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Evaluation of the Publicly-Funded Homebirth trial in the Australian Capital Territory

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GLOSSARY AND ABBREVIATIONS

ACT	Australian Capital Territory
ACTAS	ACT Ambulance Service
ACTIA	ACT Insurance Authority – Insurance Provider for the ACT Government
ACTPAS	ACT Patient Administration System
Antenatal	Period of time during pregnancy up until the commencement of labour
Apgar score	A tool used to assess the health of the baby at one and five minutes after birth
AR-DRG	Australian-Refined Diagnosis Related Groups
Birth Centre	An area of the Centenary Hospital for Women and Children where midwifery led birthing services are provided to low risk women
BOS	Birthing Outcomes System. An electronic clinical database used to collect clinical information at the Centenary Hospital for Women and Children
CHS	Canberra Health Service
CHWC	Centenary Hospital for Women and Children, ACT
Continuity of care and carer	Care by the same carer, or group of carers, throughout pregnancy, birth and after the birth
Gestation	The length of pregnancy expressed in weeks
Homebirth	A planned event where the woman decides to give birth at home, with care provided by a midwife/midwives
Informed consent	When a woman consents to a recommendation about her care after she has been provided with sufficient evidence based information about options, in the absence of coercion by any party and without withholding information about any options
Intrapartum	Occurring during labour
Low risk	women whose history and condition do not demonstrate any known risks or complications in pregnancy
Model of Care	A concept which broadly defines the way health services are delivered
Multiparous	A women who has had two or more pregnancies greater than 20 weeks gestation
Neonate	Refers to the baby from birth until 28 days of age
Postnatal or postpartum	The first six weeks after birth. Postnatal refers to the baby and postpartum refers to the mother.

Postpartum haemorrhage (PPH)	Vaginal blood loss after birth greater than 500ml
RiskMan	An electronic reporting tool using in ACT Health to enable the recording of clinical incidents.
Syntocinon	A medication used to assist in the separation of the placenta (third stage) and reduce maternal bleeding after the birth of the baby

EXECUTIVE SUMMARY

In 2015, Cabinet of the ACT Government approved the implementation of a trial of publicly funded homebirth to women at low risk of pregnancy or birth complications receiving care at the Centenary Hospital for Women and Children (CHWC). In October 2016, the trial commenced at the CHWC. Recruitment commenced in October 2016 with the first homebirth occurring in January 2017.

A detailed risk register and risk matrix was developed prior to the commencement of the trial. This identified the risks associated with the trial and the risk controls and actions to be taken. This document is commendable in its level of detail and thoughtfulness and highlights the great care taken to set up this program.

In total, 76 women expressed interest in experiencing a homebirth. Of these, 42 (55%) went on to have a successful homebirth. Interest in the homebirth trial has steadily increased each year with eight interested women in 2017 through to 37 in 2019.

All women who planned a home birth had a spontaneous onset of labour and a vaginal birth. Over 90% of women experienced no complications during labour. None of the women who planned a homebirth were transferred to hospital during labour. There were four postpartum transfers – three for maternal reasons and one for neonatal reasons. There was one baby with a possible poor outcome after an unexpected breech birth at home.

It was evident through survey data, interviews and focus groups of women and staff, that the homebirth service is seen as a very positive initiative. Universally, the feedback on the commencement of the trial was enthusiastic with comments such as “we were so delighted to see it actually start”.

The key concerns raised about the acceptability of the program was the narrow inclusion criteria which many stakeholders thought was too restrictive. These criteria included being multiparous, living with a defined geographical boundary and not being able to have a waterbirth or physiological third stage of labour (without medications). While these are understandable for the trial there is now an opportunity to revisit these inclusion criteria and further develop the model for more women in the ACT.

In summary, the ACT Government are to be commended for establishing this program as a trial and for taking such care and due diligence in commencing the program. The ACT is an ideal location for such a service due to its geographical locality, lack of traffic problems and a strong unified commitment at all levels.

The evaluation showed that the trial has achieved its goals and objectives and has had very good outcomes. The trial should now be completed and homebirth offered as part of the suite of services available at the CHWC. This will increase efficiency and sustainability and will meet the request of women in the ACT for more options.

RECOMMENDATIONS

This review makes 12 recommendations to improve the performance of the program. These are that:

Recommendation 1: The ACT Publicly-Funded Homebirth Trial be considered completed and the program be incorporated in the core business of the CHWC as an additional option of birth setting for eligible women.

Recommendation 2: All midwives attending homebirths have training in advanced neonatal resuscitation in collaboration with training through the NICU.

Recommendation 3: The homebirth option should be offered to primiparous women who meet low risk criteria, have a healthy pregnancy, would like a planned homebirth and are fully aware of the benefits and risks.

Recommendation 4: The geographical boundaries associated with publically funded homebirth at the CHWC be revisited in collaboration with the ACT Ambulance Service and the ACT Insurance Authority.

Recommendation 5: The ACT Government consider establishing a publicly-funded homebirth service for women living in the northern geographical area (Calvary Hospital) and that this be written into the Calvary Hospital's service level agreement with the ACT Health Directorate.

Recommendation 6: If a publicly-funded homebirth service cannot be established at Calvary Hospital, midwives providing the service from the CHWC are given visiting rights by the ACT Government to the Calvary Hospital enabling them to transfer women from that geographical area if required.

Recommendation 7: Women are informed about the benefits and risks of practices in labour such as waterbirth and physiological management of the third stage of labour be able to choose such practices should the clinical situation be appropriate and the woman provides verbal consent.

Recommendation 8: All midwives providing waterbirth at a homebirth undergo an education and credentialing process to ensure waterbirth is provided in a safe, effective and consistent way.

Recommendation 9: The continuity of care program has a regular collaborative meeting with an obstetrician who also holds a small antenatal clinic weekly to review women who the midwives refer. Women on the publicly-funded homebirth service are reviewed in the same way (a paper-based record review at 36 weeks and a face to face visit only if required or requested).

Recommendation 10: That midwifery students be able to attend a homebirth as an observer if a woman who chooses homebirth is one whom they have engaged in a continuity of care experience.

Recommendation 11: Midwives working in the CHWC maternity unit have the opportunity to rotate into the homebirth program to enhance understanding of the experiences and processes of homebirth. This may open the opportunity for a midwife from the Birth Suite being available as second on call.

Recommendation 12: The homebirth program be incorporated into the usual systems of monitoring safety and quality and communicating outcomes.

INTRODUCTION

The ACT Government recognises that every woman has the right to accurate information, informed consent, respect for her choices and preferences for model of care and place of birth, to be treated with respect, to equality and freedom from coercion, including her birthing preference (Canberra Health Service 2019). The government recognised that some women prefer to give birth in the comfort of their own home.

There is now good evidence from cohort studies and systematic reviews that planned homebirth is at least as safe as hospital birth for women at low risk of obstetric complications when attended by a qualified caregiver who is well networked with mainstream maternity services (Birthplace in England Collaborative Group 2011, Davies-Tuck, Wallace et al. 2018, Scarf, Rossiter et al. 2018, Homer, Cheah et al. 2019, Hutton, Reitsma et al. 2019). In Australia, prior to 2016, publicly funded homebirth had not been offered in the ACT.

In 2015, Cabinet approved the ACT Health proposal to implement a trial of publicly funded homebirth to women at low risk of pregnancy or birth complications receiving care at the Centenary Hospital for Women and Children (CHWC). In October 2016, a Publicly Funded Home Birth Trial (PFHBT) commenced at the CHWC as an extension of existing maternity services with an aim to provide additional place of birth choices for women who live in the ACT (Canberra Health Service 2019). Recruitment commenced in October 2016 with the first homebirth occurring in January 2017 (Figure 1).

Figure 1: The journey of the ACT *Publicly Funded Homebirth Trial (2016-2020)*

The Canberra Hospital and Health Services Framework for a Trial of a Publicly Funded Homebirth Service (the Framework) was developed through the ACT Health Nursing and Midwifery Office, Australian Capital Territory Insurance Authority (ACTIA), ACT Health obstetric and midwifery clinicians; and consumer representatives from the ACT Healthcare Consumers Association. The Framework was approved by Cabinet and ACT Health prior to commencement. The trial was implemented within the current maternity budget (Canberra Health Service 2019).

It was agreed at the commencement of the homebirth trial that there would be an internal interim formative evaluation (known as the 'process review') of the service after 20 births, and that an external consultant would be commissioned to provide a summative evaluation at the conclusion of the trial period. By the time of this process review, a total of 17 births had occurred (Canberra Health Service 2019). The process evaluation was released in November 2019 and made 14 recommendations (Canberra Hospital and Health Services 2019). These focused on risk management systems and process, engagement with the ambulance service, oversight by the Homebirth Trial Governance Committee, the need for data on women requesting homebirth, and the reason for exclusion or program exit, where this is the outcome and ongoing monitoring and evaluation. The specific recommendations of this process review are provided in Appendix B.

In late 2019, the ACT Government tendered for the overall evaluation of the ACT. The purpose of the evaluation was to assess how the ACT Publicly Funded Homebirth Program was performing post-implementation. The evaluation was to measure performance by assessing if the service:

- demonstrates accountability
- ensures there is transparency in assessing if the service is achieving its goal and objectives
- is efficient and sustainable and has met the objectives

The evaluation was also to:

- assist with future planning of maternity services
- identify opportunities for improvement, including identifying the intended and unintended impacts that could be enhanced to improve the program's short and long-term performance.

This report is the result of this final evaluation of the trial.

METHODOLOGY

A mixed methods approach was undertaken to measure the key performance areas: process (activities, outputs and outcomes), impact and outcome especially long-term implications and possibilities.

Qualitative and quantitative data were collected and analysed. The qualitative data collection was mostly collected face to face in Canberra in March 2020. Appendix A provides a list of the people interviewed. Two members of the team collected the data. The qualitative data included:

- One to one interviews and one focus group with women who have used the PFHB in the ACT
- Focus group with the midwives who provide the homebirth service
- Focus group with midwives in the receiving hospital service
- One to one interviews with relevant obstetricians and obstetric registrars, neonatologists and neonatal registrars, health service managers, policy makers and relevant organisations representing the health care providers
- Interview with Health Care Consumers' Association Inc
- Community meeting with women from local community groups interested in maternity services provision - ACT Branch of Maternity Choices, Maternity Consumer Network and Friends of the Birth Centre

The quantitative data included:

- Descriptive anonymised report of the outcomes of the women and babies to date on the homebirth program
- The clinical journey of enrolled women including transfers and birth and neonatal outcomes
- Information on the women wishing to enroll in the homebirth program who were not eligible (where these data were available)
- Data on the midwives providing homebirth as part of the trial – number, years of experience, meet requirements for the program including annual updates, retention
- Risk management reports (RISKMAN) reports and actions

All women who were booked onto the trial were invited to complete an online survey about their experiences. This survey was adapted with permission from the COMcareSS (Continuity of Midwifery Care Satisfaction Survey) that was developed by colleagues in Canberra (Perriman, Muggleton et al. 2019). The survey was put into Survey Gizmo and women were texted an invitation and a link to complete it. The text was sent by administrative staff in the CHWC. The evaluation team did not have access to women's names and phone numbers.

The costing data include usage of the data collection process for micro-costing as previously used in our research in NSW was used.

A policy review of the current ACT PFHB policy was undertaken and this was compared with other similar policies across the country, that is, South Australia, New South Wales and Victoria.

FINDINGS

Description of the model of care

Staffing for the homebirth trial

The CHWC offers midwifery continuity of care to around 30% of women accessing the maternity service. Depending on the complexity of the women enrolled in the model, the midwives have a caseload of between 35 and 40 women per year. There are nine midwives who support women to give birth at home as well as women who are planning birth in the hospital birth centre or birth unit. The ACT homebirth trial has drawn on existing expertise by engaging midwives who were working in the established birth centre and midwifery led continuity of care models. This has contributed to the success of the trial as the service operates out of existing infrastructure.

The midwives work in a team which ensures that there is always a primary homebirth midwife rostered to be available for homebirths. Staffing has not been a problem to date however it could be in the future if the service were scaled up and more women requested it. When this was discussed, the staff felt they needed more mentoring support as the administration of the homebirth program is quite onerous and takes a disproportionate amount of time away from general operational duties for the Clinical Midwifery Manager (CMM). A suggestion was made to employ a clinical development midwife (part-time) who may also carry a caseload, or may be a conduit between the homebirth team and the broader multi-disciplinary maternity workforce.

The homebirth team conduct a monthly meeting to discuss upcoming births, plan for who will attend as a second midwife, and organize the roster, leave, and education.

