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**Rosemary Bryant AO** Research Centre

# Evaluation of the Midwifery Caseload Model of Care in the Riverland Mallee Coorong Local Health Network (RMCLHN)

clinical lab

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Rosemary Bryant Foundation

University of South Australia

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# Evaluation of the Midwifery Caseload Model of Care in the Riverland Mallee Coorong Local Health Network (RMCLHN)

**Report prepared for:** Riverland Mallee Coorong Local Health Network (RMCLHN)

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

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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. We acknowledge the stories, traditions, and living cultures of Aboriginal and Torres Strait Islander peoples on this land and commit to building a brighter future together.

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- Victoria Sutton, Academic Research Assistant for the RMCLHN evaluation
- Professor Paul Worley, Executive Director Clinical Innovation, RMCLHN, SA Health

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Advisory Committee Members for the Riverland Mallee Coorong Local Health Network MMoC:

- Vanessa Drummond, Advanced Midwife Manager, RMCLHN MMoC Project
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- Victoria Sutton, Academic Research Assistant for the RMCLHN evaluation
- Karen Hollitt, Executive Director, Nursing & Midwifery, RMCLHN
- Sally Shannon, Director Nursing & Midwifery, Riverland General Hospital
- Shellie Humphries, Acting Director of Nursing & Midwifery, Riverland General Hospital (leave cover for Sally Shannon from Jan 2023).
- Rebecca McEvoy, Interim Director, Nursing & Midwifery, Murray Bridge Soldiers' Memorial Hospital
- Rachael Yates, Midwifery Director, Policy, Workforce, Best Practice, Models of Care, Nursing and Midwifery Office, SA Health (from September 2022: Executive Director, Nursing and Midwifery, Women's and Children's Hospital)
- Emma Love, Consumer representative

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# Abbreviations

| Abbreviation | Full name |
|---|---|
| AiMS | Assistants in Midwifery Students |
| AFBP | Aboriginal Family Birthing Program |
| AMIC | Aboriginal Maternal Infant Care (workers/practitioners) |
| CaFHS | Child & Family Health Service |
| CHL | Country Home Link |
| DON/M | Director of Nursing/Midwifery |
| EOI | Expression of Interest |
| 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 |
| MBSMH | Murray Bridge Soldiers' Memorial Hospital |
| MGP | Midwifery Group Practice also referred to as caseload |
| MMoC | Midwifery Model of Care |
| MTPPP | Midwifery Transition to Professional Practice Program |
| ORIC | Organizational Readiness for Implementing Change |
| QMNC | Quality Maternal and Newborn Care framework |
| RA | Research Assistant |
| RGH | Riverland General Hospital (at Berri) |
| RBRC | Rosemary Bryant AO Research Centre |
| RMCLHN | Riverland Mallee Coorong Local Health Network |
| RSS | Rural Support Services |
| SA | South Australia |
| TPPP | Transition to Professional Practice Program |
| YNLHN | Yorke and Northern Local Health Network |
| UniSA | University of South Australia |

# Executive summary

## Background and Aims

Across Australia many birthing sites have been closed due to workforce shortages, and country Australia has been especially hit hard. In South Australia (SA) about 60% of rural maternity units have closed since 1992 and about a quarter of all women have had to birth away from their usual region of residence. The reasons for these closures include service challenges around geographic spread, low population density, recruitment and retention difficulties for midwifery and medical staff and high costs of service delivery.

In 2017, the SA Health Rural Maternity Services Committee sought to develop a sustainable midwifery workforce model in regional SA and in mid-2019, the Yorke and Northern Local Health Network (YNLHN) implemented a caseload midwifery model of care (MMOC). The concurrent evaluation reported that the MMoC was effective, acceptable, and sustainable and provided a model for other country SA Health sites. In late 2021, the Riverland Mallee Coorong Local Health Network (RMCLHN) faced acute maternity service shortages that resulted in one of the four birthing hospitals suspending birthing services. The remaining birthing hospitals, Riverland General Hospital (RGH), Loxton Health Complex (LHC) and Murray Bridge Soldiers' Memorial Hospital (MBSMH) were under considerable strain. In response, the RMCLHN commenced a pilot of an all-risk midwifery caseload model of care with midwives working in collaboration with local GP/obstetricians. The aim was to preserve birthing services and provide quality care to women and families in the region. The model commenced in October 2021 at RGH at and in May 2022 at MBSMH.[1]

The Rosemary Bryant AO Research Centre (RBRC) was invited to evaluate the model using a similar approach to that in the YNLHN evaluation. A midwifery model of care (MMoC) advisory committee was formed with senior midwives, directors of nursing, consumer and executive RMCLHN representation to ensure local contextual relevance and issues of importance were addressed in the evaluation.

**The primary aim** of the evaluation was to inform the RMCLHN of the effectiveness of the implementation, acceptability, and sustainability of the MMoC in the region. All stakeholders were consulted including the perspective of women receiving care and care providers (nurses, doctors, and midwives) working within the new model. This provided a rural/regional context for this collaborative model.

## Method

A mixed methods design was undertaken following principals outlined in The UK National Institute for Health Research guide for conducting evaluations in healthcare. 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 to assess care provision and workforce, a women's survey and two rounds of focus groups for each clinician group (midwives, doctors, nurses). Data collection occurred over 16 months from Jan 2022 to March 2023. Prior to the introduction of the MMoC readiness for change was assessed at the collective level.

## Results

### *Readiness for change*

There were 34 responses to the organizational readiness for implementing change (ORIC) scale with a mean score of 36.2 (range 12-60) which suggested collectively, midwives, nurses and doctors began the new model of care with a sense of readiness for change. The overall score was lower than that reported in the YNLHN MMoC, where participants had a mean ORIC score of 41.5 (range 12-60). Hospital nurses were much less likely to indicate they were ready for change (mean score 27.5) than midwives or doctors.

### *Women's Survey*

A total of 142 women completed or partially completed the anonymous electronic survey run over a 12-month period at RGH and 5 months at MBSMH, with a response rate of 69.3%. For 40.6% of women, this was their first baby.

**Before birth.** Women's main source of information about pregnancy and birth were from MMoC midwives (89.1%) and GP obstetricians (84.8%). Most women (59.4%) reported their main care provider as being shared care (MGP and GP obstetrician). Twenty percent reported MGP midwives as being their main care provider. Women whose main care providers were shared care or MGP midwives alone, rated their care very highly and agreed they were treated with respect, felt listened to, could ask questions, and felt confident in the skills and knowledge of their midwives and doctors.

**Labour and birth.** For women who birthed in the area, the main care provider who assisted in the actual birth of their baby was about equally a MGP midwife (46%) or a shared care GP obstetrician or obstetrician (47%). Most women (59%) had one or two MMoC midwives during labour and birth. Women who birthed out of the region were more likely to have three or more midwives (69%). Just over half (52%) of all women reported knowing their midwife well during labour and birth, this proportion being higher (66%) for those who birthed in the region. Most women (>85%) agreed or strongly agreed with the positive statements regarding their labour and birth experiences.

**Postnatal care.** MMoC midwives (74%) were the main care provider after the birth, with an average and median number of 5 visits. At home support was rated as very good to excellent by 95% of women. The breast-feeding rate at 6-8 weeks postpartum was 74%. Almost all women (97%) replied they would seek the MMoC again for a next pregnancy and 98% would recommend it to a friend.

**Student experience**. Most women had a student experience (midwife, nurse or medical) and rated this experience as good as or better than they had hoped over 90% of the time.

**COVID-19 impact on care.** There was a surge of COVID-19 cases in the Riverland in 2022, with over half of women (58.5%) reported feeling anxious about the impact on their wellbeing. However, women reported being happy about the changes to care due to COVID (90.6%), felt like they received timely and clear answers to their questions (96.1%), and were happy (97.8%) about how the midwives and doctors working in the model were managing the risks of COVID-19.

### *Clinical Outcome Indicators*

Overall, there was no evidence of any increase in adverse outcomes for women birthing in the RMCLHN. Women in the RMCLHN had low intervention rates with good clinical outcomes, consistent

with international reviews of midwifery continuity of care. RMCLHN selected outcome indicators and overall SA indicators are presented in Table 1 below.

**Table 1.** Core maternity outcomes data, RMCLHN (2022) and SA state indicators (2021).

| **Core Maternity Outcomes** | **Year 2022* RMCLHN Percent** | **Year 2021^ South Australia Percent** |
|---|---|---|
| Total % women who birthed vaginally | 69.8% | 62.7% |
| Non-instrumental vaginal birth for *selected* women giving birth for the first time | 48.1% | 45.2% |
| Instrumental vaginal birth for *selected* women giving birth for the first time | 24.1% | 21.9% |
| Total all women % caesarean section | 30.2% | 37.3% |
| *Selected* women giving birth for the first time, caesarean section | 27.8% | 32.9% |
| Total all women % induction of labour | 41.3% | 37.1% |
| Induction of labour, *selected* women giving birth for the first time | 49.4% | 46.7% |
| Third or 4th degree tears; all vaginal births | 0.5% | 2.9% |
| APGAR score of less than 7 at 5 minutes post birth for babies live born at term | 2.1% | 1.2% |
| Stillbirths | 0 | n/a |

* RMCLHN data = combined RGH 12 months data, MBSMH 5 months data. Total number of births = 281.
^ Most recently published SA data. *Selected women include those aged between 20 and 34 years, whose baby's gestational age at birth was between 37 and 40 completed weeks, with a singleton baby in the vertex presentation*

### *Care provider's focus groups*

**Round one, Year 2022.** To gain an understanding of how well the model was being implemented and accepted by care providers (nurses, doctors and MMoC midwives), focus groups were conducted within the first 3-4 months of service commencement at RGH. Different sessions were held with each group of clinicians to ensure the unique perspective of each group were reported.

Analysis of round one focus groups suggested that implementation of the model faced several challenges at first due to a combination of increased workloads and staffing deficits. The model was well accepted by midwives and doctor. Hospital nursing staff have found it more difficult to transition to this model of care, raising concerns over scope of practice, feeling ill-prepared and cited communication challenges. However, all care providers recognise that without the change in model of care, maternity services may not have continued in this regional/rural area. Five broad themes identified challenges and learnings in the areas of: collaborative relationships; service challenges

have had an impact; scope of practice concerns for nurses; communication is important to success; and it is working well for women, midwives, and doctors.

**Round two, Year 2023.** The second round of focus groups were held with three distinct clinician groups in Feb 2023 (13 months after implementation RGH and 7 months after implementation at Murray Bridge).

Analysis of round two focus groups identified an overarching theme of 'working it out together'. In total, 6 themes and 13 subthemes captured the transition from implementation and lessons learnt, these included: Working together; Finding the right balance; Formalising the processes; Change takes time and education; Collaboration and communication is key; and making it sustainable.

All participants acknowledged the MMoC was a 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 MMoC midwives were extremely positive about working in the model but raised concerns over staffing levels and challenges of providing care within a rural context. Alongside this, there was a need to build capabilities and confidence of nursing colleagues, particularly regarding postnatal care. Challenges were discussed alongside ongoing strategies for sustainability.

### *MMoC midwives' workforce survey*

An anonymous workforce survey sent to 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. Response rate was 73.1% for all questions answered.

Over half of the MMoC midwives (54%) had less than 5 years working as a midwife. Most (79%, n=15) had worked in a rural setting prior to working in the MMoC and most had been employed (58%) in a midwifery position in the RMCLHN. Most (79%) felt prepared to work in a regional caseload model.

Work-life balance was rated as 'high satisfaction' by 32% of midwives and 'moderate satisfaction' by almost half (47%). Midwives have a high perceived level of empowerment in their practice as measured by the Practice Environment Scale for midwives. Most midwives (95%) believed the MMoC covered core components of care within the Quality Maternal and Newborn Care Framework. Almost three-quarters (74%) of midwives had no plans to leave their current position within the next 5 years.

*Effectiveness: The new MMoC affected not only how care was provided, but also had major implications for the way clinicians worked together*

- All women birthing at RGH and MBSMH received care through the MMoC. Nearly all women reported feeling supported and confident in the midwife providing care.
- Over 80% reported accessing the care during pregnancy, however only 20% stated that the MMoC midwife was their named main care provider, with 59% stating care was shared between the midwife and GP.
- The MMoC midwives provided the majority of labour and birth care (79%), though most women also saw a doctor during this period.
- Most women were provided care by one or two midwives compared to three or more for women who birth outside of the RMCLHN.
- Postnatal care was positively reviewed where nearly all women reported receiving a visit from their MMoC midwife, average number of visits being five per woman.
- The MMoC provided comparable or improved clinical outcomes for women and babies. Of note, more women birthed vaginally, 69.8% compared to 62.7% (SA state data) and saw a decrease in caesareans'; 30.2% compared to 37.3% (SA state data).
- From the perspective of care providers there was agreement that the MMoC was effective, with midwives (95%) reporting that the model enabled them to provide care that aligned with core components within the Quality Maternal and Newborn Care Framework
- All care providers agreed that this model was necessary to ensure the continuation of maternity services in the region and to provide service that were valuable to the local community.

Acceptability*: Stakeholder satisfaction with various aspects of the MMoC 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.
- Women were overwhelmingly positive about their experience; they felt respected, listened to, treated individually, and had confidence in the midwives and doctors.
- Most women agreed that clinicians worked well together (88%) and that the care given was well connected (84%), although they were less likely to agree that care providers passed on information to each other very well or that they always knew what the other care providers had done.
- Doctors have been overall supportive of the MMoC and while there were initial issues with frequent calls and messages to the on-call doctor from the midwives, this has reduced as the midwives have gained confidence and experience, as well as incorporated improved communication protocols.
- Most midwives felt prepared for their role and perceived a high level of empowerment as measured by the perceptions of empowerment in midwifery scale (PEMS).
- Midwives commented on the positive difference of working on the ward and in the model, being able to work autonomously and establish effective relationships with women across the childbirth continuum.

- Results of the practice environment scale (PES) suggested that midwives experienced good collaboration with their medical colleagues, which was evident in the focus group discussions.
- Most midwives were moderately to highly satisfied with their time off work (79%) and their work-life balance (73%). This was somewhat lower as compared with the Yorke and Northern LHN evaluation and was most likely influenced by staff shortages, a generally less experienced cohort, and environmental challenges.
- The transition to the MMoC had significant implications for the nursing staff who lost many of their senior dually qualified RM/RN staff to the model.
- Nurses initially raised concerns around scope of practice and the need for more education and earlier preparation.
- All service providers reported a commitment to navigate the change and challenges that had arisen, noting the impact on relationships and responsibilities.

### *Sustainability: The new system offers a sustainable model for ongoing maternity care in the region*

- Women overwhelmingly reported if they had another pregnancy, they would seek the midwifery MMoC and recommend the model to a friend.
- The model is highly valued by women, clinicians, and the community with good clinical outcomes. However, sustainability is influenced by several factors and will require on-going diligence and long-term effectiveness need to be monitored.
- The MMoC needs to be supported by the LHN, with the operations of the model well embedded. This includes the establishment and adequate support for midwifery unit managers.
- Overall, RMCLHN midwives working in the MMoC found the role both satisfying and sustainable.
- Close to three-quarters (74%) of midwives had no plans to leave their current position within the next 5 years.
- The strategies of employing assistants in midwifery (AiMs) and midwifery, medical and nursing students were well accepted by women.

## Conclusion and Recommendations

- The MMoC should be replicated as the standard care in the remaining birthing sites in the RMCLHN; Loxton (commenced July 2023) and Waikerie with consideration of the local environment at each site.
- In considering implementation of the MMoC over the four sites in RMCLHN resource and workforce sharing plans will need to be assessed and developed. There is a need for continued shared vision for the model and for reduced caseload to be considered in workload arrangements.
- Partnership with Aboriginal Family Birthing services and development of professional pathways for Aboriginal midwives and AMIC workers should be prioritised for regional SA. This follows from the successful integration of the MMoC at MBSMH with the existing AFBP.
- It is imperative that there is sufficient advanced planning and lead in time to the introduction of a MMoC.

- Future consideration of the regional/rural medical workforce in maternity care should take into consideration AMA Rural and Remote Policy and Workforce Initiatives (2023) including: retention strategies providing extra funding and resources to rural and regional hospitals to support the provision of adequate facilities, improved staffing levels and flexible work arrangements and supporting the practice of existing private practices in these areas. https://www.ama.com.au/rural-communities.

### *Leadership and collaboration*

- Midwifery-led models of care need strong visionary leadership and well-developed overarching management, commitment and hard work; this will influence how well the team functions.
- On-going support for weekly team midwifery meetings are vital for the team and for quality and safety reasons.
- A commitment of nursing and midwifery leadership in making progress towards interdisciplinary collaborative care.
- Intentionally nurturing respectful, open communication and trusting professional relationships are required.
- Foster better collaborative learning opportunities with GPs, midwives, and nurses. Inter-professional learning opportunities are recommended as a means to build feelings of credibility and confidence in each other's role.[2]
- Flexibility and openness to adapt to different ways of doing things and promote interprofessional behaviours. Having the openness and flexibility to adjust to each other's personalities and capabilities.[3]
- Team size should be considered - smaller team sizes promote shared responsibility and leadership among team members and sometimes a "champion" in teams may improve collaboration.[3]

### *Education and Continuing Professional Development*

- Skills and need assessments (as measured early on in RMCLHN) are important in tailoring education and ongoing professional development for midwives.
- Educational needs of midwives (working in a caseload) include time management, being on-call, managing a caseload and CPD to individual needs and experience.
- Educational needs of nurses and inclusion in planning, changes to roles and responsibilities, especially for nurses unfamiliar with maternal and newborn care. In this model of care, nurses should have skills to provide care for neonates and, provide supported care for antenatal and postnatal women.
- Quarantined funding for midwifery and nursing education and team building.
- Encourage midwifery one-on-one teaching to nurses when performing postnatal care.
- Collaborative learnings such as PROMPT and interprofessional case reviews and debriefs should be included for all service providers.
- Financial support- Because teams in rural areas are smaller and workloads are high, financial support is particularly important to protect paid time to coordinate an initiative.[3]

### *The Midwife role, staffing factors*

- Incorporation of midwifery students with local employment as AiMs. This provides support and reduces workload for midwives. This also introduces students to a MMoC model and the regional environment.
- Review caseload/allocations with regards to the caseload complexity and acuity, to ensure the wellbeing of midwives and sustainability of the MMoC. It has been suggested in several studies that a caseload of 38FTE is too high for regional/rural midwives.
- Continuity of care requires careful consideration to how many midwives each woman is likely to see for her care if backup is provided by a larger team. This also needs to be considered from the perspective of a more cohesive team environment with a smaller team.
- Midwives in as much as possible should have control over their own schedules and have the opportunity to participate in planning and negotiating their rosters.
- For dually qualified hospital midwives; provide more non-shift opportunities to maintain their midwifery skills and include engagement with the MMoC. Fully utilise their midwifery capabilities within the hospital setting.
- Individual staffing consideration should include the need to consider level of experience, backfill capacity, protected time off work.
- Flexible working options for midwives include consideration of part-time arrangements and self-rostering.
- Midwives new to a caseload model need support in learning negotiation and communication of professional boundaries between the personal and professional relationships with women.

### *Workforce sustainability*

- Midwifery graduates and early career midwives should be encouraged to work in the model and be well supported with supervision and assistance close by.
- Multiple approaches to recruitment will be needed, including collaborating with universities to ensure midwifery student placements, incentives such as relocation assistance, offering flexible work arrangement, ensuring that recruitment efforts are culturally sensitive. Relationships, culture, flexibility and autonomy are all important considerations in sustainability.
- Midwives ability to “be with” and build relationships with women to work to full scope of practice
- Support and promotion of midwives as lead care providers

**Photo of the Murray River in the RMCLHN region, South Australia**

# Background and Aim

## Regional and rural services for maternity care in Australia

In South Australia (SA) about 60% of rural maternity services have closed over the past two decades.[4] The reasons for these closures include service challenges around geographic spread, low population density, recruitment and retention difficulties for midwifery and medical staff and high costs of service delivery.[5] Although there have been numerous reports and recommendations for women's access to equitable and safe maternity care in rural communities, this remains a challenge for many.[6,7]

Closing maternity services has had significant consequences for women and communities, resulting in poorer health outcomes and financial and social hardships.[8] As approximately 30% of Australian birthing women live in rural and remote areas, there is an outstanding demand for maternity services in these areas.[9]

An option for increasing the sustainability of birthing services in regional and rural Australia is implementing midwifery services models such as a midwifery caseload.[5] 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.[10] 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, with the assistance from doctors in the event of identified risk factors.[11] 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.[12-15]

Over the past few years national and state health departments 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 highlighted the need for improved access to woman-centred care as one of four key values and principles.[16] Service adaption and innovation is a core 10-year strategy of the Australian Government's Stronger Rural Health Strategy and South Australia's Rural Health Workforce Plan to promote rural health service sustainability.[17] The SA Rural Nursing and Midwifery Workforce Plan 2021-26 was developed to facilitate the government's commitment to develop and implement a plan to recruit, train and develop the nursing and midwives needed to deliver country health services.[18] One of the key implementation strategies in the SA Rural Nursing and Midwifery Workforce Plan is the development of new and sustainable workforce models for rural health care. Objective 2.1 of the plan states; *develop and implement nursing and midwifery models of care that are evidence-based, innovative, effective and responsive to the health needs of rural people.*[18]

Based on the evaluation of Country Health SA Midwifery model of care (MMoC) in the Yorke and Northern Local Health Network of SA, implementation of midwifery models of care have been suggested as a strategy to increase the recruitment and retention of midwives, retain birthing sites in the region, and improve satisfaction with care for both women and clinicians.[19] The RMCLHN Clinician and Workforce Engage Strategy 2021-2024 provides an outline to guide the effective

engagement with clinicians and workforce and partnering in the planning, monitoring and evaluation of the regions health services.[20] Key objectives of these documents are within the brief of the current evaluation for the MMoC Pilot in the Riverland Mallee Coorong Local Health Network (RMCLHN). The RMCLHN covers areas including the Riverland and the Murray River, Lakes, and Coorong areas in South Australia, extending east to the Victorian border. Approximately 70,000 people live across the region, with the majority located in one of seven major towns – Barmera, Berri, Loxton, Mannum, Murray Bridge, Renmark, and Waikerie (Appendix 1, SA Regional LHNs).

## RMCLHN Midwifery Model of Care

In the RMCLHN midwifery care was mostly provided in a traditionally rostered hospital arrangement, whereby many senior midwives held dual registration and worked across the role of nurse and midwife. This required midwives to be staffed on all shifts at the hospitals. Across Australia, dual qualified nurse/midwives are declining due to an aging workforce and there has been a rise in the proportion of single degree midwives. [21]

In mid-2021 the RMCLHN moved from a conventional hospital rostered midwifery care model to a midwifery caseload model. This decision was made against a background of significant difficulties in retaining and recruiting midwives in the Riverland over the past few years and the prospect of having to suspend birthing services at Riverland General Hospital. Birthing services at a smaller hospital in the Riverland, Waikerie Hospital, had been suspended early-2021 due to staffing shortages.

Following the successful introduction of a MMoC in the Yorke and Northern Country Health Region of South Australia, this was viewed as a viable option for the region.[19,22,23] The new MMoC would no longer require midwives to be rostered at the hospital 24/7, provided better utilisation of midwifery staff to be allocated to the number of women receiving services rather than to each shift on the ward, would provide quality continuity of care to women and provide an opportunity for collaborative care arrangements with local general practitioners with obstetrics training. The agreed caseload for midwives in the RMCLHN is 38 women per year/FTE. The MMoC, also referred to locally as MGP, provides a collaborative inter-professional maternity services model that is evidence based, innovative, effective, and responsive to the regional/rural environment where there are clinical workforce shortages.

The four sites offering maternity services in the RMCLHN are: Waikerie Hospital and Health Services, RGH at Berri, Loxton Hospital Complex and Murray Bridge Soldiers' Memorial Hospital. All sites are level three for birthing as per the SA Standards for Maternal and Neonatal Services. The total births for 2020/21 financial year were 487, comprising:

- Riverland General Hospital (RHG) at Berri n=166
- Murray Bridge Soldiers' Memorial Hospital n=246
- Loxton n=91
- Waikerie n=18 (no birthing services since Feb 2021)

Over the period 2021/2022 approximately 74% of women who booked with RGH and MBSMH to have their baby, birthed locally. Reasons for birthing elsewhere included women with a BMI over 40

who were required to birth at a tertiary hospital and women with complex pregnancy or medical conditions who required to birth at higher level sites.[24]

There were 48 women who birthed and identified as Aboriginal or Torres Strait Islander or had Aboriginal or Torres Strait Islander babies in 2020/21 (approximately 10% of all births in the region).

## Riverland General Hospital

Riverland General Hospital (RGH) is a 38-bed public regional hospital located in Berri, SA providing general medical, surgical and maternity care to people living in the Riverland. Prior to the introduction of the MMoC, dually registered midwives provided care to women and babies, as well as acute hospital inpatients. Midwives worked on the ward on three shifts across a 24-hour period and were highly dependent on local GP obstetricians providing shared care.

In May 2021, the RMCLHN Governing Board approved a MMoC project at RGH, Berri. The aim of the MMoC was to provide, a sustainable midwifery continuity of care model that works collaboratively within a well-integrated network of maternal and neonatal providers. Women and families are at the centre of the decision making from the beginning of pregnancy, through to the birth and postnatal period, and are supported through best evidence-based care and ongoing professional development.[1] All midwives working at RGH transitioned to the new MMoC in October 2021.

A full description of the midwifery caseload model is available in the document*, Riverland General Hospital Midwifery Caseload Model of Care, November 2021*, Riverland Mallee Coorong Local Health Network, Government of SA.[1] In this model, all pregnant women choosing to birth at RGH are allocated to a known midwife once pregnancy has been confirmed. The care is in partnership with the midwife and a general practitioner (GP) obstetrician. Women who choose or who need to birth outside their local region due to personal choice or level of acuity can still access a MMOC midwife (and doctor) for antenatal and postnatal care. Admission into the model can occur by the following referral types: self, GP, GP obstetrician, obstetrician, or a midwife. A schematic of how women are allocated into the model is shown in Figure 1. The MMoC at RGH was designated as a pilot program until October 2022, at which time the LHN endorsed the model for the region.

## Murray Bridge Soldiers' Memorial Hospital

In February 2022 the RMCLHN Governing Board approved the implementation of a MMoC at Murray Bridge Soldiers Memorial Hospital (MBSMH), with the new model commencing in July 2022. MBSMH is a 45-bed regional public hospital locating in Murray Bridge, SA providing general medical, surgical and maternity care to people living in the Riverland. Like RHG, midwives were required to work in a ward-based model rostered to shifts prior to the implementation of the MMoC. Murray Bridge had adequate FTE of midwives however women were still being transferred to metropolitan hospitals for midwifery care as the midwives were being utilised as nurses to provide acute hospital care. Most midwives at MBSMH transitioned to the new MMoC, although a few dual qualified midwives elected to continue to work on the ward in a general nursing role and to work as a midwife when providing postnatal care on the ward. The evaluation of the MMoC included five months of data (July 2022-Dec 2022) from MBSMH.

## Aboriginal Family Birthing Program integration with MMoC at Murray Bridge

A unique service offered by MBSMH is the Tumake Tinyeri Birthing Program; see sourced information from the *RMCLHN Midwifery Model of Care Project- Final Report, March 2023*.[24] The Program includes an Aboriginal Maternal and Infant Care (AMIC) worker who works with Aboriginal women, in partnership with midwives and doctors to provide care throughout the antenatal, labour, birthing and postnatal periods to ensure continuity and flexibility of care. The Tumake Tinyeri Birthing Program staff have worked closely with MGP at Murray Bridge to develop a partnership model that provides individualised care for women and their families as well as security and job satisfaction for the AMIC workers. A partnership training day led by the Aboriginal Family Birthing Program leadership team occurred in 2022.

At RGH, the MMOC midwives' partner with a senior Aboriginal health worker who specializes in maternal and infant care. This is to support culturally safe and appropriate care for a woman who identifies as Aboriginal or who are pregnant with an Aboriginal baby.[1]


**Figure 1.** RMCLHN Pregnancy Care Pathway.
Source: Riverland General Hospital Midwifery Caseload Model of Care, Nov. 2021

## Aims and Objectives of the Evaluation

Evaluation planning was embedded early in the MMoC conceptual framework. In August 2021, The University of South Australia (UniSA), through the Rosemary Bryant AO Research Centre (RBRC) was approached to conduct an evaluation of the MMoC. Key questions and objectives were developed in consultation with the MMoC Advisory Committee to address the overall aim of the evaluation.

**The aim** of the evaluation was to inform the RMCLHN of the effectiveness of the implementation, acceptability, and sustainability of the MMoC in the region. This was considered from the perspective of women receiving care and clinicians (nurses, doctors, and midwives) working within the new model within a rural/regional context, which provides evidence-based, woman-centred continuity of care to residents of the RMCLHN.

The primary objectives of the 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; consumers and providers with the new model of care.
    - To report on the provider's (midwives, nurses, and doctors) views and experiences transitioning to a MMoC over the prenatal, intrapartum and postpartum care period. This includes exploring the new collaborative arrangements surrounding agreed roles and responsibilities, coordination and collaboration of care and professional support.
    - Report on the consumers (women's) experience with the new MMoC over the entire pregnancy continuum, including postnatal support.
    - Report on the experiences and elements of the midwifery transition to professional practice (MTPP) within the MMoC
- Report on the overall effectiveness, acceptability, and sustainability of the model of care; what works well, and lessons learnt in transitioning to the new model of care.
- Provide a comparative analysis of these evaluation outcomes with the Yorke and Northern LHN midwifery caseload pilot model of care evaluation report.
- Based on learnings from RGH and the Yorke and Northern LHN MMoC, outline and provide recommendations for rolling out the model of care throughout the remaining birth sites in the Riverland Mallee Coorong Local Health Network (Loxton, Waikerie and Murray Bridge) and consider learnings more broadly for South Australia.

