care and reported that:

i. Brief alcohol interventions are effective at reducing hazardous and harmful drinking in primary care;
ii. overall evidence implies that brief alcohol intervention is equally effective in men and women, however, while pregnancy itself may provide a powerful incentive to reduce alcohol drinking, there is insufficient evidence to determine the effectiveness of brief intervention during the prenatal period; and,
iii. effect sizes research shows these are largest at the earliest follow-up points, with decay in intervention effects over time.

What follows is an overview of the evidence related to screening tools, brief interventions, motivational interviewing, followed by a review of studies which have considered midwives knowledge and practice associated with using screening tools and brief interventions.

### *1.2 Screening tools*

It has been noted that health care providers play a critical role in identifying alcohol risk behaviour in childbearing aged and pregnant women, and best practices for risk assessment are well documented[7]. There are a number of standardized screening tools (T-ACE, TWEAK, CAGE, AUDIT) all of which have been tested under a variety of conditions, with T-ACE and TWEAK specifically developed for use in prenatal care[8]. However, a review of current evidence for brief alcohol intervention in pregnancy[9] found the use of the 10-item AUDIT and the three-item AUDIT-C (a derivative of AUDIT) as most prevalent, while a 2007 study reported the AUDIT-C performed as well as the full AUDIT and significantly better than self-reported risky drinking, including screening thresholds that simultaneously maximized sensitivity and specificity being > or =3 for women (sensitivity 0.73, specificity 0.91)[10]. A later study confirmed AUDIT-C specifically in relation to risk drinking in pregnant women as demonstrating sensitivity (95%) with high specificity (85%)[11]. Other studies[12] [13] noted screening itself constitutes an intervention and potentially explains why control group participants also reduce their alcohol consumption when they are not also exposed to a brief intervention in combination with risk screening. The latter study notes that awareness that one's drinking is being monitored may induce motivational effects and actual behaviour change regardless of whether one receives an intervention or not.

### *1.3 Brief Interventions and Motivational Interviewing*

A 2007 Cochrane Review[14] determined that brief alcohol interventions in primary care populations lowered alcohol consumption. However, while the effect was clear in men at one year of follow up, this was not evident in relation to women. This Review also found that longer counselling had little additional benefit in addressing alcohol use. It had also been noted that screening alone seemed to reduce alcohol use among pregnant women, while brief interventions, including education about alcohol effects on the developing fetus were effective among women not responding to screening alone[15], confirmed in a later systematic review[16]. It has also been found that when two groups of pregnant women received alcohol abstinence advice, one with the addition of counselling, the counselling model was not more effective in lowering the proportion of women who abstained from drinking during pregnancy[17]. However, alcohol risk assessment combined with a counselling model

was more favourably perceived than standard care by pregnant women. Combined, these studies emphasise the importance of providing education regarding the effects of alcohol use for all women. This is most efficiently and effectively done through use of consistently delivered brief interventions.

Brief intervention (BI) and motivational interviewing (MI) incorporate slightly different approaches, but are based on similar principles, and both are suited to and used in midwifery practice. BI and MI are aimed at prompting self-reflection in women client/patients with use of anticipatory guidance by midwives to assist women identify for themselves any desire or motivation to change harmful lifestyle-related behaviours such as alcohol and other recreational drug use. The main difference between BI and MI is that the latter is often, but not always, a sustained series of encounters occurring between a midwife and a woman in a continuity of care model, while BI is usually incorporated as a brief, reinforcing educational aspect of routine care. A central feature of both BI and MI is to avoid shame and judgement when approaching the subject of alcohol use in pregnancy. Rather, the objective is to assist women to identify potentially harmful behaviours and support them to make positive changes relevant to their desire to achieve the best outcome for themselves and their baby. Before describing the evidence supporting the use of BI in the prenatal setting, it is useful to consider how MI can be used to address potentially risky drinking behaviours, particularly when working in settings where alcohol use is widespread.

It is increasingly understood that addressing health behaviours during pregnancy from a health determinants perspective is more likely to engage those women at highest risk of poor perinatal outcomes. This approach highlights the complexities of women's lives and accords very well with caseload or group practice models of maternity care which support continuity of carer, and therefore midwife/woman relationships. In this respect, Poole's Four-Part Model of Prevention[18 19]incorporates the use of motivational interviewing to reduce alcohol exposed pregnancies and has proved highly successful in supporting women to change behaviours likely to have negative impacts on their own health and that of their baby.

In this context, MI is defined as "a directive, client centred counselling style for eliciting behaviour change by helping clients explore and resolve ambivalence". It is most likely to be of benefit where alcohol use is a more entrenched aspect of a person's behaviour requiring a sustained and supportive interaction with a health professional. To this end, it may be an effective approach for addressing high risk or hazardous alcohol related harm in pregnancy, and where midwives have the capacity to sustain multiple encounters with a pregnant woman over the course of pregnancy.

Typically, MI is most broadly understood as a series of discussions conducted over an extended period (for example, over several prenatal visits) involving goal setting and ongoing reviews between the pregnant woman and her midwife carer[20]. MI is mainly used in a context where a relationship is developed over time, providing the basis for promoting behaviour change through positive guidance and supportive advice. As an intervention applied in and of itself (i.e. separately from routine prenatal care) cost is a negative factor, however MI is highly suitable where continuity of carer is a feature of a women's prenatal care, for example in midwifery-led continuity of care models. An RCT to test the effectiveness of a single-session of motivational interviewing (MI) to decrease alcohol consumption, while at the same time examining the theory-based mechanisms involved in the intervention was reported in 2014[21]. The intervention was delivered separately, alongside prenatal care, although by a researcher rather than by a health care provider. In that circumstance, MI was not found to be

effective in decreasing alcohol use, although low levels of reported alcohol use by women at baseline were noted as leaving little room for improvements as a result of the intervention.

In contrast, brief intervention is most often a process which reinforces a central preventive message and[22] noted convincing evidence for the efficacy and effectiveness of BI in most settings, while Burns and colleagues noted that BI typically take 5-10 minutes, and consists of advice aimed at motivating individuals to modify their behaviour although there was a lack of clear guidance in the study about how to question women about their alcohol use. A brief intervention is a patient-centred approach that focuses on changing potentially risky behaviour. It refers to any therapeutic or preventive consultation of short duration undertaken by a health professional/care provider who is not usually a specialist in addiction treatment. BI though should not be regarded as a homogeneous or formulaic entity. Rather it is a suite of approaches varying in duration, content, and target; usually involving assessment, direct feedback, negotiating and goal setting, behavioural modifications techniques, self-help information, and follow up and reinforcement.

As such, brief intervention involves a suite of tools midwives can call on to provide relevant education and information to support a pregnant woman to change her behaviour, and which is routinely incorporated into prenatal visits. The central premise of alcohol-related BI during prenatal visits is that it is an opportunity to raise questions about the risk of alcohol use during pregnancy, whether or not a woman has disclosed alcohol use, and provide education which enables a woman to make her own decisions about her alcohol use in pregnancy based on the information provided.

A more recent systematic review described BI as "*providing risky drinkers with feedback on their use, information on the adverse consequence of alcohol; information on the benefits of reducing intake; analysis of high risk situations for drinking and techniques to help moderate their consumption. The approach includes an emphasis on the individual's responsibility for her own consumption, empathic attitude, counselling toward changing those behaviours based on the identification of strategies for interrupting or decreasing consumption and stimulus to the patient's self-efficacy perception*"[23]. Further, the review identified promising results for pregnant women, with decreased alcohol consumption evident when BI was used to motivate behaviour change in relation to alcohol use.

The most cited randomised control trial supporting the use of BI for prenatal alcohol use, showed that fewer than 20 per cent of participants were alcohol abstinent at study enrolment, averaging 1.5 drinks per episode[24]. Factors associated with higher prenatal alcohol use after randomisation included: more years of education, extent of previous alcohol consumption, and temptation to drink in social situations. Prenatal alcohol use declined in both the treatment and control groups after study enrolment. Pregnant women with the highest levels of alcohol use reduced their drinking most after a brief intervention that included their partners. Recommendations of the study included consistent screening for prenatal alcohol use followed by diagnostic assessment when this was indicated in the presence of hazardous drinking.

Taken as a whole then, the evidence related to both routine risk screening for alcohol use, followed by a brief intervention relevant to the identified risk is positively associated with reductions in prenatal alcohol use. Even though screening in and of itself appears to motivate reductions or cessation of alcohol use in pregnancy, there are clear advantages associated with providing BI as an educative and informative aspect of prenatal care, to provide women with the full picture of why it is desirable not to drink alcohol during pregnancy.

## 2. Midwives knowledge and/or practices of assessing alcohol use with pregnant women

### *2.1 Background*

Midwives are a crucial health provider in the area of raising awareness and providing preventive education and information to women regarding alcohol use in pregnancy. Midwives though have expressed concerns regarding their confidence and capacity to undertake screening for alcohol use in pregnancy and provide appropriate brief interventions, particularly where low to moderate risk is disclosed. As such, midwives have endorsed access to professional development which improves their capacity to use screening tools, provide brief interventions addressing alcohol consumption during pregnancy, and education about FASD as highly relevant[25 26].

Further, women's ambivalence in relation to alcohol use in pregnancy underpins the rationale for the inclusion of alcohol-related risk assessment and BI into routine midwifery prenatal care. As studies have established that binge prenatal alcohol exposure ($\geq$ 4/5 standard drinks on a single occasion) is related to cognitive deficits in children[27], screening for alcohol risk is not only relevant to identification of persistent high-risk or hazardous drinking, but importantly is essential for those women assessed as being of low to moderate risk from intermittent or occasional use of alcohol during pregnancy.

### *2.2 Women's attitudes to alcohol use in pregnancy*

Women's perception of drinking alcohol within the context of their lives is important background to approaching screening for alcohol use in the antenatal setting. Four recent Australian studies have considered this question. The first reported on women's deliberations regarding drinking alcohol during pregnancy, particularly their emotional dimensions and concluded that the significance of alcohol to women's identity appeared to be an important reason for continued alcohol use during pregnancy among otherwise risk averse women. Women predominantly assessed the risk of their drinking in terms of the kinds of alcohol beverages consumed rather than alcohol content. In reflecting on the advice received, women recalled their health care providers as being relaxed about the risks of alcohol consumption, with obstetricians noted as an important mediator of any anxiety about alcohol consumption. The study authors concluded that health messages that: 1] dispel the notion that wine is a 'healthy' choice of alcoholic beverage; 2] provide women with strategies to help them avoid drinking; 3] advise the broader public not to pressure women to drink if they do not want to; and, 4] educate women about the effects of ethanol on maternal and fetal bodies, are all required[28].

The second reported that women's emotional responses to being asked about their alcohol consumption in a research setting are generally favourable, but that these questions require a clear context to reduce anxiety from being asked about alcohol use. From a routine health care provider practice perspective, it is suggested this may include: 1] incorporating methods which rely on asking women to recall their drinking occasions over a shorter rather than longer term (months as opposed to open-ended time, for example, questions related to the period immediately prior to their pregnancy); 2] a drinks guide which shows participants the translation of 'standard drinks' into real life situations to avoid underestimation of alcohol intake; and, 3] a question about special occasion drinking may encourage women to disclose infrequent events when alcohol intake is higher than normal. Further, to encourage women to accurately self-report any alcohol use, it is vital to avoid complex and/or subjective language[29].

The third noted that women reported a number of problems with the information about alcohol use during pregnancy; both in regard to inconsistencies and advice and, with mixed messages and

confusion prevalent about identifying a safe level of consumption. This had implications for women's decision making about whether to drink or abstain during pregnancy. In this study, women expressed a need for a clear and consistent message from (all) health care providers[30]. The final study largely confirmed these findings, emphasising the need for clear and consistent messages from all health care providers including accurate and comprehensive information about the effects of alcohol consumption on the developing baby, particularly with regard to the lack of evidence about safe quantities of alcohol and the timing of the exposure. This study also suggested there is a lack of evidence-based, up-to-date continuing professional development education for midwives[31].

The findings of these Australian studies reflect a 2010 Swedish study which compared two alcohol counselling models for pregnant women: standard care and a comprehensive model incorporating the AUDIT-C and tailored advice (essentially as BI)[32]. There were considerable differences between the two models with regard to women's attitudes toward and perceptions of the counselling they received. Women who were counselled using the AUDIT-C questions stated they received sufficient advice to a higher degree than women receiving standard care. The women in the AUDIT-C counselling group interpreted the message 'to abstain from drinking during pregnancy' to a greater degree even though equal proportions of women in the two groups ceased drinking during pregnancy.

Taken as a whole then, these studies further support the outcomes of large studies which have considered the effectiveness of screening. When combined, the evidence supports the approach that any discussion between health professionals and women in relation to alcohol use in pregnancy is likely to prompt women to reduce or cease alcohol use. However, women want a clear context for questions about their alcohol use and consistent advice, as well as accurate and comprehensive knowledge about the impact of alcohol on their baby's in-utero development. From a midwifery perspective, questions related to both regular and special occasion drinking may be needed when discussing alcohol use with pregnant women to identify the full extent of any alcohol use. This provides the circumstances for providing the education and information women have indicated they want to assist them in their decision making in relation to alcohol use. Further, advice should include highlighting to women strategies which assist them to avoid alcohol use in social circumstances.

### *2.3 Midwives knowledge and practice*

Another[33] Australian study reported that midwives and pregnant women consistently agreed that conversations about alcohol are generally limited to brief screening questions at the first visit, but that the risks are not discussed or explained (except for high-risk women). Both groups expressed comfort with the idea of discussing alcohol consumption, but lacked knowledge of what risks are present and recommendations in reduce risks. This study was undertaken just prior to the release of 2009 NHMRC Guideline 4 which recommended 'no alcohol in pregnancy is the safest option'. Nonetheless, the study demonstrated that the opportunity to provide women with information in the prenatal setting is under-utilised.

Following a change in policy in Denmark in 2007 to alcohol abstinence during pregnancy, the results of midwives knowledge and practice at two time points in 2009 were reported[34] showing that 61 per cent of midwives (vs 28 per cent in 2000) reported they advised alcohol abstinence and their knowledge of official recommendations was good. Encouragingly, the study noted that attitudes towards, and beliefs and knowledge about, drinking in pregnancy among midwives changed along with changes in official policy and this was mostly independent of personal characteristics (age,

gender, place of work). A Swedish study noted that more continuing professional education (CPE) in handling risky drinking was associated with more common use of AUDIT-C assessment of women's alcohol intake before pregnancy, and more frequent counselling when identifying a pregnant woman whose pre-pregnancy consumption was risky[35]. It has also been reported that the amount of CPE undertaken by midwives increased significantly between 2006 and 2009[36]. The routine use of an alcohol screening questionnaire was reported by nearly all midwives in 2009. The most confident midwives in 2009 had taken part in more days of education, had more often taken part in education regarding MI/BI, and provision of advice and information on the health risks associated with alcohol and screening.

In relation to a program rolled out by all Scottish Health Boards, interviews were conducted with midwives to determine their attitudes and practices in relation to screening and BI[37]. The authors found that while midwives were positive about their involvement in screening and BI, they were not completely convinced about the purpose and value of screening in antenatal care. In the midst of competing priorities, screening and BI was seen as having a low priority in their workload. Further, midwives felt that the rapport between them and pregnant women was not sufficiently established at the first antenatal appointment to allow appropriate discussion of alcohol issues.

A later realist evaluation of the program[38] attempted to understand the underlying complexities involved in a social intervention incorporated into a clinical context. So rather than measuring the efficacy of screening and BI – which the study authors deemed well established – they instead sought to understand the factors which influence the use of screening and BI. The evaluation systematically unpacked the components which contribute to the use of screening and BI by midwives when there are concerns about the relevance in the context of prenatal care that is often initiated at the end of the first trimester, and sometimes in the second trimester.

The outcome of the evaluation process demonstrated that screening and BI improved midwives and pregnant women understanding of the risk involved with prenatal alcohol consumption, but that this was sometimes conferred low priority for women who had other challenges aside from alcohol. Overall, the authors noted that screening and BI improved midwives and pregnant women's understanding of the risk involved with prenatal alcohol exposure, and, that BI skills training was successful in equipping midwives with the necessary skills and confidence to screen and deliver BI thus raising its priority in prenatal care.

