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Policy and practice recommendations

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Key messages

- Prenatal alcohol exposure (PAE) is associated with multiple adverse outcomes, including fetal alcohol spectrum disorder (FASD), that are associated with significant individual, family, and societal burden.
- Due to the risks associated with alcohol use in pregnancy, National Health and Medical Research Council (NHMRC) Alcohol Guidelines recommend alcohol abstinence as the safest option when pregnant or planning to conceive.
- Despite this, Australian rates of alcohol use in pregnancy are among the highest in OECD countries, with approximately 49% of Australian women consuming alcohol at some point in their pregnancy.
- Key issues contributing to high rates of alcohol use in pregnancy include:
 - Lack of public awareness of the NHMRC Alcohol Guidelines and the risks associated with alcohol use in pregnancy
 - Limited implementation of screening for alcohol use in pregnancy
 - Lack of standardized collection and reporting of population-level prenatal alcohol use data

Executive summary

The widespread use of alcohol during pregnancy is a significant public health concern in Australia. Prenatal exposure to alcohol, caused by maternal alcohol use in pregnancy, increases the risk of miscarriage, stillbirth, and FASD. Individuals living with FASD experience lifelong neurodevelopmental impairments across a range of areas, and are at increased risk of secondary disabilities, including mental illness, disengagement from education and the workforce, and contact with the justice system.

Despite National Health and Medical Research Council (NHMRC) Alcohol Guidelines recommending alcohol abstinence as the safest option for women who are pregnant, planning a pregnancy, or breastfeeding, alcohol use in pregnancy in Australia is amongst the highest in OECD countries. In 2016, approximately half of women consumed alcohol at some point in their pregnancy, and prevalence studies demonstrate that rates of FASD are extremely high in some sub-populations in Australia. Australian policymakers are therefore faced with both the challenge and the opportunity to reduce the burden associated with antenatal alcohol use in pregnancy through comprehensive and coordinated prevention approaches.

Major barriers to the prevention of PAE and FASD include a lack of public awareness of the Alcohol Guidelines and the risks associated with PAE, as well as limitations in antenatal alcohol screening and data collection. With the NHMRC Guidelines currently under review and the National Alcohol Strategy and FASD Strategic Action Plan in development, it is timely to consider how health sector policy and practice can be effectively used to address antenatal alcohol use in Australia.

Major recommendations include:

- The provision of clear, coherent and targeted messaging through policy, practice guidelines, position statements, and mainstream media that there is no established safe level of alcohol consumption during pregnancy.
- The consistent implementation of universal alcohol screening practices prior to pregnancy and throughout the antenatal period.
- Ongoing capacity building within the health workforce to support clinicians to effectively screen for, advise about and provide appropriate intervention for PAE.

- The introduction of systematic reporting of alcohol in pregnancy data, to the Perinatal National Data Collection, to support the development of evidence-based policy and prevention approaches.

Acronyms and Abbreviations

AHMAC	Australian Health Ministers Advisory Council	The advisory and support body to the COAG Health Council. Tasked with facilitating a coordinated health services approach across Australia with respect to key areas of health.
AIHW	Australian Institute of Health and Welfare	Australia's national health and welfare statistics agency.
AUDIT-C	Alcohol Use Disorders Identification Test – Alcohol Consumption Questions	A 3-item alcohol screening test that can help identify at-risk alcohol consumption and can be used for alcohol screening during pregnancy.
CALD	Culturally and Linguistically Diverse	The preferred term for many government and community agencies as a descriptor for ethnic communities.
COAG	Council of Australian Governments	The peak intergovernmental forum in Australia: consists of the federal government, the governments of the six states and two mainland territories, and the Australian Local Government Association.
FASD	Fetal Alcohol Spectrum Disorder	A lifelong neurodevelopmental disorder caused by exposure of a fetus to alcohol during pregnancy. Note that since the Australian Guide to the Diagnosis of FASD was published, the term Fetal Alcohol Syndrome (FAS) is no longer used in Australia.
NDSHS	National Drug Strategy Household Survey	The National Drug Strategy Household Survey (NDSHS) collects information on alcohol and tobacco consumption, and illicit drug use among the general population in Australia. It also surveys people's attitudes and perceptions relating to tobacco, alcohol and other drug use. The survey has been conducted every 2 to 3 years since 1985.
NHMRC	National Health and Medical Research Council	Australia's peak funding body for medical research, responsible for the development of national health guidelines such as the Alcohol Guidelines.
NPDC	National Perinatal Data Collection	A national population-based cross-sectional collection of data on pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia.
OECD	Organisation for Economic Cooperation and Development	Intergovernmental economic organisation with 35 member countries.

PAE	Prenatal Alcohol Exposure	Alcohol exposure to the fetus caused by maternal alcohol consumption while pregnant; a leading preventable cause of birth defects and neurodevelopmental abnormalities.
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1 Introduction

Prenatal alcohol exposure (PAE), caused by maternal alcohol use during pregnancy, can harm fetal development and cause birth defects (O'Leary et al., 2010). PAE is linked to increased risk of miscarriage, stillbirth and premature birth, and long-term developmental problems (Bailey & Sokol, 2011), including fetal alcohol spectrum disorder (FASD).

What is FASD?

FASD is a lifelong neurodevelopmental disorder that involves severe impairment in at least three neurodevelopmental domains, such as cognition, language and motor skills (Bower et al., 2017; Lange, Rovet, Rehm, & Popova, 2017). FASD is also associated with numerous “secondary effects,” including reduced educational and vocational engagement, mental and physical health problems, and increased risk of contact with the justice system (Ericson, Magnusson, & Hovstadius, 2017; Streissguth et al., 2004). The term Fetal Alcohol Syndrome (FAS) is no longer used in Australia.

There are significant social and economic benefits to preventing PAE. While the economic burden of PAE in Australia is not fully understood, it has been estimated that prevention of FASD in Western Australia alone would save the government AUD\$2 million in service use and loss of productivity per year (Telethon Kids Institute Alcohol and Pregnancy and FASD Research Team, 2014). International estimates (for example, from Canada) suggest that the estimated annual cost to society of FASD in Canada in 2013 was CAD\$1.8 billion (Popova, Lange, Burd, & Rehm, 2016).

Alcohol is the most widely used drug in Australia (Australian Institute of Health and Welfare, 2016, 2017b) and a high proportion of Australian women of childbearing age consume alcohol (Australian Institute of Health and Welfare, 2017b). Among OECD countries, Australia has one of the highest levels of alcohol use in pregnancy, with approximately half of Australian women consuming alcohol at some point during their pregnancy (Australian Institute of Health and Welfare, 2017b). This is despite the National Health and Medical Research Council (NHMRC) Australian Guidelines to Reduce Health Risks from Drinking Alcohol (Alcohol Guidelines) recommending alcohol abstinence as the safest option when pregnant or planning to conceive (National Health and Medical Research Council, 2009). This message is reiterated in the Australian Department of Health's National Alcohol Strategy (Commonwealth Department of Health, 2018) and the Commonwealth FASD Action Plan (Australian Government, 2013).

With the NHMRC Guidelines, the National Alcohol Strategy, and the FASD Strategic Action Plan currently under review and in development, it is timely to examine the key issues related to alcohol use in pregnancy in Australia and highlight opportunities to improve prevention.

Since alcohol consumption behaviours are embedded in a complex system of social, cultural, and systemic determinants (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015) a comprehensive health systems approach combined with place-based prevention strategies is recommended to support sustainable behavioural change among women who could become pregnant, are planning a pregnancy, or who are currently pregnant (Salmon & Clarren, 2011).

1.1 Policy Background

Alcohol consumption in pregnancy is both a maternal and child health issue, which sits at the intersection of three broad, and overlapping policy areas: (1) consumption of alcohol, use of tobacco and other drugs; (2) maternity care; and (3) preventative health.

