A review of policies on alcohol use during pregnancy in Australia and other English-speaking countries, 2006

Colleen M O'Leary, Louise Heuzenroeder, Elizabeth J Elliott and Carol Bower

ABSTRACT

- It is well accepted that heavy alcohol consumption during pregnancy is a risk factor for fetal alcohol spectrum disorder, but research findings for exposure to low to moderate alcohol levels during pregnancy are equivocal, allowing a range of interpretations.
- The 2001 guideline from the National Health and Medical Research Council (NHMRC) for low-risk drinking for "women who are pregnant or might soon become pregnant" recommends fewer than seven standard drinks per week, and no more than two standard drinks on any one day. This position has polarised health professional and consumer opinion in Australia.
- The NHMRC guidelines on alcohol are scheduled for review in 2007. We surveyed the alcohol and pregnancy policies and clinical practice guidelines of Australia and six other English-speaking countries to identify current policy. Documents were obtained through Internet searches and direct contact with the relevant organisations.
- The policies and guidelines varied both across and within countries, and the NHMRC guideline, while not universally supported in Australia, is in step with the policies of the United Kingdom and Canada.
- Research is needed to elucidate the true association between low to moderate alcohol consumption and fetal harm, the impact of different policies on rates of maternal alcohol consumption during pregnancy, and any untoward outcomes of an abstinence message, to inform and underpin future policy development in Australia.

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The issue of alcohol use during pregnancy is controversial. It is well accepted that heavy maternal alcohol consumption during early pregnancy — either chronic daily use or binge drinking (five or more drinks per occasion) — is required for the development of fetal alcohol syndrome (FAS),[1,2] but not all children exposed to alcohol *in utero* will be affected to the same degree, and some will not be affected.[3] A number of factors, such as the pattern and timing of alcohol consumption, stage of fetal development, and sociobehavioural factors, such as poverty and smoking, may exacerbate the impact of alcohol.[4] Maternal nutrition, genetics and concomitant use of other drugs may also influence fetal risk. Alcohol exposure can also cause a range of alcohol-related birth defects and neurodevelopmental disorders which, collectively with FAS, comprise fetal alcohol spectrum disorder (FASD).[5] The amount of alcohol necessary for fetal damage is unclear, and it remains debatable whether there is a threshold level below which alcohol does not harm the fetus.[6]

Lack of clarity in the published literature about the relationship between low to moderate alcohol consumption and fetal harm has allowed a range of interpretations and conclusions to be drawn from the data. The way each government and professional body interprets these data is reflected in their policies, and inconsistency in policy is evident not only between, but also within, countries.

In this article, we examine government policies on maternal alcohol consumption during pregnancy in seven English-speaking nations — Australia, New Zealand, Canada, South Africa, the United Kingdom, Ireland and the United States — and in Australian states and territories. Where available, policies and clinical practice guidelines of relevant medical, nursing, and non-professional organisations are also presented. This review is timely, in view of the upcoming revision of the guidelines on alcohol use in Australia by the National Health and Medical Research Council (NHMRC).

Alcohol and pregnancy policies and guidelines were identified through Internet searches of the websites of the relevant jurisdictions and organisations. Where no policy could be identified, the organisation was contacted by email or telephone. This strategy was based on the assumption that, to be useful tools, policies must be publicly available and easy to access.

Policies in Australia

In 2001, the NHMRC published revised alcohol guidelines based on a literature review.[7] These guidelines reversed the previous (1992) NHMRC policy advising women to abstain from alcohol during pregnancy.[8] Recommendations in the 2001 guidelines focus on avoiding a high maternal blood alcohol level. They advise that abstinence may be considered and that, if a woman does drink during pregnancy, she should consume no more than seven standard drinks a week and, on any one day, no more than two standard drinks, spread over at least 2 hours. They also advise that under no circumstances should a pregnant woman become intoxicated. The publication of these guidelines has generated considerable debate across Australia, and a review of the guidelines is scheduled for 2007, with a public consultation document to be finalised by the end of 2007.

