



# Home Births

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This statement has been developed by a Working Party and reviewed by the Women's Health Committee and approved by the RANZCOG Board and Council.

A list of Women's Health Committee Members can be found in [Appendix A](#).

Disclosure statements have been received from all members of this committee.

**Disclaimer** This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

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**Background:** This statement was first developed by Women's Health Committee in March 1987 and most recently reviewed in the first half of 2017.

**Objectives:** This statement is intended to provide advice on home birth.

**Funding:** The development and review of this statement was funded by RANZCOG.

**Outcomes:** Mortality and morbidity associated with planned home birth.

**Target audience:** This statement is intended for use by anyone seeking guidance on home birth.

**Values:** The evidence was reviewed and appraised by the working group and presented to Women's Health Committee. Local factors relating to Australia and New Zealand were applied by the working group and Women's Health Committee.

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## 1. Patient summary

Home birth may be available through a publically funded program connected to public hospitals or alternatively with private midwives. In order to optimise safety and minimise potential harm to you and your baby, there are a number of issues that should be considered if you are thinking about having a home birth. These issues include the level of risk relevant to your individual circumstance, your carer(s) suitability for managing a homebirth and the planned arrangements for transfer to hospital in the event of unanticipated complications requiring hospital care.

## 2. RANZCOG position statement

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) views its role as aiming for the best outcomes for mother and baby. The College supports women having an informed choice in all aspects of their maternity care – including the planned place of birth. All women contemplating planned homebirth should receive evidence-based information about the risks and benefits of homebirth as outlined in Appendix A. The College supports hospitals as the safest place for birth in Australia and New Zealand. However the College recognises that there is a small group of women who are accepting of the associated risks and elect to proceed with a planned homebirth. The College believes these women should be maximally supported in that choice but in the knowledge that provision of such support cannot ever completely mitigate the associated risks

## 3. Summary of Recommendations

Recommendation 1	Grade
The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) supports women having informed choices in maternity care – including the place of birth.	Consensus-based recommendation
Recommendation 2	Grade
Women contemplating planned home birth must be provided with accurate information free of prejudice and bias.	Consensus-based recommendation
Recommendation 3	Grade
Even in a pregnancy without complicating factors, the level of risk to mother and baby with homebirth is at a level that is unacceptable to most women. When a pregnancy has any factor that increases maternal or perinatal risk, home birth is particularly dangerous.	Consensus-based recommendation
Recommendation 4	Grade
Where a woman remains intent on a planned homebirth, the following is strongly recommended: <ol style="list-style-type: none"><li>1. Health practitioners providing home birth services should be confined to obstetricians (GP or specialist) and/or suitably qualified midwives, Eligible Midwife in Australia or Lead Maternity Carer (LMC) in New Zealand.</li><li>2. Women planning a home birth should meet the eligibility criteria as specified in the guidelines of their local hospital program or in accordance with the National Guidelines for Consultation and Referral.</li></ol>	Consensus-based recommendation

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| <ol style="list-style-type: none"> <li>3. A midwife practising homebirth must have established professional relationships with an obstetrician(s) for consultation and referral</li> <li>4. All practitioners undertaking homebirth must have an established pathway for referral to a hospital in the event of complications. Such pathways must include: <ol style="list-style-type: none"> <li>a) "Booking" at the hospital of planned transfer in the event of complications</li> <li>b) Plans for rapid and safe transportation</li> <li>c) Timely notification to the hospital of an evolving clinical situation that might result in the need for transfer.</li> <li>d) At the time of transfer, appropriate handover of all relevant clinical information in a timely and efficient manner</li> </ol> </li> </ol> |  |
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## 4. Introduction

Women show considerable diversity in their choices around childbirth<sup>1</sup>. Fewer than 1% of births in Australia<sup>2</sup> and nearly 4% of births in New Zealand<sup>3</sup>, are planned home births. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) support women having an informed choice about where to give birth to their baby. It is accepted that women show considerable diversity in their choices around childbirth<sup>1</sup> and such diversity should be respected, while providing information free of prejudice and bias.

Where a woman plans a home birth, it is important that reasons for this are explored and that her decision represents an informed choice. Women should be informed that several factors are critical to reducing potential adverse maternal and perinatal outcomes. These factors include:

- the presence or not of complications that may increase maternal or perinatal risk above that inherent in all pregnancies
- access to a high standard of service and an integrated team of appropriately trained health professionals – in community-based and hospital- based settings,
- access to consultation, and
- access to safe and timely transport to a nearby maternity hospital.

## 5. Homebirth research - perinatal and maternal outcomes

The level of increased maternal and perinatal risk of a planned home birth relative to a hospital birth is difficult to ascertain and is likely to vary greatly according to circumstances. High-quality evidence is limited, with no quality data from Australia or New Zealand to inform local practice. Many studies are often limited by methodological issues, including: small sample sizes, lack of appropriate control group and limited ability to distinguish between planned and unplanned home birth.

A literature search was undertaken on homebirth, particularly with perinatal and maternal mortality and morbidity as outcomes of interest. Pubmed searches were carried out with the search terms "planned home birth versus planned hospital birth" and "planned home birth and perinatal mortality". These searches combined returned 78 articles. The search was then limited to only include articles published in English,

those published after 1998 (to ensure currency) and the following exclusions applied: reviews, committee opinions, opinion pieces, comments, unplanned births before arrival (BBA) and planned versus unplanned homebirth. Following exclusions, there were 20 articles related to planned home birth versus hospital birth. Appendix A provides the 20 retrieved articles on home birth according to the search criteria, along with an appraisal of the quality of evidence and a commentary on the applicability and generalisability of the study to the Australian and New Zealand health care context.