## 3. Review Discussion

This critical review has addressed the issue of alcohol risk screening and follow up brief intervention within the context of prenatal care provided by midwives and other health professionals. It has highlighted both the evidence supporting AUDIT-C as an effective and efficient tool to accurately assess alcohol risk, and brief intervention as a highly efficient and appropriate means of educating women in the presence of low-moderate alcohol risk assessment. While alcohol risk screening alone is likely to prompt a reduction in the use of alcohol in pregnancy, when combined with a brief intervention, women have a greater understanding of risks associated with using alcohol in pregnancy. The review has considered the challenges of routine adoption of this process by midwives in particular, and confirmed that continuing professional development in the use and delivery of risk screening and brief intervention is warranted.

Overall, the literature has clearly demonstrated that midwives are well-placed to deliver education and information to women for both alcohol abstinence advice and the effects of alcohol on the developing baby. Further, women have themselves clearly identified a need for clear, consistent and comprehensive advice provided during their prenatal care. However, alcohol screening and brief intervention is one of many routine assessments midwives are required to make in the prenatal setting. The model of care in which a midwife is working may moderate the priority placed on conducting alcohol screening and/or a brief intervention in a first prenatal visit. Nonetheless, midwives should be encouraged to include alcohol screening and brief intervention into their routine practice and to deliver this at the earliest opportunity in a woman's pregnancy, regardless of whether this contact occurs in the first, second or third trimester of pregnancy. While many studies found that screening without BI may prompt behaviour change in relation to alcohol use in pregnancy, screening with BI does nothing to educate women on the full effects of alcohol use on the developing fetus. The inclusion of brief intervention is an opportunity to provide succinct and relevant education about alcohol use, alerting women to the real and harmful effects prenatal alcohol use has on their baby's development. Finally, exposure to appropriate professional development appears to prompt midwives to more fully adopt screening tools into their routine prenatal practice.

## 4. Conclusion

To summarise, AUDIT-C is a three-item questionnaire highly relevant to assessing alcohol risk in the prenatal setting. Depending on the outcome of the risk assessment, the brief intervention aspect may be short (for example 5 minutes) or slightly longer (up to 15-20 minutes). An individual woman's knowledge of alcohol-related harm is a likely mediator of the length of time taken for a brief intervention. This relies on midwives acknowledging women's pre-existing knowledge, while at the same time emphasising the potential consequences of even occasional alcohol use. The primary message based on the current available evidence is 'no alcohol in pregnancy is the safest option'. As part of a comprehensive public health strategy, this message needs to be reinforced with consistent and clear information/education provided by all health care providers involved in the care of pregnant women.

While BI and MI are most often differentiated by the number of sessions involved, both approaches are effective and relevant in motivating women towards decision-making in relation to their alcohol use. Broadly, BI though often considered as a single session intervention can be repeated as needed, while MI usually takes the form of multiple sessions across the course of visits. Both BI and MI are effective in engaging women in self-reflective behaviour change processes and rely on the same principles of non-judgemental, informative, goal-setting behaviour change strategies that promote self-efficacy of women's capacity to make positive changes to their lifestyle for their own and their baby's benefit.

Overall, BI is noted as an appropriate and effective means of providing timely and relevant educative messages to women in the prenatal setting, is acceptable to women and is highly suited to midwifery led encounters with women.

# SECTION TWO

## Pre-intervention – Qualitative Data Report

### 2.1. Introduction

In 2014 the national Women Held Pregnancy Record (WHPR), together with the AUDIT-C alcohol risk screening tool, was adopted by WA Health as the standard pregnancy and childbirth record for public maternity services. To ensure the Midwives and Women AUDIT-C Intervention project was responsive to any perceived issues regarding acceptability of routine screening and brief intervention related to alcohol use, qualitative data was collected from women with current or recent experience of maternity care. Additionally, midwives providing care for pregnant women were asked about their current practice of risk screening for alcohol use, and knowledge of the AUDIT-C screening tool and associated brief intervention prompts. This information assisted development of the AUDIT-C Learning Guide, a professional development resource designed to support midwives adoption of routine alcohol risk screening and brief education.

### 2.2 Data Collection Methods

Focus group discussions and individual interviews were conducted with women with current or recent experience of maternity care in various settings in the Perth metropolitan area. Locations for group discussions were: Attadale, Armadale, Melville, Mt. Hawthorn and Bicton. Women's individual interviews were all conducted at the Armadale Health Service antenatal clinic.

Focus group discussions and individual interviews were also conducted with midwives employed by Armadale Health Service, and who were working in a variety of models of care, including midwifery group practice and standard shared care (GP and midwife). All midwives data collection was conducted on site.

Group discussions and individual interviews with women and midwives were led by the lead researcher. When groups were held, a second researcher was present to take notes to supplement audio recording. All participants were provided with information sheets, verbally informed about the purpose of the study and completed consent forms prior to discussions and audio recording commencing. Transcripts were prepared as de-identified verbatim records, with groups or interviews referred to by a number descriptor.

### 2.3 Qualitative Study Sample Characteristics

Basic demographics to describe women and midwife participants were collected. Women participants for the group discussions (n=23) and individual interviews (n=10: total n=33) are described in Tables 2.1 and 2 and midwife participants (n=24) are described in Table 2.3.

**Table 2.1: Women's focus groups – current or recent experience of maternity care**

| Number of Women | Mean Age and Range | First or Second+ Pregnancy | Education |
|---|---|---|---|
| **23** | Mean: 31 years<br>Range: 19-44 years | 12 first<br>11 second+ | Year 10-12 = 3<br>TAFE cert = 3<br>TAFE Dip = 4<br>Uni Grad = 6<br>Uni Post-Grad = 7 |

**Table 2.2: Women's Individual Interviews – women currently receiving prenatal care**

| Number of Women | Mean Age and Range | First or Second+ Pregnancy | Education |
|---|---|---|---|
| **10** | Mean: 28 years<br>Range: 19-36 years | 2 first<br>8 second+ | Year 10-12 = 4<br>TAFE Dip = 2<br>Uni Grad = 3<br>Uni Post-Grad = 1 |

Of the 33 women participants, the mean age was 29 years (range 19-44) and 43 per cent had or were expecting a first baby, while 57 per cent had or were expecting a second or subsequent baby. Most women in both groups and interviews had completed post-secondary school education.

**Table 2.3: Midwives currently providing prenatal care**

| Number of Midwives | Mean Age and Range | Range of Time in Midwifery Practice | Main Area of Practice |
|---|---|---|---|
| **24** | Mean: 39 years<br>Range: 26-65 years | Student = 4<br><1-10 years = 12<br>10 years + = 8<br>(Range: 1 – 36 years) | Full Scope = 21<br>Antenatal = 1<br>Postnatal = 1<br>Birth suite/labour = 1 |

For the 24 midwife participants, time of practice as a midwife (or student midwife) ranged from very recent (less than one year, plus 4 students on clinical placement) to 36 years of practice. Most midwife participants worked across the full scope of maternity care, while a few currently work solely in antenatal, postnatal or birth suite/labour ward, but had previously worked across the full scope of practice.

## 2.4 Methods of Qualitative Data Analysis

All focus group discussions were semi-structured and based on three questions. Individual interviews with women were more structured, with four standard questions used. Individual interviews with midwives focussed on current practice and knowledge of AUDIT-C.

Qualitative data was analysed using the principles of the constant comparative method (CCM) from grounded theory. CCM establishes the most consistent views expressed by participants, through identification of commonly occurring responses as each set of data is examined and coded[39]. This enables description and interpretation of extracted concepts and typologies and triangulation across different groups of participants. In this instance, themes were largely predetermined by questions posed in focus groups and interviews. CCM was therefore used to determine topic concepts and sub-topic typologies within the thematic framework set by the questions.

Reviews of data extracted from transcripts, and arranged as it related to thematic areas (experiences, practices, acceptability) were independently undertaken by two researchers for preliminary topic concept coding. Topic coding within these thematic areas was then compared and agreement reached on the final range of topics which the lead researcher then used to interpret sub-topic typologies.

## 2.5 Results of Qualitative Data

The thematic framework and data sets contributing to results in each theme is set out in Table 2.4. Topics extracted from the five women's groups and ten individual interviews and the combined midwives groups and individual interview data are then reported in each theme, together with any

sub-topic typologies. The results are then discussed as a whole to present a comprehensive interpretation of the collected data.

**Table 2.4: Themes and data sets used for thematic topics**

| Theme and Number | Thematic topics | Data sets used |
|---|---|---|
| 1. Women's *experiences* of being asked about alcohol use | 1. Health professional advice about alcohol in pregnancy<br>2. Ambiguity about alcohol use in pregnancy<br>3. Health behaviours education | Women's groups, women's individual interviews |
| 2. Midwives *practices* when asking women about alcohol use | 1. Routine questions about alcohol use<br>2. Circumstances which support discussing alcohol use with women | Midwives combined (groups and individual interviews) data |
| 3. *Acceptability* and use of AUDIT-C | 1. AUDIT-C questions<br>2. Factors assisting the screening process<br>3. Knowledge about standard drinks<br>4. Knowledge of AUDIT-C<br>5. Use of AUDIT-C | Women's groups, Midwives combined (groups and individual interviews) data |
| 4. Social *practices* associated with alcohol use or avoidance in pregnancy | 1. Early pregnancy alcohol avoidance<br>2. Pregnancy alcohol avoidance strategies | Women's groups |

### *2.5.1 Theme 1 – Women's experiences of being asked about alcohol use*

For Theme 1, experiences of being asked by a midwife or doctor about alcohol use in pregnancy was discussed in women's group discussions and individual interviews resulting in three topics (1-1, 1-2, 1-3) and five sub-topics (see Table 2.5).

For Topic 1-1, health professional advice, two sub-topics were evident in the women's group discussions, which were also reflected in the more structured individual interview responses. Topic 1-1 sub-topics (1-1 a) and (1-1 b) showed that most women recollected receiving advice about avoiding alcohol use in pregnancy but little associated education as to why alcohol was harmful. Individual interview participants also agreed that being asked multiple times in pregnancy about alcohol use is acceptable.

Women's group discussions also produced Topic 1-2, which identified widely held ambiguity and ambivalence about alcohol use in pregnancy expressed by health professionals to women, in the broader community and by pregnant women. The individual interviews produced Topic 1-3, that women expect midwives to educate them and promote healthy behaviours in pregnancy. Topic 1-2 sub-topics (1-2 c), (1-2 d) and (1-2 e) unpacked the problems associated with inconsistent messages around alcohol use with a common perception across all women's group discussions that health professionals often provide ambiguous advice in relation to alcohol use and this situation would be resolved by clear and consistent information from health professionals. The ambiguity about alcohol use advice and education contrasted strongly with both women's individual interview and group participants' persistent recollections about receiving clear dietary advice, particularly foods to exclude during pregnancy.

Overall, women participants reported that while 'no alcohol in pregnancy' is common knowledge across the community, there is also widely held community disagreement on the relevance of this advice, particularly as it relates to perceptions about 'safe' levels of alcohol use in pregnancy.

Ambiguous advice provided by health professionals together with ambivalent broader community views was reflected in the personal ambivalence many women participants expressed about what actually constitutes alcohol use in pregnancy. For example, an 'occasional sip' or 'one or two occasional drinks' were regarded by women's group participants as acceptable, perhaps not even constituting alcohol use. Whereas consistent (frequent) alcohol use in pregnancy was strongly perceived as unacceptable by both group and individual interview women participants.

| **Table 2.5, Theme 1: Experience of being asked about alcohol use** |
|---|
| **Topic 1-1: Health professional advice about alcohol in pregnancy** |
| *Women's Focus Groups* |
| ***a. Specifically advised not to use alcohol in pregnancy or clear recollection of being asked about alcohol use:*** occasions of GP, Midwives and Obstetricians clearly advising not to drink alcohol while pregnant; occasions of being asked at initial or booking visit but no further information after this time; recollections of being asked about smoking, but not alcohol use; and, having declared no alcohol use there being no further reference to this by health professionals. |
| *Women's Individual Interviews* |
| All ten women reported being asked about alcohol use by a midwife, and three recalled a screening tool. |
| Two women received education or information about the impact of alcohol on the developing fetus while eight clearly stated they understood that alcohol is not good for their baby, but had not received any education or specific information on why alcohol is harmful to the baby. |
| All but one woman were receptive to being asked about their alcohol use multiple times in pregnancy. |
| *Women's Focus Groups* |
| ***b. No Recollection of being asked:*** occasions of limited or no education/information about alcohol use from GP, Obstetricians or Midwives; with expectations of information being provided about alcohol use; and for second and subsequent pregnancies - assumptions by GP, Obstetricians and Midwives that women know information from first pregnancy. |
| **Topic 1-2: Ambiguity about alcohol use in pregnancy** |
| *Women's Focus Groups* |
| ***c. Health professionals' ambiguous advice:*** confusion when professional advice raised ambiguity about alcohol use; consequences of alcohol use not as clearly defined as dietary guidelines; information changes over time contributing to ambiguity; being provided with clear and consistent information would remove any ambiguity. |
| ***d. Broader community ambivalence:*** no alcohol use in pregnancy is common knowledge; different views on alcohol use in pregnancy prevail; and, various perceptions about 'safe' levels of alcohol. |
| ***e. Pregnant women's ambivalence:*** pregnant women are not clear on what constitutes alcohol use; changes in advice (friends and internet) over time promotes confusion; general understanding of no alcohol use in pregnancy is juxtaposed against personal ambivalence in relation to occasional use ("sips") not being alcohol use; friendship circles influence personal decisions regarding alcohol use; especially, when friends are health professionals who are personally ambivalent about alcohol use in pregnancy. |
| **Topic 1-3: Health behaviours education** |
| *Women's Individual Interviews* |
| Seven of ten women recalled healthy behaviours being discussed and primarily recalled advice related to a healthy diet, with some women recalling specific advice in relation to smoking, drinking, weight gain and exercise. |
| Three women had no recall of information being provided about healthy behaviours. |
| Overall, women had an expectation of being provided with information and education about health behaviours by midwives. |

***Women's Group and Individual Interview Participant Quotes Illustrating Theme 1 Topics***

*"My female GP…was quite thorough and one of the questions was 'do you drink and do you smoke'…and I said I drink socially…and I remember her saying 'you need to be aware that you need to either cut it out completely or you really need to think about how much you are having and it needs to be limited." (Group 3)*

*"I think she looked at me and made the call that she didn't think that I would have taken drugs or drunk alcohol and so…it wasn't a very open field for me to say I had" (Group 4)*

*"if you go 'oh 2 drinks, what's the risk? What's the consequence?...I guess the consequence with alcohol is a lot more unclear than the consequence with food" (Group 2)*

*"It's just common sense really. They should tell you anyway" (Group 1)*

*"because I have a lot of friends who had been through pregnancies…they were all fit healthy girls but still were of the thought that it was ok to have the small drink now and then…and that was what I took with me…but when I got into all my appointments in the public system they were so thorough with how much information they were giving out with nutrition and drinking and smoking…I told them…I only ever socially drink, they seemed to sort of ease off a bit. They didn't really go into detail about how much, they didn't go into any of that at all" (Group 3)*

*"I don't want to be a neurotic pregnant woman and alcohol seems to be one to say 'look I've got a balanced view and I know I can have a glass of wine and I'm not going to stress about it" (Group 4)*

*"A friend of mine, she fell pregnant quite young, so she was maybe 19 and her OB said there was no reason for her to stop drinking and I think that's the first thing I kind of threw into my mind. Is it alright to continue drinking a little bit? I didn't, but is it ok, a little bit ok? Or is it none?" (Group 1)*

*"there is a school of thought that says an occasional drink is probably not harmful. But they are not able to categorically research it…I know 2 OBs personally and I have seen them both have a drink while pregnant" (Group 5)*

*"I can't remember what I expected…well obviously no smoking, drinking, weight gain, a healthy weight gain, probably looking after your fitness and stuff as well" (Interview 4)*

*"I don't really expect [being advised about alcohol use] because they don't normally do that or they haven't done that with me this time or last time, so it's not something that I expect. But I do think it is something that they should discuss" (Interview 6)*

*"Maybe every time. I mean at the start you see the people every 4 weeks, so it's not like you are seeing them every week. So probably every time you come you should probably get checked up on – have you been consuming alcohol, maybe something happened in someone's life and then they just decide to start drinking. I mean, what's the harm in asking?" (Interview 7)*

### 2.5.2 Theme 2 - Midwives practices when asking women about alcohol use

The theme of midwives current practices when asking women about alcohol use was discussed with all midwives. Theme 2 produced: Topic 2-1, routine questions about alcohol use; and, Topic 2-2, circumstances which support discussing alcohol use. Both topics also had sub-topics (see Table 6).

