Rosemary Bryant AO Research Centre

Evaluation of the Midwifery Caseload Model of Care Pilot in the Yorke and Northern Local Health Network

June 2021

Adelson, P.

Fleet, J.

McKellar, L.

University of South Australia

Rosemary Bryant Foundation

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Evaluation of the Midwifery Caseload Model of Care Pilot in the Yorke and Northern Local Health Network

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Report prepared by: Rosemary Bryant AO Research Centre, University South Australia Clinical & Health Sciences

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Acknowledgement of Country

We acknowledge the Traditional Custodians of the lands on which we work and live, and recognise their continuing connection to land, water and community. We pay our respects to Elders past, present and emerging.

Contributions and acknowledgments

This report on the Midwifery Caseload Model of Care (hereafter referred to as the MoC) would not have been possible without the participation of the midwives and collaborating doctors working in the York and Northern (Y&N) Region MoC, and the nurses and midwives working at the five birthing sites. In the midst of delivering a new model of care, during a pandemic, they willingly gave their time to participate in focus groups and complete surveys. The dedication of these clinicians to go above and beyond during this time, is exceptional, and we gratefully acknowledge their commitment to giving the best possible care to women, and in seeing through this evaluation.

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All acknowledged members of the advisory team provided sage advice without influencing the evaluation process.

Advisory members for the York and Northern MoC Evaluation:

- Ms Elizabeth Bennett, Maternity Unit Manager, Yorke and Northern Midwifery Group, Yorke and Northern Local Health Network (YNLHN), SA Health
- Ms Lena Boxall, UniSA research assistant
- Mr Michael Eades, Executive Director Nursing and Midwifery, YNLHN, SA Health
- Ms Rachael Yates, Advanced Midwife Manager, Maternal & Neonatal Services, Rural Support Services, SA Health
- Carly Arboit Consumer representative

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Contents

List of tables

List of figures

Abbreviations

Abbreviation	Full name
BHFLHN	Barossa Hills Fleurieu Local Health Network
CaFHS	Child & Family Health Service
CHSALHN	Country Health South Australia Local Health Network
CHL	Country Home Link
FTE	Full Time Equivalent
GP	General Practitioner
HN/M	Hospital nurses/midwives
HREC	Human Research Ethics Committee
LHN	Local Health Network
LSCS	Lower Segment Caesarean Section
MGP	Midwifery Group Practice also referred to as caseload
MoC	Model of Care (in the York and Northern Local Health Network)
MTPP	Midwifery Transition to Professional Practice Program
ORIC	Organizational Readiness for Implementing Change
QMNC	Quality Maternal and Newborn Care framework
RA	Research Assistant
RBRC	Rosemary Bryant AO Research Centre
RSS	Rural Support Services
SA	South Australia
TPPP	Transition to Professional Practice Program
UniSA	University of South Australia
Y&N	York and Northern Region
YNLHN	York and Northern Local Health Network

Executive summary

Background and Aims

The Model of Care (MoC) pilot in the Yorke and Northern Local Health Network (YNLHN) of South Australia (SA) is an all risk caseload model of care in regional SA whereby 12.9 FTE midwives are employed to work in collaboration with general practitioners (GP)/ obstetricians across five birthing sites (Port Pirie, Crystal Brook, Wallaroo, Clare and Jamestown) in the region. In the MoC all pregnant women in the YNLHN are allocated to a known midwife once pregnancy has been confirmed. Care is provided in partnership with the midwife and the woman's referring GP, obstetrician, or obstetric GP. Women may choose or need to birth outside the region due to personal choice or level of acuity required. These women can still access a MoC midwife for antenatal and postnatal care and support. Women who have not received antenatal care through the MoC and birthed in an Adelaide metropolitan public hospital may be referred to a MoC midwife for postnatal care through Country HomeLink (CHL).

The University of South Australia (UniSA), through the Rosemary Bryant AO Research Centre (RBRC) was contracted to evaluate the MoC Pilot in April 2019. The oversight committee for the regional local health networks (LHN) is the Regional SA Maternity Services Committee. This partnership provided clinical outcome data and sought consumer and provider experiences as part of the agreed 18-month evaluation. The MoC commenced on 6th July 2019 and was officially launched by the Minister of Health, Stephen Wade MLC on 27 August 2019.

The overall aim of the evaluation was to inform the Maternity Services Committee of the effectiveness of the implementation, acceptability, and sustainability of the MoC that provides evidence-based, woman-centred continuity of care to residents of the Y&N Region.

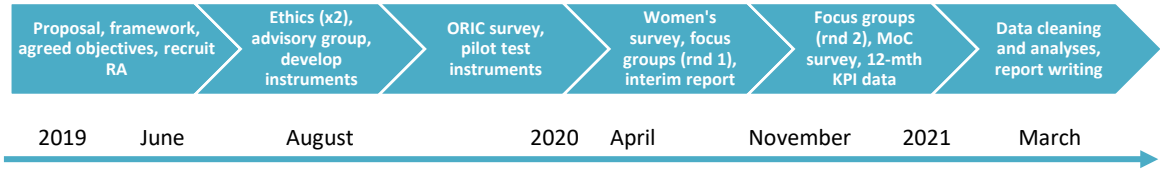
The objectives were agreed to in consultation with the evaluation advisory committee. The primary objectives of this evaluation were to:

- Report on agreed clinical outcomes that are routinely collected by the service including maternity indicators, birth outcomes and transfers.
- Report on views/satisfaction of stakeholders; service users and providers of the MoC.
- Report on the effectiveness and sustainability of the MoC.
- Describe what works well in a regional midwifery caseload MoC.
- Describe lessons learnt in a regional MoC model.

Method

A mixed methods design was undertaken using quantitative and qualitative methods following principals outlined in The UK National Institute for Health Research guide for conducting evaluations in healthcare. In assessing key aspects of provider and user care, the Quality and Maternal Newborn Care (QMNC) Framework was integrated into the evaluation. This included: analysis of routine data collected as part of the program design (maternal and neonatal indicators), validated survey instruments used in assessing care provision and workforce, and two rounds of focus groups.

The progression of the evaluation was as follows:



Results

Readiness for change

Organizational readiness for implementing change (ORIC) was assessed at the beginning of the pilot, using the ORIC instrument to examine provider's readiness to change to the new MoC. Overall, 53% (n=56) of clinicians responded to the survey.

The mean ORIC score was 41.5 (range 12–60) suggesting collectively, midwives, nurses and doctors began the new model of care with a sense of readiness for change. Participants were most likely to agree on the change efficacy statements, "People who work here feel confident that the organization can get people invested in implementing this change" and the change commitment statements "People who work here are determined to implement this change", "People who work here want to implement this change", and "People who work here are committed to implementing this change". The three statements that had the highest level of disagreement or where clinicians somewhat disagreed included those that related to support to adjust to the MOC, confidence to handle the change and manage the politics of implementing the change.

Women's survey

Women birthing in the MoC from December 2019 to December 2020 were approached to participate in an anonymous online questionnaire sent to them 6-8 weeks after birth. A response rate of 52.6% (n=205) was achieved. For forty percent of respondents, this was their first baby.

Before birth. MoC midwives were a main source of pregnancy information for most women (87.8%, n=180). Just under half of all respondents (45.9%) listed their main antenatal care provider as MoC midwives. A similar proportion (45.4%) reported MoC midwives and GP/obstetrician (shared care) as their main antenatal care providers.

Respondents who reported their main care provider was a MoC midwife were overwhelmingly positive (95%) about the care they received from their MoC midwife during their pregnancy. In general, most women agreed or strongly agreed with positive statements; e.g. treated with respect, felt listened to, could ask questions, felt confident in the skills and knowledge of their midwife and disagreed or strongly disagreed with negatively worded statements; e.g. treated like just another case, had too little say in what was decided. For the approximately 5% of respondents who gave unfavorable responses, these tended to be across all statements, suggesting this may have been related to individual experiences. Results for MoC midwives working in a shared care arrangement with GP/obstetricians largely mirrored those for main care provider MoC midwife.

Labour and birth: Women reported MoC midwives provided the vast majority (87.8%) of labour and birth care either as the main care provider (60.3%) or working in shared care with GP/obstetricians (27.5%). Those who did not have MoC midwives or shared care, birthed outside of the region or the baby was born before arrival. Most respondents reported having one or more doctors attending to their care during labour and birth with only 13.2% reporting having no doctor attending to them during labour and birth.

The main care provider who assisted in the *actual birth* was reported by women as: MoC midwife, 58.5%, shared care 21%, hospital-based midwives 10.7% and other arrangements or unsure 9.8%.

Most respondents (70.6%, n=144) reported knowing their midwife well during labour and birth. For all care arrangements, 83.6% of women reported that their birth was a positive experience and 97.3% felt supported by the midwife who provided most of their care.

Postnatal Care: MoC midwives were the main care provider after the birth for most respondents (84.1%), with shared care accounting for 8.9% of post-partum care. Ninety-seven percent of women reported received MoC midwife visits, mostly as home visits (77%). Approximately a third (32.5%) received 6 or more visits. Women reported the support they received from their MoC midwives the first week at home as very good to excellent in 94% of cases, with a further 4% reporting this as good. Most women (88.1%) agreed they were given the advice they needed about their own health and recovery and felt supported (89%) in their feeding choice.

Clinicians working together: For women who received the majority of their care in the MoC, most agreed or strongly agreed that the clinicians worked well together (92%), and the care was well connected (89%).

Future Pregnancy: Women overwhelmingly reported (94.3%) if they had another pregnancy, they would again seek the midwifery MoC and 96.5% reported they would recommend the model to a friend. Open ended questions sought feedback from the women about their experience. Throughout the responses the word excellent was used the most and repeatedly, to describe the service. Other descriptors included 'wonderful', 'happy', 'best', 'grateful', 'very lucky', 'amazing', 'fantastic', 'exceptional', 'outstanding'.

Care provider focus groups

Round one. To gain insight into the early transition to the MoC, focus groups with the three groups of care providers who were directly impacted by the MoC, were held at approximately nine months (April-May 2020) into the new service. The three service provider groups were: hospital nurses and midwives (HN/M) across the five sites, GPs/obstetricians working in the region and midwives from the MoC. Those who had not been able to attend the focus group completed a survey based on the focus group questions.

Analysis of round one focus groups indicated that the MoC was generally working well, with many positive outcomes identified. Six broad themes identified challenges and areas for improvement in the areas of: collaboration; communication; scope of practice; regional distance; workload and awareness of the MoC.

Round two. A second round of focus groups were held in November/December 2020 and followed the same procedure as round one. Key aims of round two included, how the program impacted their role, whether early concerns have been addressed and what was working well and/or may need further attention.

Analysis from round two focus groups concluded that there was an overwhelming commitment to the MoC and a general belief that there is no other option –'*it has to work*'. The MoC was seen to benefit the community and care providers, with an understanding that it was best for women to keep services local and accessible. Midwives in the model valued working with women and each other, and it was acknowledged that there was an overall improvement in service provision. All care providers reported a strong commitment to navigate the changes required, noting the impact on relationships and responsibilities. Collaboration and information sharing/communication was

expressed as key elements for success. Participants recognised while challenges were ongoing, strategies were being implemented and improvements made. Specific challenges and complexities to be prioritised included: a need to clarify expectations and assumptions of non-midwifery staff working within the MoC and their scope of practice, and workload for MoC midwives.

MoC midwives survey

A survey sent to MoC midwives at the end of the pilot period assessed regional/rural workforce issues and used validated tools to assess midwife-doctor relations and empowerment in midwifery.

Fourteen of the eighteen (77.8%) MoC midwives completed all questions. The majority (80%) reported previously working in a rural setting; three midwives had not. Half had not previously worked in a midwifery group practice setting. When MoC midwives were asked if they were prepared to work in a regional/rural caseload model of care, the majority (75%) indicated they were; two less experienced midwives were unsure and one felt she was not prepared to work in this type of model. All respondents thought the role of the midwife in the MoC Y&N Region was sustainable and would be attractive to other midwives.

Practice Environment Scale (midwife-doctor relations). The mean score of 3.94 (scale range of 1-5) for the 3-item subscale of midwife-doctor relations suggests that on average midwives generally agreed that there was good overall collaborative alliances with the doctors.

Perceptions of Empowerment in Midwifery Scale (PEMS). All midwives felt the MoC covered all of the necessary care for women, e.g. health promotion, screening, care planning and managing complications. This included promoting normality and strengthening women's capabilities. The majority of midwives (85.7%) responded that they felt the organisation of care in the MoC was accessible, of good quality and adequately resourced, with one being unsure and another replying "no".

Work life balance and intention to leave. When asked to rate satisfaction with time off work, 86% of midwives rated this as "moderate" satisfaction, with the remaining 14% rating high satisfaction. There were no responses of low satisfaction.

Two midwives intended to leave their position within the next 12 months, and a further four intended to leave within the next 1-5 years. Three responded "other" and gave the reasons: end of contract, maternity leave and possibly changing region/undecided on future plans.

Woman-centred care. All midwives felt the MoC covered all of the necessary care for women, e.g. health promotion, screening, care planning and managing complications. This included the care provided by all MoC midwives promoted normality and strengthening women's capabilities.

Maternity Indicators

- There were 499 women cared for in the MoC during the calendar year 2020, with 375 (75.2%) of women birthing in the Y&N region.
- The 25% of women (n=124) who did not birth in the region did so due to reasons such as a BMI of $\geq$ 40, personal reasons or obstetrical/medical conditions.
- The total proportion of women who birthed vaginally was 72% (n=270) and 71.6% (n=63) for selected primiparous women. '*Selected primiparous woman' defined nationally as: women age 20-34 years old, giving birth for the first time at $\geq$ 20 weeks gestation, cephalic presentation, 37-41 weeks gestation.*
- Birth by caesarean section, all women 28% (n=105), and for selected primiparous women 25% (n=22).

- Induction of labour, all women 26.1% (n=98) and for selected primiparous women 30.7% (n=27).
- Epidural use, all women who birthed vaginally 19.3% (n=52) and for selected primiparous women who birthed vaginally, 30.2% (n=19).
- Stillbirths or neonatal deaths; none
- Third or 4th degree tear, selected primiparous women who gave birth vaginally 4.8% (n= <5). (most recent national 2018 indicator 5.0%)
- APGAR score of 6 or less at 5 minutes post birth 1.1% (<5). (most recent national 2018 indicator 1.3%)

Conclusion for effectiveness, acceptability, and sustainability

Effectiveness: This unique workforce brought together five birthing sites with one governance structure; what went well, experiences, and lessons learned.

- Extensive engagement with stakeholders; clinicians, women, and the community occurred prior to commencing the MoC, ensuring an overall preparedness for implementation.
- The majority of women birthing in the Y&N regions engaged in the new MoC. Close to half of women reported their main care provider as MoC midwives (45.9%), with a further 45.4% reporting a shared care arrangement with their GP/GP obstetrician who partnered with MoC midwives.
- Of respondents whose main care provider was a MoC midwife, the vast majority had most of their pregnancy care with their primary midwife. The main care provider for most respondents during labour and birth were midwives working in the MoC.
- Intervention rates were low; Induction of Labour 26%, epidural use 19%, vaginal birth 72%, caesarean birth 28% and birth outcomes comparable with national indicators.
- All MoC midwives responded that they felt the MoC covered all necessary care for women, e.g. health promotion, screening, care planning and managing complications. Care provided promoted normality and strengthening women's capabilities.
- The majority of midwives responded that they feel the organisation of care in the MoC was accessible, of good quality and adequately resourced.
- Midwives in the model were seen to be working with women and each other, and it was acknowledged that there was a general improvement in service provision.
- Focus group feedback from all care providers who have provided care to women agreed that the MoC was an effective model to provide maternity services in the region and that it was imperative that the MoC continued.

Acceptability: Stakeholder satisfaction with various aspects of the new system and the implementation process.

- The ORIC data demonstrated collectively, midwives, nurses and doctors began the new model of care with a sense of readiness for change.
- On average the MoC midwives generally agreed that there were good overall collaborative alliances with the doctors.
- Women respondents were overwhelmingly positive (approx. 95%) about the care they received from their MoC midwife during their pregnancy, birth and postnatal follow up.
- In the open-ended responses provided by the women the word 'excellent' was used repeatedly to describe the service. Women felt very supported and highly valued having a known midwife.

- MoC midwives identified the top two positive aspects of working in the model being able to provide continuity of care for the women and working within the group of midwives.
- All service providers reported a strong commitment to navigate the change and challenges that had arisen, noting the impact on relationships and responsibilities.

Sustainability: The new system was viewed as sustainable and future proof

- Women overwhelmingly reported if they had another pregnancy, they would seek the midwifery MoC.
- All MoC midwives who responded to the MoC survey (approximately 80%) thought the role of the regional MGP in the York and Northern Region MoC was sustainable and would be attractive to other midwives.
- The majority of MoC midwives indicated when first recruited they were prepared to work in a regional/rural caseload model of care and were moderately satisfied with their work-life balance.
- Specific challenges and complexities were identified including workload and scope of practice for some care providers.
- Graduate and Transition to Profession Practice Program (TPPP) midwives felt well supported in the model and were now more confident in their midwifery skills and practice. The ongoing recruitment strategy includes TPPP and mentoring arrangements are factored into the MoC.
- A significant key to the success of the model of care in the Y&N was strong visionary leadership and well-developed overarching management and stakeholder engagement.

Considerations for policy, practice and research

The following suggestions are made to advance the implementation, acceptability and sustainability of the Y&N MoC beyond a pilot phase. These findings add further evidence to strengthen the MoC and to influence policy, practice and future research where appropriate.

- Ensure the MOC remains a shared vision for the Y&N region, multi professional commitment is imperative for sustainability. A review of the current referral process to engage all stakeholders in ongoing strategies will enhance success as well as continuing strong visionary relationship-based leadership.
- Reviewing targets for the proportion of women accessing MoC midwives as primary care providers. This may include a review of referral pathways and further role clarification.
- Consolidate the varied communication strategies so that an effective way of sharing knowledge and maintaining relationships can be embedded and strengthened.
- Review the current caseload with all stakeholders involved, this would include exploring the workload that appears to be generated from Country Home Link.
- Review the current TPPP pathway for midwifery graduates to work in the model drawing on emerging research to support new graduates in transition to continuity of care models.

Background and Aims

Regional and rural services for maternity care in Australia

Current workforce shortages in rural maternity services threaten the sustainability of birthing in rural hospitals. More than half of Australia's rural maternity units have closed since 1992.[1] In South Australia (SA) this proportion is 60% with about a quarter of all women having to birth away from their usual region of residence.[2]

Closing maternity services has had significant consequences for women and communities, with resulting poorer health outcomes and financial and social hardships.[1] With about 30% of Australian birthing women living in rural and remote areas, there is an outstanding demand for pregnancy, birth and postnatal health services in these areas.[3] Challenges to providing these services include the geographic spread, low population density, recruitment and retention difficulties for midwifery and medical staff and high costs of service delivery.[4]

An option for increasing the sustainability of birthing services in regional and rural Australia is implementing midwifery services models such as a midwifery caseload. [4] In most Australian rural and regional settings midwifery care is mostly provided in a traditionally rostered hospital arrangement, whereby midwives are required to work across the role of nurse and midwife.[5] Midwifery caseload, also known as midwifery group practice (MGP), is a maternity continuity of care model whereby care is provided by a known midwife or a secondary backup through pregnancy, birth and the postnatal period, and with assistance from doctors where needed in the event of identified risk factors.[6] Each midwife has an agreed number (caseload) of women per year and acts as a second or "back-up" midwife for women who have another midwife as their primary carer. High level evidence from trials and multiple studies have demonstrated the benefits and significance of midwifery-led continuity of care in terms of maternal satisfaction, efficacy and decreased cost to health services.[7-10]

Over the past two years national and state health departments have recognised and have proposed strategic directions and plans to address some of the critical health workforce shortages affecting regional and rural Australia. The 2019 Australian Government's Strategic Directions for Australian Maternity Services[11] highlights the need for improved access to woman-centred care as one of four key values and principles. Service adaption and innovation is a core strategy of the Australian Government's Stronger Rural Health Strategy and South Australia's Rural Health Workforce Plan to promote rural health service sustainability[12] One of the key implementation strategies in the 2021-26 SA Rural Health Workforce Plan is the development of new and sustainable workforce models for rural health care. Objective 2.1; *develop and implement nursing and midwifery models of care that are evidence-based, innovative, effective and responsive to the health needs of rural people*[12], is within the brief of the current evaluation for the MoC Pilot in the Y&N Region.

The Midwifery Caseload Model of Care Pilot in the Yorke and Northern Region

Against this background, a new midwifery continuity of care service model in the Y&N Region of South Australia was designed in collaboration with midwives, nurses, and doctors, including general practitioners (GP) and obstetricians with the aim to ensure a sustainable midwifery workforce in one region of rural South Australia (SA). In 2017, a small project team of the Country Health South Australia Local Health Network (CHSALHN) Maternity Services Committee were tasked to develop a sustainable midwifery workforce model in country SA with the aim of keeping birthing as close to home where safely possible. The YNLHN (Appendix 1) was chosen as the area to develop the model as there were critical midwifery workforce shortages in some locations along with areas of successful

midwifery group practice and team midwifery. Over the ensuing year the Project Executive Lead, Project Manager, Project Team, and Project Expert Working Group of the (then) Country Health SA Local Health Network (CHSALHN) developed the framework and working plan for a pilot study. This was first published in September 2018; the *Midwifery Caseload Model of Care Pilot in Yorke and Northern Region*.[13]

In July 2019, the 2-year funded MoC pilot program was operationalised by implementation lead Elizabeth Bennett and executive lead Michael Eades with the aim to provide continuity of care and promote a sustainable midwifery workforce in the region.[13] The Yorke and Northern Local Health Network consists of five birthing sites: Clare, Jamestown, Crystal Brook, Wallaroo and Port Pirie with an average of n=420 births per year over the past 5 years. The YNLHN provided health care access to approximately 77,000 people within the Yorke Peninsula, Southern Flinders and the Lower and Mid North areas of South Australia.[14]

The MoC is an all risk caseload midwifery model whereby midwives work in collaboration with general practitioners (GPs)/obstetricians. All pregnant women in the region are allocated to a known midwife once pregnancy has been confirmed (Figure 1).

Care is in partnership with the midwife and the woman's chosen obstetric doctor plus or minus shared care with a GP. Women may choose or need to birth outside their local region due to personal choice or due to a higher level of acuity required. These women can still access a midwife in this MoC for antenatal and postnatal care and support. Women who have not received antenatal care through the MoC and have birthed in an Adelaide metropolitan public hospital may be referred through Country Home Link (CHL) to a MoC midwife post birth for postnatal care. The model is unique as it brings together five birthing sites connecting midwives, GP/obstetricians doctors, and community teams. This enables clinicians to share resources and provide professional support to one another to deliver safe and effective care to women and their families.[13]

The pilot program serves the needs of women in the region though a midwifery continuity of care model which places a woman and her family at the centre of decision making; from the beginning of pregnancy through to the birth and postnatal period. Women and families are supported through best evidence-based care and ongoing professional development. It has been observed that systems for designing rural services in Australia do not often use a caseload model to manage the lower numbers that exist in dispersed populations.[15] In the pilot, workforce collaborations were given careful consideration on the way midwives would support birthing in regional SA.[13]

The service delivery model prioritises choice and interdisciplinary care working collaboratively with GPs/ obstetricians. Graduate midwives are also included in the model and supported through the SA Health transition to professional practice program (TPPP) for midwives. The collaborative approach embraced a key priority of area of the Country Health Strategy; helping clinicians to work together and support the attraction and retention of staff.

The Y&N MoC aims to provide a sustainable midwifery model, that works collaboratively with a well-integrated network of maternal and neonatal care providers that will: improve the long-term sustainability of birthing services, offer best practice, and improve the capability of the rural midwifery workforce.

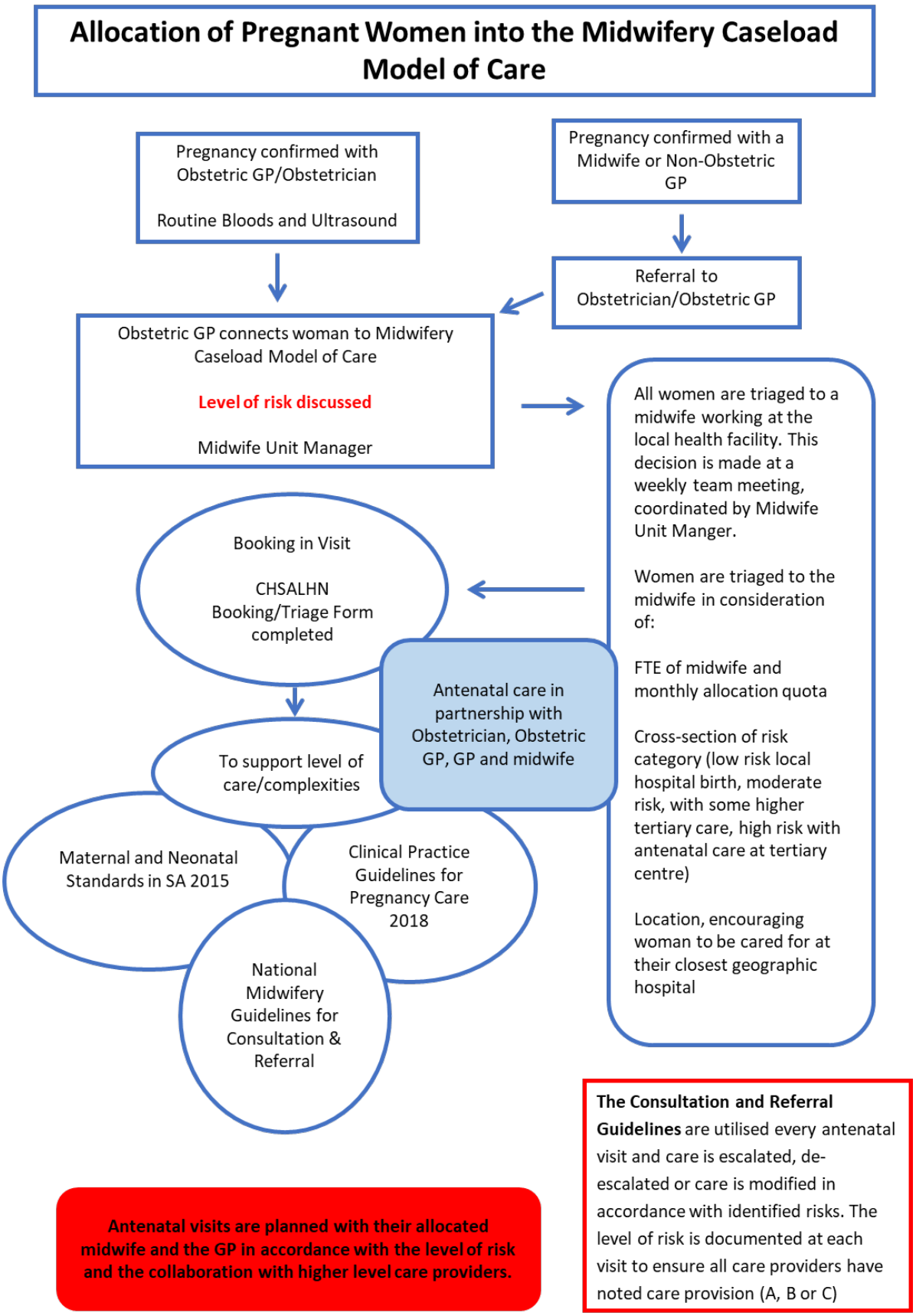


Figure 1. Allocation of women into the MoC.
Source: *CHSALHN Midwifery Caseload Model of Care, Sept 2018*

Aim and Objectives of the Evaluation

An evaluation plan was embedded early in the MoC conceptual framework. Prior to launching the MoC in July 2019, The Rosemary Bryant AO Research Centre (RBRC) and members of the University of South Australia (UniSA), Mothers, Babies and Families (MBF) Group were approached to conduct an evaluation of the pilot program.

The overall aim of the evaluation was to inform the CHSALHN Maternity Services Committee of the effectiveness of the implementation, acceptability, and sustainability of the MoC in a rural/regional context, which provides evidence-based, woman-centred continuity of care to residents of the YNLHN.

SMART (*specific, measurable, achievable, realistic, and time-based*) objectives were developed to achieve the overall aim of the evaluation. The objectives were agreed to in consultation with the evaluation advisory team.

In total, seven SMART objectives were defined and are detailed in Appendix 2. In brief these are:

1. Report on state and national clinical outcomes that are routinely collected by the services; maternity & neonatal indicators.
2. Report on state and national clinical outcomes that are routinely collected by the services; hospital activity and demographic data.
3. Report on the women's experience with the new MoC.
4. Report on the experiences and elements of clinicians at the 5 sites transitioning to the new MoC.
5. Report on the experiences and elements of the midwifery transition to professional practice within the MoC.
6. Report on the overall effectiveness and sustainability of the model of care and what works well, and lessons learnt in a regional model of care.
7. Report on the key workforce benefits of the new MoC with regard to; workforce administrative and clinical systems, cultural change and workforce attraction and retention.

Midwifery specific learnings and professional development were not included as part of the evaluation, but are detailed in the program document *Midwifery Caseload Model of Care Pilot in Yorke and Northern Region*.[13] It was not within the scope of this evaluation to assess total workforce costings. This is being done independently by a SA Health economist and will be reported separately. An interim report was provided to the advisory committee in July 2020 (the first seven months) to gauge initial implementation and how the program was tracking.

A word about COVID-19. COVID-19 has resulted in wide-sweeping changes across all sectors of health care delivery and this has been especially true for maternity services. Pregnancy, childbirth, and the post-partum are vulnerable times for women and the unexpected cancellation of antenatal classes, limited face to face interactions with clinicians, and restrictions on family and partner support only increased anxiety for many women. The first cases of COVID-19 in Australia were announced on 25 January 2020, and the Australian Health Sector Emergency Response Plan activated on 27 Feb 2020. The first Australian COVID-19 case was confirmed on 25 January 2020 and on 2 March 2020 the first two cases of community transmission in Australia were recorded, including one healthcare worker and one close contact of a recent traveller.[16] This timing coincided with the implementation and evaluation of the MoC.

Methodology

Procedure

To ensure contextual relevance and evaluation of all key elements of the pilot program, an advisory committee was formed and met approximately every 4- 6 weeks over the course of the evaluation. Membership was appropriate for their expertise and included: The Executive Officer, Maternity Services Committee/Maternity Lead, Rural Support Service (RSS), the Executive Director, Nursing and Midwifery, YNLHN Maternity Unit Manager, a consumer representative, the UniSA evaluation team and a part-time research assistant (RA) contracted for the project. The RA was a midwife who had worked in midwifery caseload in the YNLHN but was currently on maternity leave. Her responsibilities were largely administrative; she did not provide direct care for women or participate in the provider focus groups.