The outcomes for planned homebirth are either similar to, or significantly higher than those reported hospital births. Since the hospital population include some women at increased risk of obstetric complications, there should be an expectation of better outcomes for the planned homebirth group by virtue of being selected for lower obstetric risk. It is therefore concerning to find similar outcomes in the homebirth population when compared to a higher risk population of hospital births. Given that the large majority pregnant women are very risk averse with respect to adverse outcome for their offspring, consideration of homebirth will only be applicable to a small minority of women<sup>1</sup>.

## 6. Where a woman plans a homebirth

Where a woman undertakes a planned homebirth in full awareness of the associated additional risks, the following are recommended:

- a) Health practitioners providing home birth services should be confined to obstetricians (GP or specialist) and/or suitably qualified midwives; that is an Eligible Midwife in Australia or Lead Maternity Carer (LMC) in New Zealand.
- b) Women planning a home birth should meet the eligibility criteria as specified in the guidelines of their local hospital program or in accordance with the National Guidelines for Consultation and Referral.
- c) A midwife practising homebirth must have established professional relationships with an obstetrician(s) (public or private) for consultation and referral. Maternity hospitals that have a collaborative relationship an Eligible Midwives or LMC are encouraged to collaborate through the provision of educational opportunities particularly in simulated emergency training and practice within local legislation, institution policies and procedures, regulatory requirements and quality assurance activities.
- d) All practitioners undertaking homebirth must have an established pathway for referral to a hospital in the event of complications. Such pathways must include:
  - a. "Booking" at the hospital

The hospital is greatly assisted in the management of transfers if there has been some prior relationship with the woman so that basic information is already logged with the hospital, well in advance of any transfer.
  - b. Plans for rapid and safe transportation

In advance of any emergency, careful consideration of the safest and most timely mode of transport. This will usually be via the ambulance service but some flexibility may be needed given the relevant clinical circumstance.
  - c. Timely notification to the hospital of an evolving clinical situation that might result in the need for transfer.

Many hospital maternity units are busy. Informing the hospital of an emerging clinical situation provides an opportunity for the obstetrician and health service to anticipate the possible arrival of an emergency. The hospital can then be better prepared to care for both the woman in question and also other women who could be adversely impacted by the unanticipated arrival of an obstetric emergency.

- d. At the time of transfer, appropriate handover of all relevant clinical information in a timely and efficient manner

Good communication and handover is extremely important. A summary of antenatal care and the current situation should be clearly documented and communicated to receiving staff. This should occur by telephone in advance of the patient's arrival at the hospital.

*In return, the receiving clinicians at the hospital should treat both patient and those responsible for supervising the planned homebirth with appropriate respect, regardless of the particular circumstance. The role of the homebirth attendant on transfer to hospital should be clear. Where professional standards have not been met by the homebirth carer, this should be addressed at a subsequent review and not at the time of referral and transfer.*

## 7. Conclusion

A decision to give birth at home must be taken in the knowledge that there are relatively few resources available for the management of sudden unexpected complications and that these complications may affect any pregnancy or birth – even those without any acknowledged obstetric risk factors.

For those women who continue with a planned homebirth, arrangements should be in place to limit the additional risks as far as possible. Homebirth practitioners should be integrated into the health care system with pre-defined pathways for consultation, referral and transfer of care.

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## Links to other related College Statements

Collaborative Maternity Care (C-Obs 33)

[http://www.ranzcog.edu.au/component/docman/doc\\_download/966-c-obs-33-collaborative-maternity-care.html](http://www.ranzcog.edu.au/component/docman/doc_download/966-c-obs-33-collaborative-maternity-care.html)

Evidence-based Medicine, Obstetrics and Gynaecology (C-Gen 15)

[http://www.ranzcog.edu.au/component/docman/doc\\_download/894-c-gen-15-evidence-based-medicine-obstetrics-and-gynaecology.html?Itemid=341](http://www.ranzcog.edu.au/component/docman/doc_download/894-c-gen-15-evidence-based-medicine-obstetrics-and-gynaecology.html?Itemid=341)

National Midwifery Guidelines for Consultation and Referral (3rd edition, Issue 2)

[https://www.ranzcog.edu.au/RANZCOG\\_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Referral-Guidelines-3rd\\_edition\\_issue\\_2\\_20150211\\_final\\_0.pdf?ext=.pdf](https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Referral-Guidelines-3rd_edition_issue_2_20150211_final_0.pdf?ext=.pdf)

New Zealand Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines)

<http://www.health.govt.nz/system/files/documents/publications/referral-glines-jan12.pdf>

Standards of Maternity Care in Australia and New Zealand (C-Obs 41)

[http://www.ranzcog.edu.au/component/docman/doc\\_download/974-c-obs-41-standards-of-maternity-care-in-australia-and-new-zealand.html](http://www.ranzcog.edu.au/component/docman/doc_download/974-c-obs-41-standards-of-maternity-care-in-australia-and-new-zealand.html)

## 9. Patient information

A range of RANZCOG Patient Information Pamphlets can be ordered via: <https://printstore.ranzcog.edu.au/>