The 2001 Department of Health National Alcohol Strategy (National Expert Advisory Committee on Alcohol, 2001) was the first Australian Government policy response specifically targeting the issue of PAE and FASD. This strategic policy outlined the protection of those at higher risk of alcohol-related harm, including pregnant women and recommended that educational materials be developed and disseminated to inform adolescents, sexually active women and clinicians about the risk posed to the fetus by “excessive, episodic” maternal alcohol consumption during pregnancy.

In 2002 the National Expert Advisory Committee on Alcohol (Commonwealth Department of Health) initiated a review of the scientific literature on fetal alcohol syndrome (FAS) (O'Leary, 2002), which:

- documented the link between PAE and FAS;
- highlighted issues with PAE and FAS surveillance, including the limitations of self-report alcohol measures that average use over time; and
- reported that Australian research and policy development related to FASD was limited.

Between 2011 and 2012, the House of Representatives Standing Committee on Social Policy and Legal Affairs conducted an inquiry into FASD prevention, diagnosis, and management (Standing Committee on Social Policy and Legal Affairs, 2012). The inquiry report was tabled in Parliament in November 2012 and included 19 recommendations, 11 of which related to FASD awareness and prevention (Standing Committee on Social Policy and Legal Affairs, 2012). These recommendations are listed in Table 1A.

1.2 The FASD Action Plan

In August 2013 the Commonwealth Government announced funding of \$20 million over four years for the implementation of a national FASD action plan - *Responding to the Impact of Fetal Alcohol Spectrum Disorders in Australia – A Commonwealth Action Plan 2013-14 to 2016-17* (Australian Government, 2013). The FASD Action Plan was subsequently initiated in June 2014, with funding of \$9.2 million. The National FASD Action Plan comprised five key action areas for 2013-17 (Australian Government, 2013), including:

- supporting a whole of government approach to the issue of FASD, given its relevance to a broad range of services and supports across portfolios;
- taking a whole of population approach to the issue, while noting that targeted approaches to prevention and management should be pursued for populations at greatest risk from FASD;
- recognising the preventable nature of FASD and support continuation of efforts to prevent FASD building upon existing government program activity;
- supporting access by children and families impacted by FASD to services based on need and level of functional impairment; and
- supporting the health and broader workforce to prevent FASD and to better respond to the needs of families affected by it.

1.3 Taking More Action

The 2016-17 Budget measure *Taking More Action to Prevent Fetal Alcohol Spectrum Disorders* was announced with \$10.5 million funding for FASD from 2016–17 to 2019–20 (Australian Government, 2016). In addition to FASD prevention, this measure also focuses on the diagnosis and management of FASD, including:

- The establishment of a new national FASD clinical network, including paediatricians who work with children living with FASD.
- The development of a new national FASD information hub to support FASD diagnosis, data collection, and provide accessible, accurate and consistent information.

To date, government actions aimed at addressing FASD, such as funding the development of a national FASD clinical network and a national FASD information hub (FASD Research Australia Centre of Research Excellence, 2018a) have made headway in improving diagnostic capacity and clinical management for FASD in Australia. There is also evidence to support the effectiveness of community-led initiatives in effecting the reduction of maternal alcohol use in pregnancy (Fitzpatrick et al., 2017).

However, current figures indicate approximately half of women consume alcohol at some point in their pregnancy (Australian Institute of Health and Welfare, 2016), suggesting that progress on whole-of-population reductions in maternal alcohol consumption during pregnancy remains limited.

1.4 Opportunities for Change

The current brief outlines opportunities for change to support the prevention of PAE and FASD and integrates clinical strategies, as well as public health approaches. Consideration is given to three key areas:

- Improving awareness of the risks of alcohol use in pregnancy;
- Improving alcohol screening and referral practices in antenatal care; and
- Improving population-level surveillance of PAE.

Findings from the international and Australian literature are integrated to provide an overview of the strengths and limitations of different policy and practice responses to the issue of alcohol use during pregnancy. Key findings suggest that a multi-level approach of awareness raising, screening,

capacity-building and surveillance is critical to address the challenges and risks associated with alcohol consumption in pregnancy.

This brief also highlights considerations for reducing inequities in alcohol consumption in pregnancy and the distribution of harms related to PAE. Health inequities are systematic differences in health that arise due to the distribution of resources and subsequent impacts on social determinants of health, including access and opportunities in education, employment, housing and living conditions (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015). Alcohol use is one of a range of health behaviours that is impacted upon by social determinants of health; moreover, the harms posed by alcohol are often linked to factors such as socioeconomic status, ethnicity, place of residence, education, age, gender, and marital status (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015; Roche, Kostadinov, Fischer, Nicholas, O'Rourke, et al., 2015).

If FASD is to be prevented, it is important to ensure that policies and practices aimed at preventing PAE and FASD are designed in such a way that they do not exacerbate health inequities and that they actively target inequities in harm (Institute of Health Economics, 2009; Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015; Rutman, Poole, Hume, Hubberstey, & Van Bibber, 2014).

2 Improving awareness of the risks of alcohol consumption during pregnancy

2.1 NHMRC Alcohol Guidelines

The National Health and Medical Research Council (NHMRC) Australian Guidelines to Reduce Health Risks from Drinking Alcohol (Alcohol Guidelines) provide recommendations regarding the consumption of alcohol during pregnancy (National Health and Medical Research Council, 2009). These recommendations, about the frequency and amount of alcohol use in pregnancy, have changed over time (see Table 1).

Table 1: NHMRC Recommendations on the consumption of alcohol in pregnancy

Year	Recommendation
1992	alcohol abstinence (National Health and Medical Research Council, 1992)
2001	no more than seven standard drinks in a week and no more than two in any day (National Health and Medical Research Council, 2001)
2009	alcohol abstinence as the “safest option” when pregnant or breastfeeding (National Health and Medical Research Council, 2009)

While drinking guidelines are considered an important component of a national health strategy to address alcohol-related harms, Australian research on the impact of the Alcohol Guidelines suggests that their effect on alcohol use behaviour, including alcohol consumption in pregnancy is unclear.

Australian studies on the impact of alcohol guidelines on alcohol use behaviour.

- In a 2010 survey of the general population, under 5% of people surveyed had perceptions of “low-risk” drinking levels that were in line with the 2009 Guidelines (Livingston, 2012).
- A 2016 survey of 2168 consumers of alcohol in Australia found that over half (52%) of people who drank at high or very high risk levels did not perceive their drinking to be harmful.
- In 2010 study of women of childbearing age, the majority of women survey reported negative attitudes about alcohol in pregnancy, however 1 in 3 women did not know that alcohol use in pregnancy could cause adverse impacts (Peadon et al., 2010).
- Research with Australian women who were pregnant, planning a pregnancy, or who had recently given birth found that while women were aware that alcohol consumption during pregnancy was “probably unsafe,” they lacked information about the actual risks of maternal alcohol use for the developing child (Holland, McCallum, & Walton, 2016; Jones & Telenta, 2012) and did not view ‘moderate’ alcohol consumption or having an ‘occasional’ drink as being at odds with messages regarding alcohol abstinence (Holland, McCallum, & Blood, 2015).
- A 2016 Australian survey with pregnant, non-pregnant, and possibly pregnant women who use alcohol, found over a third of women in each group intended to drink five or more drinks on a single occasion in the next two weeks (33%, 32% and 39%, respectively) (Pettigrew, Jongenelis, Chikritzhs, et al., 2016).

The 2009 Alcohol Guidelines are currently under review, with the revised Guidelines scheduled to be released in 2020. There is an important opportunity for the Guidelines to be revised and promoted in a way that optimises the likelihood of population-level behaviour change. For example, the 2009

Alcohol Guidelines do not specify the potential risks that alcohol use in pregnancy can pose to the developing fetus and do not highlight the evidence that associated harms can be severe and lifelong.

Developing a clear and measurable communications strategy to be included in the revised Guidelines will be critical to increasing public awareness around the recommendations contained within them (France et al., 2014; Wakefield, Loken, & Hornik, 2010).

2.2 Australian Government Department of Health

The national policies and strategies that relate to alcohol and pregnancy consumption are outlined in Table 2A.