Regular education sessions are held with the midwives and include the following:

- Neonatal resuscitation including advanced life support (held monthly with a multi-disciplinary team, required to attend twice a year)
- Maternal resuscitation
- Advanced life support (ALSO, PROMPT)

Midwives are also expected to be proficient in perineal repair within their scope of practice (1st, 2nd degree perineal tears), and venepuncture and cannulation. There have been two off-site emergency simulations, held in the community. These simulations brought together midwives, ambulance staff, and others to practice transfer procedures from a homebirth to CHWC. The feedback regarding these activities has been very positive, with many participants reporting learning new things and working out issues they had not considered in other discussions around transfer. All staff involved expressed a desire to continue to have regular off-site simulation exercises.

Homebirth processes and procedures

Women are offered a homebirth if they meet the criteria in the *Canberra Hospital and Health Services Eligibility for Birth Centre and Canberra Midwifery Program Care Guideline.* Additional criteria were implemented for the purposes of the trial:

- living within the geographical area stipulated to be within 15 minutes of the CHWC
- have had at least one previous, uncomplicated pregnancy and birth (multiparous)
- agree to an active third stage of labour (using Syntocinon medications)
- no waterbirth to be conducted at home, however water immersion during labour is acceptable
- have ACT ambulance insurance cover

If women do not meet the criteria outlined above, they are still able to give birth in the birth centre. Women who are eligible for a homebirth and have expressed interest will be flagged as a "homebirth" in the ACT Patient Administration System (ACTPAS).

Antenatal care

Antenatal care is conducted in the birth centre or at the woman's home and a home visit is scheduled at around 36 weeks gestation to evaluate the suitability of the woman's home for homebirth (and complete a Publicly Funded Homebirth Trial- Home assessment form) which is then filed in the clinical record. The homebirth equipment and medication packs are delivered to the woman's home at this time and oxygen tanks are arranged to be delivered.

Women are also asked to attend a consultative appointment with their midwife and an obstetrician at CHWC to discuss their continuing eligibility and any questions the woman may have. It is at this consultation that the drugs are ordered (syntocinon, syntometrine, misoprostol, lignocaine and vitamin K). There were some initial problems with pharmacy

dispensing these medications to give to women at home, however they have since been added to the standing orders which has simplified the process.

A second midwife is identified for every woman planning homebirth and this role includes meeting the woman prior to birth, reviewing the woman's clinical record and raising any clinical concerns they have identified, attend the home for the birth (at least from the commencement of second stage) and to the completion of the third stage of labour, and assist in hospital transfer if necessary.

Intrapartum care

Women contact their primary midwife when they commence labour and the midwife will make arrangements to attend the home at the appropriate time. On arrival to the home, the primary midwife makes an assessment of the woman and then notifies the following people: second midwife, the CHWC birth unit team leader, the ACT Ambulance Service (ACTAS), and the CMM of the Continuity Program if in working hours. These calls alert the hospital that the midwife is attending a homebirth and the woman is admitted to the virtual homebirth 'ward'. The call to the ambulance service is made to alert them of the homebirth which is reassuring to the women and their families, by all accounts. The ambulance service reported that essentially nothing is done with this information and they do not (cannot) keep an ambulance on stand-by just in case it is needed. This call was not seen as necessary from the perspective of the ACT Ambulance Service.

Both midwives are present for the birth, the completion of the third stage and until both mother and baby are stable.

Postpartum care

The primary midwife stays at the home following the birth for at least 4 hours (as per birth centre policy) and if care is required for longer than 6 hours, consideration should be made to transfer the woman to CHWC. A second call is made to the hospital to obtain a unit record number for the baby and discharge the woman from the virtual ward.

All documentation is completed as per *ACT health Clinical Records Management Policy* including data entry into the electronic birthing system – Birth Outcomes System (BOS). A *Birth outside of a hospital form* is completed and sent to ACT Registrar of Births, Deaths and Marriages within 48 hours. After leaving the home, the midwife returns all clinical records to the hospital and disposes of all medical waste and surplus medications (including sharps).

Transfer to Centenary Hospital for Women and Children

In the event of a transfer, a call is made to the hospital birth unit team leader and appropriate transport is arranged. If the request is non-urgent, for example, the woman has changed her mind or is requesting pain relief, she may proceed in a private car. Urgent transfers are conducted in an ambulance. On arrival to the hospital, the midwife continues to provide care to the woman. Similarly, if the transfer is for the baby, an ambulance is

called and the destination of the transfer is at the discretion of the ambulance, that is, directly to the birth unit if the care is urgent but the baby will be admitted via the Emergency Department if the baby is receiving life support.

Recruitment and training of midwives

Prior to the commencement of the trial, midwives were invited to submit an expression of interest to become a homebirth midwife. These midwives had the core skills of perineal suturing, intravenous cannulation, neonatal and maternal resuscitation, had attended the homebirth simulations and many had recently attended the Advanced Life Support in Obstetrics (ALSO) course.

At the commencement of the trial, there were eight midwives, three of whom have left and been replaced by three midwives with similar skills and training. There are also a number of midwives at CWCH who are working towards becoming a primary homebirth midwife. This would expedite the up-scaling of the program as there is capacity in the current workforce.

Governance, leadership and managing quality and safety

At the outset of the ACT Homebirth Trial, a Steering Committee was established to monitor and guide the progress of the trial. This has a range of stakeholders as members and is currently chaired by the Director of Nursing and Midwifery, Centenary Hospital for Women and Children (CHWC). A detailed risk register and risk matrix was developed prior to the commencement of the trial. This identified the risks associated with the trial and the risk controls and actions to be taken. This document is commendable in its level of detail and thoughtfulness and highlights the great care taken to set up this program.

The Quality and Safety Framework for the Canberra Health Service (CHS) is applied to the trial which includes incident reporting through the RiskMan system and review by the broader morbidity and mortality committee. ACTIA has also required a report on every birth that has occurred.

Initially there seems to have been a lack of clarity about the process of incident reporting with a perception that only those that resulted in an adverse event requiring reports. The governance team were clear that all deviations from policy should be reported as an incident in RiskMan.

One of the challenges has been the multiple data collection and record keeping systems making ongoing monitoring difficult. Currently data are collected in a number of electronic systems (Birth Outcome System (BOS), ACT Patient Administration Systems (ACTPAS), Clinical Patient Folder), as well as paper-based health records. Excel spreadsheets have also been developed to collect additional information that has been required for the trial.

Another challenge has been a lack of clarity about some of the criteria for continuation on the trial. For example, women with gestational diabetes are not able to continue to plan a

homebirth but may plan to give birth in the Birth Centre. Some stakeholders interviewed felt that some of the midwives had 'pushed the boundaries' in relation to women with gestational diabetes being included in the trial and this had caused concerns.

One of the other issues identified that impacts on quality and safety was the need for effective teamwork and communication. Over the past two years, considerable work has been undertaken across the CHWC to improve workplace culture, especially teamwork and communication. The impact of this was felt by the evaluation team. Relationships seem strong and respectful and there was little evidence of an 'us versus them' culture between midwives in different locations and the medical staff.

Outcomes for women

Since the Homebirth Trial began in October 2016, 76 women have expressed interest in experiencing a homebirth. Of these 76 women, 42 (55%) went on to have a successful homebirth with the first birth in January 2017. Interest in the homebirth program has steadily increased each year with eight interested women in 2017 through to 37 in 2019. Thirty women who initially expressed interest in a homebirth did not go on to have a homebirth. For the women who did not have a homebirth, 10 (33%) were unable to due to clinical reasons at booking or throughout pregnancy and 20 (66%) did not meet other eligibility criteria, including desiring a water birth, living out of the catchment area, change of mind and social reasons (Table 1).

Table 1: Homebirth program interest (January 2017 to February 2020)

Year	Expression of interest (N=76)	Women with successful homebirth (N=42)	Not eligible due to clinical reasons (N=10)	Didn't meet other eligibility criteria (N=20)	Yet to give birth (N=4)
2017	8	8	-	-	-
2018	15	11	4	-	-
2019	37	21	4	12	-
2020	16	2	2	8	4

All women who planned a home birth had a spontaneous onset of labour and a vaginal birth. Over 90% of women experienced no complications during labour. One of the births was an unplanned water birth. Four women experienced labour complications including meconium liquor, undiagnosed breech birth, compound presentation and a postpartum haemorrhage (800mL).

Just under half of all women (45%) had an intact perineum, 29% experienced a first degree tear of which only one required suturing. In total, 24% of women experienced a second

degree tear, all of which were sutured except two. One woman experienced a third degree tear which was sutured in the operating theatre after transfer from home (Table 2).

All babies were born alive. Babies weighed between 2780g and 4770g. Most had Apgar scores of 9 at 1 minute and 9 and 10 at 5 minutes. One baby who had an Apgar score of 3 at 1 minute and 6 at 5 minutes, was an undiagnosed breech who was transferred to the neonatal intensive care unit (NICU) was later found to have neurological complications on an MRI. All babies, except one, were breastfeeding on discharge from the homebirth service (Table 2).

Table 2: Health outcomes of women and newborns

Health outcomes of women and newborns	N (%); N=42
Planned homebirth	41 (98)
Unplanned (BBA)**	1 (2)
Perineum tears	
• Intact	19 (45)
• First degree	12 (29)
• Second degree	10 (24)
• Third degree (sutured in operating theatre)	1 (2)
Blood loss (postpartum vaginal)	
• <500ml	40 (95)
• >500ml	1 (2)
• Unknown	1 (2)
Labour complications	
• Yes	4 (9.5)
• No	38 (90.5)
Labour complications details	
• Meconium liquor	1 (2)
• Breech	1 (2)
• Postpartum haemorrhage	1 (2)
• Compound fetal presentation	1 (2)
Apgar scores	
1 minute	
• 3	1 (2)
• 5	1 (2)
• 8	3 (7)
• 9	37 (88)
5 minute	
• 6	1 (2)
• 9-10	41 (98)
Infant feeding on discharge from service	
Breast	41(98)
Bottle	1(2)

** This woman was booked on the trial but ultimately did not meet the criteria but was included in the data collection.

None of the women who planned a homebirth were transferred to hospital during labour. There were four postpartum transfers – three for maternal reasons and one for neonatal reasons (Table 3).

Table 3: Clinical journey of women and newborns enrolled in the program

Reasons for transfer	Number of women	Timing of transfer	Comment
Postpartum haemorrhage	1	Postpartum	Baby born before midwife arrived (PPH 800ml)
Perineal repair - 3rd degree tear	1	Postpartum	Compound presentation (4.7kg baby)
Perineal repair	1	Postpartum	Transferred by family
Neonatal care	1	Postnatal	Unexpected breech birth

Risk management reports

The risk management system (RiskMan) reports were submitted for seven women for the following reasons: third degree perineal tear, midwife not present at birth, baby's head born by the time the midwife arrived, baby's Apgar score of 5 at 1 minute, breech birth, woman with group B streptococcus on screening who declined antibiotics. Four of these cases followed appropriate care and no further action was required. Three of the reports were discussed at team morbidity and mortality case review discussions.

Perspectives from women - survey

There were 28 full responses and 9 partial responses to the survey (giving an overall response rate of 37/42 or 88%). Below is a summary of the responses.

Characteristics of the women

Eligibility for the ACT Homebirth Trial required the women to have had at least one previous birth. Sixty percent (60%) of the respondents were having their second baby, with the rest having their third or subsequent baby. Regarding previous place of birth, 58 percent of women had previously given birth in a birth centre, followed by 38 percent in a hospital and 4 percent at home.

Two-thirds of women (66%) had their first antenatal appointment by 14 weeks gestation, the remaining having their first appointment between 15 and 20 weeks. A small number of women could not recall their gestation at their first antenatal appointment. The majority of women engaged with the ACT Homebirth Trial had their first appointment with the Homebirth service between 11 and 20 weeks (73%), 13% were seen after 20 weeks and 13%

could not recall their gestation. All women who answered the survey had English as their first language. The majority (70%) of women had heard about the ACT Homebirth Trial from a midwife and 17% heard about it from the media, 10% from a friend and the remaining women heard about the trial through the hospital, their GP and a doula.

Place of birth and postnatal care

Of the women who responded, 96% gave birth at home and 4% gave birth in hospital, which is consistent with the proportion of women who were transferred out of the ACT Homebirth Trial during pregnancy. Almost three-quarters (70%) received three or more antenatal home visits with the remaining 30% receiving 1-2 antenatal visits at home. All women reported having a normal vaginal birth. Following the birth of the baby, 78% of women received a home visit from a midwife within 24 hours, the remaining 22% being seen between 24 and 48 hours post-birth. The majority of women had between 3 and 7 home visits (81%) and 7% received more than 7 home visits. The remaining women had 1-2 home visits. All women reported to be breastfeeding at the discharge from the ACT Homebirth Trial.