## 10. Appendices

### Appendix A: Homebirth research - perinatal and maternal outcomes

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">Brocklehurst P et al. 2011.</a> <a href="#">Perinatal and maternal outcomes by place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study.</a> <sup>4</sup>	<b>UK</b> All NHS trusts providing intrapartum care at home, all Free-standing midwifery units, all alongside midwifery units (midwife led units on a hospital site with an obstetric unit), and a stratified random sample of obstetric units.	Prospective cohort study (women with a singleton term $\geq 37$ weeks) and “booked” pregnancy. Booked refers to already receiving antenatal care.	Prospective cohort study of 64,538 women with a singleton term $\geq 37$ weeks) and “booked” pregnancy. Booked refers to already receiving antenatal care.  For the three non-obstetric unit settings, transfer rates were much higher for low risk nulliparous women (36% to 45%) than for multiparous women (9% to 13%) during labour or immediately after birth.  Low risk nulliparous women had a 2.8 times the incidence of adverse outcome for their babies compared with low risk nulliparous women delivering in hospital.	Not relevant to Australia and New Zealand for the following reasons:  <b>Midwifery education</b> more comprehensive in the UK compared with Australia with respect to skills deemed as basic training and community based maternity care.  <b>Transfers</b> – Australia and New Zealand are more geographical diverse than the UK (distances and traffic in urban areas).  <b>Obstetric Flying Squads</b> available in UK and not in Australia. Obstetric Flying Squads are medical retrieval teams that are composed of an obstetrician, anaesthetist, midwife and other healthcare personnel who are on-call to attend to mothers with major obstetric complications occurring in the community.
<a href="#">Bastian H, Keirse MJ, Lancaster PA. Perinatal death associated with planned home birth in Australia: population based study. 1998. BMJ;317:384-8.</a> <sup>5</sup>	<b>Australia</b> A planned home birth was defined as a birth that, at the onset of labour, was intended to occur at home with the assistance of a home birth practitioner. This definition excluded antepartum transfers, unplanned home births, and births where the woman was supported only by family and friends. Home birth practitioners included midwives and medical practitioners, both registered and non-registered, but not Aboriginal	Retrospective cohort study comparing data on planned home births during 1985-90, notified to Homebirth Australia, with national data on perinatal deaths and outcomes of home births internationally.  Data were collected on home births during 1985-90 were from a database of Homebirth Australia, a national consumers’ association that kept a register of practitioners attending home births. Practitioners were asked to complete a detailed notification form for each planned home birth.	High overall perinatal mortality qualifying that low risk home births in Australia have good outcomes but that high risk births gave rise to a high rate of avoidable death at home	Data from 1985-1990. Very old and not considered relevant.  Database was National Homebirth Database – unclear what standard of data integrity is acceptable for entering into this database.

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
	traditional midwives.			
<a href="#">Chang JJ, Macones GA. 2011.</a> <a href="#">Birth outcomes of planned home births in Missouri: a population-based study.</a> <sup>6</sup>	<b>USA (Missouri)</b> Home births attended by physicians/certified nurse midwives or non-certified nurse midwives compared with hospital/birthing centre births.	Retrospective cohort study of women using Missouri vital records from 1989-2005. Included singleton pregnancies between 36-44 weeks' without major congenital abnormalities or breech presentation.	In this cohort study of 859,873 women using Missouri vital records from 1989-2005 (including singleton pregnancies between 36-44 weeks' without major congenital abnormalities or breech presentation), there was an increased relative risk for perinatal death in planned home birth group.	Not relevant to Australia and New Zealand for the following reasons: This study included women <b>36-44 weeks</b> of gestation. This is outside the scope of the consultation and referral guidelines for midwifery care. The quality of findings is questionable as there are very <b>wide confidence intervals</b> noted. The authors have lumped physicians and certified nurse midwives as one group of practitioners which is not relevant in the Australian and New Zealand context.
<a href="#">Cheyney M, Bovbjerg M, Everson C, Gordon W, Hannibal D, Vedam S. 2014</a> <a href="#">Outcomes of care for 16,924 planned home births in the United States: the Midwives Alliance of North America Statistics Project, 2004 – 2009.</a> <sup>7</sup>	<b>USA</b> 16,924 planned midwife led home births between 2004 – 2009.	Retrospective cohort study of women using statistics for maternal demographics, antenatal risk profiles, procedures, and outcomes of planned home births in the Midwives Alliance of North American Statistics Project (MANA Stats) 2.0 data registry. Data were analysed according to intended and actual place of birth.	Among 16,924 women who planned home births at the onset of labour, 89.1% gave birth at home. The majority of intrapartum transfers were for failure to progress, and only 4.5% of the total sample required oxytocin augmentation and/or epidural analgesia. The rates of spontaneous vaginal birth, assisted vaginal birth, and cesarean were 93.6%, 1.2%, and 5.2%, respectively. Of the 1054 women who attempted a vaginal birth after cesarean, 87% were successful. Low Apgar scores (<7) occurred in 1.5% of newborns. Postpartum maternal (1.5%) and neonatal (0.9%) transfers were infrequent. The majority (86%) of newborns were exclusively breastfeeding at 6 weeks of age. Excluding lethal anomalies, the intrapartum, early neonatal, and late neonatal mortality rates were 1.30, 0.41, and 0.35 per 1000, respectively.	Only data from women who consented was included in the research data set. The authors have lumped a range of different "midwives" together including certified nurse midwives, naturopathic midwives, unlicensed direct entry midwives and others as one group of practitioners which is not relevant in the Australian and New Zealand context.
<a href="#">de Jonge A, Geerts CC, van der Goes BY, Mol BW, Buitendijk SE, Nijhuis JG. 2015.</a> <a href="#">Perinatal mortality and</a>	<b>Netherlands</b> Low-risk women in midwife-led care at onset of labour, planning to birth at home compared	Cohort study of women who had a planned home birth versus a planned hospital birth. Results obtained through merging three national perinatal databases.	Of the total 814,979 women, 466,112 had a planned home birth and 276,958 had a planned hospital birth. No increased risk of adverse perinatal outcomes (intrapartum and neonatal death, Apgar scores and admission to	Not relevant to Australia and New Zealand for the following reasons: The authors state that the <b>results only apply to regions where home births are well integrated into the maternity care system</b> . This is not the case in Australia and New Zealand.