The NHMRC 2001 guidelines have been adopted without alteration by only three organisations in Australia: the Australian Government Department of Health and Ageing, the Western Australian Drug and Alcohol Office, and the Tasmanian Department of Health and Human Services. The recently published *National clinical guidelines for the management of drug use during pregnancy, birth, and the early development years of the newborn* (2006),[9] which were commissioned by the Ministerial Council on Drug Strategy, provide the NHMRC 2001 recommendations with a caveat that they are not, in the opinion of the authors, supported by sufficient evidence to conclude that any level of alcohol consumption during pregnancy is completely safe.

The perception that there is insufficient evidence to conclude that any level of alcohol consumption during pregnancy is low-risk is prevalent across Australian state and territory governments (Box 1). The Victorian Department of Health[18] provides the NHMRC recommendations while advising that a safe level of alcohol consumption during pregnancy has not been determined. How-

1 Policies on alcohol and pregnancy: Australian Commonwealth and state and territory governments*

Source	Abstinence	Occasional small amounts	Comments	Evidence base†
Commonwealth Government				
National Health and Medical Research Council (2001)[7]	May be considered	2 per day & < 7 per week is low risk	◦ Should never become intoxicated ◦ Risk is highest in the early stages of pregnancy	2
Australian Government Department of Health and Ageing[10-12]	May be considered	2 per day & < 7 per week is low risk	◦ Should never become intoxicated, but the evidence about low to moderate alcohol consumption is less clear ◦ Risk is highest in the early stages of pregnancy	2
Ministerial Council on Drug Strategy National Clinical Guidelines[9‡]	Safest	2 per day & < 7 per week is low risk, but no level can be assumed to be completely safe	◦ Provide NHMRC recommendations ◦ State that no level of alcohol consumption has been determined as completely safe ◦ All pregnant women should be asked about their alcohol consumption and given information on the risk associated with drinking alcohol during pregnancy	NHMRC, 2; Point 2, 4
States and territories				
ACT: no policy	—	—	◦ The ACT Drug and Alcohol Office advised that the information provided to women varies across health service providers	—
NSW Health[13]	Safest	Even a small amount may be harmful	◦ Binge drinking, particularly during the first trimester, is harmful ◦ A safe level or safe time for drinking has not yet been determined	5
NSW Health, Centre for Drug and Alcohol[14]	Safest	Moderate alcohol use may be harmful	◦ Heavy drinking is known to be dangerous ◦ Moderate use of alcohol defined as 2 drinks per day, 3–4 times a week	5
Queensland Health[15]	Optional	Reduction	◦ Alcohol reduction or cessation advised, but no level of alcohol consumption specified	5
South Australian Department of Health[16]	Safest	Not advised	◦ Reduce alcohol when planning pregnancy and abstain when pregnant ◦ The risks increase with increasing quantity, with harm occurring with high exposure, and a safe level has not yet been determined	5
Tasmanian Department of Health and Human Services[17]	Safest	2 per day & < 7 per week is low risk	◦ Follow the NHMRC guidelines	2
Victorian Department of Health[18]	Safest	2 per day & < 7 per week is low risk	◦ There are varying opinions about the harm from drinking alcohol during pregnancy, but a safe level has not yet been determined ◦ Present the NHMRC guidelines (2001)[7]	2
Western Australian Drug and Alcohol Office[19]	Safest	2 per day & < 7 per week is low risk	◦ Follow the NHMRC guidelines (2001)[7]	2
Western Australian Department of Health[20]	No specific advice	No specific advice	◦ Drinking alcohol at hazardous or harmful levels during pregnancy increases the risk of low birthweight, intrauterine growth retardation and prematurity	2

* Australian standard drink equals 10 g of alcohol. † Key to evidence base: 1 = systematic literature review; 2 = literature review (not systematic review); 3 = broad statement or indication that the policy is based on the evidence, but no specific references provided; 4 = consensus of authors; 5 = not mentioned.
‡ *National clinical guidelines for the management of drug use during pregnancy, birth and the early development years of the newborn.*[9]
NHMRC = National Health and Medical Research Council. ◆

ever, none of these policies and guidelines mention the basis for their recommendation of abstinence (Box 1).