Women's perception of relationships, empowerment, decision making, personalised care, advice and support

The following figures depict the responses to a series of questions relating to the women's perception of their relationship with the midwives, their feeling of empowerment and decision making, and the quality of the advice and support they received during the ACT Homebirth Trial.

The respondents indicated very positive perceptions of their experiences while participating in the trial. As shown in Figure 2 and 3, the majority of the responses were highly favourable when considering the sense of trust and confidence they had in the midwives caring for them.

Figure 2: Perceptions of the relationship between the woman and midwife

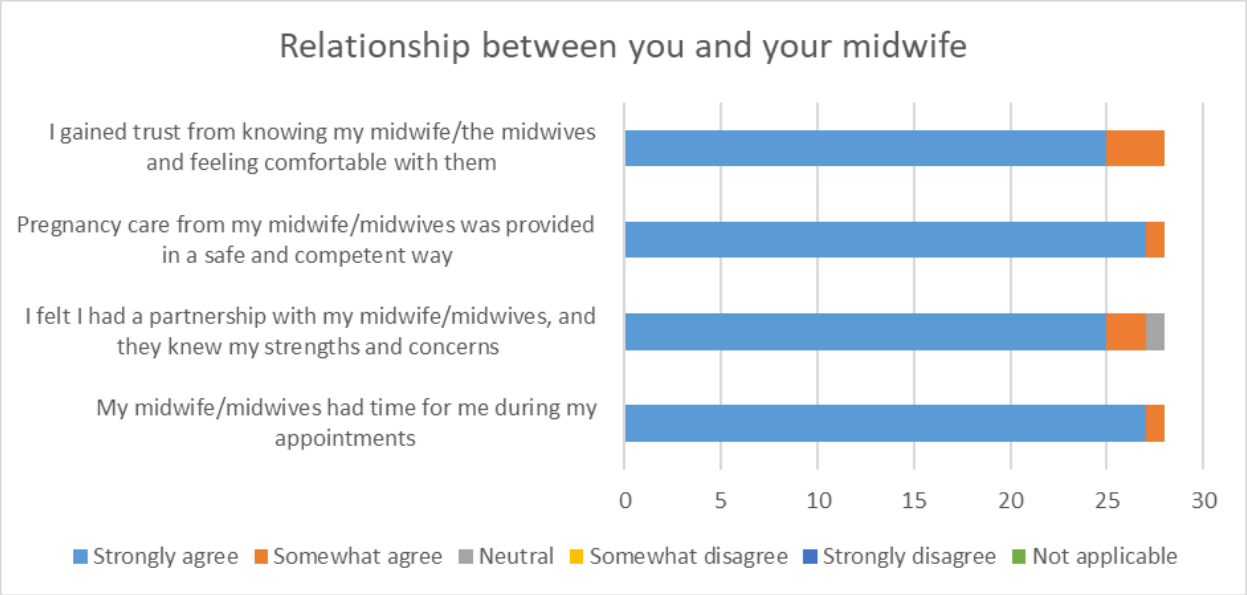
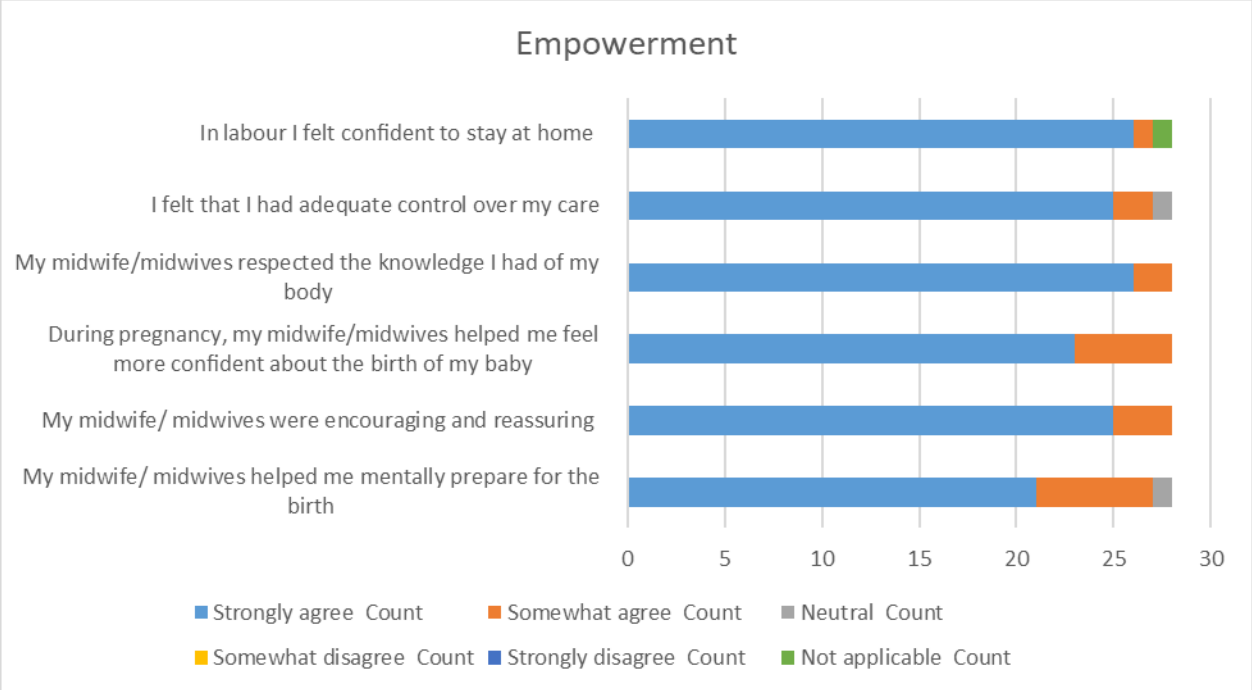


Figure 3: Perceptions of the aspects of empowerment felt by the woman



The women who responded to the survey reported feeling very involved in the decision making process during their pregnancy (Figure 4). They also felt that the midwives provided a personalised service, with an emphasis on supporting the women's personal preferences while maintaining respect and privacy (Figure 5)

Figure 4: Perceptions of decision-making and involvement

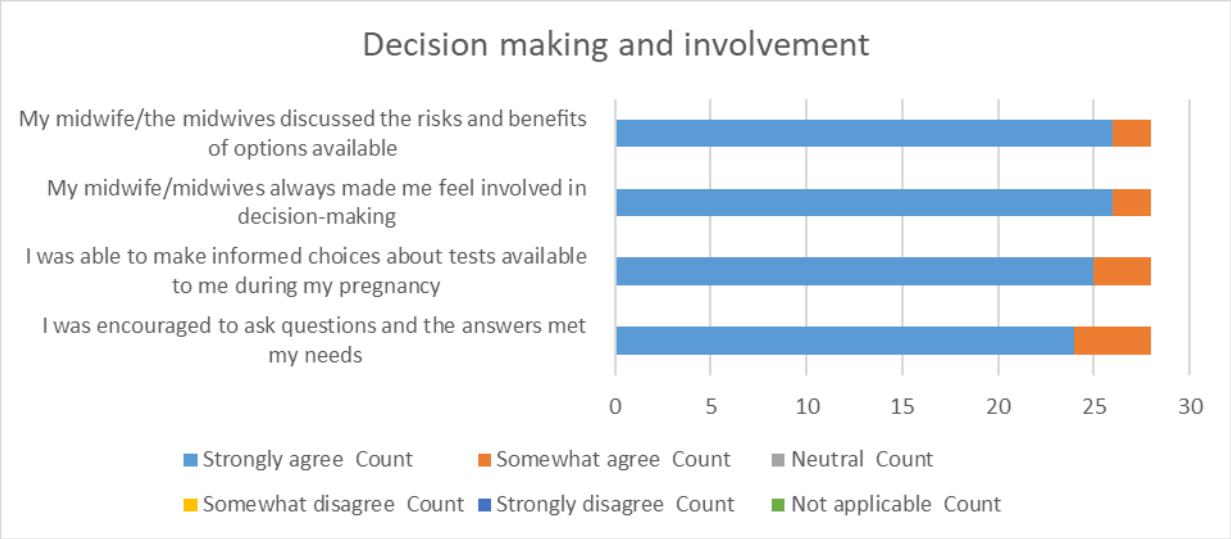
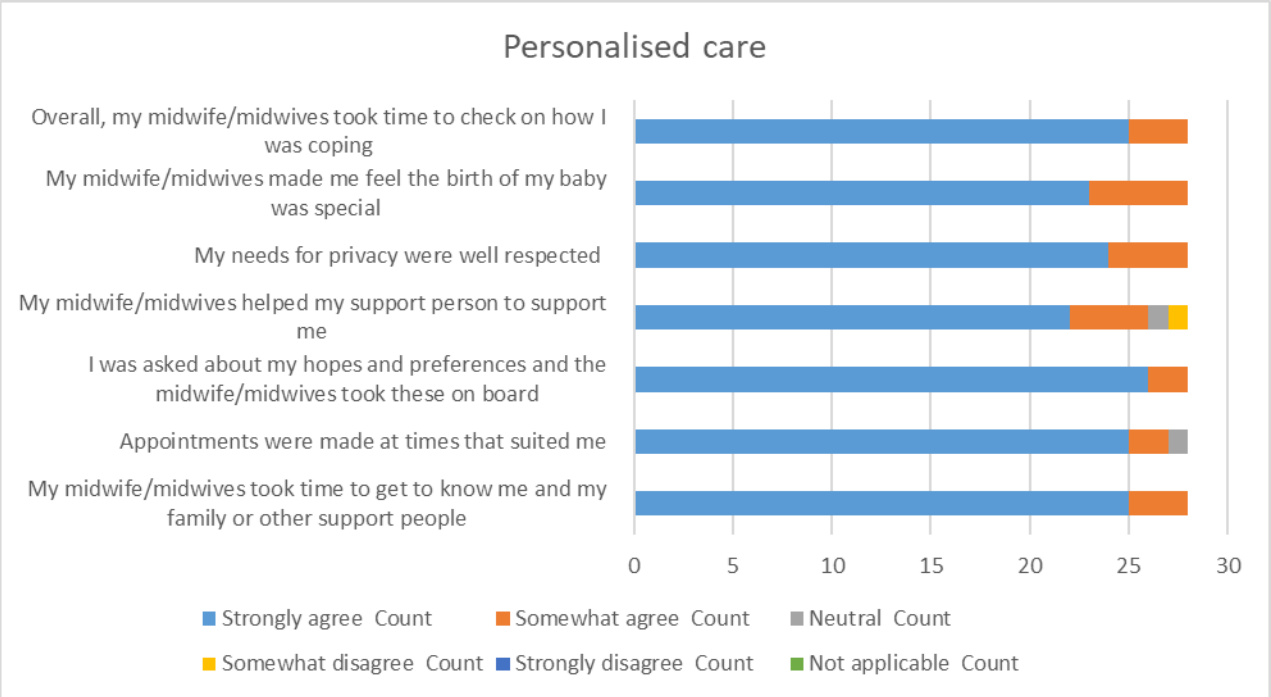
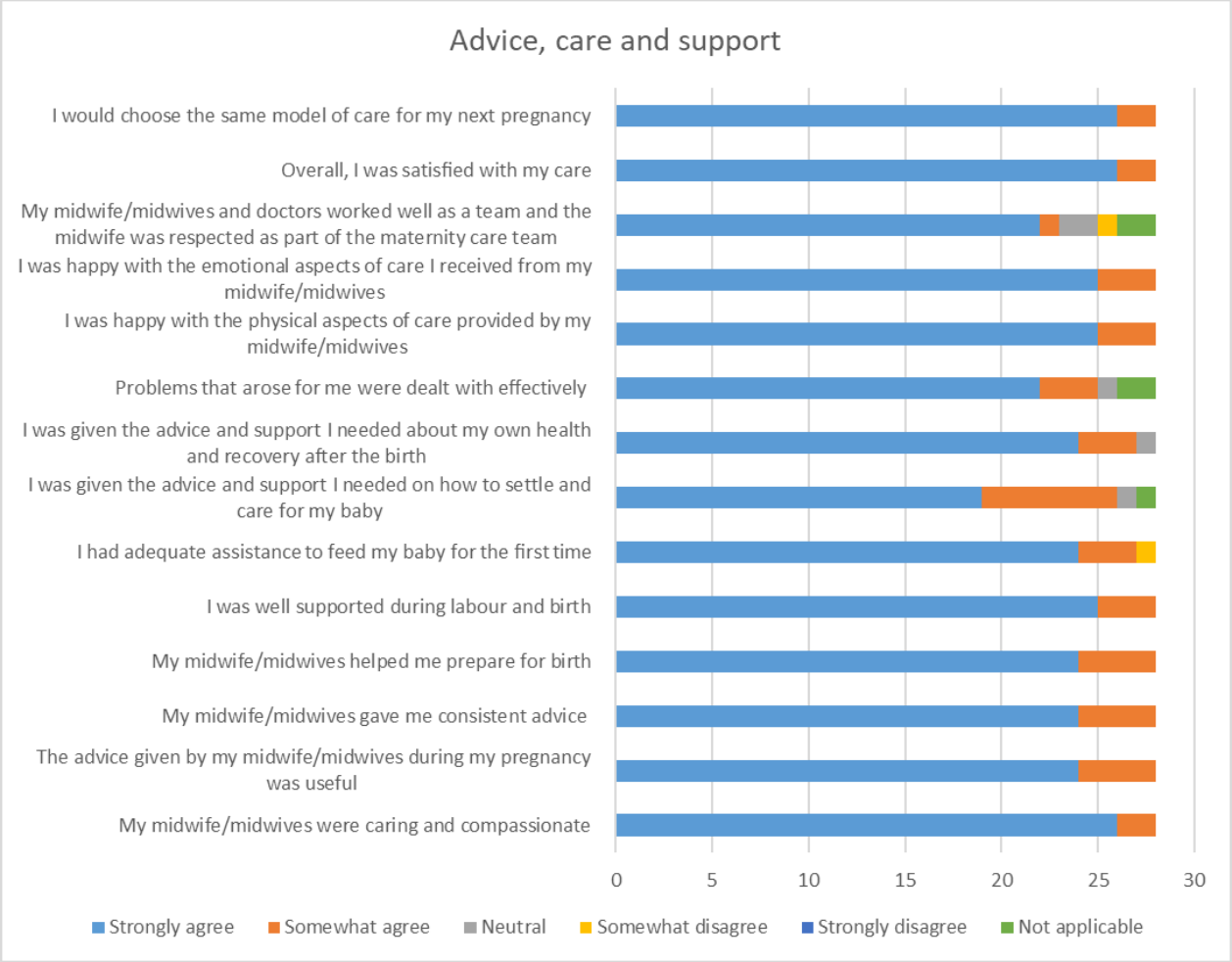