For Topic 2-1, the majority of midwives reported routinely asking (usually at the first booking visit) if women are using alcohol in pregnancy. While a few reported using the AUDIT-C screening tool, most midwives indicated they do not ask pregnant women about alcohol use beyond an initial yes/no question, unless alcohol use is declared, in which case they may ask in subsequent visits about use. Time constraints were reported as the principle reason for not probing beyond an initial question at the first visit. Midwives also stated there is minimal reporting by women of alcohol use when personal histories are taken at booking visits, and midwives have expectations that women will be honest in their reporting of alcohol use.

For Topic 2-2, the circumstances which may prompt a midwife to ask more detailed questions about alcohol use were: if alcohol use was noted in a previous pregnancy; or, if a woman was at potential high-risk for alcohol use, for example, in relation to the results of EPDS or domestic violence screening. It was also noted that continuity of carer provided more opportunity to have detailed conversations with women about the harmful effects of alcohol use over multiple visits. Finally, midwives discussed how universal, or routine, approaches to screening for alcohol use may avoid them making assumptions based on a woman's education level or ethnicity.

| **Table 2.6, Theme 2 – Current practices asking about to alcohol use** |
|---|
| *Midwives Combined Data* |
| **Topic 2-1: Routine questions about alcohol use** |
| ***a. At first visit:*** routine practice is to ask about alcohol but it is *not* routine to ask after initial question if a woman indicates 'no' to alcohol use question; and unlikely to proceed with AUDIT-C unless women declare alcohol use or there is a history of use.<br>***b. At subsequent visits:*** questions are repeated in subsequent visits if alcohol use declared; or if changed circumstances indicate higher risk; or when working with known at risk women.<br>***c. Honesty in reporting:*** broad views is that most women tell the truth about alcohol use; that women routinely report no alcohol use during history taking at booking visits; although, while women usually say they should not drink alcohol in pregnancy, this does not mean they don't drink alcohol in pregnancy.<br>***d. Time constraints:*** the number of issues midwives cover at booking visits impose on capacity to probe the issue of alcohol use beyond first yes/no question. |
| **Topic 2-2: Circumstances which support discussing alcohol use with women** |
| ***e. Rationale supporting discussion****:* only about half of all women understand the implications of alcohol use; women need to know why midwives need to know about alcohol use; and also need to know why women should not drink alcohol while pregnant.<br>***f. Continuity of carer****:* is factor in getting more information about alcohol use from women over multiple visits; and supports more opportunity for women to confidently declare alcohol use.<br>***g. Universality of screening****:* (asking everyone the same questions) avoids instances of making assumptions based on a woman's ethnicity or education level; or whether women are drinkers or not; as education level as not an indicator that women know about alcohol use; and it is appropriate to advise all women that AUDIT-C is routinely used (normalising use of the tool). |

***Midwives Group and Interview Participant Quotes Illustrating Theme 2 Topics***

*"I ask them do they drink alcohol…in the booking, near the beginning. But I feel most people answer 'no', for 'while I'm pregnant'. They all say 'not while I'm pregnant', only a couple of people have volunteered what they did before" (Interview 5)*

*"I think generally most [midwives] don't probe… you ask the question and you expect their answer to be honest…and you move on to all of the thousands of other things that you have to cover" (Group 1)*

*"If they are seeing the same person that would be good, so if you have continuity of care…you would get more information as you go along" (Group 6)*

*"You also explain to them, if some of them divulge how much alcohol they drink, it is important that we know…if something happens and we don't know what they have taken, then how are we going to help them with their baby. And when they hear that they think 'oh, ok' and then they will tell you" (Group 2)*

*"I look [at] education, and if they are full time workers, what they do for work as well. Sometimes educated women are more aware of the effects of alcohol but the younger girls, young women and single parents and people…in domestic violence situations…alcohol is a bit of a crutch…you look at the whole picture" (Group 2)*

*"it doesn't matter about education level…Because I have had exposure privately…I've had friends that are nurses, doctors, health professionals, [they] will have a drink when they are pregnant…"(Group 6)*

### *2.5.3 Theme 3 – Acceptability and use of AUDIT-C*

Specific questions about the AUDIT-C screening tool were posed in women's groups and in midwives groups and midwife individual interview discussions. Discussions in women's groups focussed on acceptability of the AUDIT-C screening tool and resulted in three topics: Topic 3-1, acceptability of AUDIT-C questions; Topic 3-2, factors assisting a screening process; and, Topic 3-3, knowledge about standard drinks. Discussions in midwives groups and individual interviews focussed more on knowledge and use and resulted in a further two topics: Topic 3-4, knowledge of AUDIT-C; and, Topic 3-5 using AUDIT-C with pregnant women, with sub-topics in both these. Both women's and midwives topics, and midwives sub-topics, are set out in Table 7.

For Topic 3-1, in relation to the three questions used to establish a risk score in the AUDIT-C screening tool, women's group participants described these as specific, fair and reasonable, and better than just being asked a yes/no question about alcohol use. Further, the questions are a good way to introduce further information about alcohol use. Topic 3-2 noted the factors assisting the screening process were: it being presented as routine; requiring trust in the person asking the questions and no judgement being made about women's responses. Also, women's group participants were mainly comfortable with being asked the AUDIT-C questions at the first visit, and having these repeated at subsequent visits, although knowing the person asking the questions would make it more acceptable. In Topic 3-3, women's group participants noted there is a lack of understanding about standard drinks, with a general view that as most people don't know what a standard drink is there is potential to underestimate consumption. As such, participants thought it is the role of health professionals to work out how many standard drinks women are consuming, and visual cues showing standard drinks would be useful in helping women report more accurately. Finally, women's group participants noted there was potential for dishonestly responding to AUDIT-C questions, as some women might be more concerned about being judged in relation to their alcohol consumption rather than doing what is right.

In Topic 3-4, midwives were aware of the AUDIT-C screening tool in the WHPR, however, this is not routinely used, and there was no broad understanding of the reasons for recording AUDIT-C on three occasions across pregnancy. Midwives also perceived that women don't understand and are not comfortable with the AUDIT-C questions regarding alcohol use and are likely to underestimate alcohol use. Finally, in this topic, midwives stated a lack of confidence in providing a brief intervention and as such would welcome training and education in the use of both AUDIT-C and BI. Topic 3-5 focused more on the factors which are against, as well as those factors which support, using AUDIT-C with pregnant women. Midwives perceived the factors against using AUDIT-C were women being rushed in antenatal visits and if they have said no to alcohol use, women being annoyed with further questions as well as time constraints in the clinic setting deterring routine and/or persistent questions. Additionally, AUDIT-C is one of many screening tools to be 'got through' and midwives also perceived a lack of supportive resources and appropriate information to provide to women. Factors supporting use of AUDIT-C were: other indicators such as EPDS or domestic violence screening indicating a need to re-ask about alcohol use; and an obvious need to repeat AUDIT-C with women who are known to be risky drinkers. Midwives also perceived the AUDIT-C process as an opportunity to educate women about the harms of alcohol use in pregnancy.

| **Table 2.7, Theme 3: Acceptability and use of AUDIT-C** |
|---|
| *Women's Groups* |
| **Topic 3-1: AUDIT-C questions** |
| Are acceptable, reasonable, specific, non-judgemental, fair, and, more informative than asking only yes/no questions; and a good means of guiding further conversation about alcohol use. |
| **Topic 3-2: Factors assisting the screening process** |
| Relies on trust and no judgement; with questions routinely asked of all women; at a first appointment and at multiple times during pregnancy are both acceptable (preferably by a known person is more acceptable).<br>Being asked AUDIT-C questions provide opportunity for education on the harms of alcohol use; and this is important regardless of a known relationship. |
| **Topic 3-3: Knowledge about standard drinks** |
| A lack of understanding of a standard drink; with potential to underestimate alcohol consumption; therefore it is health professionals responsibility to calculate number of standard drinks consumed; using visual cues when asking women questions.<br>Potential for dishonesty in response to questions; as being judged may be perceived as more important than doing what's right. |
| *Midwives Groups* |
| **Topic 3-4: Knowledge of AUDIT-C** |
| ***a. Perceptions of AUDIT-C:*** known as being in the women's hand-held pregnancy record but is not routinely used; women don't understand the questions regarding alcohol use; women underestimate alcohol use; not entirely comfortable with AUDIT-C questions; a lack of confidence in providing brief intervention; and not informed about reasons to record AUDIT-C on three occasions.<br>***b. Improving knowledge of AUDIT-C:*** Receptive and welcoming of training and education in the use of AUDIT-C. |
| **Topic 3-5: Using AUDIT-C** |
| ***c. Factors against using AUDIT-C:*** when women are rushed and have said no to alcohol use they can be annoyed with further questions; time-constraints in the clinic setting deter routine and persistent questions being asked about alcohol use; one of many screening tools that need to be 'got through; and a lack of supportive resources and appropriate information to provide to women.<br>***d. Factors supporting using AUDIT-C:*** other indicators (EPDS or DV) may indicate need to re-ask about alcohol use; obvious to repeat AUDIT-C with known high risk women; and use of tool as educational opportunity. |

***Women's Group Participant Quotes Illustrating Theme 3 Topics***

*"[AUDIT-C are] fair questions…it doesn't feel like it's judgemental" (Group 5)*

*"I would be happy if they actually were that invasive about [screening] because it is a serious issue…cause if you are drinking three days a week it's 6 drinks at least if it's 2 drinks a day" (Group 1)*

*"I don't know anyone who actually pours one standard drink when they pour their own wine glass" (Group 2)*

*"maybe it should be more of entering into a discussion like 'let's try and work out how much you do drink on those days"( Group 4)*

*"And I think they [ the questions] should…be asked more regularly…like maybe throughout [pregnancy] why not" (Group 3)*

*"I think repeating the question is a good idea…this is just how we do it, we ask everyone this…you would have to be very clear that it is just asked of every woman" (Group 4)*

***Midwives Group and Interview Participant Quotes Illustrating Theme 3 Topics***

*"I haven't had anyone disclose alcohol for a long time and I've just sort of circled it as nought and write no, there's no point writing it in two other places" (Midwives group 1)*

*"I think generally most midwives aren't very confident giving a lot of intervention or a lot of education to women because it's they don't really know where and lack of resources, we don't know what to give the women" (Midwives group 1)*

*"it's like everything throughout the book, not just with alcohol, but domestic violence and everything, you're trained that when you are doing an initial interview with women there is ways of asking…ways of picking up cues on women to get that information and that's something that we are doing on a regular basis…it's how you approach that woman so she is relaxed and it's how you're watching her response, and then probing her a bit more" (Midwives group 2)*

*"we are seeing most women again…I find that we're lucky in our environment that we have got more time to do that book-in, and it may be in the women's home…so it is more of a relaxed approach…so we can sort of pick up on the cues and you get to know that woman, you get to know her mood and…her personality…so you can actually be a bit of a professional friend…and feel confident asking questions" (Midwives group 2)*

*"it's a negative association with a screening tool…you say to somebody 'how much do you drink?' they are not going to give you the answer. You may get it three or four months down the track when you have got a relationship, but it does sound like you're grilling them over something they know they shouldn't be doing, so I don't know how effective it is…"(Midwives group 3)*

*"For people to recognise, if they don't even go to the back of the book and check the AUDIT-C, then maybe they will pick it up somewhere else in the hand-held record. I've never thought of it though, and I've always wondered 'why do I have to write it three times?'" (Midwives group 4)*

*"I think it's the advantages of continuity of care…we get women telling us…but it's not always on the first visit. They usually do disclose it, because they are worried about the baby. They genuinely want to do the right thing by their baby so they will usually slide a question in somehow that makes you think 'oh'" (Midwives group 1)*

### 2.5.4 Theme 4 - Social practices associated with alcohol avoidance in pregnancy

A final theme which emerged from the women's group data is Theme 4, social practices used to avoid drinking alcohol in pregnancy, particularly in early pregnancy. This theme generated: Topic 4-1, early pregnancy alcohol avoidance; and, Topic 4-2, pregnancy alcohol avoidance strategies, which included three sub-topics (see Table 8). While associated with Theme 1, Theme 4 topics more explicitly described the strategies women use to avoid alcohol use in pregnancy.

In Topic 4-1, women's group participants often said that due to the wide spread social acceptability of alcohol use, not drinking in social settings was akin to making a clear declaration of being pregnant. This was within the context that there is understanding in most social circles that pregnant women don't drink. Therefore, for women who were not ready to announce their pregnancy, refusing alcohol was an issue from the perspective that not drinking = being pregnant. Further, it was perceived as easier to stop drinking alcohol because of being pregnant, rather than simply for supporting personal health. Some participants described quite complex subterfuge in early pregnancy to allay any suspicion they may be pregnant. This involved appearing/pretending to be drinking alcohol at social occasions, usually weddings or special celebrations, while actually avoiding drinking by secretly substituting a drink, or using a wine glass as a drink signifier, even if it contained orange juice.

In Topic 4-2, there were three sub-topics (4-2 a, 4-2 b & 4-2 c) associated with pregnancy alcohol avoidance strategies. The acceptability of alcohol use at a societal level was in the background, with some participants commenting that there is sometimes social pressure to still consume alcohol during

pregnancy, which required women to actively resist, by refusing drinks containing alcohol. Some participants achieved this by secretly substituting non-alcohol drinks for alcohol when others around them were drinking, while others, as a matter of course, simply asked for non-alcoholic drinks at social events. Associated with this, some participants expressed they were uncomfortable discussing alcohol use with other pregnant women, while others were confident to advise other pregnant woman they should not drink alcohol.

| **Table 2.8, Theme 4: Social Practices associated with alcohol and pregnancy** |
|---|
| Women's Groups |
| **Topic 4-1: early pregnancy alcohol avoidance** |
| Social acceptability of alcohol use and the burden that pregnancy imposes on this; understanding in social circles that pregnant women don't drink; not drinking alcohol a signal of pregnancy; easier to stop drinking because of pregnancy, than for supporting personal health; using elaborate subterfuge to avoid alcohol use |
| **Topic 4-2: pregnancy alcohol avoidance strategies** |
| ***a. Acceptability of alcohol:*** in moderation at a societal level; some social pressure to still drink in pregnancy; actively resisting social pressure to drink |
| ***b. Substituting:*** soft drink for alcohol in response to perceived social pressure; or, as a matter of course, substituting for alcohol at social events |
| ***c. Discussing alcohol avoidance:*** for some confidence to advise other pregnant women not to drink; for others discomfort discussing alcohol use with other pregnant women |

***Women's Group Participant Quotes Illustrating Theme 4 Topics***

*"Well Australia, just our society in general is just so based around alcohol, everything we do, so that's why it's such a big deal and we talk about it, dealing with it all the time…when you are in early pregnancy that's the hardest thing sometimes, not to tell people that you are pregnant because there is no excuse otherwise for why you are not saying yes to a drink…"(Group 3)*

*"not drinking while you are pregnant its seen as a terrible burden that you have to bear, while you are pregnant you can't enjoy a drink, like it's such a terrible thing" (Group 5)*

*"I did things where I've accepted a glass of wine, especially my first pregnancy when I was working full time I used to have to go to a lot of networking functions…I just used to accept the first glass of wine but then just hold it the whole time" (Group 4)*

*"my friend was a bridesmaid and…she didn't want the bride to know…she didn't want to drink at all…and she came up with the concoction with her dad, who said 'why don't you get a little hip-flask with lime cordial in it and every time you get a white wine just tip it out and fill it up with water and some lime cordial and it will look like white wine'…" (Group 3)*

*"when I was pregnant with her we would always go down with her, down to the pub with our friends and everyone would be drinking and I would drink water or lemonade by the bucket load because you felt like you always had to have a drink…" (Group 1)*

*"I didn't find it hard…I think I was just so excited about being pregnant, that kept me going…I had something to do it for. I think if you were just quitting and for your own health it would be ten times harder." (Group 2)*

*"I had a few times people going 'oh we are all having wine, oh you don't want any do you? Of course you don't'. So I've had that a few times" (Group 5)*

*"there's definitely still some social pressure, I find it's usually from people who have had children, I find this second time around, well maybe I know more women who have children but they seem to be the one's telling me 'oh you could have a drink, that's alright'." (Group 3)*

*"I bought non-alcoholic beer which tastes like normal beer" (Group 2)*

*"I used to ask for a vodka soda without the vodka…"* (Group 5)

*"If my friend was drinking while pregnant I would definitely say something. I don't think it's ok not to say something…maybe they weren't really aware" (Group 1)*

*"I would never judge someone else, so I would never find a place to say anything unless I knew all the circumstances and thought that they were being abusive" (Group 2)*

## 2.6 Discussion of Qualitative Results

The thematic topic and sub-topic analysis demonstrated areas of similarity between women and midwives and areas of difference, but also highlighted the complex nature of alcohol use in the broader social context and how this translates into the clinical environment.