These multiple strategies relating to alcohol consumption and pregnancy can be utilized to present a coherent message about preventing harms related to alcohol use in pregnancy. However, messaging needs to be supported by clear plans to increase awareness of the risks associated with alcohol use in pregnancy among the general public.

Ensuring that these strategies are consistent in their recommendations, that the recommendations are based on best available evidence and that a framework for evaluating the impact of these strategies is developed and implemented early, will be critical to reducing antenatal alcohol use and FASD in Australia.

Australian Government Department of Health strategies referencing the NHMRC alcohol Guidelines

- The National Alcohol Strategy (2006-2011) (Ministerial Council on Drug Strategy, 2006); and
- The National Alcohol Strategy 2018-2026 Consultation Draft (Commonwealth Department of Health, 2018)
- The National Preventative Health Strategy (Australian Government Preventative Health Taskforce, 2009)
- The Commonwealth Action Plan to reduce the Impact of Fetal Alcohol Spectrum Disorders (FASD) 2013-14 to 2016-17 (Australian Government, 2013)
- The National FASD Strategy 2018-2028 (**under consultation**)
- The National Maternity Services Plan (Australian Health Ministers' Conference, 2010); and
- The National Strategic Approach to Maternity Services (**under consultation**)

2.3 Public Health Messaging about Alcohol in Pregnancy

National public health campaigns, including mass media communications, are an important part of government efforts to reduce harms associated with alcohol consumption in pregnancy (Jonsson, Salmon, & Warren, 2014). Improving public awareness and addressing misperceptions about the risks that alcohol use in pregnancy can pose to the fetus can help to reinforce advice given by healthcare professionals and encourage compliance with recommendations in the Alcohol Guidelines (France et al., 2014; Hall & Partners Open Mind, 2016).

2.3.1 Targeting mainstream media

Mainstream media messaging is an important vehicle for increasing public understanding of the evidence on which the Alcohol Guidelines are based, encouraging people to review their alcohol use in the context of the Alcohol Guidelines recommendations and increasing the salience of risk in alcohol consumption decisions (McCallum & Holland, 2018; Pettigrew, Jongenelis, Pratt, et al., 2016). A key consideration for mainstream media campaigns run by government or advocacy groups is the development of messages that are evidence-based and persuasive, and that encourage compliance with the recommendations contained in the Alcohol Guidelines, without exacerbating guilt or shame among women who consumed alcohol prior to pregnancy recognition or for whom abstinence is difficult (France et al., 2014).

2.3.2 Identifying different target groups

Public health campaigns need to consider the behavioural determinants of alcohol consumption in pregnancy across different target groups in order to design messages that effectively influence change in awareness, attitudes and behaviours (Wakefield et al., 2010). For example, alcohol consumption in pregnancy is more likely among women who are older, more highly educated, and of higher SES (Anderson et al., 2013; Hutchinson, Moore, Breen, Burns, & Mattick, 2013; Kingsbury, Hayatbaksh, Gibbons, Flenady, & Najman, 2015; McCormack et al., 2017), as well as among women who smoke and those who have not actively planned their pregnancy (McCormack et al., 2017).

Additionally, as alcohol consumption following recognition of pregnancy is a conceptually different behaviour to alcohol use prior to pregnancy recognition, behavioural determinants may be different (McCormack et al., 2017). It has been reported that women who suspect that they are pregnant often intend to continue consuming alcohol until pregnancy is confirmed (Elek et al., 2013; Pettigrew, Jongenelis, Chikritzhs, et al., 2016; Skagerström, Alehagen, Häggström-Nordin, Årestedt, & Nilsen, 2013), suggesting that women may face different barriers to behaviour change pre- and post-pregnancy recognition. This highlights the need for government- and advocacy-led campaigns to design and distribute different media messages for identified target groups in order to effectively reduce harms related to alcohol consumption in pregnancy (Wakefield et al., 2010).

2.3.3 More than the individual

Decisions about alcohol use in pregnancy are known to occur in the context of existing alcohol use and are influenced by the behaviour of partners, family members, and friends (Jonsson et al., 2014; McBride, 2014). Framing alcohol use in pregnancy as an individual decision only can lead to discourse focused on 'blaming risk-taking mothers' for alcohol use in pregnancy and the subsequent risks to the fetus (Holland et al., 2016; McCallum & Holland, 2018).

Therefore, there is a role for public health campaigns to educate the broader public about the risks of alcohol use in pregnancy through the use of messaging targeted at adolescents (males and females); partners of women who are pregnant, planning to conceive, or sexually active; as well as specific groups who play a key role in prevention, such as health professionals.

2.3.4 Addressing health inequalities

Alcohol use is one of a range of health behaviours that is impacted upon by social determinants of health; moreover, the harms posed by alcohol are also unequally distributed in society (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015). Inequities, as they relate to alcohol use, are linked to factors such as socioeconomic status, ethnicity, place of residence, education, age, gender and marital status (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015).

It is important to note that national guidelines and campaigns can act to worsen inequalities in health, even where overall harms are reduced (Roche, Kostadinov, Fischer, Nicholas, O'Rourke, et al., 2015). This is because disadvantaged groups may face barriers to accessing health information and more obstacles to behaviour change than those who have a higher level of resources, including education and health literacy (Baum & Fisher, 2011).

Therefore, it is important that effort is invested by policymakers into obtaining and utilising evidence regarding which public health strategies are most likely to support behavioural change among vulnerable populations, how they should be implemented in order to reduce inequities, and what the potential risks are (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015).

3 Screening and referral practices in antenatal care

Universal screening for alcohol consumption during pregnancy enables the risk of prenatal alcohol exposure to be assessed in a standardized way and provides an opportunity for education and support to reduce drinking (Centers for Disease Control and Prevention, 2014).

In Canada, consensus clinical guidelines recommend universal screening for alcohol consumption periodically for all pregnant women (Carson et al., 2017). This recommendation is also endorsed by the World Health Organization (World Health Organization, 2014) and a number of US organisations, including the American College of Obstetricians and Gynaecologists (American College of Obstetricians and Gynecologists Committee, 2011).

In Australia, while alcohol screening occurs in some states and territories, there is currently no nationally-consistent framework for alcohol screening during pregnancy (Australian Institute of Health and Welfare, 2017a). For example, self-report data of alcohol use in pregnancy is routinely collected as part of the midwives data collections in the Australian Capital Territory, the Northern Territory and Tasmania (see Table 3A), however, each of these states use different methods which means that data cannot be compared (Australian Institute of Health and Welfare, 2017a). This limits the capacity to develop nationally-consistent datasets for population surveillance of alcohol use in pregnancy. It is recommended that universal, standardized alcohol screening is implemented across all Australian states and territories (Recommendation 1).

3.1 *Why is routine alcohol screening important?*

Routine alcohol screening in healthcare settings has been shown to increase women's awareness of their own alcohol use (Muggli, Cook, O'Leary, Forster, & Halliday, 2015a) and, alcohol screening provides an opportunity for health professionals to offer information on the risks associated with alcohol use in pregnancy and to discuss strategies for reducing use (Hicks, Sauve, Lyon, Clarke, & Tough, 2003).

Understanding the frequency and quantity of a woman's alcohol consumption is fundamental to the implementation of appropriate referral and clinical management strategies and provides crucial data to inform FASD diagnosis (Bower & Elliott, 2016; Hicks et al., 2003). It has been found that most people with high-risk alcohol consumption are not detected in primary care without specific screening (Demirkol, Haber, & Conigrave, 2001). This creates an issue for the implementation of appropriate referral and clinical management strategies, including in the antenatal period.

Universal alcohol screening during pregnancy can help to detect those who may not otherwise seek help for alcohol use and is known to be acceptable to women (Gifford et al., 2010; Hall & Partners Open Mind, 2016).