All the Australian medical and nursing organisations that provide guidelines on alcohol and pregnancy have promoted abstinence as either the only option or the preferable or safest option (Box 2). None of the policies, with the exception of that of the Australian College of Midwives, which endorses the *National clinical guidelines for the management of drug use during pregnancy, birth and the early development years of the newborn*, refer to a review of the evidence.

Policies in other English-speaking countries

The policies and guidelines for alcohol and pregnancy in the other English-speaking countries reviewed — namely Canada,[25-28] the UK,[29-31] the US,[32-37] Ireland,[38] New Zealand,[39,40] and South Africa[41,42] — reflect the range of policies found within Australia, ranging from an abstinence message to advice that the risk from low amounts of alcohol is minimal (Box 3).

The Royal College of Obstetricians and Gynaecologists in the UK[29] is the only organisation included in our review to have undertaken a systematic review of the literature. This systematic

2 Policies on alcohol and pregnancy: Australian medical and nursing organisations*

Source	Abstinence	Occasional small amounts	Comments	Evidence base†
Royal Australian College of General Practitioners[21]	Preferable	Limit drinking	• Pregnant women and those planning pregnancy should be assessed annually on their quantity and frequency of alcohol intake and the number of alcohol-free days each week • High-risk drinkers should receive brief interventions	5
Royal Australian and New Zealand College of Obstetricians and Gynaecologists	—	—	• No policy or guidelines identified	—
Australian College of Midwives‡	Safest	2 per day & < 7 per week is low risk	• Follows the recommendations set out in the National Clinical Guidelines (NCG) (see Box 1)	As per NCG
Royal Australasian College of Physicians, Royal Australian and New Zealand College of Psychiatrists[22]	Safest	No level has been determined completely low risk for the fetus	• All pregnant women should be given information on the risk associated with drinking alcohol during pregnancy	5 "Usually based on NHMRC"
Australian Medical Association[23,24]	Desirable	Not advised	• The position statement was written in 1998 and is based on the 1992 NHMRC recommendations • In 2005, the AMA President stated that the NHMRC should revise the guidelines on alcohol consumption during pregnancy, indicating that an abstinence message should be given	Point 2, 4

* Australian standard drink equals 10 g of alcohol. † Key to evidence base: 1 = systematic literature review; 2 = literature review (not systematic review); 3 = broad statement or indication that the policy is based on the evidence, but no specific references provided; 4 = consensus of authors; 5 = not mentioned.
‡ Helen Cooke (former executive member of the Australian College of Midwives, Sydney, NSW), personal communication, 2006.
NHMRC = National Health and Medical Research Council.

review appears to be the basis for the government policies in the UK.[30,31] Six other organisations indicate that their policy is based on a review (not systematic) of the literature: Health Canada,[25] the Public Health Agency of Canada,[26] the Society of Obstetricians and Gynaecologists of Canada,[28] the US National Institute on Alcohol Abuse and Alcoholism,[33] the American College of Obstetricians and Gynecologists,[35,36] and the American Academy of Pediatrics.[37]

Discussion

The current lack of consensus on the evidence surrounding the potential for harm to the fetus from low to moderate levels of alcohol consumption during pregnancy is reflected in the variety of policy advice provided across the English-speaking countries examined. The policies identified can be grouped into three categories: those that recommend abstinence alone; those that recommend abstinence as the safest choice but also indicate that small amounts of alcohol are unlikely to cause harm (some indicate that women who cannot stop drinking should decrease their alcohol consumption during pregnancy); and those that advise that a low alcohol intake poses a low risk to the fetus. However, Australia and the UK are the only two countries where a quantity of alcohol has been specified. The UK recommends a maximum of four standard units per week (maximum of 32 g of alcohol), while Australia recommends no more than seven standard drinks per week (maximum of 70 g of alcohol), and both advise against binge drinking. Other policies stating that the risk from consuming a low level of alcohol is minimal refrain from quantifying a "low level" (Box 1 and Box 2). This may reflect the use of a safety factor, such as that recommended by some authors.[2,43]

Although women in Canada, Ireland and South Africa are advised to abstain from alcohol during pregnancy, the message is more complex than a simple abstinence message. For example, Health Canada advises that the consumption of low levels of alcohol is associated with minimal risk to the fetus; the Department of Health in Ireland advises women to avoid binge drinking; and the South African Department of Health advises that women who cannot stop drinking should reduce their alcohol consumption.