Figure 5: Perception of personalised care



The responses continued to be very positive when questioned about the advice, care and support the women received whilst on the trial. The women felt well supported not only by the midwives, but also by the maternity care team. The advice they received was consistent and useful and the women felt the midwives were caring and compassionate (Figure 6).

Figure 6: Perceptions of advice, care and support



Aspects of care that were considered most positive

Most women provided a free-text response to the question about what aspects of care they considered most positive. Themes from the responses included: the value of continuity of care, supportive and respectful relationships with the midwives, and a sense of feeling well informed to make decisions. Women wrote comments like:

> *"I felt I had a partnership with my midwife/midwives. This really helped me make the decision to have my baby at home."*

> *"[the most positive aspects were] to be well informed. To have a midwife that really cares about your journey"*

> *"Continuity - this was the biggest difference between my first and second baby"*

Women also wrote about the importance of respect and choice when planning the birth of their baby, for example:

> *"Respecting parent's choice of care model, working with that care model when evaluating each pregnancy"*

"Choice! Giving women options, having them informed of these options and their rights and encouraging them and empowering them to choose"

Women commented on the impact that developing a relationship with the midwife had on their sense of safety, control and autonomy. They said the most positive aspects included:

"Building my relationship with my midwife and having a peaceful and quiet birth"

"I feel 100% comfortable to ask questions and known I'm being listened too"

"The sense of feeling in control of my body, birth and baby"

"With my home birth it was absolutely amazing I cannot thank the midwives enough"

The women also commented on the positive influence of being in their own space, in "the comfort of their own home":

"Being in the comfort of our own home and being able to immediately be doing things on our terms and our schedule was the other positive."

"I was able to [give] birth more instinctively and did not have to resist the progress of labour in order to get into a vehicle. My birth was smoother and more enjoyable because of it."

There were also comments relating to the women's desire for the homebirth program to be expanded so that other women had this option:

"It felt so normal and natural and should be an option for more women"

"I hope the trial expands and becomes a standard practice for women who are able to participate"

"I think it's the most improved health service that the government can give mothers"

Aspects of care that were considered negative

There were fewer responses to the question regarding negative aspects to the homebirth trial. Responses included themes such as conflicting advice from different staff and dealing with negative comments from people they told about their homebirth:

"Having differing and conflicting opinions from different staff during antenatal care regarding homebirth"

"The only frustration was people's (outside of the clinic) apprehension and mistrust of the idea of a home birth"

Other comments related to returning the equipment to the hospital:

"Having to bring all the equipment back to the hospital in my own, with a newborn"

A few women commented that the criteria while on the trial were too restrictive:

> *"Restrictions. Not being able to [give] birth in the water, having to have an active third stage, not having a student midwife"*

> *"I didn't like that you could be 'risked out' at any point and that essentially that choice isn't yours."*

Overall comments

Women were invited to comment on the trial or make a comment in general. These responses were overwhelmingly positive and reflected a desire for the option of having a homebirth to continue:

> *"I could not advocate for this more. I hope it becomes a permanent option for birthing in the ACT. I had full confidence in my midwife and being at home allowed for a much more enjoyable and smooth birth experience."*

> *"Having the choice to have a homebirth was an amazing experience and one I have recommended to all of my family and friends. I hope one day this option is available for everyone"*

> *"I am very grateful that I met all the criteria for the Homebirth Trial. I hope that at the conclusion of the trial some of the criteria is relaxed or expanded."*

> *"I'm hoping more women get this option"*

Other comments related to the benefit of having the family around the woman while she gave birth, as well as the desire for their midwifery student to be present:

> *"The normality of [giving] birthing at home with my kids around me"*

> *"The whole experience of birthing at home with my immediate family members"*

> "*A home birth gave me the opportunity to have all my family under one roof stress free!"*

> *"I had a really positive experience with this program. My only other comment is I would have liked my student midwife to have been able to attend birth, as she was not allowed under the current guidelines."*

Women also wrote about the feeling of safety and normality they felt while on the homebirth trial:

> *"It felt totally normal and safe and amazing"*

> *"…. it takes the stress and anxiety out of going to the hospital and makes the birthing process smoother and more relaxed."*

"The trial was really well put together, I felt in control and safe the whole time."

Following are the perspectives from the women who were interviewed or who attended a focus group discussion, further supporting the above results.

Perspectives from women – interviews and community meeting

In total, 13 women were interviewed, either one to one, in a small group or part of the community meeting with representatives from three consumer groups (ACT Branch of Maternity Choices Australia, Maternity Consumer Network and the Friends of the Birth Centre). The perspectives from all these women were overwhelmingly positive.

Women found the information session provided by the midwives very useful especially the opportunity to meet women who had already gone through the program. The ability to have some antenatal visits at home was valued as was the positive relationship they developed with their midwives.

The experience of birth at home was mentioned as particularly special for many of the women interviewed. This included not having to drive to hospital while in labour (which some women found very uncomfortable), being able to have family and other children present, and a calm positive environment which helped make the birth very positive and breastfeeding successful. Some women also felt that having a homebirth gave women particular confidence in their parenting capacity and was also an excellent way to engage partners and ensure they felt included and enabled given it was taking place in their own home.

Women reported that the continuity of carer relationship with the midwife/midwives and the trust they had built up meant they felt safe and supported and were able to labour and give birth freely. The women particularly said that this relationship meant that they did not need to negotiate with their care provider during labour – the connections and parameters were already established.

In the community meeting, women were very positive about the opportunity the trial had provided but were very critical of the restrictions. In particular, they raised concerns about the geographical boundaries, the requirement only for multiparous women and the inability to have a waterbirth or physiological management of the third stage of labour. In relation to the last point, women said they felt that this was a violation of their rights as they were 'required' to consent to something (active management of the third stage) which was in fact not informed consent at all. For these women, having choice in terms of place of birth and practices within labour and birth was crucial.

Women in the community meeting reported that they knew of a number of women who had chosen a freebirth (giving birth without a registered midwife) because they could not

access a homebirth through the trial, could not afford a private practising midwife and had significant fear related to giving birth in hospital.

Perspectives from staff – interviews and focus groups

Midwives

Focus groups were held with midwives working in the maternity unit and staff working in the homebirth trial. The feedback from both groups was very positive and reflected the overall positive perception of the homebirth trial. All midwives were delighted to see the trial commence and felt the processes worked smoothly, following some initial "teething" issues. When the suggestion of having the opportunity to be a "second on call" for midwives who were attending a homebirth was made, many midwives in the maternity staff group expressed great interest. They acknowledged that exposure to the experience of a homebirth would enhance their understanding of the program and further build relationships with the midwives who attend homebirths.

The midwives working in the homebirth program spoke about the enjoyment the diversity of the role allowed, and the noticeable increase confidence in the women they had in their program. They also discussed the ease with which they transitioned to the homebirth setting, given they were already working in the continuity of care model, they saw the shift to homebirth a natural step for eligible women. The midwives working in the homebirth model were also very open to increasing exposure to interested midwives with the view to expanding the workforce and the program in the future.

The limitations of the program identified by the midwives in the homebirth trial reflected the view of many of the stakeholders who were engaged in the evaluation. While they acknowledged the necessity to make the eligibility criteria very "tight" to conduct the trial, they felt frustration at the restriction on their ability to give the women choice of options such as waterbirth and physiological third stage. Often these sentiments were related to feedback they had received from the women themselves, who felt they were informed on the risks and benefits of these particular practices. The exclusion of primiparous women and women outside the strict geographical area were also a source of disappointment for the midwives.

The midwives discussed the opportunity for a revision of the homebirth guidelines and saw this as a positive step given the success of the trial to date. They felt that a harmonisation of the policies relating to birth in the birth centre was appropriate and well within safety parameters. They were also very open to expanding the option of homebirth to women on the north side, either by gaining visiting rights to Calvary Hospital service or Calvary developing their own homebirth program.

Another suggestion made by the midwives was to engage with the obstetric, neonatal and the wider midwifery staff in information sharing either during a scheduled staff meeting or

as a new meeting to share the successes of the program and talk through processes such as transfers. They felt that representation at meetings such as the morbidity and mortality meeting would bridge the gap in knowledge and understanding of the program and build relationships with members of the maternity service that are not exposed to the day-to-day functioning of the homebirth program.

Medical staff

Discussions with various medical staff revealed similar sentiments regarding the success of the trial, and the strictness of the eligibility criteria. Obstetric staff recognised the trial was popular with the women and supported continuing the program with clear eligibility criteria. The doctors discussed the difficulties early in the trial around the confusion between the homebirth criteria and the birth centre criteria and are open to re-visiting the inclusion parameters moving forward. They also suggested that if the homebirth program was incorporated as part of the maternity service, many of the administration and reporting challenges would be solved. This includes a change to the compulsory face-to face consultation with an obstetrician at around 36 weeks gestation, to be replaced by a notes review and referral by the midwives if necessary as per ACM National Midwifery Guidelines for Consultation and Referral.

A number of neonatal staff were interviewed. Their perception of the homebirth trial was positive, commenting that is was well planned and executed. The fact that there had been little interaction between the midwives and the neonatal staff reflected both positive and negative aspects of the trial. On a positive note, there had only been one admission from a homebirth to the NICU which indicated from their perspective that the women were screened well and did not encounter any complications requiring admission to hospital (except for one baby). Conversely, there were also comments regarding the lack of communication between the staff involved with the homebirth trial and the NICU, and it was suggested that a regular (perhaps twice a year) meeting be scheduled to share with the NICU staff the activities of the program, including the successes, numbers planning a homebirth and results of completed homebirths.

Regarding advanced resuscitation in a home setting, a suggestion was made to up-skill the midwives in the homebirth program to extend their skills in neonatal resuscitation. This may include gaining skills in the use of laryngeal masks, and attending real-life resuscitation training with the NICU staff on a regular basis. Another issue was raised regarding the expansion of the Homebirth Program to the north side in regard to neonatal support. Given there is not an onsite paediatrician at Calvary Hospital, there would need to be clear processes developed to ensure the on call paediatrician was present at the hospital or the baby would be brought straight to CWCH for admission.

ACT Ambulance Service

In an interview with a representative from the ACT Ambulance Service (ACTAS), discussions centred around geographical boundaries, the off-site simulation training and communication with the ACTAS. Expansion of the geographical boundaries was supported by ACTAS, which included the potential inclusion of Calvary Hospital as an emergency referral centre. The phone call made by the midwives on arrival to the homebirth did not present a problem for ACTAS, and if it provided reassurance for the woman and families, they were supportive of continuing the practice.