3.1.1 Not just 'high risk' drinkers

Despite recent evidence indicating that any amount of alcohol exposure during pregnancy has an effect on the developing child (Muggli et al., 2017), low-moderate alcohol exposure in pregnancy is still considered by the general public as having little to no risk (Elek et al., 2013). Given that the majority of women who use alcohol during pregnancy do not frequently drink at high levels (Muggli, O'Leary, et al., 2016), population-level harm caused by alcohol consumption in pregnancy may be

avoided by targeting those women in the population consuming low-moderate levels of alcohol during pregnancy (McBride, 2014).

Implementing universal screening would circumvent the need for case-by-case decisions about whether to ask about alcohol use in pregnancy and reduces potential stigma associated with alcohol screening (Gifford et al., 2010).

In addition, while the majority (87%) of women stop drinking as soon as they realise they are pregnant, approximately half of Australian pregnancies are unplanned (Rowe et al., 2016) and high levels of alcohol exposure may occur before women are aware of their pregnancies (Muggli, O'Leary, et al., 2016), suggesting there is a need for alcohol screening and education in women who are sexually active .

Primary prevention measures, such as alcohol risk reduction and promoting effective contraception practices among women who use alcohol has been found to reduce the risk of alcohol exposed pregnancies. Such strategies can be effectively adapted for culturally and linguistically diverse groups (Hanson et al., 2017) and easily delivered via telephone, the internet or face-to-face (Ingersoll et al., 2018; Wilton et al., 2013).

4 What are the recommended practices for antenatal screening?

While there are issues with the validity of data collected using self-report measures, for example, difficulties recalling alcohol consumption, standardised self-report instruments have been shown to be a feasible and available means of screening for alcohol in early pregnancy (Australian Institute of Health and Welfare, 2017a). Screening measures for alcohol use in pregnancy include the T-ACE (Tolerance, Annoyed, Cut Down, Eye Opener) and TWEAK (Tolerance, Worry, Eye Opener, Amnesia, Cut Down) self-report measures, however these are primarily designed to identify high-risk drinking (Australian Institute of Health and Welfare, 2017a).

4.1 Screening - The AUDIT - C

Another self-report alcohol screening tool is the Alcohol Use Disorders Identification Test - Consumption (AUDIT-C). AUDIT-C is a short, 3-item measure that can be used with pregnant women to identify and provide feedback on alcohol-related risk. Unlike the T-ACE and the TWEAK, it also examines the frequency and amount alcohol consumption, including binge drinking (Australian Institute of Health and Welfare, 2017a).

AUDIT-C is suited to the routine collection of self-reported alcohol use as it is acceptable to both antenatal health professionals and pregnant women (Muggli, Paul, Nagle, & Halliday, 2016; Reibel, Giglia, & Fletcher, 2018). It is also considered the most appropriate tool for use with Aboriginal and Torres Strait Islander women (Australian Institute of Health and Welfare, 2017a).

Studies with Australian midwives have found that routine administration of the AUDIT-C could be successfully integrated into midwifery practice with the appropriate supports and training (Muggli, Paul, et al., 2016; Reibel et al., 2018). Midwives also report that standardized approaches for alcohol assessment, such as using the AUDIT-C, may prevent them from making case-by-case decisions about alcohol use based on a woman's presentation (Reibel & Giglia, 2017). Despite the clinical utility of the AUDIT-C, it is not currently routinely used in antenatal care at a national level, with only Queensland and Western Australia use AUDIT-C within their hand-held records.

It is recommended that universal alcohol screening for pregnant women is implemented across all states and territories in Australia, using the AUDIT-C as a standardized tool (Recommendation 1). Implementation requires support at multiple levels including education and capacity-building to support practice change (Recommendation 4), standardization of national alcohol in pregnancy data collections (Recommendation 2), and awareness raising with the general public about the risk of alcohol use in pregnancy (Recommendation 5).

4.2 Screening, Brief Intervention and Referral to Treatment (SBIRT)

In Canada and the United States, the SBIRT (Screening, Brief Intervention and Referral to Treatment) is recommended as a prevention and early intervention approach for antenatal alcohol use (Centers for Disease Control and Prevention, 2014; O'Brien, 2014). The SBIRT approach involves universal screening of alcohol use, feedback and brief intervention to explain the risks associated with alcohol use during pregnancy, provision of support to stop drinking, and referral to specialty treatment where indicated.

4.2.1 Brief Intervention and Referral to Treatment

International guidelines on alcohol and pregnancy recommend the provision of a “brief intervention” for women who report consuming alcohol when pregnant (Carson et al., 2017; O'Brien, 2014; World Health Organization, 2014). For example, a brief intervention provided by antenatal health professionals may include feedback about the level of risk posed by current alcohol consumption, information on recommended alcohol use levels to reduce risk, strategies for reducing alcohol use and referral to more intensive support where required. Examples of supports intensive supports may include cognitive behavioural therapy, motivational interviewing, or motivational enhancement therapy (O'Brien, 2014), although the appropriateness of different support options should be decided on a case-by-case basis.

In Australia, at the minimum, brief intervention delivered by antenatal healthcare professionals should include communicating the recommendations in the NHMRC Alcohol Guidelines, along with information about the specific risks associated with PAE. In alignment with recommendations made by the Foundation for Alcohol Research and Education (FARE), harm reduction and treatment strategies need to be made available for women who continue to use alcohol during pregnancy (Carson et al., 2017) (Foundation for Alcohol Research and Education (FARE), 2012).

SBIRT models should be informed by recognition of social, cultural and systemic influences on alcohol consumption behaviour so that appropriate and sensitive care can be provided. Furthermore, such practices should be person-focused and trauma informed (McBride, 2014). In order to address health inequities that are key drivers of alcohol-related harms (Roche, Kostadinov, Fischer, Nicholas, O'Rourke, et al., 2015), these activities need to occur simultaneously with strategic actions that promote equitable access to preventative health and antenatal care.

For example, the National Primary Health Care Strategic Framework outlines strategies to promote health system models that support continuing relationships between consumers and general practices (Standing Council on Health, 2013). In the antenatal care context, this aligns with continuity of care and encompasses the need for culturally-responsive maternal health services (Kildea et al., 2018). Without equitable access, any strategies implemented within the health system may act to widen gaps in social disadvantage (Roche, Kostadinov, Fischer, Nicholas, & Australia's National Research Centre on AOD Workforce Development, 2015).

4.2.2 Supporting implementation of SBIRT in Australian antenatal care

Clinical guidelines for antenatal care in Australia are designed to promote best practice in antenatal care, including the maternal screening and consideration of antenatal risk factors, such as alcohol use (Department of Health, 2018b).

In Australia, the most recent antenatal care clinical guidelines are the *Clinical Practice Guidelines: Pregnancy Care* (Department of Health, 2018a) published in 2018. However, these guidelines have been described as “dangerously outdated” with regard to the guidance provided about alcohol use in pregnancy (Bower, 2018). While these guidelines acknowledge the risks associated with maternal alcohol use during pregnancy, they do not acknowledge the recommendations of the Australian Guide to the Diagnosis of FASD about using AUDIT-C to ask about PAE (Bower & Elliott, 2016), as well as using outdated terminology to refer to FASD diagnoses. These issues could be mitigated if

government policies and clinical guidelines relating to alcohol consumption during pregnancy were coherent and consistent in the information and recommendations provided (Recommendation 5).

Practice at the level of individual clinicians is not only influenced by clinical guidelines but also by the policies and procedures of the workplace, the availability of time and resources to carry out specific practice requirements, as well as their own knowledge, attitudes and personal beliefs relating to alcohol use in pregnancy (France et al., 2010; O'Brien, 2014). In order for SBIRT models to be integrated into practice, leadership within individual organizations can support SBIRT implementation, by providing clarity around reporting requirements and referral pathways, making the necessary time and resources available to clinicians and establishing key performance indicators (Race & McKinnon, 2014; Rahm et al., 2015).