All participants in the evaluation (women and clinicians) were provided with ethically approved written participant information and consent obtained before participation. Access to all survey and focus group data were limited to the UniSA evaluation team. Provider and participant data collection occurred over 18 months allowing for sufficient time to collect data from clinical providers (midwives, doctors and hospital nurses/ midwives) from the launch of the MoC through to 16 months post-implementation.

Ethical approval for the study, *Evaluation of the Midwifery Caseload Model of Care Pilot in Yorke and Northern Country Health Region,* was approved by the Women's and Children's Human Research Ethics Committee, HREC/19/WCHN/68 on 6 June 2019 and by the University of South Australia (UniSA) Human Research Ethics Committee (HREC) Application ID: 202393 on 14 August 2019.

Progression of the evaluation was along the following path:

Participants

All Y&N women who received total or in part MoC care for; antenatal, intrapartum or postpartum care were given the option of participating in the voluntary and anonymous women's survey. They were informed that their decision to participate would not affect their relationship with MoC midwives, GPs or other care providers in any way. No personally identifying information was collected on the women's questionnaires. Data collection from Y&N women participating in the MoC occurred over the period (Dec 2019-1st March 2021). This was to gain participation from women birthing in the MoC over a 12-month period. Women who entered the program from early pregnancy in July 2019 but did not birth until Dec 2019 were included through to women who birthed to the 31 Dec 2020 (allowing 6-8 weeks postpartum to complete the survey). Although planned for 12 months of birthing data, there were initial delays in the field with recruitment and distribution of the survey during the first month, so a decision was made to extend questionnaire collection through 31 Dec 2020.

Care providers who participated in the evaluation were: MoC midwives, collaborating MoC GPs/obstetricians, and nurses/midwives from the five birth sites. Participation was voluntary and anonymous. Written information and consent were obtained before participation. We acknowledge

that amongst a relatively small group of clinicians, there was the potential likelihood of identification in focus groups. However, focus groups were restricted to only participants and the three UniSA evaluation team members. Individuals were anonymised in all data collection (no names collected, or potential identifying information associated with the individual) and reporting was at the aggregate level, except for where illustrative, anonymous quotes are used in the report.

Theoretical Framework

The evaluation plan follows principals outlined in the UK National Institute for Health Research guide to conducting evaluations in healthcare. A mixed methods design using qualitative and quantitative methodologies was employed. As the aim of the evaluation was to assess the implementation of a new service, the evaluation framework for implementation outcomes developed by Proctor[17] was identified as the most suitable conceptual framework to guide the overall evaluation design. The framework was specifically developed for evaluation of implementation activities within the context of health service evaluation. The framework distinguishes between three distinct but interrelated outcome types: implementation, service and client outcomes (Figure 2).[17]

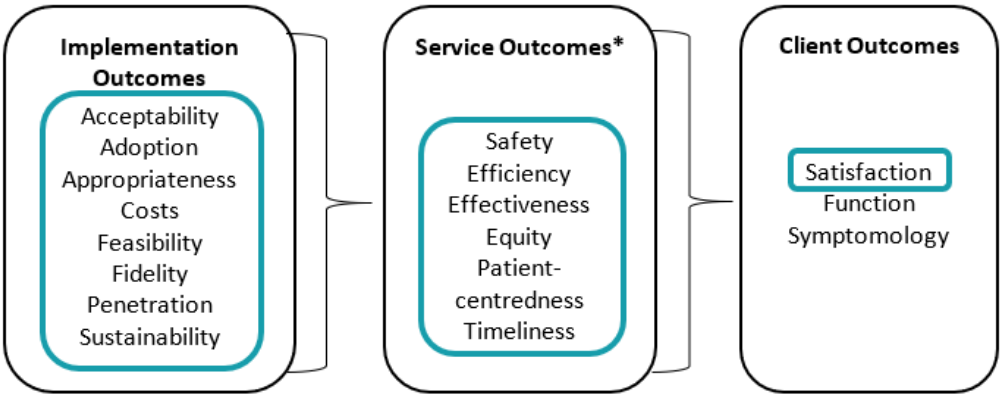


Figure 2. Conceptual framework for understanding implementation outcomes (Proctor, 2011).
Notes. Outcomes highlighted in green are relevant to the current evaluation. Staff and client satisfaction will be assessed against the QMNC framework. *Institute of Medicine Standards of Care.

Elements of the framework being incorporated into the evaluation include:

- Acceptabilit**y** – Stakeholder satisfaction with various aspects of the new system and the implementation process.
- Adoption – Have all aspects of the new MoC been adopted? Which aspects have been most challenging to implement and why?
- Appropriateness – To what extent are changes to the MoC considered useful and important? For example, is the new referral system working appropriately? Are the roles and responsibilities of the various functions clearly delineated?
- Feasibility (practical aspects) – What have been the improvements to and challenges associated with everyday processes? For example, what are the efficiencies and challenges with the shared care arrangement, transfer processes, nursing roles in the hospital? How streamlined and efficient are the data flows and communication in the new system?
- Fidelity (integrity and quality) – Is the new MoC operating as intended? For example, is there consistency of data entry and interpretation?

- Penetration – To what extent are practices integrated within structures and services? For example, are nursing/midwifery roles within the hospital clearly defined?
- Sustainability – To what extent is the new system viewed as sustainable and future proof?
- Efficiency and Effectiveness – How have processes and practices changed because of the new MoC?
- Timeliness – How has the implementation progressed against initial milestones?
- Cost (and resources) - How sufficient is the resourcing for the new MoC? Is the MoC considered cost neutral or cost saving for the region? *(Note- a separate economic analysis by SA Health is being conducted).*

Quality and Maternal Newborn Care Framework

In assessing key aspects of user and provider care, the evidence-based QMNC Framework, reported in the Lancet Series on Midwifery[18] was integrated into the evaluation. The framework has been used to assess the quality of care provided through the MoC during the antenatal, intrapartum and postpartum care period and across the five components of the QMNC framework: practice categories, organisation of care, values, philosophy and care providers (Figure 3).[18] Evidence for the framework has shown that care led by midwives, integrated into the health system and working in interdisciplinary teams, had a positive effect on maternal and perinatal health across the many stages of the framework, even when compared with care led by other health professionals in combination with midwives.[18] In Australia, the framework has been used to explore the key qualities of midwifery-led continuity of care in both a rural and metropolitan setting.[19]

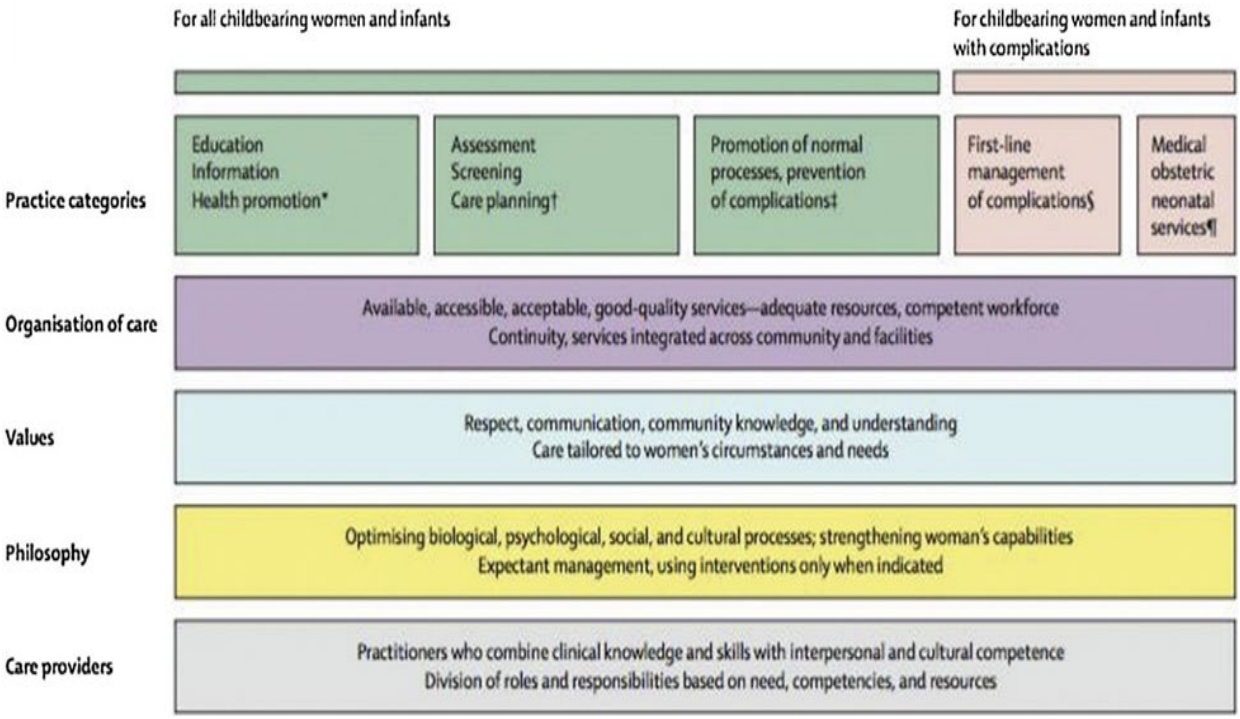


Figure 3. Five components of the QMNC Framework (from Cummins et al, 2019[19])

Measures

Organizational Readiness for Implementing Change

At the beginning of the pilot, it was agreed that the provider's readiness to change to the new MoC would first be objectively assessed. This was measured by the Organizational Readiness for Implementing Change scale (ORIC).[20] The instrument was chosen due to multiple strengths, including; its theory based psychometrically validated measures, measuring readiness for change at the collective level (rather than the individual level) and its brevity for use by busy practitioners.[21]

The 12 item Likert scale ORIC instrument is a multilevel construct with a focus on change commitment and change efficacy. Change commitment (5 statements), reflects organizational members' shared resolve to implement a change and change efficacy (7 items), reflects organizational members' shared belief in their collective capacity to implement a change.[20]

The ORIC survey was timed to coincide with the launch of the new MoC so that clinicians were knowledgeable and aware of the impending change to service delivery, but before the implementation had occurred. The survey was distributed anonymously in August 2019 to 102 clinicians working directly in the MoC or those impacted by the changes; midwives (n=12) and doctors (n=10) transitioning to the model of care, and midwives and nurses providing direct maternity care at the 5 local hospitals (n=80). Participation was encouraged, but voluntary, and surveys were distributed electronically via the survey software SurveyMonkey©. An information sheet was attached to the ORIC instrument and included a statement of implied consent for those completing the survey. A printed version of the questionnaire was also available to clinicians who were unable to access the online survey at work. Responses to the anonymous online questionnaire went directly to RBRC.

Hospital Activity and Maternity Indicators

Selected hospital activity, maternity indicators and demographic data from each of the five sites were identified by the steering group for reporting over the 12-month calendar period 1 January 2020 through 31 December 2020. These include key labour and birth data that are amalgamated by SA Health for purposes of state and national reporting. Data included the total number of women who birthed by any method, caesarean sections, and birth by primiparous women. Data from each of the five sites were provided to the evaluation team and amalgamated for reporting purposes. Indicators reported for "selected primiparae" are defined in accordance SA/national core maternity indicators:

- woman who was 20-34 years of age at the time of giving birth
- giving birth for the first time at ≥20 weeks of gestation
- singleton pregnancy
- cephalic presentation
- 37 to 41 weeks gestation.

Administrative and System Processes

New administrative and system processes were introduced into the MoC to improve communication and handover of services across the five sites. These are reported as sourced information provided to the research team.

The MoC midwives survey administered at the end of the survey period also included seven Likert-type questions specifically asking questions around administrative and system processes.

COVID-19 disruptions

Challenges and modifications to service delivery are reported as sourced information, largely from the MUM who had to manage the changes. There were no COVID-19 specific questions included in any of the instruments. However, there were opportunities to comment on these challenges in focus groups and open-ended questions on both the women's instrument and the MoC midwives' survey.

Focus Groups: Round 1

To gain insight into the early transition to the MoC, focus groups with the three groups of care providers who were directly impacted by the MoC, were held at approximately 9 months (April-May 2020) into the new service.

Different sessions were held as each group had their own unique adjustments to make to the MoC. These occurred within the same week for the groups:

I. MoC midwives.
II. Doctors who provided maternity services in the area working in the MoC.
III. Nurses and midwives working at the five birthing hospitals.

Invitation to the focus groups were by direct invitation with participate information sheets and consent forms pre-circulated. Technical support was arranged through the existing hospital network. The focus groups were led by an experienced facilitator (LM) of the evaluation team with the two other members (JF, PA) in attendance to take notes. All focus groups were recorded with permission from those in attendance. Members of the advisory team were not included in the focus groups in order to facilitate open and candid dialogue.

The focus group questions were designed to address the objectives of the study, including those focused on assessing key aspects of user and provider care as aligned to the QMNC Framework. The topic guide used by Symon et al (2018)[22] for assessing antenatal care against the QMNC Framework was adopted in part for the focus group questions. A copy of the guiding questions for round one focus groups are in Appendix 5.

Focus groups were originally planned to be on site with the UniSA evaluation team, however due to the COVID-19 pandemic these were rescheduled and held via Zoom. For those unable to attend the focus groups and/or for those who wished to add further comments in private, an anonymous online survey of the same general questions was made available for each of the three groups.

As the doctors did not have a common mode of contact, individual emailed letters of invitations were sent to them for participation.

Focus Groups: Round 2

The second round of focus groups were held in November and December 2020 with different sessions held for the same groups of care providers. In-person focus groups were once again planned, but due to a late November COVID-19 outbreak in Adelaide, a state-wide lockdown was ordered, and the focus groups had to be conducted remotely via Zoom. The format followed the same procedure as the first round of focus groups with LM as facilitator.

The aim of the second round of focus groups was to seek input from the care providers who had been closely aligned or involved with the care provided to women participating in the new MoC. In particular, how the program impacted their role, whether early concerns had been addressed and what worked well and/or may need further attention. For those who wished to elaborate further outside of the focus group, a survey link was provided asking the same questions. The prompt questions used to encourage discussion for round two focus groups are in Appendix 6.

Women's Survey

All women birthing in the MoC from December 2019 to December 2020 were approached to participate in an anonymous online questionnaire sent to them 6-8 weeks after birth. A participation information sheet was provided to women and written consent obtained. Women were assured that the survey came back directly to UniSA and was only accessed and viewed by the evaluation team; their care would in no way be affected by their responses. Women who consented to the survey were followed up by email or letter by the data manager if the survey was not returned in two weeks' time. Women who were unable to read or write in English were not sent the online survey (they were offered a paper- based survey and access to an approved interpreting service if required). Women who may have had a severe adverse outcome i.e. perinatal death or critically ill baby, were not approached to take the survey.

Survey development

The survey was developed by the research team with the advisory committee invited to comment on content to ensure contextual relevance and applicability to the local context. The women's questionnaire was based on validated instruments used in previous studies in Australia, including trials assessing women's and provider's perceptions and satisfaction of caseload midwifery care as well as clinical outcomes. [23, 24] Incorporated into the survey were questions designed to assess key elements of the QMNC Framework around organisation of care and values such as; respect, communication, knowledge and understanding.

The survey was formatted into five parts; (i) demographics (ii) before birth (iii) labour and birth (iv) at home, after the baby was born and (v) your overall experience. There were approximately 35 Likert-type of multiple-choice questions in the survey. The women's survey addressed the following domains outlined in Table 1.

Table 1. Domains assessed within the Woman's Survey

Demographics	Before the birth	Labour and birth	After the birth
• Maternal age •Place of care start • Birth hospital • Reason for birthing out of region (if applicable)	•Pregnancy information & antenatal classes •Main care provider •Agreement/ disagreement with care received statements	•Main care provider & how many during labour & birth •Familiarity with birth MW •Agreement / disagreement with care received statements	•Main care provider •MoC MW visits; how many and familiarity with MW •Breastfeeding •Other services used •Agreement/ disagreement with care received statements

The final questions of the survey were free text responses; questions asked women to comment on the best aspects of the care they received, ways in which they felt the care could have been improved, and if there was anything else they wanted to say.

The survey went through several revisions by the research team, practitioners working in the MoC and a consumer representative. The survey was formatted with logic sequences for readability and designed to be completed on either a computer or mobile devices.

The draft survey was pilot tested in August 2019 with ten women who had recently given birth in the Y&N region between Sept-Oct 2019. The women were asked if they could complete the online survey and provide feedback on any issues that were unclear to them. Women from three different sites completed the survey and completed the questionnaire on their phone without difficulties. One woman reported that it may have been easier to complete on a computer. Minor adjustments were made to the survey following the pilot testing and it was distributed by RBRC via the secure online platform REDCap (Research Electronic Data Capture) hosted at the University of South Australia.[25, 26]

Completed questionnaires were automatically received by RBRC and not shared with anyone outside the UniSA evaluation team. This was to ensure women's confidentiality and to encourage open reporting of experiences.

Model of Care Survey Midwives

Survey development

In addition to the qualitative data obtained during the two rounds of focus groups with MoC midwives, a short quantitative survey was developed and completed at the conclusion of the evaluation. The anonymous survey was electronically distributed in February 2021. The purpose was to address specific questions regarding working in the regional/rural environment and to benchmark against national and international surveys assessing midwifery rural workforce issues.

The first part of the questionnaire sought demographic information and questions about working in regional/rural midwifery adapted from a previous study.[27] Additional questions included:

- information on work-life balance as reported in a previous Australian midwifery study,[28]
- questions related to the QMNC framework,
- administrative systems and processes in the MoC
- intention to leave current position
- top two positive and negative aspects of working in the MoC
- midwife-doctor relations (Practice Environment Subscale)
- autonomous practice, effective management and woman-centred practice (PEMS scale)

Practice Environment Scale (midwife-doctor relations)

A subscale of three questions from the Practice Environment Scale (PES) was used to assess midwife-doctor relations.[29] The three items in the collegial midwife- doctor relations measured: teamwork, collaboration, and productive working relationships between doctors and midwives. Respondents are asked to indicate level of agreement with each statement on a 4-point Likert-type scale of 1 (*strongly agree*) to 4 (*strongly disagree*). Data were reverse coded before scoring so that higher scores represented greater agreement that the practice characteristic was present in their work environment. A higher subscale score (> 2.5) indicates agreement that the organisational characteristic is present in the work environment (i.e., a favourable rating of the characteristic).

Perceptions of Empowerment in Midwifery Scale (PEMS*)*

The Perceptions of Empowerment in Midwifery Scale (PEMS) developed by Matthew et al.[30] assesses midwives' perceptions and experiences in the workplace by three subscales: autonomous practice, effective management and woman-centred practice, consisting of 6 questions for each

subscale. Respondents are asked to indicate level of agreement with each statement on a 5-point Likert-type scale from (*strongly agree=5*) to (*strongly disagree=1*) and consist of a series of positively and negatively phrased statements. Negatively worded statements are re-coded prior to calculating sub-scale scores.

Permission was sought and granted from the author to use the scale. The scoring sheet was also provided by the author (Matthew).

Pilot testing and distribution

The questionnaire was electronically pilot tested with 5 midwives at UniSA and all were able to complete the questionnaire in 10 minutes or less. After minor revisions from the pilot, the final questionnaire was distributed by RBRC via the secure online platform REDCap, hosted at the University of South Australia.[25, 26]

Data Analysis

Quantitative Data

Quantitative analyses were performed using the software STATA v16.0 (StatCorp, College Station, TX). Frequency analyses were performed on a majority of the survey items, with valid percent reported. Where applicable, the mean, standard deviation, standard error, and 95% confidence intervals were calculated and reported. Cronbach's alpha was used to assess internal consistency of subscales from validated instruments.

Qualitative Data

Qualitative data from questionnaires were exported from REDCap[31]with coding and analyses done in Excel (Microsoft 365 Apps). A descriptive qualitative approach was taken for data analysis,[32] which is appropriate for mixed-method research.[33] Thematic analysis was used for both focus groups and open-ended survey questions to identify themes according to each area of interest. Data from the focus groups were transcribed collectively and thematic analysis was used to identify overarching themes regarding care provider's experience and impact of the new MoC. The phases of thematic analysis included: data familiarisation, initial coding, searching for themes, reviewing themes and coding, defining and naming themes, and summarising findings[34]. Data saturation was assessed during the coding for each area of interest and was defined as no new accounts of practice or service being identified.

Results

Qualitative and quantitative results of all measures and focus groups are presented in chronological order. The structure of reporting for the evaluation objectives incorporate methodological data triangulation from quantitative and qualitative results and are presented in the discussion section of this report.

COVID-19 effects and service adjustments

All care providers demonstrated great commitment and attentiveness to the challenges of service delivery through the pandemic. Prior to the formal announcement of pandemic status, service preparations began; procedures and protocols were updated and adopted for infection prevention and control. This involved daily contact via the Microsoft Teams platform to communicate changes to service delivery across the five sites. While not formally reported in the evaluation data, discussion with service providers identified that women appeared extremely anxious and the restrictions on health services caused initial anger and frustration that the midwives had to manage. Although the use of virtual platforms was useful, care providers reported that at times it restricted the development of therapeutic relationships and they were unable to provide care in the usual way. Additionally, women identified feeling more isolated and needed a greater level of reassurance. However, despite initial shortages of PPE, cancellation of antenatal classes, restrictions on hospital family support and limits to direct personal contact, a high quality of care was provided, but contributed to midwives feeling fatigued.

Clinicians working in the MoC adapted to meet these challenges to service delivery in a number of ways, including:

- midwives saw women in their homes, using COVID-19 precautions when they were too anxious to present to a health service or services were restricted
- social media was used to support antenatal education where virtual group classes were not available
- midwives collaborated with the doctors to update care and arrange investigations as needed
- the use of Health Direct to be able to meet with women virtually at a time that suited them
- midwives were accessible 24/7 for the women to call and to provide reassurance
- hospital restrictions of support people during birth was alleviated in part by the sound therapeutic relationship women and midwives shared
- early discharge challenged some families, though the knowledge that a known midwife was available to them at home helped with the transition
- flexibility of the midwives to travel to meet families to attend antenatal and postnatal care and to meet families where convenient (shearing sheds, roadside parks, health centres, paddocks on tractors)

Organizational Readiness for Implementing Change

The pre-implementation 12-item ORIC survey, distributed in August 2020, yielded an overall response rate of 53.3% (56/105). Responses varied by clinical role. Midwives transitioning to the MoC had the highest response rate at 80% (12/15), followed by midwives/nurses working in the hospital and community setting (n=40/80, 50%) and doctors (n=3/10, 30%). One respondent did not answer the two questions regarding location of work and clinical role. Three MoC midwives were away or not yet hired at the time of the survey. Responses were relatively proportional to the five

areas served with one location (Port Pirie) representing over a third of all responses, but also being the largest of the 5 hospitals.

Overall, participants had a mean ORIC score of 41.5 (range 12-60) which suggests collectively, midwives, nurses and doctors have begun the new model of care with a sense of readiness for change. Participants were most likely to agree (33.9%) on the change efficacy statement, "*People who work here feel confident that the organization can get people invested in implementing this change*" and most likely to disagree (14.3% for each), with the change efficacy statements "People who work here feel confident that the organization can get people invested in implementing this change" and "People who work here feel confident that they can manage the politics of implementing this change". Participant responses to the ORIC statements grouped by the two subscales, change commitment (5 statements) and change efficacy (7 statements) are shown in Figure 4. A full discussion of these findings were the basis of a paper[35] describing the instrument in the context of a midwifery continuity of care model and can be found in Appendix 7**.**

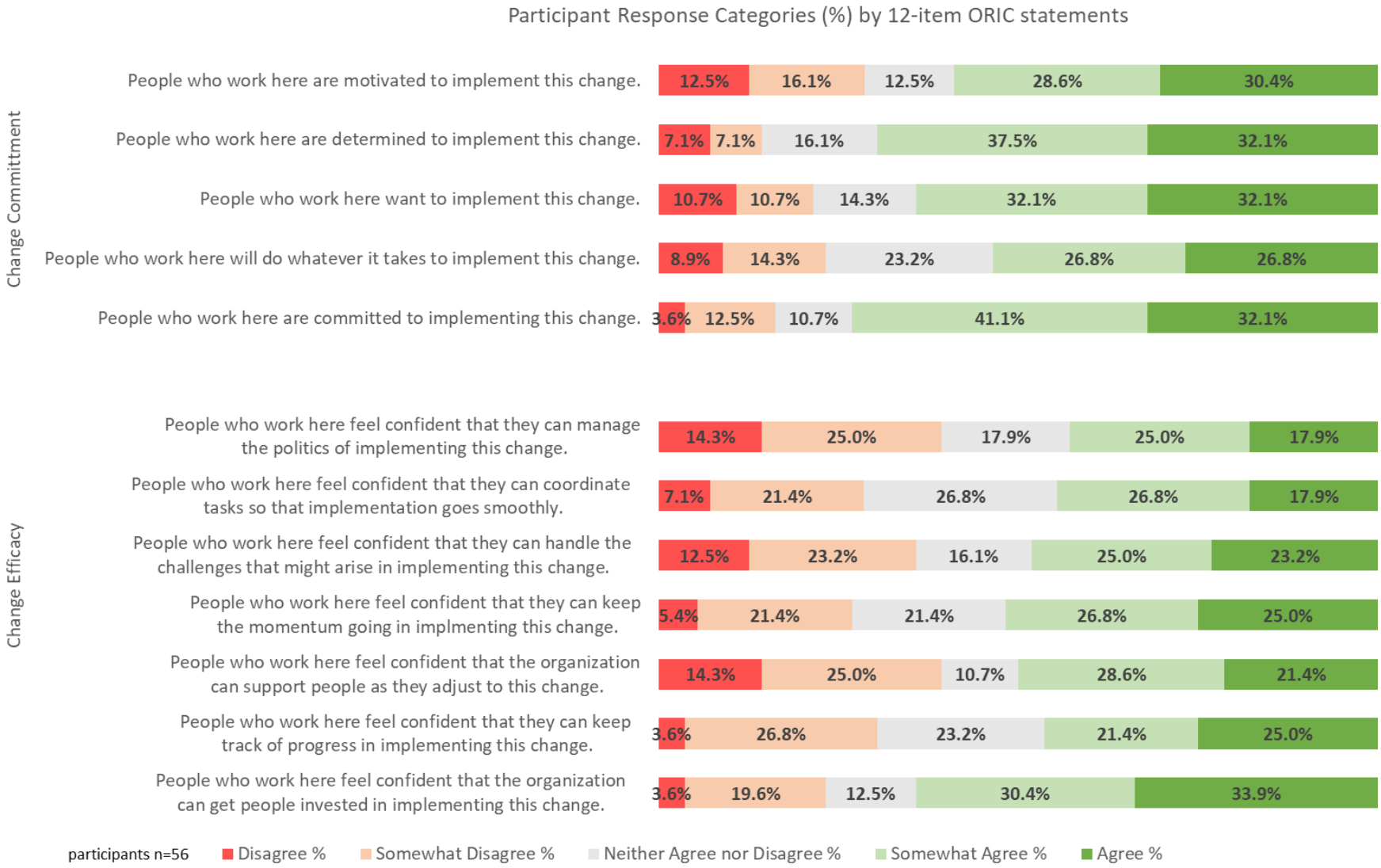


Figure 4. Participant responses to ORIC by subscales change efficacy and change commitment.

Care Provider Focus Groups: Round 1

Key findings
❖ Interdisciplinary collaboration was working moderately well
❖ Communication amongst the MoC midwives was good. Hospital handover with nursing staff was improving. Opportunities for on-site team building have been limited due to the pandemic, but are required to continue to bring the five sites together
❖ Hospital nurses felt the loss of onsite midwives and have at times struggled with caring for new mothers and babies. Hospital midwives raised concerns about maintaining their skills and at times feeling left out
❖ Resources and regional distances impact on caseload
❖ Referral processes need to be reviewed to ensure women and GPs outside the MoC are aware and can access the service

Summary

To gain an understanding of how well the model was implemented and accepted by the care providers focus groups were conducted. Three separate focus groups with MoC midwives (n=14), hospital nurses/midwives (HN/M) (n=6) and doctors (n=5) were conducted via Zoom in April and May 2020. Additionally, in response to participant request, a survey was provided for staff who were unable to attend these groups. This is a summary of initial key findings from all three groups combined. The preliminary analysis suggest that the MoC is working well, with many positive outcomes identified. Alongside this there were six broad themes identifying challenges or areas for improvement that relate to; collaboration; communication; scope of practice; regional distance; workload; awareness and access.

The MoC is working

Feedback focused on both positive aspects of the MoC as well as challenges faced by the clinicians. However, overall, there was agreement from respondents that 'it was working', with overwhelming agreement that the women loved the model and that it was best for them.

Other positives described through the focus groups included:

- Midwives being able to work to full scope of practice
- Professional development opportunity
- Women have a team, stronger rapport with midwives
- Less disruption on the ward
- Good environment for students
- Early discharge and good postnatal follow up
- Women returning from Adelaide can be offered support when they return
- Increase flexibility
- Collaboration

Some respondents reported there were teething problems with implementation and transition to the MoC, for some places this appeared more evident than others; factors related to the need for change. This included changes to teams, new team members, positions not filled immediately, change in role for some midwives not engaging in the MoC, and the potential for the midwives in the hospital to work to maintain hours of practice, changes for doctors, some were not present when the MoC introduced. Nursing staff at the hospital found the change quite challenging at first, but this was reported to have resolved to some degree. Feedback included the recommendation that if this model was implemented elsewhere, that a longer lead in time and more preparation would be helpful.

Key themes raised

Collaboration

Overall interdisciplinary collaboration was reported to be working fairly well. There was some concern expressed that initially the new model was not as well accepted by GPs and that there may have been a lack of confidence in the MoC and the midwife's practice. It is important to continue fostering positive relationships and acceptance of the MoC as an option for women.

Communication

In general communication amongst midwives working in the MoC was reported well, but there appeared to be an ongoing need to ensure regular communication and keeping updated with each other during the day as needed. Communication with the doctors was also reported as good, with the doctor's noting that they enjoyed the few occasions (before the pandemic) when they were able to get together with the midwives as a group, however some felt that this could be strengthened. There was a reported need to ensure MoC handover to hospital staff is clear and adequate and that the midwife is contactable. Feedback suggested nurses were not always aware of what the care plan was for the woman. It was noted that this is improving. Fostering strong teams and collegial support is very important. There appears to be a need to share strategies that work to build strong teams and collaboration as some locations reported they were doing this more effectively than others.

Scope of practice

Some concerns were voiced by the nurses about their scope of practice when providing care for women and babies at hospital. At times they felt that they could not answer the woman's questions if the midwife was not available. They recognised they needed specific professional development, some felt that the education promised has not all been provided. The maternity "golden doors" were mentioned and that sometimes this seems like this area is off limits to other staff. Some nursing staff felt it would be good to be aware of what is happening in labour ward just in case staff are called for an emergency. Hospital staff sometimes felt they were left with the clean-up and this shouldn't be entirely their responsibility. Hospital-based midwives raised concern about maintaining skills, particularly in labour ward and there was some evident disappointment for them in their redefined roles. There were suggestions to include hospital-based midwives in MoC huddles. Building relationships with the hospital/ward l teams is important.