Midwifery specific learnings and professional development were not included as part of the evaluation but are detailed in the working program document *RMCLHN Midwifery Model of Care Operational Plan 2021-2023.* It was not within the scope of this evaluation to assess workforce and hospital accountability costs. This is reported in the report, *RMCLHN Midwifery Model of Care Project- Final Report (March 2023).*[24] The Tumake Tinyeri Birthing Program (Aboriginal Family Birthing) at MBSMH was not part of the evaluation, but is referenced as sourced material, also from the *RMCLHN Midwifery Model of Care Project- Final Report*.

An interim evaluation report of findings over the first five months of the MMoC in the RMCLHN at Riverland General Hospital (RGH) was provided to the MMoC Advisory Committee in July 2022; *Interim evaluation report of the Midwifery Caseload Model of Care in the Riverland Mallee Coorong Local Health Network (RMCLHN) at Riverland General Hospital, July 2022*. The report covered the period January 2022 to mid-June 2022 and was prepared to assess how the program was tracking with the main focus on the perspective of women receiving care and clinicians (nurses, doctors, and midwives) working within the new model.

# Methodology/Measures

## Procedure

To ensure contextual relevance and evaluation of all key elements of the pilot program, the MMoC Advisory Committee was formed and met approximately every 6-8 weeks over the course of the evaluation. Membership was appropriate for their expertise and governance role in the MMoC. RMCLHN members were:

- Executive Director of Nursing & Midwifery, RMCLHN (Project Executive Sponsor)
- Executive Director Clinical Innovation, RMCLHN
- Director of Nursing & Midwifery, RGH
- Director of Nursing & Midwifery, MBSMH
- Midwifery Director, Policy, Workforce, Nursing & Midwifery Office, SA Health
- Project Manager MMoC & Advanced Midwife Manager
- Consumer Representative, RMCLHN

An evaluation protocol was drafted, agreed upon in consultation with key members of the Advisory Committee and submitted to WCHN Human Ethics Committee (Nov 2021). Full ethical approval for the study, *Evaluation of the Midwifery Caseload Model of Care at Riverland Mallee Coorong Local Health Network* was approved by the Women's and Children's Human Research Ethics Committee, 2021/HRE00395 on 02 February 2022 and by the University of South Australia (UniSA) Human Research Ethics Committee (HREC) Application ID: 204461 on 15 February 2022. The first Advisory Committee meeting took place on 3 March 2022.

A part-time research assistant (RA) was contracted for the project. The RA was a midwife who had worked in midwifery caseload in the RMCLHN and was returning from maternity leave. Her responsibilities were largely administrative; ensuring women and midwives were aware of the consumer survey, facilitating informed consent and keeping track of participant numbers.

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 end of year data from both women and clinical providers. An interim report on the first 5 months the MMoC was operational at RGH was presented to the MMoC Advisory Committee in July 2022. This final report incorporates findings of the interim report (Focus Group 1 and the organisational readiness for change survey).

| **Key milestones of the RMCLHN MMoC evaluation were as follows:** | |
|---|---|
| Jul 2021 | RMCLHN midwifery model of care model project group established by the LHN. Governance structure established in the region (Terms of Reference; Membership; Action Plan). RBRC approached for to evaluate the new model of care. |
| Aug/Sept 2021 | RMCLHN Project Planning (Budget; Communication Plan; Risk Management) RMCLHN distributed Organizational Readiness for Implementing Change scale (ORIC) instrument. |
| Oct 2021 | RMCLHN Engagement Groups (Membership; Risk Assessments; Journey Mapping; Operational Plan consultation). Launch of MMoC at Riverland General Hospital. |
| Nov 2021 | RBRC Evaluation protocol reviewed, WCHN Ethics and Site-Specific Assessment submitted through GEMS. RMCLHN MMoC consultation with Murray Bridge Hospital |
| Jan 2022 | Address feedback from WCHN Ethics, lodge UniSA ethics. RMCLHN Operational Plan. RBRC contract signoff with RMCLHN. Establish evaluation advisory committee, meeting dates, modify instruments as needed. |
| Feb 2022 | Finalise quantitative instruments, upload surveys to REDCAP, contract RMCLHN midwife RA. Begin data collection @ RGH site; first clinician focus groups/survey and women's survey begins. |
| Jul 2022 | Interim report (Jan 2022-mid-June) reporting on ORIC results, 1st clinician focus groups and women's early survey results completed. |
| Feb 22-Mar 23 | On-going data collection (Women's- allowing 6-8 weeks after last birth), Advisory Committee updates, final clinician focus groups (21-22 Feb 2023). 31 March Women's survey closes. |
| Apr 23 | Focus group transcriptions |
| May-July 23 | Data analysis (women's data, focus groups, midwifery workforce survey), clinical outcome indicators received from RMCLHN |
| Aug-Sept 2023 | Report writing, draft consumer report and main results to Advisory Group |
| Nov 2023 | Updated clinical indicators received, finalise reports and printing |

## Participants

### *Service Providers*

Primary MMoC service providers (midwives, nurses, and doctors) who provided maternity care to women at RGH and MBSMH were invited to participate in focus groups. 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 reported at the aggregate level, except for where illustrative, anonymous quotes are used in the report.

### *Women*

All women who received maternity care at RGH and MBSMH (whether for all or part of their care) were given participant information about the MMoC evaluation and the option to participate in a voluntary and anonymous electronic survey about their care experience. They were informed that their decision to participate would not affect their relationship with MMoC midwives, GPs or other care providers in any way. No personally identifying information was collected on the women's questionnaires. Per agreed protocol, women who may have had an adverse perinatal outcome (stillbirth, death, relinquished baby) would not be approached to complete the survey.

## Evaluation Framework

The evaluation plan was based on the previous evaluation performed by the research team in the Yorke and Northern Local Health Network of South Australia for a five-site MMoC.[19] The design used a mixed methods design and followed principals outlined in the UK National Institute for Health Research guide to conducting evaluations in healthcare. The approach to the evaluation was collaborative, with open and ongoing dialogue to address potential areas of concern. It is those working in the model and in the region who know best their own challenges and problems.

As the aim of the evaluation was to assess the implementation of a new service, the evaluation framework for implementation outcomes developed by Proctor[25] 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).[25]

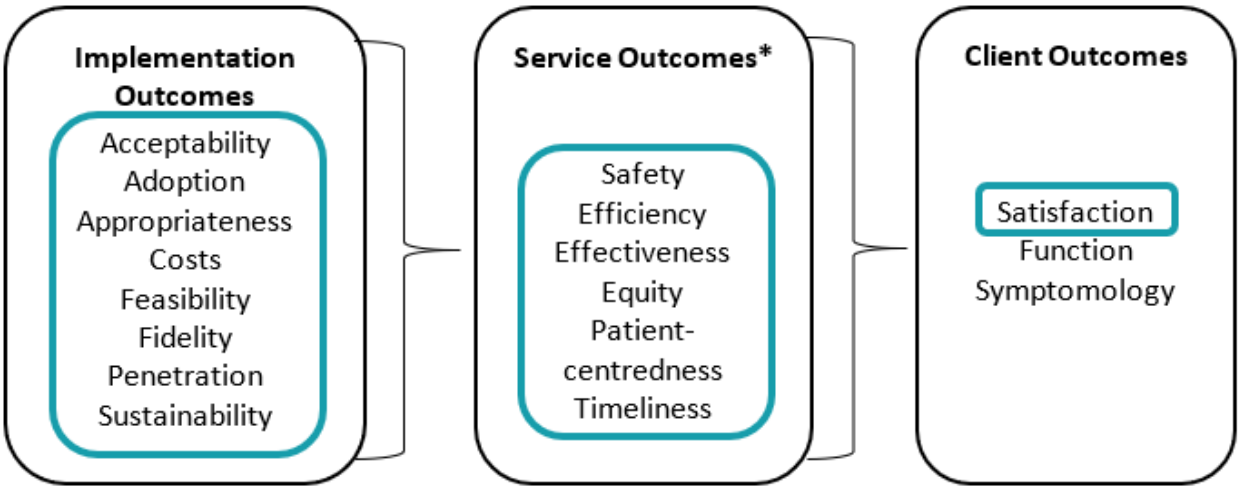



**Figure 2.** Conceptual framework for understanding implementation outcomes.
*From:* Proctor et al.[25] *Notes*. Outcomes outlined in green are relevant to the current evaluation. Staff and client satisfaction will be assessed against the QMNC framework. *Institute of Medicine Standards of Care.

Elements of the framework incorporated into the evaluation included:

- Acceptability – Stakeholder satisfaction with various aspects of the new system and the implementation process.
- Adoption – Have all aspects of the new MMoC been adopted? Which aspects have been most challenging to implement and why?
- Appropriateness – To what extent are changes to the MMoC considered useful and important? 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 MMoC 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 MMoC?
- Timeliness – How has the implementation progressed against initial milestones?
- Cost (and resources) - How sufficient is the resourcing for the new MMoC? Is the MMoC considered cost neutral or cost saving for the region? *(*Note-this was reported in the RMCLHN Midwifery Model of Care, Final Report, March 2023[24] *).*

### *Quality and Maternal Newborn Care Framework*

To assess key aspects of user and provider care, The Quality and Maternal Newborn Care (QMNC) Framework, reported in the Lancet Series on Midwifery[26] was used to frame important questions in survey and focus group instruments (Figure 3). All survey instruments have been previously validated, tested or used in previous evaluations. The framework has been used to assess the quality of care provided through the MMoC 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.[26] 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.[26] 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.[27]

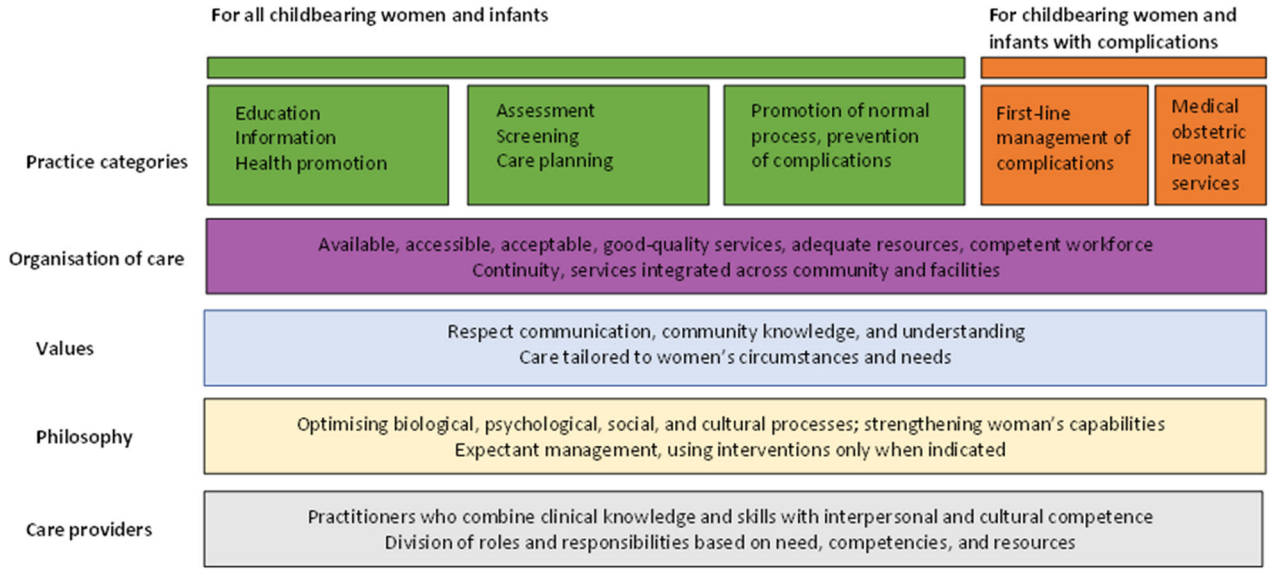



**Figure 3.** Five components of the QMNC Framework
From: Cummins et al, 2019[27]

## Organizational Readiness for Implementing Change

At the beginning of the pilot, it was agreed that care provider's readiness to change to the new MMoC would first be objectively assessed. This was measured by the Organizational Readiness for Implementing Change scale (ORIC).[28] The questionnaire was distributed electronically (as a Microsoft Forms survey via QR (via email and printed on the wards), by the RMCLHN to MMoC providers and hospital nurses/midwives in August/Sept 2021 at all birthing sites. Responses were anonymous. 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.[29]

The 12 item ORIC scale aims to measure at the collective level change commitment (5 statements) and change efficacy (7 statements) through 5-point Likert scale statements; disagree to agree (score range 12 to 60). Change commitment reflects the organisational members shared resolve to implement a change.

Change efficacy reflects organisational members shared belief in their collective capacity to implement a change.[28] Lower scores indicate a lower readiness for implementing change.

The ORIC survey aimed to assess readiness for change amongst the midwives, nurses and doctors transitioning to the new model of care and was previously used to assess readiness in a similar MGP model in the Yorke and Northern Local Health Network (LHN) of SA.[30] In order for new programs or practices to be successfully implemented in healthcare settings, it is necessary that those within an organisation be ready to support such a change at the collective level. Several change efforts fail in the health sciences because organisations are not ready or prepared to change.[28]

## Hospital Activity and Maternity Indicators

Reporting of selected hospital activity, demographic data and maternal and neonatal clinical outcome indicators from RGH and RMCLHN were agreed to by the steering group. For RGH, 12 months of data are reported (1 January 2022 to 31 December 2022) and for MBSMG, approximately 5 months of data are reported (16 July 2022 to 31 December 2022). Data from the two sites were provided to the evaluation team and combined for reporting purposes.

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. Indicators reported for “selected primiparae” (aka “selected women given birth for the first time”) are defined in accordance with SA/national core maternity indicators as:

- 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

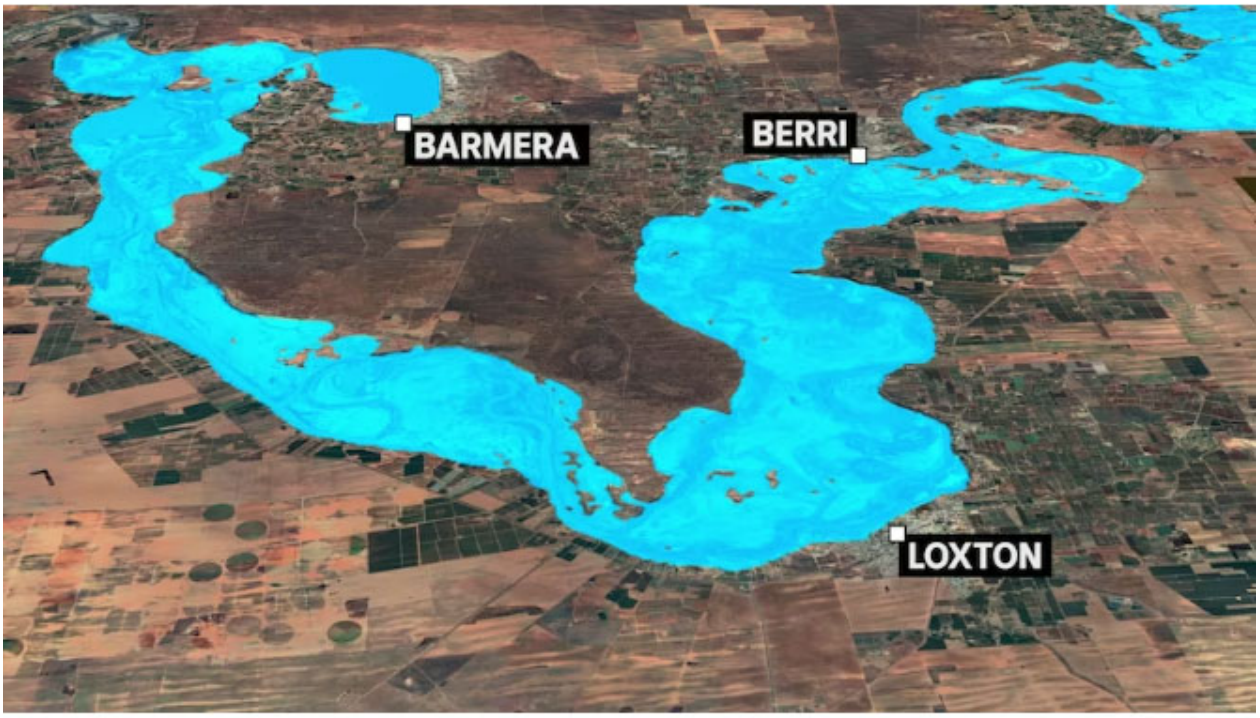
New administrative and system processes were introduced into the MMoC to improve communication and handover of services across the birthing sites. These are reported as sourced information provided to the evaluation team.

The MMoC workforce survey administered at the end of the survey period included seven Likert-type questions specifically asking questions around administrative and system processes and are reported in the survey results.

## COVID-19 and Flood disruptions/ service adjustments

Over the course of the 18 months of this evaluation, the Riverland experienced a surge of COVID-19 cases in 2022. This affected the workforce of the hospital, medical staff and midwives who required sick leave due to COVID-19 and impacted service delivery. COVID-19 questions are including in the women’s survey as described earlier. Modifications to service delivery are reported as sourced information from the MMoC project manager.

The Riverland also experienced its worst flooding in over 50 years over Dec 2022- Jan 2023 (Figure 4). Non-essential activities along the river were banned, homes evacuated, and main roads and bridges to hospitals were impassible at times.




Predicted flooding around the towns of Berri, Loxton and Barmera. *(ABC News)*

**Figure 4.** Flood region in Riverland area, Dec 2022 – Jan 2023.

## Focus Groups: 2022 Round 1 RGH

To gain an understanding of how well the model was being implemented and accepted by care providers (nurses, doctors and MMoC midwives), focus-groups were conducted within the first 3-4 months of service commencement at Riverland General Hospital. A topic guide of focus group questions was designed to address the objectives of the study, including those focusing on assessing key aspects of user and provider care as aligned to the Quality Maternal and Newborn Care (QMNC) Framework (Topic guide, Appendix 2).

Staff were invited to attend the focus groups 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 (JF) of the evaluation team with the two other members (PA, LM) in attendance. 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.

Different sessions were held with each group of clinicians, as each had their own unique adjustments to make to the MMoC. These occurred between 16/2/22 to 9/3/22 for the three groups:

I. MMoC midwives.
II. Doctors who provided maternity services in the area working in the MMoC.
III. Nurses and midwives working at the hospital birthing sites.

For providers unable to attend these groups/and or those who wished to elaborate further, an anonymous, electronic survey (secure UniSA platform REDCap) of the same general focus group topics was made available the following day. Focus groups were originally planned to be on site with the UniSA evaluation team, however due to the COVID-19 travel restrictions at the time, these were conducted over Microsoft Teams. Sessions were audio recoded and auto transcribed with permission over Microsoft Teams.

## Focus Groups: 2023 Round 2 RGH and MBSMH

The second round of focus groups, six in total, were held on 21 Feb (MBSMH) and 22 Feb 2023 (RGH) approximately 13 months after implementation of the MMoC at Berri and 7 months after implementation at Murray Bridge. The aim of the second round of focus groups at RGH was to: seek input from the care providers who had been working in the model or closely aligned to it and explore how the program impacted their role; whether early concerns had been addressed and what worked well and/or may need further attention. A topic guide of questions designed to address these aims was used to facilitate the discussions (Topic guide, Appendix 3).

The three focus groups held at MBSMH were the first and only focus groups for this site. The aims were similar to those of the first round of focus groups at RGH regarding implementation of the MMoC, barriers and facilitators to working in the model, interdisciplinary collaboration and what service-level modifications could be made to strengthen the model and explore what lessons had been learned from RGH and taken on board at MBSMH.

The 2023 focus groups were held in-person at each site (RGH and MBSMH) for each group of care providers; MMoC midwives, nurses, and doctors, and ran between 60 to 90 minutes. Invitations, procedures, and format followed the same as the first round with JF as facilitator. The hospitals provided refreshments for those attending the focus groups. All sessions were audio recorded with permission and transcribed with the auto transcription service Rev Transcription. The transcriptions were reviewed and corrected for clarity (by listening to the original audio) by all three members of the evaluation team.

## Women's Survey

Women birthing in the MMoC from Jan 1 2022 to 31 December 2022 from RGH and five months from the introduction of the model at MBSMH in July 2022, to 31 Dec 2022 were approached to participate in an anonymous online survey sent to them six to eight weeks after birth (Women's survey, Appendix 4). Women were provided information about the voluntary survey by their designated MMoC midwife at booking in their booking in appointment and provided with a participant information sheet. Consent was obtained and women were assured that the survey came 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 consenting to participate were sent a survey link by the research assistant upon discharge from the MMoC service, approximately 6-8 weeks after birth. A reminder was sent 2-3 weeks after the survey link to all women who in that time period (as there were no personal identifiers). The survey was designed and distributed through the licensed software (REDCAP). Responses came directly to the evaluation team through the secure UniSA server and were not shared with anyone else. This was to ensure women's confidentiality and encouraging open reporting of their experiences. Women who were unable to read or write in English were not sent the online survey. Women who may have had a severe adverse outcome i.e., perinatal death or critically ill baby, were not approached to take the survey.

The survey was based on validated instruments aligned to "The Woman's Experience" and included those from the QMNC topic guide and questions used in previous Australian evaluations of MGP services.[31,32] The survey is based on the previous Yorke and Northern LHN instrument and was revised, updated and pilot tested with input from the RMCLHN MMoC Advisory Group. The updated version includes COVID-19 questions used in Australian national surveys of women and are used with permission from the author (Zoe Bradfield).[33] As student placements in regional areas are important in workforce sustainability, questions on women's experiences with midwifery, medical or nursing students were also added to the survey. The survey was formatted into seven parts; (i) demographics (ii) before birth (iii) labour and birth (iv) at home, after the baby was born (v) COVID-19 impact (vi) student experiences and (vii) your overall experience. There were approximately 50 Likert-type or multiple-choice questions in the survey. The women's survey addressed the following domains outlined in Figure 5.

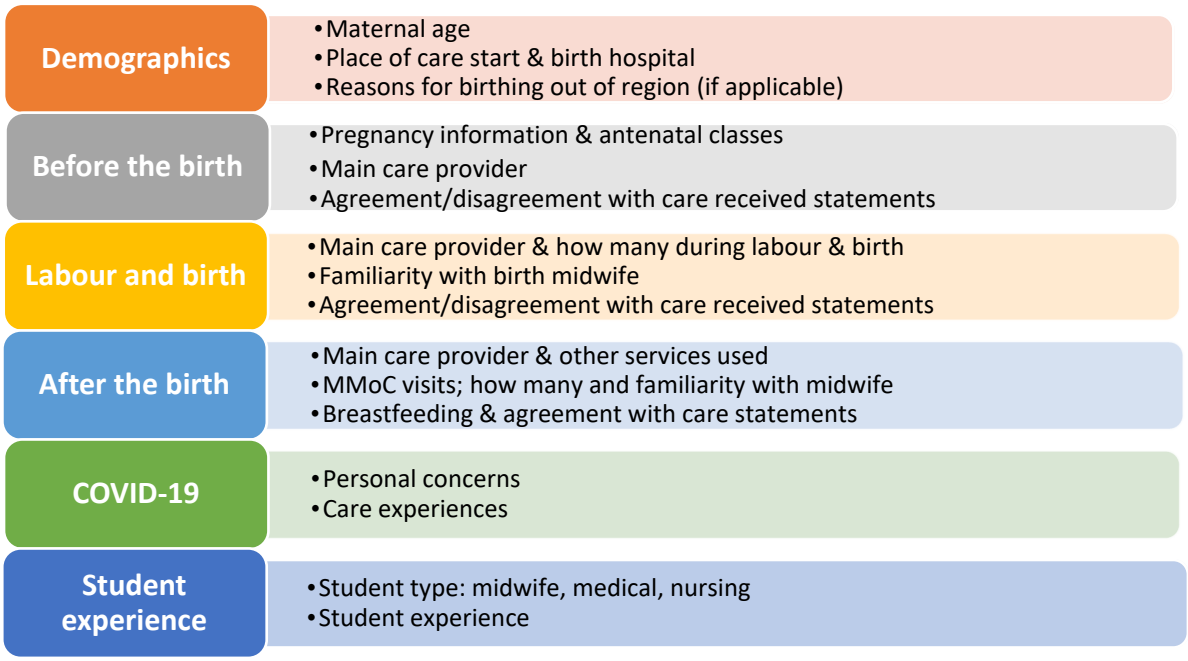



**Figure 5.** Domains assessed within the Women's Survey.

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.

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 section.

## MGP Model of Care Survey

### *Survey development*

In addition to the qualitative data obtained during the two rounds of focus groups with MMoC midwives, a short quantitative survey was developed and completed at the conclusion of the evaluation. The anonymous survey was electronically distributed in March 2022. 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.[34] Additional questions included:

- information on work-life balance as reported in a previous Australian midwifery study,[35]
- questions related to the QMNC framework,
- administrative systems and processes in the MMoC
- intention to leave current position
- top two positive and negative aspects of working in the MMoC
- 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 validated Practice Environment Scale (PES) for midwives was used to assess midwife-doctor relations.[36] The PES is a reliable instrument, adapted for use in midwifery and used in Australia studies.[36,37] 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 disagree*) to 4 (*strongly agree*). 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.[38] 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. Validity and reliability of the PEMS has been established and used in Australian studies. [37,38]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 survey had previously been pilot tested with 5 midwives at UniSA and all were able to complete the questionnaire in 10 minutes or less. The final survey was distributed by RBRC via the secure online platform REDCap, hosted at the University of South Australia.[39]

## Data Analysis

### *Quantitative Data*

Quantitative data collected as part of the program design and survey data was summarized and analysed descriptively. Survey data was downloaded from the secure platform REDCap[39] and imported into the software STATA v 17.0 for analyses. 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 coefficient was used to assess internal consistency of subscales where appropriate, from validated instruments.

### *Qualitative Data*

Qualitative data from questionnaires were exported from REDCap[39] with coding and analyses done in Excel (Microsoft 365 Apps). A descriptive qualitative approach was taken for data analysis,[40] which is appropriate for mixed-method research.[41] 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 MMoC. The phases of thematic analysis included: data familiarisation, initial coding, searching for themes, reviewing themes and coding, defining and naming themes, and summarising findings.[42] 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

Quantitative and qualitative results of all measures are presented mostly in chronological order, starting with the ORIC survey, distributed at the beginning of the MMoC to assess service provider's readiness for change. Data triangulation of the results reported in this section: service provider's focus groups, women's survey results, clinical outcome data and midwifery workforce data are incorporated into the discussion section and provide support for the effectiveness, acceptability and sustainability of the MMoC.

## Organizational Readiness for Implementing Change

Thirty-four responses to the ORIC survey were received from three RMCLHN sites: RGH (n=15), MBSMH (n=16) and Waikerie (n=1) The Waikerie response was combined with Berri as Waikerie's birthing services were suspended. There were no responses from Loxton.

At the time of the survey (29th August 2021) there were 5 midwives planning on transitioning to the caseload at RGH, and 5 doctors (4 GP obstetricians and 1 specialist obstetrician/gynaecologist (part-time). Two MMoC midwives were away or not yet hired at the time of the survey. In Murray Bridge there were 16 midwives working in a shift model and 7 GP obstetricians. Waikerie had 1 midwife and 2 GP obstetricians (however births were not occurring at the time of the survey) and Loxton 6 midwives with 2 GP obstetricians. Approximately 85 nursing staff work at RGH and 105 nurses at Murray Bridge – all had access to the survey. Loxton and Waikerie did not share the survey with their staff.

### *Internal test performance*

The ORIC test results were first assessed for internal consistency and reliability with the Chronbach's Alpha test. The Chronbach Alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test. A reliability coefficient of .70 or higher is considered acceptable for internal consistency. The overall alpha scale coefficient for the 12 items was 0.97 indicating good scale quality with high internal consistency. The Chronbach Alpha for the 7-item change efficacy was 0.97 and for the 5-item change commitment 0.91 were also good.

### *Characteristics and scores*

Two participants did not provide their main professional role and provided low scores (<30 on the ORIC scale). Three participants did not answer all 12 questions, and these were omitted from the overall mean score. Overall, for the 31 participants who completed all 12 questions, the mean ORIC score was 36.2 (range 12-60) which suggests collectively, the midwives, nurses, and doctors who completed the survey began the new model of care with a sense of readiness for change. The overall score was lower than that reported in the similarly initiated MMoC in the Yorke and Northern Local Health Network (YNLHN) where participants had a mean ORIC score of 41.5 (range 12-60).

The mean ORIC score was similar for the two primary birth sites with Riverland General Hospital having a slightly higher score of 37.4 (n=15) and Murray Bridge a score of 35.1 (n=16). However, a significant difference (ANOVA F= 3.51, p=.030) was found between the main professional groups, with hospital nurses much less likely to indicate they were ready for change (mean score 27.5). This difference was not demonstrated in the previous ORIC survey from the Yorke and Northern LHN.[19] Comparative results for the Riverland and Yorke & Northern LHN are presented in Table 2. Clinical role, distribution and mean ORIC scores of participants, RMCLHN & YNLHN MMoC.

**Table 2.** Clinical role, distribution and mean ORIC scores of participants, RMCLHN & YNLHN MMoC.

| | **Riverland, Mallee, Coorong LHN** | | **Yorke and Northern LHN** | |
|---|---|---|---|---|
| | n (%) | ORIC score[1] Mean (SD) | n (%) | ORIC score[2] Mean (SD) |
| Clinical Role | | | | |
| MoC MGP midwife | 5 (14.7) | 46.6 (7.8) | 12 (21.4) | 40.5 (9.5) |
| Hospital midwife/nurse | 11 (41.2) | 38.5 (10.6) | 13 (23.2) | 44.5 (11.1) |
| Hospital nurse | 10 (29.4) | 27.5 (15.5) | 27 (48.2) | 41.8 (14.1) |
| Doctor (GP, Obs) | 3 (8.8) | 46.0 (13.2) | 3 (5.4) | 40.0 (14.7) |
| Not stated | 2 (5.9) | - | 1 (1.8) | - |
| Total | 31 (100) | 36.2 | 56 (100) | 41.5 |

[1] Between group ANOVA $F = 3.51$, $p = 0.03$

[2] Between group ANOVA $F = 0.26$, $p = 0.86$

Participants were most likely to agree or somewhat agree on the change commitment statement, '*People who work here are committed to implementing this change'* (52.9%) and the change efficacy statement, '*People who work here feel confident that they can keep the momentum going in implementing this change' (*51.8%).