Implementation strategies such as electronic prompts and reminders, advocacy by local opinion leaders, educational training and resources, performance monitoring and feedback may also be effective in supporting practice change (Flodgren et al., 2011; Johnson & May, 2015; Reeves, Pelone, Harrison, Goldman, & Zwarenstein, 2017). In order to maximize the effectiveness of implementation strategies, organizations must be responsive to specific barriers health professionals may face in putting recommended actions into practice (Chaillet et al., 2006; French et al., 2012), such as limited tools to prompt alcohol assessment, concerns about stigma, and a lack of perceiving skill in provided SBIRT (Kingsland et al., 2018).

Professional bodies for the health professions involved in the provision of prenatal and antenatal care include the Australian Medical Association (AMA), the Royal Australian College of General Practitioners (RACGP), the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), the Australian College of Midwives (ACM) and the Royal Australian College of Physicians (RACP).

These bodies demonstrate a commitment to supporting the reduction of alcohol-exposed pregnancies, as demonstrated in their position statements, policies and guidelines on antenatal alcohol consumption (see Table 4A). It is therefore possible that these bodies can play a key role in supporting the implementation of SBIRT models in practice by promoting professional development resources and offering incentives for their completion (Hall & Partners Open Mind, 2016).

4.2.3 Evaluating implementation of SBIRT practices

Because of the barriers to consistent use of SBIRT models in clinical practice (Australian Institute of Health and Welfare, 2017a; Rahm et al., 2015), evaluation of implementation strategies using standardized performance measures has been highlighted as an integral step in PAE prevention (O'Brien, 2014). For example, it has been suggested that following process-oriented performance measures be utilised to evaluate the implementation of SBIRT (Australian Institute of Health and Welfare, 2017a):

- Ratio of all pregnant patients screened for alcohol use utilising a validated screening measure at their first antenatal visit (including refusals), to all pregnant patients seen by a health professional at their first antenatal visit.

- Ratio of all pregnant patients receiving an evidence-based brief intervention and/or referral for alcohol use during their first prenatal visit or during a subsequent prenatal visit where alcohol use is recorded to all pregnant patients who screen positive for alcohol use at their first prenatal visit or at a subsequent visit.

The use of such measures to evaluate the implementation of SBIRT practices can support accountability, quality improvement and value-based purchasing and help to identify where targeted or systemic change is required to support consistent implementation (Australian Institute of Health and Welfare, 2017a). Evaluation can be conducted at an organisation and/or service level by integrating relevant measures into existing Health Information Management Systems, or by conducting SBIRT-specific evaluations.

4.3 Continuity of Care

Canadian consensus clinical guidelines recommend that health professionals create a safe environment for women to report alcohol consumption (Carson et al., 2017). Continuity of care models, in which women have a consistent maternity caregiver throughout pregnancy are one way of promoting a safe environment and supporting effective screening and response to alcohol consumption in pregnancy (Reid, Gamble, Creedy, & Finlay-Jones, 2018).

Continuity of care models allow women to develop relationships with their caregiver over the course of their pregnancy. This familiarity has been shown to increase the likelihood that screening practices and the provision of information about alcohol in pregnancy will be consistent, as well as making women feel safer about disclosing information (Allen, Kildea, & Stapleton, 2016; Beake, Acosta, Cooke, & McCourt, 2013). Continuity of care models have also been found to lead to earlier antenatal care bookings, more frequent attendance and greater buy-in to self-care practices and referrals for support (Allen et al., 2016), suggesting that continuity of care is a preferred model of care when supporting women to reduce their alcohol use during pregnancy (Reid et al., 2018). It is recommended that continuity of care models are implemented nationally in Australia so that women feel safe and supported when discussing alcohol use in pregnancy (Recommendation 1).

5 Capacity building in the health workforce

Capacity building initiatives with Australian health professionals are another way of supporting the prevention of PAE through clinical care practices.

Who is responsible for antenatal alcohol screening, intervention, and referral?

Health care professionals who work with women and their partners prior to, during and post-pregnancy are integral to communicating the recommendations in the Alcohol Guidelines and supporting families to prevent alcohol-exposed pregnancies (Floyd, O'Connor, Bertrand, & Sokol, 2006)

Health professionals who play a key role in FASD prevention include primary health care providers, child health nurses, general practice obstetrics, obstetricians, midwives, neonatologists, neonatal nurses, paediatricians, health workers and allied health practitioners (Bower & Elliott, 2016). These professionals undertake a range of activities related to preventing alcohol-exposed pregnancies, including:

- provision of recommendations for pre-conception care;
- asking and advising about alcohol use during pregnancy;
- referring to or providing different levels of intervention for women who are consuming alcohol during pregnancy;
- supporting mothers to abstain from alcohol while breastfeeding; and
- referring infants and children who have been prenatally exposed to alcohol for assessment.

5.1 Women want to know (WWTK)

The 'Women Want to Know' project (WWTK), developed by the Foundation for Alcohol Research and Education (Australian Government Department of Health, 2018), provides educational resources for health professionals on the risks of alcohol consumption during pregnancy, as well as training to assist health professionals to ask about and respond to alcohol consumption in pregnant women.

An evaluation of WWTK found that while health professionals want information about how to speak to women about alcohol and pregnancy, the WWTK training was found to have mixed success in engaging them (Hall & Partners Open Mind, 2016). Two key issues were identified as being barriers to engagement with the program:

- awareness of the training; and
- increasing motivation to complete the training by mechanisms other than continuing professional development

It was found that including new evidence about the impact of alcohol consumption during pregnancy, particularly at low levels, would provide participants the additional motivation necessary to successfully engage in training (Hall & Partners Open Mind, 2016). Additional incentives for completion of the training, such as a prize draw to have professional membership fees paid for a year, was also recommended as a way of boosting both enrolments and completion rates (Hall & Partners Open Mind, 2016). Based on these findings, it is recommended that implementation plans for capacity-building initiatives be developed in consultation with health professionals, tertiary

training programs, and professional bodies, so that dissemination is supported and engagement and completion rates maximised (Recommendation 4).

5.2 The Midwives and Audit-C Intervention Project

The Midwives and Audit-C intervention Project, is a capacity building program designed to provide West Australian midwives with a learning package about using the AUDIT-C for universal alcohol screening with pregnant women (Reibel et al., 2018). Following implementation of the program, the evaluation found that there was a 32% increase in the number of medical records that had a recorded AUDIT-C score (only 16% of medical records had a recorded AUDIT-C score at baseline) (Reibel et al., 2018).

Another study involving Western Australian health professionals found that the provision of educational resources about prevention of PAE and FASD led to significant changes in practice or practice intentions with almost half of health professionals surveyed (Payne et al., 2011)

The results of these projects indicate the need for ongoing capacity building in the health workforce to assist with increasing awareness of the Alcohol Guidelines and supporting health professionals to disseminate the information contained within them. Moreover, as health professionals may face numerous obstacles to asking women about antenatal alcohol use (Gifford et al., 2010), capacity building initiatives are required to support a universal and effective implementation of the SBIRT approach.

It is recommended that up-to-date training and resources are provided to help health professionals stay informed on the latest evidence for maternal alcohol use in pregnancy and on the risk of antenatal alcohol use to the fetus. Dissemination of evidence-based resources via online portals such as the FASD Australia Hub (FASD Research Australia Centre of Research Excellence, 2018b) is one way of providing evidence updates, and partnerships between research bodies and professional bodies, service providers and tertiary training institutions can support translation of the evidence into practice (Recommendation 4).

6 Improving Population-Level Surveillance of Alcohol Use in Pregnancy

Nationally consistent data on alcohol consumption among pregnant women in the Australian population is required to inform the development of preventative health policies and programs.

A lack of comprehensive data on prevalence, amount and timing of alcohol consumption in pregnancy is a major challenge to providing targeted prevention for PAE and FASD and also for communicating the associated risks of drinking in pregnancy (Australian Institute of Health and Welfare, 2011; Pei, Tremblay, McNeil, Poole, & McFarlane, 2017). In addition to limiting diagnostic capacity for FASD, the lack of comprehensive population data in Australia limits capacity to:

- Understand the contextual factors associated with alcohol consumption in pregnancy;
- Understand the outcomes linked to different levels and timing of alcohol consumption in pregnancy; and
- Design and evaluate data-driven prevention initiatives.