In terms of similarity, women reported that in the main they did not clearly recall more than being asked an initial question about alcohol use in pregnancy, with very few women recalling detailed advice or education about the impact of alcohol use from health professionals in general, including midwives. Likewise, midwives reported that other than an initial question about alcohol use, unless other risk indicators are present, such as domestic violence or a high EPDS score, midwives are unlikely to pose detailed questions about alcohol consumption, to use AUDIT-C screening, or, to provide detailed education about the impact of alcohol. Even so, while women consistently demonstrated an understanding that alcohol was not good for babies in utero, far fewer were clear about the reasons for this.

Both women and midwives also agreed that women are likely to underestimate their alcohol consumption, but had different views as to why this is so. From women's perspectives, as most people do not understand what a standard drink is, women considered it the role of all health professionals to assist women to more accurately determine the extent of their alcohol use. Further, women suggested AUDIT-C screening questions are a good entry into discussing alcohol use, and that visual cues showing standard drinks would help with establishing accurate consumption. This was another point of difference; with midwives suggesting that women are uncomfortable with questions about alcohol use, or would not understand the AUDIT-C screening questions. Yet these views were not reflected in women's group discussions when they were asked about the AUDIT-C screening questions, which they described as fair, specific and reasonable and better than just being asked yes/no in relation to their alcohol use.

Women also said that AUDIT-C screening was a step into providing education to women about the harmful effects of alcohol in pregnancy. This latter point was also noted by some midwives, particularly the few midwives who reported using AUDIT-C, while other midwives conceded that AUDIT-C potentially provides an opportunity to more fully discuss the harmful effects of alcohol use with women. Another point of opportunity referred to by both women and midwives, was when a known carer, and/or someone the woman trusts, is asking questions regarding alcohol use. Continuity of carer was seen by both midwives and women as a situation that would support asking about alcohol use on multiple occasions over the course of pregnancy. However, women also thought it was

acceptable and important that midwives ask women about alcohol use and provide education at a first visit to ensure women understand, or are reminded about, the implications of alcohol use as early as possible in pregnancy. This was particularly relevant for women expecting a second or subsequent baby, as it was also noted by women's group participants that there is far less likelihood of receiving education about alcohol use in subsequent pregnancies as health professionals tend to assume women already knew this information.

For midwives, the issue of time-constraints often arose during group and individual discussions, in addition to a lack of familiarity with the AUDIT-C screening tool and/or brief interventions. These combined issues are the likely reasons that midwives do not currently routinely use AUDIT-C, a circumstance which has been noted in other studies. Midwives reported feeling constrained by the number of assessments (EPDS, alcohol, tobacco, domestic violence) that need to be done with women at a booking visit, in addition to taking detailed personal histories. Midwives also expect women to be honest in their reporting of current or recent past alcohol use when asked this question during personal history taking at the booking visit. In the absence of other risk-factors which may indicate a potentially greater likelihood of substance abuse such as the presence of domestic violence or a high EPDS score, combined with a perception that most women answer 'no, not while pregnant' to the initial (yes/no) personal history question about alcohol use, midwives took these factors as indicating there is minimal use of alcohol by pregnant women. Midwives generally also conceded they were not always confident using AUDIT-C or providing brief interventions and upskilling in the use of these would be beneficial.

Studies have shown that around 47 per cent of pregnancies are unplanned, around half of Australian women drink alcohol before knowing they are pregnant and 20 per cent of Australian women continue to drink alcohol after pregnancy confirmation[40 41 42 43]. The likelihood that AUDIT-C screening will produce at least a low risk score for a reasonable proportion of pregnant women (potentially around 20-25% of all pregnant women) is a reasonable conclusion.

Alcohol risk screening in the antenatal settings provides the circumstances for frank discussions about the detrimental impact of alcohol use for both mother and baby. Further, as there was detailed discussion in women's groups about the societal acceptability of alcohol use, expressed as a persistent ambivalence in the broader community and among women about alcohol use in pregnancy, clear and consistent advice about this issue ***is clinically important*** in terms of both maternal and infant outcomes.

This is particularly pertinent as women's groups data also demonstrated that occasional alcohol use may be ignored by women as inconsequential. This view, when combined with a lack of understanding of standard drink measures leading to underestimation of alcohol consumed, and combined with the reported absence of consistent education and advice from health professionals, contributes to ambiguity around alcohol use in pregnancy across society.

As such, there is a clear role for midwives to promote the NHMRC guideline that 'no alcohol in pregnancy is the safest option' as part of their routine prenatal care practice and for this advice to be provided on more than one occasion in each pregnancy.

## 2.7 Conclusion

The results of the qualitative data collection with women and midwives is consistent with the current evidence set out in the critical review regarding the benefit of routine screening for alcohol use in pregnancy and the provision of brief intervention to all women, regardless of perceived levels of risk, education or age.

Importantly, women involved in this study have confirmed the acceptability of the AUDIT-C screening process, and the screening questions as fair and reasonable. This evidence contributes to dispelling concerns that midwives may have about using the AUDIT-C screening tool or discussions regarding alcohol use in pregnancy.

Women also consistently reported wanting to know more details about the impact of alcohol in pregnancy on their baby's development. AUDIT-C is not only an opportunity to educate women, but to empower them in their decision making about alcohol consumption through the provision of clear and consistent information they can then share with their partners, families and friends.

Also consistent with the current evidence, is midwives identification of a need for upskilling in the use of AUDIT-C and brief intervention to ensure their competency and confidence in both. As such, the development of the AUDIT-C learning guide which clearly sets out the rationale for the AUDIT-C screening and brief intervention is confirmed.

# SECTION THREE

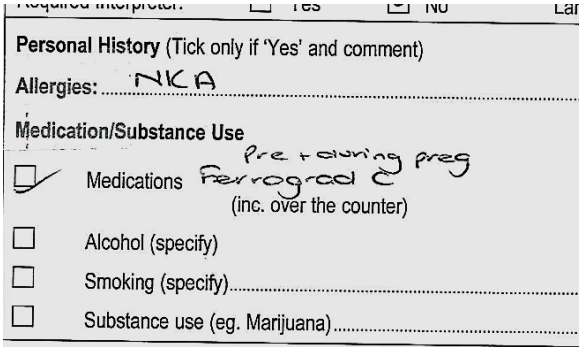
## Pre-Intervention Review of Medical Records

### 3.1 Background

The WA Department of Health (WA Health) adopted the Women Held Pregnancy Record (WHPR) in 2014 as the standard record of pregnancy and childbirth for all public maternity units in Western Australia. In 2015, the WHPR was reprinted, incorporating the AUDIT-C alcohol risk screening tool.

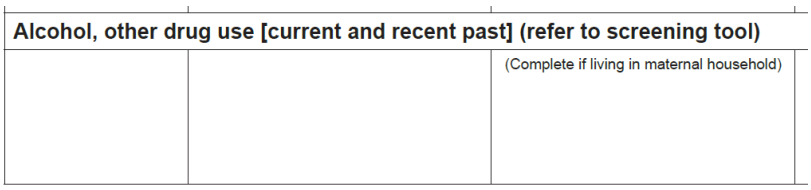
Previously, alcohol use in pregnancy had typically been recorded at the first antenatal visit as part of a woman's Personal History (see *Figure 1*). Although the term 'specify' followed an alcohol use tick-box, no explanation of what should be specified (such as a screening tool result) was provided. It was the only occasion a pregnant woman was likely to be asked about alcohol use during her pregnancy.

***Figure 1. Extract from a Typical Antenatal Record prior to introduction of the WHPR***


Personal History (Tick only if 'Yes' and comment)
Allergies: NKA
Medication/Substance Use
☑ Medications Pre training preg Ferrograd C
(inc. over the counter)
☐ Alcohol (specify)
☐ Smoking (specify)
☐ Substance use (eg. Marijuana)

The WHPR Personal History page includes a general question for *alcohol, other drug use* (see *Figure 2*) while noting "refer to screening tool", but with no specific reference to the AUDIT-C screening tool. The WHPR Personal History page is replicated in full in Appendix 2 together with the AUDIT-C screening tool, alcohol risk exposure tables and brief intervention prompts.

***Figure 2. Extract from WHPR Personal History page – see Appendices for a sample of whole page***


Alcohol, other drug use [current and recent past] (refer to screening tool)
(Complete if living in maternal household)

The AUDIT-C alcohol risk screening tool uses three questions to assess (score) and record women's self-reported estimations of alcohol use. It is expected that risk assessments will be completed on three occasions across a woman's pregnancy. At the first visit, a woman's pre-pregnancy *and* current alcohol use are assessed (= two scores). Assessment is recommended to be repeated at two other antenatal visits, although the timing of these is not specified. The AUDIT-C screening tool also includes two Level of Risk tables (maternal and fetal) and brief intervention prompts.

The purpose of repeating alcohol risk screening after a first antenatal assessment is to identify any changes in a woman's alcohol use across the course of her pregnancy. A change in personal circumstances may prompt alcohol use. Or, as familiarity and trust with a maternity carer grows,

women may feel more confident to discuss their alcohol use. Either way, repeating alcohol risk screening across pregnancy increases the opportunity for women to report any alcohol use in pregnancy, including occasional drinking, as well as presenting multiple educational opportunities.

### 3.2 Medical Record Review Method

A review of medical records was conducted at the trial site to measure if alcohol use in pregnancy is routinely assessed by midwives.

Medical record data was used as a proxy measure to ascertain how frequently alcohol risk screening was done, as noted in the antenatal records of women who received any pregnancy care at the trial site.

It is noted that a limitation of this measure was the variety of models of antenatal care available to women. While these include midwifery led care, pregnant women also have access to general practitioner and specialist obstetric care. Even so, all women intending to birth their baby at the trial site at the very least undertake a booking visit with a hospital employed midwife, usually around 20 weeks of pregnancy. The booking visit presents an opportunity to record a minimum of one pregnancy AUDIT-C screening result in each woman's WHPR.

The medical record review specification provided to the Medical Record Department was to extract:

1. 140 random antenatal records for January 2014 (prior to implementation of WHPR).
2. 140 random antenatal records for January 2015 (after implementation of WHPR).
3. 140 random antenatal records for January 2016 (after implementation of amended WHPR).

The outcome of records provided comparative to useable records is shown in the table below, which also shows the percentage of records reviewed relative to the number of births in the same month.

| Time Point | # of records randomly extracted for audit | # of records not used in audit (no antenatal data, or, outside of Time Point) | Total # of records included in audit | Total # of births for the Time Point | Percentage of records to number of births for the Time Point |
|---|---|---|---|---|---|
| January 2014 | 138 | -13 | 125 | 204 | 52% |
| January 2015 | 142 | -15 | 127 | 212 | 59% |
| January 2016 | 147 | -16 | 131 | 200 | 65% |

Conducting three pre-intervention reviews of medical records for women who received any antenatal care at the trial site accounted for changes to the type of antenatal records following transition to the standard WHPR in late 2014, subsequently followed by an amended version of WHPR in late 2015. The first version of the WHPR had not incorporated the AUDIT-C alcohol risk screening tool, corrected in the next WHPR print run.

The 2014 medical record review established a baseline measure of:

a) frequency of asking about alcohol use as recorded in a woman's Personal History;
b) any recording of screening results for alcohol use prior to the introduction of the WHPR and AUDIT-C screening tool as standard; and;

c) any evidence of brief intervention (BI) being provided in response to any identified alcohol use during pregnancy.

The 2015 medical record review provided a baseline of AUDIT-C scores being recorded following introduction of the WHPR. The 2016 audit established any upwards trend in AUDIT-C scores that may be evident prior to the AUDIT-C intervention at the trial site.

### 3.3 Audit Results

The 2014 medical record review data showed a frequency of 50/125 (relative frequency 40%) of recording if the Personal History general question about alcohol use was asked; with only one example of an alcohol use estimation being recorded. However, it is noted that this was not as an AUDIT-C score. In terms of brief interventions (BI) being provided; the frequency for 'no' was 47/125 (relative frequency 37.6%) and for 78/125 records there was no entry recorded.

In contrast the 2015 medical record review data showed a frequency of 99/127 (relative frequency 78%) of recording if the Personal History general question about alcohol use was asked; with a frequency of 11/127 (relative frequency 8.6%) of an AUDIT-C score recorded. In this same period, the frequency of a BI being provided was 2/127 for 'yes'; 25/127 for 'no, declined or not applicable' (relative frequency 19.7%) and for 100/127 occasions (relative frequency 80%) no entry for a BI was recorded.

The final pre-intervention medical record review data taken from 2016 medical records showed a frequency of 47/131 (relative frequency 36%) of recording if the Personal History general about alcohol use was asked; with a frequency of 21/131 (relative frequency 16%) of an AUDIT-C score recorded. The frequency of a BI being provided was 7/131 for 'yes'; 123/131 (relative frequency 94%) for 'no, or not applicable' and only one occasion with no entry recorded.

Overall, the pre-intervention medical record audit results demonstrated poor uptake of the AUDIT-C screening tool following implementation of the WHPR in 2014 as the standard record of pregnancy care. Furthermore, there was significant variability in consistent use of the Personal History general alcohol use question.


*Figure 1 Personal History General Alcohol Question*

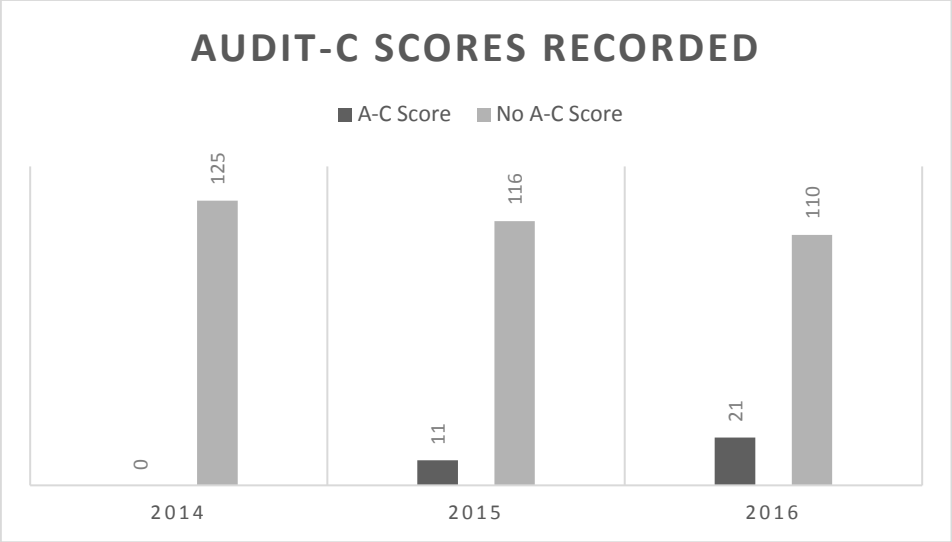



*Figure 2 Occasions of AUDIT-C scores in medical records*

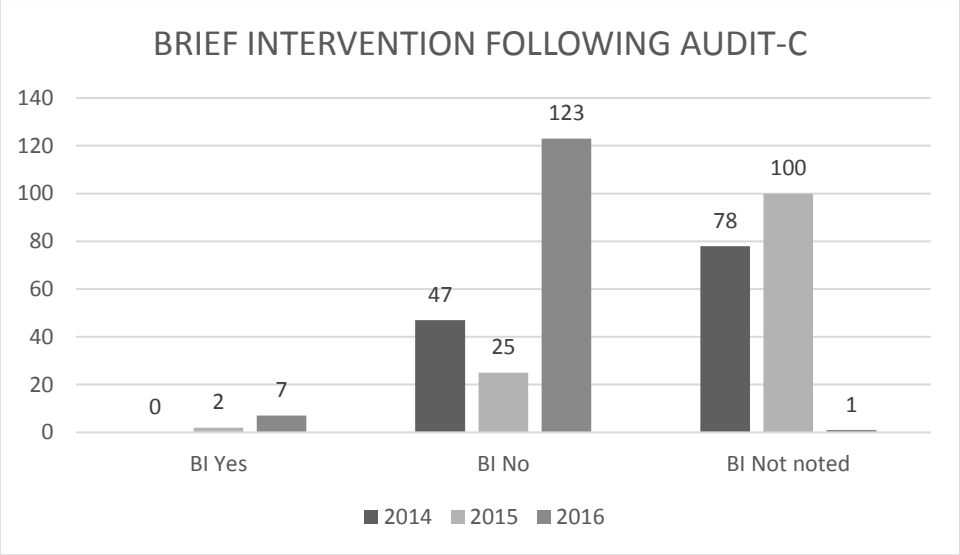



*Figure 3 Occasions of a Brief Intervention following AUDIT-C*

## 3.4 Discussion of Pre-Intervention Medical Record Review Results

While the overall proportion of women being asked if they were using alcohol since becoming pregnant increased between January 2014 and January 2015, there were very limited occasions in the 2015 review data when an AUDIT-C score was entered in the WHPR.