Participants were most likely to disagree or somewhat disagree on the change efficacy statements, 'People who work here feel confident that they can manage the politics of implementing this change' (53.0%) and 'People who work here feel confident that the organisation can support people as they adjust to this change' (48.5%).

Participant responses to the ORIC statements grouped by subscales are shown in Figure 6.

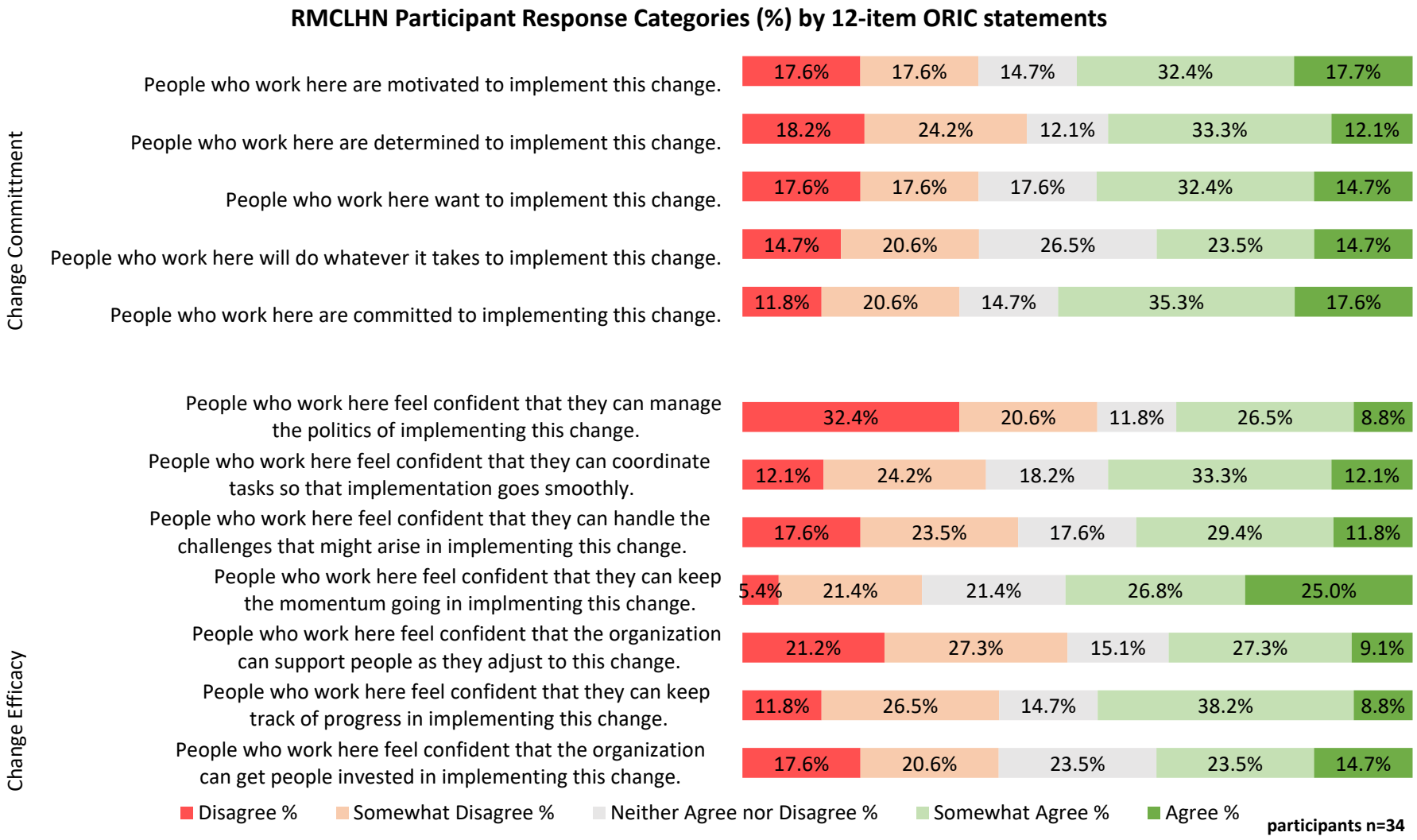



**Figure 6.** Distribution of responses to the ORIC statements.

## Care Provider Focus Groups: Round 1 RGH

Three separate focus groups were held between 16/2/22 to 9/3/22: MMoC midwives and follow-up survey with n=10/12 responding, nurses and follow-up survey with n=13/85 responding (85 potential nurses at RGH- unsure of absolute reach), Doctors and follow-up survey n=3/5. Notably, of the five GP obstetrician and one consultant, only one doctor attended the focus group session, although two doctors completed the optional follow-up survey. Focus groups were facilitated via Microsoft Teams.

### *Summary*

The analysis suggests that implementation of the model faced several challenges at first due to a combination of increased workloads and staffing deficits. However, as described by one of the midwives, '*the dust has settled from when it was first implemented. And now I think things are sort of starting to be accepted*.' Specifically, the model has been well accepted by midwives and doctors who have worked collaboratively over the past years to see this change implemented. Midwives have enjoyed the increased autonomy and relationship-based care. Nursing staff at the hospital have found it more difficult to transition to this model of care, raising concerns over scope of practice, feeling ill-prepared and cited communication challenges. However, all care providers recognise that without the change in model of care, maternity services may not have continued in this regional/rural area. A number of key themes were evident (Figure 7).


**Figure 7.** Focus group themes and sub-themes from care providers, round 1.

### *Key themes*

#### *Theme 1: Collaborative relationships are key to acceptance*

It was evident in the discussion that the doctors (Drs) and midwives understood the model whereas it appeared the nurses did not. The relationship between the midwives and doctors had developed over time, as together, they were seeking to find a solution to sustain a service for women and the community.

> *"I think that we've [midwives & Dr] put a lot of work in over many years to get to the place that we're at now." (Midwife)*

While all staff (midwives, nurses, and Dr's) have been impacted, the nurses found the change most challenging, reporting little involvement in the process for change and a perceived lack of understanding of the new model.

#### *Embracing the change through shared understanding*

Previous critical incidents and identified need provided a shared goal and understanding for this new model of care.

> *"I knew it had to happen. Had to happen for staffing levels had to happen for the patients. It was, you know, recommendation from a critical incident report …..on so many levels that had to happen." (Doctor)*

> *"We went through a lot of hard stuff over a few years…… these few clinical incidents really, really brought out what we're here for. So I think the work had been done before the model started." (Midwife)*

The midwives and doctors reported the proposal for the new MGP model had been on monthly agendas for years and they felt there were no surprises or secrets.

> *With the implementation with the doctors, we were consulted the whole time. We've known about this for years; we've known they've wanted to do it for years…… and how it was actually going to work and getting it nutted out. Obviously it only happened in kind of 12 months or so before implementing it, but it was on our agenda of our monthly meeting every single time….. there were no secrets there, we knew." (Doctor)*

> *"The doctors have been extremely supportive, and they're actually even like with bringing in the model very, very supportive and just like, what can we do this needs to start as soon as possible, you know, let us know what we can do. Just really, really supportive, um, which historically certainly a huge shift over the last five years." (Midwife)*

There was also an awareness of the prior experience of the YNHLN MGP model and opportunities for both medical and midwifery champions along the way that made it work.

> *"I knew kind of a fair bit about the Yorke and Northern 'cause I'm on the state-wide Maternity Services committee, so I would hear all their outcomes and there,*

*you know, I got their one-year report and all that sort of stuff. So, I kind of knew roughly how it would work." (Doctor)*

### *Not having a shared understanding made change confronting*

For the nursing staff the change was seen to be driven by a threat of service closure so they may have felt forced to engage with the new model rather than having been on the same journey. Some nurses stated that they didn't like the model.

*"Nursing staff felt it was forced on them with very little to no education given to majority of staff." (Nurse)*

All care providers commented that nurses may not have felt adequately engaged in collaboration or the implementation and some nurses felt they had been kept in the dark.

*"Um, I feel like the nurses are definitely not involved the way that they should be or, that I'd like to see them be. I think that's, that's definitely missing." (Midwife)*

*"I know the major pushback was from the nurses, and there was a few, you know, quite vocal ones, but other ones that were a bit more quiet about it, but then felt that they weren't consulted enough in the implementation process. I don't know how much they were consulted, they all knew about." (Doctor)*

The nurses recognized a need for change, but some felt they had other priorities pre-implementation and had not been part of the consultation of how best to make it work.

*"The structures were only ever put in place by the midwifery team and the RGH team were not included in the collaboration at all. There has not been a follow up meeting since the roll out to be able to feedback information and problems associated with the model of care." (Nurse)*

The midwives and doctors both recognised that the model was implemented at a time when the nurses had been under a lot of pressure within the service. The new model was not a priority for them as they navigated changes that included loss of several senior staff and a need to adapt to new roles, policies, procedures and care plans.

*"I think also MGP commenced at a time in the hospital where staffing was absolutely critical for nurses. They lost a lot of senior nurses, like morale on the ward was horrific as I'm sure it is in lots of hospitals, but speaking to this hospital, it was a really tough time for them. So I think there was a lot of change. They lost senior nurses and then they lost all of us on the ward." (Midwife)*

## *Theme 2: Service challenges have had an impact*

The implementation began at a time of high service demand with more births scheduled than previous months and staffing ratios below the allocated FTE. This impacted all staff, though the nursing staff felt most vulnerable, they reported they needed more support and education during the transition. Changes to team dynamics, with midwives no longer working on the wards and nursing staff taking on a new role to provide care for women and neonates that had previously been undertaken by the midwives was both challenging and confronting.

*"Lack of policies and procedures around what baby is "stable" or "healthy" what is okay for a midwife to leave and what isn't. Lack of staff, nurses are over worked and stretched too thin and as are the midwives." (Nurse)*

### *Staffing ratios alongside increased service demand*

Some midwives felt overwhelmed with the adjustment to the new model and managing the higher than usual birth rates. The Doctors were supportive and managed more of the antenatal care.

*"We had less staff when we started this than before we started this. So we actually, we were critically low before, but even more so when we started this." (Midwife)*

*"Staffing levels so like you know, I tried to book two elective (elective caesarean) sections on a day; on one day, two different midwives, but then the director of nursing vetoed that and said I don't have enough nurses on the ward to look after two sections." (Doctor)*

*"Lack of staff. Not having a ward midwife available at least during the day. No-one available to do re-stocking and safety checks on equipment which often leads to having to leave the woman in theatre or birth suite to run for required equipment." (Midwife)*

### *Finding the balance: roles and workload*

Some midwives commented on their role, noting that due to the increase in bookings the schedule of shared care with the doctors did not eventuate as planned.

*"When we did the clinical engagement phase, we really did talk about low-risk women being able to have midwife only appointments. And we laid out a bit of a journey, a patient journey where the doctor I'd like to see them at sort of 20, 28, 36 and 40 and 41. And that the midwives can see them for the other appointments in between that. So, we couldn't do that initially because of how busy we were. But I feel like now there's an opportunity for midwives to be able to do that if the women would like to, which most of them certainly do from my point of view." (Midwife)*

*"It seems the doctors' loads have increased significantly since the model was initiated. I think this is related to more births than average however I think there are other factors involved as each midwife has more responsibility with each patient and this responsibility gets shared with the on- call doctor. I think we are overlapping a bit and we can be more efficient. I think it will sort itself out with time but something to discuss as we move forward." (Doctor)*

However, the midwives also commented that in order to fulfil the extent of the model that the caseload may need to be adjusted.

*"I really do feel like we need a FTE of like, a caseload of like 35 per full-time midwife, 38 I mean, it's not a lot of difference really, but it's really tough when there's not any core midwives at all." (Midwife)*

### *Inter-professional tension*

There were unique challenges in service provision related to role delineation within the midwifery model. There appeared to be tension around who was responsible for care prior to 20-week gestation, with midwives no longer on the ward for nurses to consult with when women presented to the emergency department (ED) and the current hospital policy to refer the woman back to her doctor. Nursing staff reported there had been instances where women had presented to the ED due to bleeding prior to 20 weeks. In the previous model the nurse would ask the midwife to attend, seemingly unaware this would then require the midwife to refer the woman back to her doctor. Nursing staff reported this as a gap in service provision not realizing the woman could also have support from their allocated midwife once seen by the doctor. Nursing staff spoke about not feeling able to provide adequate care in these instances and felt they were unable to provide the appropriate emotional support.

> *"We have had very little input into the creation of the program. None actually, so there's very little communication between the midwives and us as a team." (Nurse)*

Another challenge expressed was how the nursing staff should work with the midwives when they came in to provide care. Some felt they could leave the midwife to provide care which enabled them to focus on other patients while some nurses stated they would value the opportunity to attend the care to learn from the midwife.

> *"One other thing that I've noticed, is when the midwife comes to see their mid patient say in the morning, they will go in themselves and they will do observations and whatever else they need to do, but they're not including the nurse. So, I thought that was the whole idea of it as well was to, you know, upskill the nurses and have it involved in what they're doing with their patient. Um, but that's not going to happen." (Nurse)*

> *"If a baby is of concern, what's the criteria for the midwife to be looking after it as opposed to somebody who's not a midwife? That's kind of my issue as well. Like I said earlier about a high-risk baby and I didn't know about it and things weren't done because the midwife wasn't here and things like that. So then the doctor's angry, but I didn't know. I think there needs to be more of a formal process about what the plan is." (Nurse)*

> *"It has been hard to get all nursing staff engaged and educated in providing care and aware of how to contact the midwives with concerns. Staff are aware to document nursing note in baby case notes as well, however large proportion do not write anything. Some have ideas that they will leave all physical care for midwife to do when they come in and only give medications if charted (i.e. will leave all obs, bloods and any other tests which are all within their scope, for the midwife to do). Some try to distance themselves from any responsibility to those patients and a very large proportion believe they are just 'babysitting' these women and refuse to write notes of if the midwife has been in and written one of the care the midwife has provided." (Midwife)*

These model specific challenges have fed into the notable dissatisfaction for nurses, however there was a general sense that these challenges were improving.

> *"And now I think things are sort of starting to be accepted. Like just now I just booked an iron infusion and they said, oh, make sure you let her primary midwife know to come and do the, fetal heart, and think, well, that's actually really good that they are aware, and they know that's what we need to do. So I think from a very short experience .., that it's getting better." (Midwife)*

> *"…you know, [the nurse] loves women, loves babies and that sort of thing, but actually felt really uncomfortable with the postnatal and baby care even doing a set of baby obs was like some massive thing for her, and now she just takes it all in her stride. So she's kind of got used to it. So, both going to the education sessions, but also just doing it." (Doctor)*

### *COVID-19 challenges and opportunities*

COVID has brought both positive and negative challenges – most notably for nurses who worked in a hospital that had patients with COVID.

> *"It's really tough out there for them [nursing staff]. Cause they're really like they're, they're in PPE. They're they've got COVID patients they're and new mums. Like it's really hard for the nurses." (Midwife)*

However, COVID restrictions may have helped facilitate early discharge for women. The midwives felt they were able to build strong relationships with the women and noted improvements in breastfeeding and one on one time with fewer interruptions from visitors.

> *"if I can say that about COVID, a positive, is that women are much more open to early discharge and not hanging about in hospital for three days or four days. Like they're much more open to going home early. So that's actually been a really good part of the new model. I don't think we've had many negatives in terms of the model about COVID." (Midwife)*

The negative side to this was that some women were then left without additional social supports from family and friends, and this increased the woman's level of anxiety.

> *"Absolutely [COVID affected care]. Having to restrict face to face time with women has resulted in far more anxious pregnancies and birthing experiences. It has forced families to be separated after birth and effected bonding as a family unit. It has also made it harder to provide education and support as it lacks a personal touch when it must be completed primarily over the phone." (Midwife)*

The use of telehealth and electronic means of communication was effective although the midwives and doctors noted some women seemed to overuse the service, as they experienced higher numbers of calls/texts out of hours.

### *Theme 3: Scope of practice concerns for nursing staff and education needs*

There was considerable discussion about scope of practice and the requirement for nurses to provide care to women and neonates as there were no longer midwives rostered on to the ward for postnatal care. Midwives attended daily but were not on onsite 24/7.

> *"I know how the patients feel about it, but I don't like it…… I think we're expected to do things that we not really trained to do, like out of scope and its sort of sometimes it's expected that, you know, oh, you've had a baby, you'll be right. No, that's not, not enough." (Nurse)*

> *"So yeah, the whole scope of practice thing was a sentence I heard over and over again. Uh, so I think it was breaking that barrier." (Doctor)*

> *"Nursing staff are struggling with the concept of not having a midwife available at the hospital and have voiced they do not feel safe looking after women and their babies." (Midwife)*

### *Nurses were unfamiliar with maternal and neonatal care needs*

Some nurses believed very strongly that women were not receiving the care they should and that providing care for the neonate was problematic. Midwives however, felt there may have been a lack of understanding of the role of the midwife in the postnatal period and the care provided once home. For example, education, breastfeeding support and neonatal care, such as bathing the baby was not seen as a responsibility of the nurse on the ward.

> *"Well, they're not getting that care that they would normally get if a midwife was looking after them." (Nurse)*

> *"When mothers need the support post birth, they are left with a nurse who often isn't trained or confident in providing care. As a nurse, I feel out of my depth and often uncomfortable. I am able to complete obs on a baby, do BGLs and basic care. However, I do not feel sure enough of what is 'normal' for a baby to be able to safely identify if something is abnormal. We have a large patient load and often cannot provide the mid patients with the time and support they need." (Nurse)*

Nurses identified that they felt there was an expectation that they would just know what to do, but there was unfamiliar paperwork and a lack of understanding around midwifery practice.

> *"You have the doctor coming in and saying to you, this should have been done. This baby's high risk and you don't know because you just do what you've been told to do, which sometimes you're not really even comfortable doing because you don't know enough about it." (Nurse)*

### *Missed educational opportunities for nurses*

Nursing staff reported educational opportunities were provided early but not sustained. It seems that at the time the nurses were busy and did not fully understand the model or their need for education. Nurses who initially did not attend education stated they felt it was not relevant to their practice of care, particularly in the pre-implementation phase. It wasn't until the model was

implemented and the midwives were no longer on the ward that they realized why the education was relevant.

> *"[X name] did run about eight sessions, three and a half hour sessions in the lead up to the model beginning. And we just, did a lot on everything … that would be relevant. very detailed and long. But the challenge was, I think people just didn't really see it as important. It wasn't happening yet. And then once the model begun, they're like, oh, we [nurses] need the education." (Midwife)*

> *"There was some education, and when they first did it, they tried a few, few hour trainings, but a lot of the staff didn't actually go, like weren't able to make it either. So, like myself, I'd be just thrown in the dark if I got a mid patient. Cause I don't know much about babies, and I don't feel overly confident with having a baby because of that as well. If they were deemed high risk or something, I'd be – my pants." (Nurse)*

All staff felt additional education was needed. In particular, to support the nurses to gain confidence and familiarity with maternal and neonatal care, terminology and documentation. Recommendation for education were not just about obstetric emergencies but also understanding care plans, how to escalate care, who to call (doctor or the midwife), being familiar with normal neonatal observations and recognizing when they fell outside of normal ranges.

> *"So, to me, you know, when the midwife, they should be going into the room with the nurse yeah. And doing stuff together. Yeah. So, the nurse learning as well and there's that handover if the patient and the nurse that we drive together, which doesn't happen." (Nurse)*

> *"More appropriate education [needed], not just given YouTube videos to watch. Having support of the midwives if feeling unsure about the health of the neonate." (Nurse)*

Service improvement such as in-services were suggested and both midwives and doctors expressed their willingness to support their colleagues and be called in as needed.

### *Theme 4: Communication is important to success*

The importance of effective communication was evident, with evidence of positive communication strategies between the GPs and midwives. This level of collegiality was enabling a shared understanding of each other's roles as the model has settled in. However, there was concerns raised over lack of clear communication processes with nursing staff.

### *Positive and effective communication strategies between GPs and midwives*

Overall, the midwives and doctors had ways of communication that was working well, particularly utilising their mobile phones for calls, email and texting. Some of the doctors commented on having more calls and text from midwives due to their increased responsibilities and this was being shared with them. However, this is expected to decrease as the midwife's confidence increases.

*"The communication's been really good with email and emailing with our phones has made life much easier, um, texting and calling. And I think the communication is really good." (Midwife)*

There were regular meetings which provided opportunity for case reviews and in-depth discussions. Sometimes these were taken up with system concerns and Covid management. A few doctors commented on the need to prioritise discussions of women who maybe at-risk/complex needs at the beginning of the multi-disciplinary meetings.

*"When we have our monthly meetings, which is all the midwives, the doctors, the Director of Nursing, the Director of Medical Services came to the last one… because of the COVID stuff. Because COVID took a little bit to talk about and then there was a few other things to talk about, the last thing on the agenda is the discussion about women of concern. I think in terms of communication, I think that needs to be better. I think the most important part of that meeting is discussing the women of concern. I think they should be first." (Doctor)*

*"We do have a monthly like multidisciplinary team meeting. So we go through case reviews. Then when we can and, and review all the women of concern who are coming up and that that's quite a long meeting, it goes through the two or three hours and at least it's quite well attended and it's yeah, that's, that's a good meeting." (Midwife)*

There was room for improvement particularly around ways to streamline bookings and sharing calendars.

*"I was told that out the other thing was that we were trying to work out a shared calendar…. For inductions and caesareans like so, elective bookings of things so that, you know, say, if we're seeing a woman and we went, OK, well, they need to be induced sometime in the next week." (Doctor)*

### *A need for clear communication and clarification of expectations of nursing staff*

The nurses discussed communication at length, identifying that this was an area that needed further attention.

*"So there's very little communication between the midwives and us as a team……. we don't know when they're here, when they're not, what we're doing." (Nurse)*

*"Since really, we went into the new model, we probably haven't had as much sort of formal contact (with the nurses)". (Midwife)*

Nurses felt the new model made it more difficult to have discussions with the midwife and at times they did not know who to call, though this was improving.

*"Oh, I would personally .., if I had an issue I'd just call them [doctor or midwife] like most of the time I've had a problem, they try to solve over the phone for you. That's one thing that you, it definitely is a negative thing about not being on the floor. You can't just, you know, ask them to do something". (Nurse)*

*"Barriers are minimal communication between the midwifery team and the RGH team. There are no meetings at a management level. The RGH team often don't know when there is a midwife in the building as they don't check in with anyone when they arrive." (Nurse)*

The nurses also identified a need for a clearer process around handover, being confident with documentation and understanding the care required once the midwife had left the hospital.

*"Sometimes you have a midwife handover to the nurse on shift for an example. And then another nurse come for the night shift, she's getting a handover from the nurse who got the handover from the midwife hours ago, you know, staff lost translation sometimes." (Nurse)*

*"I think there's a lot of paperwork that we're also not familiar with and we don't have the opportunity to like, to really sit there and go through the paperwork….. We kind of just, you know, do I guess the basics, do what we know, and we know, I feel like we are not giving the proper level of care." (Nurse)*

The nurses suggested more detailed guidelines and that care pathways or check lists might be beneficial.

*"We don't want any more paperwork, but I think that we kind of need something to say they have had all of this done, and at the end of the day, then at least there's a tick box or something to say, like, you've shown this. That said that everything's okay" (Nurse)*

They also suggested that being present when the midwife was visiting the woman would be ideal.

*"Midwife assessing their mid patient without the nurse being present - as nursing staff are learning how to care for mid patients this NEEDS to be a priority to help nurses feel comfortable and confident." (Nurse)*

### *Growing understanding in sharing care and resources now the dust has settled*

There was recognition that the implementation of the model had occurred at a time that was extremely busy and that this had impacted on midwives being able to fulfil the full extent of their role. Working out what sharing care looks like as the 'dust settles' was noted to be important.

*"I think 'cause, they're so short of midwives, they (midwives) can't probably see them (women) as often as they would like. And we've pretty much kept the standard appointments at the clinic." (Doctor)*

*"In December, we had a huge number of births that we knew were going to happen. And I think we knew that we couldn't really do what we, our full potential as MGP during that time,……. So, we literally couldn't really achieve it initially. So I think now we're going through a settling period where, we now have some more time and we've got more midwives, so our loads are slightly less, we've got a bit more time to do antenatal appointments and not just drown in*

*births and postnatal care, which is certainly what happened,… So, I think now we're going through a sort of settling process." (Midwife)*

The potential for overservicing was discussed, acknowledging that in many instances the women see both the doctor and midwife. It was noted by the doctors that the midwifes role was important for education and that it may take time to establish their full scope of practice and benefit.

*"How are we going to plan this with appointments and things moving through? Because it hasn't been quite right up till now, which hasn't really been anyone's fault. It's just been really, really, busy." (Midwife)*

*"But being able to do all the breastfeeding, education, and especially for those (women) that don't feel comfortable, coming to an antenatal class, you know, gives them that more time to communicate with them." (Doctor)*

There were also suggestions on how the doctors could provide antenatal care from the hospital to share resources, reducing costs to the women and ensuring case notes were kept in one location. Having all doctors see women from the Berri clinic has addressed some of the concerns.

*"We've always sort of thought it's a good idea to have all the patients being seen by doctor in the same place. ….. We put a couple of different proposals to the hospital about doing it at the hospital…. And it became very complicated. As in, we would have to pay for admin and rent, which meant we couldn't bulk bill for the patients… and so I said, well, can't the hospital pay us like it's an antenatal clinic in a public hospital? Like, can't this be a salary point? … And also all the notes would also still be in one spot." (Doctor)*

### *Theme 5: Working well for the women, midwives, and doctors*

There was agreement that the model was working well for the women, with increased engagement with services. The midwives and doctors also spoke very positively about the model on their practice.

*"I'm finding the women, the women are, have been really excited and supportive about it." (Midwife)*

*"And even though that's well over six weeks now, that mum still sent her photos and stuff like that. So, I think you know, beneficial for the patient. But I also think therapy for the midwife." (Doctor)*

*"We get to spend more time with people, I, I think it's going to be better for women, especially once they get used to the idea of things are a little, we're doing things a little bit differently." (Midwife)*

*"Doctors, Women and Families have received the implementation of MGP very well." (Midwife)*

### *Increased engagement from women with services*

It was noted that women appeared to be engaging with the service more than previously.

*"And I feel like it's actually increasing compliance of certain women who I've seen prior to [working in the model] who have had babies [at RGH]. And now they're having another one that their level of compliance with care has actually increased with MGP." (Midwife)*

*"I think what's happening is because women have that direct port of call. It's easier for them to contact and they contact more than what they would have usually and therefore we get called more so I definitely get more emails, more text messages and more phone calls." (Doctor)*

### *Midwives have greater autonomy and relationship-based care*

Midwives overall were enjoying this new way of working and were very proud of what they had achieved.

*"From the midwife perspective it is certainly an improvement on my work life balance, and I have greater job satisfaction overall." (Midwife)*

*"Like it's very different now, but in that I am enjoying it way more than I was the way that we were working, because I feel like we've all got more autonomy and I feel like the group of midwives have just increased in their competence and their skill levels. Like everyone's doing such an amazing job. So I just feel really proud of our team that we are here, because it's been very many years. Um, yeah, I think we're all in a really good place." (Midwife)*

*"I'm so proud of everyone. And I think everyone's really stepped up into, you know, this role that is advanced practice." (Midwife)*

### *Learning to be on call*

The midwives discussed the challenges of adjusting to on call for longer periods of time and learning to switch off. The doctors suggested they had more experience with being on call so for a caseload of patients and may be able to provide education/ support to midwives during the transition.

*"I definitely do find it hard to switch off when I get home, but I think that takes a bit of practice too and getting used to things and settling in, but definitely it's challenging you." (Midwife)*

*"So, you've just got to be always mindful with conserving your hours cuz you don't know when you're going to get called in, um, and how long you'll being for. Um, yeah. So that makes it sort of a bit difficult in that sense in just the responsibility of being the first person on call for 80 women, like at a time can be quite stressful as well." (Midwife)*

### *Considerations for service improvement*

The analysis of the first round of care provider focus groups suggested that the MMoC was working well, with many positive outcomes identified. In particular, the doctors and midwives seemed prepared for the implementation of the new model and the changes this would bring, whereas the nurses were less so. This lack of readiness was evident in both the ORIC results and the focus group analysis. Fostering strong teams and collegial support was recognised as being important. This

included building relationships with the hospital nursing staff and ensuring clear communication strategies were developed and embedded. Challenges were recognised, including the model not being fully staffed and COVID-19 disruptions to services and staffing. These issues were summarised and reported to the Advisory Group in the interim report, with actions taken in moving forward. These were summarised below for each service provider group.

*Key learnings from focus group one provided in the interim report.*

Considerations from the nurses:

- Strategies to enhance communication between nurses on the ward and MMoC; Consider a system to know when midwives are on site/ alongside the on-call roster etc.
- A more formal handover and policy around the expectations of care or care plans. This would include improved communication of when women are booked for IOL and when a midwife will be on site for postnatal follow up.
- Nursing/team leader representation on multi-disciplinary meeting or a way to share communications from these meeting to this group.
- Education for nursing staff as well as opportunities for multi-disciplinary education. Inclusive of neonatal care and breastfeeding.
- Information for nursing staff to better understand the role of midwives in the MMoC, in particular the postnatal period to reduce pressure that they are required to provide this care.
- Bedside handovers: suggest the midwives invite the nurses when they are on the ward to learn from them and to familiarize the nurses with unfamiliar documentation and terminology.

Considerations from the doctors:

- Multi-disciplinary meetings: move the discussion of at-risk women to the beginning of the meetings and allow more time for the discussion of these women.
- Doctors would like to have a way to know the MMoC midwives' rosters to assist when they book an IOL or elective LSCS and the availability of the primary midwife.

Considerations from the midwives:

- Better collaboration with nursing staff; team building and clear information on role delineation. When to call the midwife or doctor if concerned about scope of practice.
- Review of caseload and capacity to work to full scope with development of a schedule for share care with the GP and role delineation particularly relating to antenatal care.