The ACTAS representative also spoke very highly of the off-site simulation exercises and was keen to continue with these going forward. As other participants have said, there were many valuable lessons from these exercises and they also provided an opportunity to establish relationships between the Homebirth Midwives and the Ambulance Officers.

Costing the service

The ACT Homebirth Trial has been conducted within the current staffing model. Initial outlays include the purchase of the birth equipment boxes which are stocked with equipment and consumables for potential use at a homebirth (see Appendix D for list of stocked items). There will need to be more homebirth kits assembled with the expansion of the program.

Other initial start-up and ongoing costs include the simulation training and maternity emergency training for the midwives. These training programs are similar to those for all midwives in the Continuity Program and could be included as part of an overall suite of education for midwives.

Reports from the midwives attending homebirths correlate with a micro-costing study we conducted in New South Wales (Scarf, Yu et al. 2019) regarding the use of consumables at a homebirth and the cost of midwifery time. That study found that the cost of consumables was minimal ($8.00-$77.00) and the total cost of offering a homebirth service amounted to around $2150, the bulk of the cost being attributed to midwifery time during the antenatal, intrapartum and postpartum periods.

When observed from a system perspective, the cost of the homebirths in this trial are covered in the AR-DRG allocated to uncomplicated vaginal birth (O60C) given they were all normal vaginal births ($4515) (IHPA 2019). Cost considerations moving forward would include the potential increase in transfers from home to hospital particularly for primiparous women, and the increased time spent by midwives attending these women at home. However, even with these conditions, a recent study has shown that offering women the option of giving birth at home is not more costly for the health service (Scarf 2019).

Comparison with other states

A policy analysis was undertaken to compare the similarities and differences between the Canberra Hospital and Health Services Homebirth Publicly Funded Trial policy with the New South Wales (NSW), South Australian (SA) and Victorian (Vic) homebirth policies (Table 4).

The Canberra Hospital and Health Services Homebirth Publicly Funded Trial policy (Canberra Hospital and Health Services 2016) was reviewed in conjunction with the Homebirth Publicly Funded Trial Operation Procedure (Canberra Hospital and Health Services 2016) and the Homebirth Trial Self-assessment (eligibility) criteria. These documents will be referred to as the ACT policy henceforth.

The ACT policy outlines the eligibility criteria for women to give birth at home, antenatal preparation, intrapartum care, postnatal care of the women and baby, transfer considerations for the women and baby and the role of the Canberra Midwifery Program Homebirth Midwife. Related policies, procedures, guidelines and legislation are also detailed. The other three policies provided similar information and the differences and similarities of the information provided will be discussed below.

Table 4: Selected state and territory homebirth policies

State or Territory	Title:	Date created:
ACT (Canberra Hospital and Health Services)	Homebirth Publicly Funded Trial Policy Homebirth Publicly Funded Trial Operation Procedure Homebirth Trial: Self-Assessment (Eligibility) criteria	Issued 5/12/2016 Last reviewed 1/11/2019
South Australia (South Australia Health)	Planned birth at home Clinical Directive 2018	Approval date: 30/10/2018
Victoria (Better Care Victoria)	Homebirth – A Clinical Practice Guideline	Draft – currently under consultation
NSW (NSW Health)	Maternity – Public Homebirth Services Policy Directive	Publication date: 29/06/2006 Last reviewed: 31/12/2019

Eligibility criteria for giving birth at home

All policies outlined details regarding women's eligibility to give birth at home except NSW which stated that access to the service would be determined using the *Australian College of Midwives National Midwifery Guidelines for Consultation and Referral* (ACM 2017). The ACT

policy is the only one to define an age range for eligibility (between 18 and 40 years). The ACT and SA policies were the only ones to specify a maximum Body Mass Index (BMI) of 35kgm² (and/or 100kg in the SA policy). Victoria and NSW did not include any information about maternal body weight or BMI. Ambulance cover was required for all woman planning a homebirth in ACT, SA and Victoria but this was not mentioned in the NSW policy.

The ACT policy specifies eligible women as 'healthy' in their current pregnancy and 'uncomplicated and progressing normally'. Victoria similarly defines eligible women as being 'low risk with no pre-existing or occurring medical conditions.' Whereas, the SA policy is much more comprehensive, listing several conditions and/or disease processes which would preclude a woman (and/or newborn) from giving birth at home, such as, hypertension, preeclampsia, gestational diabetes requiring medication, abnormal placentation and so on. The SA policy is the only one to mention prior female genital mutilation as a barrier to a homebirth. All policies (except NSW) state that eligible women need to have a term (37+0 to 42+0) singleton pregnancy with cephalic presentation. The ACT policy is the only policy which requires women to be multiparous. All other state policies include primiparous and multiparous women.

Details regarding the need for a safe working environment, such as, electricity, clean water, reliable telecommunication access and easy vehicle access are outlined in all policies except NSW. The SA and Victorian policies provide greater detail around psychosocial issues that may preclude a woman from having a homebirth. For example, evidence of domestic violence, illicit recreational drug use and/or child protection services which may involve the removal of the baby after birth. The ACT policy does not include these considerations.

Three policies (except NSW) acknowledged that a woman's eligibility for homebirth may change over the course of pregnancy and during labour and as such assessing suitability is an ongoing process. Most policies noted that eligible women should make an informed decision as to whether they would like a homebirth or not and sign a consent form (except NSW which did not specify requirements about signed consent). The ACT policy suggested women could 'research the literature' which many women may not know how to do. In saying that, all policies (except NSW) listed the availability of homebirth information sheets for women.

A detailed overview of the different policies in relation to antenatal, intrapartum and postpartum care, consultation and referral, staffing and processes when women decline recommended care is detailed in Appendix C. In summary:

- Most of the policies provide similar information around eligibility criteria for women planning a homebirth, antenatal, intrapartum and postnatal care, transfer of care and the role of the midwife/clinician.

- All policies require home visits prior to the onset of labour – the time at which this should occur differs across policies. Information regarding requirements for the home environment are also fairly consistent across policies.
- All policies stipulate the need for two clinicians to be involved in the care of the women during her home birth – although the specified clinician cadre differs across policies
- All policies referred to local guidelines and policies for standard care to be provided during the antenatal, intrapartum and postnatal periods.
- Management recommendations for women who refuse care before or during labour are similar across policies
- All policies provided details regarding the role of the midwife and relevant registration, education and training requirements
- All policies referred to the ACM National Guidelines for Consultation and Referral (ACM 2017)

The main differences between the ACT policy and others included:

- The ACT policy contained some unique homebirth eligibility criteria. For example, age, weight, parity.
- The ACT is the only policy to exclude primiparous women
- The ACT is the only policy to provide a recommended number (6) of midwives per homebirth team
- The ACT (and SA) requires two midwives to care for the women during her homebirth
- Differences existed regarding the level of detail provided regarding conditions requiring hospital transfer and who should take the clinical lead in an emergency
- Management of GBS women differed to other policies with the option for the newborn to receive care at home (dependent on midwife availability and rostering)
- Across policies, there were different timelines regarding registering the newborn with state and territory registry bodies
- The ACT policy was the only one to provide a mentorship program for homebirth midwives

DISCUSSION AND RECOMMENDATIONS

Degree to which the service meets demand from women of the ACT

It was difficult to determine the demand from women in the ACT as the data systems were not able to collect information on preferred model of care or place of birth.

Women who were interviewed and those who attended the community meeting felt that there was great demand but the current eligibility restrictions meant that many women could not access the service. It was not possible to quantify such demand.

A new system has been developed, the Maternity Options Service (MOS) which is an ACT-wide service that provides a single point of entry for maternity and child health care. The service is run by a team of 6 full-time equivalent midwives. Women receive health assessment, early referrals and are provided with information about the models of care available across the two hospitals in the ACT. For the first time this will provide data on what services or models of care women want and in future will enable demand to be measured.

Safety of the program

In total, 42 women commenced labour expecting to have a homebirth as part of the trial and all were successful. Four women (10%) required transfer after the birth, two for perineal suturing, one due to a postpartum haemorrhage and one was a baby who needed neonatal intensive care. This is a low transfer rate and in line with other studies and programs especially for multiparous women.

Most homebirth programs have a transfer rate during labour for multiparous women of 6.3-12.0% (Fox, Sheehan et al. 2014). It is indicative of the strict inclusion criteria for this program, especially being multiparous, that the transfer rate during labour was 0%. The postpartum and postnatal transfers are not unexpected, and for the most part, seem to have been managed appropriately.

Having highly skilled and experienced midwives who are experts in normal birth has been key to the success of this trial. This group of midwives are very committed. Being able to support normal birth in an environment of a tertiary referral hospital which caters for high risk women is commendable.

> **Recommendation 1:** The ACT Publicly-Funded Homebirth Trial be considered completed and the program be incorporated in the core business of the CHWC as an additional option of birth setting for eligible women.

Communication about the homebirth service and the numbers of women and outcomes could be more clearly expressed across the CHWC's maternity service. A number of stakeholders expressed that they were unaware of the numbers of women who had given

birth at home and the number of adverse events. Not knowing the outcomes meant some clinicians in the hospital erred of the side of thinking that there were more transfers or adverse events than less. Having clear communication across the CHWC would be a useful way to share information about the service.

Ongoing skills and drills in maternity emergencies are in place with a regular mandatory program. The neonatal service also conducts a neonatal advanced skills workshop every three months and the neonatal team felt that this would be important for midwives providing homebirth services to attend, probably more frequently than once a year. It was also suggested that improved communication between the midwives providing homebirth and the neonatology team would be useful. The neonatal team encouraged the midwives to 'pick up the phone and seek advice at any time' and they felt that this would improve patient safety and awareness.

> **Recommendation 2:** All midwives attending homebirths have training in advanced neonatal resuscitation in collaboration with training through the NICU.

Acceptability of the program

It was evident through survey data, interviews and focus groups of women and staff, that the homebirth service is seen as a very positive initiative. Universally, the feedback on the commencement of the trial was enthusiastic with comments such as "we were so delighted to see it actually start".

The key concerns raised about the acceptability of the program was the narrow inclusion criteria which many stakeholders thought was too restrictive. These criteria included being multiparous, living with a defined geographical boundary and not being able to have a waterbirth or physiological third stage of labour (without medications).

Parity as an inclusion criterion

The issue of needing to be multiparous (having had at least one normal birth previously) received a lot of criticism from a range of stakeholders, including women and clinicians. Most recognised that it was important to establish the trial and actually 'get it off the ground' but now it needed to be re-examined. Women, in particular, felt that post the trial, the service should be opened up to primiparous women. Most clinicians interviewed also felt this with one saying "it is really important to get the first birth right so women having their first baby should have the opportunity to plan a homebirth".

> **Recommendation 3:** The homebirth option should be offered to primiparous women who meet low risk criteria, have a healthy pregnancy, would like a planned homebirth and are fully aware of the benefits and risks.

Geographical boundaries

The geographical boundaries were also raised by many stakeholders as again being too restrictive given Canberra's road networks and lack of traffic concerns. The ACT Ambulance Services stated that they would be prepared to revisit these. Our understanding from some stakeholders was that the insurer would also be prepared to examine expanding the boundaries to enable greater access for women.

Many stakeholders highlighted the value of Calvary Hospital commencing a homebirth program themselves to enable women in the north of Canberra to access the service. Another option was to broaden the geographical boundaries to include the Calvary catchment area and then enable midwives from the CHWC to have visiting rights at Calvary Hospital if women needed transfer.

> **Recommendation 4:** The geographical boundaries associated with publically funded homebirth at the CHWC be revisited in collaboration with the ACT Ambulance Service and the ACT Insurance Authority.
>
> **Recommendation 5:** The ACT Government consider establishing a publicly-funded homebirth service for women living in the northern geographical area (Calvary Hospital) and that this be written into the Calvary Hospital's service level agreement with the ACT Health Directorate.
>
> **Recommendation 6:** If a publicly-funded homebirth service cannot be established at Calvary Hospital, midwives providing the service from the CHWC are given visiting rights by the ACT Government to the Calvary Hospital enabling them to transfer women from that geographical area if required.

Practice factors – water birth and third stage management

Having practice issues such as 'no waterbirth' and 'active management of the third stage of labour' is problematic and many stakeholders wanted these removed. These decisions may not be able to be easily made during pregnancy and the decision at the time depends on the woman's progress and her personal choices. It seems that when women have made choices such as to stay in the pool to have a waterbirth or have declined active management of the third stage of labour, midwives have been put in a very difficult position and have be subject to significant scrutiny. There are also instances of women agreeing to these two policies during pregnancy with the full intention of not following through during the birth or postpartum. Again, this is unhelpful and leads to distrust and suspicion of women's motivations.