6.1 *The National Drug Strategy Household Survey (NDSHS)*

The draft National Alcohol Strategy states that the National Drug Strategy Household Survey (NDSHS) alcohol consumption during pregnancy data will be used to evaluate the success of the strategy for reducing alcohol consumption in pregnancy (Commonwealth Department of Health, 2018).

However, there are a number of limitations of relying on the NDSHS for this data. The NDSHS involves retrospective recall of alcohol consumption for women who have been pregnant in the last 12 months (Australian Institute of Health and Welfare, 2017b), potentially compromising the reliability of the data. Additionally, there are a low number of pregnant respondents and difficulties ensuring representativeness of the sample. It is therefore recommended that AUDIT-C data, collected during pregnancy as part of universal screening, be used to evaluate the success of the NAS (Recommendation 3).

6.2 *National FASD Register*

Surveillance of PAE with pregnant women as part of routine antenatal care provides a rapid and interim measure of the effectiveness of health promotion policies and prevention initiatives designed to prevent FASD (Australian Institute of Health and Welfare, 2011).

Data collected from the National FASD Register, which records diagnosed cases of FASD in Australia, are problematic for timely and accurate evaluation of FASD prevention strategies, given that:

- children with FASD are commonly diagnosed at 6-12 years of age, meaning there is a significant time lag between implementation of preventative efforts and availability of data to evaluate their success;
- efforts are currently being made to increase awareness of FASD in Australia and improve diagnostic capacity, meaning there is likely to be an increase in cases reported to the Register over the next 5-10 years; and
- it is highly likely that not all individuals who have FASD will be reported to the Register.

It is therefore recommended that AUDIT-C data, collected during pregnancy as part of universal alcohol screening, be used as an interim metric to evaluate the success of FASD prevention strategies (Recommendation 3).

6.3 National Perinatal Data Collection (NPDC) and Perinatal National Minimal Data Set (NMDS)

The Australian Institute of Health and Welfare (AIHW) is responsible for developing the National Perinatal Data Collection (NPDC), a national population-based collection of data on pregnancy and childbirth that is compiled from state and territory perinatal data collections (Australian Institute of Health and Welfare, 2013, 2018). States and territories supply this information under the National Health Information Agreement (Australian Institute of Health and Welfare, 2017a). The Perinatal National Minimum Data Set (NMDS) specifies core perinatal data items for national mandatory collection and reporting, as well as voluntary items (Australian Institute of Health and Welfare, 2017a).

Since 2010, the Australian Institute of Health and Welfare (AIHW) and the National Perinatal Data Development Committee (NPDDC) have been working to develop a nationally standardized method for collecting and reporting data on alcohol use in pregnancy (Australian Institute of Health and Welfare, 2017a). Currently, only three states report alcohol in pregnancy data to the NPDC (see Table 3A), but these data are not collected in a standardised way and therefore cannot be directly compared (Australian Institute of Health and Welfare, 2017a).

In 2017, the AIHW reported that the current perinatal NMDS contained in the Metadata Online Registry (METeOR) “does not include data item(s) on alcohol use in pregnancy, nor is there national consensus on how alcohol use in pregnancy should be collected or reported”. As a result, the population prevalence of alcohol use in pregnancy is unable to be accurately ascertained. In addition, capacity for population-level surveillance of FASD is limited (Australian Institute of Health and Welfare, 2017a), as assessment of alcohol use in pregnancy is part of a FASD diagnostic assessment (Bower & Elliott, 2016).

The AIHW engaged the Murdoch Children’s Research Institute (MCRI) to explore the feasibility of routine collection of alcohol use in pregnancy data (Australian Institute of Health and Welfare, 2017a). The work conducted by MCRI found support for the collection and reporting of alcohol use in pregnancy data, using the AUDIT-C to be incorporated into the perinatal NMDS (Australian Institute of Health and Welfare, 2017a; Muggli, Cook, O’Leary, Forster, & Halliday, 2010).

In line with these findings, it is recommended that the Perinatal NMDS specify the mandatory collection and reporting of alcohol in pregnancy data, including timing and dose of alcohol use, to the National Perinatal Data Collection (Recommendation 2). It is understood that nationally standardised alcohol data elements have been approved for collection by the relevant national committee, which includes all jurisdictions, and the addition of these items is in the process of being implemented (AIHW, committee in confidence).

6.3.1 What data are needed?

The 2017 AIHW report indicated that the NPDDC have agreed to the development of a nationally standardized set of items for collecting and reporting dose and timing of alcohol use in pregnancy (Australian Institute of Health and Welfare, 2017a). To gain insight into patterns of alcohol use in pregnancy and capture whether strategies designed to reduce alcohol use are effective, it is recommended that items on dosage and timing of alcohol use be administered more than once during pregnancy (Recommendation 2).

In addition to collecting this data, there is evidence to suggest that questions about binge drinking or “special occasion” drinking should be included as part of universal alcohol consumption during pregnancy screening (Recommendation 2), as this question has the potential to identify alcohol consumption not otherwise reported using AUDIT-C (Muggli, Cook, O’Leary, Forster, & Halliday, 2015b; Muggli, O’Leary, et al., 2016).

6.3.2 How should data be collected?

As per the recommendations made by the MCRI and documented in the 2017 AIHW report, it is recommended that alcohol use in pregnancy data be collected using a validated screening tool such as the AUDIT-C. As outlined in Section 4, the AUDIT-C is a validated instrument that can be used to provide feedback to women as part of an SBIRT (screening, brief intervention, and referral to treatment) approach.

As per the recommendations in Section 4, and the findings of work undertaken by the MCRI (Australian Institute of Health and Welfare, 2017a; Muggli et al., 2010) questions about alcohol use in pregnancy should be asked as part of a discussion with an antenatal healthcare professional, such as a midwife. This underscores the importance of capacity-building with antenatal care professionals and ensuring that clinical guidelines support the implementation of a standardized alcohol screening approach (Recommendation 4). It is important that women understand the reasons for collecting this data, and that they feel safe and supported to discuss alcohol use with their antenatal care professionals (Australian Institute of Health and Welfare, 2017a; Muggli et al., 2010; Reid et al., 2018). For this reason, embedding alcohol screening within a continuity of antenatal care model (Recommendation 2) and raising awareness with the general public about this risks associated with alcohol use in pregnancy (Recommendation 5) are recommended.

6.3.3 How might the antenatal alcohol use data in the NPDC be used?

Data on prenatal alcohol use reported to the NPDC can be used to understand the population prevalence of alcohol use in pregnancy and the contextual factors that influence it. Findings would then be available to develop evidence-based policy and targeted public health initiatives to reduce harms associated with antenatal alcohol use.

Data could also be used to identify whether population-based efforts to reduce alcohol use in pregnancy have had any effect on the target population (Recommendation 3). These data also form part of a range of indicators that can be used to identify whether implemented policies are addressing health inequities in alcohol use. For example, such data may be used to evaluate whether antenatal health gaps between Aboriginal and Torres Strait Islanders and non-Indigenous Australians are closing.

There is also the potential to use antenatal alcohol use data in the NPDC to evaluate FASD prevention efforts made under the National Alcohol Strategy (Commonwealth Department of Health, 2018) and FASD Strategic Action Plan.

7 Conclusions and recommendations

Prevention of prenatal alcohol exposure is a public health priority in Australia (Elliott, 2015) and internationally (Schölin, 2016). Prenatal exposure to alcohol is associated with numerous risks to the developing child, including FASD, and carries significant social and economic burden.

Current obstacles to the prevention of prenatal alcohol exposure in Australia include limited public awareness of the risks associated with alcohol use in pregnancy, inconsistent alcohol screening and intervention practices across Australian states and territories, and gaps in national collection of alcohol in pregnancy data.