This outcome suggests that following the introduction of the WHPR, while women in 2015 were more likely to be asked a Personal History general question about alcohol use since becoming pregnant, AUDIT-C risk screening was not being routinely used, and brief interventions were not being provided, or at least were not being recorded as being provided. This is supported by the brief intervention data,

which shows very limited occasions of a brief intervention relative to alcohol risk being recorded as having been offered. However, given the variable nature of data quality noted during the medical record reviews, it is also possible this is an outcome of poor record keeping.

Occasions of the Personal History general alcohol questions being asked declined significantly in the 2016 medical record audit. While there was also a minor increase in the number of occasions an AUDIT-C score was recorded from the 8.6 per cent of records in 2015 to 16 per cent of records in the 2016 review, these results demonstrated clear evidence of missed opportunities to screen and educate women about alcohol use in pregnancy. Additionally, no medical records included in the pre-intervention audit had a second or third visit AUDIT-C score recorded.

As the purpose of the AUDIT-C screening tool is that it is used routinely with all pregnant women, initially to establish a pre-pregnancy *and* first visit alcohol risk score, and then to track and record any changes in alcohol use over the course of pregnancy, it is evident from the medical record review data that this had not been occurring, despite changes in the way in which pregnancy data is collected in the WHPR.

These combined outcomes demonstrate an across the board failure to use the AUDIT-C screening tool routinely and correctly which accords with findings related to midwives knowledge and attitudes to alcohol risk screening in pregnancy in a previous study[44].

The next section reports on the post-intervention review of medical records, following active promotion of the AUDIT-C learning guide to midwives at the trial site.

### 3.5 Conclusion

The pre-intervention medical record reviews clearly demonstrated that while at least half of all women were being asked a general question about alcohol use in pregnancy during a booking in or first antenatal visit with a midwife, and despite the availability of the AUDIT-C screening tool from late 2014, this was not being widely used by midwives.

Further, the notation in the WHPR Personal History page which includes the general alcohol question (GAQ) – *alcohol, other drug use [current and recent past] (refer to screening tool)* – does not specifically refer to the AUDIT-C screening tool, and, conflates alcohol and other drug use. This appears to be highly problematic in terms of seeking accurate information from women with regard to their alcohol use and other drug use.

The pre-intervention results supported the need for a targeted intervention to highlight use of the AUDIT-C screening tool.

# SECTION FOUR

## AUDIT-C Learning Guide Intervention

### 4.1 Background

The primary purpose of the Midwives and AUDIT-C intervention project was to develop a learning resource for midwives in the Western Australian public health system to address an identified gap in midwives professional skill set related to risk screening for alcohol use in pregnancy.

Early in the project it had been noted that freely available online training modules developed by the Foundation for Alcohol Research and Education (FARE) to promote alcohol risk screening as a routine part of pregnancy care had been available to health professionals, including midwives, from July 2014.

As such, expert midwifery opinion was sought about the useability of the FARE training modules with an outcome that a more succinct and accessible learning format was required to engage more midwives in professional development related to alcohol risk screening. This view was borne out by 2017 FARE data which showed that from 2014-17, while there had been 1,627 midwife enrolments in the FARE online course, there were only 604 active users, with 599 course completions. As a nationally available course, this represented a very small proportion of the estimated 23,800 midwives actively working in maternity care across Australia.

### 4.2 Midwives AUDIT-C Learning Guide Development

An Expert Group comprising midwifery educators, maternity unit managers, senior midwifery advisors, and a consumer representative reviewed the results of: qualitative data collection with women and midwives (reported in Section Two); critical review outcomes; and, a range of professional development resource materials compiled from desktop searching. A learning guide template was drafted and circulated to the Expert Group for feedback. Further opinion was also sought from national and international experts. The AUDIT-C Learning Guide was subsequently finalised, and comprised:

- A current practice self-assessment exercise
- Module 1: Prenatal Alcohol Exposure and Fetal Alcohol Spectrum Disorder
- Module 2: Understanding and Using AUDIT-C
- Module 3: Brief Intervention
- Module 4: Breastfeeding and Alcohol
- Web-based resources
- Print Ready AUDIT-C resources

The AUDIT-C Learning Guide was pre-loaded on to USB devices together with a short audio visual presentation providing a background to the project and an introduction to the learning guide, which became the intervention to be tested at the trial site.

Between December 2016 and January 2017, four face-to-face presentations were made to midwives (n= 45) at the trial site to raise awareness of the learning guide, and 50 USB devices were distributed to workstations across the maternity unit, with an email notification sent to all midwives to alert them to the availability of the AUDIT-C Learning Guide. Three measures were used to assess impact as reported below.

## 4.3 Intervention Results

Measures to assess the impact of the AUDIT-C intervention were: 1] a brief survey for women attending the trial site antenatal clinic during the intervention period; 2] a post intervention medical record audit to determine any changes to occasions of an AUDIT-C scores recorded in medical records; and, 3] an evaluation tool for midwives. The midwives evaluation tool was intended to ascertain the useability and relevance of the Learning Guide. However, a poor return rate (n=14) limited the relevance of the midwives evaluation outcomes.

On six occasions across January and February, women attending the antenatal clinic were directly approached to complete a brief survey after their appointment on the day. The timing of the women's survey collection overlapped with the AUDIT-C Learning Guide presentations to midwives. The women's survey data is reported below, followed by the outcomes of the post-intervention review of medical record data conducted in May 2017 and the midwives evaluation data. The post-intervention medical record review results are reported in comparison to the pre-intervention medical record review results reported in Section 3.

### *4.3.1 Women's Survey Results*

The tick-box women's survey comprised seven questions: gestation and number of visits (2 questions); receipt of information about drinking alcohol during pregnancy from anyone (1 question); and, attitudes to being asked questions about alcohol use in pregnancy (3 questions). The seventh question asked if the woman had seen a midwife, and if yes, there were six sub-questions to complete.

A total of 78 evaluations were completed by women attending the trial site antenatal clinic. Most women (n=73) had seen a midwife at the time of completing the survey. A small number of participants (n=5) had not seen a midwife at the time of the survey, and as such their data was only relevant to the results shown in Table 1.

*Table 1: Results - Women's Survey questions 1-6 (n=78)*

| **Gestation (n=78)** | **Number of antenatal visits** | | | | **Given information about drinking alcohol by anyone** | | **Should women be asked if they are drinking alcohol (Y/N)** | | **Are questions about drinking alcohol easy to answer (Y/N)** | | **Do questions about drinking alcohol worry you? (1-3 scale; a. very worried/ b. a bit worried/ c. not worried at all)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2-3 | 4-5 | 6+ | | Yes | No | Yes | No | Yes | No | a. | b. | c. |
| **< 20 weeks (n=13)** | 10 | 2 | 1 | | 9 | 4 | 11 | 2 | 13 | 0 | 1 | 0 | 12 |
| | | | | *%* | ***69*** | *31* | ***85*** | *15* | ***100*** | *0* | *8* | *0* | ***92*** |
| **> 20 weeks (n=65)** | 30 | 27 | 8 | | 51 | 14 | 61 | 4 | 62 | 3 | 2 | 2 | 61 |
| | | | | *%* | ***78*** | *22* | ***94*** | *6* | ***95*** | *5* | *3* | *3* | ***94*** |

Of the 78 survey participants, all were between 12 and 35+ weeks of gestation, with most participants (72/78) having had 2 or more antenatal visits, the majority of these were in the 2-5 visit range. Participant responses were analysed as: 20 weeks or less; or, more than 20 weeks gestation, and results showed that:

- Most women (20 weeks or <: 69%, and >20 weeks: 78%) had been given information about drinking alcohol in pregnancy by someone at some stage (friend, family member, or health professional).
- A very high proportion of women 20 weeks or <: 85%, and >20 weeks: 94%) agreed that women should be asked if they are drinking alcohol in pregnancy.
- To the question "Are questions about drinking alcohol while you are pregnant easy for you to answer" 20 weeks or <: 100%, and >20 weeks: 95%) of women responded 'yes'.
- In terms of anxiety associated with being asked questions about drinking alcohol while pregnant, 20 weeks or <: 92%, and <20 weeks: 94%) of women were *not worried at all* by such questions. Overall, only 5/78 women expressed any anxiety or worry in response to this question.

Question seven of the women's survey was only relevant if women had attended at least one antenatal visit with a midwife, and was designed to prompt women's recollections of being asked questions by a midwife about their alcohol use during pregnancy. This question comprised six sub-questions: one directly related to the Personal History general alcohol question in the WHPR, three directly related to the AUDIT-C screening tool questions, and two related to whether advice or written information about alcohol use in pregnancy had been provided by a midwife during a visit. These final two sub-questions were a proxy indicator for a brief intervention. The results for question seven are shown in Table 2.

*Table 2: Results - Women's survey question 7 (n=73)*

| ***At any of your antenatal visits with a midwife in this pregnancy, did a midwife:*** | YES | | NO | |
|---|---|---|---|---|
| | **#** | **%** | **#** | **%** |
| *Ask if you have had any alcohol* | 68 | ***93*** | 5 | ***7*** |
| *Ask you how often you have a drink containing alcohol* | 51 | ***70*** | 22 | ***30*** |
| *Ask how many drinks containing alcohol you usually have in a day* | 39 | ***53*** | 34 | ***47*** |
| *Ask how often you have five or more drinks containing alcohol on any one day* | 26 | ***36*** | 47 | ***64*** |
| *Give you advice about stopping alcohol while you are pregnant* | 33 | ***45*** | 40 | ***55*** |
| *Give you written information about drinking alcohol in pregnancy* | 41 | ***56*** | 32 | ***44*** |

While the vast majority of women recalled being asked if they had used any alcohol while pregnant, only around half of the women surveyed recalled either being given advice about stopping alcohol while pregnant or being provided with written information. The survey results also showed that while over two thirds of women recalled being asked how often they have a drink containing alcohol, this reduced to about half in relation to a question regarding the amount consumed in a typical day and just over one third recalled being asked a question related to any occasions of binge drinking (five or more drinks containing alcohol on any one day).

### *4.3.2 Post-Intervention Audit of Medical Records Results*

At the time of the final medical record audit, the WHPR incorporating AUDIT-C was the universal antenatal record at the trial site. The parameters for the post intervention recall of medical records covered two months rather than one month used for the pre-intervention audits, and a higher proportion of records were used than for the pre-intervention audit, as shown in Table 3.

Table 4 provides a summary of the records included in the post-intervention audit, and which also shows the number and percentage of occasions when an AUDIT-C score was recorded. The March and April 2017 results were then combined in order to compare these to the pre-intervention medical record review results, a summary of which is shown in Table 3.

*Table 3: Pre and Post Intervention*

| Time Point | # of records randomly extracted for audit | # of records not used in audit (no antenatal data, or, outside of Time Point) | Total # of records included in audit | Total # of births for the Time Point | Percentage of records to number of births for the Time Point |
|---|---|---|---|---|---|
| 2014 | 138 | -13 | 125 | 204 | 52% |
| 2015 | 142 | -15 | 127 | 212 | 59% |
| 2016 | 147 | -16 | 131 | 200 | 65% |
| 2017 | 290 | -36 | 254 | 343 | 74% |

*Table 4:* ***Post-intervention Medical Record Audit: Summary of Occasions of Recording Alcohol Use – borders?***

| | # of records (randomly) extracted for audit | # of records not used in audit (no antenatal data, or record not available) | Total # of records included in audit | Total # of births for the Time Point | Percentage of records to # of births for the Time Point | # of records with AUDIT-C score correctly recorded | Percentage of records with AUDIT-C score correctly recorded |
|---|---|---|---|---|---|---|---|
| March 2017 | 149 | -10 | 139 | 189 | 73% | 96 | 51% |
| April 2017 | 141 | -26 | 115 | 154 | 74% | 66 | 43% |

From the post-intervention review records, the following demographics are relevant:

- the mean gestation was 23 weeks + 2 days (range 6+0 to 38+6);
- the mean number of antenatal visits was 4.85 (range 1-12);
- 25% of women were first alcohol risk screened at 20 weeks gestation or prior, and
- 75% were first screened at more than 20 weeks.

About half of all women with a valid pregnancy AUDIT-C score recorded in their medical record were screened at >25 weeks gestation which aligns with the timing of face-to-face presentations at the trial site.

The outcomes of the pre and post intervention medical record review results are reported in relation to: the frequency of the Personal History general alcohol question (GAQ) *alcohol, other drug use* (yes or no); if a valid AUDIT-C score was recorded (yes or no), and if a brief intervention following AUDIT-C was recorded (yes, no or not noted).

While there was variability of the GAQ being asked during the pre-intervention record reviews, the 2017 post-intervention data showed a much higher frequency of the GAQ being asked (relative frequency 67%) (see Figure 4) and a valid AUDIT-C score being recorded (relative frequency 64%) (see Figure 5).

However, in relation to brief interventions, these show a continued trend of not being provided (see Figure 6). However, it is also possible that the lack of entries regarding if a BI was provided following an AUDIT-C assessment was due to poor record keeping, as indicated by the data collection notation of 'not noted' (172/254).

The overall outcomes based on pre- and post-intervention data collected at the trial site was a mean increase of 32% following the AUDIT-C intervention, from a previous high of 16% of occasions in 2016 to a combined total of 48% of occasions in 2017, as shown in Figure 7.