Waterbirth seemed to have the most amount of uncertainty associated with it as a practice. Waterbirth is common in the Birth Centre with 14% of women giving birth in 2017-2019 having a waterbirth (450 of 3198 women). This suggests that many of the midwives have skills and experience in waterbirth but clearly there are still concerns. It is essential that all

midwives providing waterbirth at a homebirth have a targeted education program and potentially some form of credentialing process to ensure waterbirth is provided in a safe and effective way.

There is now considerable evidence around waterbirth although few randomised controlled trials. Studies conducted in Canada and Portugal (Camargo, Varela et al. 2018, Jacoby, Becker et al. 2019) found that women who had a waterbirth had a reduction in the number of severe perineal lacerations, postpartum haemorrhage, maternal fever and puerperal infection compared to women who had a 'land birth'. Neonatal outcomes were similarly favourable with significantly fewer admissions to the NICU and fewer Apgar scores less than seven at five minutes. Further evidence from a systematic review and meta-analysis found no significant difference in neonatal outcomes between babies born in water and those born 'on land' (Taylor, Kleine et al. 2016).

> **Recommendation 7:** Women are informed about the benefits and risks of practices in labour such as waterbirth and physiological management of the third stage of labour be able to choose such practices should the clinical situation be appropriate and the woman provides verbal consent.
>
> **Recommendation 8:** All midwives providing waterbirth at a homebirth undergo an education and credentialing process to ensure waterbirth is provided in a safe, effective and consistent way.

Routine obstetric review at 36 weeks of pregnancy

The requirement that a woman must physically be reviewed by an obstetrician or obstetric registrar at 36 weeks of pregnancy also received some comments and criticism, mostly from women. In the survey of women, this was highlighted as one of the most unsatisfactory aspects of the program. It seems that when a homebirth-supportive obstetrician or obstetric registrar was available for this appointment, the process was smooth and effective. However, there were a number of instances reported where a non- homebirth-supportive obstetrician or obstetric registrar saw the woman they experienced a very negative perspective and felt that they were not listened to.

The continuity of care program has a regular collaborative meeting with an obstetrician who also holds a small antenatal clinic weekly to review women who the midwives refer. It would be ideal if women on the publicly-funded homebirth service were reviewed in the same way (a paper-based record review at 36 weeks and a visit only if required). It was also suggested that a paper-based review after the initial visit would be useful to collaboratively assess eligibility and highlight any potential areas of concern.

> **Recommendation 9:** The continuity of care program has a regular collaborative meeting with an obstetrician who also holds a small antenatal clinic weekly to review women who the midwives refer. Women on the publicly-funded homebirth service

are reviewed in the same way (a paper-based record review at 36 weeks and a face to face visit only if required or requested).

The Australian College of Midwives (ACM) National Midwifery Guidelines for Consultation and Referral provide clear guidance on the need for referral and consultation regarding conditions both pre-existing and those which develop during pregnancy. To strengthen the clarity around the process of eligibility for the homebirth program, suggestions were made to align screening processes with the ACM Guidelines for Consultation and Referral including naming the category the women is aligned with eg. Category A, B C. It would then follow that the appropriate referral process would occur in the beginning and at any time during the pregnancy, including at the 36 week point in women's pregnancies.

Midwifery students as observers

Midwifery students are not able to attend planned homebirths as an observer. It is not clear where this policy for midwifery students has come from – some stakeholders felt it was the insurer, others felt it was the universities. There were no explicit concerns expressed relating to having students at the birth if the woman agreed.

A number of women expressed disappointment that midwifery students were unable to continue to be part of their journal through the midwifery continuity of care experiences. Choosing a homebirth in the latter half of pregnancy meant that woman who had developed a relationship with a midwifery student needed to sever that connection as the student could now not attend the birth. This was reported to be distressing for both the woman and student. Enabling midwifery students to attend a planned homebirth on the program, even just as an observer, would be beneficial. Providing opportunities for obstetric resident medical officers to also attend and observe a homebirth (with permission granted from the woman) would also be an excellent way for future doctors to better understand normal birth and homebirth.

> **Recommendation 10:** That midwifery students be able to attend a homebirth as an observer of if a woman who chooses homebirth is one that they have engaged in a continuity of care experience.

Expanded access for midwives

Midwives who did not work in the homebirth program were very supportive and positive towards the trial and the midwives who worked in the service. The possibility of a rotation from Birth Unit into the homebirth service was discussed and received positively. There is also an option of having a midwife from the Birth Unit rostered on to be the second midwife at a homebirth. This was also seen positively as it was seen as a way of growing the workforce and providing opportunities for midwives who often did not see much normal labour and birth to have this experience.

Recommendation 11: Midwives working in the CHWC maternity unit have the opportunity to rotate into the homebirth program to enhance understanding of the experiences and processes of homebirth. This may open the opportunity for a midwife from the Birth Suite being available as second on call.

Cost of the program

There is evidence in Australia (Scarf et al, 2019; Draft AR DRG study) and internationally (Schroeder, Petrou et al. 2012, Scarf, Catling et al. 2016) that publicly-funded homebirth is not more costly to provide. This is largely due to the low rates of complex interventions and neonatal admissions to NICU in this group of healthy women.

It is important to note that midwifery continuity of carer offers cost savings to the health service. Factors contributing to these savings include the midwives' flexible working arrangements which respond to the needs of the woman rather than "staffing the ward", and the reduced rates of intervention for women in this model of care (Donnellan-Fernandez, Scarf et al. 2019). A recent study from Australia which included women of all-risk status demonstrated a reduction in cost by $566 per woman compared to standard care (Tracy, Welsh et al. 2014). This study attributed the cost saving to the flexible delivery of midwifery care and the increase in spontaneous labour, with a subsequent lower intervention rate. Consequently, the length of stay for these women was shorter and the readmission rates were low. The ACT homebirth trial have shown promising outcomes in line with these results.

Ongoing monitoring, evaluation and communications

The CHWC has a sound system of monitoring for safety and quality across its services. The homebirth service needs to be incorporated in these systems as one model of care under the Continuity Programs. This would ensure that all usual quality and safety frameworks applied to the homebirth program. It would be useful if all the Continuity Programs could report outcomes, incidents and patient experiences going forward.

Recommendation 12: The homebirth program be incorporated into the usual systems of monitoring safety and quality and communicating outcomes.

CONCLUSION

In summary, the ACT Government are to be commended for establishing this program as a trial and for taking such care and due diligence in commencing the program. The ACT is an ideal location for such a service due to its geographical locality, lack of traffic problems and a strong unified commitment at all levels.

The evaluation showed that the trial has achieved its goal and objectives and has had very good outcomes. The trial should now be completed and homebirth offered as part of the

suite of services available at the CHWC. This will increase efficiency and sustainability and will meet the request of women in the ACT for more options.

PLAIN LANGUAGE SUMMARY

In 2015, the ACT Government approved the implementation of a trial of publicly funded homebirth to women at low risk of pregnancy or birth complications receiving care at the Centenary Hospital for Women and Children (CHWC). In October 2016, the trial commenced at the CHWC.

In just over 3 years, 76 women expressed interest in experiencing a homebirth. Of these, 42 (55%) went on to have a successful homebirth. Interest in the homebirth program has steadily increased each year with eight interested women in 2017 through to 37 in 2019.

All women who planned a home birth went into labour naturally and has straightforward normal births. There were no transfers to hospital during labour. Four women were transferred after the baby was born – three for maternal reasons and one for neonatal reasons. There was one baby with a possible poor outcome after an unexpected breech birth at home.

Women and staff were very positive about this initiative. Universally, the feedback on the commencement of the trial was enthusiastic with comments such as “we were so delighted to see it actually start”.

There were a number of concerns raised including the narrow inclusion criteria which many people thought was too restrictive. These criteria included having your second or subsequent baby, living with a defined geographical boundary and not being able to have a waterbirth or physiological third stage of labour (without medications). While these are understandable for the trial there is now an opportunity to revisit these inclusion criteria and further develop the model for more women in the ACT.

In summary, the ACT Government are to be commended for establishing this program as a trial and for taking such care and due diligence in commencing the program. The ACT is an ideal location for such a service due to its geographical locality, lack of traffic problems and a strong unified commitment at all levels.

The evaluation showed that the trial has achieved its goal and objectives and has had very good outcomes. The trial should now be completed and homebirth offered as part of the suite of services available at the CHWC. This will increase efficiency and sustainability and will meet the request of women in the ACT for more options.

REFERENCES

ACM (2017). National Midwifery Guidelines for Consultation and Referral (3rd Edition; Issue 2). Canberra, Australian College of Midwives.

Birthplace in England Collaborative Group (2011). "Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study." BMJ **343:d7400** doi: 10.1136/bmj.d7400.

Camargo, J., V. Varela, F. Ferreira, L. Pougy, A. Ochiai, M. Santos and M. Grande (2018). "The Waterbirth Project: São Bernardo Hospital experience." Women and Birth **31**(5): e325-e333.

Canberra Health Service (2019). Publicly Funded Homebirth Trial Process Review. Canberra, ACT Health.

Canberra Hospital and Health Services (2016). Homebirth Publicly Funded Trial policy. Canberra, Canberra Hospital and Health Services.

Canberra Hospital and Health Services (2016). Operational Procedure - Homebirth: Publicly Funded Trial. Canberra, Canberra Hospital and Health Services.

Canberra Hospital and Health Services (2019). Publicly Funded Homebirth Trial Process Review. Canberra, Canberra Hospital and Health Services.

Davies-Tuck, M., E. Wallace, M. Davey, V. Veitch and J. Oats (2018). "Planned private homebirth in Victoria 2000-2015: a retrospective cohort study of Victorian perinatal data." BMC Pregnancy Childbirth **18**(1): 357.

Donnellan-Fernandez, R., V. Scarf, D. Devane and A. Healy (2019). Chapter 7 - Is midwifery continuity of care cost effective? . Midwifery Continuity of Care. C. Homer, N. Leap, P. Brodie and J. Sandall. Sydney, Elseiver Australia.

Fox, D., A. Sheehan and C. Homer (2014). "Experiences of women planning a home birth who require intrapartum transfer to hospital : a metasynthesis of the qualitative literature." International Journal of Childbirth **4**(2): 103-119.

Homer, C., S. Cheah, C. Rossiter, H. Dahlen, D. Ellwood, M. Foureur, D. Forster, H. McLachlan, J. Oats, D. Sibbritt, C. Thornton and V. Scarf (2019). "Maternal and perinatal outcomes by planned place of birth in Australia 2000 – 2012: A linked population data study." BMJ Open **9**: e029192.

Hutton, E., A. Reitsma, J. Simioni, G. Brunton and K. Kaufman (2019). "Perinatal or neonatal mortality among women who intend at the onset of labour to give birth at home compared to women of low obstetrical risk who intend to give birth in hospital: A systematic review and meta-analyses." EClinicalMedicine **14**: 59-70.

IHPA (2019). National Hospital cost Data Collection Australian Public Hospitals (2016-17). Canberra, Independent Hospital Pricing Authority.

Jacoby, S., G. Becker, S. Crawford and R. Wilson (2019). "Water Birth Maternal and Neonatal Outcomes Among Midwifery Clients in Alberta, Canada, from 2014 to 2017: A Retrospective Study." Journal of Obstetrics & Gynaecology Canada: JOGC **41**(6): 805-812.

Perriman, N., S. Muggleton, J. Taylor and D. Davis (2019). COMcareSS (Continuity of Midwifery Care Satisfaction Survey). Canberra.

Scarf, V. (2019). Costing childbirth at home, in a birth centre or in a hospital for women at low risk of pregnancy complications in New South Wales, Australia (PhD thesis). Sydney, University of Technology Sydney.

Scarf, V., C. Catling, R. Viney and C. Homer (2016). "Costing Alternative Birth Settings for Women at Low Risk of Complications: A Systematic Review." PLoS One **11**(2): e0149463.

Scarf, V., C. Rossiter, S. Vedam, H. Dahlen, D. Ellwood, D. Forster, M. Foureur, H. McLachlan, J. Oats, D. Sibbritt, C. Thornton and C. Homer (2018). "Maternal and perinatal outcomes by planned place of birth among women with low-risk pregnancies in high-income countries: A systematic review and meta-analysis." Midwifery **62**: 240-255.

Scarf, V., S. Yu, R. Viney, L. Lavis, H. Dahlen, M. Foureur and C. Homer (2019). "The cost of vaginal birth at home, in a birth centre or in a hospital setting in New South Wales: A micro-costing study." Women Birth **doi: 10.1016/j.wombi.2019.06.003. [Epub ahead of print]**.

Schroeder, E., S. Petrou, N. Patel, J. Hollowell, D. Puddicombe, M. Redshaw, P. Brocklehurst and on behalf of the Birthplace in England Collaborative Group (2012). "Cost effectiveness of alternative planned places of birth in woman at low risk of complications: evidence from the Birthplace in England national prospective cohort study. ." BMJ **344**: e2292.