Regional distances

Distance was reported to sometimes impact on communication strategies and can result in lack of communication between sites. Back up can be difficult especially if driving in the middle of the night as there can be large distances to cover. Additionally, hospital staff were hesitant to call the MoC

midwife or medical staff unless an emergency to avoid them coming in out of hours. Communication strategies such as video chats to address these concerns may be beneficial.

Workload

There was some discussion over the need for more FTE for smaller sites raised along with cover for leave- rostering can be a challenge for on-call. Being able to protect time off is seen as important.

Awareness and access

Some feedback identified a need to ensure women attending GP clinics are aware of the service – particularly clinics not included with the MoC service should be aware and actively promoted and offered by doctors. The issue of women attending additional appointments with both medical and midwives was raised with some concern that women do not fully understand the model and may be attending more appointments than required. There were also some concerns raised that women end up birthing in Adelaide because they are not aware of the MoC service.

COVID-19

COVID-19 disrupted some of the communication and resulted in some education being cancelled. However, COVID-19 provided an environment that enabled midwives to do more home visits, provide virtual antenatal education, virtual follow up clinics and the doctors engaged in telehealth.

Care Provider Focus Groups: Round 2

Key findings
❖ All participants agreed that the MoC "has to work" and were committed to the success of the MoC in the Y&N region
❖ The MoC was working well for the women and provided a service that supported the local community.
❖ The midwives working within the model were very satisfied with the way in which they could engage with midwifery practice
❖ There was an improvement in maternity service provision
❖ Agreed commitment to address change as required, particularly to continue improving communication and collaboration
❖ Challenges were identified; workload for MoC midwives, roles of nurses and midwives not working in the MoC and ongoing expectations

Summary

Four separate focus groups were undertaken, one each for MoC midwives (n=10), doctors (n=5) and two for HN/M from across five sites (n=9). Additionally, seven HN/M participants who had not been able to attend the focus group completed a survey based on the focus group questions. Five MoC midwives gave further feedback, two of these had not been able to attend and one doctor provided further feedback via the survey.

There was strong support for the MoC verbalised during the discussions recognising that this was a hugely beneficial and highly satisfying model for the women. There was also an evident commitment

to ensure that this model would be sustainable within these communities, with all stakeholder groups seeking to improve collaboration and communication. The MoC midwives were extremely positive about working in the model but raised concerns over workload and in particular the case load of 38 women. They felt that this was too high when the complexities of working rurally in a continuity model were considered, including the CHL service. Alongside this, there was some confusion for the nursing staff with regards to how caseload worked and how they were to manage the impact of midwives not being available while women remained in hospital. The concern over nurses working with postnatal women remained, as well as some disappointment from hospital midwives regarding their loss of practice.

Key themes raised

There is no other option-it has to work

From the focus group analysis, the overarching theme captured the absolute commitment to the MoC and general belief that 'there is no other option - 'it has to work'.

> *I think the important thing to take away from this is that it can't really go back to how it was before (HN/M)*
>
> *Absolutely this is the way ahead – it is how we are going to keep birthing units in rural areas (MoC)*

The MoC was seen to benefit the community and care providers, with an understanding that it was best for women to keep services local and accessible. Midwives in the model valued working with women and each other, and it was acknowledged that there was an overall improvement in service provision. All service providers reported a strong commitment to navigate the change, noting the impact on relationships and responsibilities. Collaboration and information sharing/communication was expressed as key elements for success. Participants recognised while challenges were ongoing strategies were being implemented and improvements made. Specific challenges and complexities to be prioritised included a need to clarify expectations and assumptions of non-midwifery staff working within the MoC and their scope of practice, and workload for MoC midwives. With this overarching understanding, the findings from the focus group clearly demonstrated the benefit of the model to 'community care and care providers.' There was a genuine 'commitment to change' evident from all stakeholders, while acknowledging the 'challenges and complexities'. Within these three key themes, a number of subthemes were evident (Figure 5).

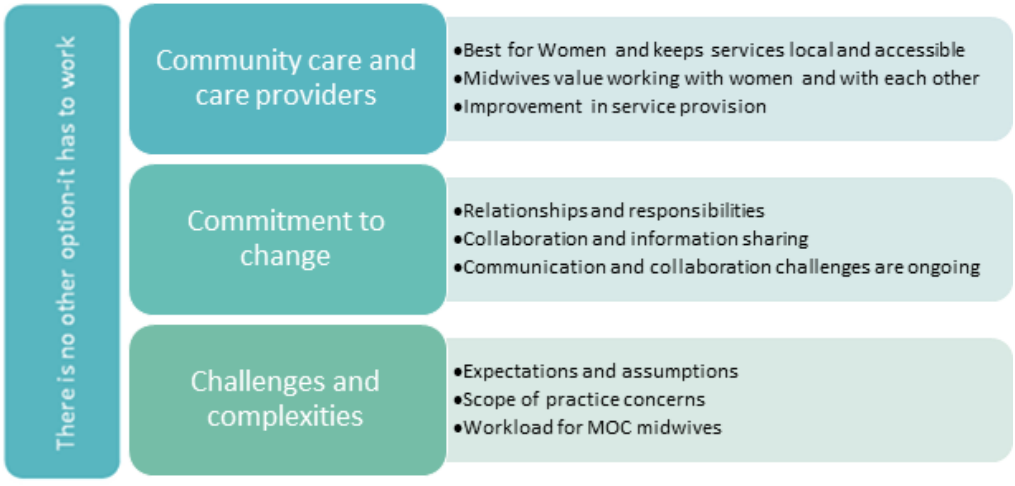


Figure 5. Themes and sub-themes from second focus group analysis

Community care and care providers

It was clear from all perspectives that the MoC was working well for the women, providing a service that supported the local community. The midwives working within the model were very satisfied with the way in which they could engage with midwifery practice and many times they expressed that they 'loved' working in the model. They asserted that it was best for the women and kept services local and accessible.

Best for women and keeps services local and accessible

Importantly, there was agreement across each stakeholder group, nurses/midwives, MoC midwives and GP's, that the model of care was beneficial to the women, acknowledging that receiving care from a known midwife was very valuable.

> *I think some women are getting better care cause its one on one, more intensive and have relationship with them prior to birth the trust is there (HN/M)*
>
> *We've been doing it here for 12 months – I think it's great it is an amazing change – it's fantastic for community and women (MoC)*
>
> *Women seem to like the model as they have their own midwife (GP)*

There was shared agreement that this was better for the community overall, addressing some of the challenges experienced for some women in rural areas. Responding to psychosocial needs, breastfeeding and providing care in home was cited.

> *We are seeing greater breastfeeding numbers and can easily attribute that to continued and better support. (MoC)*
>
> *They can also be managed at home for a lot of their time which is great (HN/M)*
>
> *Our demographic of women is diverse, including many that require extra supports … - and the MoC allows access to supports and continuity otherwise difficult to attain. (MoC)*

Midwives value working with women and with each other

The midwives spoke passionately about working in this model of care, overwhelmingly the MoC midwives described the professional fulfillment of working in a model that reflected their philosophy of practice and provided a context to engage with women in woman-centred midwifery care.

> *I absolutely love it and can't see any other way to go – its hard work when you want to birth your women and you come in on days off – but I love it (agreement from other midwives) (MoC)*
>
> *My comment is I think it is working brilliantly for the midwives (GP)*

The midwives also commented on the satisfaction of working to the full scope of practice,

> *Midwifery skills are starting to be recognised and we are beginning to see our scope utilised more. (MoC)*

Interestingly, midwives thought that this model would provide an incentive for midwives to work rurally.

> *I truly think this is the only option to sustainable midwifery care in regional sites. Midwives are generally happier to work in this model, which makes working regional more desirable (MoC)*

Certainly, the graduate midwives who had been employed within this model as part of their TPPP were very positive about the experience and the support they received. They identified that at times it had been a steep learning curve but that this has contributed to ongoing development of knowledge and clinical skills.

> *I feel so much more confident in my skills and you have to think does this need to be escalated to keep the woman safe – also in advocating – using your voice go to a senior midwife and say I'm not comfortable……I feel really well supported – they always offer to come in to give help – if they can't I have second in [X site] and I've had opportunity to go to [X site]– it's been fantastic I have a lot of good things to say about my experience (MoC Graduate 1)*

> *I've been really lucky with the team with x senior midwives who are incredibly supportive who whether on a day off or on if I need them they will answer their phone and support me – it's definitely had its challenges taking on a lot responsibility without doctors there to reassure you that you are doing the right things – a big learning curve….. the social complexities have been one of the biggest challenging…. it's hard sometimes days are long and challenging and you go home and you are exhausted (MoC Graduate 2)*

Improvement in service provision

The impact on service provision was discussed, mostly from a positive perspective recognising that without a change in the model that rural maternity services could be threatened.

> *I am aware that without the model of care, our site would have birthing closed. The women of our large service area deserve a local birthing site and this provides a continuation to the service. (MoC)*

The nursing staff identified that in general, the model contributed to better care for the women while in hospital and improved staffing. The participant nurses explained that previously, dual qualified RN/RM could be taken from the medical ward staffing allocation to attend to the labouring woman leaving them short of nursing staff.

> *[Better] that a staff member is not taken off the ward while a mid is labouring/ being induced as designated midwives are allocated (HN/M)*

> *I think the important thing to take away from this is that it can't really go back to how it was before – pre team [MoC] model it didn't work, it was very messy – very messy with staffing, we are a orthopaedic urology ward we get clients with high needs and it would be that someone would rock in labour and one of your colleagues would have to go out the back – someone would disappear so you would be on the floor with 18 patients (HN/M)*

They also reported that women had reduced stay on the postnatal floor and less outpatient presentations, and that it provided a 24-hour cover for regional hospitals with an allocated midwife. While challenges were raised throughout the focus group discussion there was strong support for the model to continue from all represented stakeholder groups.

> *I've worked in [x] ward for 15 years and how we did midwifery 10 years ago is not going to work so the mid team has to work the old system will never work again we're all supportive of the team and the role (HN/M)*

Absolutely this is the way ahead – it is how we are going to keep birthing units in rural areas instead of being localised to metro the women get the best benefit out of this model the true form of caseload is satisfying to work in absolutely the way forward (MoC)

Generally, I sleep better with this model than in the past depending which midwife was on in the old days I wouldn't sleep well - I trust the assessments that are made generally- (GP)

Commitment to change

The focus group questions asked the participants to reflect on the themes that emerged from the initial focus group, particularly to comment on the challenges with communication and collaboration that had been experienced as the new MoC was implemented. It was very evident that all stakeholders were committed to change, and many had actively contributed to strategies for better information sharing and building relationships.

Relationships and responsibilities

It was recognised that there had been a period of transition and adjustment as each group had come to understand each other and how to work together better.

At {regional site] we have GP Obs they were resistant at first –but in recent times they have realised that for birthing services to continue rurally they have had to come on boards- we are going through a transition phase to a better place and we communicate a lot better – we are getting there (MoC)

Communication has been good there is always going to be situations where there are differences of opinion where you just respect each other – we don't talk over we don't belittle we just get on with people in the practice and support each other when we need help we just come to the hospital (GP)

I think we have done a fair bit of work to improve the cohesion between the ward staff and mid team – through communication – our ward midwives have really stepped up and taking our nurses and EN staff through the birthing unit and doing adhoc opportunistic teaching about second in birth supporting them in the second in birth and getting permission from mums now its almost competitive about who is going in to be second – we have done a bit of work (HN/M)

While not unanimous, it was evident that midwives and GPs were working together more cohesively as a team and that this was important.

We have come a long way in 12 months – we have improved our relationship, more respect they understand we are learning and gained more skills (MoC)

If I didn't have the obstetrician I do we wouldn't have the model – we are fine - lucky – he is very accommodating – 100% behind the model, happy for us to see our women and supports us (MoC)

The relationship is better with a smaller number of midwives, the skill level is better the midwives have a higher level of skill than before this model was trialled – it's a team when the decisions, not a one person we do it as a team are made we respect each other's views and I think it's been really good …..so having a team that does it regularly and meets been a big bonus regularly is good (GP)

I've seen it since January stepping in from outside in – to see what the staff were voicing originally there has been growth and cohesion between teams and staff – there is work to be done but that will grow as people accept new ways of doing something – it's been a positive thing for the ward and region (HN/M)

Collaboration and information sharing/communication

Strategies to improve collaboration and communication had been proposed and tried – some with very good effect, while recognising that this would be an ongoing 'trial and error' process. Noticeably though, there was a clear solution focussed approach taken to strengthen this area.

Most definitely huge changes have occurred across the previous 12 months. Communication is excellent between some medical officers, and needs improvement with others (MoC)

we are in a good run of things – there is always room for improvement – it's about communication , getting the nurses more involve in being the second – BF – getting juniors more comfortable when to call the midwives…. In the last 6 months things have got better – doesn't need a drastic overhaul just the cherry on the cake (HN/M)

Collaboration has improved over the last 6 months since we have started regular face to face meetings for clinical discussions and CPD. Still some issues with ward midwives not being involved in the sessions and GP shared care doctors who are disenfranchised (GP)

Strategies to improve information sharing included bedside handovers, colour coded teams, documentation proformas, case conferences and ongoing education.

It's taking adjustment – initially there were issues but we have been working on improving them ie we do a bedside handover, making sure the name of the midwife is up on the boards and that women know who to call so it's getting better (MoC)

Developed a way of communicating when someone comes in for induction there is a proforma form emailed to Director of Nursing which gives us a heads up – can make sure everything is ready, can plan around this. In the past it may have just been a phone call – its more structured (HN/M)

We do a monthly case conference with them – what is nice is that the doctors take note of which midwife is allocated to which (MoC)

The implementation of a streamlined referral process to tertiary beneficial (MoC)

The mid model has two colours – green and purple and service different areas – that was brought in and has helped and made an improvement – it means we most know the local midwives (purple) team (HN/M)

I think the communication with GPs over time will improve as we get more used to each other and have more regular meetings (GP)

Communication and collaboration challenges are ongoing

While it was clear from the discussion that there had been a concerted effort to improve communication and collaboration, participants also recognised that this would remain an ongoing challenge and that it would need continuing attention and creative solutions. As one participant noted *"communication between all parties is probably the single biggest issue"* (HN/M). Other comments included:

From our point of view I guess I miss some communication from the midwives cause they used to consult down by our rooms so their used to be more corridor discussion or they would come in and have a look and see what you think but cause their up at the hospital more we don't get that same communication in a timely manner or they have forgotten to tell me something so next time I see the patient I have to read the notes or no one told me that - so a bit of a loss of communication between the midwives and the GPs on an antenatal (GP)

There is minimal communication between Midwifes and RN`s. It would be helpful for example to know how many expected births are planned for each month. (HN/M)

Individual sites communicate well within their own little hub, but the hubs don't communicate well with each other (MoC)

There is definitely room for improvement. Starting with a good handover from the midwifes and the nursing interventions they want RN`s to do. (HN/M)

Challenges and complexities to be addressed

Beyond the evident need to keep working on collaboration and communication, a number of distinct challenges and complexities were raised, and some discussed intensely. These challenges related directly to the change in model of care, alongside the difficulties of working in a rural region.

Expectations and assumptions

Through the discussion it became evident that there was still some confusion about the roles of each health professional, particularly for the nurses and midwives, with expectations and assumptions that had not been explicitly clarified between these different providers. A variety of issues were raised.

There are no clear guidelines in what the midwife does when a midwifery patient is admitted to the hospital post birth. In this I mean, who does the obs, who changes the bed linen, how long does the midwife have to stay on the ward post labour? It would really be useful to have these clear guidelines in writing so RN`s know what to expect and also what midwives are not expected to do. As it is in my opinion that the most friction between RN`S and midwife are caused by having the wrong expectations from each other (HN/M)

Sometimes in handovers the midwife makes an assumption that the nurse understands the terminology, practice – when they have no idea (HN/M)

The forms are ok – but some post-delivery forms don't get filled out as the nurse doesn't know – assume that it is midwife responsibility – they do ask and fill in obs sheet as they have learnt to do this (HN/M)

One comment the night staff said – oh that's a midwife's job – to see if the billy blanket was in the drawer – and I agree we do manage our own ward check but there was a distinct divide that this wasn't our job (MoC)

Knowing boundaries between expectations of ward midwife and when MGP MW is expecting to be called and take over care. (HN/M)

There were several comments which indicated that there was still tension for some, between the expected role of the midwife and the GP but that overall, this was improving.

After I've seen the patient you know I think there's possibly differences in how we use language, how we come to patient's decision making and that sort of things (GP)

I think the medical team understand the model more now whereas at the beginning they did not, perhaps lacking knowledge of how the program worked (MoC)

There is variability in the doctors and how they practice and in the evidence they follow – so it has been a challenge as it is hard to have an expectation on what's happening – it's been surprising how several have come on board and how they ring the midwife – some will get in touch and let the midwife know about what changes they might make – but this is not across all of them (MoC)

We witness power/control struggles a lot. The medical staff are very resistant to the model and hold ultimate power over us at times. (MoC)

[x] doctor is fabulous too but - he expects senior midwives will manage things and only call him if necessary – so sometimes you take on more responsibility that you should (MoC)

The midwives recognised the value of working well with their GP colleagues,

They (GP) are an amazing source of information and all highly skilled in their own right which shouldn't be overlooked. (MoC)

Of note however, there were a few very emotive comments about the fact that the GP's role had changed. Through the discussion it became apparent that there had been specific incidents that had possibly fuelled some conflict.

We were promised that our model of care wouldn't change and to a certain extent it has changed whether it's for the better or worse I'm not sure, for example they will write into the pregnancy record which visit will be with the doctor which will be with the midwife. I'm just not sure whose decision that is to make, whether it's their decision to make whether it's my decision to make based on the level of care that I think the patient needs or whether they should be seeing both (GP)

Also at times I have felt as though my decision making is being taken out of my hands a little bit of push back about inductions where I've had discussion with women in my rooms and their point of view where if they are a multip and they want to be induced at 39 weeks – I get pushback from the midwives on that (GP)

Scope of practice concerns

There remained discussion around the scope of practice for nursing staff working on the ward with postnatal women and neonates added to their allocation. Not having midwives available on the ward once the immediate postnatal care has been provided, meant that nurses needed to attend to the needs of the woman and baby.

Because it is new and nurses don't usually look after women and its scary and terminology is foreign – we have done work with this but still you might have no idea when you come to the paper work – those kind of things which change over time so that we become familiar (HN/M)

Some nurses refuse to look after a recently birthed a woman and baby – it is out of scope so we have had some difficult events (MoC)

About out of hours when group midwives go home – we ran for a long time with a midwife on every shift and overnight – now the midwife will do their 4 hours post-delivery if the patient stays in they get left with the ward staff and get ignored….(GP)

If I wanted to be a midwife I would have gone on – I don't want to throw myself into midwifery practice- I find there is not enough midwives with all the childbearing women – zoom is great but doesn't always work (HN/M)

Scope of practice for nurses was acknowledged by the MoC midwives as well,

Transition for hospital staff for not having midwives – they are managing well but for some they have no experience – they have done a really good job grasping that there won't be a midwife 24/7 they have taken this responsibility well (MoC)

Midwives though willing to stay longer indicated that this was challenging due to workload,

We struggle at [regional site] because they are so busy and staff cuts so we have to stay longer after delivery because we don't have support to do obs – only have limited midwives on the ward – so does add complexity to workload (MoC)

The nurses provided some suggestions including:

BFHI training session – that was really helpful in building confidence – in the care – not so frightened a lot of them go I don't know anything about babies – so having an 8 hours session was really helpful for when the midwife isn't there (HN/M)

Education by midwifes to RN`s would be greatly appreciated as well if midwife`s notice that something hasn`t been done please tell the RN to raise awareness and it won`t happen again. (HN/M)

I think it is the lack of confidence that RN`s have in their own skills that some RN`s won`t support the model. By more education regarding midwifery care and scenario`s and improved communication and clear guidelines, I think this hurdle can be overcome. (HN/M)

Concern for midwives who were not working in the MoC model was also raised again with discussion around the loss of identity and skills.

Midwives - less than 50% are working in the midwifery model – they work on the ward – they do feel somewhat isolated and excluded from currency of practice and has been hard for them to try and address so it's difficult as the birthing thing is so adhoc and they aren't involved with the women any more like they used to. (HN/M)

I sort of feel sometimes that they are excluded as they are not part of the team but they are a good resources good support to ward nurses and others and they feel excluded until they are needed – need to make them feel included (HN/M)

Interestingly the doctors were quite vocal about this change

The model is different there is some residual hurt feelings from some of the midwives who aren't part of the team they are sort of (agreement) they think that they are the poor cousins to the maternity service, they are called on when no one is available to pick up the hours that are needed when no one is available – not sure of the answer (GP)

We have been in the model for 10 years so the midwives that don't have the team mid positions have pulled back and won't give any help at all and are very reticent to even to look after postnatal for a couple of hours — its upskilled the ones in the team and deskilled the rest (GP)

Participants discussed this issue further recognising that it was important for sustainability to provide solutions for ways to be more inclusive of midwives not engaged in the MoC.

> *There have been challenges such as changes, meetings, new technologies etc but also the other challenge has been for the ward midwives – I feel for them as they have lost connection other than a little bit of postnatal care – we could do more work on how to include them but from team perspective and growth of midwifery it's been an amazing model and wonderful to work in (MoC)*

> *The ward midwives have been offered to backfill into the mid model but it has not been accepted – they have been approached when there has been shortfall but hasn't been accepted- Not a fear thing its more about this group of midwives are all over 50 years so it's more about work life balance (HN/M)*

> *I feel like if some of them can figure out where they stand – some of them want leadership roles some want ANUM role – some from midwifery perspective trying to help them find an identity and get there leadership and experience tailored to what there bread and butter is – need to have a discussion and collaboration again to work this out – maybe we need to use the pre-existing relationships that the midwives on the ward had with the team so we can bridge some of the issues together – (HN/M)*

> *Feel for some of the midwives who have lost practice and contact but that depends on the midwife- we had one come back and she's really motivated and that supports us – having a good midwife on the ward helps (MoC)*

Workload for MOC midwives

There was significant discussion about the workload of the MoC midwives from all stakeholders, perhaps because of the flow on effect.

> *We only see a small section of what they do- they have a lot of hours – home visit, birth, clinic, community – its full on (HN/M)*

> *When we go back to talking about hours we know that midwives are very very dedicated and we hear that they have been pulling 12 hours 14 hours in a day and you go over and you can see they're are knackered they've got red eyes……. they've had a hard run – checking in with the doctor – doing the well women clinic working around the clock – would be interested to hear from them about how they are coping – burnout, their health- impact on their day today- waking up at all hours –(HN/M)*

> *Care is working very well – the big problem is the midwives are getting overloaded particularly with the workload they are getting with the patients coming back from Adelaide which is over half the workload (GP)*

The MoC midwives provided rationales for why the workload appeared so huge, this included the unpredictability of the work, the on-call, administration load, distances travelled and the psychosocial aspect of their role that might otherwise be managed by a social worker or other professionals.

> *I think it is working there is just the usual hiccoughs of staffing and you can't plan the activity on a mid-model – it all happens on one day or it doesn't so it is difficult for staff when you have 3 births on one day and who knows where everyone supposed to be and because we are spread out over the region it is a bit hard to push the help where it is meant to be (MoC)*

Country MGP is a different breed to city- we get the women early we are looking after them from the moment they ring us and say they are pregnant – city MGP misses out on the first few visits – they have ward Clerks that do admin – when you look at our work load when we don't have administrative support, social workers we are doing the administrative for social work – putting in referral helping fill out paper work for women to get housing – DASA (MoC)

And the social side is huge we do the role of the social worker – is some places we have high complex social issues and we spend hours trying to help our women and go above and beyond so that they have a safe house to go to so we know this baby is safe when we are delivered (MoC)

It would be good if we had admin available to us – also like having thing supplied by the hospital like we are grasping at any opportunity to have a vehicle to drive to appointments- I go to book a car and its booked (MoC)

One aspect that was discussed at length was CHL,

Previously they had more care in Adelaide they would stay 2 or 3 days to get things established now they go home straight away and midwives here are expected to give all their postnatal care (GP)

As this model got part way through – Southern Yorke Peninsula Country HomeLink were added and we couldn't cope and we were told we could go to Yorketown – that is a 5 hour turn around – mostly we go to X or X – 45 minutes that's expected but we normally get the women to come to us – but I am already at my – I think I'm 3 over what I'm allowed for FTE – and that's not counting Country home link …..its not like it used to be - the ones coming back from Adelaide are finger feeding – they have not had any care, no antenatal – the social work down here like for [xx] - is just phenomenal the workload (MoC)

I think they need a dedicated person for country home link which could be a midwife who can do on call or who can only work Monday to Friday cause that is a big unknown workload – the workload is unknown (MoC)

Case load was also discussed, and it was evident that not everyone understood how the load had been calculated or how this equated to standard hours.

No one really knows what the hours mean- how many hours do midwives have? How many hours in the team? It would be good to have more information about how hours are used – what they mean? This might help us understand about where ethe hours go and how we can use them – could we have this explained (HN/M)

More needs to be understood about the workload of women who have not been including in allocation and therefore FTE (MoC).

There was a discussion around reduction in FTE,

I think I'm lucky as I'm part of the seasoned group so it hasn't been a huge change but I agree that increase in FTE has increased our workload exponentially not just because its caring for women but because in this model we now have so much more education opportunities – we have more meetings, more administration jobs – its increase our workload so much from previously – 30 women FTE we also still travel an hour, not city travel of 30 km but we can travel 100 km in an hour- so a visit can be 3 hours – we have to dedicate 3 hours for a one hour visit – out of our time – so I have 5 women who live at that hour

boundary of our care so doing that- one month they are at the complete opposite end so I can go to one visit and then it is 2 hours to the other – so coordinating that is really tricky- I think there has to be a reduction in FTE to make the workload sustainable to provide the quality care that we want to provide so its not fair to make the women on the boundary travel to us when women closer get wonderful visits (MoC)

While most MoC midwives felt they were managing, several midwives identified that there might be risk of burnout.

Never quite getting proper days off. As we only have one on call at a time, we come in on our free days to support a colleague in birthing or to get in appointments/visits because we know we will be busy with IOL/LSCS etc, or we have to catch up on appts in our own time if we had to cancel due to birthing. (MoC)

We are suffering burn out at a great rate of knots, and greater consideration to increasing staffing and reducing caseload numbers needs priority. (MoC)

The participants recognised that some of the challenges had been due to deficits in positions being filled and the need to back fill for maternity and other leave.

Its just the ongoing ironing out of some problems – the main issue is recruitment – with staff movements (HN/M)

I was on leave and others had to pick up my work and that made it difficult as they all had enough to do and it was hard to replace me – so that is where it is hard in a rural setting as you can't pull another midwife from somewhere (MoC)

There needs to be the appropriate number of midwives and dropping the number of women allocated is part of that but also need for back fill and taking out those administration jobs to an admin person (MoC)

This has impact on nursing staff being able to provide the care needed to women who remained admitted to hospital, many times the nurses were reluctant to call the midwife back if she had attended a birth earlier.

Yes we know they are there but we know they are exhausted, doing delivery after delivery- try not to call them but I call if I have to but sometimes the mid [patient] has to wait an hour or hour and half cause the midwife is far away (HN/M)

You need more midwives so that when one has done her time there is someone else to call in so I'm not waking up the midwife that has worked 15 hour – we want to call someone fresh who can come quickly (HN/M).

This challenge impacted the workload of the nursing staff,

But before nursing staff were allocated mothers as patients – That increases workload – they are not counted as your patients (HN/M)

They are not supposed to be now it is supposed to be the team but when the team have used up their hours – most of the midwives are good but the patients if they have had a difficult birth or there is something going on – or having difficulties with feeding is the time consuming thing – when the midwives have run out of hours they can't come in and help with that sort of thing (HN/M)

Women's Survey

Key findings
❖ 205 women completed the survey for a response rate of 52.6%
❖ Women's main source of information (87.8%) about pregnancy and birth was from MoC midwives
❖ Main care pregnancy provider was reported about equally for MoC midwives (45.9%) and shared care (MoC midwives with GP/obstetrician) at 45.4%
❖ Women whose main care provider was a MoC midwife had 86.2% of their pregnancy care with their primary midwife
❖ Women were overwhelmingly positive (95%) about the care they received from their MoC midwife during their pregnancy.
❖ MoC midwives provided the vast majority (87.8%) of labour and birth care either as the main care provider (60.3%) or working in share care with GP/GP obstetrician (27.5%). Most women (75.5%) reported knowing their MoC midwife well during labour and birth.
❖ Most women (>85%) agreed or strongly agreed with the positive statements regarding their labour and birth experiences
❖ MoC midwives were the main care provider after the birth (84.1%), with over a third of women receiving 6 or more home visits. Most women (93%) knew the first midwife who visited them with an average of 3.7 visits from this midwife. At home support was rated as very good to excellent by 94% of women. Breast-feeding rate at 6-8 weeks postpartum was 77.5%.

Response Rate

Women birthing in the MoC from Nov 2019- 31 Dec 2020 were approached to complete the online women's survey. As not all women were approached during Nov 2019 and some were missed during the first few months, the time for recruitment was extended to 31 Dec 2020. Those approached and consented over this time are as follows:

- Number of women booked in service: 532
- Number of women approached for consent: 411
- Number of women declined consent or not able to consent: 18
- Number of women consented: 392
- Number of surveys sent: 390
- Number of surveys completed and returned: 212

The women's survey was closed at the end of March 2021. This was to allow sufficient time for women who had birthed in the MoC (until 31 Dec 2020) at least 6-8 weeks to receive and complete the questionnaire.

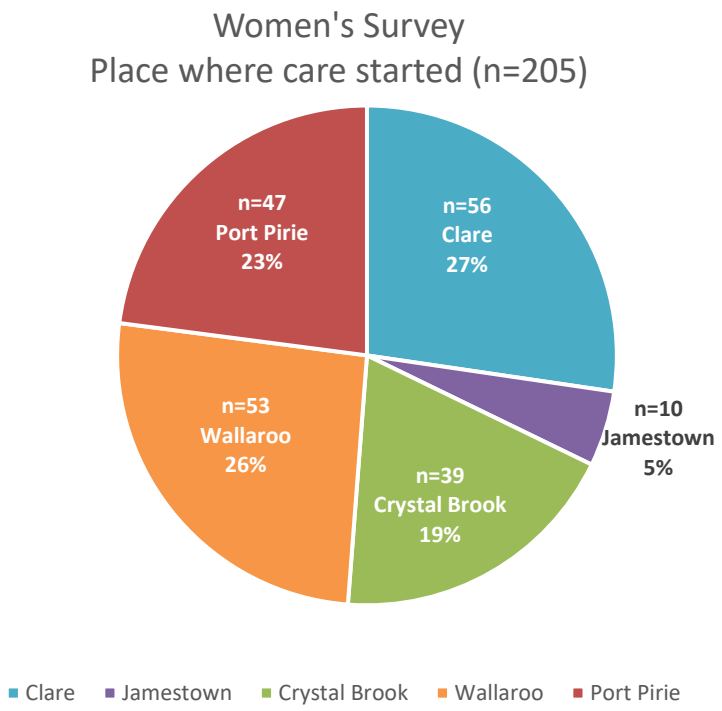
Once the dataset was closed, data were examined carefully for legitimate dates and checked individually for duplicates and missing data. Qualitative responses were exported and analysed separately per described in qualitative methods.