There is therefore an opportunity to ensure that policies and practices to address prenatal alcohol exposure and FASD, address these gaps and provide a multi-level, comprehensive, and evidence-based approach to addressing alcohol use in pregnancy. There is also a need to ensure that policies and practices aimed at addressing PAE and FASD are culturally appropriate and responsive to the social determinants of alcohol use and alcohol-related harms.

Importantly, all initiatives need to be evaluated, using nationally-consistent data collection and reporting practices. Evaluation of these strategies must include consideration of the impact of each strategy on vulnerable groups in addition to the total population.

7.1 Recommendation 1. Improving the Identification and Management of Alcohol Use in Pregnancy in Australia.

In line with Canadian, United States and World Health Organization recommendations, it is recommended that a universal screening test for alcohol consumption be implemented in all models of antenatal care in Australia.

It is important that universal screening for alcohol use in pregnancy be implemented in a way that is likely to generate accurate, time-specific data on prenatal alcohol exposure. Use of AUDIT-C is recommended as a means of collecting dose and frequency of alcohol use in pregnancy.

Specifically, it is recommended that:

- universal alcohol screening for pregnant women is implemented across all states and territories in Australia;
- AUDIT-C is used as a standardized tool for assessing alcohol use in pregnant women across all jurisdictions;
- AUDIT-C is administered at multiple points across pregnancy; and
- that these data be used to indicate where early FASD screening and assessment may be indicated so that intervention to support child outcomes can be initiated as early as possible.

To support reduction in alcohol use in pregnancy, it is recommended that:

- universal screening be implemented as part of a Screening, Brief Intervention and Referral to Treatment (SBIRT) model, in which screening is used as an opportunity to provide women with the recommendations contained within the Alcohol Guidelines and explain the risks of alcohol use in pregnancy to the developing fetus;
- screening assessments be used to provide tailored feedback to women about their alcohol use;
- referral to appropriate supports and/or treatment services is provided for women who require more support to reduce alcohol use;
- alcohol screening is embedded within continuity of care models and underpinned by principles of trauma-informed, person-centred, and culturally-secure care so that women feel safe and supported when discussing alcohol use in pregnancy, and so that intervention and referral practices are appropriate and effective.

7.2 Recommendation 2: Implement the Mandatory Collection of Alcohol in Pregnancy Data

It is recommended that:

- the Perinatal National Minimum Data Set specify the mandatory collection and reporting of alcohol in pregnancy data (including timing and dose of alcohol use) to the National Perinatal Data Collection;
- these data be used in combination with other perinatal data to identify risk factors associated with alcohol use in pregnant women to inform targeted prevention efforts;
- these data be used to provide population-based insights into the links between different levels and timings of PAE and corresponding child outcomes;

7.3 Recommendation 3: Evaluate FASD Prevention Strategies

Consistent, evidence-based national policy and guidelines on the use of alcohol during pregnancy, are an important step in the prevention of alcohol-related harms.

It is recommended that:

- maternal AUDIT-C scores during pregnancy (including frequency and dose) be used to evaluate the impact of the NAS on prenatal alcohol use and as an interim evaluation metric for the National FASD Strategic Action Plan; and
- maternal AUDIT-C scores in pregnancy be used with other variables collected as part of the National Perinatal Data Collection (e.g. maternal age, socioeconomic status, ethnicity) to evaluate prevention initiatives from a health equity perspective (for example, to determine the impact of PAE reduction strategies on antenatal alcohol use among Indigenous and non-Indigenous women).

7.4 Recommendation 4. Build the Capacity of Health Professionals to effectively screen and provide appropriate advice to pregnant women

In line with the recommendations provided by FARE (Foundation for Alcohol Research and Education (FARE), 2012) and highlighted in numerous studies with Australian health professionals (Crawford-Williams, Steen, Esterman, Fielder, & Mikocka-Walus, 2015; France et al., 2010; Payne et al., 2011; Peadon et al., 2011), ongoing capacity-building with the health workforce is recommended to support clinicians to effectively screen for, advise about and provide appropriate intervention for PAE. This is required in order to support the implementation of Recommendations 1 and 2, and includes the dissemination of resources and training related to:

- Asking about alcohol use during pregnancy and with sexually active women of childbearing age
- Disseminating the information contained in the Alcohol Guidelines
- Providing brief intervention and referral for women who need more support to stop alcohol and pregnancy.

It is recommended that clinical guidelines (for example the National Clinical Guidelines: Pregnancy Care) reflect the above recommendations regarding universal screening for alcohol use in pregnancy and direct health professionals to relevant resources on asking about alcohol use in pregnancy.

Specific practitioners who should have access to capacity building opportunities in these areas include general practitioners, gynaecologists and obstetricians, midwives, child health nurses and paediatricians.

Ensuring that guidelines are disseminated to health professionals and that they are aware of available training opportunities is key to improving nationally consistent prevention strategies for prenatal alcohol exposure. However, there is a need for national, long-term training to upskill the existing health workforce and provide education and capacity-building for trainee health professionals and tertiary health curriculums.

There is a role for professional bodies to play in raising awareness of capacity building initiatives through newsletters and professional events and providing incentives for their completion, such as offering professional development points. Partnerships between research bodies and professional bodies, tertiary training institutions, and service providers can support the dissemination of up-to-date information and translation of evidence into practice.

7.5 Recommendation 5. Raise Awareness of the Risks of Alcohol Use in Pregnancy

It is recommended that:

- current policies, practice guidelines and position statements reflect a coherent message regarding recommendations about alcohol use in pregnancy and the specific risks associated with prenatal alcohol exposure;

- the Australian government implement a broad-reaching national media campaign using multiple media channels to increase awareness of the updated NHMRC Alcohol Guidelines when the revised version is released;
- campaigns are based on evidence of what works to change health risk behaviours and are responsive to the multiple target audiences that influence women's alcohol use behaviours in pregnancy, as well as to the needs of different groups of women, including vulnerable groups; and
- the impact of public campaigns on health behaviour change be evaluated, with consideration given to the impact of such strategies on health equity outcomes.

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Table 1A. Recommendations related to FASD awareness and prevention made in the report on the House of Representatives Standing Committee on Social Policy and Legal Affairs Inquiry into the prevention, diagnosis and management of Fetal Alcohol Spectrum Disorders

Recommendation 4	<p>The Commonwealth Government work with the National Health and Medical Research Council and professional peak bodies to ensure that all health professionals are:</p> <ol style="list-style-type: none"> (1) fully aware of the National Health and Medical Research Council Guidelines that advise women not to drink while pregnant; (2) have alcohol consumption impacts on pregnancy and the developing fetus incorporated into all general practice and midwifery training; (3) trained in discussing the National Health and Medical Research Council Guidelines and alcohol consumption with women; and (4) skilled in asking women about alcohol consumption and recognising and responding to women at risk. <p>By 1 January 2014, all health professionals, including sexual health advisors, midwives, general practitioners and obstetric professionals should be promoting the consistent message that not drinking while pregnant is the safest option, in line with the National Health and Medical Research Council Guidelines.</p>
Recommendation 5	<p>The Commonwealth Government establish mechanisms for health professionals to record women's alcohol consumption during pregnancy, or at the time of birth for women who have not presented for prenatal care, and to ensure such information is recorded in midwives' data collections or notifications across Australia.</p>
Recommendation 6	<p>The Commonwealth Government implement a general public awareness campaign which promotes not drinking alcohol when pregnant or when planning a pregnancy as the safest option, consistent with the National Health and Medical Research Council Guidelines. Specific awareness campaigns should be developed to target youth and Indigenous communities. Nationwide campaigns should be started no later than 1 July 2013.</p>
Recommendation 7	<p>The Commonwealth Government mandate a health advisory label advising women not to drink when pregnant or when planning a pregnancy to be included on the packaging of all pregnancy and ovulation testing kits. These labels should be in place by 1 October 2013.</p>
Recommendation 8	<p>The Commonwealth Government raise with the States and Territories the critical importance of strategies to assist Indigenous communities in managing issues of alcohol consumption and to assist community led initiatives to reduce high-risk consumption patterns and the impact of alcohol.</p>
Recommendation 9	<p>The Commonwealth Government work with State and Territory governments to identify and implement effective strategies for pregnant women with alcohol dependence or misuse</p>
Recommendation 10	<p>The Commonwealth Government seek to include health warning labels for alcoholic beverages, including a warning label that advises women not to drink when pregnant or when planning a pregnancy, on the Legislative and Governance Forum on Food Regulation's December agenda. The Commonwealth Government should determine the appropriate format and design of the labels by 1 March 2013, to assist the alcohol industry in adopting best practice principles and preparing for mandatory implementation.</p>