Taylor, H., I. Kleine, S. Bewley, E. Loucaides and A. Sutcliffe (2016). "Neonatal outcomes of waterbirth: a systematic review and meta-analysis." Archives of Disease in Childhood-Fetal Neonatal Edition **101**(4): F357-F365.

Tracy, S., A. Welsh, B. Hall, D. Hartz, A. Lainchbury, A. Bisits, J. White and M. Tracy (2014). "Caseload midwifery compared to standard or private obstetric care for first time mothers in a public teaching hospital in Australia: a cross sectional study of cost and birth outcomes." BMC Pregnancy and Childbirth **14**: 46.

APPENDICES

Appendix A: People/groups interviewed during the evaluation (in alphabetical order)

Individuals	
Wendy Alder -	Clinical Midwifery Manager, Birthing, Centenary Hospital for Women and Children (CHWC)
Rebekah Bowman	Midwife involved in the start of the trial, Lecturer, University of Canberra
Ann Burgess	Nursing and Midwifery Office, ACT Health
Hazel Carlisle	Clinical Director of Neonatology, CHWC
Elizabeth Chatham	Acting Chief Operating Officer, CHS
Chanel Connor	Acting Assistant Director of Nursing and Midwifery, CHWC
Darlene Cox	Executive Director, Health Care Consumers' Association Inc
Deborah Davis	Professor of Midwifery, University of Canberra and ACT Health
Megan Davis	ACT Ambulance Service
Simon Fenton	Manager, Insurance and Legal Liaison Unit, CHS
Christine Fowler	Clinical Midwifery Manager, Continuity, CHWC
Ash Grimes	Clinical Development Midwife (Continuity of Care, HB Trial)
Boon Lim	Clinical Director, Obstetrics and Gynaecology, CHWC
Penny Maher	Assistant Director of Nursing and Midwifery (Retired), CHWC
Cathy O'Neill	Director of Nursing and Midwifery, CHWC
Alison Porteus	Staff Specialist Obstetrician and Gynaecologist, CHWC
Peter Scott	Staff Specialist Obstetrician and Gynaecologist, CHWC
Nadia Schmidt	Neonatologists, CHWC
Sarah Stewart	Nursing and Midwifery Office, ACT Health
Ali Teate	Midwife, Australian College of Midwives

Midwives

- Midwives - not working in the ACT Homebirth Trial (n=15)
- Midwives - working in ACT Homebirth Trial (n=5)

Consumers/Community members

- Focus group (n=5)
- Interviews (n=2)

- Community meeting – ACT Branch of Maternity Choices, Maternity Consumer Network and Friends of the Birth Centre (n=6)

Appendix B: Recommendations from the process evaluation (2019)

The process evaluation was released in November 2019 and made 14 recommendations:

1. Seek advice on the requirement for submission of RiskMan reports to record all events and near misses, that are outside the eligibility criteria and homebirth framework
2. In relation to recommendation 1, that a written document is developed on the nature of reportable events via RiskMan, and that this is incorporated into the existing procedure and policy documents with ongoing education for midwives.
3. That, for any unexpected outcome, the ACT Insurance Authority (and any associated RiskMan) reports are forwarded within one working day, as identified in the Homebirth Framework. In the absence of the usual approval pathways, these should be escalated through the Director of Nursing and Midwifery.
4. That audits are conducted at 36 weeks gestation, and post birth, with a view to ensuring all tasks have been completed, actioned where necessary, and fully documented. This includes RiskMan and ACT Insurance Authority reports.
5. That a process is developed to ensure the ambulance case sheet is included within the clinical records, where applicable.
6. That midwifery education reinforces the importance of data integrity.
7. That controls for response for a birth occurring before the arrival of the midwife include calling an ambulance, and that the Publicly Funded Homebirth Trial Risk Register be updated accordingly.
8. That the Clinical Midwifery Manager for Continuity assumes accountability for oversight of the audits identified in recommendation 4, and that a written report is prepared for the Homebirth Trial Governance Committee.
9. That oversight by the Homebirth Trial Governance Committee is strengthened to include a full review of all homebirths as outlined in the Terms of Reference, and that this be via the written reports.
10. That the Publicly Funded Homebirth Trial Risk Register be updated as risks are identified, including women declining previously consented treatment, and unplanned waterbirths.
11. That eligibility criteria is strictly adhered to, including ACT and catchment area residency.
12. In line with the ACT Health Consumer Feedback Management policy, that feedback is encouraged and documented appropriately.

13. That a record be kept on the ACT Patient Administration System via the existing Locally Defined Data Item of all women requesting homebirth, and the reason for exclusion or program exit, where this is the outcome.
14. That monitoring and evaluation of those accessing information on the trial (i.e. analytics on webpage views) be undertaken quarterly to inform future planning

Appendix C: Details of the state-wide policy comparison

Antenatal preparation:

All policies describe details regarding the need for home visits during the antenatal period. The NSW policy outlines a minimum of two antenatal contacts in the home – at booking and 36 weeks – with other contacts to be determined as needed. The ACT policy specifies that the homebirth midwife should complete a home visit for the purposes of a home assessment prior to the 35-36 week appointment. The SA policy similarly states that a home visit must occur before 37 weeks gestation. The Victorian policy suggests an 'ongoing and dynamic assessment' of the home environment, which may coincide with a home visit at 36 weeks, to both assess the home and enable the midwife to become familiar with the intended place of birth. All policies (except NSW) advise that a home assessment should review ease of access (including parking), availability of clean, running water and electricity and reliable communications. The Victorian and SA policies, but not the ACT policy, also recommend that the home assessment should look for signs of domestic violence and illicit drug use. In addition, the Victorian policy recommends a familiarisation hospital visit in case a woman requires a hospital transfer. Whilst, the SA policy suggests women pack a bag for hospital in the event she requires a transfer.

The ACT policy requires women to attend a consultative appointment at 35-36 weeks with her continuity homebirth midwife and an obstetrician to discuss homebirth, review eligibility criteria and provide an opportunity for the women to discuss any questions she may have regarding homebirths. This discussion is then recorded in the women's relevant clinical records. The Victorian policy notes that some providers/services may offer or mandate a 'booking in appointment' at 35-36 weeks. The SA policy was the only policy to recommend a GP visit early in pregnancy.

In relation, to equipment for home birth, little information was provided in the ACT policy regarding details of the equipment needed for a homebirth whereas the Victorian policy contains a sample home birth equipment list and the SA policy has an extensive list (Appendix A). The NSW policy didn't include information regarding homebirth equipment.

Intrapartum care

All policies stipulate the need for two clinicians to be involved in the care of the women, however policies differ on the cadre of clinician required. The ACT and SA policy require these to be two registered midwives. Both the Victorian and NSW policies recommend two (credentialed) clinicians to be present at each homebirth; and for Victoria, one of these must be a midwife.

The ACT policy refers to the two midwives as primary and secondary. The primary midwife as the main provider of care and is to be called by the woman during the first stage of

labour. Both the ACT and SA policies require the second midwife to be present from at least the commencement of the 2nd stage of labour through to completion of the third stage. The Victorian policy requires that the woman has the contact details of more than one midwife, in case the primary midwife is unavailable/uncontactable.

Most policies referred to local guidelines with regards to routine care during pregnancy, labour and the postnatal period and that clinicians should work within their scope of practice. The ACT policy requires the primary midwife to notify the secondary midwife and relevant team leaders at the participating hospital when the woman was in labour.

The SA policy made mention to the need for midwives to follow infection control guidelines and use appropriate personal protective clothing – this was absent in the ACT policy. Whilst the NSW policy refers to NSW health occupational health and safety guidelines published elsewhere.

Guidelines for management of GBS positive or negative women differed between the ACT and SA policies. The NSW and Victorian policies did not include information regarding GBS management. The ACT policy outlines that newborns born to women with a positive GBS swab, who have not received adequate antibiotic prophylaxis, require 48 hours of inpatient neonatal monitoring according to local policies. However, there was scope for this monitoring to be provided in the home if the midwife was able to provide regular clinical contact. Whereas the SA policy included this as a reason for newborn transfer to hospital.

Postnatal care

The ACT policy states that the primary midwife is to provide care for 4 to 6 hours after completion of the third stage of labour and to consider hospital transfer if ongoing care is required. During this time, the primary midwife should review the woman (blood loss, fundal height, urine voided, vital signs) and the newborn (vital signs and observation of one breastfeed). Similarly, the SA policy states that the midwife must stay for 4 hours after birth and undertake a clinical assessment of the mother and newborn before leaving. The NSW policy recommends that the primary homebirth clinician provides postnatal care in the community for a minimum of 14 days but not exceeding six weeks postpartum. The NSW policy specifies that in addition to providing care, the clinician will liaise with local community services and assist with the transition from maternity services to child and family health services.

It is not clear from the ACT policy, who is responsible for undertaking a full newborn examination. The SA policy states that a newborn examination needs to be performed by a GP between day 7 and 10 after birth; whilst the NSW policy states that examination of the newborn can be negotiated locally and may include general practitioners, paediatricians or midwives.

The ACT and SA policies require the homebirth midwife to organise a follow up postnatal visit within 24 hours of birth. The ACT policy also states that the primary midwife must arrange for the woman to attend the hospital within 4 days of birth to complete the newborn hearing screen and hepatitis B vaccination. The NSW and Victorian policies state the need for the homebirth clinician to arrange newborn hearing services. Administration of hepatitis B vaccination is not mentioned in the NSW or Victorian policies. None of the policies mention when the newborn blood spot test will be conducted and by whom. Although, the Victorian policy states to offer newborn bloodspot screening and ensure transport of the specimen.

The ACT policy advises that women must register their newborns' birth details with Birth, Deaths and Marriages within 26 weeks of birth, whereas the SA policy stipulates the birth must be registered within 7 days for a live birth and 48 hours for a stillbirth. The Victorian policy states to be completed and submitted as required.

Transfer considerations

All policies referred to the *Australian College of Midwives (ACM) National Guidelines for Consultation and Referral.* The NSW policy only refers to the policy and provides no further information on indications for transfer of the mother or baby. The ACT policy outlines the process involved to coordinate the transfer of a woman when needed but provides no details regarding what conditions or situation would necessitate a transfer of the mother and/or baby to hospital. In contrast, the Victorian policy outlines some indications that may require hospital transfer, such as, greater pain relief, progress less than expected, concern about maternal or fetal wellbeing, woman changes her mind, delayed completion of third stage of labour or retained placenta, need for advanced perineal repair or a change in environmental conditions (i.e. bushfires, extreme weather conditions, no electricity etc). The SA policy is very comprehensive and outlines several indications or conditions which would necessitate the transfer of mother or baby; including meconium-stained liquor, intrapartum haemorrhage, fetal heart rate abnormalities, absence of progress in established labour, active first stage of labour in excess of 18 hours and so on.

If not urgent, the ACT and Victorian policies state that the women and her support team could travel in their private care with the midwife following. All policies state the need to call an ambulance in the event of an emergency and that an ambulance is always used to transport a newborn regardless of urgency. In the event of transfer to a hospital, the role of the primary midwife carer for the woman and role of the paramedic was not clearly delineated in the ACT policy. The ACT policy states that if urgent transport to hospital via ambulance is needed that the midwife remains the 'primary care provider'. However, the SA policy and Victorian policies specify that the paramedic will take the clinical lead if presentation is not pregnancy or birth-related and the midwives must continue care in collaboration with ambulance staff.

All policies outline information regarding handover from home to hospital if a transfer is required. The Victorian policy recommends that the ISBAR format is used to transfer critical information and a handover checklist is used for newborn emergency. The Victorian policy provides varied information dependant on whether the homebirth midwife is public or private with or without admitting rights. Once the woman arrives at the hospital, the ACT policy states that the homebirth midwife will continue to provide care as the primary midwife and handover care as per usual practices. In the need for urgent care for mother or baby, they would be transferred to the birthing area of the hospital. If the mother or baby were needing life support then they would be transferred to the emergency department and the relevant teams called i.e. neonatal emergency team.

Refusal of advised care

All policies mentioned considerations for women who at some stage may decline the advice of their homebirth midwife, which may include opting to stay at home when a transfer is recommended. The ACT, Victorian and SA policies recommend to document the care being declined, the reason for declining and agreed plan if appropriate. These policies also advise to consult with another midwife or medical doctor and document the discussion. The ACT policy states that the primary midwife can offer the women a second midwifery or obstetric opinion and request the attendance of the secondary midwife if they are not already present. The Victorian policy suggests using the *ACM record of understanding* form to document when a woman chooses to go against medical advice.