Only the US and New Zealand provide a consistent abstinence message as the only option for pregnant women. These policies state that a safe level of alcohol has not been identified.

Public policy cannot be viewed in isolation. The impact of an abstinence message on women and their likely response to this message need to be considered. A recently published study of alcohol consumption by Western Australian women during pregnancy reported that 59% of the women surveyed reported drinking some alcohol during pregnancy, 14% reported binge drinking during the 3 months before conception, and almost half of the pregnancies (47%) were unplanned.[44] These findings are similar to those of a Queensland study, in which half of the women surveyed consumed alcohol during early pregnancy, over a third (36%) consumed alcohol during late pregnancy, and 20% reported binge drinking (five drinks or more per occasion) at least once during early pregnancy.[45] The results of these studies indicate that many pregnancies may be exposed to high levels of alcohol during the periconceptional period, before pregnancy awareness.

The possibility that an abstinence message will generate fear and guilt that results in harm was expressed by Dr Ian Walpole, a clinical dysmorphologist, geneticist and paediatrician who has

3 Policies on alcohol and pregnancy: other English-speaking countries*

Source	Abstinence	Occasional small amounts	Comments	Evidence base†
Canada				
Health Canada National guidelines for the childbearing years[25]	Prudent choice	Risk from low levels of alcohol is minimal	• The risk is relative to the amount of alcohol consumed • Women who have consumed small amounts of alcohol during pregnancy should be reassured that the risk is likely to be minimal	2
Public Health Agency of Canada[26]	Safest	No safe amount	• During pregnancy there is no safe amount, type, or time to drink	2
Canadian Medical Association[27]	Prudent choice	No specific advice	• Physicians can play a leading role in educating and counselling about the dangers of alcohol • Pregnant women should receive high priority for alcohol and drug addiction treatment services	5
Society of Obstetricians and Gynaecologists of Canada[28]	Prudent choice	Occasional intake unlikely to cause harm	• Excessive or persistent alcohol intake has been associated with fetal alcohol syndrome	2
United Kingdom				
Royal College of Obstetricians and Gynaecologists[29]	Safest	1–2 standard units once or twice a week	• Binge drinking in early pregnancy may be particularly harmful • Alcohol offers no benefits in relation to the outcomes of pregnancy	1
UK Department of Health, National Health Service[30]	As above	As above	• Heavy or frequent drinking can harm your baby; avoid getting drunk	As above
Health Scotland[31]	As above	As above	• Heavy drinking may seriously harm your baby's development	As above
United States				
US Surgeon General (2005)[32]	Advised	No safe amount	• During pregnancy there is no safe amount, type, or time to drink • Health professionals should take a history of alcohol consumption, provide information on the risks, and advise abstinence	3
National Institute on Alcohol Abuse and Alcoholism (NIAAA)[33]	Advised	No safe amount	• During pregnancy there is no safe amount, type, or time to drink • Each pregnancy is different and alcohol may hurt one baby more than another • NIAAA has published on its website a review of drinking moderately and pregnancy by Jacobson and Jacobson,[2] which states: "moderate drinking has much more impact on child development when the mother consumes several drinks in a single day than when she drinks the same quantity in doses of one to two drinks per day over several days". The review recommends using a safety factor of 10 to determine a safe drinking level. Although not stated, we assume this review influenced NIAAA policy	2
US Department of Health and Human Services, Department of Agriculture *Dietary guidelines for Americans 2005*[34]	Advised	Not recommended	• Heavy drinking may have a serious effect on your baby's development and moderate drinking may have behavioural or developmental consequences for the baby	5
American College of Obstetricians and Gynecologists[35,36]	Safest	Small amounts unlikely to cause harm	• Although small amounts of alcohol are unlikely to cause serious harm, women are best advised to refrain from alcohol entirely • Even when heavy drinking in early pregnancy has occurred, risk of further harm can be reduced by cessation of alcohol use	2
American Academy of Pediatrics[37]	Advised	No safe amount	• Potential for harm to the fetus is much stronger with large amounts of maternal alcohol consumption • Maternal age, parity, and health may contribute to infant outcome	2
Others				
Ireland Department of Health, Health Promotion Unit[38]	Safest	Avoid binge drinking	• A safe level of alcohol consumption during pregnancy has not yet been determined; cutting down or stopping protects your baby	5
New Zealand Ministry of Health[39] and Alcohol Advisory Council of New Zealand[40]	Safest	—	• During pregnancy there is no safe amount, type, or time to drink • Not all women who drink during pregnancy will have a child with fetal alcohol syndrome	5
South African Department of Health[41,42]	Advised	Safe level has not been determined	• Women are advised to attend antenatal clinics as early as possible • Damage to the baby can be limited by reducing alcohol misuse during pregnancy • Men should support their partners to avoid alcohol	5