Of the 212 surveys received; there were 7 questionnaires that were duplicates and one questionnaire for which the baby's date of birth (May 2019) was out of the defined period of analyses. These 8 questionnaires were dropped, yielding n=205 questionnaires (complete and incomplete for analysis. The overall response rate was therefore **52.6%** (205/390).

Demographics

Approximately three-quarters (76.1%) respondents started their care in either Clare, Wallaroo or Port Pirie. The largest proportion of questionnaires (27.3%) were from women who started their care in Clare (Figure 6). Jamestown had the fewest number of respondents (n=10, 4.9%) and the lowest response rate (27.8%).

Figure 6. Place where women's care started in the Y&N



Age of respondents ranged from age 16 to 42 years with a mean age of 29.7 years (SD 4.97, median age of 30 years). For 69 respondents (40%), this was their first baby. The mean time of completing the questionnaire was 11 weeks after the baby was born (median time 9 weeks). Approximately 17% (n=34) of respondents did not birth in the Y&N area (Figure 7).

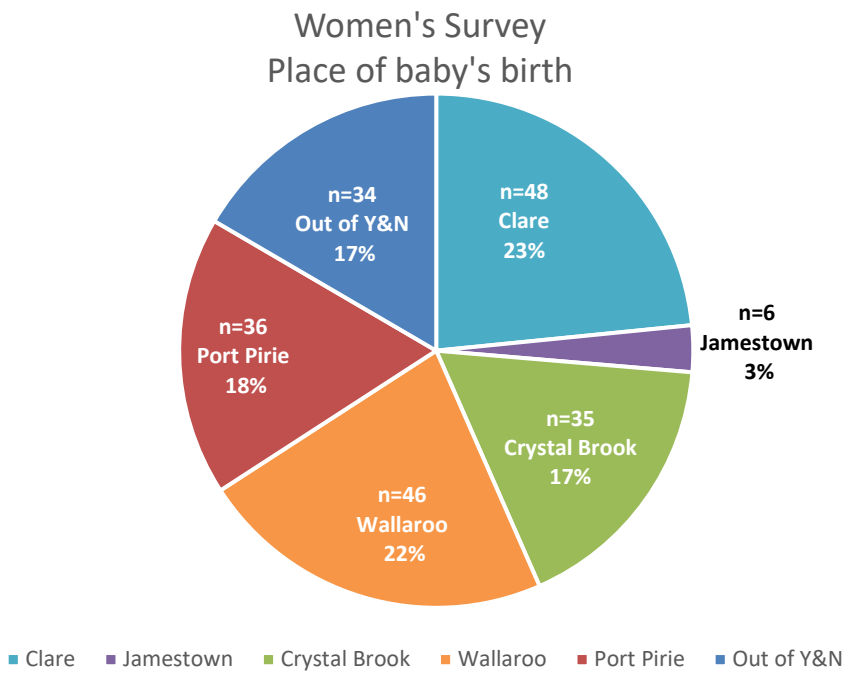


Figure 7. Place of baby's birth

The most common reason for not birthing in the area was being transferred out due to medical or obstetric condition or complication (41.2%). Only 6 women (17.7%) elected to birth out of the region (Table 2).

Table 2. Category for birthing out of Y&N region

Did you birth out of the York and Northern Region, or did you need to because of complications or an emergency?	**Freq.**	**Percent**
Elected to birth out of the region	6	17.7
Transferred because obstetrical service not available at the time	2	5.9
Planned birth away (for reasons such as BMI, twins, etc.)	12	35.3
Transferred out of region due to obstetrical condition/complication	14	41.2
Total	34	100.0

Before the Birth

A multiple response question asked women "what were your main sources of information about pregnancy and labour?" All 205 women replied to this question, with most women selecting more than one source of information. The vast majority of women (87.8%) indicated that a main source of information was midwives in the MoC (Table 3). Other frequently cited sources of information were from previous birth experience (45.9%) family and friends (33.7%) and GPs (31.2%).

Table 3. Women's main sources of information for pregnancy and labour

Sources of information	***n***	**%**
Midwife(s) in the MoC	180	87.8
Midwife(s) not in the MoC	8	3.9
General Practitioner (GP)	64	31.2
Obstetrician	52	25.4
Hospital information	21	10.2
Family and friends	69	33.7
Internet	58	28.3
Books, magazines	19	9.3
My previous birth experience(s)	94	45.9
*Other	6	2.9

Notes. *n* and % refers to number and percent of respondents selecting this as a source of information as multiple sources could be selected by each respondent

*Other sources of information listed were: antenatal classes, my own training (a nurse or medical training), specialist and WCH.

Sources of Awareness about the MoC

Respondents were asked how they found out about the MoC. All 205 women responded to this question. Several selected more than one source, the most frequently cited sources of finding out about the MoC were: from hospital midwives (31.7%), finding out when first pregnant (28.8%), and from general practitioners (28.3%) (Table 4).

Table 4. How women first found out about the MoC

How did you find out about the MoC?	***n***	**%**
Hospital midwives	65	31.7
General Practitioners (GPs)	58	28.3
Obstetrician	24	11.7
Media/posters	0	0
Family or friends	23	11.2
Previous experience with MGP in Y&N	47	22.9
First found out when referred for pregnancy	59	28.8
*Other	6	2.9

n and % refers to number and percent of respondents selecting this as a source of information as multiple sources could be selected by each respondent

*Other sources of finding out about the MoC were: have always used them (n=1), currently working at a Y&N hospital or in GP shared care (n=4), I had no choice (n=1)

Antenatal/parenting classes

Most of the 205 respondents (n=150, 73.2%) reported not attending antenatal/parenting classes. For the 55 who did attend classes; 30 (14.6%) attended those taught by MoC midwives, 20 (9.8%) attended those taught by hospital midwives and 5 women responded "other". The "other" responses were: classes with previous pregnancy (2), no classes due to COIVD19 (1) and watched online (2).

Of the n=150 women who did not attend classes, the most frequently cited reason (64.7%) was attendance at classes in previous pregnancy(ies) (Table 5).

Table 5. Reasons for not attending antenatal/parenting classes

I did not attend classes because:	**Freq.**	**Percent**
My midwife told me everything I needed to know	22	14.7
Too far away	4	2.7
Too inconvenient	3	2.0
Did not know about them	4	2.7
Attended classes in my previous pregnancy	64	42.7
I had enough information already	26	17.3
*Other (please specify)	27	18.0
Total	150	100.0

*Other stated reasons for not attending classes: COVID-19 (n=15), not available or being run at the time (n=6), was not offered (n=1), was not aware of classes (1), no transportation (n=1), having a c/s (n=1).

Main care pregnancy provider

Just under half of all respondents (45.9%) reported their main pregnancy care provider as only midwives working in the MoC. A similar proportion (45.4%) were in GP/GP obstetrician shared care with MoC midwives (Table 6).

Table 6. Main care pregnancy provider in the MoC

Who was your main pregnancy care provider while in the MoC?	**Freq.**	**Percent**
Midwives working in the MoC	94	45.9
GP/GP obstetrician and midwives working in the MoC (Shared care)	93	45.4
Specialist obstetrician (and midwives working in the MoC)	16	7.8
Private obstetrician	1	0.5
Other: specialist at tertiary hospital	1	0.5
Total	205	100.0

Respondents were asked how many different midwives they had during their pregnancy care (across all types of care). This varied by type of care, with those seeing an obstetrician more likely to have seen 4 or more midwives during their care (43.8%) as compared with those having shared care (34.1%) or MoC midwives only (35.1%), (Table 7). Women whose main care provider was shared care GP/MoC midwife had the highest proportion (approximately 21%) of having only one MoC midwife for their care during pregnancy.

Table 7. Number of midwives attending to pregnancy care by main care provider.

	Who was your main pregnancy care provider while in the MoC?				
	n (%)	n (%)	n (%)	n (%)	n (%)
During your pregnancy care, can you please identify how many different midwives attended to your care?	Midwives working in the MoC	GP/ obstetrician and MW working in the MoC (Shared care)	Specialist obstetrician (and MW working in the MoC)	Private obstetrician /other	Total
1	10 (10.6)	19 (20.9)	0 (0)	0 (0)	29 (14.3)
2	25 (26.6)	22 (24.2)	5 (31.3)	1 (50.0)	53 (26.1)
3	26 (27.7)	19 (20.9)	4 (25.0)	1 (50.0)	50 (24.6)
4 or more	33 (35.1)	31 (34.1)	7 (43.8)	0 (0)	71 (35.0)
Total	94 (100)	91 (100)	16 (100)	2 (100)	203 (100)

Close to half of all women (46.3%) saw the same doctor during their pregnancy, with 41.4% seeing two or more doctors during their pregnancy. Those whose primary care provider was GP/shared care were most likely (49.5%) to see the same doctor during their pregnancy care (Table 8).

Table 8. Number of doctors attending to pregnancy care by main care provider.

	Who was your main pregnancy care provider while in the MoC?				
	n (%)	n (%)	n (%)	n (%)	n (%)
During your pregnancy care, can you please identify how many different doctors attended to your care?	Midwives working in the MoC	GP/GP obstetrician and MW working in the MoC (Shared care)	Specialist obstetrician (and MW working in the MoC)	Private obstetrician /other	Total
None	1 (1.1)	0 (0)	2 (12.5)	0 (0)	3 (1.5)
1	43 (45.7)	45 (49.5)	5 (31.3)	1 (50.0)	94 (46.3)
2	42 (44.7)	35 (38.5)	7 (43.8)	0 (0)	84 (41.4)
3	7 (7.5)	8 (8.8)	2 (12.5)	1 (50.0)	18 (8.9)
Total	94 (100)	91 (100)	16 (100)	2 (100)	203 (100)

Main care provider MoC midwife

Of the n=94 women who responded their main care provider was a MoC midwife:

- 75.5% (n=71) had met all MoC midwives that provided their care before they were in labour
- the vast majority of women (86.2%, n=81) had most of their pregnancy care with their primary midwife
- most women (71.3%, n=67) also knew who to contact if they wanted to change their primary midwife

Women were asked to indicate how much they agreed or disagreed with a series of questions concerning their main care provider during pregnancy (Figure 8). In response to these statements, respondents were overwhelmingly positive (95%) about the care they received from their MoC midwife during their pregnancy. In general, most women agreed or strongly agreed with positive statements; e.g. treated with respect, felt listened to, could ask questions, felt confident in the skills and knowledge of their midwife and disagreed or strongly disagreed with negatively worded statements; e.g. treated like just another case, had too little say in what was decided.

The statement where there was the most ambivalence was the statement about wanting more information on the test and examinations being carried out with 16% of women neither agreeing or disagreeing and approximately 10% of women agreeing/strongly agreeing to this statement. For approximately 5% of respondents who gave generally unfavorable responses, these tended to be across all statements, suggesting this may have been related to individual experiences.

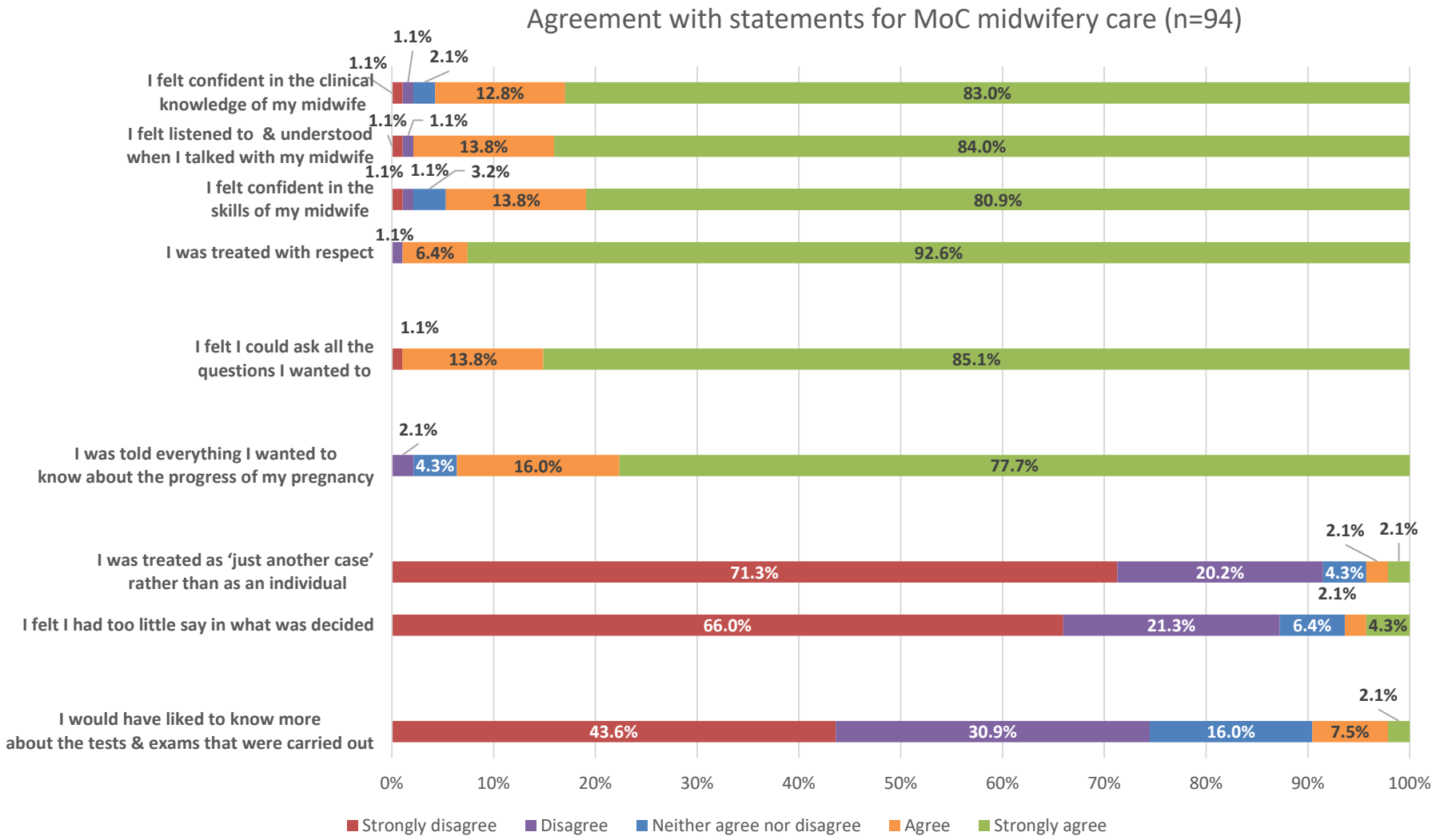


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Figure 8. Respondents range of agreement to disagreement with statements regarding the MoC midwife or midwives who were their main care provider during pregnancy.

Care provided by midwives in other care arrangements

Respondents whose main care provider was in a shared care arrangement during pregnancy with doctors and MoC midwives were also very confident in the skills and knowledge of the midwife who worked with their doctor and felt they were treated with respect and could ask all the questions they wanted to. Results for midwives working with doctors generally mirrored those whose main care provider was a MoC midwife, although woman were slightly more likely to indicate they felt less individualized care in this care arrangement (Figure 9). Note- these data are restricted to the 109-110 women who responded their main care provider was shared care: a MoC midwife with a GP, GP obstetrician or obstetrician and refers to the care received by the midwife in this arrangement. The midwife in this case could be a MoC midwife or in the case of an obstetrician out of area, a midwife affiliated with that practice.

Care provided by doctors across care arrangements

Respondents were generally very confident (95%) in the clinical knowledge and skills of their doctor and felt they were treated with respect during their pregnancy care. They were slightly less likely to report feeling listened to (90% as compared with 96% MoC midwives) and were more likely to agree with the statement “I was treated as just another care”. However, this included all doctor care (whether or not the doctor worked in the MoC) (Figure 10). Note- these data are restricted to the 109 women who reported their main care providers during pregnancy were not MoC midwives. This includes shared care: MoC midwives with a GP, GP obstetrician or specialist obstetrician and refers to care provided by their doctor.

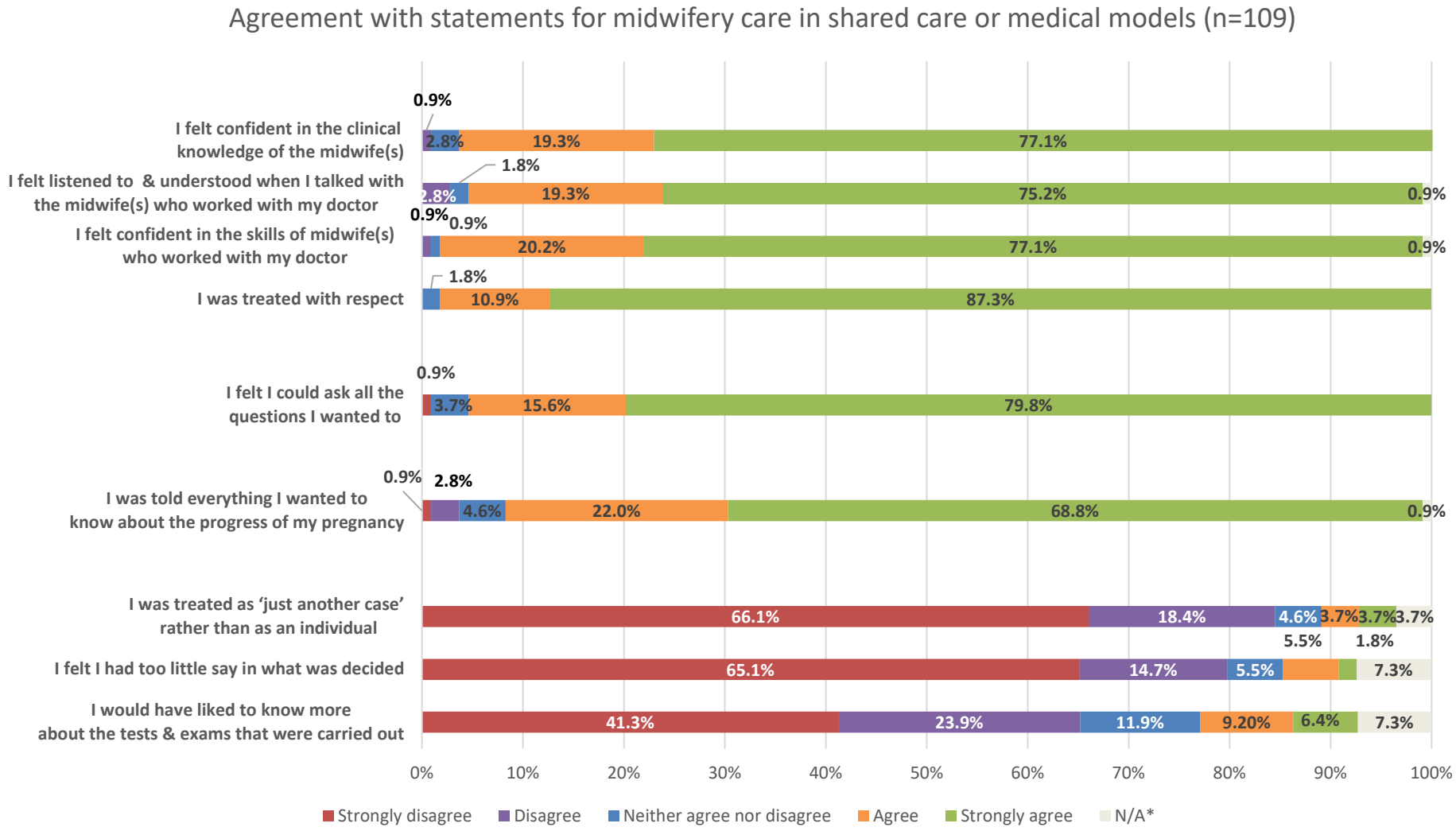

Figure 9. Respondents range of agreement to disagreement with statements regarding care provided by the midwife (midwives) who worked with their main care provider (GP, GP obstetrician or obstetrician) during pregnancy.

*not applicable has been added as some respondents may have had little or no contact with a MoC midwife during pregnancy

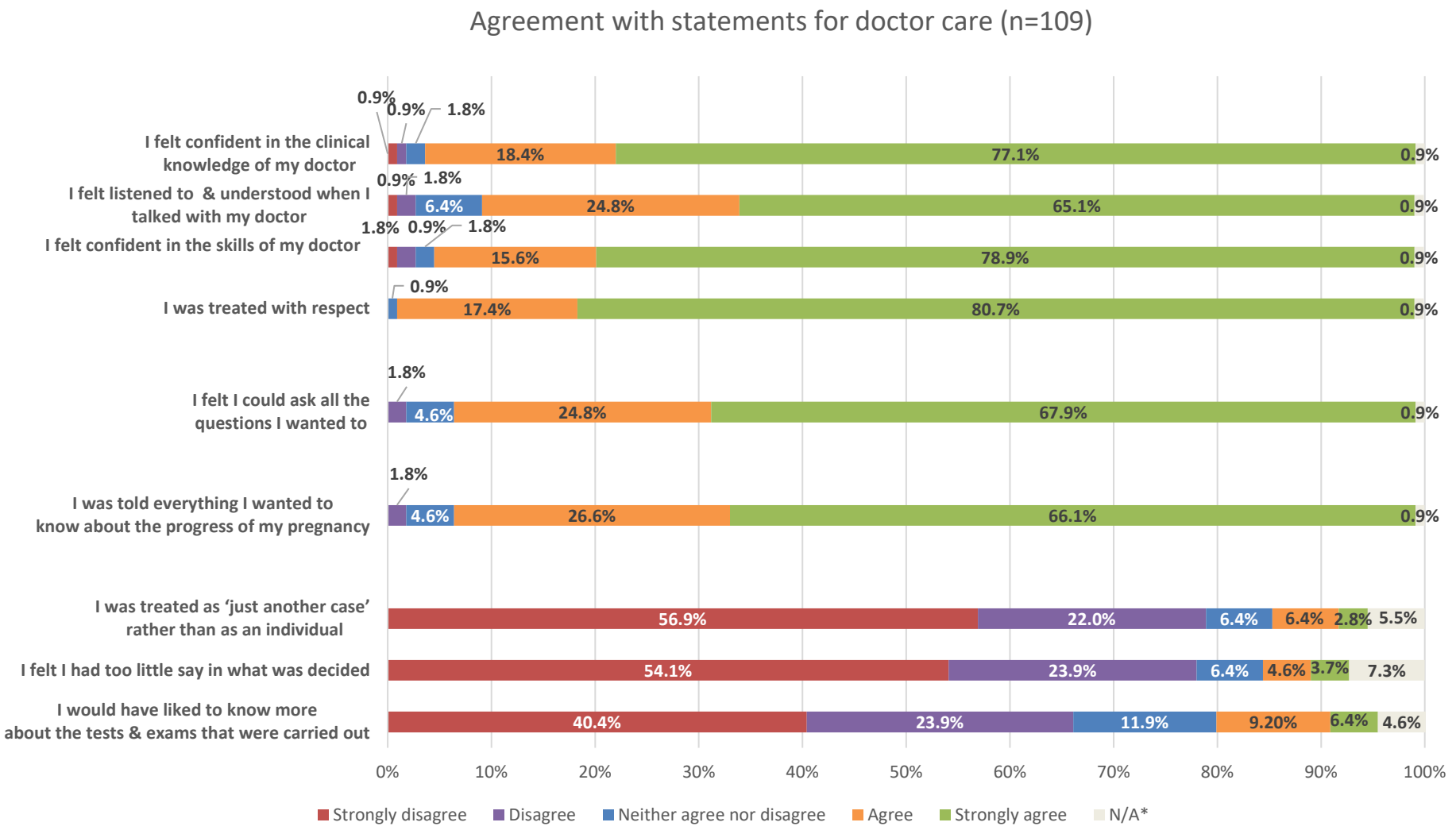

Figure 10. Respondents range of agreement to disagreement with statements regarding care provided by their main doctor provider (GP, GP obstetrician or obstetrician) during pregnancy.

Labour and Birth

Women reported that MoC midwives provided the vast majority (87.8%) of labour and birth care either as the main care provider (60.3%) or working in share care with GP/GP obstetrician (27.5%), (Figure 11). Overall, women MoC midwives were involved as primary or in shared care arrangements in 87.8% of all labour and births. For the majority of respondents (n= 58.5%), the care provider that assisted in the actual birth of the baby was a MoC midwife (Table 9).

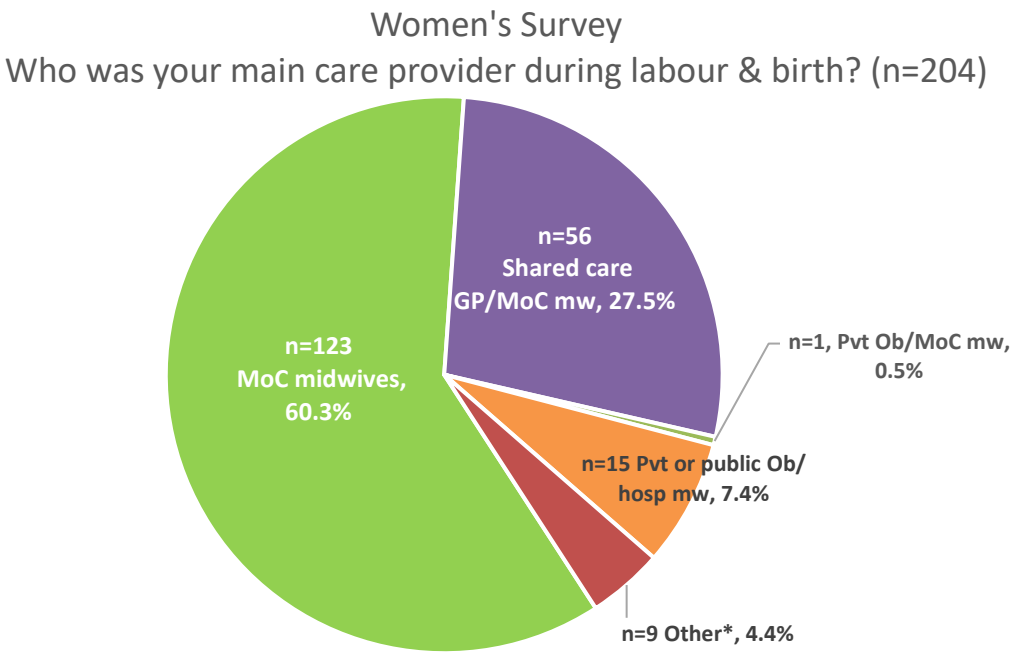

Figure 11. Main care provider during labour and birth
*The 4.4% (n=9) "other" responses for main care provider during labour and birth included hospital midwives, tertiary hospital births and one born before arrival.

Table 9. Main care provider who assisted in the actual birth

Who was the care provider that assisted in the actual birth of your baby?	Freq.	Percent
Midwife in the MoC	120	58.5
Hospital midwife	22	10.7
GP (general practitioner)/GP obstetrician	20	9.8
Obstetrician working in the MoC	23	11.2
Obstetrician not working in the MoC	5	2.4
Private obstetrician	4	2.0
Not sure	11	5.4
Total	205	100.0

During labour and birth, close to three-quarters of all women (73.0%) had one or two midwives during their labour and birth (Table 10). This was similar across main care providers with 30.9% of women whose main care provider was MoC midwives having only one midwife during labour and birth, and for main care provider GP/shared care MoC, 30.4% had only one midwife. The main care provider group with the highest number of midwives during labour and birth were those who had obstetric care with 6 out of 16 (37.5%) having three or more midwives during labour and birth.

Table 10. Number of midwives during labour and birth.

During your labour and birth, can you please identify how many different midwives attended to your birth	**Freq.**	**Percent**
None (Born before arrival)	1	0.5
1	62	30.4
2	87	42.7
3	29	14.2
4 or more	25	12.3
Total	204	100.0

Most respondents (86.76%) had one or more doctors attending to their care during labour and birth, with over half (54.9%) just having one doctor (Table 11). Only 13.2% of respondents reported having no doctor attending to them during labour and birth.

Table 11. Number of doctors during labour and birth.

During your labour and birth, can you please identify how many different doctors attended to your birth	**Freq.**	**Percent**
None	27	13.2
1	112	54.9
2	34	16.7
3	10	4.9
4 or more	21	10.3
Total	204	100.0

The majority of respondents (70.6%) reported knowing their midwife well during labour and birth, with those whose main care provider was a MoC midwife most likely to know their midwife well (75.5%), Table 12.

Respondents who replied "no" they did not know their midwife (n=38), were asked if this bothered them. For the majority of respondents (n=26, 68.4%) they reported this did not bother them. However, close to a third (31.6%) reported that this did bother them.

Table 12. Main care provider by knowing midwife during labour and birth

Did you know the midwife who cared for you for most or all of the time during your labour and birth?	**Main care provider** n (%)			
	MoC MW	GPMoC	OB_pvt	Total
Yes, I knew her well	71 (75.5)	62 (67.4)	11 (61.1)	144 (70.6)
Yes, but not very well	8 (8.5)	11 (12.0)	3 (16.7)	22 (10.8)
No	15 (16.0)	19 (20.7)	4 (22.2)	38 (18.6)
Total	94 (100)	92 (100)	18 (100)	204 (100)

The following series of statements asked women to indicate how much they agreed or disagreed with statements concerning their care during labour and birth. For the women (n=189) who completed this matrix, most (>85%) agreed or strongly agreed with the positive statements regarding their experiences and 83.6% reported that their birth was a positive experience (Table 13). For whom these statements were applicable, women felt supported by the midwife who provided most of their care (97.3%) and the doctor who provided care (85.5%) during labour and birth.