The SA policy also mentions that the decision for a homebirth should be reconsidered for women who do not follow advice during antenatal period. The ACT policy similarly requires that women planning a homebirth attend regular antenatal care in keeping with guidelines and adhere to the midwife's advice regarding whether a transfer is needed or not.

Role of the homebirth midwife/clinician

All policies referred to the need for clinicians providing homebirth services to meet some form of professional standards and credentialing processes. The NSW policy simply refers to midwives and medical practitioners meeting NSW Health credentialing policy directives whilst the ACT policy provided much more information and referred to several codes, guidelines and professional standards. The ACT and Victorian policies referred to the need for homebirth midwives to meet all relevant professional standards and annual competencies and requirements as per the Nursing and Midwifery Board of Australia and other registration bodies i.e. AHPRA and NMBA.

The ACT policy was the only policy to provide recommendations around the number of midwives per homebirth team. The policy recommended 6 midwives per homebirth team, each with a minimum of three years of experience post-registration providing birthing,

antenatal and postnatal care. The SA policies requires a midwife to have participated in at least five planned home births under supervision to be accredited as competent.

Most policies referred to the need for meeting educational requirements in line with existing health service expectations for midwives. The NSW policy was the only policy which stated that education about domestic violence and child protection was mandatory for homebirth clinicians. The ACT policy is the only one which outlines a mentorship program for homebirth midwives involving intensive and supportive mentoring and opportunities for self-reflection, peer-review and discussion.

Implementation, monitoring and evaluation:

The ACT policy included limited information regarding implementation, monitoring and evaluation – referring to the trial period and planned evaluation. Implementation of the ACT policy focussed on the Canberra Hospital and Health Services staff with planned dissemination through email, work room notice boards and through multidisciplinary education sessions. However, there was no mention of sharing the policy outside of the health service with other relevant groups, such as, GPs, Maternal and Child Health Nurses, allied health professionals, parent groups or community members. In contrast, the NSW policy states that the policy is distributed to the public health system, divisions of general practice, government medical officers, health associations unions, health professional associations and related organisations, NSW Ambulance Service, NSW Department of Health, Public Health Units, Public Hospitals and Tertiary Education Institutes. The NSW policy was the only policy to note the role of local consumers, noting it was 'essential' to have local consumers involved at all stages of implementation and evaluation.

The ACT policy noted that clinical incidents where a midwife provides care outside of the normal scope of practice should be reported to senior management as soon as possible and in turn this will be reported higher within 12 hours and for extreme incidents within 24 hours. The RiskMan Significant Incident Reporting Module needs to be used. The NSW policy states that clinicians providing homebirth services are required to meet all reporting requirements of NSW Health.

The ACT policy did not include information regarding routine data that should be collected for monitoring and evaluation purposes. In contrast, the NSW policy outlined the following components that should be collected: clinical maternal and neonatal outcomes, costs associated with the provision of the model, women's experience of care during pregnancy, birth and the postnatal period, staff satisfaction including retention rates of clinicians working in this model of care and transfer rates. The Victorian policy similarly states that homebirth programs should have processes for auditing clinical practice and outcomes, providing feedback to clinicians on audit results, addressing identified risks and a list of outcomes requiring mandatory reporting.

The SA policy has limited information regarding implementation and monitoring and only refers to the collection of incidence of homebirth data being collected annually by the SA Health Pregnancy Outcome Unit.

Table 5: Eligibility criteria for women to give birth at home across three jurisdictions

ACT	SA	Victoria
Be between ages of 18-40		
Live within the homebirth catchment area (within 30 minutes travelling time of the Centenary Hospital for Women and Children) *NSW residents not eligible	Less than 30 minutes travelling time by ambulance from the participating hospital	Need to consider the woman's distance from her nearest hospital and the time it may take to arrive during peak and non-peak times. Currently no evidence regarding prescribed distance to hospital as an eligibility criterion.
Capacity to provide informed consent and have signed a consent form	Has the capacity to provide informed consent and has signed the consent form for a planned home birth (MR82HB)	
Have current ambulance cover	Has an understanding of the implications of being transported by ambulance to hospital should it be required; including process and ambulance costs. Ambulance insurance must be recommended to women.	Assessment of capacity and potential provision of emergency ambulance transport (private health, pension/concession card or ambulance subscription).
Live in a safe working environment for midwives including: Adequate lighting Electricity Access to clean hot water Pets that can be secured out of the birthing area Easy access to your home for any emergency vehicles	Clean and hygienic Clean water and electricity Has an area to secure animals away from the birthing environment Has an environment that supports other dependant members of the household (i.e. the birthing women must not be responsible for other household members during labour and birth)	Ongoing assessment of the home environment to identify the safety of the environment and any possible risks i.e. dangerous animals, illicit drug use, domestic violence. Providers should implement their own home visiting risk assessment according to local guidelines.

ACT	SA	Victoria
Parking availability for two midwives Reliable phone access at all times	Easy access (in case transfer during labour is warranted) Reliable telecommunication access; landline or mobile phone with 'coverage' No evidence of domestic violence No evidence of illicit recreational drug use	Easy vehicle access, including parking. Consideration of egress from the house if required in an emergency situation. Access to clean running water and electricity. Reliable communications – landline and/or mobile coverage.
Agree to home assessment by the homebirth midwife	Home visited and found suitable	An ongoing (dynamic) assessment of the home should be undertaken
Agree to accepting the midwife's advice about transfer to hospital care		
One or more birth supporters from family/friends who support the decision to have a homebirth and undertake to be available and present throughout labour, birth and recovery period. Partner support (if applicable) to birth at home	Has support people intending to be present at the birth and that they have received appropriate information relating to their roles during labour and birth.	
Meet all the current suitability criteria for acceptance onto the Canberra Midwifery Program.		

ACT	SA	Victoria
Be healthy and BMI <35 at the 36-week pregnancy assessment.	Following conditions preclude a women giving birth at home: BMI >35kgm² or maternal weight greater than 100kg Any significant medical condition or pre-existing gynaecological disorder (Referral C in the ACM National Midwifery Guidelines for Consultation and Referral) Alcohol or illicit drug dependency Female genital cutting > Type 2B Extreme psychosocial issues Current child protection concerns where removal of baby following birth is a possibility	Nil reference to BMI or maternal body weight
Have had at least one, and not more than 4, previous healthy pregnancies and uncomplicated births and recovery periods.	Includes primiparous women Following conditions preclude a women giving birth at home: Caesarean section Postpartum haemorrhage in excess of 1L Shoulder dystocia requiring internal manoeuvres	Includes primiparous women No previous caesarean section or uterine surgery

ACT	SA	Victoria
	Neonate requiring intensive care for an unexplained reason Perinatal death not related to preterm birth	
Current uncomplicated pregnancy progressing normally.	Following conditions preclude a women giving birth at home: Gestational diabetes (GDM) requiring medication Women refusing assessment for GDM Hypertension and/or or preeclampsia Abnormal placentation (including placenta praevia) Suspected fetal abnormalities that require paediatric attention at birth Polyhydramnios or oligohydramnios Suspected fetal macrosomia Suspected fetal IUGR or SGA APH Mal-presentation Identified need for newborn to be hospitalised following birth Significant mental health issues requiring medication (not an absolute contraindication but further consultation required)	A low-risk pregnancy with no pre-existing or occurring medical conditions that may impact upon the pregnancy, birth or postnatal period (maternal, fetal and neonatal)

ACT	SA	Victoria
Onset of labour between 37 and 42 weeks	37+0 and 42+0 weeks Women precluded if post-term pregnancy (>42 wks)	Term gestation (37+0 + 41+6 completed weeks gestation)
Regular ANC care in line with recognised guidelines	Woman refusing assessment for gestational diabetes mellitus Woman refusing morphology ultrasound	
Registered interest and discussed suitability with ACT Health Homebirth service by 36 weeks		
Have a single pregnancy with the baby in a head down position before labour starts	Following conditions preclude a women giving birth at home: Multiple pregnancy	- Singleton pregnancy - At the onset of labour, baby is in the cephalic (head down) position
Attended a 'suitability for homebirth assessment' joint appoint with their midwife and the homebirth service obstetrician on or before the 36th completed week of pregnancy		
Wish to labour naturally and: - Plan to only use non-pharmacological analgesia during labour - Accept active management of the third stage of labour	Has a birth plan that does not include pharmacological pain relief or an epidural during labour. Waterbirth is not precluded.	Use of water for labour and birth as per the Water for labour and birth eHandbook (under development). Waterbirth is not precluded.

ACT	SA	Victoria
Water immersion in labour is offered but not water birth	Policy does not indicate whether water birth is offered but states that midwife should be aware of and refer to the SA Health Clinical Directives around *First Stage Labour and Birth in Water.*	Policy does not indicate whether water birth is offered but states that water use should be per the 'Water for labour and birth ehandbook'

Appendix D – Equipment list for ACT homebirth trial

Oxygen cylinder

Will be delivered by BOC and collected by same after the birth

Homebirth medication pack

Will be packed by pharmacy, and collected by the woman at 36 weeks to be stored in the home fridge. Pack will have a tamperproof seal, expiry dates and cold chain sensors.

Medications

- Syntocinon 10iu pack of 5 ampoules
- Syntometrine ampoules x2
- Misoprostil 200mg x4
- Lignocaine 20mlxL
- Vitamin K for Neonate

Medical supplies

Prepared in pack form and collected by the woman at 36 weeks. The pack will be collected by the midwife and returned to the Birth Centre for restocking after the birth. The pack needs to be stored safely. A homebirth resource folder containing all required paperwork for documentation will also be left at the woman's home at the time of the 36 week visit.

Midwives' equipment (for antenatal visits and the birth)

- Fetal Doppler with spare battery x 1 and bottle of gel
- Pinnards stethoscope
- Sphygmomanometer and adult stethoscope
- Thermometer
- Yellow top jars
- Urine dipsticks
- Pathology request forms
- Sterile gloves and non-sterile gloves
- Lubricant sachets

Birth Kit (see photo)

- Sterile birth bundle
- Episiotomy scissors
- Cord clamp x2
- Touch Dry sheets, large and small x 5
- Combines x3 packets

- Amnihook x 1
- Small LED torch
- Cord blood collection tubes and blood transfer device in pathology bag
- Sterile gloves, non-latex 6.5, 7, 7.5 and lubricant.

IDC Pack

- 12g Foleys catheter x 2
- Size L2 in/out catheter x2
- Catheter bag
- Disposable IDC sterile pack
- 30ml sterile Normal saline
- 10 ml sterile water for injection
- 10 ml syringe
- Lubricant x 3
- Catheter stabilization device

Suture set (body of large box)

- Sterile suture set
- Sterile drape x 2
- Abdo sponges x L pack of 5.
- 30ml normal saline
- Suture material: 2/0 rapide x 2,2/O vicryl x l and 3/0 rapide x 1
- 20ml syringe x 1
- 23g needle x 2
- Xylocaine 20ml x 1 (listed in medication list)

IV access pack (small box)

- lV cannula 16g x 2, 18g x2
- Needles 21"9, 23g,25gx4 each
- 21g butterfly needles x2
- 10ml syringes x4
- 1ml syringes x 4
- Normal saline 10ml x5
- Sterile water for injection 1Oml x 5
- Tourniquet
- Alco wipes
- lV bungs
- lV giving set x 2 (gravity lines)
- Hartmanns lL x 2
- lV starter pack x 2
- Spot band aids x 4
- Drug additive label x 2
- Exadrop attachment
- Y connector X 1

Sterile water injection pack

- 4 x l ml syringe
- 2 x drawing up needles
- 4 x 25g needles
- Alco wipes
- 30 ml sterile water

Medication administration pack

- 5ml syringe x 2
- 2ml syringe x 4
- 1ml syringe x 2
- Alcowipes
- Drawing up needles x6
- 21g needles x6
- 23g needles x6
- 25g needles x6

Resuscitation pack (backpack)

- lnfant laerdal bag
- Adult laerdal bag
- Oxygen cylinder from BOC
- Oxygen regulator and flow meter
- Adult oxygen mask and tubing

- Twin-o-vac set up with tubing for suction
- lnfant Y suction catheters x 2
- Yankeur sucker
- Paediatric stethoscope
- Manual suction trap/ De-lee sucker.
- Pulse oximeter with maternal and baby probes
- Velcro strap to secure 02 cylinder to table leg upright
- 2x blood gas syringes, 2x21g needles, pathology bag and form, blood gas labels

Other

- Baby scales and tape measure
- ophthalmoscope
- Rubbish bags
- Personal protective equipment, eye protection, plastic gown etc
- Sharps container (body of large box)
- 1 box med/large non-sterile gloves (body of large box)
- Head lamp/torch and spare batteries
- Maternal and Baby identification bands
- Yellow medical waste plastic bag