## Care Provider Focus Groups: Round 2 RGH and MBSMH

The second round of focus groups were held on 21 Feb (MBSMH) and 22 Feb 2023 (RGH) approximately 13 months after implementation at Berri and 7 months after implementation in Murray Bridge. The second round of focus groups were held in-person at each site (Berri and Murray Bridge), for each group of care providers and ran between 60 to 90 minutes. The format followed the same procedure as the first round with JF as facilitator.

The findings from the first round of focus groups and surveys informed the second round of focus groups. In particular, questions on how the MMoC impacted care providers roles, whether early concerns raised in the first focus group had been addressed, what aspects of the model worked well and/or may need further attention, and lesson learnt that may benefit other groups implementing a similar model. An optional survey incorporating the same general prompt questions was provided for care providers who could not attend the focus groups.

### *Summary*

Six separate focus groups were undertaken, one for each group of care providers at each site: midwives (n=9 Berri, 9 MB), doctors (n=4 Berri +3 MB) and nursing staff (n=8 Berri +11 MB). Additionally, 13 participants who had not been able to attend the focus group or wished to provide additional detail completed a survey based on the focus group questions (n=2MMoC, midwives, n=10 nursing staff and n=1 doctor) provided further feedback.

Analysis of round two focus groups identified an overarching theme of ‘working it out together’. In total, 6 themes and 13 subthemes captured the transition from implementation and lessons learnt, these included Working together; Finding the right balance; Formalising the processes; Change takes time and education; Collaboration and communication is key; and Making it sustainable (Figure 8).

All participants acknowledged the MMoC was highly satisfying 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 midwives were extremely positive about working in the model but raised concerns over staffing levels and challenges of providing care within a rural context. Alongside this, there was a need to build capabilities and confidence of nursing colleagues, particularly regarding postnatal care. Challenges were discussed alongside ongoing strategies for sustainability.

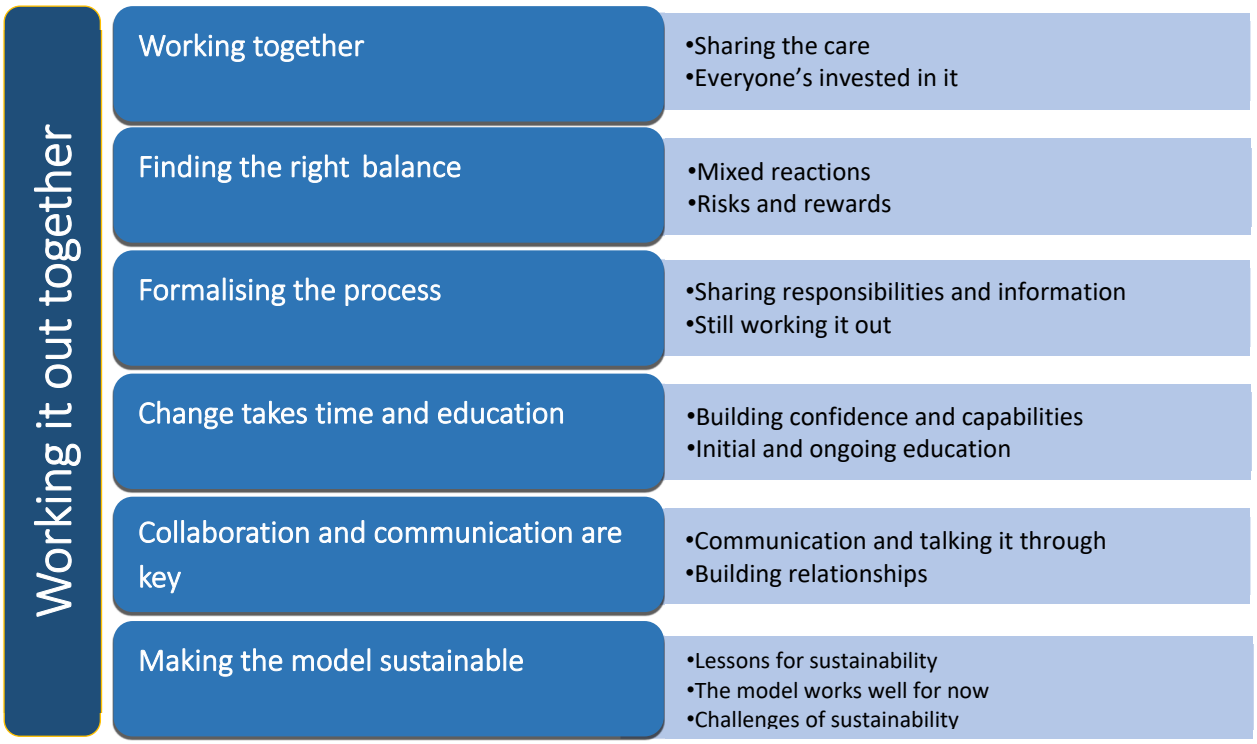



**Figure 8.** Focus group themes and sub-themes from care providers, round 2.

### *Key themes*

### *Theme 1: Working together*

It was evident that all care providers were committed to working and learning together even though there were challenges. The increase in women birthing in the service, caused a great deal of strain on both the midwives and hospital staff. Overall, there was a sense of team work particularly between midwives and doctors that enabled them to share the care. Critically, all care providers were invested in making the new model work.

### *Sharing the care*

All participants provided examples of supporting one another in providing care and managing workload.

> *"It's been tough. I think when we began we had a lovely month or two where it was normal in terms of activity and then we hit a sustained covid boom and a 40% increase in women booked to the service, .. and we were understaffed. So that was very tough. .. that lasted 12 months. We had to draw on every single bit of passion and work ethic and everything" (Midwife)*

> *"..So we were used to, sharing care with the midwives." (Doctor)*

> *".. they [Doctors] were a godsend for us. They would help us [when understaffed] .. while we could manage the next walk in …." (Midwife)*

> *"They [nurses and women] certainly know .., we will come back overnight and help them." (Midwife)*

### *Everyone's invested in it*

It was evident in the discussion that there was willingness to make it work because the participants were invested in the success of the model.

> *"Everyone's very invested in it [the success of the MMoC], and actually taking ownership of their patients and made it work, and the relationship between the medical teams and midwives I think is really good here. <group affirmative>, there's a lot of respect between everybody involved." (Doctor)*

> *"I think from the get-go it was, yes. How do we [Doctors] help [implement MMoC]" (Midwife)*

> *"I find them [midwives] really happy to support [nurses]." (Nurse)*

### *Theme 2: Finding the right balance*

It was apparent that it has taken time to find the right balance – working out how everyone works within the model and getting the workload right.

> *"I think we're getting the right balance. .., we're getting on really well and there's none of that rivalry that could be a barrier if someone felt .., they didn't want the doctor involved or vice versa." (Doctor)*

### *Mixed reactions*

All care providers reported having to work through initial mixed reactions, weighing up the risks and rewards associated with a new way of working. However, realizing that the more people engaged in the new model the better it was.

> *"I'd say there was a mixed reaction. Some people were all for it. Some people were dead against and I'm talking midwives. and some were probably not sure. ..I think women were probably [most] excited about it." (Midwife)*

> *".., I would agree that probably some of the nursing staff don't feel confident with, the postpartum care in particular and neonatal care…" (Doctor)*

> *" I think some of the resistance was fear about being put in situations over their heads." (Nurse)*

> *"Yes, definitely the consumers were very [supportive of MMoC], you know, there'd been consumer groups in the community that wanted a group practice." (Midwife)*

> *"apart from some really good nurses, which is probably five or six of them who are amazing. There's very much the nurses versus midwives culture at the moment, and we feel that too. Yeah." (Doctor)*

Differences in how work was managed and being short staffed, particularly when the model was first implemented had a significant impact on all care providers and may have initially contributed to individual responses.

*"And even in the rollout we were, finding our feet. Yeah. We still didn't really know what it [MMOC] would look like for them [nursing staff on the ward]." (Midwife)*

*"Trouble with the model is that there's no sort of set hours, which I think can be a good thing but also unpredictable….. But then other times that works well cause you work around kids .. just that not knowing where the calls would come, it'd be quite tricky and that be barrier, but that's just part of it." (Doctor)*

### *Risks and rewards*

Risks came with change of roles and workload for both nurses and midwives, but the rewards were significant, particularly for the women and midwives.

*"Yeah. It was very scary. So for us to then [to] be positive for the nursing staff when we were scared ourselves, you know, how is this going change our home life? How is this going change our income? You know, how is our wages going to differ as well when you no longer got the penalty rates work, weekends, that kinda stuff. Um, it was scary. It was very different. But I have to say, looking at it now, I really enjoy it." (Midwife)*

*"Am I going to risk losing a good staff member because I put them in an area constantly, you know, where they are uncomfortable am I going to risk losing that person as employee even though they're really, really, good at general nursing ward stuff…. Yeah. It's that risk and reward …" (Nurse)*

*"The autonomy we [MMoC midwives] …. I'm seeing a lot more midwives work to their full scope of practice compared to what it was in the old system, .. we're all learning from one another um, every day. I've enjoyed that." (Midwife)*

While the implementation brought initial challenges, as care providers settled into to the new model they were able to find ways to contribute, and this in turn impacted their experience of working within or alongside the model.

*"The more they [nurses] engage the more they get out of it," (Nurse)*

"*I think the women are the ones who are enjoying it the most, that's for sure. <affirmative>. Um, and I think that none of us would ever want to go back to working on the wards." (Midwife)*

*However,* some MMoC midwives raised concern around the risk of 'burnout' and the need to monitor workload.

*"On the floor you walk home you can leave it out the door. In MGP (MMoC) you can't. I definitely have found burnout is greater and unless there are more practices put in place where we are taught how we can deal with that better, put better boundaries in place, I worry about the burnout." (Midwife)*

Doctors also raised concerns about the financial risk as the doctors are employed on a fee for service model, noting some women were choosing to cancel appointment to avoid paying the gap to see the GP.

> *"They'll need to pay $25 every visit [women].. Yeah. So that's something that unfortunately as, as a business owner, we can't, there's no other way (sigh)." (Doctor)*

> *".. I think as well when we were talking to the hospital about that, we were trying to work out how women didn't have to pay for their [antenatal appt with a doctor] visits as well." (Doctor)*

### *Theme 3: Formalising the processes*

There was discussion around the need to formalise some of the processes and that early on there was a lack of clarity about how the model worked. This was particularly around sharing responsibility and information. All care providers acknowledged that they were still working it out and that there was an ongoing need to manage the challenges. Working through changes in roles has created some sense of divide between some nursing staff and the midwives who no longer work on the wards.

> *"there's no formal process [allocating women], but if someone's got a relationship with someone, .. they can request midwife X, though not guaranteed." (Doctor)*

> *"We just have their [doctors] on-call roster. But that was the problem [not contacting for non-urgent matters in business hours]. We were using our on-call doctor that's meant for emergencies." (Midwife)*

> *"We don't have, you know, [centralised results] the blood test isn't coming in from the hospital so we don't know who needs iron infusions.. and all of a sudden, no one has that central information anymore." (Doctor)*

### *Sharing responsibilities and Information*

There was significant discussion on how to improve information sharing, with a number of actions suggested.

> *"..if they're on call they'll answer it. If they're not on call, then it'll get diverted on. So that's quite useful. And then email is obviously another fairly easy way to get things done. So I can email re an induction or elective section as the whole idea is they [primary midwife] are here for it." (Doctor)*

> *"[handover post birth] from four hours post, to postnatal there is a checklist that they go through. To make sure we are comfortable." (Nurse)*

> *"I think the um, [midwife weekly] team meetings are really, really important…., we can sort of come together and .. debrief and check in and make sure everyone's okay. I think if we didn't do that, some of us would drown." (Midwife)*

*"We need that structure for them [doctors] to have that structure so that we're not booking appointments in the same week or the same day and it you are, your over servicing a lot of women." (Midwife)*

Learning how to effectively communicate to reduce time burdens and ensure appropriate follow up was discussed.

*"No {doctors are not using/accessing Microsoft Teams] that's a bit different with politics around information sharing. But we do send them a list of the women and who's allocated and we send them the roster to their like private clinic email but they just can't have access to the [Microsoft]Teams. ..." (Midwife)*

*"The tricky part is that we don't use the same [communication systems], so we use our own clinic software. And they use the hospital notes, and they don't talk to each other. So other than what if you saw a midwife a week ago, I ask you what did a midwife tell you? And then other than a brief note, [in the] hand record." (Doctor)*

### *Still working it out*

It was acknowledged that while the model had been implemented successfully that there were still challenges that would need to be worked out – particularly regarding the sustainability of the model. Challenges included working out the best way to manage a team approach to MMoC.

*"Well, we're still working that out [working in a team who is primary and second to provide CoC for the women]. ... When we had two teams, I think my team we had it worked out; we were working well together, we knew who was on, who was off in our own team. But there was a smaller group to keep track of. It's harder to keep track of like 10 people who's on, who's off, who's on call, new rostering. It's just been a bit of a mix up again." (Midwife)*

*"I mean it's hard cause we don't always know exactly when they're [women] seeing a midwife. But I, I'll normally try and work out, you know, okay, so you need to be seen in two weeks. When are you seeing the midwife, if I know they're seeing a midwife on Tuesday, there's no point me seeing them on Wednesday." (Doctor)*

Staffing levels for midwives and the impact of nurses' workload and have created an ongoing challenge. This includes changes to staff availability, for example the scheduling of caesareans in the afternoon, the role of enrolled nurses and risk management concerns.

*"I would say [challenges are] primarily staffing…we [midwives] were understaffed for what we needed for our baseline of bookings. So that was very, very tough." (Midwife)*

*"The hospital was understaffed; they're losing how many senior staff [nurse-midwives to MMoC midwives]. So probably the background, you know, the flip side of it is that the ward was struggling and so that resentment built because we were, you know, trying to take time to do education and do things, but it just*

*wasn't possible because they're drowning [understaffed on ward] and we're feeling like we're leaving them stranded basically." (Midwife)*

*"The sections are a bit of a worry sometimes, because theater will rarely let us do a morning section. We get knife to skin at three pm…. If we could do an 8:00 AM section instead, this would be less likely to be a night shift problem if you're going come up with a problem, it would be more likely when there's a midwife in the hospital." (Doctor).*

Travel and distance also need to be considered in allocation of the workload.

*Yeah. I think more like from an admin management perspective, we need to acknowledge that that [distance of going to Waikerie] takes more time and we need to allow some more hours there.." (Midwife)*

### *Theme 4: Change takes time and education*

Throughout the focus groups there was agreement that change takes time, but that education was a key part of making the model succeed. The nursing staff identified a significant need for initial and ongoing education. And there was recognition that working alongside one another built confidence and capability.

### *Building confidence and capabilities*

Investing in supporting nurses' capability and confidence, particularly in postnatal care was a key concern.

*"And I think the midwives probably didn't get enough education time to wrap their head around it so that they could support us [nurses] better. They were still very much finding their feet when it all started. So we [nurses] weren't as supportive as we necessarily needed to be to be looking after mums and babies." (Nurse)*

*"…[nurses] help them [MGP assist the women] breastfeed and seeing the difference in babies will provide nursing staff with more confidence. .. putting it into practice." (Nurse)*

*"[understanding scope of practice] Whether we can provide breastfeeding support, whether we can't, sort our defined role in what they [midwives] expect of us to help. This would help a lot of nurses I think feel more confident providing the care we do." (Nurse)*

*"[nurse education] That probably comes down to numbers as well. Nursing staff have a lot of [ward] patients that they're allocated. So if they have a mid-patient and they could have a smaller patient allocation, they could focus more on those skills of education". (Doctor)*

Some nurses described being able to work closely with midwives was a helpful strategy.

*"I feel confident that I'm one of the four or five that spend a lot of time down there [pre-implementation] with the mums. But that's only because I've had the time and the patience from the midwives to give due process in the education to be able to support the women." (Nurse)*

*"The ENs have said it's not actually the education sessions that have set them up, it is the one-to-one conversations they're having with each individual midwife when they're handing over women. It's them seeing us work in practice." (Midwife)*

Participants commented on how the nurses had grown in knowledge and confidence and felt that practice made a big difference.

*"There's some nurses that are great and I think enjoy postnatal care and babies and they are great. Happy to have the opportunity to do a lot more of it and really enjoy it…" (Midwife)*

*"I think recently a lot of the nurses who work looking after postnates in particular have become a lot more comfortable with, you know, doing baby obs and, and things like that that they were all frightened of, um, initially then become a lot more, um, comfortable with the machines and doing what they need to do. Um, I think they're also getting used to the care plans a lot more." (Midwife)*

### *Initial and ongoing education*

Education was considered fundamental for success of the model for all health care providers, this requires investment in time and development of capabilities pre-implementation, as well as building this into ongoing education sessions. Finding champions among each discipline to address concerns that related to scope of practice, aspects of normal care and when to seek support is needed.

*"The girls that were rolling out the project [were] also the ones providing the education. So they were very overloaded trying to work out what they were doing. And that's why they ran out of time for the education..[of the nurses]. [could] someone else provide the education that's not involved in the project? You know, work side by side rather than try and manage everything." (Nurse)*

*".. Ward staff took a lot longer to get their head around what it was [the MMoC] as I don't think there was enough education put out before it was implemented. There's lot of talking about it but didn't actually happen. So they didn't have enough confidence skills under belt before it was brought." (Nurse)*

*I think for us [nurses], that's continuing education, you know, not just now that it's implemented, they still need to be doing that. Especially for those that are still not engaged, the exposure they get through education, the more familiar they'll be [with care]." (Nurse)*

*"More regular education for nursing staff and make it mandatory for ALL nursing staff." (Nurse)*

*"There's so many new ones [nurses] that started since the model began that we might need to regroup back to some things [education] that were done at the start.." (Midwife)*

*"I would love more education ... like how to structure your day, how to boundary setting that kind of stuff…" (Midwife)*

### *Theme 5: Collaboration and communication are key*

All care providers agreed that ongoing collaboration and communication were keys to the model's success. There were challenges with communication and strategies implemented to address these challenges. Additionally building closer working relationships and working out how to work together was important.

### *Communication and talking it through.*

Overall, the communication had improved from the early implementation stage

*"I had a minor worry that maybe some medical things might be missed. You know, like the nuances, preeclampsia or diabetes or those sorts of things. But no I think the communication's been great." (Doctor)*

*"I've actually really enjoyed in the model there's better communication with the doctor. There's less things getting missed for women. Um, the continuity is just amazing." (Midwife)*

Recognising the importance of communication, a number of strategies had been implemented which facilitated ongoing discussions, particularly in regard to clinical cases.

*"yes, I think those meetings [multi-d] are good and we've had some good constructive discussions on uh, of complex cases. So that is good. …" (Doctor)*

*"It's [monthly multi-d meeting] been very good. Cause we've had a couple of quite high-risk women present, …, the fact that all the obstetrician, anaesthetics, theatre, midwives already know about this person; the community. we're just like 10 steps ahead when they do present." (Midwife)*

*"So at least if we give the ward some warning that there is somebody coming in that might or might not be, you know, potentially having an APH we're not far behind. Exactly. This is how far away I am. And I think you just have to be, especially in those early days, overshare with the nursing staff because it gives them the reassurance…" (Midwife)*

Additional strategies had also been employed,

*"..Monthly newsletter .. so the NUMs know what we're up to and the [nursing] staff know what we're up to..." (Midwife)*

*"I think us having a laptop has really helped. Um, compared to us being on the floor. You know, I can be home and I can go check the roster from home. I can*

*send emails from home, I can check blood results from home. Um, it also helps if the floor [ward staff] calls me and says who's on call? ...” (Midwife)*

*“Weekly [Midwives team meetings]. So we were going to change it to fortnightly, but we changed it back to weekly. We do need that time each week, just to kind of go through what's been happening, debriefing...” (Midwife)*

*“[Improving continuity and communication systems] She's [AMIC worker] found a way to communicate with midwives in that she's got an email spreadsheet where a calendar where she knows our rosters [books] women in with the midwives on the day they work and keep them up to date. She does appointments on her own too.” (Midwife)*

Nevertheless, specific communication challenges remained,

*“Sometimes you don’t know there's anyone in labour, you don't know .. for us [Team leader], you know, we need to know if someone is in labour, if people had a baby, what they're up to, .., how many sections [LSCS] are happening for the week and inductions and you know, that's not [communicated], as good as it could be” (Nurse)*

*“I'm often team leader, it is quite a tour to track them [midwives} down sometimes to see what's going on, we don't really have a lot to do with them [midwives] now that they're offsite.” (Nurse)*

The midwives also noted that the NUMs and team leaders were often too busy to come to the education sessions and this is viewed as a missed opportunity for engagement. It was suggested that maybe other tactics could be tried to include nursing management at their meetings, and it would be an opportunity to talk about women of concern.

### *Building relationships*

One of the important outcomes from improving communication has been the strengthening of relationships between "care providers, particularly midwives and doctors.

*“Because you're just not coming to work doing that shift and going home. You're actually all integrated. And really working together. Like really working together.” (Midwife)*

*“The good thing about our situation probably is that we had great rapport with the doctors before MGP. Yeah. So, we already knew how to work with them.” (Doctor)*

It was also noted that the model promoted closer partnerships with the woman and midwife.

*“I find it really positive that women can see one midwife throughout their pregnancy. They developed. Um, um, that bond I think it's really a good way for, midwives to be able to recognize when a patient might not be themselves or there's something happening at home or something brewing.” (Doctor)*

*"We deal with a lot more [women experiencing social issues] than we used to, I think. Well perhaps because you have a relationship with women, they're more prepared to tell you [issues they maybe experiencing]. Yeah, that's true. You become the go-to." (Midwife)*

It was still evident that time could be invested in consolidating positive working relationships between midwives and nurses.

*"If they [MGP] want the nursing staff to feel comfortable and confident in looking after these babies, they need to include them in, their, you know, their review of the baby [Midwife baby check on the ward]." (Nurse)*

*"Yes. I mean the first time I was here, which was November, January 2021, every time I handed over to a nurse I would get, it's outside my scope of practice. I don't get that anymore." (Midwife)*

### *Theme 6: Making the model sustainable*

Throughout the focus groups issues were raised that provided important lessons for sustainability. Issues outside of workforce recruitment were raised that made it difficult to attract staff, for instance COVID-19 and a lack of rental properties in the Riverland. All participants suggested that a longer lead in time was needed, with involvement of all care providers. In particular, nursing staff needed to be engaged from the beginning that included education and support through the transition. The importance of rural placements for midwifery, nursing and medical students were also recognised as an important strategy in attracting and retaining a rural workforce. They also recognize that there would be ongoing challenges that needed to be addressed. However, there was a unanimous agreement that the model worked.

*"…we had [in the old model nurses and midwives] shared nursing [allocations] and .., most people felt we were losing good midwives to other [nursing] areas, other [midwifery] models. So I think from a recruitment sustainability, it's great." (Doctor)*

*"[attracting new doctors] Yeah, it's definitely, .. attractive to be able to know, come in and do care across the board. And that support of the midwives is very positive as well. You know, very well here ... It's a great place to learn." (Doctor)*

*" [on having medical students witness a birth] So yeah, you have to see what is normal first, because otherwise you cannot understand what's abnormal. The women has the right to privacy and continuity and being protected, but that space also has to be a learning space, otherwise the system dies out." (Doctor)*

### *Lessons for sustainability*

The lack of lead up time was considered one of the greatest challenges for care providers and staff recommended that more time be provided for any future implementation of similar projects to enable acceptability and sustainability.

*"We [midwives] knew [MMoC] was coming, but there was not a lot of time {to prepare]…. I don't feel like we had a lot of lead in time." (Midwife)*

*"they [nurses] would ask us questions [about the model] and we didn't have the answers for them. And we would go to find the answers and, be told, "it'll be okay. It will work itself out." But I would've like to a bit more groundwork beforehand." (Midwife)*

*"..at those early times there was no structure that somebody could point to, to say this is exactly how it's [MMoC] going to be implemented." (Midwife)*

*"And we as managers, we weren't included in, um, any of the planning of MGP [MMoC] at all.. myself and the other NUM (nurse unit manager) we weren't included in any of the planning or the lead up to it, that doesn't work." (Nurse)*

There was discussion on the need for greater clarity on how the model would work both initially and long term.

*"I think [managers] wanted us to work it out for ourselves, but as none of us except for (one RM at this site) had ever worked in the model, it would've been nice to actually have, this is how we're going to start and have this, this, this, this in place and then try that, instead of us the first 2, 3, 4 weeks figuring out how we're going to work." (Midwife)*

*"We didn't get our phones until the day we actually started, we had to set them up, we had no templates, we had no…. We were supposed to do education and stuff that fortnight, but the ward was too busy and other things happened and we couldn't do that….It just got busy, it wasn't anyone's fault." (Midwife)*

*"I feel as though it's [MMoC] really good for the community, families, it's good for women. Um, in terms of a hospital perspective, it was like a pending date that we knew was coming but nothing was set in stone. But all of a sudden it was coming up, but then it wasn't, and then it was here. For the preparation leading into the mid model, staff weren't given enough support, enough education, there was no preparation, and we didn't have nearly enough support from nursing staff in terms of those who had received enough education or were there enough nurses who had received the education before it was actually implemented." (Nurse)*

### *Challenges of sustainability*

Further challenges were identified to ensure that the model remained sustainable, these included changes to staffing allocations, managing workload and the unpredictable nature of maternity care.

*"Majority of us [midwives going into MMoC] were working as team leaders [on the wards]. Um, .., [taking] all of us away basically left a lot of junior staff then having to fill roles that perhaps they weren't equipped to fill yet." (Midwife)*

*" I feel like they [MGP RMs] leave their phones on [when not on call] like there are a lot of them that have their phones on and so that if their patients call, you know, and um, yeah, I think the, the potential can burn out without putting those boundaries in places is fairly high." (Doctor)*

*"I had a conversation with someone the other day about how they [nurses] can't believe babies aren't patients [counted in the allocation]." (Midwife)*

*"It was really, really, hard to cope with that [40% increase in births] because we were understaffed. But we were also massively over our numbers. And I don't think in the whole model so far, I think we've had a few heavenly little weeks of blocks like two weeks at a time where we might have been fully staffed and at a normal activity level." (Midwife)*

The challenges of providing care rurally were also raised, this not only impacted the midwives but also the hospital.

*"We had eight community mid country home links that we were completely unaware of [women not booked prior to birthing elsewhere], um, that were actually living in our catchment and .. and they need immediate [postnatal] visits and all of a sudden you're like how am I gonna find eight midwives to provide that care? That makes it hard. We have tried to increase the communication with other birthing hospitals that MGP [MMoC] is up, and the process and we've been a bit more successful in getting referrals antenatally early." (Midwife)*

*"The other big thing was being on call. So our old on-call system there was always a midwife on call and a nurse on call for the whole hospital. So now all of a sudden they lose an extra on call to man the hospital. Um, that was huge shift for them having to think about now we need two nursing people cover the whole hospital. Um, which also covered ED. And yeah, that was a strain for them." (Midwife)*

There were some concerns voiced around the way the model was implemented and the sustainability of continuity of carer.

*"When we were working in the smaller teams [Murray Bridge had 2 teams at the beginning] it worked fine because they [women] were only going to then see potentially up to five midwives [if the primary RM was rostered off]. But now we're in one big team, they [women] could see up to 10 [[different RMs depending who is on call], um, which is losing that whole continuity." (Midwife)*

However, there was a commitment to address these challenges which required adaptability and problem solving.

*"You just have to have a passionate willingness to, to try and just go and be willing to adapt as you go." (Midwife)*

*"we've now got two wonderful new grads who are both local. That's fantastic." (Midwife)*

*"I think you'd need a champion [nurse] in mid, like a champion of our general nurses mm-hmm. <affirmative> to focus on midwifery, perhaps join those groups and have those conversations about their risks. And then that could be their*

*[midwives go to], you know, vehicle to get that to the rest of the staff in team huddles." (Nurse)*

*"The other thing that (MGP to reduce travel time) are doing for women, that are quite distance away, they'll send a set of scales home with them and then they'll have some phone consults as well." (Midwife)*

*"We [MGP] made sure we got two [RM] grads a year. Cause they're both local. We could see it coming last year and we moved heaven and earth to make sure we've got two grads, which we've never done before, but we'd be fools not to. And they're both very high quality." (Midwife)*

*"If they can bring in more AIMs and there's positions available and they can fill them. That potentially will be a, a source of people coming in that would understand the model and would be potentially willing to work in it as well. Or in fact really want to work in it." (Midwife)*

### *The model works for now*

The focus group discussion provided opportunity for care providers to provide feedback, explore what worked and discuss the challenges. While making the model sustainable will require ongoing commitment and focus, the participants agreed that the model was working for now.

*"It [transition to MMoC] felt seamless. I don't know how soon before then it had been implemented. All I knew was that it was fairly new, but it seemed fairly seamless just in terms of the new person coming in and starting." (Doctor)*

*"I think the great strength [MGP] is also the postnatal care people focus a lot on the antenatal, and postpartum I think that was being, that had been lost, and this [MMoC] stepped in at the right time ..." (Doctor)*

*"[staffing challenges]….but there's no way we could have managed this [40% increase in births] the old way." (Midwife)*

*"From an RN on call perspective, we're being called less for sections [LSCS] in the middle of the night<inaudible>. That's true. [New speaker] The women are getting that one-on-one time that the midwives don't need to come out to look after general patients, that if they come in for a woman that they can spend as long as they feel is required for them." (Nurses)*

*"It [the MMoC] works really well especially here in this hospital {new speaker] Yeah This is a great service for mums {new speaker]. Absolutely [ new speaker] and the midwives are much happier, they're more engaged more willing to teach and talk to you [nurses] because they're not so …[new speaker] don't know any difference, but just having that one point of call is, [new speaker] it's amazing." (Nurses -Multiple speakers)*

### *Recommendations*

One of the key recommendations was the need for careful planning and a longer lead in time for implementation. There was recognition that not all care providers were prepared for the changes and the way the model would work. Nurses reported they did not feel prepared for the impact on their role and the reorganisation of care. This created negativity between care providers, particularly midwives and nurses and additional stress. With a shared commitment to the new model these concerns have been raised, but the focus groups discussions indicated that engagement in activities that supported a collegiate relationship between nurses and midwives was still needed. This may involve trouble shooting challenges that have arisen for nurses due to the new model, as well as further clarifying roles and responsibilities.