Table 13. Respondents agreement with statements regarding care provided during labour and birth

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
I felt I had too little say in what was decided	86 (45.5%)	38 (20.1%)	14 (7.4%)	12 (6.4%)	8 (4.2%)	31 (16.4%)	189 (100%)
I was treated as 'just another case' rather than as an individual	111 (58.7%)	28 (14.8%)	11 (5.8%)	6 (3.2%)	5 (2.65%)	28 (14.8%)	189 (100%)
I was told everything I wanted to know about the progress of my labour	1 (0.5%)	6 (3.2%)	10 (5.3%)	39 (20.6%)	130 (68.8%)	3 (1.6%)	189 (100%)
I felt I could ask all the questions I wanted to	1 (0.5%)	2 (1.1%)	3 (1.6%)	39 (20.6%)	143 (75.7%)	1 (0.5%)	189 (100%)
I had a birth-plan and this was followed	6 (3.2%)	6 (3.2%)	32 (16.9%)	34 (18.0%)	61 (32.3%)	50 (26.5%)	189 (100%)
Any procedures during labour & birth were explained, & I was asked to consent to these	-	4 (2.1%)	5 (2.7%)	41 (21.7%)	131 (69.3)	8 (4.2%)	189 (100%)
I was treated with respect	1 (0.5%)	1 (0.5%)	2 (1.1%)	26 (13.8%)	158 (83.6%)	1 (0.5%)	189 (100%)
I felt confident in the clinical knowledge & skills of my main care provider during labour and birth	-	3 (1.6%)	8 (4.2%)	25 (13.2%)	152 (80.4%)	1 (0.5%)	189 (100%)
My birth was a positive experience	6 (3.2%)	10 (5.3%)	14 (7.4%)	35 (18.5%)	123 (65.1%)	1 (0.5%)	189 (100%)
I felt supported by the midwife who provided most of my care	2 (1.1%)	1 (0.5%)	2 (1.1%)	30 (15.9%)	152 (80.4%)	2 (1.1%)	189 (100%)
I felt supported by the doctor who provided care during my labour and/or birth	4 (2.1%)	3 (1.6%)	18 (9.5%)	37 (19.6%)	110 (58.2%)	17 (9.0%)	189 (100%)
I felt my partner/ support person was included during my birth	2 (1.1%)	2 (1.1%)	5 (2.7%)	32 (16.9%)	145 (76.7%)	3 (1.6%)	189 (100%)

Post-partum Care

For most respondents (n=188), MoC midwives were the main care provider after the birth (n=159, 84.1%). Share care GPs and MoC midwives accounted for 8.9% of post-partum care (n=17) and 6.9% (n=13) indicated they had "other" post-partum care. 'Other' post-partum care received were: CAFHS nurse (n=6), midwives and nurses at the birth hospital, and midwives at referral hospital due to baby's prematurity.

Midwife MoC Visits

For the 97% of women who received visits from a MoC midwife, approximately a third received six or more visits (Figure 12). Most women (77%) reported receiving their visit in their home or a combination of home and not at home (20%). Three percent reported the visits were not conducted at home. Six women (3.2%) did not report any visits from MoC midwives.

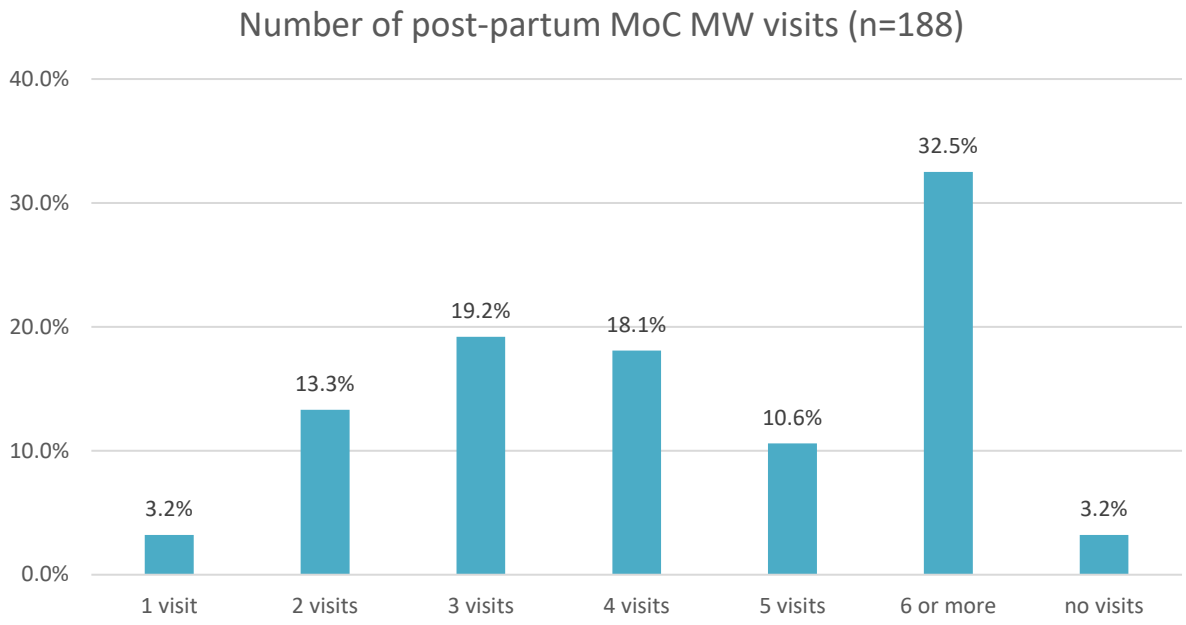

Figure 12. Number of visits from MoC midwife after the birth

When asked to rate their MoC midwives' support during the first week at home, 94% (171/182) rated their support as very good to excellent, with a further 4% rating their care as good. Only 2% (n=4) rated their support as fair and none rated their care as poor.

The majority of women (93%) reported these visits were with a midwife they had met before; 93% knew the first midwife who visited them and had an average of 3.7 visits with the first midwife (range 1-12). Two-thirds (n=121) of women reported having postpartum visits with a second midwife, of which 74% of women knew the second midwife who visited them. Women reported having an average of 1.3 visits with the second midwife. A quarter (25.3%) of women reported having a visit with a third midwife, of which half knew the midwife who visited them.

For approximately 40% of women, midwifery postpartum visits stopped when the baby was 6 weeks of age or older (Table 14). When asked if they would have liked more visits from the MoC midwife, less than a quarter of respondents (22.53%, n=41) reported that they would.

Table 14. Age of baby when midwifery visits stopped

How old was your baby when the midwife stopped visiting?	Freq.	Percent
1 week	5	2.8
2 weeks	32	17.6
3 weeks	22	12.1
4 weeks	33	18.1
5 weeks	18	9.9
6 weeks	57	31.3
Greater than 6 weeks	15	8.2
Total	182	100.0

Community support

Women were asked if they used or were referred to any community support services after the birth. Approximately 20% of women responded that they had not used any community support services. The most frequently cited service used was Child Health Nurse with 71.81% of women indicating they had used this service. The next most reported service was lactation consultant, with 16.49% of women using this service (Table 15).

Table 15. Community support services used after the birth

Did you utilise or were you referred to any of the following Community support services?	Freq.	Percent
Child health nurse	135	71.8
Aboriginal services	-	-
Physiotherapy	18	9.6
Social work	2	1.1
Mental health	8	4.3
Drug and alcohol	1	0.5
Lactation consultant	31	16.5
*Other	6	3.2
None	37	19.7

Percentage is greater than 100% as multiple response options (more than one can be selected)
*Other services used were: Multiple Birth Association, pediatrician, dietician, Australian Breastfeeding Association, Child & Family Health Service (CaFHS).

When respondents were asked if there were any other supports they would have liked, 34 women provided comments (of which n=10 were “none”). Many responses were comments on how well supported they felt by their midwives. A few mentioned they would have liked: more early parenting visits, all breastfeeding women to have a visit from a lactation consultant, and a new mother’s group.

Support, confidence, advice after the birth

The following series of statements asked women to indicate how much they agreed or disagreed with statements concerning their care after the birth of their baby. The majority of women (n=163, 88.1%) agreed or strongly agreed they were given the advice they needed about their own health and recovery, although 12% of women would have liked to know more about what was happening to them after the birth (Table 16). Almost all women (96%) felt they were treated with respect and felt supported (89%) in their feeding choice. Approximately 18% of women indicated that they would have liked to stay in hospital longer with an additional 12% unsure if they wanted to stay longer.

Most women (84%) agreed or strongly agreed that they felt confident as a mother, although first time mothers were less likely to strongly agree with this statement (29%) as compared with those who were already mothers (56%).

Most women agreed (85%) they were given the advice they needed to settle and look after their baby. However conflicting advice from clinicians and family/friends caused a minority of women some confusion; 13% for midwifery advice, 9% for doctor's advice, and 15% from family/friends advice.

Note, responses to statements regarding confidence as a mother predictably varied when examined by parity, with fewer first-time mothers strongly agreeing (29%) to feeling confident as a mother as compared to those who were already mothers (56% strongly agreed they felt confident). However only n=7 (10%) of the first-time mothers disagreed or strongly disagreed with feeling confident as a mother (as compared with 2% of women who were already mothers).

Table 16. Respondents agreement with statements regarding care received after the birth of their baby.

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A*	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
I was given the advice I needed about how to handle, settle or look after my baby	2 (1.08)	5 (2.7%)	15 (8.1%)	51 (27.6%)	107 (57.8%)	5 (2.7)	185 (100%)
I was given the advice I needed about my own health and recovery after the birth	1 (0.54%)	7 (3.8%)	11 (6.0%)	45 (24.3%)	118 (63.8%)	3 (1.6%)	185 (100%)
I was confused with conflicting advice provided by midwives	85 (46.0%)	36 (19.5%)	19 (10.3%)	16 (8.7%)	8 (4.3%)	21 (11.4%)	185 (100%)
I was confused with conflicting advice provided by family and friends	55 (29.7%)	42 (22.7%)	32 (17.3%)	22 (11.9%)	6 (3.2%)	28 (15.1%)	185 (100%)
I was confused with conflicting advice provided by doctors	78 (42.2%)	48 (26.0%)	16 (8.7%)	13 (7.03%)	4 (2.2%)	26 (14.1%)	185 (100%)
I felt confident as a mother	1 (0.5%)	8 (4.3%)	19 (10.3%)	74 (40.0%)	82 (44.3%)	1 (0.5%)	185 (100%)
I understood very little of what was said to me	103 (55.7%)	41 (22.2%)	15 (8.1%)	5 (2.7%)	1 (0.5%)	20 (10.8%)	185 (100%)
I would have liked to know more about what was happening to me	79 (42.7%)	43 (23.2%)	21 (11.4%)	17 (9.2%)	6 (3.2%)	19 (10.3%)	185 (100%)
I was able to get help and felt supported with my feeding choice	5 (2.7%)	1 (0.5%)	11 (6.0%)	51 (27.6%)	114 (61.6%)	3 (1.6%)	185 (100%)
I would have liked to stay longer in hospital	62 (33.5%)	53 (28.6%)	22 (11.9%)	21 (11.4%)	12 (6.5%)	15 (8.1%)	185 (100%)
I was treated with respect	2 (1.1%)	-	5 (2.7%)	28 (15.1%)	149 (80.5%)	1 (0.5%)	185 (100%)

Breastfeeding

Most respondents reported that they were confident they could breastfeed (65.4%, n=121), or thought they would give it a try (30.8%, n=57). Only n=7 (3.8%) women responded that they did not plan to breastfeed.

Of those that were breastfeeding or planning to breastfeed, 87.1% of women (n=155) were still breastfeeding at the time of their last visit with their midwife. This had decreased to 77.5% (n=138) of women when asked if they were still breastfeeding at the time of the survey (6-8 weeks or longer). Of the 40 women (22.5%) who were no longer breastfeeding at the time of the survey, the mean age of stopping breastfeeding was at 5.6 weeks (95% CI 3.3 to 7.8 weeks). When these 40 women were asked as to why they decided to stop breastfeeding, multiple reasons were selected, including: felt there was not enough milk (51.3%), other reasons (51%), unable to get baby to attach/suck (23%), nipple pain (23%). "Other" reasons cited were no milk, or milk never came in, baby had reflux, I was ready to stop.

First week at home

The next five questions in the survey asked women to consider how much they agreed or disagreed with statements concerning how well they were managing during the first week at home (Table 17). Overall, most women agreed/strongly agreed that they managed well (n=150, 81.5%), and that their midwife was readily available (94%). Approximately 15% of women were unsure or disagreed that they felt confident to take care of themselves. Breastfeeding is another area where a small minority of women (14.1%) were unsure or disagreed that they had good breastfeeding support. This is most likely a reflection of the difficulties many women have with establishing lactation.

Table 17. Respondents agreement with statements regarding how well they were managing in their first week at home with baby.

Statement	**Strongly Disagree**	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly Agree**	**Total**
	n (%)	n (%)	n (%)	n (%)	(n) (%)	n (%)
I managed well	3 (1.6%)	8 (4.4%)	23 (12.5%)	73 (39.7%)	77 (41.9%)	184 (100%)
My midwife was readily available	4 (2.2%)	2 (1.1%)	5 (2.7%)	44 (23.9%)	129 (70.1%)	184 (100%)
I had good breastfeeding support	5 (2.7%)	3 (1.6%)	18 (9.8%)	44 (23.9%)	114 (62.0%)	184 (100%)
I felt confident to care for my baby	-	2 (1.1%)	4 (2.2%)	65 (35.3%)	113 (61.4%)	184 (100%)
I felt confident to care for myself	-	10 (5.4%)	17 (9.2%)	56 (30.4%)	101 (54.9%)	184 (100%)

Overall experience

Women were asked to rate how ***important*** specific aspects of their care were in terms of overall importance to their pregnancy and birthing experience (Table 18). For all women (n=184, 100%), regardless of who their provider was, there was unanimous agreement that feeling comfortable and supported was important/very important to them. Having one midwife they knew well in the MoC was also important/very important to women, as was having one GP they knew well (93.1%).

Eighty-two percent of women reported that it was *very* important for them to know that a doctor was available in case of an emergency (with a further 12% indicating this was important).

Feeling in control during labour and birth was important/very important to women (96.7%, where applicable), as was feeling that she was making her own decisions (95.6%).

Table 18. Women's rated statements for overall importance to their pregnancy and birth experience

Statement	Not at all important	Fairly un-important	Unsure	Important	Very important	N/A*	Total
	n (%)	n (%)	n (%)	n (%)	**n** (%)	n (%)	n (%)
Having one midwife I knew well in the MoC	1 (0.5%)	2 (1.1%)	2 (1.1%)	40 (21.7%)	137 (74.5%)	2 (1.1)	184 (100%)
Having one GP I knew well *(if applicable, if main provider was a GP)*	2 (1.1%)	3 (1.6%)	4 (2.2%)	34 (18.5%)	88 (47.8%)	53 (28.8%)	184 (100%)
Having one obstetrician I knew well *(if applicable, if main provider was an obstetrician)*	5 (2.7%)	3 (1.6%)	5 (2.7%)	26 (14.1%)	80 (43.5%)	65 (35.3%)	184 (100%)
Feeling comfortable and supported	-	-	-	22 (12.0%)	162 (88.0%)	-	184 (100%)
Knowing a doctor was available in case of an emergency	1 (0.5%)	-	5 (2.7%)	25 (13.6%)	150 (81.5%)	3 (1.6%)	184 (100%)
Feeling I was in control in labour and birth	1 (0.5%)	3 (1.6%)	7 (3.8%)	37 (20.1%)	132 (71.7%)	4 (2.2%)	184 (100%)
Feeling I made my own decisions	1 (0.5%)	-	7 (3.8%)	33 (17.9%)	142 (77.2%)	1 (0.5%)	184 (100%)

Satisfaction with pregnancy and birthing experience

This series of questions were the same questions as in the previous series, but asked women how ***satisfied*** they were aspects of their pregnancy and birthing experience. Overall, most women were satisfied/very satisfied with knowing well their midwife (94.5%), GP (93.3%) or obstetrician (91.4%), (Table 19).

Whereas all women indicated that feeling comfortable and supported was important to them, there were 9 women (4.9%) who were unsure or not satisfied with this element of their care. However, 78.8% were very satisfied with an additional 16.3% satisfied that they were comfortable and supported during pregnancy and birthing.

Most women were satisfied/very satisfied (93.4%) that a doctor was available in case of an emergency, similar to the proportion of women (94%) who indicated that this was important to them.

Approximately 9% of women were unsure or unsatisfied that they were in control in labour and birth (9.4%) or felt they did not make their own decisions (8.8%), however about 5% of women had indicated in the previous series that they were unsure or this was not important to them. In comparing the two series of questions, what was important to women and their satisfaction with their experience, there was general overall congruence.

Table 19. Women's satisfaction with the pregnancy and birthing experience

Statement	**Not at all satisfied**	**Fairly un-satisfied**	**Unsure**	**Satisfied**	**Very satisfied**	**N/A***	**Total**
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Having one midwife I knew well in the MoC	4 (2.2%)	-	6 (3.3%)	29 (15.8%)	144 (78.3%)	1 (0.5)	184 (100%)
Having one GP I knew well *(if applicable, if main provider was a GP)*	3 (1.6%)	-	6 (3.3%)	30 (16.3%)	95 (51.6%)	50 (27.2%)	184 (100%)
Having one obstetrician I knew well *(if applicable, if main provider was an obstetrician)*	5 (2.7%)	3 (1.6%)	2 (1.1%)	26 (14.1%)	80 (43.5%)	68 (37.0%)	184 (100%)
Feeling comfortable and supported	3 (1.6%)	2 (1.1%)	4 (2.2%	30 (16.3%)	145 (78.8%)	-	184 (100%)
Knowing a doctor was available in case of an emergency	2 (1.1%)	4 (2.2%)	6 (3.3%)	36 (19.6%)	134 (72.8%)	2 (1.1%)	184 (100%)
Feeling I was in control in labour and birth	6 (3.3%)	2 (1.1%)	9 (4.9%)	42 (22.8%)	122 (66.3%)	3 (1.6%)	184 (100%)
Feeling I made my own decisions	4 (2.2%)	3 (1.6%)	9 (4.9%)	34 (18.5%)	132 (71.7%)	2 (1.1%)	184 (100%)

Clinicians working together

Of the 169 women who received care from MoC providers (MoC midwives and/or GP/obstetricians), 93.8% responded to the question which asked them to indicate how much they agreed or disagreed with four statements concerning how well clinicians worked and communicated together. Most women agreed or strongly agreed that the clinicians worked well together (92%), and the care was well connected (89%). While the majority also agreed or strongly agreed that clinicians passed on information and knew what care the other providers had done, respondents were more likely to be neutral or disagree on these two communication statements (11-17%) (Table 20).

.

Table 20. How well MoC midwives and other care providers (GPs, or specialists' obstetricians) worked and communicated together.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Unsure	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
These care providers pass on information to each other very well	1 (0.6%)	5 (3.0%)	12 (7.1%)	57 (33.7%)	92 (54.4%)	2 (1.2%)	169 (100%)
These care providers work very well together	1 (0.6%)	2 (1.2%)	11 (6.6%)	50 (29.8%)	104 (61.9%)	-	168 (100%)
The care given by these care providers is well connected	1 (0.6%)	3 (1.8%)	14 (8.3%)	42 (24.9%)	108 (63.9%)	1 (0.6%)	169 (100%)
These care providers always know very well what the other care providers have done	2 (1.2%)	8 (4.7%)	18 (10.7%)	52 (31.0%)	85 (50.6%)	3 (1.8%)	168 (100%)

Final Questions

Women were asked if they had another pregnancy if they would seek the midwifery MoC. Of the 173 women who answered this question, almost all (95.4%, n=165) said they would. Only eight answered they would not seek this type of care again, of which 6 gave reasons why they would not. Several of these responses were not a reflection of the midwifery MoC model per se, for example: one woman said she needed to be under specialist care, another said she would like to see the midwives and not just the doctors, another said she would if she could stay in hospital longer than one night and have more support, another said if communication between everyone was better during labour she would consider it, and two women's responses reflected dissatisfaction with a particular carer(s).

Most women (96.5%, n=167) also replied that they would recommend the midwifery caseload model of care they received to a friend. Only 6 women replied that they would not. Two comments that were different from the previous responses for not using the MoC again were; (1) the post birth period needs more attention for first time mums and (2) the midwives are stretched too thin and need more support.

Pregnancy and birth care compared with previous experience(s)

Women who were not first-time mothers, were asked how they would rate the care provided for this pregnancy and birth against their previous experience(s). Most women reported their care as excellent (77.0%) or very good (16.4%), (Table 21).

Table 21. Rating of care for this pregnancy compared to past experience(s)

How do you rate the care provided for this pregnancy and birth against your previous experience?	**Freq.**	**Percent**
Excellent	77	74.0
Very good	17	16.4
Good	4	3.9
Fair	5	4.8
Poor	1	1.0
Total	104	100.0

In comparing their care this time around with previous pregnancy (ies) and birth, a quarter (25%) of these women had experienced midwifery group practice before (Table 22).

Table 22. Pregnancy and birth care provider in previous pregnancy

Who provided most of your care for the previous pregnancy and birth(s)?	**Freq.**	**Percent**
Public Hospital Midwives Clinic	44	42.3
Private obstetrician (specialist doctor)	5	4.8
Shared care (GP and hospital)	24	23.1
Midwifery Group Practice	26	25.0
Other (please specify)	5	4.8
Total	104	100.0

When asked where they had care in their previous pregnancy, most women (75.96%, n=79) had experienced their previous pregnancy care in the Y&N Region. For 25 women (n=25.04%) this was their first-time receiving care in the area.

Free text responses to women's survey open ended questions

Free text comments were optional on the women's' questionnaire.

There were 134 women who responded to the question, "*What were the best aspects about the care you received during your pregnancy, birth and following birth*?"

The responses were extremely positive with a clear mantra that the women felt supported and valued having a known midwife, as shown in the word cloud below.

Figure 13. Best aspects of the care you received during your pregnancy, birth and following birth

Some examples of responses representing all sites included:

> *All midwives are extremely lovely and knowledgeable and make you feel at ease and that they are always there if you need. I was lucky to have the midwife at my birth that I felt I knew well from my first pregnancy and that I felt was going to be the best support for me. Great experience all round. (P65, site 1)*

> *The continuity of care and the vast knowledge of my precious pregnancy made the care provided by the midwife with the GP comforting. I liked the idea of having one midwife that I could contact and have appointments with. (P75, site 2)*

> *Consistency, familiarity and a sound rapport with my primary midwife and those others within the MoC, in addition to the listening ears and support of my wishes / choices per pregnancy and birthing & postnatal experiences. (P31, site 3)*

> *Feeling comfortable, nothing was a hassle and no question was too silly. [x midwife] was the most excellent midwife, as a first time mum I felt completely supported, respected and comfortable in her care. Even though we had difficulties after delivery she remained calm and professional which was reassuring to myself, not knowing at the time exactly what had* happened. (p26, site 4)

> *I am absolutely GLAD that i have 1 assigned midwife and had the support of the same team. I think it is the best idea because you grow comfortable with one person and you know they are always there and you can talk to them whenever. I really hope the MoC sticks. (P138, site 5)*

Sixty-six women responded to an opened ended question which asked, "*is there anything else you would like to tell us?"* The responses were extremely positive, and the women used superlative language on many occasions to convey this feedback. The word excellent was used the most and repeatedly, to describe the service. Other descriptors included 'wonderful', 'happy', 'best', 'grateful', 'very lucky', 'amazing', 'fantastic', 'exceptional', 'outstanding'.

Some examples of responses representing all sites included:

> *We are very lucky to have such a dedicated team of mids in the Yorke region. They always show their passion and are clearly knowledgeable! (P63)*
>
> *My midwife was excellent! Very happy with the care we received! (P15)*
>
> *Absolutely best place to receive pregnancy, birth and post birth care. (P139)*
>
> *This is an amazing model of care and the entire experience. (P172)*
>
> *The midwife support and service is excellent (P101)*
>
> *A fantastic program which enables and encourages women to continue having their babies locally. I think it also provides the very best start to a baby's life and early parenthood so I really hope to see it continue. (P125)*
>
> *This system is amazing keep up the good work. A huge shout out to [midwife] working from [x] Hospital. Her care was beyond expectations. (P150)*

The women also commented on the midwives' knowledge and support, describing them as safe, compassionate and respectful. They felt listened to and one woman even described the midwives providing care for her as *'angels.'* (P199)

> *Wonderful team of midwifery that are very supportive and knowledgeable in a time that is exciting but daunting. (P51)*
>
> *I don't believe I could have coped with my pregnancy and birth as well as I did without that constant support being so vulnerable and alone, they were incredible (P168)*

There was repeated commentary on the benefit and importance of the continuity of care and knowing their midwife/midwives. Most comments indicated that this had been facilitated very effectively.

> *Having the same midwife all the way through my pregnancy and then through the birth was the best experience. I felt a lot more comfortable and confident in expressing my concerns and felt like I was really listened to. My midwife knew me quite well by the time I was ready to give birth and was able to ensure I had the best experience with the birth. I wish this had happened with my past births. (P35)*
>
> *I really hope the MoC sticks. It is absolutely the BEST idea and i absolutely loved having one midwife and she was absolutely amazing. (P138)*
>
> *I wouldn't have my baby anywhere else! Group practice is gold standard and very well implemented here (P11)*
>
> *This model of care provides excellent outcomes- continuous care from the same person ensures nothing gets missed and meaningful relationships are established for the birthing process. I wish I could have brought the midwife with me when we moved! (P149)*

However, there were several women who commented that there had been some challenges and disappointment if they did not receive all care from the same midwife.

Most of my pregnancy care was with one midwife, who was amazing, and I was able to build a relationship with was excellent. However, I had two different ones for birth and then a midwife I had never met providing my after birth care…... I feel the model is good, but needs some fine tuning. (P32)

At the beginning of my pregnancy the Moc hadn't started yet so I had a number of different midwives initially. I enjoyed being able to meet each one from the team as it made me feel more comfortable going into my labour when my allocated midwife had to handover to one I had seen earlier in my pregnancy. I do feel the Moc is a great model but also feel it is important to meet and have an awareness of other midwives across the team as you can never be guaranteed you will get yours allocated. (P28)

Some of the women commented on the way in which care was shared with the midwife and the doctor.

The transparency between midwife and doctor was excellent and so important during COVID. Seeing the midwife more often instead of the doctor also ended up being a cheaper process. (P149)

I felt completely happy with the care the midwives gave and found it unnecessary for the GP Obstetrician to pop in at the end of each appointment. He was lovely, and it was good knowing he was there in case of any problems... but as I never had any problems during pregnancy and birth, I found it unnecessary for him to appear at every checkup. (P24)

Just that we were so very happy with everything and we cannot thank the Midwives and Doctors enough for everything! (P43)

Additionally, there were comments on the benefit of the model when returning from birthing outside the region

This program was invaluable to me even though I had a private specialist obstetrician and birthed in an Adelaide hospital. It was nice to have support at 'home'. And I had complications, so it was comforting to know I had a local phone number to call if I needed anything. I also looooved my midwife and thought she was amazing- so kind and caring. (P148)

Two women specifically commented on graduate midwives and midwifery students.

I loved the idea that my student midwife with my first pregnancy became my midwife for this one. It was comforting to know she knew about us already and what my needs/wants were and the idea of having no birth plan and rolling with what happened on the day made the whole experience calm. She made me feel empowered and supported - even when things didn't go to plan at the end. I loved that it was a calm experience and she was mentoring another student midwife to pass on her awesome approach. (P75)

The ladies including trainee [midwifery student] I had were lovely supportive and knowledgeable thank you (P84)

Many women specifically commented they would birth with the MOC model of care in the future and hoped the model would continue.

The midwives are excellent in providing the care to me and my baby. If I will have another baby again I would love to have them again (P48)

Thank you!! Again I absolutely love this program, it was such a positive experience and I hope it continues in the future. (P74)

Women were specifically asked if they would recommend the model and all but five women stated they would, comments included:

> *I found the program and care provided by the MoC ideal and highly attuned to the maternal needs per pregnancy. Care was consistent, relationships suitably developed and I felt my needs were always respected. I am a strong supporter of the midwifery MoC and will be recommending my peers to birth locally to experience the benefits of this great service continuing. (P31)*

> *I have recommended so many people to birth in [x town] under this MoC model! I was considering going to Adelaide to birth - thinking I would be more supported.... but with this new model, the around the clock support I received was unbelievable. Honestly haven't heard anyone fault this since it has begun in [x town]. I really hope this care continues. I will be back :) (P201)*

For those who would not recommend the model this generally related to a negative experience, postnatal care not being what was needed and how busy the midwives were. Alongside this feedback, women were asked if there were ways in which the care could have been improved. 137 women provided responses to this question with the majority of responses reinforcing how positive the experience had been.

> *I am amazed by how good the new system is. Having 2 previous children 5 and 8 years ago. It was a much different experience this time. The support was amazing and I was always made to feel like a good mum and reassured in times of doubt. (P150)*

However, from the feedback common areas for improvement were presented. Several women commented that they felt midwives had pushed breastfeeding too hard.

> *They pushed the breast feeding very hard- and when I had difficulty feeding my child- I had really bad mum guilt. Wasn't until I made the decision to stop breast feeding I actually got support and was told it was ok. - due to being understaffed I felt a little neglected in the hospital after the birth. However- thoroughly loved and enjoyed all midwives- they were doing the best they could. (P72)*

> *Breastfeeding was heavily pushed upon me by my midwife which made my first few weeks and especially first few days in hospital extremely stressful. I wasn't happy with this aspect at all. (p8)*

A few comments described that the woman and partner felt that they had not been heard adequately,

> *Listen to the person having the baby include their partner instead of treating like they do not exist Don't want to put them through what I went through (P207)*

> *Definitely in labour, I should have been listened to more, I felt like I had no say at all, nothing went to my own plan, and I was disregarded and dismissed by the doctor (P4)*

There was specific feedback about care after birth – particularly while in hospital,

> *After birth when I passed a large clot and I spoke to a midwife I hadn't seen before I felt like it wasn't important until I spoke to my main midwife and she seemed a little more concerned. (P212)*

> *The pre birth was amazing especially with my excellent midwife. I felt the hospital and post birth was better using the previous model especially if you are a first time mum. The ability to call a midwife on the ward to help with feeding when you are feeding, answers questions in a*

timely manner and help when the baby is distressed builds confidence with motherhood which aids with your confidence at home. I also felt this model 'pushed' you out the hospital door encouraging more home care however it wasn't as supportive as my previous births. This also made me feel very nervous. I would recommend mothers and babies staying for 3 nights unless THEY wish to go home earlier. (P152)

Maybe a better system needs to be in place for arranging home visits as they were often cancelled or the time was changed at the last minute making it a bit stressful (P20)

Some concern was raised regarding communication.

I cannot fault the midwives and doctors I dealt with at [x] Hospital. However I did experience quite a traumatic birth which lead to being transferred to an Adelaide hospital. This resulted in a lot of miscommunication and little support from the Adelaide hospital in regards to caring for my baby and breastfeeding. I feel as though if my birth and aftercare were more positive, my answers would be different. (P106)

I felt as all the midwives needed to be on the same page with their information. For example: One midwife would tell me how to do something then the next midwife would tell me that's not how you do it and tell me another way. I was confused with what was right and wrong (P211)

Doctors and midwives speaking to one another in detail and passing on to patient to ease a worrying mind. (P51)

Some of the women commented on the staffing levels, noting that the midwives were busy and one woman suggested a better system to contact the midwife.