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">morbidity up to 28 days after birth among 743 070 low-risk planned home and hospital births: a cohort study based on three merged national perinatal databases.</a> <sup>8</sup>	with low-risk women in midwife-led care at onset of labour planning a hospital birth.		NICU within 28 days of birth) for planned home births among <b>low-risk women</b> .	
<a href="#">de Jonge A, van der Goes BY, Ravelli AC, Amelink-Verburg MP et al. 2009. Perinatal mortality and morbidity in a nationwide cohort of 529,688 low-risk planned home and hospital births.</a> <sup>9</sup>	<b>Netherlands</b> Low risk women in primary midwifery-led care planning to birth at home were compared with low risk women in primary midwifery-led care planning a hospital birth.	Cohort study of low-risk women under midwifery care at start of labour: planned homebirth versus planned hospital birth. Analysis of national perinatal and neonatal registration data.	Of a total of 529,688 low-risk women under midwifery care at start of labour: 60.7% planned homebirth, 30.8% planned hospital birth, remainder unknown. No significant differences were found between planned home and planned hospital birth for intrapartum death and neonatal death during the first 24 hours, intrapartum death and neonatal death up to 7 days, or admission to neonatal intensive care unit.	Not directly relevant to Australia and New Zealand for the following reasons:  Authors conclude that homebirth in the Dutch system does not increase risk of perinatal death or severe perinatal morbidity, 'provided the maternity care system facilitates this choice through the availability of well-trained midwives and a good transportation and referral system.'  The rate of missing data for the national neonatal registry ranges from 31 to 51%. Given the high rate of transported patients, data from transported patients may be disproportionately represented among the missing data. In the absence of further analysis of the reasons for the missing data, the authors' assumption that 'information was missing randomly for planned home and planned hospital births' is not justified  The authors' claim that their method is 'comparable to an "intention-to-treat analysis"'. This is questionable. A more robust prospective Dutch intention-to-treat analysis (Evers <i>et al. BMJ</i> 2010;341:c5639) showed that low-risk women who started labour with a midwife had a higher risk of delivery-related perinatal death than high-risk women whose labour started under the supervision of an obstetrician.
<a href="#">Dixon L, Prileszky G, Guilliland K, Miller S &amp; Anderson J. 2014. Place of birth and outcomes for a cohort of low risk women in New Zealand: A comparison with Birthplace England.</a> <sup>10</sup>	<b>New Zealand</b> Observational study using retrospective data to determine demographic differences between planned birth place setting, neonatal outcomes and transfer rates for a cohort of <b>low risk New Zealand women</b> and compared these findings	Cohort study of women from the New Zealand College of Midwives Clinical Outcomes Research (NZCOMCORD) database were analysed for the years 2006 to 2010 inclusive for <b>low risk women</b> . Comparisons have been made between place of birth (home, primary unit) and parity, ethnicity, age, body mass index, transfer rates, and neonatal outcomes (Apgars, NICU admission, perinatal mortality).	Cohort study of 61,072 women from the New Zealand College of Midwives Clinical Outcomes Research (NZCOMCORD) database were analysed for the years 2006 to 2010 inclusive for <b>low risk women</b> .  Findings were similar to the Birthplace England study, although the rates of transfer from home to hospital were lower. The actual number of perinatal mortality outcomes was low across all settings for low risk women in New Zealand	The results of this trial were similar to the Birthplace in England Collaborative Group study on which it was compared (Brocklehurst P <i>et al.</i> , 2011).  This study is useful in analysing where women plan to birth in NZ and where they end up birthing but does not answer the question home birth versus hospital birth.