It was very evident that there was a need for more education and that this may have alleviated some of the concerns raised. Findings champions at all levels (nursing and midwives) is needed to mentor and support staff to navigate the change. In response to this, further education has been provided and midwives have worked more closely with nurses to enable them to feel prepared to provide care when required. However, it was clear there is a need to continue to provide education for all levels of staff and recognition graduate nurses may not have had neonatal care included in their undergraduate degree. Having dedicated education sessions to further develop capabilities and confidence would enable care providers to address learning needs and feel prepared for their roles.

The lack of clear processes presented challenges to organisation between midwives and doctors. However, many of these initial issues have been addressed and new ways of working have been identified. In particular, there were challenges discussed around communication and ensuring that strategies were in place that supported this. There may need further consideration regarding shared technology between midwives and doctors, and specific actions to address the need for shared information between clinicians – such as recording of blood tests, scan results, traditionally written in the handheld record. Scheduling of antenatal appointments was also raised by midwives and doctors. While this has been addressed to some degree the difference between models requires women to pay a fee for appointments with the doctor. Strategies need to be considered to ensure women have equity in choices of service provision and are able to obtain medical support as needed without resulting in additional financial burden.

There is an ongoing need to embed strategies to ensure the model will be sustainable. This may require a review of caseload allocation and the impact of the rural context on workload for midwives. Recruitment of new midwives and graduates, and AIM's (assistants in midwifery students) should be an ongoing focus.

## Women's Survey

**Key findings**

- 142 women completed or partially completed the survey. The overall response rate from women approached to do the survey was 69.3% (142/205).
- Women's main source of information about pregnancy and birth were from MMoC midwives (89.1%) and GPs (84.8%).
- Most women (59.4%) reported their main care provider as being shared care (MGP and GP obstetrician). Twenty percent reported MGP as being their main care provider.
- Women whose main care providers were shared care or MGP alone, rated their care very highly and agreed they were treated with respect, felt listened to, could ask questions and felt confident in the skills and knowledge of their midwives and doctors.
- Most women (88%) agreed or strongly agreed that the MMoC clinicians worked well together, and (88%) reported the care was well connected.
- For women who birthed in the area, the main care provider who assisted in the actual birth of their baby was about equally a MGP midwife (46%) or a shared care GP obstetrician or obstetrician (47%).
- Most women (59%) had one or two MMoC midwives during labour and birth. Women who birthed out of the region were more likely to have three or more midwives (69%). Just over half (52%) of all women reported knowing their midwife well during labour and birth, this proportion being higher (66%) for those who birthed in the MMoC.
- Most women (>85%) agreed or strongly agreed with the positive statements regarding their labour and birth experiences.
- MMoC midwives (74%) were the main care provider after the birth, with an average and median number of 5 visits. At home support was rated as very good to excellent by 95% of women. Breast-feeding rate at 6-8 weeks postpartum was 74%.
- Over half of all women (59%) reported feeling anxious about the impact of COVID19 on their wellbeing, however, were happy with changes to care due to COVID in their area (90.6%) and happy (98%) with how the midwives and doctors managed the risks of COVID-19.
- Most women had a student experience (midwife, nurse or medical) and rated this experience as good as or better than they had hoped over 90% of the time.
- Almost all women (97%) replied they would seek the MMoC again for a next pregnancy and 98% would recommend it to a friend.

### *Response Rate*

Women birthing in the MMoC at Riverland General Hospital (Berri) over a 12-month period (Jan 2022 to Dec 2022) and at Murray Bridge Hospital over a 5-month period (mid-July 2022 to Dec 2022) were asked to complete the e-survey. Due to HREC approval delays, required written consent from women and acute staff shortages, potential participants in the early months were not approached and/or did not respond to attempts to gain written consent. Mid-year an electronic consent process was approved; this facilitated improved response rates. Those approached and consented over this period are as follows:

- Number of women booked in service: n=371 women
- Number of women approached for consent: n=205
- Number of women declined consent or not able to consent: n=11
- Number of surveys opened or attempted: n=166 (including duplicates)
- Number of surveys with data: n=142 (124 completed, 18 partial responses)
- The overall response rate from women *approached* to do the survey was 69.3% (142/205). However, the proportion of women who completed a survey who were booked into the service was 38.3% (142/371).

The women's survey was closed at the end of March 2023. This was to enable sufficient time for women who had birthed in the MMoC (until 31 Dec 2022) at least 6-8 weeks to receive and complete the questionnaire. The mean time to complete the survey was 10 weeks post-birth (median 9 weeks, IQR 7-12 weeks).

### *Demographics and place of care*

Age of respondents ranged from 18 to 42 years with a mean age of 29.5 years (SD 5.3, median age of 29 years). Where parity was recoded (n=128), for 52 respondents (40.6%), this was their first baby.

Most respondents (97%) reported starting their care in RMCLHN. Approximately two-thirds of respondents reported starting their care in Berri (n=90, 63.4%), the remaining third (n=47, 33.1%) in Murray Bridge. One woman started her care in Waikerie and four (2.8%) did not start their care in the Riverland.

## *Pregnancy Care*

### *Sources of pregnancy and labour information*

A multiple response question asked women "what were your main sources of information about pregnancy and labour?". Ninety-seven percent (n=138) of women responded, with most selecting more than one source of information. Most women indicated that main sources of information were from MMoC midwives (89.1%%) and GP obstetricians (84.8%) with family, friends, and internet sources being other major sources of information (approximately 40% each) (Table 3).

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

| **Sources of information** | **n** | **%** |
|---|---|---|
| Midwife(s) | 123 | 89.1 |
| General Practitioner (GP) obstetrician/Obstetrician | 117 | 84.8 |
| Hospital information/antenatal clinic | 10 | 7.3 |
| Family and friends | 50 | 36.2 |
| Internet (incl. apps, podcasts, pregnancy groups) | 55 | 39.8 |
| Books, magazines | 10 | 7.3 |
| My previous birth experience(s) | 6 | 4.4 |
| *Other | 6 | 4.4 |

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. Few women saw obstetricians and often referred to their GP as their "obstetrician". *Other sources of information listed: hypnobirthing course and self-knowledge as a clinician.

### *Sources of Awareness about the MMoC (MGP)*

Respondents were asked how they found out about the MMoC (referred to as MGP in survey). All 142 women responded. The most frequently cited sources were from midwives when first booking into the hospital (38.7%) and from GP obstetricians/obstetrician (35.2%). Note- more than one source could be selected (Table 4).

**Table 4.** How women first found out about the MMoC.

| **How did you find out about the MGP?** | **n** | **%** |
|---|---|---|
| MGP midwives when booking into hospital | 55 | 38.7 |
| General Practitioners (GPs) | 31 | 21.8 |
| GP obstetrician or obstetrician | 50 | 35.2 |
| Medical clinic staff (i.e., Berri Medical Clinic or other) | 12 | 8.5 |
| SA Health or other website | 0 | 0 |
| Family and friends | 11 | 7.8 |
| First found out when referred for pregnancy | 16 | 8.6 |
| *Other | 11 | 7.8 |

*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 MGP were Facebook (n=2), receiving a phone call (n=2), previous pregnancy (n=1), through hospital employment (n=2), independent midwife (n=2), while visiting RGH (n=2)

### *Antenatal/parenting classes*

Most women (n=103, 74.6%) reported not attending antenatal/parenting classes. For the 35 (25.4%) women who did attend classes; 31 attended those taught by midwives two attended private online classes, and two attended hypnobirthing. Of those who did not attend classes, the most frequently cited reason for not attending (40.2%) was attendance at classes in a previous pregnancy (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 | 14 | 13.7 |
| Too far away or inconvenient | 4 | 3.9 |
| Cancelled due to COVID-19 | 4 | 3.9 |
| Did not know about them | 5 | 4.9 |
| Attended classes in my previous pregnancy | 41 | 40.2 |
| I had enough information already | 25 | 24.5 |
| *Other (please specify) | 9 | 8.8 |
| Total | 102 | 100.0 |

*Other stated reasons for not attending classes: previous pregnancies and midwives answered questions (n=5), did not get around to it or not inclined didn't want to do it (n=2), Zoom over the phone (n=1), medical complications & was unable to attend (n=1).

### *Main care pregnancy provider*

Most women reported their main care provider as shared care MGP and GP obstetrician (59.4%). Twenty percent reported MGP as their main care provider. Overall, approximately 82% of all women reported having MGP as their pregnancy care provider (Table 6).

**Table 6.** Main care pregnancy provider.

| **Who was your main pregnancy care provider?** | **Freq.** | **Percent** |
|---|---|---|
| MGP midwives | 28 | 20.3 |
| MGP and GP obstetrician (Shared care) | 82 | 59.4 |
| MGP and specialist obstetrician | 3 | 2.2 |
| GP obstetrician | 22 | 15.9 |
| Private obstetrician | 3 | 2.2 |
| Total | 138 | 100.0 |

Respondents were asked how many different midwives they had during their pregnancy care (across all types of care) (Table 7). On average, women saw two midwives for their pregnancy care. This varied somewhat by type of care. For instance, those whose care included or was exclusively an obstetrician were more likely to see four or more midwives.

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

| During your pregnancy care how many different midwives attended to your care? | Who was your main pregnancy care provider? n (%) | | | | | |
|---|---|---|---|---|---|---|
| | **MGP midwives** | **GP obs** | **Shared care w/ (GP obs)** | **Shared care w/ (Specialist Obs)** | **Private Obs** | **Total** |
| 1 | 8 | 6 | 35 | 1 | 0 | 50 |
| | (29.6) | (27.3) | (42.7) | (33.3) | (-) | (36.5) |
| 2 | 7 | 9 | 23 | 0 | 0 | 39 |
| | (25.9) | (40.9) | (28.0) | (-) | (-) | (28.5) |
| 3 | 9 | 5 | 11 | 1 | 1 | 27 |
| | (32.3) | (22.7) | (13.4) | (33.3) | (33.3) | (19.7) |
| 4 or more | 3 | 2 | 13 | 1 | 2 | 21 |
| | (11.1) | (9.1) | (15.8) | (33.3) | (66.7) | (15.3) |
| Total | 27* | 22 | 82 | 3 | 3 | 137 |
| | (100) | (100) | (100) | (100) | (100) | (100) |

*n=1 response missing

Location also influenced the number of midwives seen for their pregnancy care with women more likely to see more midwives in Berri than in Murray Bridge (Table 8). This reflects workforce shortages in the area at the time. Eighty-seven percent of women who started their pregnancy care in Murray Bridge saw no more than two midwives for their care as compared with Berri where 57% of women saw no more than two midwives for their pregnancy care.

**Table 8.** Number of midwives attending to pregnancy care by area of maternity service.

| During your pregnancy care how many different midwives attended to your care? | In which of the following areas with maternity services did you start your care? n (%) | | | | |
|---|---|---|---|---|---|
| | **Berri** | **Murray Bridge** | **Waikerie** | **I did not start my care in the RMCLHN** | **Total** |
| None | 1 | 0 | 0 | 0 | 1 |
| | (1.2) | (-) | (-) | (-) | (0.7) |
| 1 | 25 | 24 | 1 | 0 | 50 |
| | (28.7) | (52.2) | (100) | (-) | (36.2) |
| 2 | 22 | 16 | 0 | 1 | 39 |
| | (25.3) | (34.8) | (-) | (25) | (28.3) |
| 3 | 22 | 3 | 0 | 2 | 27 |
| | (25.3) | (6.5) | (-) | (50) | (19.6) |
| 4 or more | 17 | 3 | 0 | 1 | 21 |
| | (19.5) | (6.5) | (-) | (25) | (15.2) |
| Total | 87 | 46 | 1 | 4 | 138 |
| | (100) | (100) | (100) | (100) | (100) |

### *Main care provider MGP midwife(s)*

Of the 20% (n=28) of women who responded their main care provider in pregnancy was a MGP midwife:

- 67.9% (n=19) had met all of the MGP midwives that provided their care before they were in labour (note- 6 women did not birth in RMCLHN).
- most women (92.9%, n=26) had most of their pregnancy care with their allocated midwife.
- most women (75%, n=21) 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.

For those whose main care provider were MGP midwives, respondents were overwhelmingly positive (95.8%) about the care they received from their MGP midwife during their pregnancy. This included agreeing or strongly agreeing 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 (Figure 9).Figure 9. Agreement with statements for pregnancy care, main care provider MGP midwife(s).

The statement where there was the most ambivalence was about wanting more information on the test and examinations being carried out, with 7.1% of women having a neutral response and 10.7% of women agreeing/strongly agreeing to this statement; that they would have liked more information. This statement was also the one where there was most ambivalence in the Yorke and Northern LHN in 2020.

For those who reported generally unfavorable responses (representing only one or two women in this series), these tended to be across all statements, suggesting this may have been related to individual experiences.

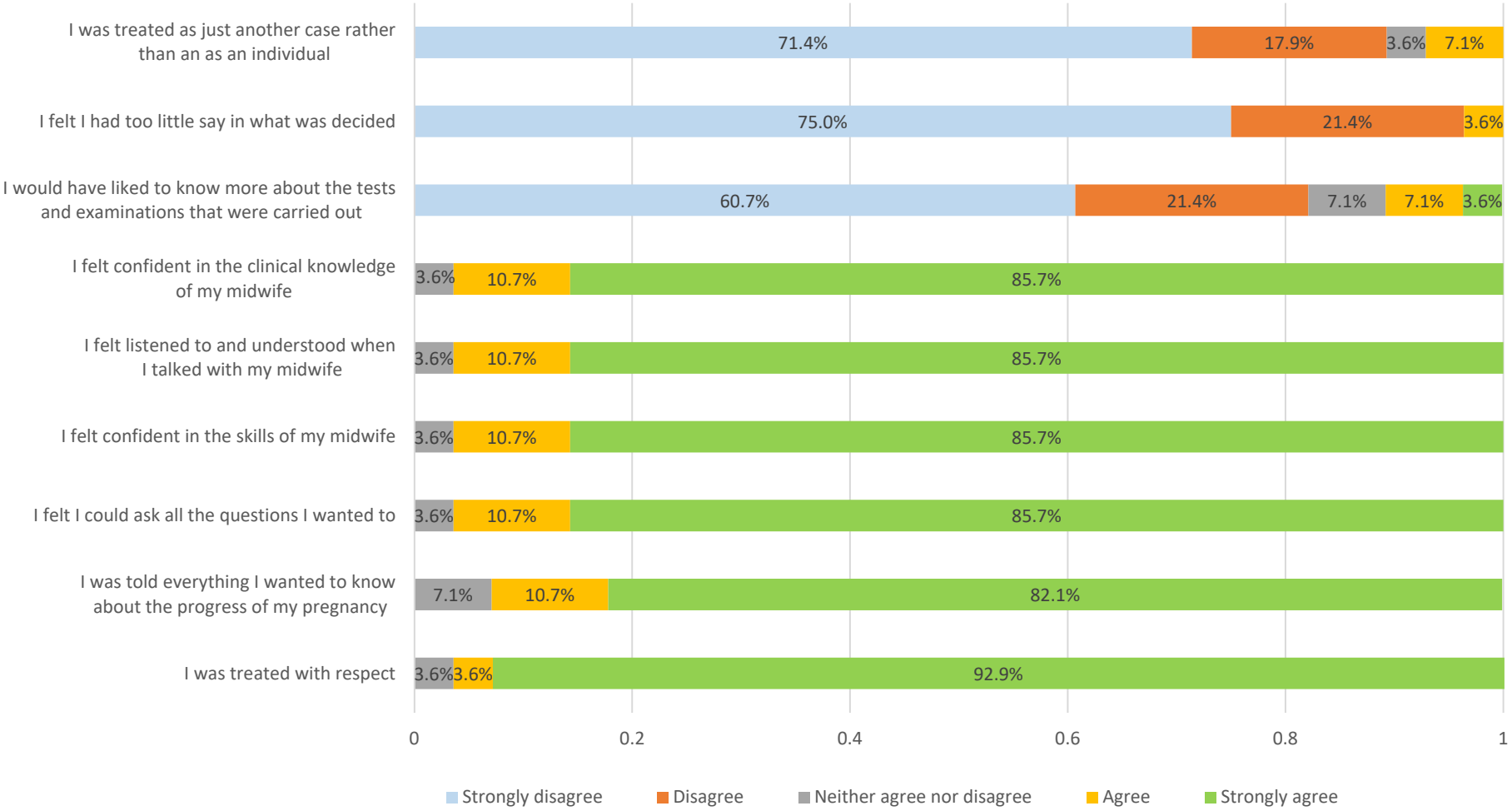



**Figure 9.** Agreement with statements for pregnancy care, main care provider MGP midwife(s).
Notes. Respondents range of agreement to disagreement with statements regarding the MGP midwife or midwives who were their main care provider during pregnancy. N=28

### *Doctor care during pregnancy*

Women were asked to indicate how many different doctors they saw for their pregnancy care (Table 9). Three women reported not seeing a doctor for their pregnancy care. The mean number of doctors seen by women was 2.3 over the course of their pregnancy care. This varied by site, with half (50%) of women in Murray Bridge reporting seeing only one doctor. Women were more likely to see more doctors in Berri (55.2% seeing 3 or more). This is due to the different ways the doctor's work. Berri (RGH) doctors are employed by a sessional fee agreement, they are on call for 24 hours at a time and the women are seen by whichever doctor is on call. Murray Bridge doctors work under a fee for service arrangement. They are on-call for the women they care for (much like private obstetricians) from around 36 weeks gestation. Women only see the GP obstetrician who is rostered on call if their doctor is away or if they have an early pregnancy presentation.

**Table 9.** Number of pregnancy care RMCLHN doctors seen.

| Doctor numbers | Freq. | Percent |
|---|---|---|
| None | 3 | 2.17 |
| 1 | 31 | 22.46 |
| 2 | 49 | 35.51 |
| 3 | 37 | 26.81 |
| 4 or more | 18* | 13.04 |
| Total | 138 | 100 |

*4 women who saw 4 or more doctors did not birth in RMCLHN

### *Care provided by MGP midwives in care arrangements with doctors*

Respondents whose main pregnancy care provider was shared care GP obstetrician or mostly with a doctor (obstetrician or other private) were asked to indicate how much they agreed or disagreed with a series of questions concerning the MGP midwife, who worked with their doctor. For women who birthed out of the area or had private care this could reflect only their post-partum care MGP care.

Women whose main care providers were GP/shared care or with other doctors, rated the care they received from the MGP midwives very highly. Women agreed or strongly agreed (>97%) with positive statements; treated with respect, felt listened to, could ask questions, felt confident in the skills and knowledge of their midwife, informed about the progress of the pregnancy and generally disagreed or strongly disagreed with negatively worded statements; e.g. treated like just another case, had too little say in what was decided (Figure 10. Agreement with statements regarding care provided by MGP midwives in care arrangements with doctors.). Similar to the statement where MGP midwives were the main care provider, the statement where there was the most ambivalence was the statement about wanting more information on the test and examinations being carried out with 15.5% of women having a neutral response, and 5.5% of women agreeing/strongly agreeing to this statement.

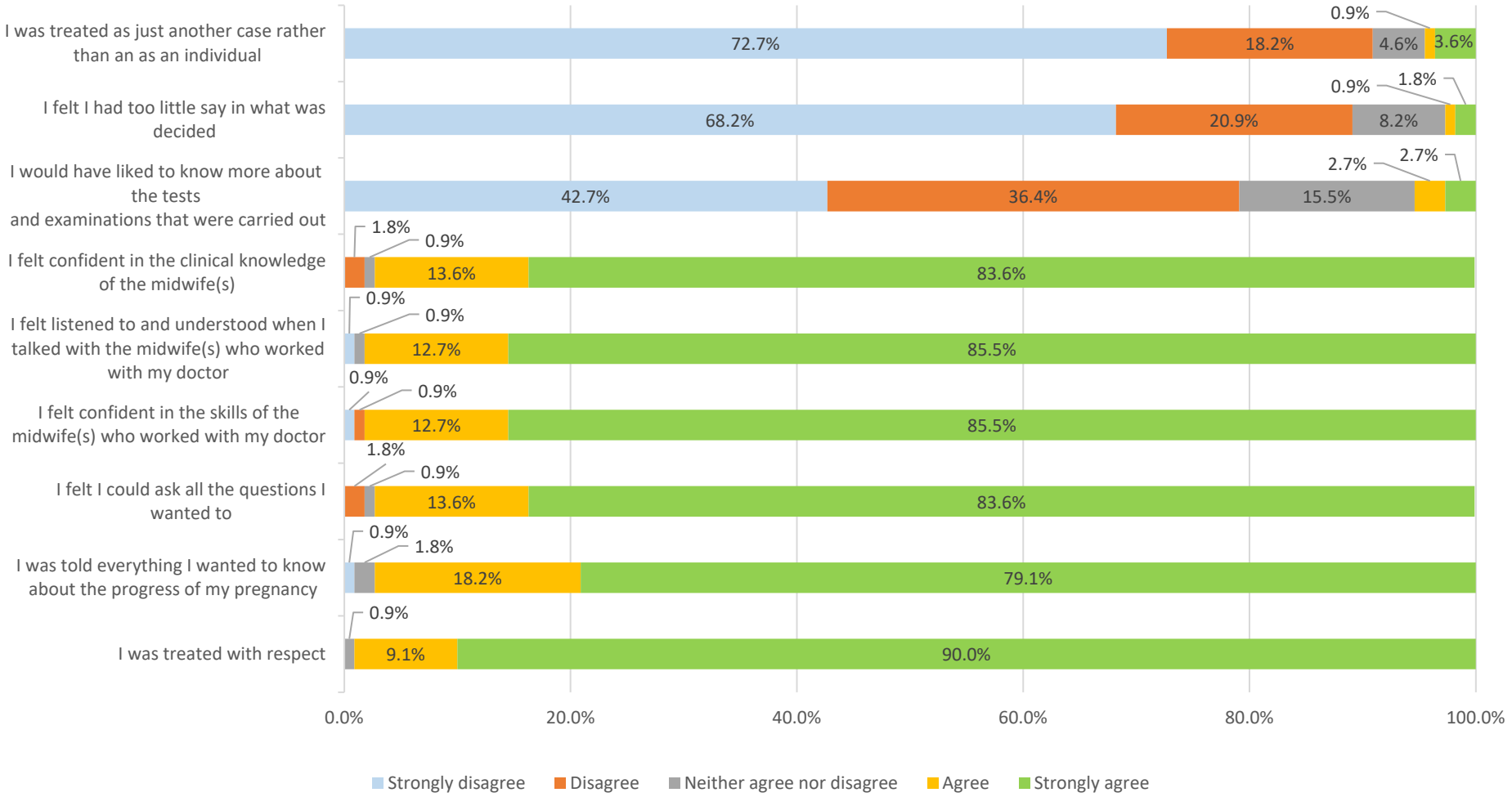



**Figure 10.** Agreement with statements regarding care provided by MGP midwives in care arrangements with doctors.

Notes. Respondents range of agreement to disagreement with statements regarding care provided by the MGP midwife (midwives) who worked with their main doctor care provider (GP, GP obstetrician or obstetrician) during pregnancy. N=110

### *Care provided by doctors across all care arrangements*

Respondents were generally confident (96.4%) in the clinical knowledge and skills of their doctor/s and felt they were treated with respect during their pregnancy care (97.3%). They were slightly less likely to report feeling listened to (90.9% compared with 96.4% MGP midwives). However, this included all doctor care (whether or not the doctor worked in the MMoC). As in the other two series of similar questions, the most ambivalence was around the statement about wanting more information on test and examinations being carried out (Figure 10).

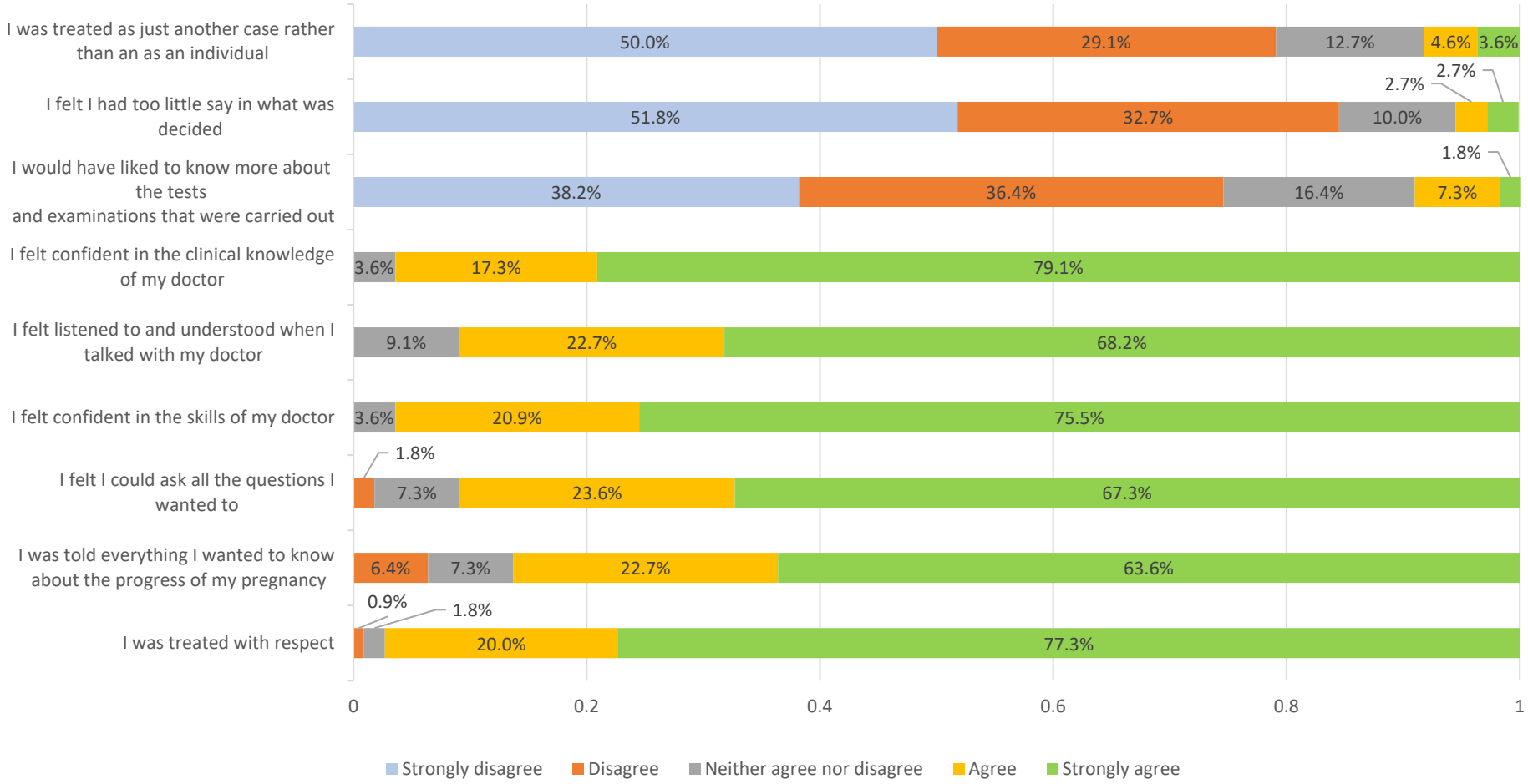



**Figure 11.** Agreement with statements regarding care provided by doctors.

Notes. 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*

Although most respondents (97%) reported starting their care in RMCLHN, a quarter (25.4%) birthed outside the region. The most common reason for not birthing in the area was planned birth away for medical/obstetrical reasons (41.7%) such as high BMI or twins. Only 6 women who did not birth in the region elected to do so (Table 10).

**Table 10.** Category for birthing out of the region.

| **Did you elect to birth out of the Riverland region, or did you need to because of complications or an emergency?** | **Freq.** | **Percent** |
|---|---|---|
| Elected to birth out of the region | 6 | 16.7 |
| Transferred because obstetrical service not available at the time | 1 | 2.8 |
| Planned birth away (for reasons such as BMI, twins, etc.) | 15 | 41.7 |
| Transferred out of region due to obstetrical condition/complication | 10 | 27.8 |
| Other reason (e.g., moved house) | 4 | 11.0 |
| Total | 36 | 100.0 |

Place of birth for the 36 respondents who birthed outside of the region were: WCHN (n=14), FMC (n=7), Lyell McEwin (n=5), Private hospitals (n=4), Mount Barker (n=6). While most survey respondents receiving care at Murray Bridge birthed at the local hospital (68.1%), they had more choice in location to birth due to the close proximity of city hospitals (Adelaide) an hours' drive away or a nearby hospital with a newer birthing facility approximately 40 minutes away. Twenty-seven percent of the women who started their care at MBSMH but did not birth there, elected to birth elsewhere.

Women reported that MGP midwives provided the vast majority (79.4%) of labour and birth care, either as the main care provider (55.9%) or working in share care with GP/GP obstetrician (23.5%) (Figure 12). The main care providers who assisted in birth of the respondent's babies were equally MGP midwives (36.0%) or shared care MGP/GPobs or obstetrician (36.0%) (Table 11). For the n=101 women who birthed in the RMCLHN, women reported that the main care provider that assisted in the birth were about equally MGP midwives 45.5% (n=46), or GP obstetricians or obstetricians working in the model 47.2% (n=48). Five women reported a hospital midwife (not MGP) assisted in the birth and 2 women were unsure.