They are stretched too thin and need more midwives and more support (P156)

Yes, midwives have too big of a workload, they need more support. (P197)

More staffing. After a challenging pregnancy with constant monitoring and checkups, you could notice staff were quite busy with multiple women (especially being the only birthing place for the whole Yorke peninsula. (P207)

Some women commented on seeing both midwives and doctors and felt this was not necessary,

It was a little complicated with three care providers, midwives, GP and obstetrician. A few things were doubled up on. (P83)

I feel like my midwife could have assisted with the birth of my daughter on her own. The obstetrician didn't really need to be there. (P35)

A few comments referred to specific areas such as:

The support system for a VBAC should be better. The midwives and the doctors should better support it. (P17)

Debrief of labour before leaving the hospital not just being told what's happening during the labour. (P188)

Wish there was home birth option in this area where the midwife would come to our home to help birth. It should be an option. (P87)

I would have liked to have had the opportunity to attend antenatal classes to prepare myself for birth and the aftercare of myself and my baby. (P106)

COVID-19 was only mentioned specifically by several participants,

> *The covid situation impacted my experience and it would have been nice to have a covid plan and more information regarding covid, pregnancy and babies. A plan for preterm labour or in any circumstance that you'd have to go to Adelaide was not clear. Also I found it sad that my kids couldn't visit in hospital but aged care could have visitors considering they were higher risk I found this contradictory. I understand it was out of the control of midwives but I feel as though it was part of it for me. (P144)*

> *More frequent appointments would have been nice but considering the circumstances of covid 19, I understand. (P69)*

MoC Midwives' Survey

Key findings
❖ Fourteen MoC midwives completed the survey (77.8% response rate). Half of the midwives had worked as a midwife for less than 10 years
❖ 75% of midwives felt prepared to work in a regional caseload model
❖ Collaborative alliances as measured by the Practice Environment Scale suggested good overall collaborative alliances with MoC doctors
❖ Work-life balance was rated as 'moderate' satisfaction by 86% of the midwives
❖ Midwives have a moderate-high perceived level of empowerment in their practice as measured by the PEMS instrument
❖ All midwives believed the MoC covered core components of care within the QMNC framework
❖ 35.7% of midwives had no plans to leave their current position within the next 5 years

Demographics

The quantitative, anonymous, MoC midwives survey, distributed at the end of the evaluation period was accessed by 16 of the midwives working in the practice at the time. Fourteen of the eighteen (77.8%) MoC midwives completed all questions. One survey only had one field completed (years worked as a midwife) with no other data. Another survey had only the 6 demographic questions completed. This yielded n=14 completed surveys for analysis. Locations of where the MoC midwives were based is shown in Table 23.

Table 23. MoC midwives' location

At which site are you based for most of your time?	Freq.	Percent
Clare	2	13.3
Jamestown	2	13.3
Port Pirie	3	20.0
Crystal Brook	1	6.7
Wallaroo	1	6.7
Equally between Crystal Brook and Port Pirie	6	40.0
Total	15	100.0

Close to half (47%) of the MoC midwives were in age group 35-49 years with about a quarter younger than 35 and a quarter over the age of 50. Half of the respondents had worked as a midwife for less than 10 years. Two midwives (12.5%) had worked for 30 or more years (Table 24).

Table 24. Years of experience working as a midwife

How many years have you worked as a midwife?	Freq.	Percent
1-4 years	4	25.0
5-9 years	4	25.0
10-19 years	4	25.0
20-29 years	2	12.5
30 + years	2	12.5
Total	16	100.0

The majority of midwives (80%, n=12) reported that prior to working in the MoC they had worked in a rural setting. Only three had not previously worked in a rural setting. More than half (n=8) of the midwives had not previously been employed in a midwifery group practice setting. All but one of the midwives were familiar with the York and Northern Region, with just over half (n=8) having worked in the area for 1-4 years, and over a quarter (n=4, 27%), having worked in the area for 10 years or more, (Table 25).

Table 25. Years worked as a midwife in the Y&N (in any role)

How long have you been employed in total (in any midwifery position) in the York and Northern Region?	Freq.	Percent
< 1 year	1	6.7
1-4 years	8	53.3
5-9 years	2	13.3
10+ years	4	26.7
Total	15	100.0

Questions about working in rural MGP or continuity of care models

When respondents were asked if they were prepared to work in a regional/rural caseload model of care, the majority (75%) indicated they were, two less experienced midwives were unsure and one felt she was not prepared to work in this type of model.

Midwives nominated a number of specific skills that stand out as being essential when practicing in a regional midwifery setting. These skills included being adaptable and flexible, having sound knowledge and clinical skills, being able to practice autonomously but also be able to effectively communicate and work in a team. Understanding rural practice was deemed important alongside a commitment to compassionate woman-centred.

When asked to nominate a few words to describe the difference from working in metropolitan positions, the following points were made which aligned closely with the responses to the previous question. The midwives commented that one of the key differences was working in a small community where you knew the woman, her friends and family. You also worked with a close team of midwives and doctors but that at times there was limited support for leave. They noted the difference in being able to work autonomously, but also recognised this meant that at times there

was limited back-up in emergencies and the midwife needed to be resourceful and draw on a solid base of knowledge and clinical skills.

All (100%) respondents thought the role of the regional MGP as presented in the Y&N Region MoC was sustainable and would be attractive to other midwives.

Practice Environment Scale for use with midwives

Collaborative alliances for midwife-doctor relations were assessed by three Likert-type statements as described in the methods sections. The statements were: (i) doctors and midwives have good working relations, (ii) good teamwork between midwives and doctors and (iii) collaboration (joint practice) between midwives and doctors. Responses and scoring were across the range of 1 (strongly disagree) to 4 (strongly agree). The subscale had good internal consistency for the three items as measured by Cronbach's alpha test (alpha 0.824) and was considered valid.

The mean score over the 3-item subscale of midwife-doctor relations for the 14 midwives who completed all three questions was 3.11 (95% CI 2.82-3.41), (SD .52), median score of 3.0, with a range of scores from 2-4. No one strongly disagreed (score of 1) with any of the questions. An average score of 2.5 indicates at a group level, there was equal distribution of agreement and disagreement. The score of 3.11 suggest that on average, midwives generally agreed that there was good overall collaborative alliances with the doctors.

Work-Life balance

When asked to rate satisfaction with time off work, 86% of midwives (n=14) rated this as "moderate" satisfaction, with the remaining 14% rating high satisfaction. There were no responses of low satisfaction. Similar levels have been reported in those working in Australian continuity models of care, with 76% reported moderate to high satisfaction with time off.[28]

The majority of midwives (79%) were also moderately satisfied with their work-life balance. The remaining were either highly satisfied (14%) or had low satisfaction (7%). This is higher than those reported in a Australian sample of approximately 200 MW working in a continuity model of care, where 59% reported moderate to high satisfaction with work-life balance.[28]

Perceptions of Empowerment in Midwifery Scale (PEMS)

Cronbach's alpha test for internal test consistency of the three 6 itemed-subscales showed good internal consistency for the subscale effective management (0.7569) and woman-centred practice (0.7350). The subscale autonomous practice had lower internal consistency (0.5906) and dropping the item "I have autonomy" increased the alpha test to an adequate level of 0.6132. Mean sub-scores were subsequently calculated. A score of 1.0 indicates very low perceived empowerment, 2= low perceived empowerment, 3=moderate perceived empowerment, 4=high perceived empowerment, and 5=very high perceived empowerment.

Results of the mean subscale score for autonomous practice, revealed a score of 3.940 (range 3.3 to 4.66) indicating that midwives have a moderate-high perceived level of empowerment in their practice.

The mean subscale scale for effective management was 3.976, indicating that midwives have a moderate-high perceived level of empowerment for this item. The mean subscale scale for woman-centred practice was 4.285, indicating that midwives have a high perceived level of empowerment for this item. The sum of means yielded an overall PEMS score of 12.19. Scores in the range of 10-12 correspond with a level of high perceived empowerment.

Quality Maternal and Newborn Care (QMNC) Questions

The three questions specifically addressing core care components within the QMNC Framework were mostly positively answered. These were:

1. Do you feel the MoC covered all of the necessary care for women, e.g. health promotion, screening, care planning and managing complications?

- All 14 MoC midwives responded “yes” to this question.

2. Do you feel the organisation of care in the MoC was accessible, of good quality and adequately resourced?

- The majority of midwives (85.7%) responded “yes” to this question, with 7.1% being unsure and 7.1% replying “no”. Comments for the “unsure” response was related to issues of recruitment strain.

3. Was the care provided in the MoC based on promoting normality and strengthening women’s capabilities? e.g. did it follow expectant management, intervening only when necessary?

- All midwives responded “yes” to this question.

Intention to Leave current position

Midwives were asked if they plan to leave their position within the next 5 years. Over a third of respondents (35.7%) to this question indicated that they had no plans to leave their position within the next 5 years (Table 26).

Fourteen percent were intending to leave within the next 12 months and a further 29% intended to leave within the next 1-5 years. Of those that responded “other”, reasons were varied including: end of contract, maternity leave and possibly changing region/undecided on future plans.

As a comparator, in South Australia, in both 2017 and 2019, approximately 55% of midwives responding to the SA Climate Workforce Surveys indicated they planned to leave their current position within the next 5 years. However, most of these midwives worked in hospitals and the sample sizes were small (n=217 & n=135, respectively).

Table 26. MoC midwife’s intention to leave current position

Do you plan to leave your current position?	**Freq.**	**Percent**
No plans to leave within the next 5 years	5	35.7
Yes within the next 12 months	2	14.3
Yes within the next 1-5 years	4	28.6
Other	3	21.4
Total	14	100.0

Positive and negative aspects of MoC

All midwives were asked to list their top two positive and negative aspects of working in the MoC. Fourteen midwives provided responses to their top two positive aspects of working in the MoC and 12 midwives reported on the top negative aspects of working in the MoC. These are explored in more detail in the qualitative analyses. In brief;

- The positive responses generally focused on: care for the women (i.e. continuity of care, making a difference to the woman, knowing their women, being with the woman through her journey, etc) and working within the group of midwives (i.e. supportive team, collegial relationship, working with like-minded midwives, etc). Other mentioned positive responses included: confidence in skills and abilities, education, flexibility of work, own time management, living in the country.

- The negative responses focused on lack of back up staff or being short-staffed, feeling quite rushed at the beginning, issues around being on-call, and challenges with work-life balance. Other mentioned negative aspects included: distances covered, not enough staff cars, funding for equipment, challenges with doctors, and paperwork/bureaucracy.

System processes and change management

Information on new system and communication processes were sourced directly from several service providers to provide clarity around changes that were not explicitly obtained from the survey and focus groups. This information is included to provide some explanation of how system processes impacted the MoC implementation. Crucial to the smooth transition to the MoC were the change management and system processes that needed to occur. This included the introduction and modifications to a number of administrative and communication systems. Ultimately these resulted in improved efficiencies across the sites and are reported in brief in this section. This includes seven questions asked of midwives from the MoC midwives' survey.

Change management and governance

Prior to the MoC each of the five hospitals had its own administrative processes, leadership, and service delivery model. It was a struggle to fill midwifery positions at the sites as midwives had to be dual qualified and work in nursing roles when birth numbers were low. Midwifery care was largely hospital based and required rostering of midwives on all shifts. Rostering challenges existed with the inability to fill rosters, resulting in double shifts, agency staff needed, and midwives needed to be on-call. Having sufficient midwives to service all five sites at times resulted in the situation where two of the five sites were shut down due to no staff. Women were moved to another birthing site due to no midwives, but often also due to no obstetric doctor or anaesthetist available to cover theatre call. The ward call roster was the biggest issue; whereby ward midwives would work shifts then have to go on call after shifts to come back to work, including weekends. Some sites had midwives covering midwives' call and theatre call, at the same time, which posed significant safety risks.

Midwives worked only at their site, so if there were no midwives rostered, there would be a diversion in service. GPs in the area were also overloaded without an established shared-care collaborative arrangement.

In the new MoC, a consistent management structure was proposed to provide a common vision that is directed and coordinated. The Y&N region has moved away from the traditional ward rostering of 24/7 and team midwifery model to a regional midwifery group practice in Y&N. Rostering issues

have largely been resolved as the MoC midwives cover the call for all five sites working within the enterprise agreement. This has resulted in no call roster or call-back rates and no diversion of services. Rostering in the new MoC is reported to be more resourceful with a good workforce flow.

The introduction of the MoC has greatly contributed to team relationships and continuity of services for women. For both clinicians and women, there are known midwives within the team, with more flexibility and improved interdisciplinary care. The new MoC has led to a palpable cultural change within the service.

With the introduction of the new model, the MoC midwives have taken on two registered midwives' transition to professional practice program (TPPP) (2020-2021 financial year) as well as early career midwives, all of which require mentoring. The important role of mentoring and training these new graduates with regard to MoC workload is being addressed. In the long term, this is an important role of the MoC midwives in building sustainability and making regional/rural caseload an attractive option for new midwives.

As a result of these changes, some birthing sites have maintained hospital midwives on-site who are not part of the MoC model and other sites no longer have a midwife rostered on site. This has presented a challenge to many of the nurses who had previously worked in a segregated system and are now caring for mothers and babies (when the caseload midwife is not on site). Nursing staff have been educated to manage and support families on the ward through planned full day obstetric workshops to recognise deterioration and when to call a midwife, although there were some interruptions to education by the pandemic. There has been an effort to ensure that ward staff midwives and nurses feel part of the collaborative team. For the doctors in the area there are now better collaborative arrangements and teamwork with new MoC.

Supporting change management, the local health network operational development facilitator has run a suite of workplace culture change workshops that has brought the MoC midwives together in a safe and respectful way, to encourage a common goal and vision. Reflective clinical supervision has been sourced with Flinders and Upper North Local Health Network (FUNLHN). This process is being established but will provide a much needed opportunity for all midwives to engage in a personal reflective space.

Communication

To facilitate effective communication processes across the five sites, the Microsoft Teams platform was introduced early in the MoC. The platform is a secure system to support the level of security required for healthcare consumer information and the medical record requirements for safe storage and management of patient information. These features allow the midwives to communicate effectively with each other. The platform is also used to record meetings and education forums, support rostering and enable collaborative work across the MoC. Both MoC midwives and doctors are also now using MS OneNote. Standardisation across the five sites has resulted in consistent communication platforms and clinical handover across the region, directly resulting in better collaborative arrangements and teamwork within the new MoC.

Referral platforms with the Northern Area Local Health Network in Adelaide have also been introduced and shown to be effective through the Integrated Point of Care Clinical system (IPOOCs) referral platform. Women referral systems are managed to enable a seamless, timely and responsive process. In this process women / families are triaged by appropriate clinicians and a management plan is developed that includes virtual appointments that can be supported by the MoC Midwife and

necessary referrals to services can be made. This reduces unnecessary travel for women/families and connects and coordinates care.

Administrative and rostering processes was the focus of the MoC survey, which included a series of seven questions relating to these processes. In general, the majority of responses rated administrative processes and rostering/working flexibility in the good to excellent range. The highest range was for communication within the MoC team. Handover with hospital staff and doctors were less favorably rated, although the majority of responses were still in the good to very good categories (Table 27).

Table 27. Administrative systems and processes that were introduced in the MoC

Statement	Very poor *n* (%)	Poor *n* (%)	Fair *n* (%)	Good *n* (%)	Very good *n* (%)	Excellent *n* (%)	Total *n* (%)
Communication within the MoC team	-	-	-	5 (35.7%)	5 (35.7%)	4 (28.6)	14 (100%)
Handover with hospital nurses/midwives	-	-	2 (14.3%)	6 (42.9%)	6 (42.9%)	-	14 (100%)
Handover with area doctors	-	1 (7.1%)	2 (14.3%)	5 (35.7%)	5 (35.7%)	1 (7.14%)	14 (100%)
Centralised information sharing platform	-	-	-	2 (14.3%)	8 (57.1%)	4 (28.57)	14 (100%)
Standardisation of documentation across the region	-	-	-	1 (7.1%)	10 (71.4%)	3 (21.4%)	14 (100%)
Rostering and on-call	-	-	-	3 (21.4%)	11 (78.6%)	-	14 (100%)
Flexibility in working arrangements	-	-	-	1 (7.1%)	10 (71.4%)	3 (21.4%)	14 (100%)

Staffing Full Time Equivalent

The MoC was originally funded for 12.97 FTE. This included the level 3 Midwifery Unit Manager (MUM) who had a caseload of 10 and the associate midwifery unit manager, also with a reduced caseload. The model originally incorporated one TPPP midwife (per financial year) who had a reduced caseload. In the six-monthly review of staffing projections, an increase in caseload allocations was identified and recruitment was planned in accordance with this.

Over the 2-year pilot period an additional 2.8 FTE has been included in the model to support safe allocation across the LHN. This increase also accounts for the CHL workload. Every 6 months allocation of caseload is reviewed, and the required FTE provided.

It has also become apparent the MUM workload is significant, while important to maintain a reduced caseload, consideration must be made for the need to be across sites to support staffing, facilitate change management, and professional development. While women have not been

disadvantaged, the MUM workload is stretched and would benefit from clerical support for the additional administrative responsibilities.

Maternity leave as well as secondment has meant the sites at times were challenged with their continuity in relationship with families. Utilising a successful recruitment strategy the following steps were untaken to address this: midwives from the hospital wards moved into the MoC to backfill, a very successful opportunity to work with Barossa Hills Fleurieu Local Health Network (BHFLHN) to offer RN/RMs from Gawler hospital the opportunity to come and work in the MoC for 10-12 weeks to refresh their midwifery scope, and provide additional senior clinical support. The challenge for this arrangement is the Human Resource (HR) process that requires a complete reappointment to another LHN of a current SA Health employee.

Country Home Link

Ongoing discussions occurred to ensure all women and practitioners in the area were aware of the MoC. Some women in the area missed out on the service, with many women who were seen for their pregnancy booking by medical clinics, referred to metropolitan public hospitals in Adelaide for their care. The MoC is therefore unaware of these women and only receive notification of them postnatally through the Country Home Link (CHL) program. These women have no local midwifery care; they often do not attend antenatal education. These women/families often require additional support with parenting skills. There is also a considerable amount of time, approximately 4 hours of clerical work needed to complete the CHL package to maintain ongoing funding. With no clerical support this is an additional administrative workload taken on by the MoC midwives. From the period July 2019 to April 2021 there were 93 notifications of women through CHL, i.e. approximately 49 women per year that were unallocated to the model and for which post-natal care was provided by the MoC.

Efforts to increase awareness and promotion of the MoC have included visiting all of the GP clinics in the region, with posters and brochures to give to the mothers to promote contact with the service. There has been a recent increase in women booking in with Wallaroo from the Lower Yorke Peninsular, however that has largely been through word of mouth about the service. Women largely advocate for themselves to be referred to the MoC.

Midwifery Transition to Professional Practice Program

To date the MGP has employed three formal TPPP midwives, as well as six graduate midwives within the model (2019-2021 financial year). These midwives are crucial for sustainability. However, to support their transition it was recognised early career midwives require mentoring, ongoing support and an initial reduced caseload allocation. Three of the four early career midwives who completed the midwifery TPPP evaluation form at the end of 2020 have continued to work within the model, one early career midwife has recently moved interstate.

Likert scale responses from the three TPPP surveys confirmed all respondents either agreed or strongly agreed that they felt welcome and respected in their workplace, had sufficient support and education, and were now more confident in their midwifery skills and practice. Two of the three early career midwives either agreed or strongly agreed they were able to balance work and family life, though one disagreed. Despite this all three reported the program met their expectations and they would recommend it to other graduates. Responses to the open-ended question ‘what were the highlights of the program’ demonstrated all three respondents felt very well supported and had valued the ability to work in a midwifery group practice upon graduation.

Maternity Indicators

There were 499 women allocated into the MoC during the calendar year 2020, with 375 of these women (75.2%) birthing in the Y&N region. The 25% of women (n=124) who did not birth in the region did so due to personal reasons or obstetrical/medical reasons.

Maternity indicators for women birthing in the MoC for the 12-month period 1 January 2020 thorough to 31 December 2020 are reported in Table 28, Table 29, Table 30, and Table 31. These include National Core Maternity Indicators that are routinely reported by tertiary obstetric hospitals in Australia. The reporting of 'selected primiparous women' allows for comparisons of a group of women whose characteristics suggest they have lower risk of complications and gives a better indication of what can be expected in 'standard' cases.[36]

Selected primiparous women are defined as: *women age 20-34 years old, giving birth for the first time at >20 weeks gestation, singleton, cephalic presentation, 37-41 weeks gestation.*

The MoC indicators are not directly comparable to state or national statistics due to differences in risk profiles, hospital practices and management guidelines. The closest comparable statistics would be for selected primiparous women, however caution should be used with interpretation of these percentages due to small numbers and other differences. The most recently reported (year 2018) comparative national data and applicable SA data (2017) are shown in Table 31 for illustrative purposes.[36]

Table 28. Characteristics of women birthing in the Y&N MoC, calendar year 2020

Characteristic	**Number (%)**
Total number of women who give birth (by any method)	375 (100%)
Total number of babies born	375 (100%)
Total number of live babies born at 37 completed weeks or more	370 (98.7%)
Total number of primiparous women who give birth (by any method)	113 (30.1%)
Total number of selected primiparous women who give birth (by any method)	84 (22.4%)
Proportion of women who were aged 35 years or greater	56 (14.9%)

Table 29. Maternity Indicators labour and birth, MoC, calendar year 2020

Indicator	Number (%)
Total women who birthed vaginally	270 (72.0%)
Total selected primiparous women who birthed vaginally	62 (73.8%)
Induction of labour, all women	98 (26.1%)
Induction of labour, selected primiparous women	27 (30.7%)
Selected primiparous women, non-instrumental vaginal birth following spontaneous onset of labour	55 (65.5%)
Assisted vaginal birth, all women who gave birth vaginally	13 (4.8%)
Assisted vaginal birth, selected primiparous who gave birth vaginally	6 (9.7%)
Epidural use - all women who give birth vaginally	52 (19.3%)
Epidural use - selected primiparous who give birth vaginally	19 (30.6%)
Total women who gave birth by LSCS	105 (28.0%)
Selected primiparous women, who gave birth by LSCS	22 (26.2%)
Pre-labour LCSC following previous primary LCSC	29 (59.2%)
LSCS rate - early planned without medical or obstetric indication	8 (29.6%)

Table 30. Birth outcome indicators, MoC, calendar year 2020

Indicator	Number (%)
Third or 4th degree tear, selected primiparous women who gave birth vaginally	<5 (4.8%)
Episiotomy - selected primiparous women who give birth vaginally	11 (17.5%)
APGAR score of 6 or less at 5 minutes post birth - inborn singleton babies live born at term	<5 (1.1%)
Primary midwife present for birth	243 (64.8%)
Primary midwife present for labour/LSCS	240 (64.0%)

Note- percentages only reported for small numbers <5

Table 31. Selected National Core Maternity Indicators, Australia 2018 and South Australia 2017

Maternity Indicators	Australia Percent	South Australia Percent
Selected primiparous women, non-instrumental vaginal birth*	43.8%	46.2%
Selected primiparous women, LSCS	30.1%	29.4%
Induction of labour, selected primiparous women	45.3%	46.9%
Third or 4th degree tear, selected primiparous women who gave birth vaginally	5.0%	6.5%
Episiotomy - selected primiparous women who give birth vaginally	22.3%	24.5%
APGAR score of 6 or less at 5 minutes post birth - babies live born at term	1.3%	1.3%
Epidural use all women	not reported	31.3%
Total women who birthed vaginally	not reported	65.1%

*denominator- all selected primiparous women. Source: AIHW National Core Maternity Indicators 2018. https://www.aihw.gov.au/reports/mothers-babies/ncmi-data-visualisations/data

Discussion

This evaluation aimed to assess the uptake and outcomes of an evidence-supported, multi-disciplinary, continuity of maternity carer service centred around midwifery group practice in regional SA, over an 18-month period. Over the past decade within regional and rural Australia, there has been an effort to maintain existing maternity services and develop and expand new models of care,[37] following the loss of over half of these services since the 1990s. Whilst the safety and efficacy of women birthing in regional and rural areas, both nationally and internationally, has been established[38] other barriers to implementing a midwifery caseload model include; rural midwifery and doctor workforce shortages, medical dominance of maternity services and lack of awareness of what midwifery can offer women.[1, 39]

Over the course of the evaluation we were mindful of these barriers while acknowledging that a multisite evaluation brings its own challenges. Hospital size, staffing and experience with caseload or team midwifery varied over each of the five sites and some of the feedback likely reflects the uniqueness inherent in each site. In addition, COVID-19 brought other challenges; however, the adaptability of clinicians to support women during the pandemic was evident and reflected in both women's comments and care provider actions. This was a pragmatic evaluation with real-world implementation that simultaneously assessed the MoC implementation and looked at the clinical and broader consumer and workforce outcomes. Members of the evaluation advisory committee were stakeholders in the Y&N region and were able to advise that the information we sought to capture was important in assessing the viability of the MoC for women using the service, clinical care providers, and at the broader SA Health systems level. It was our brief to provide objective evidence as to the feasibility, effectiveness, acceptability and sustainability of the pilot for policy, practice and research.

The MoC is unique in regional/rural Australia as it brings together five different sites under the governance umbrella of a midwifery group practice model, that ultimately affects care providers at all levels of maternity care. Hospital-based midwives working in the region were given the opportunity to transition to the caseload model while midwives not wishing to work in the model would continue to be supported to work at their local site. For hospital nurses who lost 24-hour rostered hospital midwives to the caseload model, there were new responsibilities to provide maternity care for women and newborns. For GPs in the region who had traditionally provided all maternity care to their clients, they were now embarking on a new shared care arrangement with caseload midwives.

Extensive engagement with stakeholders; clinicians, women, and the community occurred prior to commencing the MoC.[13] While favourable clinician support had been garnered, it was important that this was objectively measured at the collective level. Prior to the official launch of the MoC, we assessed this by means of the ORIC instrument amongst MoC midwives, doctors and hospital nurses/midwives. The resulting high ORIC score demonstrated that clinicians were willing to embrace change and commit to making the change. It is unlikely that such a willingness would have been possible without the extensive two-year stakeholder engagement, and careful research and considerations that were given prior to embarking on this significant service change. The response rate to the ORIC questionnaire was just over half (55%) of all clinicians in the area and a few respondents answered all 12 questions negatively, suggesting not all clinicians were on-board with the impending changes.[35]

Within the Proctor evaluation framework and incorporating a mixed-methods design we were able to quantify outcomes and assess how well the model of care was implemented and perceived in terms of effectiveness, acceptability, and sustainability. The maternity indicators included in this evaluation are presented so that they may be used to assess whether the clinical outcomes are acceptable and for general comparable purposes.

Additionally, qualitative methods were able to address some of the nuanced aims of the evaluation including; organisational and interpersonal dynamics affecting the MoC, explaining practice change, discerning barriers and facilitators to uptake of the MoC, identifying the strategies used to foster organisational change and identifying elements and provider perceptions that affect implementation and sustainability.[40] The new MoC affected not only how care was provided, but also had major implications for the way clinicians worked together, including: effective communication, adjusting to a new management structure and systems, new demands, hand-over and sharing of care responsibilities for women and protected their own time off. These transitions were first assessed by separate focus groups with the three groups of care providers at approximately 9 months into the new service.

Key questions were included in this evaluation which directly reflected the QMNC Framework.[17] The Framework places women at its centre and requires effective multidisciplinary teamwork and integration across hospital and community.[18] This framework represents the best available evidence on quality maternal and neonatal care and has been used more recently to guide maternity care evaluation and explore key stakeholder perspectives.[19, 22, 41, 42] Similarly, we have drawn on QNMC framework to inform the analysis and interpretation of the data.

Effectiveness of the MoC

It is evident from the findings that the new MoC was effective in promoting quality care, with the majority of women (approximately 92%) in the region engaging with midwives in the MoC. Importantly, most women would seek the MoC again for future pregnancies. Women who identified that their primary care provider was a midwife reported having the majority of their care with this midwife, promoting effective continuity of care. Overall, the reported core maternity indicators demonstrated low intervention rates with good outcomes. For instance, induction of labour and epidural rates were lower than the national and state indicators (although not directly comparable). Vaginal birth rates were higher than the state average (65.1%) at 72%, and caesarean birth rates reduced (28%). In line with the practice categories described in the QMNC, all MoC midwives agreed that the model enabled midwives to provide the necessary care for women, e.g. education, health promotion, screening, care planning and managing complications. Further the care provided by all MoC midwives aimed to promote normality and strengthen women's capabilities. These findings are consistent with evidence that supports midwifery continuity of care for women.[9, 43 10, 44, 45]

While the overall objective evidence from this evaluation is positive, it should be noted that that long-term effectiveness will need to be monitored. This evaluation started at the beginning of the service and there were a few challenges to address before the program was functioning at capacity; this was to be expected as it is an ambitious program affecting service delivery at multiple levels over a large geographical area. Care was organised to be accessible, providing midwifery continuity and integrated across community and services. This was evident by partnerships with area doctors and 80% of women using supportive community services after the birth. Nevertheless, the challenges of geography and the social determinants of health in rural areas, as well as entrenched ways of delivering a service impact on ongoing service delivery transformation.

Working in rural and remote areas of Australia are challenging with distance, isolation and lack of resources identified as concerns.[2, 4 46, 47] In this evaluation all care providers commented on the distances travelled by midwives to meet the care needs of women. While the MoC midwives felt that they were well supported and prepared, ensuring adequate resources and a competent workforce is imperative. Simple measures such as available service cars, shared resources between sites and ongoing professional development specific to context are required. This finding is not new, in reviewing 20 years of rural maternity services in SA, Sweet et al.[2] identified that the closure of small rural birthing services ultimately depleted resources and impacted on skill level. Gilkison et al. [48] in their exploration of rural midwifery practice in New Zealand and Scotland concluded that appropriate and available education strategies were necessary to ensure ongoing competence and retention.