***Figure 4*** *Personal History General Alcohol Question: Asked Yes or No*

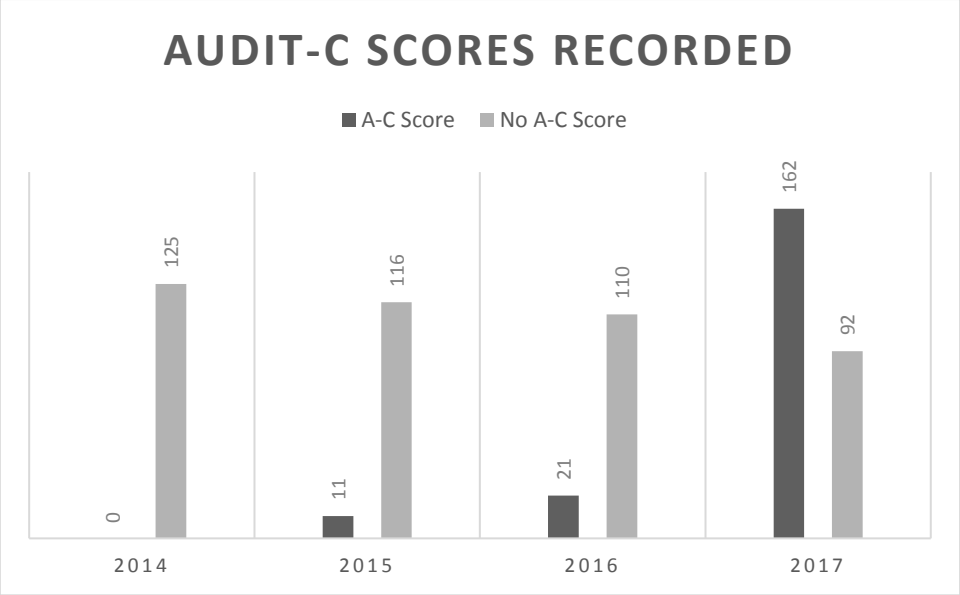



***Figure 5*** *AUDIT-C screening tool first visit score recorded*

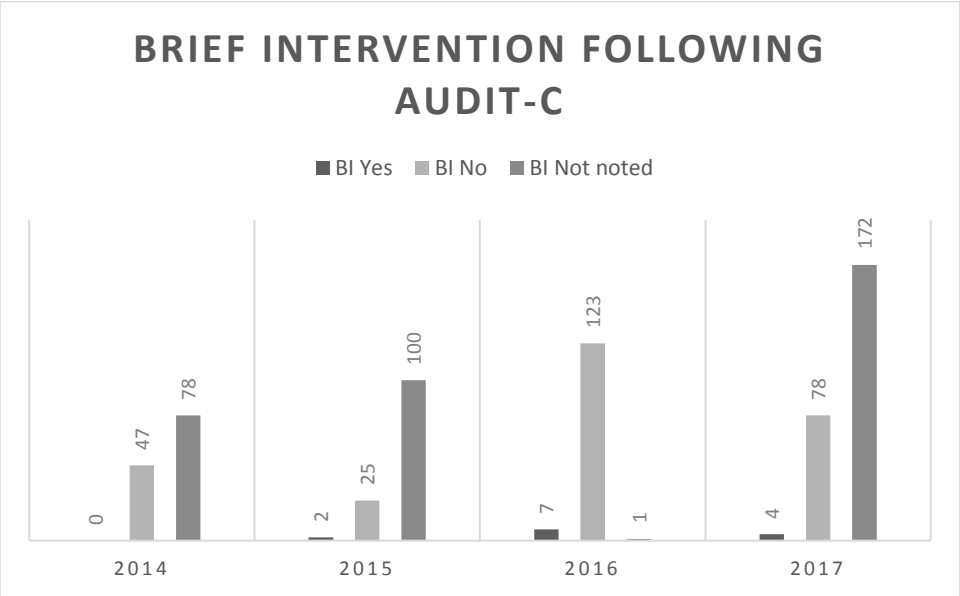



*Figure 6 Brief Interventions following AUDIT-C alcohol risk screening*

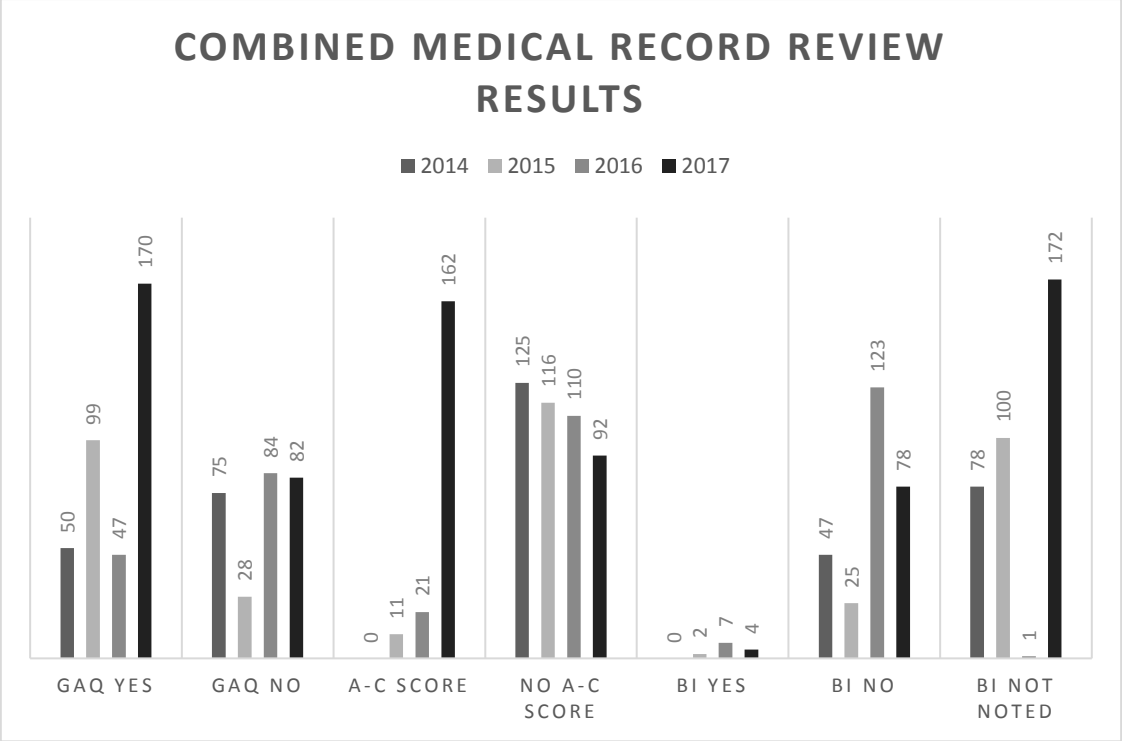



*Figure 7: Combined pre and post intervention medical record review results*

### *4.3.3 Midwives Evaluation Results*

Only a small sample of midwives evaluations were collected (n=14). The results are reported while noting significant limitations regarding results due to the sample size.

The midwives evaluations included three broad questions: Q1] knowledge of AUDIT-C, confidence providing a brief intervention, and understanding of FASD prior to using the AUDIT-C Learning Guide; Q2] which modules were accessed; and, Q3] if recommended readings, instructional videos or web-based resources were accessed, if so, which were which useful. Thirteen question/statements followed, requiring Likert-scale responses (strongly disagree, disagree, undecided, agree, strongly agree) or does not apply. The midwives evaluation form is provided in Appendix 3.

For the broad questions, more midwives indicated limited knowledge of AUDIT-C and limited confidence with providing a brief intervention, while at the same time having good or excellent understanding of FASD. Most (12/14) had read through all modules and accessed recommended readings for each module; while about half had accessed instructional videos or web-based resources, and found these to be useful.

Likert responses (Table 5) showed agreement/strong agreement that: the AUDIT-C Learning Guide was easy to use; promoted a better understanding of routinely doing AUDIT-C risk assessments and using the screening tool correctly, checking women's pregnancy records to make sure an AUDIT-C risk assessment has been completed and, using AUDIT-C in all booking or first visits and recording the score; and, improved confidence in providing brief education and interventions.

*Table 3: Midwives Evaluation Scaled Responses Summary*

| | (Agree/ Strongly Agree) = **Total** | Disagree | Undecided, Does Not Apply or Blank |
|---|---|---|---|
| I found the AUDIT-C Learning Guide easy to use. | (9/5) **14** | | |
| I am now confident to provide brief education to women about alcohol use in pregnancy even if their total maternal AUDIT-C score was low risk. | (7/7) **14** | | |
| The current practice self-assessment exercise was useful to help me identify my learning needs. | (10/3) **13** | | 1 |
| I have a better understanding of the reasons for routinely doing AUDIT-C risk assessments with all pregnant women. | (6/7) **13** | | 1 |
| I found the steps set out in *2.6 AUDIT-C as Process* improved my understanding of correctly using the screening tool. | (8/5) **13** | | 1 |
| I would recommend the AUDIT-C Learning Guide to other midwives | (8/5) **13** | | 1 |
| I have learnt new information regarding Prenatal Alcohol Exposure and Fetal Alcohol Spectrum Disorder. | (8/4) **12** | | 2 |
| I am now more confident with providing a brief intervention about alcohol use during antenatal visits following AUDIT-C risk screening. | (8/4) **12** | | 2 |
| I am now more confident to discuss alcohol use and breastfeeding with women. | (6/6) **12** | 1 | |
| I now use the AUDIT-C screening tool in all booking or first visits and record the AUDIT-C score in every woman's pregnancy record. | (8/4) **12** | | 2 |
| The Introductory Presentation with audio was useful background for the AUDIT-C Learning Guide. | (8/4) **12** | | 2 |
| I have a better understanding of the reasons for completing the AUDIT-C risk assessment three times during pregnancy and recording the score in every woman's pregnancy record. | (7/4) **11** | | 3 |
| I now check a woman's pregnancy record to make sure the AUDIT-C risk assessment has been completed at the booking visit and at one or two later visits. | (9/2) **11** | 2 | 1 |
| I have used the Web-Based Resources section to identify which resources are relevant for the setting I work in. | (7/1) **8** | 2 | 4 |

## 4.4 Conclusion

Based on the three measures used to evaluate the impact of AUDIT-C intervention at the trial site, it seems the intervention had a positive and meaningful impact on midwives practice, and increased by 32%, the recording of a valid AUDIT-C score in medical records. This outcome is supported by data from the women's post intervention individual surveys and the medical record review results.

The post intervention survey results confirmed pre-intervention qualitative data that women find questions about alcohol use in pregnancy acceptable. Even so, the results also showed that women were still not consistently being asked all three AUDIT-C questions, confirmed in the medical record review results. While the midwives evaluation results were limited due to the small sample size, there was strong/very strong agreement by midwives regarding the acceptability and usefulness of the AUDIT-C Learning Guide.

# APPENDICES

## *APPENDIX 1: ANNOTATED LITERATURE REVIEW BY TOPIC (Tables 1-5)*

| Table 1: Articles which address prevalence and/or predictors of alcohol use in pregnancy | | | | |
|---|---|---|---|---|
| Year and publishing journal (author & title) | Research design | Emphasis on (pregnant) women | Tools for measuring alcohol | Main outcomes of study |
| 2006 Matern Child Health J (Edwards & Werler Alcohol Consumption and Time to Recognition of Pregnancy) | Sample of control women from a multisite case-control study | Women who have experienced a pregnancy | | While time to pregnancy recognition did not vary among drinkers and non-drinkers, results from this study reiterate previous findings that pregnant women consume alcohol, and that drinkers share social and demographic characteristics that could be used to target public health interventions. |
| 2007 Alcoholism: Clinical and Experimental Research (Colvin et al Alcohol Consumption During Pregnancy in Nonindigenous West Australian Women) | Random survey sample | Non-Indigenous women giving birth in WA – survey timing 12 weeks post birth 1995-97 | Self-report using standard choices of different types of alcohol and number of drinks per occasion | Women generally reduced their average alcohol consumption and the number of standard drinks on a typical occasion as their pregnancy progressed, although 10-14% were drinking outside guidelines for pregnancy. Important for all women of child-bearing age to be made aware, well before they consider pregnancy, of the risks of drinking alcohol during pregnancy so they can make informed decisions. |
| 2011 Journal of Women's Health (Skagerstrom et al Predictors of Drinking During Pregnancy: A systematic review | Systematic Review | Pregnant women | Studies included: context of antenatal care, data collected during the woman's pregnancy (1999-2009), investigated predictors of any drinking, population-based orientation. | Women's pre-pregnancy alcohol consumption (i.e., quantity and frequency of typical drinking) and exposure to abuse or violence were consistently associated with drinking during pregnancy. Antenatal care providers should assess these factors for improved detection of women at risk for alcohol-exposed pregnancies. |

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| 2015 BMJ Open (O'Keeffe et al Prevalence and predictors of alcohol use during pregnancy: findings from international multicentre cohort studies) | Cross-cohort comparison of retrospective and prospective studies | Women who have experienced a pregnancy | n/a | Alcohol use during pregnancy is prevalent and socially pervasive in the UK, Ireland, New Zealand and Australia. New policy and interventions are required to reduce alcohol prevalence both prior to and during pregnancy. Further research on biological markers and conventions for measuring alcohol use in pregnancy is required to improve the validity and reliability of prevalence estimates. |

Table 2: Articles addressing the use of screening tools and/or brief intervention/motivational interviewing, inclusive of (pregnant) women

| Year and publishing journal (author & title) | Research design | Emphasis on (pregnant) women | Tools for measuring alcohol | Brief intervention &/or Motivational Interviewing | Setting/ timing of BI &/or MI | Duration of session/s | Main outcomes of study |
|---|---|---|---|---|---|---|---|
| 2005 American College of O&G (Chang et al, Brief Intervention for Prenatal Alcohol Use: A randomised trial*<br><br>**The most cited RCT on brief intervention* | RCT | Pregnant women | T-ACE | BI | Antenatal care | 25 mins | Fewer than 20% of participants were abstinent at study enrolment, averaging 1.5 drinks per episode. Prenatal alcohol use declined in both the treatment and control groups after study enrolment. Factors associated with increased prenatal alcohol use after randomisation include: more years of education, extent of previous alcohol consumption, and temptation to drink in social situations. Pregnant women with highest levels of alcohol use reduced their drinking most after a brief intervention that included their partners. Recommendations include consistent screening for prenatal alcohol use followed by diagnostic assessment when indicated. |
| 2005 BJGP (Rubak et al, Motivational interviewing: a systematic review and meta-analysis) | SR and meta-analysis of RCT using MI as the intervention | Anyone involved in an intervention which used MI | N/A | MI | | | Motivational interviewing in a scientific setting outperforms traditional advice giving in the treatment of a broad range of behavioural problems and diseases. When using MI in brief encounters of 15 minutes, 64% of the studies |

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|---|---|---|---|---|---|---|---|
| | | | | | | | showed an effect. More than one encounter with the patient ensures the effectiveness of MI. |
| 2006 J Am Board Fam Med (Mengel et al, Preventing Alcohol Exposed Pregnancies) | Clinical review | Pregnant women | TWEAK, T-ACE, CAGE, MAST | BI | Primary health care | n/a | Identifies family physicians as being in a unique position to reduce the incidence of alcohol-exposed pregnancy. Noted that screening tools developed specifically for prenatal care (TWEAK/T-ACE) are more useful than general tools (CAGE/MAST)' screening alone seems to reduce alcohol use among pregnant women, but, BI, including education about alcohol's effects on the developing fegus, are effective among women not responding to screening. |
| 2007 Alcohol Clin Exp Res (Bradley et al, AUDIT-C as a brief screen for alcohol misuse in primary care) | Cross-sectional validation study | Men and women | AUDIT and AUDIT-C | | | | Based on interviews with 92% of eligible patients, 128 (33%) men and 177 (19%) women met the criteria for alcohol misuse. Areas under the receiver operating characteristic curves (AUROCs) for the AUDIT-C were 0.94 (0.91, 0.96) and 0.90 (0.87, 0.93) in men and women, respectively (p=0.04). Based on AUROC curves, the AUDIT-C performed as well as the full AUDIT and significantly better than self-reported risky drinking, AUDIT question #3, or the augmented CAGE questionnaire (p-values <0.001). The AUDIT-C screening thresholds that simultaneously maximized sensitivity and specificity were > or =4 in men (sensitivity 0.86, specificity 0.89) and > or =3 in women (sensitivity 0.73, specificity 0.91). The AUDIT-C was an effective screening test for alcohol misuse in this primary care sample. |
| 2007 American Journal of Public Health (O'Connor and Whaley, Brief Intervention for Alcohol Use by Pregnant Women | Randomised, nested case/ control | Pregnant women | Alcohol screening questions & brief intervention | BI | Prenatal visits, BI delivered by nutritionist | 10-15 minutes | Women in the brief intervention condition were 5 times more likely to report abstinence after intervention compared with women in assessment condition only. The success of BI conducted in a community setting by nonmedical professionals is significant. |