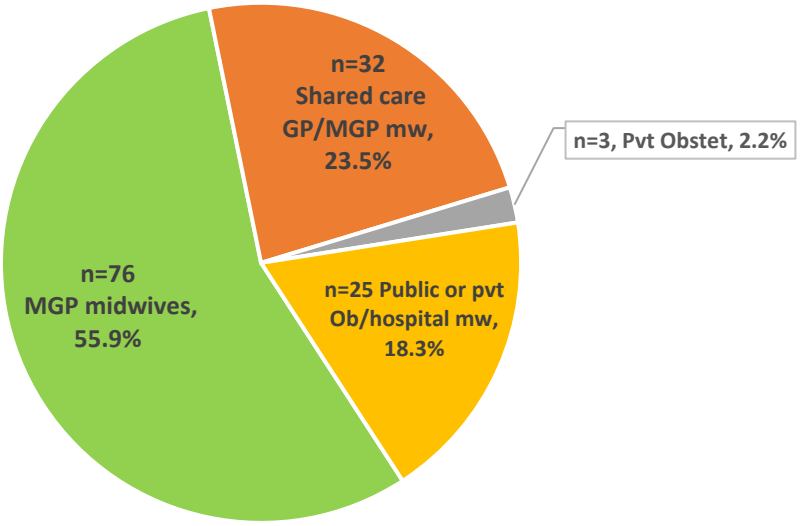



**Figure 12.** Main care provider during labour and birth.

**Table 11.** Main care provider who assisted in the birth.

| Who was the care provider that assisted in the actual birth of your baby? | Freq. | Percent |
|---|---|---|
| MGP Midwife | 49 | 36.0 |
| GP obstetrician or obstetrician with MGP (shared care) | 49 | 36.0 |
| Hospital midwife (not MGP in RMCLHN) | 21 | 15.4 |
| GP obstetrician, hospital, or private obstetrician (not in RMCLHN) | 10 | 7.3 |
| Not sure | 7* | 5.4 |
| Total | 136 | 100.0 |

*Five of these women did not birth in the RMCLHN

During labour and birth, 58.8% of respondents reported having had one or two midwives during their labour and birth (Table 12). This proportion was 71.4% for women who reported having only MGP as their main care provider, and 59.3% for women whose main care pregnancy provider was GP/shared care. Women who did not birth in the RMCLHN were more likely to have three or more midwives during their labour and birth (68.6%), as compared with women who birthed in the RMCHN (29.2%). Parity also affected the number of midwives over labour and birth, with first births more likely to have three or more midwives (55.7%) as compared with women (31.6%) who had given birth before.

**Table 12.** 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 (private obstetrician) | 1 | 0.7 |
| 1 | 28 | 20.6 |
| 2 | 52 | 38.2 |
| 3 | 26 | 19.1 |
| 4 or more | 29 | 21.3 |
| Total | 136 | 100.0 |

Most respondents had one (56.6%) doctor attend their care during labour and birth. Only 5.2 % of respondents reported having no doctor attending to them during labour and birth. The three women who reported having 4 or more doctors during labour and birth did not birth in the region (Table 13).

**Table 13**. 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 | 7 | 5.2 |
| 1 | 77 | 56.6 |
| 2 | 35 | 25.7 |
| 3 | 14 | 10.3 |
| 4 or more | 3 | 2.2 |
| Total | 204 | 100.0 |

The majority of respondents (52.2%) reported knowing their midwife very well during labour and birth, with these proportions being higher for those whose main care providers during labour and birth were in the MMoC (65.7%) (Table 14).

Overall, 31.6% (n=43) of respondents reported not knowing their midwife during labour and birth, however the majority of these women (n=25) birthed privately or in an Adelaide (city) hospital. Respondents who replied “no” they did not know their midwife (n=43), were asked if this bothered them. For the majority of respondents (n=34, 79.1%) not knowing their midwife during the birth did not bother them. However, this proportion was lower (n=7, 58.3%) for women whose main carer was a MGP midwife.

**Table 14.** Main care provider by knowing midwife during labour and birth.

| | Main care providers during labour and birth, number (%) | | | |
|---|---|---|---|---|
| | **MGP midwife** | **Shared care/MGP** | **Pvt ob or city** | **Total** |
| Yes, I knew my midwife well | 51 (67.1) | 20 (62.5) | - - | 71 (52.2) |
| Yes, but not very well | 13 (17.1) | 6 (18.8) | 3 (10.7) | 22 (16.2) |
| No | 12 (15.8) | 6 (20.7) | 25 (89.3) | 43 (31.6) |
| Total | 76 (100) | 32 (100) | 28 100 | 136 (100) |

A series of statements asked women to indicate how much they agreed or disagreed about their care during labour and birth (Table 15). For the women (n=135) who responded, most (>85%) agreed or strongly agreed with the positive statements regarding their experiences, and 77.8% reported their birth was a positive experience. For whom statements were applicable, women felt supported by the midwife who provided most of their care (93.4%) and were confident in the knowledge and skills of their main care provider during labour and birth (98.2%).

**Table 15.** Respondent's 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 | 45 (33.3%) | 24 (17.8%) | 12 (8.9%) | 9 (6.7%) | 8 (5.6%) | 37 (27.4%) | 135 (100%) |
| I was treated as 'just another case' rather than as an individual | 60 (44.4%) | 14 (10.4%) | 18 (13.3%) | 2 (1.5%) | 5 (3.7%) | 36 (26.7%) | 135 (100%) |
| I was told everything I wanted to know about the progress of my labour | 2 (1.5%) | 7 (5.2%) | 9 (6.7%) | 27 (20.0%) | 87 (64.4%) | 3 (2.2%) | 135 (100%) |
| I felt I could ask all the questions I wanted to | - | 5 (3.7%) | 7 (5.2%) | 25 (18.5%) | 96 (71.1%) | 2 (1.5%) | 135 (100%) |
| I had a birth-plan and this was followed | 2 (1.5%) | 7 (5.2%) | 31 (23.0%) | 17 (12.6%) | 48 (35.6%) | 30 (22.2%) | 135 (100%) |
| Any procedures during labour & birth were explained, & I was asked to consent to these | 1 (0.7%) | - | 5 (3.7%) | 29 (21.5%) | 95 (70.4) | 5 (3.7%) | 135 (100%) |
| I was treated with respect | - | 1 (0.7%) | 5 (3.7%) | 20 (14.8%) | 108 (80.0%) | 1 (0.5%) | 135 (100%) |
| I felt confident in the clinical knowledge & skills of my main care provider during labour and birth | - | - | 4 (3.0%) | 24 (17.8%) | 106 (80.4%) | 1 (0.7%) | 135 (100%) |
| My birth was a positive experience | 8 (5.9%) | 4 (3.0%) | 17 (12.6%) | 27 (20.0%) | 78 (57.8%) | 1 (0.7%) | 135 (100%) |
| I felt supported by the midwife who provided most of my care | 1 (0.7%) | 1 (0.7%) | 6 (4.4%) | 21 (15.6%) | 105 (77.8%) | 1 (0.7%) | 135 (100%) |
| I felt supported by the doctor who provided care during my labour and/or birth | - | 1 (0.7%) | 14 (10.4%) | 32 (23.7%) | 85 (63.0%) | 3 (2.2%) | 135 (100%) |
| I felt my partner/ support person was included during my birth | 1 (0.7%) | 1 (0.7%) | 6 (4.4%) | 21 (15.6%) | 105 (77.8%) | 1 (0.7%) | 135 (100%) |

### *Post-partum Care*

For the 133 women who responded to the question, "*who was your main care provider after your baby was born?"*, most (72.9%) reported MGP midwives. Just under a quarter (23.3%) reporting shared care with GPs and MGP midwives. Four women (3.0%) reported "other" post-partum care. 'Other' included: city hospital midwives and doctors (n=2), MGP visit in hospital only, and "haven't been home yet with baby".

### *MGP midwife visits and calls*

For 96% of women who received visits from a MGP midwife, approximately 40% received six or more visits (Figure 13). The average (and median) number of MGP post-partum visits were five per woman. Most women (64%) reported visits occurred entirely in their home with a further 32% reporting their visits were a combination of home and not at home. Only six women reported not having any of their visits at home. A third of women (33.8%) also reported having additional virtual visits and/or phone calls with their midwife, most of which were phone calls (approximately 75%). Just over half of women (55.6%) who had phone calls with midwives had <7 calls. Approximately 30% reported having >10 calls to their midwife over the postnatal period.

### *Number of MGP post-partum visits*

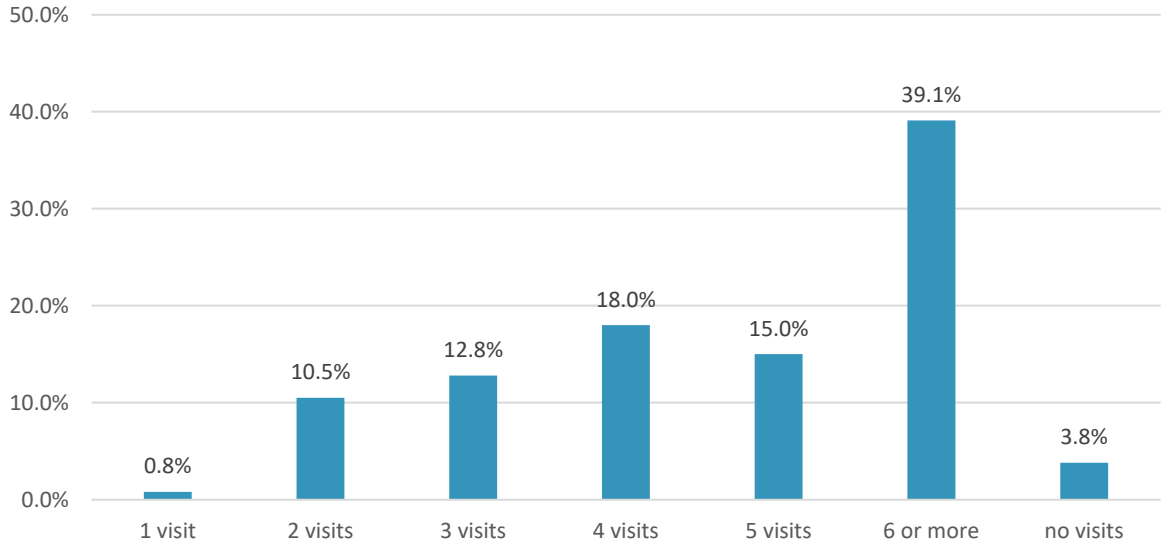



**Figure 13.** Number of visits from MGP midwife after the birth.

When asked to rate their midwives' support during the first week at home, 95.3% (122/128) rated their support as very good to excellent. Two women rated their care as neutral and 2% (n=3) rated their support as fair or poor.

The majority of women (85.2%) reported these visits were with a midwife who they had met before. Approximately 60% (n=77) of women also had visits with a second midwife, for which most women (59.7%) had met before. A third of women (34.3%) also saw or had a call with a third midwife postpartum, of which only half of these women knew this midwife.

Most women (86%) had no more than 6 weeks of visits, with a further 14% having more than 6 weeks of visits. Half of all women had a full 6 weeks of postpartum visits (Table 16). The number of

visits did not vary significantly by first birth. When asked if they would have liked more visits from MGP, only 15.6% of respondents (n=20) reported that they would. Of those that reported they would have liked more visits, 11 had reported having 6 or more visits with their midwife.

**Table 16.** Age of baby when midwifery visits stopped.

| How old was your baby when the midwife stopped visiting? | Freq. | Percent |
|---|---|---|
| 2 weeks | 7 | 5.5 |
| 3 weeks | 7 | 5.5 |
| 4 weeks | 9 | 7.0 |
| 5 weeks | 23 | 18.0 |
| 6 weeks | 64 | 50.0 |
| Greater than 6 weeks | 18 | 14.1 |
| Total | 128 | 100.0 |

### *Community support*

Women were asked if they used or were referred to any community support services after the birth. Close to a third (31%, n=41) of women responded that they had not used any community support services at the time of completing the survey. Of those that used community services, the most frequently cited service (57.1%) used was Child & Family Health Nurse Service (CaFHS). The next most commonly reported service was lactation consultant, with 12% of women using this service (Table 17).

**Table 17.** 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 & family health nurse | 76 | 57.1 |
| Aboriginal services | 3 | 2.3 |
| Physiotherapy | 19 | 14.3 |
| Social work | 4 | 3.0 |
| Mental health | 12 | 9.0 |
| Drug and alcohol | 1 | 0.8 |
| Lactation consultant | 16 | 12.0 |
| Other* | 5 | 3.8 |
| None | 41 | 30.8 |

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

When respondents were asked if there were any other community support services they would have liked, 16 women provided specific comments:

- four mentioned CaFHS services (availability and not just a phone call)
- two mentioned doctor's services (bulk billing and frequent appointment changes)
- two requested lactation consultants, breastfeeding support
- the remaining 8 reported concerns with midwifery care, including: the need for women to have access to a senior midwife, issue with a particular midwife post-partum, having to travel far to meet a midwife for a visit, and several regarding continuity of care and not knowing all midwives providing care (a need for meet and greet).

An additional seven women provided positive comments, and that no additional services were needed.

### *Support, confidence advice after the birth*

The following eleven statements asked women to indicate how much they agreed or disagreed with statements concerning their care after the birth of their baby. Most women (93.1%) agreed or strongly agreed they were given the advice they needed about their own health and recovery, although 7% would have liked to know more about what was happening to them after the birth (Table 18). Almost all women (98.5%) felt they were treated with respect and felt supported (93%) in their feeding choice. Nine percent of women indicated that they would have liked to stay in hospital longer, with an additional 14.6% unsure if they wanted to stay longer.

Most women (87.7%) agreed or strongly agreed that they felt confident as a mother, although first time mothers were less likely to strongly agree with this statement (75%) as compared with those who were already mothers (96.1%).

Most women agreed (86.9%) they were given the advice they needed to settle and look after their baby. However conflicting advice from clinicians and family/friends caused a few women some confusion; 5.4% for midwifery advice, 6.9% for doctor's advice, and 10.8% from family/friends' advice. A further 10% of women were unsure about the advice from midwives, doctors and family/friends.

**Table 18.** Respondent's 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 | 1 (0.8) | 4 (3.1%) | 8 (6.2%) | 32 (24.6%) | 81 (62.3%) | 4 (3.1) | 130 (100%) |
| I was given the advice I needed about my own health and recovery after the birth | - | 4 (3.1%) | 5 (3.9%) | 33 (25.4%) | 88 (67.7%) | - | 130 (100%) |
| I was confused with conflicting advice provided by midwives | 65 (50.0%) | 18 (13.9%) | 13 (10.0%) | 5 (3.9%) | 2 (1.5%) | 27 (20.8%) | 130 (100%) |
| I was confused with conflicting advice provided by family and friends | 46 (35.4%) | 26 (20.0%) | 18 (13.9%) | 9 (6.9%) | 5 (3.9%) | 26 (20.0%) | 130 (100%) |
| I was confused with conflicting advice provided by doctors | 56 (43.1%) | 30 (23.1%) | 12 (9.2%) | 6 (4.6%) | 3 (2.3%) | 23 (17.7%) | 130 (100%) |
| I felt confident as a mother | 2 (1.5%) | 3 (2.3%) | 11 (8.5%) | 47 (36.2%) | 67 (51.5%) | - | 130 (100%) |
| I understood very little of what was said to me | 78 (60.0%) | 24 (18.5%) | 7 (5.4%) | 1 (0.8%) | 1 (0.8%) | 19 (14.6%) | 130 (100%) |
| I would have liked to know more about what was happening to me | 66 (50.8%) | 24 (18.5%) | 11 (8.5%) | 11 (8.5%) | 2 (1.5%) | 16 (12.3%) | 130 (100%) |
| I was able to get help and felt supported with my feeding choice | 1 (0.8%) | 2 (1.5%) | 5 (3.9%) | 34 (26.1%) | 87 (66.9%) | 1 (0.8%) | 130 (100%) |
| I would have liked to stay longer in hospital | 52 (40.0%) | 32 (24.6%) | 19 (14.6%) | 7 (5.4%) | 5 (3.9%) | 15 (11.5%) | 130 (100%) |
| I was treated with respect | - | - | 2 (1.5%) | 17 (13.1%) | 111 (85.4%) | - | 130 (100%) |

### *Breastfeeding*

Most respondents reported that they were confident they could breastfeed (59.2%, n=77), or thought they would give it a try (34.6%, n=45). Only (6.2%, n=8) women responded that they did not plan to breastfeed.

Of those that were breastfeeding or planning to breastfeed, 81.2% of women (n=99) were still breastfeeding at the time of their last visit with their midwife. This had decreased to 73.8% (n=90) of women when asked if they were still breastfeeding at the time of the survey (6-8 weeks or longer). Of the 32 women (26.2%) who were no longer breastfeeding at the time of the survey, the mean age of babies when breastfeeding stopped was at 4 weeks (95% CI 2.7 to 5.3 weeks).

When the 32 women were asked as to why they decided to stop breastfeeding, multiple reasons were selected, including: did not want to breastfeed (15.6%), nipple trauma (9.4%), nipple pain (12.5%), personal reasons (37.5%), taking medications (6.3%), mastitis (3.1%), felt there was not enough milk (37.5%), baby premature (9.4%), lack of support with breastfeeding (9.4%), family/peer pressure (6.3%), unable to get baby to attach/suck (25%), other reasons (18.8%). "Other" reasons cited included: anxiety over milk supply, baby was very hungry and not enough supply, milk was upsetting the baby and traumatic trying to feed with first baby and decided not to push it this time.

### *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 managed during the first week at home (Table 19). Overall, most women agreed/strongly agreed that they managed well (88.5%, n=115), and that their midwife was readily available (94.6%). Approximately 13% of women were unsure or disagreed that they felt confident to take care of themselves. Breastfeeding is another area where a 15.4% of women were unsure or disagreed that they had good breastfeeding support.

**Table 19.** Respondent's agreement with statements regarding how well they were managing in their first week at home with the baby.

| Statement | Strongly Disagree<br>n<br>(%) | Disagree<br>n<br>(%) | Neither agree nor disagree<br>n<br>(%) | Agree<br>n<br>(%) | Strongly Agree<br>(n)<br>(%) | Total<br>n<br>(%) |
|---|---|---|---|---|---|---|
| I managed well | 2<br>(1.5%) | 5<br>(3.9%) | 8<br>(6.2%) | 56<br>(43.1%) | 59<br>(45.4%) | 130<br>(100%) |
| My midwife was readily available | 1<br>(0.8%) | 4<br>(3.1%) | 2<br>(1.5%) | 28<br>(21.5%) | 95<br>(73.1%) | 130<br>(100%) |
| I had good breastfeeding support | 1<br>(0.8%) | 6<br>(4.6%) | 13<br>(10.0%) | 37<br>(28.5%) | 73<br>(56.2%) | 130<br>(100%) |
| I felt confident to care for my baby | 1<br>(0.8%) | 3<br>(2.3%) | 3<br>(2.3%) | 33<br>(25.4%) | 90<br>(69.2%) | 130<br>(100%) |
| I felt confident to care for myself | 1<br>(0.8%) | 4<br>(3.1%) | 12<br>(9.2%) | 38<br>(29.2%) | 75<br>(57.7%) | 130<br>(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 20). Overall, regardless of who their provider was, there was near unanimous agreement that feeling comfortable and supported was important/very important to women (n=127, 99.2%). Having one midwife they knew well in the MGP was important/very important to women (89.1%). For those whose main care provider was a GP, having one GP they knew well was also important/very Important for these women (92.2%).

Eighty-three 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 14% indicating this was important. Feeling in control during labour and birth was important/very important to women (98.4%, where applicable), as was making their own decisions (97.6%).

### *Satisfaction with pregnancy and birthing experience*

This series of questions asked women how satisfied they were aspects of their pregnancy and birthing experience. Overall, most women were satisfied/very satisfied with knowing their care provider well; midwife (93.1%), GP (89.2%) or obstetrician (93.0%), and satisfied with feeling comfortable and supported (99.2%). (Table 21).

Most women were satisfied/very satisfied (94.2%) that a doctor was available in case of an emergency, similar to the proportion of women (97%) who indicated that this was very important/important to them.

Approximately 10% of women were unsure or unsatisfied that they were in control in labour and birth or felt they did not make their own decisions (9.1%). There was general overall congruence between the previous *importance* and this *satisfaction* series of questions.

**Table 20.** Women's rated statements for overall importance to their pregnancy and birth experience.

| Statement | Not at all important n (%) | Fairly unimportant n (%) | Unsure n (%) | Important n (%) | Very important n (%) | N/A n (%) | Total n (%) |
|---|---|---|---|---|---|---|---|
| Having one MGP midwife I knew well | 2 (1.6%) | 5 (3.9%) | 4 (3.1%) | 21 (16.4%) | 93 (72.7%) | 3 (2.3) | 128 (100%) |
| Having one GP I knew well* | 1 (0.8%) | 2 (1.6%) | 4 (3.1%) | 27 (21.1%) | 56 (43.8%) | 38 (29.7%) | 128 (100%) |
| Having one obstetrician I knew well* | 1 (0.8%) | 2 (1.6%) | 3 (2.3%) | 21 (16.4%) | 50 (39.1%) | 51 (39.8%) | 128 (100%) |
| Feeling comfortable and supported | - | - | 1 (0.8) | 16 (12.5%) | 111 (86.7%) | - | 128 (100%) |
| Knowing a doctor was available in case of an emergency | 1 (0.8%) | 2 (1.6%) | 1 (0.8%) | 18 (14.1%) | 106 (82.8%) | 3 (1.6%) | 128 (100%) |
| Feeling I was in control in labour and birth | 1 (0.8%) | 1 (0.8%) | 3 (2.3%) | 24 (18.8%) | 97 (75.8%) | 2 (1.6%) | 128 (100%) |
| Feeling I made my own decisions | 1 (0.8%) | - | 2 (1.6%) | 27 (21.1%) | 97 (75.8%) | 1 (0.8%) | 128 (100%) |

* if applicable, i.e., if main provider was a GP / an obstetrician.

**Table 21.** Women's satisfaction with the pregnancy and birthing experience.

| Statement | Not at all satisfied n (%) | Fairly unsatisfied n (%) | Unsure n (%) | Satisfied n (%) | Very satisfied n (%) | N/A n (%) | Total n (%) |
|---|---|---|---|---|---|---|---|
| Having one MGP midwife I knew well | 1 (0.8%) | 1 (0.8%) | 6 (4.8%) | 18 (14.3%) | 90 (71.4%) | 10 (7.9) | 126 (100%) |
| Having one GP I knew well* | 2 (1.6%) | 3 (2.4%) | 4 (3.2%) | 26 (20.6%) | 48 (38.1%) | 43 (34.1%) | 126 (100%) |
| Having one obstetrician I knew well* | - | 2 (1.6%) | 3 (2.4%) | 28 (22.2%) | 39 (30.9%) | 54 (42.9%) | 126 (100%) |
| Feeling comfortable and supported | - | - | 1 (0.8%) | 28 (22.2%) | 95 (75.4%) | 2 (1.6%) | 126 (100%) |
| Knowing a doctor was available in case of an emergency | - | 2 (1.6%) | 7 (5.6%) | 29 (23.0%) | 83 (65.9%) | 5 (4.0%) | 126 (100%) |
| Feeling I was in control in labour and birth | 3 (2.4%) | 4 (3.2%) | 5 (4.0%) | 27 (21.4%) | 82 (65.1%) | 5 (4.0%) | 126 (100%) |
| Feeling I made my own decisions | 1 (0.8%) | 4 (3.2%) | 6 (4.8%) | 25 (19.8%) | 84 (66.7%) | 6 (4.8%) | 126 (100%) |

* if applicable, i.e., if main provider was a GP / an obstetrician.

### *Clinicians working together*

There were 116 women who received care from MGP providers (MGC midwives and/or GP/obstetricians) and 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 (Table 22). Most women agreed or strongly agreed that the clinicians worked well together (87.9%), and the care was well connected (83.5%). 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 (19-29%).

**Table 22.** How well MGP midwives and other care providers (GPs, or specialists' obstetricians) worked and communicated together.

| **Statement** | **Strongly disagree** n **(%)** | **Disagree** n (%) | **Neutral** n (%) | **Agree** n (%) | **Strongly Agree** n (%) | **Total** n (%) |
|---|---|---|---|---|---|---|
| These care providers pass on information to each other very well | 4 (3.5%) | 5 (4.3%) | 13 (11.2%) | 36 (31.0%) | 58 (50.0%) | 116 (100%) |
| These care providers work very well together | - | 1 (0.9%) | 13 (11.2%) | 38 (32.8%) | 64 (55.2%) | 116 (100%) |
| The care given by these care providers is well connected | - | 5 (4.4%) | 14 (12.2%) | 31 (27.0%) | 65 (56.5%) | 115 (100%) |
| These care providers always know very well what the other care providers have done | 1 (0.9%) | 6 (5.3%) | 26 (22.8%) | 34 (29.8%) | 47 (41.2%) | 114 (100%) |

### *Impact of COVID-19 on women*

There was a surge of COVID-19 cases in the Riverland in 2022, with over half of women (58.5%) reported feeling anxious about the impact of COVID-19 on their wellbeing with more reporting feeling anxious (72.6%) about the potential impact of COVID-19 on the wellbeing of their family (Table 23). However, in general, women reported being happy about the changes to care due to COVID-19 in their area (90.6%), felt like they received timely and clear answers to their questions (96.1%), and were happy (97.8%) about how the midwives and doctors working in the model were managing the risks of COVID-19. Women tended not to feel isolated from their caregivers due to PPE and distancing measures and agreed that their care experiences turned out better that they thought during COVID-19.

**Table 23.** Concerns and care around COVID-19.

| Statement | Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly agree | Total |
|---|---|---|---|---|---|---|---|
| | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) |
| I felt anxious about the impact of COVID-19 on my wellbeing | 20 (15.6%) | 27 (21.1) | 6 (4.7%) | 30 (23.4%) | 29 (22.6%) | 16 (12.5%) | 128 (100%) |
| I felt anxious about the potential impact of COVID19 on the wellbeing of my family | 16 (12.5%) | 14 (10.9%) | 5 (3.9%) | 26 (20.3%) | 30 (23.4%) | 37 (28.9%) | 128 (100%) |
| I was happy with the changes to the way that maternity care was delivered (due to COVID-19) in my local area | 2 (1.6%) | 5 (3.9%) | 5 (3.9%) | 18 (14.1%) | 52 (40.6%) | 46 (35.9%) | 128 (100%) |
| I felt like I received timely and clear answers to the questions about the impact of COVID-19 on me, my baby and family | 2 (1.6%) | 1 (0.8%) | 2 (1.6%) | 22 (17.2%) | 50 (39.1%) | 51 (39.8%) | 128 (100%) |
| The social distancing measures & the use of PPE (mask, goggles) required because of COVID-19 meant that I felt isolated from my caregivers | 26 (20.3%) | 43 (34.6%) | 14 (10.9%) | 19 (14.8%) | 16 (12.5%) | 10 (7.8%) | 128 (100%) |
| I was happy with the way the midwives & doctors working in the MGP model were managing the risk of COVID-19 | 1 (0.8%) | 1 (0.8%) | 1 (0.8%) | 8 (6.3%) | 56 (43.8%) | 61 (47.7%) | 128 (100%) |
| Compared with my expectations, some of my care experiences turned out better than I thought they might during COVID-19 | 3 (2.3%) | 4 (3.1%) | - | 24 (18.8%) | 44 (34.4%) | 53 (41.45) | 128 (100%) |

### *Student experiences*

Student placements in regional and rural regions are an important strategy in boosting the local workforce. Of the 128 women who responded to whether they had a student, 75 (58.6%) indicated they had. Midwifery students were the most frequent type of student, with 56 of women respondents (43.8%) indicating this type of student. Twenty-four women (18.8%) had a medical student as part of their care and seven women (5.5%) a nursing student.

For the women who had a student, the mean number of times a student attended to their care varied by student type, with midwifery students averaging 3.6 times per woman.

Mean number of times a student attended to the woman's care:

- midwifery student: mean 3.6 (median 3, range 1-15).
- medical student: mean 2.2 (median 2, range 1-9).
- nursing student: mean 1.5 (median 1, range 1-3).

Women were asked four questions as to their satisfaction with the midwifery student experience. Over all categories, women's experiences were rated as good as or better than they had hoped, greater than 90% of the time. (Table 24).

**Table 24.** Satisfaction with the student midwife experience.

| Statement | Not as good as you hoped n (%) | As good as you hoped n (%) | Better than you hoped n (%) | Total n (%) |
|---|---|---|---|---|
| Were you satisfied with the way the student listened and responded to your questions and concerns? | 2 (3.6%) | 20 (35.7%) | 34 (60.7%) | 56 (100%) |
| Were you satisfied with the emotional support you received from the student? | 2 (3.6%) | 20 (35.7%) | 34 (60.7%) | 56 (100%) |
| Were you satisfied with the care the student provided? | 4 (7.1%) | 15 (26.8%) | 37 (66.1%) | 56 (100%) |
| Did the student positively contribute to your care? | 3 (5.4%) | 16 (28.6%) | 37 (66.1%) | 56 (100%) |

Women also elected to provide comments about their experience with midwifery students, a few examples are listed below:

*"The student who attended my labour was fabulous and worked closely and collaboratively with the Midwife and GP/obstetrician. I was super impressed and felt supported throughout the labour and delivery."*

*"This was a very positive experience, and she was a great extra support person in labour."*

*"Very supportive and listened to. Really invested in her learning and wanted the best outcome for everyone. She will make an amazing midwife."*

*"I was asked on the day of birth in front of the student if I was comfortable for them to observe. I would have like to have been asked this prior to birth and particularly not when the student was present = somewhat pressured to say yes."*

### *Final Questions*

Women were asked if they had another pregnancy if they would seek the MGP midwifery model of care in their region. Of the 124 women who answered this question, 120 (96.8%) said they would and 122 (98.4%) answered they would recommend the MGP model of care they received to a friend.

Only four of the 124 women answered they would not seek this type of care again, of which 3 gave reasons why they would not. Two of these responses were related to dissatisfaction with individual midwives and one expressed disappointment about building a relationship with a midwife only to be sent to the city due to a high BMI.

### *Free text responses to women's survey open ended questions*

Free text comments were optional on the women's' questionnaire. Over 100 women (n=104) 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 theme that the women felt supported and valued having a known midwife, as shown in the word cloud below (Figure 14).