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Recommendation 11	<p>The Commonwealth Government mandate the range of health warning labels for alcoholic beverages as decided by the Legislative and Governance Forum on Food Regulation.</p> <ul style="list-style-type: none"> • The warning labels should consist of text and a symbol and should be required to be displayed on all alcohol products, advertising and packaging by 1 January 2014; • The minimum size, position and content of all health warning labels should be regulated; and • The introduction of mandated warning labels should be accompanied by a comprehensive public awareness campaign.
Recommendation 12	<p>The Committee recommends that the Commonwealth Government commission an independent study into the impacts of the pricing and availability of alcohol and the influence of these factors in the changing patterns of alcohol consumption across age groups and gender. The study should be completed by 1 October 2013.</p>
Recommendation 13	<p>The Commonwealth Government commission an independent study into the impacts and appropriateness of current alcohol marketing strategies directed to young people. The study should have regard to these strategies and the volume and frequency of alcohol consumption amongst young people, the links being made between alcohol and sport, the efficacy of efforts to promote responsible drinking behaviours, and the adequacy of current regulations to respond to marketing through digital platforms such as the internet, social media and smartphones. The study should be completed by 1 October 2013.</p>
Recommendation 14	<p>The Committee recommends that, following the completion of the study into the pricing and availability of alcohol and the study into alcohol marketing strategies, the Commonwealth Government develop a National Alcohol Sales Reform Plan aimed at reducing the harms caused by irresponsible alcohol consumption across Australia.</p>

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Table 2A. Australian National Alcohol and Pregnancy Policies, Strategies, Action Plans and Guidelines

Document	Audience	Key messages	Implementation	Evaluation
National Health and Medical Research Council (NHMRC)				
Alcohol Guidelines (National Health and Medical Research Council, 2009)	All Australians	<ul style="list-style-type: none"> Maternal alcohol consumption can harm the developing fetus or breastfeeding baby. For women who are pregnant or planning a pregnancy, not drinking is the safest option. For women who are breastfeeding, not drinking is the safest option 	None specified	None specified
Australian Government Department of Health - Strategies				
National Preventative Health Strategy (Australian Government Preventative Health Taskforce, 2009)	All sectors and all Australians	<ul style="list-style-type: none"> Poor nutrition, cigarette smoking and alcohol use during pregnancy can result in long-term adverse health effects. 	Action plan includes broad dissemination of NHMRC Alcohol Guidelines, and national program to educate women about risk of antenatal obesity, alcohol & tobacco	Recommended National Prevention Agency be established to evaluate prevention strategies. Australian National Preventative Health Agency in 2010 but it ceased in 2014 and functions were consolidated in the Department of Health.
National Maternity Services Plan (expired 30 June 2016) (Australian Health Ministers' Conference, 2010)		<ul style="list-style-type: none"> Maternal alcohol consumption can harm the fetus in a number of ways. Although the risk of birth defects is greatest with high, frequent maternal alcohol intake during the first trimester, alcohol exposure throughout pregnancy (including before pregnancy is confirmed) can have consequences for development of the fetal brain. 	Key actions include developing and expanding appropriate maternity care for women who may be vulnerable due to medical, socioeconomic and other risk factors (including women who	None specified although progress reported in a series of reports (Australian Health Ministers' Advisory Council, 2016).

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use tobacco, alcohol, and
illicit drugs)

National Alcohol Strategy consultation draft (Commonwealth Department of Health, 2018)	Governments, communities and service providers.	<ul style="list-style-type: none"> • Provision of high quality alcohol-related harm and risk information is particularly important during pregnancy and breastfeeding. • Supporting women to avoid alcohol can reduce risks of long term damage to the developing baby. • Includes NHMRC guidelines, which will be updated when new guidelines released. 	Responsibilities extend across all levels of government and portfolios, plus community service, public health and non- government sectors.	NDHS Data
FASD Strategic Action Plan – consultation draft (Australian Government Department of Health)	Not publicly available			

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Table 3A. State-based data collections about alcohol use in pregnancy

State	Antenatal Alcohol Use Collected (Y/N)	Data about alcohol use collected	Options for reporting amount of alcohol consumed
ACT	Y	Alcohol consumption during pregnancy: Y/N	The number of standard drinks per week
NT	Y	Alcohol: 1 st and 36 weeks visit with a blank field or yes/no/unknown response	No prompt provided
NSW	N	N	
QLD	N	N	
SA	N	N	
TAS	Y	Consumed alcohol: Y/N	< 1 standard drink/day; >1 standard drink/day (tick box)
VIC	N	N	
WA	N	N	

Adapted from Table 3.3: Summary of perinatal data collection about alcohol use in pregnancy, reported in (Australian Institute of Health and Welfare, 2017a)

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Table 4A. Professional bodies: Policies, practice guidelines and position statements

Body	Disciplines Represented	Document	Available	Key messages
Australian College of Midwives	Midwives	N/A		N/A
Australian Medical Association	Medical professionals and medical students.	<i>Alcohol Consumption and Alcohol-related Harms – 2012 – Position Statement</i> (Australian Medical Association, 2012)	On website	<p>No scientific consensus on a threshold below which adverse effects on the fetus do not occur. The best advice for women who are pregnant is to not consume alcohol.</p> <p>The NHMRC guidelines should clearly state that no level of alcohol consumption during pregnancy can be guaranteed to be safe for the fetus. Doctors have an important role to play in providing advice to their patients about the harms of excessive alcohol use.</p> <p>Brief interventions from doctors have been shown to be effective in reducing alcohol consumption and alcohol-related problems, with follow-up sessions resulting in longer-term effectiveness.</p>
Royal Australian and New Zealand College of Obstetricians and Gynaecologists	Obstetricians and gynaecologists	<i>Alcohol in Pregnancy Position Statement</i> (The Royal Australian and New Zealand College of Obstetricians and Gynaecologists, 2014)	On website	RANZCOG currently recommends that women avoid intake of alcohol during pregnancy. Counselling women about possible adverse effects of prior alcohol intake in pregnancy is difficult. In most circumstances, it will be possible to provide reassurance that any additional risk attributable to alcohol consumption earlier in pregnancy is likely to be small. Where there is evidence of pathological drinking behaviour, involvement of a drug and alcohol specialist in counselling and care is appropriate. Use of alcohol in pregnancy may not be disclosed, so it may be of value for maternity care providers to use a screening tool to enhance detection of alcohol use. There should be involvement of a multidisciplinary team where excessive alcohol use is known or suspected.
Royal Australian College of General Practitioners	General practitioners	<i>Preventive activities prior to pregnancy</i> (The Royal Australian College of General	On website	Preconception care should include reproductive planning and contraception use to prevent unplanned pregnancy. GPs should advise women to consider abstinence from alcohol (especially if planning a pregnancy, or if the woman could become pregnant or is in the early stages of pregnancy). GPs should ask about tobacco, alcohol and illegal drug use. If use is identified, GPs should offer counselling and referral for specialized support.

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		<i>Practitioners, 2016)</i>		
Royal Australasian College of Physicians and The Royal Australian and New Zealand College of Psychiatrists	Physicians and Psychiatrists	<i>Alcohol Policy 2016</i> (The Royal Australasian College of Physicians and The Royal Australian and New Zealand College of Psychiatrists, 2016)	On website	It is important that women be asked about alcohol use prior to and during pregnancy so that appropriate advice can be offered. A brief intervention or, where necessary, referral to drug and alcohol services may be indicated to prevent harms to both mother and developing child.

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