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
	where possible with those of the Birthplace England research.		and differences in birthplace were not statistically significant ( $p < 0.14$ ).	
<a href="#">Evers ACC, Brouwers HAA, Hukkelhoven CW, et al. 2010. Perinatal mortality and severe morbidity in low and high risk pregnancies in the Netherlands: a prospective cohort study.</a> <sup>11</sup>	<b>Netherlands</b> Data analysed from the Utrecht area, a region in the Netherlands covering 13% of the Dutch population. Included pregnant women at 37 weeks' gestation or later with a singleton or twin pregnancy without congenital malformation.	Prospective cohort study of a total of 37,735 infants born to women who began labour under primary care (at home or in under midwifery care), compared to infants born to women who commenced labour under obstetrician care because of risk factors (elective caesarean section excluded).	Infants of low-risk women whose labour began in primary care under a midwife had a significantly higher risk of delivery-related perinatal death than did infants of high-risk women starting labour under obstetrician care. NICU admission rates for women under midwifery care were similar to those of high-risk women obstetrician care.	Authors describe findings as 'unexpected'. Although this Dutch study is a true prospective Dutch intention-to-treat analysis there are concerns about quality of findings as data are an aggregate of a large birth registry database and adjustment for confounders and clustering was not possible.  Included twin pregnancies which would be deemed high risk in Australia and New Zealand and outside home birth inclusion criteria.
<a href="#">Grunebaum A., McCullough L., Sapa K., Arabin B., Chervenak F. 2017 Planned home births: The need for additional contraindications.</a> <sup>12</sup>	<b>USA</b>	Population-based, retrospective cohort study of all term ( $\geq 37$ weeks gestation), normal weight ( $\geq 2500$ grams), singleton, nonanomalous births from 2009–2013 using the Centers for Disease Control and Prevention's period-linked birth-infant death files that allowed for identification of intended and unintended home births.  Study examined neonatal deaths (days 0–27 after birth) across 3 groups (hospital-attended births by certified nurse midwives, hospital-attended births by physicians, and planned home births) for 5 risk factors: 2 of the 3 absolute contraindications to home birth listed by the American College of Obstetricians and Gynecologists (breech presentation and previous cesarean delivery) and 3 additional risk factors (parity [nulliparous and multiparous], maternal age [women $< 35$ and $\geq 35$ years old], and gestational age at delivery [37–40 and $\geq 41$ weeks]).	The overall risk of neonatal death was significantly higher in planned home births (12.1 neonatal death/10,000 deliveries; $P < .001$ ) compared with hospital births by certified nurse midwives (3.08 neonatal death/10,000 deliveries) or physicians (5.09 neonatal death/10,000 deliveries).  Neonatal mortality rates were increased significantly at planned home births, with the following individual risk factors: breech presentation, nulliparous pregnant women, previous caesarean delivery, and a gestational age $\geq 41$ weeks. Planned home births with $\geq 1$ of the 5 risk factors had significantly higher neonatal death risks compared with deliveries with none of the risks. Neonatal death risk was further increased when a woman's age of $\geq 35$ years was combined with either a first-time birth or a gestational age of $\geq 41$ weeks.	Among planned home births, 59.7% of deliveries had one or more of the five risks outlined in the ACOG position statement. Women with the highest increased individual risk for NNM at planned home births were those with breech presentation (NNM 127.52/10,000 births or 1 in 78 breech births).  The US system is very different to the Australian and New Zealand healthcare context and findings cannot be extrapolated.
<a href="#">Grunebaum A.,</a>	<b>USA -</b>	A retrospective cohort study	10.5 million singleton live	This is a conference proceeding, low

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">Sapra K., Chervenak F. 2014. Term neonatal deaths resulting from home births: an increasing trend.</a> <sup>13</sup>	Various US locations using the CDC linked birth/infant death data set	using the CDC linked birth/infant death data set for term ( $\geq 37$ weeks), $\geq 2500$ grams, singleton live births, excluding congenital anomalies from 2007 to 2009. Deliveries were categorized by setting: hospitals, birthing centers, and home as well as providers (midwives, doctors, and "others" for home births). Neonatal mortality (NNM) was defined as neonatal deaths up to 28 days after delivery. Hospital midwives served as reference.	births included. Significantly raised risk of neonatal mortality for homebirths attended by midwives (RR=4.32), homebirth attended by others (RR=5.87) compared with hospital births attended by midwives (RR=1, incidence of 3.1/10,000 births).	level evidence.  <b>Inclusion criteria are questionable.</b> Definition/ role of a midwife versus delivered at home "by others" is questionable.  The US system is very different to the Australian and New Zealand healthcare context and findings cannot be extrapolated.
<a href="#">Hutton EK., Cappelletti A., Reitsma AH., Simioni J., Horne J., McGregor C., Ahmed R. Outcomes associated with planned place of birth among women with low-risk pregnancies.</a> <sup>14</sup>	Canada - Ontario	Retrospective cohort study of all midwifery-booked pregnancies between 2006 and 2009 to compare women who planned home birth at the onset of labour to a matched cohort of women with low-risk pregnancies who had planned hospital births attended by midwives.	11,493 planned home births were compared with and 11,493 planned hospital births. The risk of the primary outcome did not differ significantly by planned place of birth (relative risk [RR] 1.03, 95% confidence interval [CI] 0.68–1.55).  These findings were true for both nulliparous (RR 1.04, 95% CI 0.62–1.73) and multiparous women (RR 1.00, 95% CI 0.49–2.05). All intrapartum interventions were lower among planned home births.	Planned home birth by women with low-risk pregnancies attended by midwives in a jurisdiction where home birth is well-integrated into the health care system was not associated with a difference in serious adverse neonatal outcomes but was associated with fewer intrapartum interventions.  This study is not relevant to Australia and New Zealand as the authors note in their discussion "This study reports on outcomes of planned home birth in a jurisdiction where women are attended by registered midwives whose education and practice includes home birth and who are required by their regulatory college to maintain competence in providing care in the home setting. Home birth is offered as part of midwifery care as an option to women who have undergone screening and is an integrated part of the health system, which facilitates access to emergency transportation and transfer of care to obstetric or paediatric services when required".  Midwives in Ontario, Canada, provide care in the home and hospital and are required to submit data for all births to the Ontario Ministry of Health database.  This study was funded by the Association of Ontario Midwives but the Association had no role in the design, conduct or interpretation of analyses in this paper.
Hutton EK., Reitsma AH., Kaufman K. 2009. <a href="#">Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in</a>	Canada Ontario	Retrospective cohort study of planned home births compared with similar women at low risk planning a hospital birth.	When 6,692 planned home births were compared with similar women at low risk planning a hospital birth, no difference was demonstrated in perinatal mortality.  The rate of perinatal and neonatal mortality was very low (1/1,000) for both groups, and no	This study is not relevant to Australia and New Zealand as it demonstrates that midwives who were integrated into the health care system with good access to emergency services, consultation, and transfer of care provided care resulting in favorable outcomes for women planning both home or hospital births. This is currently not the case in Australia and New Zealand.  Midwives in Ontario, Canada, provide