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|---|---|---|---|---|---|---|---|
| | | | counselling & workbook | | | | |
| 2008 Can J Clin Pharmacol (Davis, Carr & La, Needs Assessment and Current Practice of Alcohol Risk Assessment of pregnant women and women of childbearing age by primary health care professionals | Survey | Pregnant and childbearing women | TWEAK, CAGE, T-ACE or other | N/A | N/A | N/A | The majority of survey respondents (GPs & nurse practitioners) reported either rarely or never using a standardised screening tool to assess alcohol risk or reported a less sensitive tool. Current practices varied according to gender, length of time in practice and practice location. |
| 2007 Cochrane Review (Kaner et al, Effectiveness of brief alcohol interventions in primary care populations (Review) | Systematic Review | Men and women | Brief intervention – described as feedback on alcohol use and harms, etc | | | | After one year or more, people who received the brief intervention drank less alcohol than people in the control group. For men, the benefit of brief intervention was a difference of 57 grams/week. The benefit was not clear for women. The benefits of brief intervention were similar in the normal clinical setting and in research settings with greater resources. Longer counselling had little additional benefit. |
| 2009 Current Opinion in Obstetrics and Gynecology (Nilsen, Brief alcohol intervention to prevent drinking during pregnancy: an overview of research findings | Review of current evidence | Pregnant women | TWEAK, T-ACE, AUDIT, AUDIT-C | BI | Antenatal care | | The overview presents convincing evidence with regard to the effectiveness of delivering brief intervention in antenatal care. Pregnant women are generally believed to be highly motivated to reduce their alcohol intake. It is feasible to implement systematic screening with a simple questionnaire to facilitate early recognition of women at risk. |
| 2010 Addiction (Burns et al, Brief screening questionnaires to identify problem drinking during | Systematic Review – QUADAS criteria (patient selection, | Risk drinking in pregnant women | TWEAK, T-ACE, CAGE, NET, AUDIT, AUDIT-C | N/A | N/A | N/A | 5 included studies (6724 participants) T-ACE, TWEAK, and AUDIT-C show promise for screening for risk drinking, and AUDIT-C may also be useful for identifying alcohol dependency or abuse. AUDIT-C risk drinking sensitivity (95%) with high specificity (85%). |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pregnancy: a systematic review | blinding, completeness of descriptions of reference and screening tests and data collection, and likelihood of verification bias) | | | | | | |
| 2012 Trials (Wilson et al, Brief intervention to reduce risky drinking in pregnancy: study protocol for a randomized controlled trial*<br><br>**This trial did not proceed – advised by personal communication (J Rankin 2016)* | RCT protocol – | Pregnant women | AUDIT-C | BI & MI | Midwives clinic | 5 minutes of structured advice by midwife 20 minute brief interventio n by trained alcohol counsellor | This RCT protocol included description of a design and feasibility pilot to be undertaken prior to a subsequent definitive trial. It is a parallel-group, non-blinded trial, with midwife as the unit of randomisation, comparing 5 minutes of structured advice from a community midwife plus a 20 minute brief intervention delivered by a trained alcohol counsellor (intervention group) with the standard advice on drinking in pregnancy delivery by a community midwife (treatment as usual) |
| 2012 Western Journal of Nursing Research (Osterman & Dyehouse, Effects of a Motivational Interviewing Intervention to Decrease Prenatal Alcohol Use) | Experimental two-group pre-test and post-test design, randomised to intervention or not | Pregnant women less than 2 on AUDIT items 4,5 or 6, women assessed as dependent excluded | AUDIT | MI | MI delivered by researcher | One 30 minute session | MI not found effective in decreasing prenatal drinking behaviours, although not delivered as part of routine antenatal care. |
| 2012 Nordic Federation of societies of | Cohort study | Pregnant women | AUDIT (clinical setting) and | (Risk Drinking – similar to BI) | Antenatal clinic by midwives | 90 minutes (cohort 1) week 10- | Four predictors for drinking during pregnancy: older age; having a previous birth; frequency of pre-pregnancy drinking; and perceiving the |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Obstetrics and Gynecology (Nilsen et al Alcohol prevention in Swedish antenatal care: effectiveness and perceptions of the Risk Drinking project counselling model) | | | AUDIT-C (post natal question-naire) | Counselling model provided by midwives as part of routine care | and postnatal survey by postal | 12; cohort 2 30 minutes (week 6-8) and 90 minutes week 10-12) | message from antenatal care as "small amounts of alcohol during pregnancy don't matter". The expanded counselling model in cohort 2 did not reduce the proportion of women who continued to drink during pregnancy with the previous counselling model, although the advice was perceived more favourably. |
| 2013 Substance Abuse, Treatment, Prevention and Policy (Gebara et al Brief intervention and decrease of alcohol consumption among women: a systematic review) | Systematic Review – qualitative approach, descriptive review | Pregnant and non-pregnant women | AUDIT, T-ACE, DDQ | BI | Mainly primary care | 10-30 minutes, usually in a single session | In general, results indicated a decrease in alcohol consumption among women following BI – suggesting the impact on woman's reproductive health and the lower social acceptance of female consumption can be aspects favourable for the effectiveness of BI |
| 2014 Alcohol and Alcoholism (O'Donnell et al, The Impact of Brief Alcohol Interventions in Primary Healthcare: A systematic review of reviews | SR (in accordance with PRISMA) and meta-analysis | Anyone involved in an alcohol intervention which used BI | N/A | BI | Various | N/A | The overview highlights the large volume of primary positive evidence supporting brief alcohol intervention effects, particularly: consistent reporting that BI are effective at reducing hazardous and harmful drinking in primary healthcare; overall evidence implies that brief alcohol intervention is equally effective with men and women; effect sizes are largest at the earliest follow-up points, with decay in intervention effects over time. Further recent evidence suggest that greater effect sizes may be achieved with brief multi-contact interventions (each up to 15 minutes), although the 2007 Cochrane Review found that longer (more intensive) brief interventions offered no significant additional benefit over shorter input (Kaner et al, 2007). |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2014 Journal of Substance Abuse Treatment (Osterman et al, Single-session motivational intervention to decrease alcohol use during pregnancy | Experimental two group, pre-test-post-test design, randomised to MI or not | Pregnant women | AUDIT and QDS | MI | Obstetric clinic – with intervention delivered by researcher | 30 minutes | MI not found effective in decreasing alcohol use, although low levels of reported alcohol use by women at baseline left little room for improvement due to the intervention |
| 2015 Health (Bortes, Geidne & Eriksson, Preventing Alcohol Consumption during Pregnancy: a RCT) | RCT – randomised to brochure prior to first visit and brochure at first visit | Pregnant women | (Women's Organizations Committee on Alcohol and Drug Issues ) WOCAD Brochure | BI – defined as provision of a brochure | Antenatal clinic | nil | In contrast to previous research on information initiatives, which finds little effect, the use of WOCAD's brochure had a significant effect. Furthermore, it requires little resources, is easy to manage, and can function as a complement to standard practice in prenatal care to get more women to abstain. |
| 2015 Alcoholism: Clinical and Experimental Research (Montag et al, Preventing Alcohol-Exposed Pregnancy Among an American Indian/Alaskan Native Population: Effect of a Screening, Brief Intervention, and Referral to Treatment | RCT, blinded | Pregnant women | SBIRT | BI | Health clinic | 20 minutes | A finding that assessment, in and of itself, is associated with a positive change in behaviour and may be sufficient to decrease risky drinking and vulnerability to AEP indicate a value to providing assessment even if time constraints prevent an accompanying intervention. |

| Table 3: Articles which address the process of providing information/education or assessing alcohol use with pregnant women | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year and publishing journal (author & title) | Research design | Emphasis on (pregnant) women | Tools for measuring alcohol | Brief intervention &/or Motivational Interviewing | Setting/ timing of BI &/or MI | Duration of session/s | Main outcomes of study |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2006 Acta Obstetricia et Gynecologica (Goransson et al Identifying hazardous alcohol consumption during pregnancy: implementing a research-based model in real life | Randomised to intervention or control | Midwives and pregnant women | AUDIT and TLFB | none | Antenatal clinic | N/A | Confirms previous findings that alcohol use in pregnancy is more extensive in Sweden than generally realized. Systematic screening using AUDIT and TLFB detects hazardous use in a manner which regular antenatal care does not. This remains true under naturalistic conditions, following minimal training of regular antenatal care staff, and can be achieved with minimal resources. |
| 2007 American Journal of Public Health (O'Connor and Whaley, Brief Intervention for Alcohol Use by Pregnant Women) | Randomised controlled design (nested within sites, nested within condition) | Pregnant women | TWEAK | BI for participants randomised to receive this | Antenatal clinic | 10-15 minutes | Women in the BI condition were 5 times more likely to report abstinence after intervention compared with women in the assessment-only condition. Newborns whose mothers received BI had higher birthweights and birth lengths, and fetal mortality rates were 3 times lower (0.9%) compared with newborns in the assessment-only (2.9%) condition. The success of BI conducted in a community setting by nonmedical professionals has significant i8mplications for national public health policies. |
| 2009 Cochrane Review (Stade et al Psychological and/or educational interventions for reducing alcohol consumption in pregnant women and women planning pregnancy (Review) | Systematic review | Pregnant women or women planning pregnancy | Various inter-ventions (CBT, psychothera py, counselling/ therapy) & (brief educational sessions, MI, etc) | | | | Limited studies suggest that psychological and educational interventions may result in increased abstinence from alcohol, and a reduction in alcohol consumption among pregnant women. Results were not consistent, paucity of studies, number of participants, high risk of bias, complexity of interventions limit capacity to assess effectiveness. |
| 2010 Journal of Women's Health (Nilsen et al 2010, Is Questionnaire-Based | Qualitative – two cohorts, by questionnaire. First cohort | Pregnant women | Audit-C | BI | Antenatal | 60-90 minutes | Both standard care and questionnaire-based counselling model cohorts were advised at first contact that abstinence from alcohol is advised. The questionnaire-based counselling model was |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Alcohol Counseling More effective for Pregnant Women than Standard Maternity Care | received standard care, second cohort received alcohol advice based on a comprehensive counselling model | | | | | | more favourably perceived than the standard care model, but the new model was not more effective in terms of its impact on the proportion of women who abstained from drinking during pregnancy. |
| 2011 Journal of Women's Health (Skagerstrom et al, Predictors of Drinking During Pregnancy: A Systematic Review | SR, 14 studies | Pregnant women | N/A | N/A | | | Women's pregnancy alcohol consumption (i.e., quantity and frequency of typical drinking) and exposure to abuse of violence were consistently associated with drinking during pregnancy. Antenatal care providers should assess these factors for improved detection of women at risk for alcohol-exposed pregnancies.<br>Associations with drinking in pregnancy included higher age and higher income. High socioeconomic status is primarily because of frequent light social drinking rather than heavier binge drinking. Higher age, is likely associated with more years of drinking, leading to stronger ingrained habits. Additionally, higher pre-pregnancy alcohol consumption measured using questions on quantity and frequency of drinking was consistently identified as a predictor of drinking during pregnancy. |
| 2013 Midwifery (van der Wulp et al A qualitative investigation of alcohol use advice during pregnancy: experiences of Dutch midwives, pregnant women and their partners) | Qualitative – 2 studies. Study 1, interviews with midwives. Study 2 focus groups and interviews with pregnant women and partners | Midwives and pregnant women | None (Q: alcohol use Y/N) | none | N/A | N/A | Midwives alcohol advice requires improvement with regard to screening, knowledge about mechanisms and consequences of antenatal alcohol use and the involvement of the partners in alcohol advice in pregnancy |

| Table 4: Articles which address midwives knowledge, attitudes and/or practice of assessing alcohol use with pregnant women | | | |
|---|---|---|---|
| Year and publishing journal (author/s & title) | Research design | Emphasis on midwives | Main outcomes of study |
| 2010 Midwifery (Holmqvist & Nilsen, Approaches to assessment of alcohol intake during pregnancy in Swedish maternity care – a national-based investigation into midwives' alcohol-related education, knowledge and practice) | Survey design – 25 questions, of which 11 reported in this study | midwives | The majority of midwives had participated in CPE in handling risky drinking in the antenatal setting. More education was associated with more common use of a screening tool for assessment of a woman's alcohol intake before pregnancy, and more frequent counselling when identifying a pregnant woman whose pre-pregnancy consumption was risky. The tool most frequently used was AUDIT. Overall perception of knowledge as high. Midwives wanted more knowledge about conversational techniques for use when alcohol-related symptoms are evident. |
| 2011 Midwifery (Jones et al, Midwives and pregnant women talk about alcohol: what advice do we give and what do they receive?) | Qualitative – convenience sample of interviews, midwives and pregnant women | Midwives and pregnant women | Midwives and pregnant women consistently agreed that conversations about alcohol are generally limited to brief screening questions at the first visit, and the risks are not discussed or explained (except for high-risk women). Both groups expressed comfort with the idea of discussing alcohol consumption, but lacked knowledge of the risk and recommendations, and it appears that this opportunity provide women with information is under-utilised. |
| 2011 Alcoholism: Clinical and Experimental Research (Kesmodel & Kesmodel, Alcohol in Pregnancy: Attitudes, Knowledge, and information Practice Among Midwives in Denmark 2000-2009) | Qualitative – all midwives working in one setting, at two time points (2000 & 2009) | Midwives | Compared with 2000 data results, 61% of midwives in 2009 (vs 28% 2000) reported they advised alcohol abstinence. Midwives knowledge of official recommendations was good. The study noted that attitudes towards and beliefs and knowledge about drinking in pregnancy among midwives changed along with changes in the official policy. The change was mostly independent of personal characteristics (age, gender, place of work). |
| 2012 Midwifery (Skagerstom et al, Towards improved alcohol prevention in Swedish antenatal care?) | Cross-sectional surveys with midwives collected at 2 time points, 2006 & 2009 | Midwives | The amount of CPE undertaken by midwives increased significantly between 2006 and 2009. The routine use of an alcohol screening questionnaire was reported by nearly all midwives in 2009. The most confident midwives in 2009 had taken part in more days of education, had more often taken part in education regarding MI, provision of advice and information on the health risks associated with alcohol, and screening. The authors noted that a broad, national education effort can be successful in enhancing knowledge and changing antenatal care practice. |
| 2013 Journal of Midwifery and Women's Health (Loxton et al Acquisition and Utilization of Information About Alcohol Use in | Qualitative – brief semi-structured interviews with mothers of young children; focus | Service providers and women with experience of pregnancy care | Confusion surround the recommendations regarding alcohol use during pregnancy, inconsistency in addressing alcohol use with pregnant women, information overload, and a perceived culture of drinking appear to contribute to the high proportion of Australian women drinking during pregnancy. |

| | | | |
|---|---|---|---|
| Pregnancy Among Australian Pregnant Women and Service Providers) | groups with service providers | | |
| 2014 BMC Pregnancy and Childbirth (Doi et al, Alcohol brief interventions in Scottish antenatal care: a qualitative study of midwives attitudes and practices) | Qualitative study, semi-structured interviews | Midwives | Midwives recognised the important role they play in alcohol intervention activities in antenatal care. As the majority of women stop consuming alcohol in pregnancy, many will not need a BI. Those who have not stopped are likely to need a BI, but midwives were concerned that it was this group that they were most likely to alienate by discussing such concerns. Further consideration should be given to pre-pregnancy preventative measures as they are more likely to reduce alcohol-exposed pregnancies. |
| 2014 BMC Pregnancy and Childbirth (Payne et al, Midwives knowledge, attitudes and practice about alcohol exposure and the risk of fetal alcohol spectrum disorder) | Cross-sectional study, questionnaire for midwife with sample drawn from 19 maternity sites across seven health regions | Midwives | Nearly all midwives in this study asked and advised about alcohol consumption in pregnancy and around two thirds provided information about the effects of alcohol in pregnancy. The findings support the need for further professional development for midwives in screening and brief intervention. Policy should support midwives' practice to screen for alcohol use in pregnancy and offer brief intervention when indicated. |
| 2015 Midwifery (Doi et al, A realist evaluation of an antenatal programme to change drinking behaviour of pregnant women) | A realist evaluation (CMO) incorporating systematic reviews and qualitative data | Midwives and pregnant women | Drinking in pregnancy is an emotive issue, therefore delivering alcohol brief interventions at the first antenatal appointment when they are more likely to achieve the most benefits poses challenges. When training midwives to screen and delivery BI, special attention is needed to improve person-centred communications skills to overcome barriers associated with discussing sensitive prenatal alcohol use and enhance early identification and delivery of alcohol brief interventions at the first antenatal appointment. |
| 2015 Sexual & Reproductive Healthcare (Wangberg, Norwegian midwives' use of screening for and brief interventions on alcohol use in pregnancy | Survey | Midwives | Most midwives (97%) asked pregnant women about their alcohol use at their first consultation. Just under half (42%) reported using a screening instrument, with 16% nominating AUDIT or TWEAK. The need for more training was reported by 66%. Motivational interviewing was well known and frequently used. Low perceived BI competence and finding it difficult to discuss alcohol use with parents with a different ethnicity both reduced changes of carrying out a BI. Time constraints and lack of organisational support were other frequently mentioned barriers. |