Alongside this, there was commentary on the increased psychosocial needs of women living in this region. Midwifery continuity of care models are ideal to provide care that meets the breadth of needs for women with a focus on holistic, woman-centred care. [49, 50] Using the QNMC framework, Cummins et al.[19]concluded that 'continuity' was a key feature in developing a strong therapeutic midwife-woman relationship. Through this connection midwives brought together knowledge and skills, as well as interpersonal and cultural competence. Midwifery continuity of care enables the midwife to organise care around the needs of the woman while simultaneously strengthening the woman's own capabilities. This is particularly important as women who experience higher psychosocial need may also be socially disadvantaged and have less social support. In a study which sought to offer midwifery group practice to socially vulnerable women, the midwives reported that they believed continuity of care made a profound difference to the women and provided a transformative journey of care.[50]

Providing good quality care through appropriate division of roles and responsibilities, as described in the QMNC framework, requires intentional focus and committed leadership. In this study, most women saw a doctor and a midwife. This was largely due to existing maternity care service organisation and to meet expectations of medical maternity care providers in the region. Interestingly, women identified that they also valued seeing their GP and this ensured continuity once care from the MoC midwife ended at six weeks. Flexibility in how midwifery continuity of care models are designed and implemented is required, particularly in considering the diversity of rural locations. In this model, nearly all women had a known midwife, which both women and midwives reported as highly satisfying and meets the global recommendation for all women to have a midwife across the childbirth continuum.[51, 52] However, there is a need to consider other aspects that remain barriers to implementing midwifery led models of care where midwives are recognised as lead care providers. Studies exploring midwifery led continuity of care have described barriers such as 'contested care,' whereby power struggles exist between midwives and doctors, acknowledging that this is detrimental to effective maternity care.[19, 53] In this evaluation the Practice Environment Scale indicated that the relationship between midwives and doctors was functioning well, however some focus group data suggested that a further transition and acceptance of midwives, particularly as lead care providers, may need to evolve. For example, doctors still attended a majority of births and women saw both the midwife and the doctor equally, creating some confusion at times and the potential for over-servicing. Additionally, through the focus group discussions comments were made that indicated that a hierarchy of service providers may still exist. A Canadian study which explored the barriers and facilitators of interprofessional collaboration with midwives identified that disciplinary difference was a genuine factor to negotiate.[53] This finding was sometimes exacerbated in remote areas due to lack of clearly define roles, scope of practice and organisational structures. They also reported that fee-for-service arrangements contributed to challenges and noted inequitable funding between medicine and midwifery.[53] One notable feature in this pilot was the

need for women to be referred to the service, rather than elect to self-refer. At times this meant that women were being referred to the nearest tertiary service by GPs without obstetric share care providers, rather than to another GP practice with the MoC. A lack of understanding regarding the organisational structure of the model, and midwifery-led models of care in general may have contributed. It is important that this is reviewed and agreed referral strategies are implemented.

It is acknowledged that midwifery continuity of care models are not always well understood by other health professionals and that role boundaries are potential areas for conflict.[47] For instance, Kashani et al. [47] described an 'us' and 'them' relationship between continuity midwives and hospital midwives. They also noted that doctors sometime considered caseload midwives less positively, or as noted by Crowther and Smythe,[54] midwives did not always value the perspectives of doctors. Interestingly, a study that investigated collaborative practice between maternity care providers found that doctors and midwives had different core beliefs about models of care and that this was the main source of conflict threatening collaborative practice.[55] In their exploration of maternity care in rural New Zealand, Crowther and Smythe concluded that collegiality, where teams worked together well, appreciating one another's difference was vital. They called for each profession to work co-operatively rather than competitively and concluded that intentionally nurturing respectful and trusting professional relationships was required. They suggested activities such as collaborative learning and interprofessional case reviews and debriefs. Other recommendations included planned team building activities focussed on strengthening collegial relationships[47] as well as interdisciplinary professional development.[53] In the Y&N evaluation all stakeholders commented on strategies that they had implemented to strengthen communication and collaboration and there was an evident commitment to continue to build this. Interestingly, Tennett et al.[46] noted that despite the sometimes difficult, working conditions, rural services present an opportunity to forge secure community relationships and collegial teams.

A significant key to the success of the model of care in the Y&N was strong visionary leadership and well-developed overarching management and stakeholder engagement from the beginning. There was a real commitment to transform the existing five services into an integrated, multi-disciplinary model of care. The leaders demonstrated both material and moral support for the model and worked tirelessly for its success. This aspect is reported repeatedly in studies on implementing midwifery models of care.[56] [45, 57-59] In particular, McInnes et al [45] in evaluating a midwifery model of care in the UK concluded that effective leadership was essential in building trust across all stakeholders. Larsson et al[56] reported on the implementation of a midwifery model of care following the closure of a rural labour ward. They advocated the need for strong, supportive midwifery and obstetric leadership, highlighting as well, that interprofessional collaboration was critical. Likewise, in reporting on the upscaling of a midwifery continuity of care model implemented in a health service in coastal Queensland Styles et al. [60] concluded that managerial support, co-operative inter-disciplinary relationships and positive organisational culture were crucial. They particularly noted that poor intra and inter professional communication was a significant barrier and a major predictor of dysfunction. They advocated that interdependency, underpinned by mutual respect and shared ownership of the service goals should support expansion of midwifery continuity models.[45, 53, 60] In an audit of a caseload model of midwifery care provided in a regional health service in Australia, the authors reported that success was attributed to leadership across all levels of policy and health service management. They also highlighted importantly, that the outcomes were a result of the midwife who provided the service, as was also evident in this study.[61] Leadership that enables midwives to flourish particularly within midwifery models of care is essential. There is a need to "protect, lead, manage and juggle the internal and external demands," which as identified by Hewitt et al. .[58p.175] requires leaders with both management skills, and a transformative, relationship-based

leadership approach. Specifically, there is a need to ensure leadership is sustained and that the model of care remains a shared vision for the Y&N region, recognising that multi professional commitment is imperative for sustainability.

Acceptability of the MoC

The evaluation showed that all stakeholders were strongly supportive of the MoC and agreed that it was the way forward for maternity care in the region. This consensus is significant as authentic commitment is required for ongoing success of the model.[59]

Women were overwhelmingly positive about the quality of care they received from the midwives during their pregnancy, birth and postnatal follow up. They described the service with superlatives, identifying respect, communication, knowledge and compassionate and personalised care with a known midwife, as key attributes. This is consistent with literature reporting on midwifery continuity of care models,[23, 62, 63] in which relational attributes enacted through midwifery care influenced not only the woman's experience but overall outcomes, such as reduced intervention. In Allen's [23] study, midwives working within continuity models were more likely to go above and beyond, as the model provided the context for developing an authentic therapeutic relationship with women at the centre of care.

While all care was rated positively, it was particularly evident that the satisfaction with postnatal care was significantly high when compared to literature of women's experience with standard maternity care, where satisfaction is generally low.[64, 65] In this model, women reported sustained ongoing care after birth, particularly when provided by the midwife at home. This is consistent with research on midwifery continuity of care in which women report receiving more postnatal visits and greater satisfaction with postnatal care.[66] There were a few women however, who felt that the immediate care in hospital, if the midwife could not remain present, was compromised due to nurses not having the necessary knowledge and skills to support early mothering. There is need to consider how best to address this aspect of feedback. In this model, with most midwives working in the MoC and not employed at the hospitals, nurses are required at times to provide care they may consider is outside their usual practice. Additionally, the few midwives who chose not to be employed in the model reported concerns about maintaining contemporary knowledge and skills. While professional education was made available during the implementation in the Y&N to address these concerns, these remain challenges that must be considered moving forward. In a study in rural NSW a similar challenge was reported but mitigated by a shared understanding of birth philosophy along with a commitment to interprofessional collaboration and broad representation of stakeholders through an established advisory group.[57]

Midwives described the best aspects of the model as being able to practice in line with their professional philosophy, providing relationship-based, continuity of care tailored to the woman's needs and circumstances. They also highly valued working with a group of likeminded midwives and working flexibly. Notably, the Perception of Empowerment score from the MoC midwives indicated a high level of perceived empowerment supporting qualitative data which identified professional autonomy as a key outcome for these midwives. This is consistent with research in which midwives describe high satisfaction when working in continuity models particularly around establishing effective relationships with women based on trust and respect, autonomous practice and flexibility.[45, 47, 67]

Sustainability of the MoC

Ensuring sustainability of the MoC is critical. Importantly, most women reported that if they had a further pregnancy that they would seek to engage with the midwifery MoC. Having an effective and acceptable local service ensures that maternity services can continue for rural women and their families. In particular, the uniqueness of a regional approach in bringing together five sites together may represent a way forward for regional Australia where similar models could be adopted.

In order to support longevity of the model there will be a need to continue to attract midwives. This may be supported by ensuring that the transition to practice programs remain embedded within the MoC. In this evaluation midwifery graduates and early career midwives were employed to work in the model. Feedback from graduates indicated that while at times the learning was steep that overall, they felt supported and that supervision and assistance was always close by. There is a recommendation that graduate midwives are supported to practice in continuity of care models which enables them to consolidate their knowledge and skills across the full scope of midwifery practice[19, 45, 68-70] Midwifery education standards in Australia prepare midwifery student to be proficient in continuity of care across the full scope of practice.[68] Cummins et al[71] identified that the relationship-based approach underpinning continuity of care facilitated a better consolidation of skills and knowledge. Graduates reported feeling prepared to work in these models and highly valued the experience.[71] Arguments have been raised suggesting that graduates may not be ready for the autonomy required in midwifery led models. However, studies have shown that a supportive mentoring program along with a reduced workload adequately support graduates in this transition.[70, 72] A conceptual framework proposed by Cummins et al.[72] to guide managers and organisation to accommodate new graduates, may be helpful to ensure ongoing inclusion of graduates in expansion of the MoC.[72]

One aspect that was evident through the evaluation was that the current caseload of 38 women was considered challenging by some midwives, particularly in light of geographic boundaries and on-call requirements. Additionally, MoC midwives were responsible to provide postnatal care to women returning to the region after birthing in metropolitan services, known as the Country HomeLink service, which seemed to place increased demands on workload. In a study which explored midwives experience working in a caseload model in rural Victoria similar themes were reported.[47] Midwives expressed that the on-call element of caseload interrupted their personal lives and was one of the most difficult factors. Being called in for a birth would necessitate reorganisation of other appointments, impacting not only the women but other staff as well. They also expressed guilt if they could not attend to the women when she sought assistance.[47] While the midwives in this evaluation did not express guilt, the findings suggest that instead they sought to be readily available and that this had impacted on some of the midwives' wellbeing. Working in rural communities comes with a degree of social integration which fosters greater social trust in the midwife-woman relationship, however this degree of being 'embedded' in a community, both physically and emotionally may require a level of personal as well as professional exposure.[73p.47] Crowther et al. [73] suggested that at times, midwives may get very little respite from their professional role and acknowledge that this may impact their own family.

The debate around caseload is not new, with studies asserting that a caseload contract system has been designed for urban-based midwives and that it does not work as well for rural maternity services.[54, 74] There is a need to ensure that the caseload is appropriate to the local need and organisational structure and recognise that while caseload and on-call presented challenges for most midwives this did not represent a reason not to work in the model. As reported in many studies,

being able to provide continuity of care for women and their families was more important and meaningful to midwives and resulted in significant professional fulfilment.[47, 62] Notably, research indicates that midwives working in continuity of care models do not report higher burnout rates.[62, 75] Working in teams and optimising flexible arrangements appeared to mitigate these concerns.[47, 76 57] Alongside this, research reports that good communication, supportive medical and nursing colleagues with trusting relationships across all organisational levels, strong relationships with peers, accessible professional support and authentic transformative leadership can improve sustainability.[45, 58, 59, 62, 73]

Significantly, while there remain some challenges, all care providers reported a strong commitment to navigate these, and the changes required. There were benefits across all stakeholders and recognition that this model represented a means to continue providing a high quality and safe maternity service in rural SA for all women living in the region. At times this might mean that some women with high risk factors will be referred to metropolitan services through referral arrangements but return for midwifery postnatal care. Hospital midwives and nurses were required to makes significant adjustments but agreed that benefits outweighed this.

Finally, while a separate cost analysis has been undertaken, consideration must be given to ensure that perceived cost should not constrain ongoing effective, acceptable care.[57] Previous studies have shown how attempting cost neutral services can be detrimental to expanding quality maternity care. For instance, in a study which reported on a caseload model in rural NSW to reduce expenditure the number of women booked was capped which impeded choice and access to care for women and ultimately compromised the service.[57] Further maternity care funding is complex and 'activity based', which means that complex care can attract more funding than normal.[11] In a recent study, Callander et al. [77] sought to analyse the cost and benefit associated with a midwifery continuity of care model (MGP) and reported that MGP cost 22% less that other models of care, with an approximate saving of $5000 per woman. This is consistent with previous research which identified that midwifery continuity of care provides cost-saving benefits alongside quality outcomes.[43, 78, 79]

Strengths and weaknesses

This evaluation provides a comprehensive review of the effectiveness of the implementation, acceptability, and sustainability of the MoC to inform policy and practice and future benchmarking. Strengths include a theory-based framework to guide the evaluation, with defined and agreed objectives. Key performance indicator data are reported for maternity care processes and outcomes. Surveys instruments were validated, and piloted. The high response rates suggest a strong level of engagement from all users and providers. While the authors acknowledge potential for subjectivity of self-reported responses, using quantitative and qualitative methods to triangulate data and enable convergence of information increased validity and rigor to further substantiate results and conclusions. Restrictions and lockdowns due to the pandemic meant that both sets of focus groups originally planned to be held on site by the UniSA team had be re-organised at short notice electronically (Zoom). This may have affected turnout and candid conversations from clinicians, although attempts were made to overcome this by way of optional, anonymous, follow-up surveys for those who wished to say more in a private forum.

Conclusion

There is evidence to support that the MoC is effective, acceptable and sustainable. There is strong support for the MoC from consumers and all providers, recognising that this is a hugely beneficial and highly satisfying model for the women. There was also an evident commitment to ensure that this model would be sustainable within these communities, with all stakeholder groups seeking to improve collaboration and communication. The MoC midwives were extremely positive about working in the model but raised concerns over caseload. They felt that this was too high when the complexities of working rurally in a continuity model were considered, including the CHL service. Alongside this, there was some concern for the non-midwifery staff providing care when women remained in hospital and midwives were not available, as well as some disappointment from hospital midwives regarding their loss of diversity in practice.

Recommendations

The most evident recommendation from this evaluation is that the Y&N MoC should continue in this region as standard maternity care. Additionally, this model can be replicated as standard care and expanded for other regional networks. The Y&N MoC has been shown to be effective, acceptable and sustainable. It represents an innovative response to challenges in providing rural maternity care offering a sustainable model into the future. Notwithstanding the success of this project, a number of further recommendations have been summarised.

- There is a need to ensure that the model of care remains a shared vision for the Y&N region, multi professional commitment is imperative for sustainability. A review of the current referral process to engage all stakeholders in ongoing strategies will enhance success as well as continuing strong visionary relationship-based leadership.
- Consolidate the varied communication strategies so that an effective way of sharing knowledge and maintaining relationships can be embedded and strengthened. This may include creative strategies to foster cohesion between all care providers as well as increased use of digital mediums for example the use of video calling for postnatal/ breastfeeding support on the ward.
- Review the current caseload with all stakeholders involved, this would include exploring the workload that appears to be generated from CHL.
- Review the current transition to practice pathway for midwifery graduates to work in the model drawing on the conceptual framework provided by Cummins et al (2018). Specific evaluation of new graduates working in the MOC would be beneficial to further support graduates working in continuity of care models.
- Explore ways to ensure women have access to midwives or appropriately skilled health professionals in the immediate postnatal period in hospital. This includes continuing professional education for hospital nurses to ensure they are adequately prepared and skilled to care for a well mother and baby when staying in hospital and to recognise when to call a MoC midwife.
- Consider ways to facilitate the professional development of midwives who have opted not to work in the MoC and fully utilise their capabilities within the hospital setting.
- Reviewing targets for the proportion of women accessing MoC midwives as primary care providers. This may include a review of referral pathways and further role clarification.

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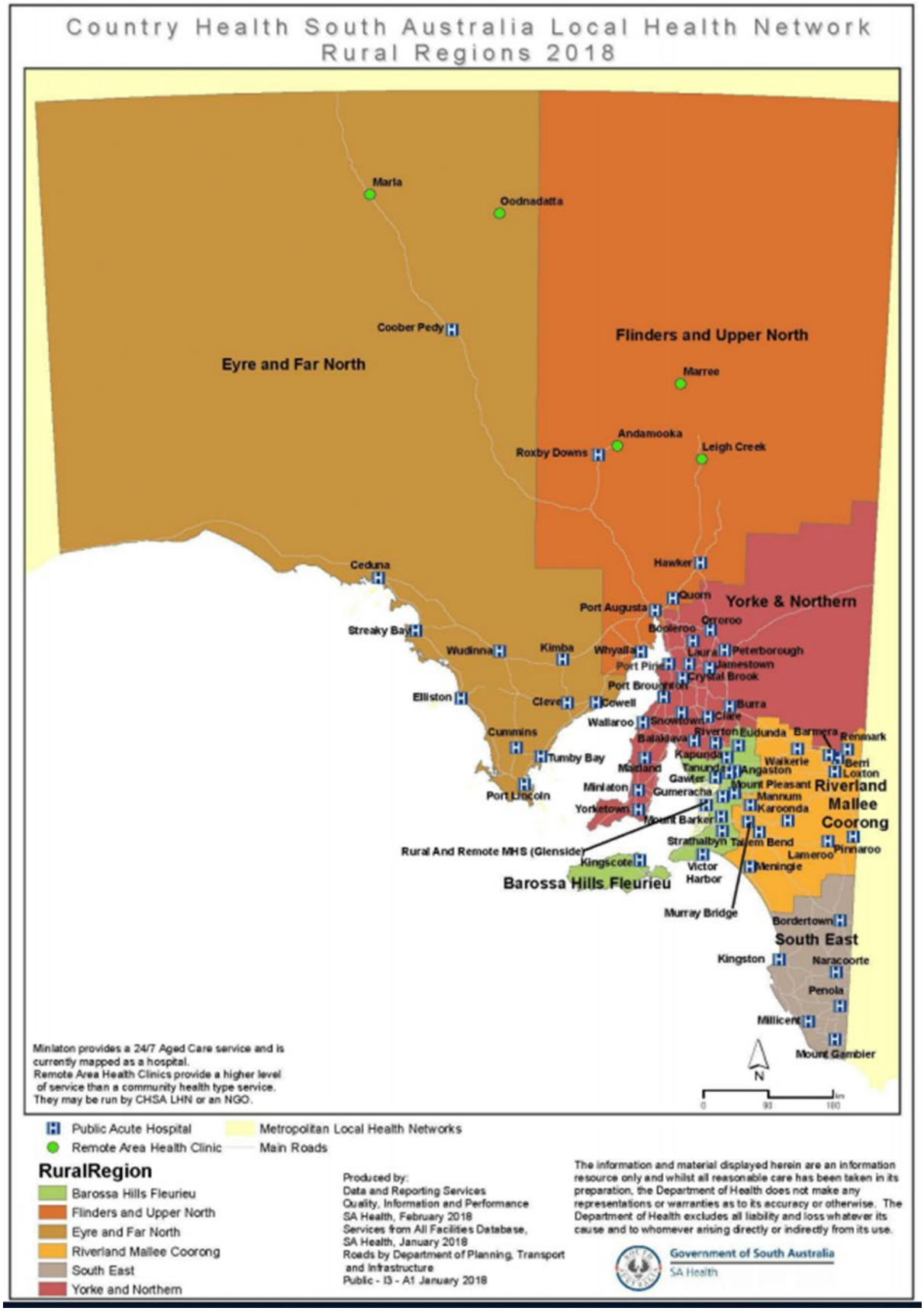
Appendix 1: Country Health SA Local Health Network



Appendix 2: SMART Objectives

Objective 1: Report on state and national clinical outcomes that are routinely collected by the services; maternity & neonatal indicators	
Key Component	**Objective**
Specific - What is the specific task?	To report on the 13 maternity and neonatal indicators as identified in the Y & N Pilot document. Key performance indicators (Section 9, page 27) and KPI targets (length of stay and induction of labour, Section 9.1, page 28).
Measurable - What are the standards or parameters?	For all women, the number and % (numerator and denominator) for each of the 13 indicators, i.e. the caesarean section rate reported for women in the program (# and % with a caesarean, elective or emergency). Data from booking form, SA perinatal data collection forms.
Achievable - Is the task feasible?	Yes, data to be compiled at each of the sites as part of the normal reporting systems. De-identified data to be sent to evaluation team at periods to be agreed upon.
Realistic - Are sufficient resources available?	Yes, data is routine collected and compiled at each site. UniSA to assist with analysis of 5 site combined data. Evaluation monies to be used in part for RA oversight/QA of quantitative data.
Time-Bound - What are the start and end dates?	For the 2-year duration of the pilot program; women who enter the program from July 2019- Jan 2021. Newly pregnant women enter the MoC from 6 July 2019 will be consented into the MoC, plus, those women transitioning into the program that are a maximum of 20 weeks gestation on 6 July 2019 and birthing from 1 Dec 2019.

Objective 2: Report on state and national clinical outcomes that are routinely collected by the services; hospital activity and demographic data	
Key Component	**Objective**
Specific - What is the specific task?	To report on agreed hospital activity data as identified in the Y & N Pilot document (Section 9, page 27).
Measurable - What are the standards or parameters?	For all women, the number and % (numerator and denominator) for each of the agreed data items; i.e. the total number of primiparas who give birth by any method (number and %)
Achievable - Is the task feasible?	Yes, data to be compiled at each of the sites as part of the routinely collected data collection and reporting systems. De-identified data to be sent to evaluation team at periods to be agreed upon.
Realistic - Are sufficient resources available?	Yes, data is routine collected and compiled at each site. UniSA to assist with analysis of 5-site combined data.
Time-Bound - What are the start and end dates?	For the 2-year duration of the pilot program; women who enter the program from July 2019- Dec 2020 and birth from Dec 2019 to Dec 2020

Objective 3: Report on the women's experience with the new MoC	
Key Component	**Objective**
Specific - What is the specific task?	To report on women's views and experiences with the new MoC over the prenatal, intrapartum and postpartum care period.
Measurable - What are the standards or parameters?	All women will be asked to complete an agreed and pilot tested, validated, survey at discharge from the MoC service. Items will include those from the QMNC topic guide and a validated instrument (Williams, et al.[24]) used in Australia in a MGP service. In keeping with appropriate methodological standards, all women approached (whether completed surveys, incomplete or refusals) will be recorded.
Achievable - Is the task feasible?	Yes, women will need to give informed consent to have the survey emailed to them. Midwives discharging women from their care will be given procedural advice on the consent and survey process. Women who do not have internet service will be given a paper questionnaire and prepaid return envelope. A follow-up protocol will be followed for surveys that are not returned within a two- week period.
Realistic - Are sufficient resources available?	Yes, instruments and systems setup by UniSA as part of the evaluation.
Time-Bound - What are the start and end dates?	Women who birth through the program from mid-Dec 2019- Dec 2020 will be asked to compete the survey.

Objective 4: Report on the experiences and elements of clinicians at the 5 sites transitioning to a caseload model of care (new MoC)*	
Key Component	**Objective**
Specific - What is the specific task?	To report on the provider's (midwives, doctors and nurses) views and experiences with the new MoC over the prenatal, intrapartum and postpartum care period. This is to include partnership with medical workforce and nursing staff, effective case management, agreed roles and responsibilities, coordination and collaboration of care, professional support.
Measurable - What are the standards or parameters?	1. Assess readiness for change at program start with approved questionnaire/instrument. All midwives, nurses and GPs will be asked to complete a validated instrument assessing readiness for organizational change at commencement of the program (ORIC survey). 2. Qualitative data from MDT focus groups will be assessed for insights into the transitioning into the MoC at 9 months and at the conclusion (2- year) of the pilot. 3. A survey of midwives and doctors will be arranged at each of the five sites to ensure all voices are heard at approximately 16 months with questions assessing their personal views on working in the model and to also include questions aligned to a previous Australian study assessing midwifery caseload care against the QMNC framework. 4. Scheduled team meetings will include discussions and document issues associated with integration and collaboration.
Achievable - Is the task feasible?	1. Yes, all clinicians will be asked to anonymously complete the readiness for organizational change instrument distributed on survey monkey or via paper; Sept-Oct 2019. 2. Yes, providers will need to give informed consent to participate in the focus groups. Will need to ensure that focus groups are arranged for agrees times at provider's convenience and led by an experienced focus group facilitator. 3. Yes, validated and pilot tested surveys will be developed and distribute in accordance with the QMNC framework.
Realistic - Are sufficient resources available?	Yes, systems setup by UniSA as part of the evaluation.
Time-Bound - What are the start and end dates?	Over the course of the 2-year duration of the pilot program. See Gantt chart. ORIC survey; program start. Focus groups at 9 months and conclusion of pilot. Provider survey at pilot conclusion and possibly after first focus group.

Objective 5: Report on the experiences and elements of the midwifery transition to professional practice(MTPP) within the MoC	
Key Component	**Objective**
Specific - What is the specific task?	Assessing the experience of graduate midwives working within the new Country MoC.
Measurable - What are the standards or parameters?	A MTPP evaluation form was developed (pgs 37-38 of the SA Health MoC framework) to be included in the assessment process. This is to be completed by the transitioning midwife upon completion of her/his time in the MoC. Graduate midwives are also welcome to submit a feedback form to the NMUM or MGP team leader at any stage to provide feedback for improvements.
Achievable - Is the task feasible?	Yes, the graduate midwife or midwives will be asked to complete the MTPP evaluation form. There is likely to only be one or two midwives going through the program. Therefore due to sensitivities around anonymity the Y&N program governance group may choose to evaluate the MTPP within house and not involve the evaluation team.
Realistic - Are sufficient resources available?	Yes, this will involve only one or two MTPP evaluations. Due to small numbers may be assessed only within the MoC program and not by RBRC.
Time-Bound - What are the start and end dates?	At completion of the MTPP program (within the 2 year period of the MoC).

Objective 6: Report on the overall effectiveness and sustainability of the model of care and what works well, and lessons learnt in a regional model of care	
Key Component	**Objective**
Specific - What is the specific task?	To describe the overall effectiveness and sustainability of the model of care as defined using the key elements identified in the Proctor evaluation framework. Describe the workforce uniqueness of this in bringing together five birthing sites coming together into an overall caseload model; how well this worked, what went well, experiences, and lessons learned from this unique model of care.
Measurable - What are the standards or parameters?	Quantitative and qualitative instruments and measures identified in the previous 5 SMART objectives will inform the response to this objective. These will be assessed in accordance with the Proctor framework of evaluation for the elements of implementation outcomes, service outcomes and client outcomes and alignment with the QMNC framework. As issues arise over the course of the two years- through formal processes such as through surveys and focus groups and informally through monthly meetings, a systematic approach will be taken to addressing problems. Problems may include areas surrounding governance, communication, systems and processes, workforce and culture. All women will also be asked for comments and what aspects of care they liked or didn't like about the MoC on their evaluation form. Data for the costing of the program will not be done by UniSA as part of this evaluation but results from a costing study may be incorporated into the report. Sustainability of the model will be assessed based in part on the evaluation and recommendations made from the evaluation.
Achievable - Is the task feasible?	Yes, for all aspects of the project previously described. Costing of the MoC program will not be the responsibility of the UniSA research team.
Realistic - Are sufficient resources available?	Yes, instruments and systems setup by UniSA as part of the evaluation. Costing of the MoC pilot will not be the responsibility of the UniSA team.
Time-Bound - What are the start and end dates?	Over the course of the 2- year program. Data collection at sites July 2019-Dec 2020. Data analysis Jan-Feb 2021, draft report March 2021, final evaluation report April 2021.

Objective 7: Report on the key workforce benefits of the new MoC with regard to: workforce administrative and clinical systems, cultural change and workforce attraction and retention.	
Key Component	**Objective**
Specific - What is the specific task?	To describe and make a comparative analysis of the new workforce MoC with the previous Y&N midwifery workforce model, specifically examining workforce change management issues. These include administrative systems and cultural changes incorporated into the new MoC, that will directly impact upon current and future workforce attraction, retention and sustainability.
Measurable - What are the standards or parameters?	Workforce implementation changes and outcomes as measured across defined elements (acceptability, adoption, appropriateness, feasibility, penetration and sustainability) in the Proctor evaluation framework will be assessed and compared across pre & post MoC implementation. Administrative and change management systems will be documented per historical and current workforce issues identified by the advisory committee. As these data are generally not available to the UniSA evaluation team, agreed key change management issues will be sought. Methodological triangulation of qualitative data from the first focus group and additional quantitative data will be employed to address these issues. *Note-some data may be obtained by an additional workforce quantitative survey to clinicians at the end of the evaluation period.* The contribution of workforce attraction and retention towards the sustainability of the model will be assessed by agreed quantitative measures and by qualitative clinician focus groups near the end of the evaluation period.
Achievable - Is the task feasible?	Yes, with sufficient and specific data supplied to the evaluation team.
Realistic - Are sufficient resources available?	Yes, instruments and systems setup by UniSA as part of the evaluation.
Time-Bound - What are the start and end dates?	Over the course of the 2-year program. Data collection at sites July 2019-Dec 2020. Data analysis Jan-Feb 2021, draft report March 2021, draft evaluation report April 2021.

Appendix 3: Women's Questionnaire

Note- formatting is somewhat different on this PDF version of the survey with logic sequences and closing note of thanks not displayed.

Confidential

Page 1

Midwifery Model of Care Survey, Yorke and Northern Region Questionnaire for Women

You are invited to take part in a survey to tell us about your recent experiences with the Yorke and Northern Region Midwifery Caseload Model of Care (this will be referred to as MoC in the questionnaire). Whether the care you received during your pregnancy and birth was provided by the midwives working in the model of care, hospital midwives, obstetricians or your local GP, all information you provide about your views and experiences of the program are important, as they will help us to evaluate the MoC.

Below is the questionnaire that we are asking you to complete. The questionnaire is anonymous, your name will not be recorded on the questionnaire. It is completely up to you whether or not you participate. Whatever your decision to participate it will not affect your relationship with the staff caring for you or the care you receive now or in the future. Independent researchers from the University of South Australia, Rosemary Bryant AO Research Centre are collecting and evaluating this information. All responses will be kept strictly confidential by both research and administrative staff.

We appreciate your taking the time to complete this survey and understand that it may be a lot to ask to fit this into your very busy schedule! You may feel it would be easier to have someone work through these questions with you. If this is the case, please telephone midwife Lena Boxall ph 0491601971, lena.boxall@sa.gov.au who will make time to run through these questions quickly with you over the phone.

IMPORTANT: If you feel that this questionnaire raises any concerns for you, including emotional issues, and you wish to talk to someone about this, please do not hesitate to contact the Midwifery Unit Manager, Elizabeth Bennett. 0448 369 499 This project has been approved by the Women's & Children's Health Network Human Research Ethics Committee (HREC/19/WCHN/68 and the University of South Australia's Human Research Ethics Committee (HREC ID 202393). If you have any ethical concerns about the project or questions about your rights as a participant please contact the UniSA Executive Officer of this Committee,

Tel: +61 8 8302 3118; Email: humanethics@unisa.edu.au

This questionnaire will take about 15 minutes to complete. If you would like to save and return later, scroll to the end of the page and select 'save and return later'.

Demographics

Your date of birth:

_____
((DD-MM-YYYY))

Baby's date of birth:

_____
((DD-MM-YYYY))

How old is your baby today?

_____
(Please enter your baby's age in WEEKS (Number Only))

In which of the five Yorke and Northern (Y&N) areas did you start your care?