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">Ontario, Canada, 2003-2006: a retrospective cohort study.</a> <sup>15</sup>			<p>difference was shown between groups in perinatal and neonatal mortality or serious morbidity (2.4% vs 2.8%; relative risk [RR], 95% confidence intervals [CI]: 0.84 [0.68-1.03]). No maternal deaths were reported. All measures of serious maternal morbidity were lower in the planned home birth group as were rates for all interventions including caesarean section (5.2% vs 8.1%; RR [95% CI]: 0.64 [0.56, 0.73]). Nulliparas were less likely to deliver at home, and had higher rates of ambulance transport from home to hospital than multiparas planning home birth and had rates of intervention and outcomes similar to, or lower than, nulliparas planning hospital births.</p>	care in the home and hospital and are required to submit data for all births to the Ontario Ministry of Health database.
Janssen PA., Saxell L., Klein MC., Liston RM., Lee SK. 2009. <a href="#">Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician.</a> <sup>16</sup>	<p><b>Canada</b> - British Columbia</p> <p>Examined all births in British Columbia between Jan. 1, 2000, and Dec. 31, 2004, that were planned to take place at the woman's home at the onset of labour. Data was obtained from Perinatal Database Registry, which captures all births in the province and is cross-referenced with the Department of Vital Statistics.</p>	A retrospective cohort analysis of all planned homebirths attended by a registered midwife from 2000 – 2004 compared with all planned hospital births attended by midwives or physicians that would have met eligibility criteria for homebirths.	<p>There were 2,889 planned homebirths attended by a registered midwife and 4,752 planned hospital births that would have met eligibility criteria for homebirths.</p> <p>There was no difference in perinatal mortality across all groups.</p> <p>The rate of perinatal death per 1000 births was very low and comparable in all 3 groups: it was 0.35 (95% confidence interval [CI] 0.00–1.03) among the planned home births, 0.57 (95% CI 0.00–1.43) among the planned hospital births attended by a midwife and 0.64 (95% CI 0.00–1.56) among the planned hospital births attended by a physician. There were no deaths between 8 and 28 days of life.</p>	<p>During their education and training Canadian midwives attend both hospital and homebirths, and therefore have extensive education and training in a community based setting and in the recognition and treatment of complications.</p> <p>This study is not relevant to Australia and New Zealand as it demonstrates that midwives who were integrated into the health care system with good access to emergency services, consultation, and transfer of care provided care resulting in favorable outcomes for women planning both home or hospital births. This is currently not the case in Australia and New Zealand.</p> <p>There are strict eligibility requirements for homebirth in Canada.</p> <p>Study was not of sufficient size to provide relatively stable perinatal death rates.</p>
Johnson K. Daviss BA. 2005. <a href="#">Outcomes of planned home births with certified professional</a>	<p><b>USA</b> -</p> <p>All home births involving certified professional midwives</p>	Prospective cohort study of all 5418 women expecting to deliver in the year 2000 in North America (USA and Canada) supported by midwives with a common certification and who planned to deliver at home when	98% of cohort were from the United States and 2% from Canada. No difference in perinatal mortality when only women at low risk with non-anomalous babies.	<p>Results lumped for USA and Canada.</p> <p>The US system is very different to the Australian and New Zealand healthcare context and findings cannot be extrapolated.</p> <p>Home birth group included breech and twins which are considered high risk in</p>

Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">midwives: large prospective study in North America.</a> <sup>17</sup>	across the year 2000. Target population was all women who engaged the services of a certified professional midwife in Canada or the United States as their primary caregiver for a birth with an expected date of delivery in 2000.	labour began.	655 (12.1%) women who intended to deliver at home when labour began were transferred to hospital. The intrapartum and neonatal mortality among women considered at low risk at start of labour, excluding deaths concerning life threatening congenital anomalies, was 1.7 deaths per 1000 planned home births, similar to risks in other studies of low risk home and hospital births in North America. No mothers died. No discrepancies were found for perinatal outcomes independently validated.	the Australian and New Zealand context.  The authors note that A randomised controlled trial would be the best way to tackle selection bias of mothers who plan a home birth, but a randomised controlled trial in North America is unfeasible given that even in Britain, where home birth has been an incorporated part of the healthcare system for some time, and where cooperation is more feasible, a pilot study failed (Dowswell T, Thornton JG, Hewison J, Lilford RJ, Raisler J, Macfarlane A, <i>et al.</i> Should there be a trial of home versus hospital delivery in the United Kingdom? <i>BMJ</i> 1996;312:753-7.)  Regardless of methodology, residual confounding of comparisons between home and hospital births will always be a possibility. Women choosing home birth (or who would be willing to be randomised to birth site in a randomised trial) may differ for unmeasured variables from women choosing hospital birth.
<a href="#">Kennare RM, Keirse MJNC, Tucker GR, Chan AC. 2010. Planned home and hospital births in South Australia, 1991-2006: differences in outcomes.</a> <sup>18</sup>	Australia	Retrospective study using South Australia data on all births and perinatal deaths during the period 1991-2006. Included 1,140 home births and 298,860 hospital births.	Planned home births accounted for 0.38% of 300 011 births in South Australia. There was no significant difference in perinatal mortality rate, sevenfold increased risk of intrapartum death, and a 27-fold higher risk of death from intrapartum asphyxia. Review of perinatal deaths in the planned home births group identified inappropriate inclusion of women with risk factors for home birth and inadequate fetal surveillance during labour. Low Apgar scores were more frequent among planned home births, and use of specialised neonatal care as well as rates of postpartum haemorrhage and severe perineal tears were lower among planned home births, but these differences were not statistically significant.	Authors conclusions: Perinatal safety of home births may be improved substantially by better adherence to risk assessment, timely transfer to hospital when needed, and closer fetal surveillance.  Women in the planned home birth group were older (mean age, 31.3 [SD, 5.5] years) than those in the planned hospital birth group (mean age, 29.2 [SD, 5.5] years), less likely to be nulliparous (31.2% v 41.0%, P < 0.001) or Indigenous (1.0% v 2.2%, P = 0.003), and more likely to have higher occupational status (P < 0.001) and to live in the metropolitan area (79.8% v 76.0%, P = 0.003). Post-term pregnancies ( $\geq$ 42 weeks' gestation) were more common in the planned home birth group compared with the planned hospital birth group (3.8% v 1.2%, P < 0.001). In the planned home birth group, 25 infants of 43 post-term pregnancies (58%) were born at home, and five infants of five sets of twins were born at home. These inclusions do not reflect the usual low risk cohort for home births.  This study was conducted before the introduction of the Consultation and Referral guidelines.
<a href="#">McMurtrie J, Catling-Paul C, Teate A, <i>et al.</i> 2009. The St George Homebirth Program: An</a>	<b>Australia -</b> NSW, particularly St George hospital.	Prospective study of 100 low risk women in planned homebirth group.  The St. George Homebirth Program was the first publicly funded homebirth model of	30% transfer prior to commencement of labour. No perinatal mortality or significant morbidity was reported.	100 – small number. Pilot study, difficult to draw conclusions from.  No control group provided and data incomplete. Reported the first 100 women enrolled in the program.



Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">evaluation of the first 100 booked women.</a> <sup>19</sup>		care set up in New South Wales. This program provides access to selected women at low obstetric risk the option of having their babies at home.		
<a href="#">Snowden JM, Tilden EL, Snyder J, Quigley B, Caughey AB, Cheng YW. 2015. Planned Out-of-Hospital Birth and Birth Outcomes</a> <sup>20</sup>	USA - Oregon	Population based, retrospective cohort study of all births that occurred in Oregon during 2012 and 2013 using data from newly revised Oregon birth certificates that allowed for the disaggregation of hospital births into the categories of planned in-hospital births and planned out-of-hospital births that took place in the hospital after a woman's intrapartum transfer to the hospital.	Perinatal mortality was higher with planned out-of-hospital birth than with planned in-hospital birth (95%CI 1.37-4.30), but the absolute risk of death was low in both settings.	The US system is very different to the Australian and New Zealand healthcare context and findings cannot be extrapolated.
<a href="#">Van der Kooy J., Birnie E., Denktas S., Bonsel GJ. Planned home compared with planned hospital births: mode of delivery and perinatal mortality rates, an observational study.</a> <sup>21</sup>	Netherlands	Retrospective study of 679,952 low risk women from the Dutch Perinatal Registry (2000 – 2007) using intervention and perinatal mortality rates.	The potential presence of over- or under treatment as expressed by adjusted perinatal mortality differs per risk group. In planned home births especially multiparous women showed universally lower intervention rates. However, the benefit of substantially fewer interventions in the planned home group seems to be counterbalanced by substantially increased mortality if intervention occurs.	This paper supports the requirement for appropriate selection of low risk women and requirement for appropriate referral and back up.  The planned place of birth impacts the intervention rate in an assumed low risk population. In planned home births especially multiparous women showed universally lower intervention rates. However, the benefit of substantially fewer interventions in the planned home group was counterbalanced by substantially increased mortality if intervention occurs.
<a href="#">van der Kooy J, Poeran J, de Graaf JP, Birnie E, Denktas S, Steegers EA, Bonsel GJ. 2011 Planned home compared with planned hospital births in the Netherlands: intrapartum and early neonatal death in low-risk pregnancies.</a> <sup>22</sup>	Netherlands	Retrospective study of 679,952 low risk women from the Dutch Perinatal Registry (2000 – 2007) using two different analyses were performed: natural prospective approach (intention-to-treat-like analysis) and perfect guideline approach (per-protocol-like analysis).	Intrapartum and neonatal death at 0-7 days was observed in 0.15% of planned home compared with 0.18% in planned hospital births (crude relative risk 0.80, 95% confidence interval [CI] 0.71-0.91). After case mix adjustment, the relation is reversed, showing nonsignificant increased mortality risk of home birth (OR 1.05, 95% CI 0.91-1.21). In certain subgroups, additional mortality may arise at home if risk conditions emerge at birth (up to 20% increase).	Randomized controlled trials would be the superior design to address this research question. However, when home birth was part of a trial, participation was hampered and selective participation was introduced, which limited generalizability. Moreover, if following one's choice affects outcome, estimates of setting effects are also biased.
<a href="#">Wax JR, Lucas FL, Lamont M, et al. 2010. Maternal and newborn</a>	The included studies were undertaken in <b>Canada,</b>	Meta-analysis of 11 cohort studies and one RCT (342,056 planned home births, 207,551 planned	There was no statistically significant difference between groups in perinatal death rate (OR 0.95, 95% CI 0.77 to	There was a risk that relevant studies were missed due to the exclusion of papers in languages other than English and those not published in peer-