| Table 5: Articles which address women's knowledge, attitude and/or practice of alcohol use | | | |
|---|---|---|---|
| Year and publishing journal (author/s & title) | Research design | Emphasis on | Main outcomes of study |
| 2008 Acta Obstetricia et Gynecologica (Nilsen et al, Alcohol use before and | Survey | Drinking behaviour and | Most women (94%) abstained from alcohol during pregnancy. Those who continued drinking during pregnancy were older, had more often given birth and drank more |

| | | | |
|---|---|---|---|
| during pregnancy and factors influencing change among Swedish women) | | information sources | frequently before pregnancy than the women who abstained. Half of respondents believed that decreases in alcohol intake during pregnancy reported in previous studies could be due to inaccurate self-reporting. The main message from maternity health care providers was perceived to be complete abstinence from alcohol during pregnancy. |
| 2010 Women's Health Issues (Roberts and Nuru-Jeter, Women's Perspectives on Screening for Alcohol and Drug Use in Prenatal Care) | Qualitative – semi-structured interviews and focus groups | Pregnant and parenting women using alcohol and/or drugs | Most women were averse to having drug but not alcohol use identified and were mistrustful of providers' efforts to discover drug use. Women expected psychological, social and legal consequences from being identified. Women did not trust providers to protect them from these consequences, and took steps to protect themselves. |
| 2013 American Journal of Health Education (Elek et al, Women's Knowledge, Views, and Experiences Regarding Alcohol Use and Pregnancy: Opportunities to Improve Health Messages) | Qualitative – focus groups | Women of reproductive age | Women acknowledged the risks and consequences of drinking alcohol during pregnancy, but many held common misconceptions. Some women continued to drink during pregnancy or expressed intent to continue drinking until pregnancy confirmation. Finds indicated that women's partners, families, and friends influence women's decisions to drink or abstain from alcohol. Health care providers and the internet act as important sources of health information. |
| 2014 BMC Pregnancy and Childbirth (Meurk et al, Factors influencing women's decisions to drink alcohol during pregnancy: findings of a qualitative study with implications for health communication) | Qualitative – semi-structured interviews with 40 women drawn from ALSWH, living in a specified geographical area, who were pregnant, or had recently given birth, when surveyed in 2009 | Women who had been pregnant | Women generally described drinking small amounts of alcohol during pregnancy as being a low risk activity, the importance of alcohol to their social lives, or finding abstinence a burden. Anxiety about alcohol consumption during pregnancy was not widespread. However, obstetricians were an important mediator of this. Health messages that dispel the notion that wine is a "healthy" choice of alcoholic beverage, that provide women with strategies to helps them avoid drinking, and educate women about the effects of ethanol on maternal and fetal bodies, should be considered. |
| 2014 BMC Public Health (Anderson et al, Women's perceptions of information about alcohol use during pregnancy: a qualitative study) | Qualitative – participants recruited from ALSWH age cohort 1973-78 study who reported a pregnancy in 2009, (self selected) | Women who had a pregnancy in 2009 and who had completed the alcohol items in the 2009 survey or 2012 survey | The discord between women's expectations to receive information about alcohol use early in pregnancy from their healthcare providers and the lack of consistent information actually being provided could be addressed by introducing a multifaceted, systematic approach to information delivery. Such an approach, particularly within the primary care setting, could help ensure a clear and consistent message is sent through this information channel which women believe to be a reliable source. Alcohol recommendations should be maintained overtime to provide a stable platform for this information provision to occur. Providing women with evidence-based information will enable them to make informed decisions about drinking during pregnancy. |

| | | | |
|---|---|---|---|
| | representing 19% of those approached | | |
| 2015 BMC Pregnancy and childbirth (Crawford-Williams et al "My midwife said that having a glass of red wine was actually better for the baby": a focus group study of women and their partner's knowledge and experiences relating to alcohol consumption in pregnancy | Qualitative study (focus groups) | Pregnant women or with recent experience of pregnancy (and partners) | Study provides insights into the relationship between pregnant women, their partners and their healthcare providers. Recommendations include: 1] public health messages and educational materials need to provide clear and consistent information about the effects of alcohol consumption on the developing baby; 2] more thorough and consistent routine enquiry for alcohol consumption in pregnant women needs to occur; and 3] important to provide ongoing education for health professionals on the issue of alcohol consumption during pregnancy. |
| 2015 Midwifery (Mugglie et al, Increasing accurate self-report in surveys of pregnancy alcohol use) | Qualitative – focus groups to explore views about a set of 22 questions related to past and current alcohol consumption | Pregnant women (Group 1) or new mothers up to 12 weeks post natal (Group 2) | Women's emotional responses were generally favourable. Barriers to accurate self-report were recall, complexity and use of subjective language. Facilitators were appropriate drink choices, occasional drinking options and contextualising questions. Questions embedded in a clear context may reduce anxiety around questions about alcohol use in pregnancy. |

*APPENDIX 2 (Personal History page 5 and AUDIT-C alcohol risk screening tool, pages 19-20 of WHPR)*

Affix unique patient identification label in this box

U.R:.....
Surname:.....
Given Name:.....
Second Given Name:.....
DOB.....

## PERSONAL HISTORY

Some questions about baby's mother and father, and additional maternal contact person.
Tick ( ☑ ) as appropriate (complete as applicable)

| | Mother | Partner | Additional maternal contact person |
|---|---|---|---|
| **Preferred Name** | Name:<br>Reside with baby's father?<br>☐ Yes ☐ No | Name:<br>Relationship to baby's mother: | Name:<br>Relationship to baby's mother: |
| **Interpreter needed?** | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ N/A | ☐ Yes ☐ No ☐ N/A |
| **If Yes, specify language:** | Language: | Language: | Language: |
| **Marital Status** | ☐ Single ☐ Defacto<br>☐ Married<br>☐ Separated / Divorced | ☐ Single ☐ Defacto<br>☐ Married<br>☐ Separated / Divorced | ☐ Single ☐ Defacto<br>☐ Married<br>☐ Separated / Divorced |
| **Occupation:** | | | |
| **Phone contact details** | Business Hours:<br>Mobile: | Business Hours:<br>Mobile: | Business Hours:<br>Mobile: |
| **Emergency contacts** | | To be contacted in emergency:<br>☐ Yes ☐ No | To be contacted in emergency:<br>☐ Yes ☐ No |
| **Any workplace hazards?** | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ N/A | N/A |
| **Born in Australia** | ☐ Yes ☐ No | ☐ Yes ☐ No | N/A |
| **Indigenous status (✓ both if appropriate)** | ☐ Aboriginal<br>☐ Torres Strait Islander (TSI)<br>☐ Not Aboriginal or TSI | ☐ Aboriginal<br>☐ Torres Strait Islander (TSI)<br>☐ Not Aboriginal or TSI | N/A |
| **If born overseas, name of country:** | | | N/A |
| **Ethnicity** | | | |
| **Religious, ethnic or cultural considerations important to antenatal care (dietary, blood products, etc.)** | | | |
| **Details/NA** | | | N/A |
| **Tobacco use and exposure to passive smoking [current and recent past] (refer to screening tool)** | | | |
| | Have you ever smoked?<br>☐ Yes ☐ No | | Does anyone at home smoke?<br>☐ Yes ☐ No |
| **Alcohol, other drug use [current and recent past] (refer to screening tool)** | | | |
| | | (Complete if living in maternal household) | (Complete if living in maternal household) |

**Completed by:** (print name/designation)..... Date:...../...../.....

# ASSESSING ALCOHOL USE DURING PREGNANCY

Affix unique patient identification label in this box

U.R:.....

Surname:.....

Given Name:.....

Second Given Name:.....

DOB.....

Ask your client the following questions about their alcohol use to assess the level of risk.
Add the scores for each question to get a total score and match the total score to the level of risk below.

| Q: Since becoming pregnant/last appointment, how often have you had a drink containing alcohol? | | | | | Score | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Date: | Date: | Date: | Date: |
| | | | | | Pre-Pregnancy | Gestation | Gestation | Gestation |
| 0 Never | 1 Monthly or less | 2 2-4 times a month | 3 2-3 times a week | 4 4+ a week | | | | |
| **Q: How many standard drinks containing alcohol do you have in a day when you are drinking?** | | | | | | | | |
| 0 1or 2 | 1 3 or 4 | 2 5 or 6 | 3 7-9 | 4 10+ | | | | |
| **Q: How often do you have five or more standard drinks in one sitting?** | | | | | | | | |
| 0 Never | 1 Monthly or less | 2 Monthly | 3 Weekly | 4 Daily / almost daily | | | | |
| **Total Score:** | | | | | | | | |



## Level of Risk

| Low risk of harm to women (total score 0-3) | Medium risk of harm to women (total score 4-7) | High risk of harm to women (total score 8+) |
|---|---|---|
| **Actions:** | | |
| a) Discuss score and provide feedback for low risk drinking for women.<br>b) Assist by providing alcohol harm prevention and reduction resources.<br>c) Offer to arrange a follow up session if needed. | a) Discuss score and give feedback for risky drinking.<br>b) Discuss positives and negatives of taking action.<br>c) Discuss tips, strategies and plan for taking action.<br>d) Assist by providing alcohol harm prevention and reduction resources.<br>e) Offer to arrange referral and follow-up session if needed. | a) Discuss score and provide feedback for high risk drinking.<br>**WARNING:** People who score in the high risk range (8+) should not be told to stop drinking alcohol or cut down without seeing a doctor.<br>b) Discuss the positives and negatives for taking action.<br>c) Provide contact information for alcohol and other drug services, ADIS and a doctor.<br>d) Assist by providing alcohol harm prevention and reduction resources.<br>e) Offer to arrange referral and a follow-up session. |

*Continuation of 'Level of Risk' table*

| **Lower risk of fetal harm (total score <1)** | **Risk of fetal harm (total score 1-4)** | **Higher risk of fetal harm (total score >5)** |
|---|---|---|
| **Key messages:** | | |
| • Advise that the safest choice is not to drink alcohol during pregnancy.<br>• Advise that a score of 0 indicates no risk of alcohol-related harm to the developing fetus.<br>• Commend women who have not consumed alcohol since becoming pregnant.<br>• Advise women who have consumed small amounts (e.g. one or two standard drinks) of alcohol prior to or during pregnancy, that the risk to the developing fetus is low.<br>• Advise that the risk to the developing fetus is influenced by maternal and fetal characteristics and is difficult to predict.<br>• Advise that the risk of harm to the developing fetus increases with increasing the amount and frequency of alcohol consumption.<br>• Offer to arrange a follow-up session if needed. | • Advise that the safest choice is not to drink alcohol during pregnancy.<br>• Advise that a score of 0 indicates no risk of alcohol-related harm to the developing fetus.<br>• Commend women who have not consumed alcohol since becoming pregnant.<br>• Advise women who have consumed small amounts (e.g. one or two standard drinks) of alcohol prior to or during pregnancy, that the risk to the developing fetus is low.<br>• Advise that the risk to the developing fetus is influenced by maternal and fetal characteristics and is difficult to predict.<br>• Advise that the risk of harm to the developing fetus increases with increasing the amount and frequency of alcohol consumption.<br>• Offer to arrange a follow-up session if needed. | • Advise that the safest choice is not to drink alcohol during pregnancy.<br>• Advise that a score of 0 indicates no risk of alcohol-related harm to the developing fetus.<br>• Commend women who have not consumed alcohol since becoming pregnant.<br>• Advise women who have consumed small amounts (e.g. one or two standard drinks) of alcohol prior to or during pregnancy, that the risk to the developing fetus is low.<br>• Advise that the risk to the developing fetus is influenced by maternal and fetal characteristics and is difficult to predict.<br>• Advise that the risk of harm to the developing fetus increases with increasing the amount and frequency of alcohol consumption.<br>• Offer to arrange a follow-up session if needed. |



People with health problems such as diabetes or are on medication that interacts with alcohol should seek advice from their doctor.

The Alcohol and Drug Service (ADIS) is a free 24-hour, confidential, telephone counselling, information and referral service available state-wide on: (country toll-free) 1800 198 024 or (metro) 08 9442 5000.

## *APPENDIX 4: Midwives Post Intervention Evaluation Form*

Government of Western Australia
WA Country Health Service

TELETHON KIDS INSTITUTE

**MIDWIVES AND AUDIT-C POST INTERVENTION EVALUATION**

Alcohol use in pregnancy is a public health issue requiring a range of interventions to reduce the number of alcohol exposed pregnancies. Prenatal alcohol exposure may result in Fetal Alcohol Spectrum Disorder (FASD). Current data suggests that at least 1 in 5 women will continue to consume some alcohol in pregnancy.

The AUDIT-C screening tool is now incorporated into the National Women Held Pregnancy Record to normalise routine screening for alcohol use three times during pregnancy with all women. The AUDIT-C LEARNING GUIDE has recently been introduced to the Armadale Health Service to assist midwives upskill in this important area of preventive health care.

After you have read the AUDIT-C Learning Guide, please take the time to answer the following questions. Your responses will help us measure how useful the Learning Guide is for improving midwives knowledge/use of the AUDIT-C screening tool and confidence in providing Brief Intervention.

**Did you attend a face-to face information session about the AUDIT-C Learning Guide: YES / NO**

**Q1. Prior to reading the AUDIT-C Learning Guide, how would you rate:**

| | Limited | Good | Excellent |
|---|---|---|---|
| Your knowledge of the AUDIT-C screening tool? | | | |
| Your confidence in providing a Brief Intervention? | | | |
| Your understanding of Fetal Alcohol Spectrum Disorder? | | | |

**Q2. Please indicate which parts of the AUDIT-C Learning Guide you read through:**

ALL MODULES ☐ OR

Module 1: Prenatal Alcohol Exposure and FASD ☐
Module 2: Understanding and Using AUDIT-C ☐
Module 3: Brief Intervention ☐
Module 4: Breastfeeding and Alcohol ☐

**Q3. Please indicate which of the following you:**

| | Accessed | & | Found Useful | or | Does Not Apply |
|---|---|---|---|---|---|
| Module 1: Recommended Readings | ☐ | | ☐ | | ☐ |
| Module 2: Recommended Readings | ☐ | | ☐ | | ☐ |
| Module 3: Recommended Readings | ☐ | | ☐ | | ☐ |
| Module 3: Instructional Videos for BI | ☐ | | ☐ | | ☐ |
| Module 4: Recommended Readings | ☐ | | ☐ | | ☐ |
| Web-Based Resources (any) | ☐ | | ☐ | | ☐ |

***Please complete the questions over the page***

| PLEASE CHOOSE ONE RESPONSE FOR EACH QUESTION | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
|---|---|---|---|---|---|---|
| The current practice self-assessment exercise was useful to help me identify my learning needs. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I have learnt new information regarding Prenatal Alcohol Exposure and Fetal Alcohol Spectrum Disorder. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I have a better understanding of the reasons for routinely doing AUDIT-C risk assessments with all pregnant women. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I found the steps set out in *2.6 AUDIT-C as Process* improved my understanding of correctly using the screening tool. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I have a better understanding of the reasons for completing the AUDIT-C risk assessment three times during pregnancy and recording the score in every woman's pregnancy record. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I am now more confident with providing a brief intervention about alcohol use during antenatal visits following AUDIT-C risk screening. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I am now more confident to discuss alcohol use and breastfeeding with women. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I have used the Web-Based Resources section to identify which resources are relevant for the setting I work in. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I now use the AUDIT-C screening tool in all booking or first visits and record the AUDIT-C score in every woman's pregnancy record. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I am now confident to provide brief education to women about alcohol use in pregnancy even if their total maternal AUDIT-C score was low risk. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I now check a woman's pregnancy record to make sure the AUDIT-C risk assessment has been completed at the booking visit and at one or two later visits. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I found the AUDIT-C Learning Guide easy to use. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| I would recommend the AUDIT-C Learning Guide to other midwives. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |
| The Introductory Presentation with audio was useful background for the AUDIT-C Learning Guide. | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree | Does not apply |

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