- ◯ Clare
- ◯ Jamestown
- ◯ Crystal Brook
- ◯ Wallaroo
- ◯ Port Pirie

Baby's place of birth:	◯ Clare Hospital ◯ Crystal Brook Hospital ◯ Jamestown Hospital ◯ Port Pirie Hospital ◯ Wallaroo Hospital ◯ Did not birth in the Yorke and Northern Region
Did you birth out of the York and Northern Region, or did you need to because of complications or an emergency?	◯ Elected to birth out of the region ◯ Transferred because obstetrical service not available at the time ◯ Planned birth away (for reasons such as BMI, twins, etc.) ◯ Transferred out of region due to medical or obstetrical complications
If you wish, please provide any additional comments about the birth here:	_____
Please indicate where your baby was born:	◯ Women and Children's Hospital ◯ Flinders Medical Centre ◯ Lyell McEwin Hospital ◯ Port Augusta Hospital ◯ Private Hospital ◯ Other (please specify)
Please type the location of your baby's birth:	_____
Before the Birth	
What were your main sources of information about pregnancy and labour?	☐ Midwife(s) in the MoC ☐ Midwife(s) not in the MoC ☐ General practitioner (GP) ☐ Obstetrician (specialist doctor) ☐ Hospital information ☐ Family and friends ☐ Internet ☐ Books, magazines ☐ My previous birth experiences ☐ Other (please specify) (Please select all that apply)
Other sources:	_____
If you attended childbirth or parenthood classes, who taught them?	◯ Midwives in the MoC ◯ Hospital midwives ◯ Other (please specify) ◯ I did not attend classes
Other:	_____

I did not attend classes because:	◯ My midwife told me everything I needed to know ◯ Too far away ◯ Too inconvenient ◯ Did not know about them ◯ Attended classes in my previous pregnancy ◯ I had enough information already ◯ Other (please specify)
Other:	_____
How did you find out about the Midwifery Model of Care (MoC)?	☐ Hospital midwives ☐ General Practitioner (GP) ☐ Obstetrician (specialist doctor) ☐ Media/posters ☐ Family or friends ☐ Have used midwifery group practice in the Y&N before ☐ First found out when I was referred for my pregnancy ☐ Other (please state) (Please select all that apply)
Other:	_____
Who was your main pregnancy care provider while in the MoC?	◯ Midwives working in the MoC ◯ GP/GP obstetrician and midwives working in the MoC (Shared care) ◯ Specialist obstetrician (and midwives working in the MoC) ◯ Private obstetrician ◯ Other (please state)
Other:	_____
I met all the MoC midwives/s that provided my care before I was in labour	◯ Yes ◯ No
I had most of my pregnancy care with my primary midwife	◯ Yes ◯ No
I knew who to contact if I had wanted to change my change my primary midwife	◯ Yes ◯ No

Please indicate the degree to which you agree or disagree with the following statements regarding the midwife or midwives who worked in the MoC.

Thinking about the care provided by your midwife during your pregnancy, how much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I was treated with respect	○	○	○	○	○
I felt I had too little say in what was decided	○	○	○	○	○
I was told everything I wanted to know about the progress of my pregnancy	○	○	○	○	○
I felt I could ask all the questions I wanted to	○	○	○	○	○
I was treated as 'just another case' rather than as an individual	○	○	○	○	○
I would have liked to know more about the tests and examinations that were carried out	○	○	○	○	○
I felt confident in the skills of my midwife	○	○	○	○	○
I felt listened to and understood when I talked with my midwife	○	○	○	○	○
I felt confident in the clinical knowledge of my midwife	○	○	○	○	○

Please indicate the degree to which you agree or disagree with the following statements regarding the midwife or midwives who worked in the MoC with your doctor:

Thinking about the care provided by the midwife (midwives) who worked with your main care provider (GP, GP obstetrician or obstetrician) during your pregnancy, how much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
I was treated with respect	○	○	○	○	○	○
I felt I had too little say in what was decided	○	○	○	○	○	○
I was told everything I wanted to know about the progress of my pregnancy	○	○	○	○	○	○
I felt I could ask all the questions I wanted to	○	○	○	○	○	○
I was treated as 'just another case' rather than as an individual	○	○	○	○	○	○

I would have liked to know more about the tests and examinations that were carried out	○	○	○	○	○	○
I felt confident in the skills of the midwife(s) who worked with my doctor	○	○	○	○	○	○
I felt listened to and understood when I talked with the midwife(s) who worked with my doctor	○	○	○	○	○	○
I felt confident in the clinical knowledge of the midwife(s)	○	○	○	○	○	○

Please indicate the degree to which you agree or disagree with the following statements regarding the doctor who provided your care while in the MoC:

Thinking about the care provided by your main doctor provider (GP, GP obstetrician or obstetrician) during your pregnancy, how much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
I was treated with respect	○	○	○	○	○	○
I felt I had too little say in what was decided	○	○	○	○	○	○
I was told everything I wanted to know about the progress of my pregnancy	○	○	○	○	○	○
I felt I could ask all the questions I wanted to	○	○	○	○	○	○
I was treated as 'just another case' rather than as an individual	○	○	○	○	○	○
I would have liked to know more about the tests and examinations that were carried out	○	○	○	○	○	○
I felt confident in the skills of my doctor	○	○	○	○	○	○
I felt listened to and understood when I talked with my doctor	○	○	○	○	○	○
I felt confident in the clinical knowledge of my doctor	○	○	○	○	○	○

During your pregnancy care, can you please identify how many different midwives attended to your care?

- ○ None
- ○ 1
- ○ 2
- ○ 3
- ○ 4 or more

During your pregnancy care, can you please identify how many different doctors attended to your care?	◯ None ◯ 1 ◯ 2 ◯ 3 ◯ 4 or more
Labour and Birth	
Who was your main care provider during your labour and birth?	◯ Midwives working in the MoC ◯ GP/GP obstetrician and/or specialist obstetrician (and midwives working in the MoC) (Shared care) ◯ Private obstetrician (and midwives working in the MoC) ◯ Public obstetrician or private obstetrician (and hospital midwife working outside the MoC) ◯ Other (please state)
Other:	_____
During your labour and birth, can you please identify how many different midwives attended to your care?	◯ None ◯ 1 ◯ 2 ◯ 3 ◯ 4 or more
During your labour and birth, can you please identify how many different doctors attended to your care?	◯ None ◯ 1 ◯ 2 ◯ 3 ◯ 4 or more
Did you know the midwife who cared for you for most or all of the time during your labour and birth?	◯ Yes, I knew her well ◯ Yes, but not very well ◯ No
If no, did this bother you?	◯ Yes, it bothered me ◯ No, it didn't bother me
Who was the care provider that assisted in the actual birth of your baby?	◯ Midwife in the MoC ◯ Hospital midwife ◯ GP (general practitioner)/GP obstetrician ◯ Obstetrician working in the MoC ◯ Obstetrician not working in the MoC ◯ Private obstetrician ◯ Not sure

Thinking about labour and birth care, how much do you agree or disagree with the following statements?	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
I was treated with respect	○	○	○	○	○	○
I felt I had too little say in what was decided	○	○	○	○	○	○
I was told everything I wanted to know about the progress of my labour	○	○	○	○	○	○
I felt I could ask all the questions I wanted to	○	○	○	○	○	○
I was treated as 'just another case' rather than as an individual	○	○	○	○	○	○
I had a birth plan and this was followed	○	○	○	○	○	○
I felt my partner/support person was included during my birth	○	○	○	○	○	○
Any procedures during labour and birth were explained, and I was asked to consent to these	○	○	○	○	○	○
I felt supported by the midwife who provided most of my care	○	○	○	○	○	○
I felt supported by the doctor who provided care during my labour and or birth	○	○	○	○	○	○
I felt confident in the clinical knowledge and skills of my main care provider during labour and birth	○	○	○	○	○	○
My birth was a positive experience	○	○	○	○	○	○

At home, after your baby was born

Who was your main care provider after your baby was born?

- ○ Midwives working in the MoC
- ○ GP/GP obstetrician and midwives working in the MoC (Shared care)
- ○ Specialist obstetrician (and midwives working in the MoC)
- ○ Private obstetrician
- ○ Other (please state)

Other: _____

How many visits did you receive from the MoC midwife after your baby was born (not including your Maternal and Child Health Nurse)?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6 or more
- ◯ I didn't have any visits

Where were these visits conducted?

- ◯ At home
- ◯ Not at home
- ◯ A combination of at home and not at home

How would you rate your MoC midwife/s support during the first week at home?

◯ Excellent ◯ Very good ◯ Good ◯ Fair ◯ Poor

Midwife Number 1:

Were any of these visits with a midwife you had met before?

◯ Yes ◯ No

Number of visits from known midwife 1:

_____
(Please enter the number of visits)

Midwife Number 2:

Were any of these visits with a midwife you had met before?

◯ Yes ◯ No ◯ Not Applicable

Number of visits from known midwife 2:

_____
(Please enter the number of visits)

Midwife Number 3:

Were any of these visits with a midwife you had met before?

◯ Yes ◯ No ◯ Not applicable

Number of visits from known midwife 3:

_____
(Please enter the number of visits)

How old was your baby when the midwife stopped visiting?

- ◯ 1 week
- ◯ 2 weeks
- ◯ 3 weeks
- ◯ 4 weeks
- ◯ 5 weeks
- ◯ 6 weeks
- ◯ Greater than 6 weeks

Would you have liked more visits from the midwife?	◯ Yes ◯ No
Did you utilise or were your referred to any of the following community support services?	☐ Child Health nurse ☐ Aboriginal services ☐ Physiotherapy ☐ Social work ☐ Mental health ☐ Drug and alcohol ☐ Lactation consultant ☐ Other (please list) ☐ None (Please select all that apply)
Other:	_____
What other support, if any, do you feel should be available?	_____

Thinking about the time at home after the baby was born, how much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
I was given the advice I needed about how to handle, settle or look after my baby	○	○	○	○	○	○
I was given the advice I needed about my own health and recovery after the birth	○	○	○	○	○	○
I was confused with conflicting advice provided by midwives	○	○	○	○	○	○
I was confused with conflicting advice provided by family and friends	○	○	○	○	○	○
I was confused with conflicting advice provided by doctors	○	○	○	○	○	○
I felt confident as a mother	○	○	○	○	○	○
I understood very little of what was said to me	○	○	○	○	○	○
I would have liked to know more about what was happening to me	○	○	○	○	○	○
I was able to get help and felt supported with my feeding choice	○	○	○	○	○	○
I would have liked to stay longer in hospital	○	○	○	○	○	○
I was treated with respect	○	○	○	○	○	○

Did you plan to breastfeed your baby?

○ Yes, I was confident I could breastfeed
○ Yes, I thought I would give it a try
○ No, I did not plan to breastfeed

Were you still breastfeeding at the time of the final visit with your midwife in the MoC?

○ Yes
○ No

Are you still breastfeeding now?

○ Yes
○ No

How old was your baby when you stopped breast feeding?

_____
(Please enter your baby's age in WEEKS (Number Only). Enter 0 if less than one week.)

Why did you decide to stop breastfeeding?

- ☐ Did not want to breastfeed
- ☐ Nipple trauma
- ☐ Nipple pain
- ☐ Personal reasons
- ☐ Taking medications
- ☐ Mastitis
- ☐ Felt there was not enough milk
- ☐ Unable to get baby to attach/suck
- ☐ Baby very premature
- ☐ Lack of help/ support/supervision with breastfeeding
- ☐ Family/peer pressure
- ☐ Other (please describe)

(Please indicate all that apply)

Other:

_____

Thinking about your first week at home with your baby, how much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I managed well	○	○	○	○	○
My midwife was readily available	○	○	○	○	○
I had good breastfeeding support	○	○	○	○	○
I felt confident to care for my baby	○	○	○	○	○
I felt confident to care for myself	○	○	○	○	○

Your Overall Experience

Please rate each of the following statements in terms of its overall importance to your pregnancy and birthing experience.

	Very important	Important	Unsure	Fairly unimportant	Not at all important	Not applicable
Having one midwife I knew well in the MoC	○	○	○	○	○	○
Having one GP I knew well (If your main care provider was a GP please answer. If this was not your main care provider, please tick "not applicable")	○	○	○	○	○	○
Having one obstetrician I knew well (If your main care provider was a specialist Obstetrician please answer. If this was not your main care provider, please tick "not applicable")	○	○	○	○	○	○
Feeling comfortable and supported	○	○	○	○	○	○
Knowing a doctor was available in case of an emergency	○	○	○	○	○	○
Feeling I was in control in labour and birth	○	○	○	○	○	○
Feeling I made my own decisions	○	○	○	○	○	○

How satisfied were you with the following aspects of your pregnancy and birthing experience?						
	Very satisfied	Satisfied	Unsure	Fairly unsatisfied	Not at all satisfied	Not applicable
Having one midwife I knew well in the MoC	○	○	○	○	○	○
Having one GP I knew well (If your main care provider was a GP please answer. If this was not your main care provider, please tick "not applicable")	○	○	○	○	○	○
Having one obstetrician I knew well (If your main care provider was a specialist Obstetrician please answer. If this was not your main care provider, please tick "not applicable")	○	○	○	○	○	○
Feeling comfortable and supported	○	○	○	○	○	○
Knowing a doctor was available in case of an emergency	○	○	○	○	○	○
Feeling I was in control in labour and birth	○	○	○	○	○	○
Feeling I made my own decisions	○	○	○	○	○	○

If you received care within the MoC from midwives and other care providers such as GPs, or specialist obstetricians, can you please indicate how much you agree or disagree with the following statements

(If this section does not apply to you, please go on to the next section.)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Unsure
These care providers pass on information to each other very well	○	○	○	○	○	○
These care providers work very well together	○	○	○	○	○	○
The care given by these care providers is well connected	○	○	○	○	○	○
These care providers always know very well what the other care providers have done	○	○	○	○	○	○

What were the best aspects about the care you received during your pregnancy, birth and following birth?

_____

Were there ways in which you felt the care you received during your pregnancy, birth and following the birth could have been improved?

_____

If you had another pregnancy, would you seek the midwifery MoC?

○ Yes
○ No

If no, can you please indicate why not?

_____

Would you recommend the midwifery caseload model of care program you received in the Yorke and Northern Region to a friend?

○ Yes
○ No

If no, why not?

_____

Is there anything else you would like to tell us?

_____

Was this your first baby?

○ Yes
○ No

How do you rate the care provided for this pregnancy and birth against your previous experience?

○ Excellent ○ Very good
○ Good ○ Fair ○ Poor

Appendix 4: Midwives MoC Questionnaire

Note- formatting is somewhat different on this PDF version of the survey and closing note of thanks are not included here

Confidential

Yorke And Northern Model Of Care Survey

Dear Midwife Working in the York and Northern Midwifery Model of Care (MoC)

Thank you for your participation in this evaluation. Your reflections and thoughts from the 2020 focus groups will be combined with results from this final survey.

The aim of this survey is to find out about your experience and how you feel about your work using validated scales and questions that have been used in other midwifery workplace studies.

Participation in this survey is voluntary and anonymous and should take about 10 minutes to complete. Responses come back directly to the UniSA research team and will only be reported at the aggregate level.

If you have any questions about the study please contact UniSA researcher Pam Adelson, telephone 830 21475; email pam.adelson@unisa.edu.au

On behalf of the UniSA research team, thank you!

Demographics	
Please indicate your age-group	◯ < 35 ◯ 35-49 ◯ 50+
At which site are you based for most of your time?	◯ Clare ◯ Jamestown ◯ Port Pirie ◯ Crystal Brook ◯ Wallaroo ◯ Equally between Clare and Jamestown ◯ Equally between Crystal Brook and Port Pirie
How many years have you worked as a midwife ?	◯ 1-4 years ◯ 5-9 years ◯ 10-19 years ◯ 20-29 years ◯ 30 + years

Working in regional/rural midwifery	
Prior to your current position, had you previously worked in a rural setting?	◯ Yes ◯ No
Prior to your current position, had you previously been employed in a midwifery group practice setting?	◯ Yes ◯ No
How long have you been employed in total (in any midwifery position) in the Yorke and Northern Region?	◯ < 1 year ◯ 1-4 years ◯ 5-9 years ◯ 10+ years
Do you think you were prepared to work in a regional/rural caseload model of care?	☐ Yes ☐ No ☐ Unsure
What specific and unique skills stand out to you as being essential when practicing in a regional midwifery setting?	_____ (note- this is a personal reflection rather than a comprehensive list; we acknowledge that midwifery capability sets for regional SA have been developed by SA Health.)
Can you provide a few key points or words to describe the difference from working in metropolitan positions?	_____
Do you think the role of the regional MGP as presented in the York and Northern Region MoC is sustainable and will be attractive to other midwives?	◯ Yes ◯ No ◯ Unsure

Collaborative Alliances

Please indicate how you would rate the following 3 statements regarding midwife-doctor relations in the MoC

	strongly agree	agree	disagree	strongly disagree
Midwives and doctors have good working relations	◯	◯	◯	◯
Good teamwork between midwives and doctors	◯	◯	◯	◯
Collaboration (joint practice) between midwives and doctors	◯	◯	◯	◯

Work-life Balance

Please indicate how you would rate the following 2 statements regarding your work-life balance in the MoC

	Low satisfaction	Moderate satisfaction	High satisfaction
Please rate your satisfaction with time off work	◯	◯	◯
Please rate your satisfaction with work-life balance	◯	◯	◯

Perceptions of Empowerment in Midwifery

Please indicate the extent to which you agree or disagree with the following statements

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am recognised as a professional by the medical profession	○	○	○	○	○
I am recognised for my contribution to the care of birthing women by the medical profession	○	○	○	○	○
I have control over my practice	○	○	○	○	○
I am not listened to by members of the multidisciplinary team	○	○	○	○	○
I have autonomy in my practice	○	○	○	○	○
I have access to adequate resources for birthing women in my care	○	○	○	○	○

Please indicate the extent to which you agree or disagree with the following statements

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I do not have a supportive manager	○	○	○	○	○
I am valued by my manager	○	○	○	○	○
I have the back-up of my manager	○	○	○	○	○
I am not recognised for my contribution to the care of birthing women by my manager	○	○	○	○	○
I am not informed about changes in my organisation that will affect my practice	○	○	○	○	○
I have effective communication with management	○	○	○	○	○

Please indicate the extent to which you agree or disagree with the following statements					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I empower birthing women through my practice	○	○	○	○	○
I am an advocate for birthing women	○	○	○	○	○
I am able to say no when I judge it to be necessary	○	○	○	○	○
I am involved in midwife-led practice	○	○	○	○	○
I have support from my colleagues	○	○	○	○	○
I do not have the skills required to carry out my role	○	○	○	○	○

Quality Maternal Newborn Care (QMNC)	
Do you feel the MoC covered all of the necessary care for women, e.g health promotion, screening, care planning and managing complications?	○ Yes ○ No ○ Unsure
Please comment, if unsure	_____
Do you feel the organisation of care in the MoC was accessible, of good quality and adequately resourced?	○ Yes ○ No ○ Unsure
Please comment, if unsure	_____
Was the care provided in the MoC based on promoting normality and strengthening women's capabilities?	○ Yes ○ No ○ Unsure
Please comment, if unsure	_____

Final Questions	
Do you plan to leave your current position?	◯ No plans to leave within the next 5 years ◯ Yes within the next 12 months ◯ Yes within the next 1-5 years ◯ Other
If other, please state (e.g. retirement)	_____
Can you list your top two positive aspects of working in this MoC?	_____
Can you list your top two negative aspects of working in this MoC?	_____

Thinking about the administrative systems and processes that were introduced in the MoC, how would you currently rate the following at your workplace?	Very poor	Poor	Fair	Good	Very good	Excellent
Communication within the MoC team	◯	◯	◯	◯	◯	◯
Handover with hospital nurses/midwives	◯	◯	◯	◯	◯	◯
Handover with area doctors	◯	◯	◯	◯	◯	◯
Centralised information sharing platform	◯	◯	◯	◯	◯	◯
Standardisation of documentation across the region	◯	◯	◯	◯	◯	◯
Rostering and on-call	◯	◯	◯	◯	◯	◯
Flexibility in working arrangements	◯	◯	◯	◯	◯	◯

Is there anything else you would like to tell us?

_____

Appendix 5 Focus Group One Facilitator's Guiding Questions

Focus group questions for MoC midwives (Focus group one)

Implementation outcomes: Acceptability, Adoption

Question 1: How has the implementation of the MoC been received at your local birthing site in Yorke & Northern?
For example: • In your view how successfully was the MoC implemented? Have you been satisfied with various aspects of the implementation process? • Was the MoC well received at your site/region; how well has it been adopted? • What are the aspects of the MoC that are working well and meeting or exceeding expectations? • What are the aspects that are not meeting expectations and are in need of improvement? • Has the Midwifery Caseload MoC achieved any efficiency gains? (e.g. streamlined services, increased team work) • At the local hospital level is the new MoC being integrated within structures and services; i.e. MW/nurses feeling valued, informed, handover, etc.
Question 2: What have been the barriers or facilitators to working in the MoC ?
For example: • Were there any challenges or issues that hindered the transition? • Were there any delays or other unforeseen events? • Were identified issues adequately addressed? • How is your role and/or work processes affected by the implementation to the MoC? • How was your organisation impacted by the implementation process?

Implementation outcomes: Penetration, Feasibility

Question 3: Has the governance of the MoC optimised positive collaboration within the whole maternity care workforce?
For example: • Can you comment on the appropriateness of the governance structure, is it operating as intended? • Were key stakeholders adequately consulted during the implementation of the MoC? • Do you feel that governance structures could be better strengthened and streamlined? • Is the professional framework supportive to midwives working within the MoC and midwives and nurses working in the hospitals? • Is the communication to the teams effective and positive from the MUM and A/MUM's? • Do you feel there is good partnership with midwives working in the MoC? • How would you rate the interprofessional collaboration and partnership with the Obstetric medical workforce? • What factors area influencing interprofessional collaboration in this model of care? ***Service Outcomes: Efficiency, effectiveness, woman-centeredness***
Question 4: What service-level modifications can be made (if any) to strengthen the Midwifery Caseload MoC ?
• In your opinion are services available and easily accessible for women and families? • Is there a clear focus on continuous quality improvement? • How is continuous quality improvement monitored? • Is the MoC covering all necessary bases- e.g. health promotion, screening, care planning, managing complications, post-natal care? • Is the care based on promoting normality and strengthening women's capabilities? • Do you feel as care provider that you are demonstrating both knowledge, skills and an awareness of how to use these most effectively?
Final comments
• Do you have any further comments about the Midwifery Caseload MoC in Yorke& Northern or other areas we may not have covered?
Those are all the questions we have for you today. Thank you very much for your time.

Focus group questions for hospital nurses and midwives (Focus group one)

Implementation outcomes: Acceptability, Adoption

Question 1: How has the implementation of the MoC been received at your local birthing site in Yorke & Northern?
For example: • In your view how successfully was the MoC implemented? Have you been satisfied with various aspects of the implementation process? • Was the MoC well received at your site/region; how well has it been adopted? • What are the aspects of the MoC that are working well and meeting or exceeding expectations? • What are the aspects that are not meeting expectations and are in need of improvement? • Has the Midwifery Caseload MoC achieved any efficiency gains? (e.g. streamlined services, increased team work) • At the local hospital level is the new MoC being integrated within structures and services; i.e. MW/nurses feeling valued, informed, handover, etc.
Question 2: What have been the barriers or facilitators to working in the MoC ?
For example: • Were there any challenges or issues that hindered the transition? • Were there any delays or other unforeseen events? • Were identified issues adequately addressed? • How is your role and/or work processes affected by the implementation to the MoC? • How was your organisation impacted by the implementation process?

Implementation outcomes: Penetration, Feasibility

Question 3: Has the governance of the MoC optimised positive collaboration within the whole maternity care workforce?

For example:

- Can you comment on the appropriateness of the governance structure, is it operating as intended?
- Were key stakeholders adequately consulted during the implementation of the MoC?
- Do you feel that governance structures could be better strengthened and streamlined?
- Is the professional framework supportive to midwives working within the MoC and midwives and nurses working in the hospitals?
- Is the communication to the teams effective and positive from the MUM and A/MUM's?
- Do you feel there is good partnership with midwives working in the MoC?
- How would you rate the interprofessional collaboration and partnership with the Obstetric medical workforce?
- What factors area influencing interprofessional collaboration in this model of care?

Service Outcomes: Efficiency, effectiveness, woman-centeredness

Question 4: What modifications can be made (if any) to improve service transitions?

- Are there any service-level modifications that you can suggest that would improve the transition from hospital discharge to the MoC post-natal period or are you happy with how this is working?
- Does nursing staff feel you have been supported to build skills to care for well women and babies postnatally?
- Do you know when to call a midwife from the Yorke and Northern Group? Do you feel supported to do this?
- Are you happy with the handover you receive from the midwife?

Final comments

- Do you have any further comments about the Midwifery Caseload MoC in Yorke& Northern or other areas we may not have covered?

Those *are all the questions we have for you today. Thank you very much for your time.*

Focus group questions for doctors working in the MoC (Focus group one)

Implementation outcomes: Acceptability, Adoption

Question 1: How has the implementation of the MoC been received at your local hospital in Yorke & Northern?
For example: • In your view how successfully was the MoC implemented? Have you been satisfied with various aspects of the implementation process? • Has the MoC been well received at your site/region; how well has it been adopted? • What are the aspects of the MoC that are working well and meeting or exceeding expectations? • What are the aspects that are not meeting expectations and are in need of improvement? • Has the Midwifery Caseload MoC achieved any efficiency gains? (e.g. streamlined services, increased team work) • At the local hospital level do you feel the new MoC is being integrated within structures and services; i.e. are you feeling valued, informed, has the handover worked well, etc.?
Question 2: What have been the barriers or facilitators to working with midwives in the MoC ?
For example: • Were there any challenges or issues that hindered the transition to the new MoC? • Were there any delays or other unforeseen events? • How was your practice been impacted by the implementation of the MoC? • Have identified issues been adequately addressed?

Implementation outcomes: Penetration, Feasibility

Question 3: Has the governance of the MoC optimised positive collaboration within the whole maternity care workforce?

For example:

- Can you comment on the appropriateness of the governance structure, is it operating as intended?
- Were doctors adequately consulted during the implementation of the MoC?
- Do you feel that governance structures could be better strengthened and streamlined?
- Is the professional framework supportive to midwives and doctors working within the MoC?
- Is the communication amongst the midwives and doctors effective and positive?
- Do you feel there is good partnership and collaboration with midwives working in the MoC?
- What factors are influencing interprofessional collaboration in this model of care?

Service Outcomes: Efficiency, effectiveness, woman-centeredness

Question 4: What service-level modifications do you feel can be made (if any) to strengthen the Yorke & Northern MoC ?

- In your opinion are the collaborative services of the MoC available and easily accessible for women and families?
- Is there a clear focus on continuous quality improvement?
- Is the MoC covering all necessary bases and making appropriate referrals where needed, i.e. health promotion, screening, care planning, managing complications, post-natal care?
- Is the care provided in the MoC based on promoting normality and strengthening women's capabilities?

Final comments

- Do you have any further comments about the Midwifery Caseload MoC in Yorke & Northern or other areas we may not have covered?

Those are all the questions we have for you today. Thank you very much for your time.

Appendix 6 Focus Group Two Facilitator's Guiding Questions

Focus group questions for MoC midwives, Focus group two

(*note- similar appropriately contextualised questions were asked in separate focus groups for hospital nurses/midwives and doctors)*

Question 1: It has now been over a year since the MoC was implemented at your local birthing site. How do you think the MoC is working for all stakeholders, i.e. women, midwives and doctors?
Example questions: • Acceptability- are the MoC midwives satisfied with the model and how it was implemented? • What are the aspects of the MoC that are working well and meeting or exceeding expectations and have these improved over the past year? • What are the aspects that are still not meeting expectations and are in need of improvement? • Has the Midwifery Caseload MoC achieved any efficiency gains? (e.g. streamlined services, increased team work)
Question 2: The first set of focus groups identified some challenges with implementation, particularly with regards to change in processes and ways of practicing. Do you think that these challenges have been addressed?
For example: • Do you feel the changes to the new management structure and common vision in the region has been achieved? • Has better organisation of care been achieved?
Question 3: A number of key themes were identified through the first set of focus groups. Could you please provide feedback on these in relation to the ongoing operation of the MoC?
For example: • Collaboration- how well do you think interdisciplinary collaboration is working? • Communication- how well do you think communication between all stakeholders is working? • Regional distances- do you perceive that the distance between sites is a concern? • Awareness and access- do you think that the service is widely known about in the region?
Question 4: What service-level modifications can be made (if any) to strengthen the Midwifery Caseload MoC for the future?
For example: • What factors would ensure the MoC is embedded into the system/culture of the Yorke & Northern region? • What factors would ensure that the MoC is sustainable (i.e. capable of continuing to meet program deliverables over time)? • How would you like to see the MoC look like five years from now? • Can you identify any opportunities to improve the model?
Question 5: Do you think COVID-19 has disrupted or presented specific challenges in making the transition to the MoC?
Question 6: Do you support the continuation of the MoC, and do you see this as sustainable in the Yorke and Northern Region?
Question 7: Do you have any further comments about the Midwifery Caseload MoC in Yorke & Northern or other areas we may not have covered?

Appendix 7 ORIC Paper

https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-021-06373-9

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BMC Health Services Research

RESEARCH ARTICLE Open Access

Measuring organizational readiness for implementing change (ORIC) in a new midwifery model of care in rural South Australia

Pamela Adelson[1*], Rachael Yates[2], Julie-Anne Fleet[1] and Lois McKellar[3]

Abstract

Background: The sustainability of Australian rural maternity services is under threat due to current workforce shortages. In July 2019, a new midwifery caseload model of care was implemented in rural South Australia to provide midwifery continuity of care and promote a sustainable workforce in the area. The model is unique as it brings together five birthing sites connecting midwives, doctors, nurses and community teams. A critical precursor to successful implementation requires those working in the model be ready to adopt to the change. We surveyed clinicians at the five sites transitioning to the new model of care in order to assess their organizational readiness to implement change.

Methods: A descriptive study assessing readiness for change was measured using the Organizational Readiness for Implementing Change scale (ORIC). The 12 item Likert scale measures a participant's commitment to change and change efficacy. All clinicians working within the model of care (midwives, nurses and doctors) were invited to complete an e-survey.

Results: Overall, 55% (56/102) of clinicians participating in the model responded. The mean ORIC score was 41.5 (range 12–60) suggesting collectively, midwives, nurses and doctors began the new model of care with a sense of readiness for change. Participants were most likely to agree on the change efficacy statements, "People who work here feel confident that the organization can get people invested in implementing this change and the change commitment statements "People who work here are determined to implement this change", "People who work here want to implement this change", and "People who work here are committed to implementing this change.

(Continued on next page)

* Correspondence: pamadelson@unisa.edu.au
[1]Rosemary Bryant AO Research Centre, UniSA Clinical & Health Sciences, University of South Australia, City East Campus, Playford Building P4-27, North Terrace, Adelaide, SA 5000, Australia
Full list of author information is available at the end of the article

Rosemary Bryant AO
Research Centre

University of South Australia
City East Campus, Playford Building
North Terrace
Adelaide, SA 5000

T +61 8302 2129
W unisa.edu.au/research/rbrc
E rbrc@unisa.edu.au

University of South Australia

Rosemary Bryant Foundation