**Figure 14.** Best aspects of the care you received during your pregnancy, birth and following birth.

Some examples of responses representing all sites included:

*"My midwife went above and beyond to get to know me, and make me and my partner feel prepared and comfortable in the lead up, birth and postnatal care of our first child. I constantly felt safe, assured and in control the whole experience. I never once felt unsure, unsafe or worried."*

*"The continuity of care from my midwife was priceless. Knowing that I could call or text her and I had her knowledge and help at my fingertips was so comforting. I felt very supported at all times, it was a great experience for me."*

*"Absolutely amazing program going into labour with a single midwife that knew my preferences was just perfect. I was treated with so much respect and care and will always look back on this experience with so much appreciation. Made it such a positive experience."*

*"It felt very personalised! I loved having the same midwife following me through my whole pregnancy, just being able to pick up where we left off every visit. The quality of care made me feel very relaxed and to know I was very supported helped make my pregnancy and birth a wonderful experience."*

*"Having one midwife and Ob was a much greater experience as you get to know them and feel comfortable with them throughout the pregnancy and after."*

*"Team was very comfortable to work with and always kept myself and my partner involved. Felt the interactions between GP and midwives was always positive and that we were all on the same page no matter who I saw."*

*"I felt so supported by both the midwife and GP/Ob throughout pregnancy, labour, birth and post-partum. My husband and I were very much always included in the decision-making process of care and were fully informed regarding all our options. We were always treated with kindness, support and professionalism which made for a very positive birthing experience. All clinicians were accessible and displayed a high level of communication. I was always informed that I could contact either the midwife or GPOB if I had any questions or concerns.*

*"I felt very supported, not just by my MGP midwife but from the whole team of midwives. Any time I was in the maternity ward, I felt known and supported by all midwives."*

Women were also asked if there were ways in which they felt the care they received during pregnancy, birth and following the birth could have been improved. There were 99 comments provided in response to this question of which approximately half (n=49) were the response "no" or similar (none, nope, was very happy with my care, etc.). Comments for improvement included: better communication between clinical staff (midwives and doctors), improved continuity of care (midwives and doctors), more staff to address shortages, better communication with some clinicians, variable post-partum nursing care, conflicting advice from a few midwives' and more support (lactation consultant) for breast-feeding.

## Maternity Clinical Indicators

Most women in SA birth in metropolitan teaching hospitals (62%) or private hospitals (19.2%) with only 3,412 (18.2%) of women birthing in country hospitals in 2020. This makes interpretation of regional hospital births not directly comparable with state and national clinical outcome indicators. While birth indicators within the MMoC will differ with metropolitan according to risk profiles, hospital practices and management guidelines, the closest comparable statistics would be those for *selected women giving birth for the first time*. This is defined in state and national birth statistics by AIHW as: *selected women include those aged between 20 and 34 years, whose baby's gestational age at birth was between 37 and 40 completed weeks, with a singleton baby in the vertex presentation.* However, caution should be used with interpretation of these percentages due to small numbers and other differences.

There were 251 bookings in the MMoC at RGH at Berri during the calendar year 2022. This comprised of 236 women cared for from the antenatal period and an additional 15 women who were referred through Country Home Link (CHL) for postnatal care. Of the 236 women booked antenatally 183 (77.5%) of these women birthed at RGH. The 53 women (22.5%) of women who did not birth in the region did so due to personal reasons or obstetrical/medical reasons including: high BMI, gestational diabetes mellitus (on insulin), COVID-19 positive, preterm labour, IURG, multiple pregnancy, maternal/fetal condition or personal choice.

Over the approximate 5-month period from the commencement of the MMoC at MBSMH at Murray Bridge on 16 July 2022 to 31 Dec 2022, there were 153 women cared for antenatally in the MMoC with an additional 15 women referred through CHL for postnatal care, plus 22 postnatal care bookings from Mt Barker. Of the 153 women who booked in antenatally, 98 (64.0%) of these women birthed at MBSMH. The 55 women (36.0%) who did not birth in the region did so due to personal reasons or obstetrical/medical reasons including: high BMI, gestational diabetes mellitus (on insulin), multiple pregnancy, maternal/fetal complexity or personal choice.

From the combined sites and time-periods there were a total of 281 births in the MMoC at the two sites, of which 33 (11.7%) were to Aboriginal women. Since the introduction of the MMoC at RGH, the number of Aboriginal births at the hospital have approximately doubled from the year 2021 to 2022 (over 20 births in 2022), exceeding those in Murray Bridge. Work is underway to consider the feasibility of having an AMIC worker working within the MGP in the Riverland.

Maternity indicators for these 281 births are reported in the Tables 25-28. These include National Core Maternity Indicators that are routinely reported by tertiary obstetric hospitals in Australia. The reporting of 'selected women giving birth for the first time' 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.[43]

Selected women giving birth for the first time (aka selected primiparous women) are defined as: Selected women include those aged between 20 and 34 years, whose baby's gestational age at birth was between 37 and 40 completed weeks, singleton, cephalic presentation. The most recently reported comparative national and SA data (year 2021) are shown in Table 28 for illustrative purposes.

**Table 25.** Characteristics of women birthing, MMoC calendar year 2022.

| Indicator | Number (%) |
|---|---|
| Total number of women who give birth (by any method) | 281 (100%) |
| Total number of babies born | 282 (100%) |
| Total number of Aboriginal women who give birth (by any method) | 33 (11.7%) |
| Total number of live babies born at 37 completed weeks or more | 275 (97.5%) |
| Total number of live babies born before 37 completed weeks or more | 7 (2.5%) |
| Total number of primiparous women who give birth (by any method) | 105 (37.4%) |
| Total number of *selected* primiparous women who give birth (by any method) | 79 (28.1%) |
| Proportion of women who were aged 35 years or greater | 44 (15.7%) |

Notes. MMoC births in RMCLHN n=183 RMC, n=98 MBSMH (5 months), combined.

**Table 26.** Maternity Indicators labour and birth, MMoC, calendar year 2022.

| Indicator | Number (%) |
|---|---|
| **Selected Women*** | |
| Women who birthed vaginally, total selected women giving birth for the first time | 57 (72.2%) |
| Induction of labour, total selected women giving birth for the first time | 39 (49.4%) |
| Caesarean section, selected women giving birth for the first time | 22 (27.8%) |
| Non-instrumental vaginal birth, selected women giving birth for the first | 38 (48.1%) |
| Instrumental vaginal birth, selected women giving birth for the first time | 19 (24.1%) |
| Epidural use women who give birth vaginally, selected women giving birth for the first time | 42 (73.7%) |
| **All Women** | |
| All women who birthed vaginally | 196 (69.8%) |
| Induction of labour, all women | 116 (41.3%) |
| Caesarean section, all women | 85 (30.2%) |
| Non-instrumental vaginal birth, all women | 166 (84.7%) |
| Instrumental vaginal birth, all women who gave birth vaginally | 30 (15.3%) |
| Epidural use - all women who give birth vaginally | 78 (39.8%) |
| General anesthetic for women giving birth by caesarean section | 9 (10.6%) |
| Women having their second birth vaginally whose first birth was by caesarean section | 15 (50.0%) |
| Caesarean section, early planned without medical or obstetric indication | 0 |

Notes. Indicator n=183 RMC, n=98 MBSMH (5 months), combined.

* AIHW definition: Selected women include those aged between 20 and 34 years, whose baby's gestational age at birth was between 37 and 40 completed weeks, singleton, cephalic presentation.

**Table 27.** Birth outcome indicators, MMoC, calendar year 2022.

| Indicator | Number (%) |
|---|---|
| Third or 4th degree tear for all vaginal first births | 0 |
| Third or 4th degree tear for all vaginal births | 1 (0.5%) |
| Episiotomy for women having their first baby and giving birth vaginally (non-instrumental) | 4 (10.0%) |
| Episiotomy for women having their first baby and giving birth vaginally (instruments) | 12 (48.0%) |
| APGAR score of 6 or less at 5 minutes post birth - inborn singleton babies live born at term | 6 (2.1%) |
| Stillbirths | 0 |
| Primary midwife present for birth | 132 (47.0%) |
| Primary midwife present for labour or caesarean section | 167 (59.4%) |

Notes. Indicator (n=183 RMC, n=98 MBSMH hospital births combined).

**Table 28.** Selected National Maternity Indicators, Australia, SA and Country Health SA 2021.

| Indicator | Australia Percent | South Australia Percent | Country Health, SA* |
|---|---|---|---|
| Non-instrumental vaginal birth for *selected women* giving birth for the first time | 42.3% | 45.2% | 47.5% |
| Instrumental vaginal birth for *selected women* giving birth for the first time | 24.3% | 21.9% | 18.1% |
| *Selected women* giving birth for the first time, caesarean section | 33.4% | 32.9% | 34.4% |
| Induction of labour, *selected women* giving birth for the first time | 44.1% | 46.7% | 44.9% |
| Third or 4th degree tears: | | | |
| ○ all vaginal first births | 4.5% | 4.9% | 3.7% |
| ○ all vaginal births | 2.7% | 2.9% | 2.1% |
| Episiotomy – women given birth for the first time and giving birth vaginally: | | | |
| ○ without instruments | 23.0% | 27.6% | 20.0% |
| ○ with instruments | 81.1% | 83.2% | 69.6% |
| APGAR score of less than 7 at 5 minutes post birth - babies live born at term | 1.3% | 1.2% | 1.4% |
| Small babies among births at or after 40 weeks gestation | 1.1% | 1.0% | 0.6% |
| Epidural or caudal, all women | 41.5% | 44.1% | - |
| Women having their second birth vaginally whose first birth was by caesarean section | 11.5% | 13.3% | 13.5% |
| Total % women, induction of labour | 34.2% | 37.1% | - |
| Total %women caesarean section | 38.2% | 37.3% | - |
| Total % women who birthed vaginally | 61.8% | 62.7% | - |
| Total % women who birthed vaginally (non-instrumental) | 49.7% | 52.1% | |
| Total % women, spontaneous vaginal births | 41.2% | 41.4% | - |

Source: AIHW National Core Maternity Indicators, Data 2021 (most recently updated July 2023) https://www.aihw.gov.au/reports/mothers-babies/national-core-maternity-indicators/data & AIHW National Perinatal Data Collection annual update 2021-data tables.

*Country Health as PHN classified in year 2021, mother's usual residence

## Midwives' Workforce Survey

**Key findings**

- Nineteen MMoC midwives completed the survey (73% response rate). Over half had worked as a midwife for less than 5 years
- 79% 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 MMoC doctors
- Work-life balance was rated as 'high satisfaction' by 32% of midwives and 'moderate' satisfaction by almost half (47%)
- Midwives have a high perceived level of empowerment in their practice as measured by the PEMS instrument
- Most midwives (95%) believed the MMoC covered core components of care within the Quality Maternal and Newborn Care Framework
- Almost three-quarters (74%) of midwives had no plans to leave their current position within the next 5 years

### *Demographics*

At the end of the evaluation period, midwives working in the MMoC at both sites (RGH and MBSMH) were asked to complete an anonymous online survey that included validated quantitative workforce measures and qualitative questions about working in the model.

The survey was accessed by all 26 midwives working in the practice at the time. Nineteen of the 26 midwives (73.1%) completed all questions, seven midwives (n=5 RGH, n=2 MB) only completed the demographic questions. Demographic characteristics are shown in Table 29**.** Over half of the MMoC midwives (54%) have less than 5 years working as a midwife.

**Table 29.** Characteristics of MGP midwives.

| | Freq. | Percent |
|---|---|---|
| At which site are you based for most of your time? | | |
| Riverland General Hospital (Berri) | 13 | 50.0% |
| Murray Bridge Soldiers Memorial Hospital | 12 | 45.2% |
| Equally between Berri and Murray Bridge | 1 | 3.8% |
| T*otal* | 26 | 100% |
| Age-group | | |
| <35 | 6 | 23.1% |
| 35-49 | 11 | 42.3% |
| 50+ | 9 | 34.6% |
| Total | 26 | 100% |
| How many years have you worked as a midwife? | | |
| 1-4 years | 14 | 53.9% |
| 5-9 years | 2 | 7.7% |
| 10-19 years | 6 | 23.1% |
| 20-29 years | 2 | 7.7% |
| 30+ years | 2 | 7.7% |
| T*otal* | 26 | 100% |

The majority of midwives (79%, n=15) reported that prior to working in the MMoC they had worked in a rural setting, largely reflecting the transition of the existing ward-based midwives transitioning to the MMoC. Only 4 of the 19 midwives responding to this question (21%) had not previously worked in a rural setting.

Most midwives, 17/19 (89.5%), had not worked in a MGP setting prior to their current employment in the MMoC. Only two midwives had previously worked in a MGP model of care. The majority of midwives (57.9%) had been employed in a midwifery position in the RMCLHN for 5 years or more, with over 40% of these being ten years or greater (Table 30).

**Table 30.** Years worked as a midwife in the RMCLHN (in any role).

| | Frequency | Percent |
|---|---|---|
| < 1 year | 0 | - |
| 1-4 years | 8 | 42.1% |
| 5-9 years | 3 | 15.8% |
| 10+ years | 8 | 42.1% |
| Total | 19 | 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 (79%, n=15) indicated they were, two midwives indicated they were not and two were unsure.

When asked what specific and unique skills stand out as being essential when practicing in a regional midwifery setting. The following free text response by one midwife best expresses what was said (collectively) by other midwives:

> *"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, be open and supportive of a large range of family situations and issues, self-confident and sound knowledge of midwifery, emotional intelligence, ability to work through whole scope of practice, knowing when to contact for extra support, time management skills."*

Understanding rural practice was deemed important alongside a commitment to compassionate woman-centred care. When asked to nominate a few words to describe the difference from working in metropolitan positions, many of the responses aligned closely with the responses to the previous question. 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. The following responses reflect common responses, these focused on the importance of a team approach to care, less availability of backup, factoring in distances, and more autonomy and responsibility, for example:

> *"All-risk' model rather than low-risk. GP Obstetricians are a PART of the team, not APART. Different to in metro where obstetricians only come when there is complications. During times of ' birth surge', rural teams have to deal with who they have, difficult to get help quickly i.e. staff to relieve exhausted midwives."*

> *"Ability to stay calm in a crisis, multitasking, interprofessional relationships. You need to be able to get along with EVERYONE in the multi-d team."*

> *"Ability to provide more of your skills in every setting, multiple skills in antenatal, postnatal, labour and birth setting."*

*"Distance - metro may have to drive up to an hour to an appointment, regional may have to drive hours to an appointment * clinical backup - metro have direct access to all clinical specialties required (Obst, Paed/Neonate, etc.), regional have to call these specialties in most cases."*

*"When you work rurally there is no one to do the little jobs for you, e.g. put in a cannula, empty the skips, admit the woman- if you don't do or don't know how to do these things then they don't get done. You need to be absolutely sure of what you are doing and capable of asking when you are not sure, there aren't always 20 other midwives around to help you. You value the importance of the multi-D team so much, furthermore, you value your team so much more."*

Midwives were asked to assess the ongoing sustainability of the regional MMoC model and whether the model would be attractive to other midwives (Table 31). This was assessed using the following question: *"Do you think the role of the regional MGP model of care as presented in the RMC local health network is sustainable and will be attractive to other midwives?"*. Most midwives (79%) responded positively to the question, although 21% were unsure or disagreed. In comparison all midwives in the Yorke and Northern local health network responded positively to this question.

**Table 31.** Midwives' response to sustainability and attractiveness of the model.

| | Frequency | Percent |
|---|---|---|
| Yes | 15 | 78.9% |
| No | 1 | 5.3% |
| Unsure | 3 | 15.8% |
| Total | 19 | 100% |

### *Practice Environment Scale for use with midwives*

Collaborative alliances for midwife-doctor relations were assessed by three Likert-type statements from the Practice Environment Scale (PES) 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 0.835) and was considered valid.

The mean score over the 3-item subscale of midwife-doctor relations for the 19 midwives who completed all three questions was 3.79 (95% CI 3.62-3.96), (SD .35), median score of 4.0, with a range of scores from 3-4. No one disagreed or strongly disagreed (score of 1 or 2) 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 3.79 indicates that midwives agreed that there was good overall collaborative alliances with the doctors.

### *Work-Life balance*

Midwives were asked to rate their satisfaction with work-life balance and time off work (Table 32). For time off work, close to half (47.4%) rated this as "moderate satisfaction" and 31.6% as "high satisfaction". Four midwives (21.0%) indicated they had "low satisfaction" with time off work. Similarly, while most midwives rated their work-life balance as moderate to high (73.7%) over a quarter (26.3%) rated this as "low satisfaction".

**Table 32.** Midwives' self-rated satisfaction with time off work and work-life balance.

| | Frequency | Percent |
|---|---|---|
| Please rate your satisfaction with time off work | | |
| High satisfaction | 6 | 31.6% |
| Moderate satisfaction | 9 | 47.4% |
| Low satisfaction | 4 | 21.0% |
| Total | 19 | 100% |
| Please rate your satisfaction with work-life balance | | |
| High satisfaction | 5 | 26.3% |
| Moderate satisfaction | 9 | 47.4% |
| Low satisfaction | 5 | 26.3% |
| Total | 19 | 100% |

### *Perceptions of Empowerment in Midwifery Scale (PEMS)*

Midwives' perception and experiences in the workplace were assessed across three subscales in the PEMS measure: autonomous practice, effective management, and woman-centred practice. The subscales consisted of 5-point (strongly disagree to strongly agree) Likert-type questions.

Cronbach's alpha test for internal test consistency of the three 6 itemed-subscales and showed good internal consistency for all three subscales: autonomous practice (alpha 0.828), effective management (0.839) and woman-centred practice (0.797). Mean sub-scores were subsequently calculated for each of the three subscales. 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.

*Autonomous practice*. Results of the mean subscale score for autonomous practice, revealed a score of 4.27 (range 3.5 to 5.0) indicating that midwives have a high perceived level of empowerment in their practice.

*Effective management.* The mean subscale scale for effective management was 4.22 (range 2.5-5.0) indicating that midwives have a high perceived level of empowerment for effective management.

*Woman-centred practice*. The mean subscale scale for woman-centred practice was 4.40 (range 3.6-5.0) indicating that midwives also have a high perceived level of empowerment for woman-centred practice.

The sum of means yielded an overall PEMS score of 12.89. Scores in the range of 10-12 correspond with a level of high perceived empowerment with the highest possible mean of 15.

### *Quality Maternal and Newborn Care (QMNC) Questions*

The midwives were asked three questions specifically addressing core care components within the QMNC Framework. These were:

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

- Most (18 out of 19) of the midwives responded "yes" to this question.

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

- The majority of midwives (n=13, 68.4%) responded "yes" to this question. Three midwives (15.8%) were unsure and three (15.8%) replying "no". Comments for the "unsure" response was related to issues of resourcing, screening tests and general ambivalence.

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

- Most midwives (n=16, 84.2%) responded "yes" to this question, one replied "no" and 2 were unsure. Comments for the unsure response included strong medical push from some doctors.

### *Intention to leave current position*

Approximately three-quarters of MMoC midwives (73.7%) had no plans to leave their current position within the next 5 years. (Table 33). Only one midwife was intending to leave within the next 12 months and a further 3 within the next 1-5 years, representing a fairly stable midwifery workforce. The one "other", response was due to a change in position and no longer working as a clinical midwife.

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 (i.e., 45% had no plans to leave their current position). However, most of these midwives worked in metropolitan hospitals.[44,45]

**Table 33.** MGP 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 | 14 | 73.7% |
| Yes, within the next 12 months | 1 | 5.3% |
| Yes, within the next 1-5 years | 3 | 15.8% |
| Other | 1 | 5.3% |
| Total | 19 | 100% |

### *Positive and negative aspects of MMoC*

Midwives were asked to list their top two positive and negative aspects of working in the Riverland MMoC. Eighteen midwives provided responses to their top two positive aspects of working in the model and 17 reported on the top negative aspects of working in the model. In summary:

- The positive responses generally focused on: care for the women (i.e., continuity of care, making a difference to the woman, knowing their women, etc.) working with supportive colleagues and in close collaboration with doctors to provide best possible care, and workforce issues including; job satisfaction, flexibility of work, upskilling and working to full scope of practice, autonomy and empowerment for midwives and women.
- The negative responses focused on the demanding nature of the work and risk of burnout due to being short-staffed, issues around being on-call, not being able to switch off, setting boundaries and challenges with work-life balance. Other mentioned negative aspects included: some members having to repeatedly pick up the load for others, challenges with executive level management, lack of clear structure, processes, and salary not commensurate with role/responsibilities.

When midwives were asked if there was anything else they wished to say, 4 midwives offered further suggestions. These included: a level 3 midwife is needed at each site to listen to staff who have concerns, midwives should consider when they need to visit and refer to other services as needed, and handover with the nurses has improved with the new ISBAR sticker.

### *Communication and administrative processes*

In addition to validated workforce questions, the MMoC survey also included a series of seven questions relating to communication and administrative processes. In general, responses rating to communication and handover with doctors were in the good to very good range. The highest rankings were for communication within the MGP team. Handover with hospital staff was rated less favorably, although most responses were still in the good to very good categories. (Table 34)**.** The areas that were ranked lower concerned standardization of documentation and a centralized information sharing platform.

Up to a quarter of responses in the categories of rostering and flexibility in working arrangements were ranked as fair, however most responses (approximately three-quarters) were ranked in the good to excellent categories.

**Table 34.** Communication and administrative processes in the MMoC.

| Statement | Very poor n (%) | Poor n (%) | Fair n (%) | Good n (%) | Very good n (%) | Excellent n (%) | Total n (%) |
|---|---|---|---|---|---|---|---|
| Communication within the MGP team | - | - | 1 (5.3%) | 9 (47.4%) | 5 (26.3%) | 4 (21.0) | 19 (100%) |
| Handover with hospital nurses/midwives | - | - | 4 (21.0%) | 9 (47.4%) | 6 (31.6%) | - | 19 (100%) |
| Handover with area doctors | - | - | - | 6 (31.6%) | 12 (63.2%) | 1 (5.3%) | 19 (100%) |
| Centralised information sharing platform | - | 3 (15.8%) | 4 (21.0%) | 3 (15.8%) | 8 (42.1%) | 1 (5.3) | 19 (100%) |
| Standardisation of documentation across the region | 1 (5.3%) | 1 (5.3%) | 4 (21%) | 6 (31.6%) | 6 (31.6%) | 1 (5.3%) | 19 (100%) |
| Rostering and on-call | - | - | 4 (21.0%) | 6 (31.6%) | 7 (36.8%) | 2 (10.5%) | 19 (100%) |
| Flexibility in working arrangements | - | - | 5 (27.8%) | 6 (33.3%) | 4 (22.2%) | 3 (16.7%) | 18 (100%) |

## Change management and governance

Prior to the introduction of the MMoC, RGH and MBSMH each had their own administrative processes, leadership and service delivery model for maternity care. 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. It was becoming a struggle to fill midwifery positions with the subsequent suspension of birthing services at one of the Riverland hospitals (Waikerie).

A RMCLHN *Midwifery Models of Care Project Governance Structure* was established at the onset of the new MMoC with project team engagement groups from each of the four birthing hospitals. In the new MMoC, a consistent management structure was proposed to provide a common vision that is directed and coordinated. The RMCLHN has moved away from the traditional ward rostering of 24/7 and team midwifery model to a regional midwifery group practice working in a shared care arrangement with local GPs.

Initial rostering shortfalls and backfill issues which challenged RGH staff in the early months are being addressed. With the introduction of the MMoC at MBSMH, midwives will be available to work between the sites to assist with acute staffing shortfalls.

The major changes in roles and responsibilities for both midwives and nurses in shifting to the MMoC required training and upskilling for both professions. Midwifery and nursing training and upskilling needs surveys were done in March 2022 with results identifying a number of areas for education. Nurse training in particular indicated; *an exceptionally high requirement for further training and upskilling – not just in the provision of maternal and infant care.* Many nurses, especially enrolled nurses expressed concerns about being out of their scope in caring for postnatal women and newborns. Training and education in the form of in-service education for both professions have been offered since the March survey. This is a recognised ongoing need that is being addressed by the RMLHN Education Team.

## System and communication processes

Midwives have been provided their own laptops and VPN which assist with clinical management and administration. The tool OneNote was introduced to capture and transfer information. There is ongoing work to decrease inefficiencies and look how systems are working. As most GPs in the area are not SA Health employees, they are on different database systems (lab results, etc) from the midwives and the two systems are not interfaced. An effort is made to record women's procedures and tests on the hand-held record to facilitate information sharing between midwives and doctors. Regularly scheduled meetings are held with doctors and midwives to discuss clinical management and system issues.

Midwives have access to government cars and are encouraged to use these, otherwise they use their own vehicle and receive travel reimbursements.

## Staffing Full Time Equivalent

Midwives in the MMoC work in all risk caseload model of care with allocations so that they can work up to 38 hours per week depending on FTE. Workforce structure and FTE calculations in accordance with the Nursing/Midwifery SA Public Sector Enterprise Agreement are detailed in the RMCLHN Midwifery Caseload Model of Care Operational Plan, Nov 2021.[1]

At the beginning of 2022 with the introduction of the MMoC at RGH, there were five midwives working in the caseload model (totaling 4.1 FTE), one midwife on maternity leave who planned to return to work in the model in Feb 2022, one TPPP midwife who commenced in Feb 2022 and one newly recruited midwife who commenced in January 2022. Since March 2022, RGH MMoC have been working under the required FTE of 6.3 (total FTE with backfill of 8.16). However, for the first six months of 2022, the impact of COVID-19, midwifery sick leave and a boom in births, put the workforce under considerable pressure with midwives working above their individual FTEs.

In June 2022 with the introduction of the MMoC at MBSMH there were 12 MGP midwives at the hospital plus three permanent and two casual midwives who did not work in the MGP model but were rostered on shifts at the hospital. MBSMH is currently fully staffed with two midwives on maternity leave, with their positions backfilled. The total FTE is 8.1 (total FTE with backfill 9.34).

An EOI level 3 midwife position was created to manage the MMoC at the two sites with Vanessa Drummond continuing to manage the project. The level 3 MUM workload is significant, and consideration must be made for the need to be across all sites to support staffing, facilitate change management, and professional development. In addition, associate midwife unit managers

(A/MUM) are available at each site and in addition to other responsibilities, supervise and support graduate midwives in the TPPP.

The MMoC had one TPPP midwife in 2022 who had a reduced caseload. She completed the TPPP program and has stayed on to work in the MMoC. A third-year midwifery student took on the role of an assistant in midwifery at RGH and two in Murry Bridge in 2022. This has proven to be a success in terms of supporting the student experience and assisting the midwifery and nursing staff at the hospital. The students have stayed on after graduation to take TPPP positions in the MMoC. At both sites, almost all midwives work in part-time positions (range from 0.2 to 0.8 FTE).

Workforce shortages, COVID-19 and sick leave were reported to have negatively impacted provision of continuity of care and working to full scope of practice – particularly for the RGH midwifery team, however they remained positive and committed to the consumers they cared for.[24] It is envisioned that with the establishment of the MBSMH midwifery team, future acute MGP staff shortages can be better accommodated between sites through sharing staff resources.

## Country Home Link

Women who do not receive antenatal care and birth out of the region are not always known to the MMoC and can cause an unexpected increase to a midwives' caseload when they return to the region for postnatal care. The MMoC would be notified of their return through the Country Home Link process. There were n=15 women notified through CHL for RGH midwives in 2022 and n=15 for MBSMH midwives (over 5 months). In the beginning of the MMoC these women were not factored in and were an additional caseload allocation. Currently, most CHL women are allocated and see a MMoC midwife antenatally and are factored into that midwife's caseload.

# Discussion

> *"The risks to rural mothers and babies are enormous when there is no local birthing service, the costs to rural families are huge, and there are also significant indirect costs to rural communities – because when a local maternity unit is closed, doctors and midwives leave town too and other local health services are often lost".*
>
> Megan Belot, National Rural Maternity Services Forum 2023

The aim of this evaluation was to inform the RMCLHN of the effectiveness of the implementation, acceptability, and sustainability of the MMoC in the region. This was considered from the perspective of women receiving care and clinicians (nurses, doctors, and midwives) working within the new model, providing a rural/regional context to examine evidence-based woman-centred continuity of care received by residents of the RMCLHN. The caseload model (38 /FTE) followed and met the SA Standards for Maternal & Neonatal Services for level 3 services. The development of the MMoC included stakeholder consultation, in accordance with regional workforce engagement strategies, an all-risk caseload model provides a central governance for birthing sites and career pathways for entry level midwives.

Using the Proctor evaluation framework and a mixed-methods design, outcomes were quantified, and the model assessed from implementation. Qualitative methods were able to address some of the nuanced aims of the evaluation including; organisational and interpersonal dynamics affecting the MMoC, to examine practice change, discerning barriers and facilitators to uptake of the MMoC, to identify strategies used to foster organisational change and identify elements and provider perceptions that affected implementation and sustainability.[46] 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. The new MMoC affected not only how care was provided, but also had major implications for the way clinicians worked together, including: communication, new management structures and systems, new demands on hand-over and sharing of care responsibilities for women and newborns, as well as a need to protect time off. This was a pragmatic evaluation that simultaneously assessed the MMoC implementation and looked at the clinical and broader consumer and workforce outcomes. The objectives were to provide evidence as to the feasibility, effectiveness, acceptability, and sustainability of the pilot for birthing services in the region and lessons learned for future SA regional birthing services. Findings from this evaluation will be useful to inform SA at the broader health systems level.

This evaluation purposefully followed the same general approach and methodology used to evaluate the midwifery group practice model introduced in 2019 in the YNLHN.[19] This was done in order to make comparisons where appropriate and incorporate findings from both regions to assist in addressing state-wide lessons and learnings. The YNLHN benefitted from a lead time of over a year before the model was introduced to the region. This allowed for extensive consultation with the five birthing hospitals, staff employed within the hospitals, medical practitioners in the region providing

antenatal care, and consumer groups. The Riverland had to act much quicker due to acute staffing shortages.

The RMCLHN evaluation occurred over a period of 16 months from January 2022; a time when the region experienced an unprecedented boom in births, a shortfall in midwifery staff, a COVID-19 outbreak and major regional flooding. These challenges were noted as they provide context and demonstrate the viability of the MMoC in times of significant demand and how women engaged in the service and how clinical care providers adapted. The adaptability of clinicians to support women during these challenges was evident and are reflected in both women's comments and care provider actions.