Study	Setting and Population	Study Design	Outcomes	Relevance to the Australian & New Zealand context and general comments
<a href="#">outcomes in planned home birth vs planned hospital births: a meta-analysis.</a> <sup>23</sup>	<p><b>Netherlands, USA, UK, Sweden, Switzerland and Australia.</b></p> <p>The studies examined outcomes for planned home delivery compared to planned hospital delivery. Home births had a certified midwife or doctor in attendance, someone other than a certified midwife or physician was in attendance or it was unclear who the birth attendant was.</p>	<p>hospital births).</p>	<p>1.18) based on 507,109 participants, but the neonatal death rate was significantly higher in the planned home birth group (OR 1.98, 95% CI 1.19 to 3.28) based on 49,802 participants; this was higher when only offspring without congenital defects were included (OR 2.87, 95% CI 1.32 to 6.25).</p>	<p>reviewed journals. Appropriate methods were used to reduce error and bias in quality assessment and data extraction; it was unclear whether this was the case for study selection.</p> <p>When interpreting the results heterogeneity remained unexplained and the results where it was present may not have been applicable to all populations and settings.</p> <p>Relevant study details were reported, but it was unclear which studies were in each meta-analysis and this made it difficult to assess whether the studies in each analysis were clinically and methodologically similar. The set of studies used in the analysis of neonatal mortality differed from the set for perinatal mortality. In particular, the largest study appeared to be included in the analysis of perinatal mortality, but not for neonatal mortality. Therefore, the results on neonatal mortality were based on a substantially smaller set of participants.</p> <p>The authors' conclusions should be treated with some caution as they did not reflect all the evidence presented in the review and there was unexplained heterogeneity.</p>

## Appendix B: Women's Health Committee Membership

Name	Position on Committee
Professor Yee Leung	Chair
Dr Joseph Sgroi	Deputy Chair, Gynaecology
Associate Professor Janet Vaughan	Deputy Chair, Obstetrics
Associate Professor Ian Pettigrew	EAC Representative
Dr Tal Jacobson	Member
Dr Ian Page	Member
Dr John Regan	Member
Dr Craig Skidmore	Member
Dr Lisa Hui	Member
Dr Bernadette White	Member
Dr Scott White	Member
Associate Professor Kirsten Black	Member
Dr Greg Fox	College Medical Officer
Dr Marilyn Clarke	Chair of the ATSI WHC
Dr Martin Byrne	GPOAC Representative
Ms Catherine Whitby	Community Representative
Ms Sherryn Elworthy	Midwifery Representative
Dr Amelia Ryan	Trainee Representative

## Appendix C: Overview of the development and review process for this statement

### *i. Steps in developing and updating this statement*

This statement was originally developed in March 1987 and was most recently reviewed in the first half 2017. The Women's Health Committee carried out the following steps in reviewing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- A working group was established at the end of 2016 to review this statement and updated (where appropriate) based on the available body of evidence and clinical expertise. Recommendations were graded as set out below in Appendix B part iii) . At the July 2017 face to face meeting, the working group presented the draft for consideration of Women's Health Committee. This statement was approved by RANZCOG Board at their meeting on.

### *ii. Declaration of interest process and management*

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of the Women's Health Committee.

A declaration of interest form specific to guidelines and statements was developed by RANZCOG and approved by the RANZCOG Board in September 2012. The Women's Health Committee members and working group members were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they became aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

*iii. Grading of recommendations*

Each recommendation in this College statement is given an overall grade as per the table below, based on the National Health and Medical Research Council (NHMRC) Levels of Evidence and Grades of Recommendations for Developers of Guidelines. Where no robust evidence was available but there was sufficient consensus within the Women’s Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

Recommendation category		Description
Evidence-based	A	Body of evidence can be trusted to guide practice
	B	Body of evidence can be trusted to guide practice in most situations
	C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	The body of evidence is weak and the recommendation must be applied with caution
Consensus-based		Recommendation based on clinical opinion and expertise as insufficient evidence available
Good Practice Note		Practical advice and information based on clinical opinion and expertise

**Appendix D: Full Disclaimer**

This information is intended to provide general advice to practitioners, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient.

This information has been prepared having regard to general circumstances. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual patient and the particular circumstances of each case.

This information has been prepared having regard to the information available at the time of its preparation, and each practitioner should have regard to relevant information, research or material which may have been published or become available subsequently.

Whilst the College endeavours to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available.