* UK unit = 8 g. Standard drink: Ireland and New Zealand = 10 g; South Africa = 12 g; Canada = 13.5 g; US = 14 g.
† Key to evidence base: 1 = systematic literature review; 2 = literature review (not systematic review); 3 = broad statement or indication that the policy is based on the evidence, but no specific references provided; 4 = consensus of authors; 5 = not mentioned. ◆

conducted research into alcohol and pregnancy, in a letter tabled at the Australian National Council on Drugs Workshop on Fetal Alcohol Syndrome in 2002.[46] The main concern relates to women with an unplanned pregnancy who have consumed alcohol before recognising they are pregnant and may consequently consider terminating the pregnancy. Similar concerns have been raised in Canada.[47]

National policy and guidelines on the use of alcohol during pregnancy, based on the evidence, should be viewed as one important step in the prevention of alcohol-related harm to the fetus. Consistency of the message is also important. In Australia, the difference in policies between and within states is likely to create confusion and lessen the impact of the policy.

Ensuring that guidelines are disseminated to health professionals and to women in the general population is a necessary component in the overall picture. Recent Western Australian surveys[48,49] indicated that fewer than half of health professionals ask women about their alcohol use during pregnancy; and, although 87% advise women to consider abstinence, fewer than 13% provide advice consistent with all components of the NHMRC 2001 guidelines.

Conclusion

The NHMRC policy of 2001 is consistent with the policies from other countries and organisations that are based on a literature review. The variation in policy direction both between and within countries indicates the uncertainty faced by policymakers when the available evidence is insufficient or inconclusive, and identifies the need for more definitive research into the relationship between low to moderate levels of alcohol consumption during pregnancy and harm to the fetus.

Examination of the correlation between the policy and the prevalence and pattern of alcohol consumption during pregnancy in each of these countries may provide some insight into the effectiveness of policy dissemination and the way in which women interpret the message presented. The ultimate measure of effect would be to monitor rates of FASD. However, in Australia, the lack of complete ascertainment, even of cases of FAS — the severe end of the spectrum[50] — and barriers to obtaining a true estimate[48] limit our ability to obtain accurate data.

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Competing interests

None identified.

Author details

Colleen M O'Leary, BSc, MPH, Research Associate[1]
Louise Heuzenroeder, BN, MBA, MPH, MHlthSc, Senior Consultant[2]
Elizabeth J Elliott, MD, FRACP, FRCP, FRCPCH, Associate Professor[3]
Carol Bower, PhD, FAFPHM, DLSHTM, Clinical Professor and Senior Principal Research Fellow[1]

1 Department of Population Sciences and Centre for Child Health Research, Telethon Institute for Child Health Research and University of Western Australia, Perth, WA.
2 Drug and Alcohol Services, Department of Health South Australia, Adelaide, SA.
3 Discipline of Paediatrics and Child Health and Australian Paediatric Surveillance Unit, University of Sydney, The Children's Hospital at Westmead, Sydney, NSW.

Correspondence: colleeno@ichr.uwa.edu.au

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