In the RMCLHN there was an increased urgency to address workforce issues due to the closure of birthing services in Waikerie and insufficient midwives to staff RGH and MBSMH 24/7. In Australia the decline in rural maternity services has been steady with data indicating that from 1992–2011, 41% of rural birth centres have closed.[47] The most recent data suggest that rural maternity services continue to be closed or downgraded, with 150 maternity units being closed in the last 20 years.[6,48] Recently, in May 2023, participants from The Rural Doctors Association of Australia (RDAA) and Australian College of Midwives (ACM) came together in a rural maternity services think tank to discuss models of care that could help prevent rural maternity services being downgrade or closed. It was agreed that innovative models and increasing access to midwifery-led continuity of care models are needed to address this lack of service for women and babies.[49] Australian College of Midwives Chief Midwife, Alison Weatherstone, believes innovation is key: "The current system isn't working effectively for 2023 and is not responsive to women's needs. We need to rethink the system instead so that mothers, babies and families receive the care they deserve close to home and to ensure midwives and doctors want to live, practice and stay in rural areas."[50] The RMCLHN MMoC represents an innovative and embraced model in which midwives, in collaboration with obstetric GPs provide a caseload midwifery service that provides high-quality, women-centered care and preserves birthing services for the community.

In planning the new MMoC, experience was drawn from the YNLHN and other regions in Australia that had successfully introduced a MMoC.[19,51] The MMoC was aligned to the national maternity strategy*: Woman-centred care: strategic directions for Australian maternity services*, incorporating the values of safety, respect, choice and access.[52] Midwifery continuity of care across the continuum is considered the 'gold standard' for maternity care and is advocated globally, as a solution to increase access to quality care for all women.[53] High level evidence from trials and multiple studies for over 15 years have demonstrated the benefits and significance of midwifery-led continuity of care in terms of maternal satisfaction, efficacy and decreased cost to health services.[12-15] However, in 2016, it was estimated that only 8% of women across Australia had access to continuity of midwifery models.[54] More recently, Australia-wide data reports MGP /caseload models of care have expanded to 14.8% across Australia, although access remains very limited in both metro and rural settings.[55,56]

Recently, one of six causal factors for midwifery workforce shortages identified by the Council of Deans of Nursing and Midwifery (Australia and New Zealand, 2023) was insufficient opportunities to practice midwifery continuity of care.[57] The following recommendation was made: 'All maternity service providers should adopt midwifery continuity of care as the foundation for all collaborative

interprofessional maternity services'.[58] This aligns with the Australian midwifery workforce report which advocated a need to increase availability of MMoC to ensure midwives can fully utilise their education.[59] Barriers to implementation of midwifery-led continuity of care include a lack of local health system financing, shortage of personnel including administrative and other support staff as well as a lack of managerial support, and interprofessional collaboration.[34,55] The MMoC provides an example of cross disciplinary commitment to address the maternity needs of the birthing sites within the RMCLHN. This was underpinned by support at the executive local health network level, consideration of systems and governance, and financial solvency.

Before the RMCLHN MMoC was implemented, findings from the organisational readiness for implementing change (ORIC) scale indicated that collectively, midwives, nurses and doctors began the new MMoC with a sense of readiness for change, however the overall score was lower (indicating less ready) than the ORIC score for the YNHLN MMoC evaluation.[30] The score for RMCLHN hospital nurses was significantly lower. In each of the focus groups participants suggested that a longer lead in time was needed, with involvement of all care providers. In particular, nursing staff felt they were not adequately engaged from the beginning, resulting in low morale and a need for clarification of roles, scope of practice and education to appropriately support staff through the transition. Although advanced planning discussions to shift to a midwifery-led continuity of care model had been underway for approximately 12 months prior to the planned implementation, communication of these plans at many levels appeared inadequate. Additionally, the effect of an unexpected increase in births and staff, including midwives, sick with COVID-19 resulted in many education sessions being cancelled. This resulted in interruptions to planning, and disrupted the transition to the new MMoC, as reflected in the staffing challenges expressed early in the first focus groups from RGH. Early challenges reinforce the need for adequate and multidisciplinary preparation. Engaging staff at all levels of service provision early to provide clear rationale and processes was felt to assist staff on how the change would impact their practice. The more invested those impacted by the change process are, the more likely they consider ways to overcome the barriers.[30]

Despite the challenges, findings from this evaluation, which drew on multiple perspectives and various data collection strategies suggests the RMCLHN MMOC is effective, acceptable, and sustainable.

## Effectiveness

Findings from this evaluation have demonstrated the MMoC provided comparable or improved clinical outcomes for women and babies. Of note, more women birthed vaginally, 69.8% compared to 62.7% (SA state data) with a decrease in caesareans'; 30.2% compared to 37.3% (SA state data). There was a lower rate of 3$^{rd}$or4$^{th}$ degree perineal tears (0.5% compared to 2.9% SA state data). The model also appeared to be cost-effective for the RMCLHN, with lower intervention rates and a shorter length of stay.[24] Obstetric emergencies have all been managed safely with the best possible outcomes.[24] A recent scoping review to compare models of maternity care found that women in public midwifery continuity models were more likely to have unassisted vaginal births, less interventions and reduced neonatal admission in intensive care units (ICU), compared with those in standard public models.[60]

In the RMCLHN, all women are eligible to receive care in the MMoC even if receiving maternity care outside the region; they may engage services with a MMoC midwife for antenatal and/or postnatal care. Referral into the MMoC differed with how the Yorke and Northern MMoC started, whereby women initially needed to be referred by their GP to the service.[19] This meant most women in the RMCLHN received care through the MMoC. Most women (82%) accessed the new MMoC during pregnancy, however only 20% stated that the MMoC midwife was their named main care provider, with 59% stating care was shared between the midwife and GP. The MMoC midwives provided the majority of labour and birth care (79%), though most women also saw a doctor during this period. Most women were provided care by one or two midwives compared to three or more for women who birth outside of the RMCLHN. Interestingly, only half of the women reported knowing their midwife very well during labour/birth with this being higher for women who had a midwife as their main care provider. This differed from the findings in the Yorke and Northern MMoC evaluation in 2020, where most women (75.5%) reported knowing their MMoC midwife well during labour and birth.[19] This most likely reflects the midwifery shortages at the time at RGH and the larger core group of midwives providing coverage at MBSMH. Measuring the extent to which continuity of care is achieved has been flagged as an important area in midwifery continuity of care. [14] Enabling continuity of care needs to be considered in the backup of primary midwives working in a larger team. Nevertheless, nearly all women reported feeling supported and confident in the midwife providing care at this time.

Postnatal care was positively reviewed where nearly all women reported receiving a visit from their MMoC midwife, average number of visits being five per woman. One third of women also reported additional virtual/telephone visits with their midwife. Importantly, most women were visited by a midwife they had met before and rated this experience as very/good to excellent. Most women also agreed that they received the advice they sought, were treated respectfully, and felt confident as a mother. This is significant as postnatal care continues to be one of the most unsatisfactory elements of maternity care.[61] Research demonstrates most women only receive one to two visits from a midwife once discharged home and often feel unprepared for the daily realities of being a parent.[61,62] In 2022, the World Health Organisation (WHO) published revised guidelines on postnatal care recognising that a positive post birth experience is foundational for long term health and wellbeing.[63] The WHO recommend that each woman and her family have access to education, support from a consistent healthcare provider who recognises the individual needs of the woman.[63] In a recent review of postnatal care that was provided by GPs it was recommended that postnatal follow up should be provided over a number of visits and a longer timeframe.[64] The MMoC provides an approach to ensure women are provided consistent care over a longer duration.

Overall, women provided feedback on the midwives involved in their care, either as the main care provider or in collaboration with the GP. The findings suggest that the model was effective in providing high quality maternity care, however, there continued to be challenges implementing the model where midwives are able to assume a lead care provider role. Research indicates that midwifery models of care are not always well understood with care providers holding different beliefs around the model of care.[51,65,66] This was evident in the YNHLN implementation and suggests that further development is needed to ensure that the MMoC can function as intended. The role of the midwife as a lead care provider may need to evolve and clarity around each health professionals' roles, scope of practice and organisational structure could be developed further. While it is

important to keep the collaborative approach with GPs for the models to expand, having the MMoC midwives lead care and work with GPs is a way forward and to keep cost effective.

The RMCLHN MMoC is an "all-risk" model and much of the midwifery continuity of care models focus on low or mixed-risk samples, which limits the generalisability of findings for those with complications and/or obstetric risks within their pregnancy.[67] For women who have complex pregnancies more robust quantitative evidence is required to endorse and develop midwifery continuity of care for these women in the health system.[67] Although MMoC largely work autonomously it is important that they communicate, collaborate and interact within the wider health care team.[68] There is a need for greater understanding about the central role midwives play in the provision of maternity care and Homer (2016) advocated that increasing collaboration with medical colleagues was important.[11] This study provides an example of strong collaboration between the GPs and midwives, however for midwives to adopt a lead role in care provision there may need to be further organisational adjustment. A Canadian study which explored the barriers and facilitators of interprofessional collaboration with midwives, identified that service arrangements were a genuine factor to negotiate.[69]

From the perspective of care providers there was agreement that the MMoC was effective, with midwives (95%) reporting that the model enabled them to provide care that aligned with core components within the Quality Maternal and Newborn Care Framework.[27] Moreover, the midwives agreed that care provided through this model aimed to promote normality and strengthen women's capabilities. All care providers agreed that this model was necessary to ensure the continuation of maternity services in the region and to provide service that were valuable to the local community. However, findings from focus groups indicated that this was more evident for midwives and GPs, and that nursing staff identified practice challenges which impacted on their roles. In regional Australia many small hospitals have employed dually qualified nurse-midwives who work across nursing and midwifery and removing midwives from the hospital roster has consequences for the nursing workforce that need to be addressed through education and consultation.

## Acceptability

### *Women*

Results of the RMCLHN women's survey indicated women were overwhelmingly positive about their experience; they felt respected, listened to, treated individually, and had confidence in the midwives and doctors. Having one midwife they knew well in the MMoC and feeling in control during labour and birth was important/very important to women, as was making their own decisions. The women described their experience as 'amazing', 'priceless' and personalised, describing midwives as 'going above and beyond'. They commented on the accessibility and quality of care, getting to know the midwives and having their partners included. Critically, 97% of women who engaged in the MMoC would seek this care again in a subsequent pregnancy, with 98% recommending it to a friend. Similarly positive responses for these questions were reported in the YNHLN MMoC evaluation.[19]

Providing continuity of care fosters trust and strong relationships between the midwife and the woman, leading to improved communication and understanding of the woman's preferences and needs. Additionally, having access to safe, appropriate maternity care that is locally available was important to most women.[37] However, for some women who live in Murray Bridge, the physical

environment likely played a part in not birthing at MBSMH, as birthing rooms are dated, with a shared bathroom between birthing rooms. An alternative birthing hospital and/or metropolitan Adelaide is only an hour away and includes facilities with an ensuite and birth pools for labour. Overall, 27% of women did not give birth at MBSMH, but returned to have their postnatal care in the MMoC. While this was not explored in the evaluation, anecdotal evidence suggests these women opted for hospitals that had newer facilities. This arrangement of providing postnatal care for women who elect to birth out of the RMCLHN model is currently being explored at MBSMB.

The survey indicated that most women agreed that clinicians worked well together (88%) and that the care given was well connected (84%), although they were less likely to agree that care providers passed on information to each other very well or that they always knew what the other care providers had done. This was supported in open ended responses where some women commented that communication between doctors and midwives could be improved. In this evaluation, the passing on of information between clinicians was rated lower as compared with the YNLHN evaluation.[19] This could be a reflection of the staffing challenges encountered early on in the model and system challenges with each group using incompatible reporting systems. While postnatal care from midwives was rated highly there were a few comments on the variability of care received from nurses while in hospital if the midwife was not present due to nurses being perceived as not having the necessary knowledge or skills or lacking confidence to support early mothering.

An important and unique feature of the MMoC at MBSMH is the collaborative work with the Tumake Tinyeri Birthing Program which aims to provide Aboriginal and Torres Strait Islander women and families with care that is respectful and culturally appropriate. While this program was not part of the evaluation, from the MMoC coordinator's report, it is noted that several of the MMoC midwives have been able to work with the primary midwife in the service and the Aboriginal Maternal Infant Care (AMIC) worker.[24] While there is not an Aboriginal birthing program at RGH, the number of Aboriginal births at RGH has significantly increased since the introduction of the MMoC, and in the year 2022 exceeded Aboriginal births at MBSMH.[24] As of this writing, the feasibility of having an AMIC worker at RGH to work as part of the MMoC at RGH is under consideration.[24] Given the acute shortage of Aboriginal midwives, it will be essential going forward that rural midwives working in similar MMoC are able to offer culturally appropriate support to Aboriginal women through these birthing programs.[70]

### *Doctors (GP obstetricians)*

It is critical to engage rural GP obstetricians in service development, monitoring and management of maternity services to achieve high-quality maternity services.[71] It has been noted that there is an emotional connectedness of sharing the same rural lifestyle and the health workforce needs to remain associated with each other in some way or other.[2] Maintaining continuity in the rural regions is not the sole remit of midwives.[72] Many GPs have been practicing in the area for a long time and may be providing multi-generational care to families. Many midwives who had worked in the RMCLHN had positive, established relationships with GPs before transitioning to the MMoC, and the GPs reported they had been engaged early in the conversations about the MMoC. This history of early collaborative relationships undoubtedly assisted with a positive transition to the model. GP obstetricians are essential to maintaining regional and rural birthing services and work closely with

midwives and hospital staff for planned care of high-risk women and interventions such as caesarean when needed.

In Berri, GPs operate in a private practice environment, whereby women are charged an out-of-pocket amount for their antenatal visit ($25-$35). For these practitioners, where there is a small volume of births in the area, the introduction of a caseload MMoC where women receive free care potentially impacts the sustainability of existing GPs and can diminish their professional satisfaction.[66] This emerged in focus group discussions with GPs who voiced concern that fewer women are coming for their antenatal care appointments potentially due to an increase in fees, and this is has financial implications for the medical practice. While a shared care antenatal schedule has been drawn up for women to see doctors at allocated time periods during their pregnancy, some women were electing not to attend these visits due to financial burden. Discussion of bulk billing has recently occurred at MBSMH, and doctors noted they will consider each woman on an individual basis.

Antenatal care arrangements operating within regions can be quite variable and are influenced by personal relationships, complexity of care, organisational and financial factors. In metropolitan public hospitals women can be seen by doctors free through publicly funded antenatal clinics, whereas in regional settings many women see GPs on a fee for service arrangement.[73] Within the RMCLHN, GP obstetricians operate within both private practices and salaried SA Health positions. Salaried medical officer models may be a way to better support GPs and provides a well-accepted model by health service staff in regional and rural areas.[74]

Doctors have been overall supportive of the MMoC and while there were initial issues with frequent calls and messages to the on-call doctor from the midwives, this has reduced as the midwives have gained confidence and experience, as well as incorporated improved communication protocols. While the potential for over servicing has been raised by all stakeholders, there is acknowledgement of the important role of the midwife to provide education and care, and GP involvement for coordination of servicing high-risk women.

### *Midwives*

From the perspective of the midwives, it was evident that this model of care provided an acceptable practice environment. Most midwives felt prepared for their role and perceived a high level of empowerment as measured by the perceptions of empowerment in midwifery scale (PEMS). Midwives commented on the positive difference of working on the ward and model, being able to work autonomously and establish effective relationships with women across the childbirth continuum. 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.[2,75,76] However, MMoC midwives also reported that at times they worked with minimal back-up and this required consolidated knowledge and skills and a need to be resourceful. In similar evaluations of rural midwifery practice, appropriate and available continuing professional development was recognized as important to ensure midwives were supported to work to their full scope.[77]

Responses from the MMoC midwives in regard to the three QMNC questions on core care components were rated somewhat lower than those in the YNLHN evaluation.[19] While most

midwives (95%) felt that the MMoC covered all of the necessary care for women, e.g. health promotion, screening, care planning and managing complications, they were less likely to agree on issues specific to resourcing, screening tests and interventions. This is likely due to strain with the model not being fully staffed and midwives questioning some of the medical interventions, which could have been related to environmental circumstances at the time (i.e., more inductions of labour).

Results of the practice environment scale (PES) suggested that midwives experienced good collaboration with their medical colleagues, which was evident in the focus group discussions. Overall, on-call arrangements appeared to be working well within the MMoC between midwives and GPs. 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.

The need for effective leadership and collaboration is reported repeatedly in studies on implementing midwifery models of care.[23,55,72,75,78-81] From the evaluation of the two regional SA local health networks where this model of care has been implemented the local context, the experience of the midwives and the leadership styles were all important considerations. Both models faced challenges though the YNLHN had more lead in time, didn't start off with COVID-19 restrictions, had more experienced midwives, and half of the midwives had worked in a caseload model before. Supporting MMoC managers is crucial to ensure the effective functioning of midwifery group practices. Managers play a vital role in coordinating and overseeing the care provided by midwives, supporting novice midwives, and ensuring that the practice runs smoothly. Peer networking whereby MMoC managers can connect with peers and share learnings and best practices may be a useful strategy as MMoC increases across regional Australia.[55]

In the RMCLHN 54% of the midwives had worked as a midwife for less than five years and only 10% had worked in a caseload model. System management was generally rated higher in the YNLHN and the combination of inexperience, acute staff shortages and natural disasters in the RMCLHN likely contributed to a higher proportion of midwives in the RMCLHN reporting lower satisfaction with time off work and work-life balance than that in the Yorke and Northern LHN. The first five years of clinical practice can be highly stressful for new midwives and contribute to early attrition from the profession. [82] It is therefore imperative that these early career midwives are supported to work in continuity of care models, with essential elements including; building relationships of trust through a high level of continuity of care, providing support and mentoring from within the group of midwives, provide and access collaborative and reflective team meetings, and having an approachable/available manager, educator or clinical support midwife.[83]

Transitioning to the RMCLHN model resulted in many of the senior dually qualified midwife/nurse staff exiting their hospital leadership roles, resulting in temporary nursing shortages at the hospitals. Dually qualified midwives had to decide between working as a midwife in the MMoC or to relinquish most of their midwifery work and continue working in the hospital, largely as a nurse. While most midwives in the RMCHLN were supportive of working in a caseload model of care, a few chose not to. Pushbacks from midwives not to join midwifery continuity of care programs have been explained by misinformation spread between midwives in relation to work-life balance issues and on-call

commitments when they transition from traditional rostered shift work, and not fully understanding how the model works.[84] However, most midwives have now joined the MMoC and are enjoying the role. The midwives who did not join the MMoC expressed disappointment and concern that they would not be able to continue to work primarily as a midwife. This was a similar experience at the YNHLN where there was concern about maintaining practice. Opportunities must be provided to these midwives so that they can maintain their skills and be supported in their preferred career choice. It has been noted that in cases where a caseload model is introduced and not fully understood, this can lead to a feeling of 'us' and 'them' by ward midwives and nurses which can be disheartening and affect care.[85]

### *Nurses*

The transition to the MMoC had significant implications for the nursing staff who lost many of their senior dually qualified RM/RN staff to the model. This left the ward short-staffed and opportunities for education and team building were limited due to challenges previously mentioned. Success of the MMoC depends on the contributions of all three clinical groups. In the early postnatal period, women and babies primarily receive care from a nurse while in hospital, although the woman's midwife develops the care plan and is available on-call. Many nurses reported they were reluctant to call a midwife, especially late at night and most felt ill-prepared to care for a new mother and baby through lack of confidence, education and/or experience. This is consistent with feedback from nurses who felt unprepared for their role in providing postnatal care from the previous evaluation in the YNLHN, where nurses reported a lack of knowledge and skills on breastfeeding and caring for women after the birth of their baby.[19]

With the introduction of the MMoC, nurses initially raised concerns around scope of practice and the need for more education and earlier preparation. The recently introduced National Rural and Nursing Generalist Framework 2023-2027, includes nurses as part of the multidisciplinary teams to support maternity care, however it lacks detail as to how this is best achieved.[86] The rural nursing work environment is complex and diverse, necessitating the need for educational opportunities that are designed specifically for rural and remote nurses.[87] In a Canadian study of rural nurses learning maternity care, nurses experienced difficulties learning how to provide safe and supportive care.[88] New nurses in particular reported initially being "scared to death" and that their education programs had little content on maternity care and was often integrated with other specialty areas including pediatrics.[88] Similar findings were reported in RMCLHN focus groups where there were new nursing graduates. The early career nurses reported a lack of education in maternity care taught at the undergraduate level. In the doctor focus groups, concern was voiced over the preparation of nurses to provide early postnatal care, especially at night where there is not a midwife at the hospital. However, examples of good postnatal nursing care were also mentioned.

The best way for nurses to support midwives in providing early postnatal hospital care for women and babies needs to be addressed for safety and best quality care. Nurses reported benefit from working one to one with the midwife while s/he was doing her postnatal observations. However, in practice, with heavy work demands for both midwives and nurses, this was not always possible. Successful interprofessional collaboration hinges on strong, mutually respectful relationships between care providers and a clear understanding of team members' roles and responsibilities. [69]

### *Interprofessional Collaboration*

Rural communities are comprised of people in an interweaving tapestry of connectivity and relationships matter.[2] The importance of collegiality and working together in a manner in which trust and mutual respect are built is vital in rural regions.[2] Different clinical providers often face ideological, organisational, structural and relational challenges and working together does not mean that interprofessional collaboration exists.[3] It has been noted that most midwifery literature focuses on how midwives and women view continuity of care, but gives little attention to the views of other members of the multi-disciplinary team who also have to interact with it.[89] In the separate nursing and midwifery focus groups, tensions between nurses and midwives was evident with an 'us' and 'them' attitude displayed at times from both groups. There has been some progress from the first to second focus groups in this regard, however, more work is needed to improve interprofessional relationships. Acknowledging that this has been a stressful period of transitioning for both groups, collaboration, and teamwork between the two groups is essential for safe, effective in-hospital postnatal care, particularly in rural settings where healthcare resources may be limited. A Canadian study examining interprofessional collaboration in different models of maternity care in rural environments noted that differences in scopes of practice, confusion about roles and responsibilities, and a lack of formal structures for supporting shared care practice all contributed to tensions.[69]

Focus groups of the three clinical groups highlighted communication and collaboration as areas for ongoing focus. This was similar to the findings in the YNLHN evaluation where participants recognized the need for ongoing commitment to developing collegial relationships and functional interprofessional teams.[19] Crowther et al. reported a similar find in exploring maternity services in New Zealand and concluded that recognizing difference while forging collaborative teams was essential. [2] As identified within this research and other studies, activities such as case reviews, team meetings and interprofessional education were important in improving relationships.[2,69,77] It has been noted that interprofessional education and collaborative practice in rural settings continues to be at is infancy across many settings and needs to be facilitated at multiple levels using a top-down and bottom-up approach.[90] Beyond the evident need to keep working on collaboration and communication, all stakeholders were strongly supportive of the MMoC and agreed that it is the way forward for maternity care in the region. Care providers demonstrated a commitment to address education needs and build capabilities and recognised a need for ongoing educational strategies. Successful examples of midwifery integration with hospital staff should include participation in formal teambuilding activities as well as informal activities. It is acknowledged that these activities require time so that trust can be built.[69]

## Sustainability

The RMCLHN MMoC offers a sustainable model for ongoing maternity care in this region of South Australia. The model is highly valued by women, clinicians, and the community with good clinical outcomes. Recommendations from the YNLHN MMoC have demonstrated the ability to sustain and grow the model with ongoing positive community engagement. However, sustainability is influenced by several factors and will require on-going diligence and long-term effectiveness need to be monitored. In a large survey (>1000) of Australia midwives, 42.8% had considered leaving the profession within the preceding six months, with the two most common reasons being, 'dissatisfaction with the organisation of midwifery care' and dissatisfaction with my role as a

midwife'.[91] Having limited opportunities to provide midwifery continuity of care heightened midwives dissatisfaction. Australia is facing acute health care shortages of midwives, nurses and doctors and regional/rural areas are being especially affected. In the recent Council of Dean's report- Future of Midwifery Workforce 2023, a key recommendation is that: *All maternity services should adopt midwifery continuity of care as the foundation for all collaborative interprofessional maternity services regardless of service location or maternal/infant risk factors*.

Many studies have identified that working in rural areas of Australia is challenging with distance, isolation and lack of resources.[4,5,92,93] While there was high satisfaction and agreement the model worked well there were some challenges raised over staffing levels and the complexities of providing care within a rural context. This included managing the unpredictable nature of maternity care, the need for adequate backup up, as well as creating agile organisational systems. For example, being able to share communication between all care providers such as scheduling antenatal appointments, hospital admission and caesarean sections. There were suggestions that the current caseload allocation for midwives may need to be reduced. This issue was also raised in the YNHLN evaluation in which midwives felt that a case load of 38 women was too high for rural midwives who cover wide geographical distances and often cared for women with increased psychosocial needs and where there are fewer allied health services available. However, there is a commitment to address these challenges through adaptation and problem solving.

From a recent national survey of over 600 MGP midwives and managers across Australia, MGP was found to be an all-consuming lifestyle for some, especially those who worked full-time.[55] Working part-time in a caseload model has been associated with increased work satisfaction and lower levels of stress for the midwife without diminishing the women's level of satisfaction with of care and birth.[94] Although many midwives work in a part-time position, organisational factors have been identified as a challenge in how managers address workload, caseload size, FTE structures and leave.[95] The review by Aleshin found that FTE structures and caseload size are significant, interrelated themes associated with part-time working arrangements.[95] Rural midwives have mentioned that 38 women per FTE is too high, given the factors that impact rural work with limited resources; including distances to travel, clerical/administrative obligations, increased education requirements and greater scope (social work roles).[95] In the recent large national survey of midwives and managers, of those who had reduced from full-time to part-time or left MGP, the reasons were; because of how it was managed, of personal reasons, or the MGP work conditions.[55] Notwithstanding these challenges, the option for midwives to work part-time in the MMoC model should be part of the on-going strategy for workforce satisfaction and retention.

Previous experience living or working in a regional/rural setting is but one factor to attract the health workforce to these areas. Health professionals decision to stay or leave a regional/rural position are broadly categorized into three domains; organisational or workplace; role (including profession and career development opportunities); and personal (including individual characteristics, family support, social aspects and lifestyle interests).[96] In the RMCLHN MMoC, the majority of midwives had worked in a rural setting but 90% had not worked in a MGP/caseload model of care prior to this employment.

Overall, RMCLHN midwives working in the MMoC found the role both satisfying and sustainable. In the midwifery workforce survey, most midwives (79%) were moderately to highly satisfied with their

time off work and similar results were rated for work-life balance (73.7%). This is higher than those reported in an Australian sample of approximately 200 midwives working in a continuity model of care, where 59% reported moderate to high satisfaction with work-life balance.[35] While more midwives in this evaluation were likely to report these two measures as low satisfaction (compared with the YNLHN evaluation) this may reflect the relatively less experienced midwives working in the RMCLHN model and the staffing challenges at the time. In a recent international review of the literature, factors that contributed to job satisfaction and sustainability of midwives working in caseload were the ability to build relationships with women; flexibility and control over own working arrangements; professional autonomy and identity; and organisational and practice arrangements.[97]

Encouragingly, almost three-quarters (74%) of RMCLHN midwives had no plans to leave their current position within the next 5 years (as compared with only 36% in the YNLHN). This positive finding suggests that while many of these midwives were less experienced, they found the model offered sustainable employment, and a work environment where they had a high perceived level of empowerment, management, and woman-centred practice (as measured by the perceptions of empowerment in midwifery scale).

In a recent literature review of midwives working in a caseload model of care, the main factors which contributed to job satisfaction and sustainability were identified as: the ability to build relationships with women; flexibility and control over own working arrangements; professional autonomy and identity; and organisational and practice arrangements.[97] Midwives in this study reported similar findings influencing their satisfaction working in the MMoC. The midwives are settling into the challenge of being on call and balancing their expectations of availability. Other midwives in caseload models have also expressed a need to always be available for the women they provide care for and these expectations could be too demanding at times.[93] Learning how to set professional boundaries with women is important as it reduces the uncertainty and unpredictability of on-call and is a key adaptation made by midwives transitioning into a caseload model.[97] Failure to set boundaries contributes to poor life-work balance, stress, and burnout.[97] Relationships, flexibility and autonomy were strongly associated with increasing job satisfaction, and these aspects were all connected to being on call.[93]

Doctors and nurses agreed that the introduction of the MMoC benefitted women and will make birthing services more sustainable in the region. In a study in regional/rural Canada, enhancing the confidence and competence of all maternity care providers was particularly salient for communities where local services had an uncertain future or where women ‘voted with their feet’ and accessed midwifery care in distant locations.[69] Collaborating and educating nurses in hospital postnatal and newborn care enhances the comprehensive care given to women.

A further consideration for sustainability is the need to recruit new midwives. In a recent Victorian study where midwifery managers were asked how difficult it was to recruit midwives over a period of 12 months, one third found it ‘very difficult’ and an additional 41% found it “difficult”, with regional/rural services experiencing the most difficulty.[98] The main issues related to midwifery recruitment were a lack of experienced midwives and the effects of service location and size.[98] Multiple approaches to recruitment will be needed, and these will require that the midwife is incorporated as a professional as a community and family member, as well as providing opportunities for ongoing professional development.[99]

A successful strategy that has been adopted by the RMCLHN and should be an ongoing focus is targeting graduates and AiMs (assistants in midwifery) students to work in the region. The importance of rural placements for midwifery, nursing and medical students is recognised as an important strategy in attracting and retaining a rural workforce.[100] There is a growing body of evidence suggesting that students who have rural backgrounds and study at rural universities, or those who have extended exposure during their studies to rural settings, are more likely to choose to work in rural localities on graduation.[101] [102] [103] In the women's survey, over 40% of women surveyed had a midwifery student as part of their care and this care was reported as a better than expected experience by 90% of women, similar to other high rates of satisfaction reported in the literature.[104]

Many midwifery students and new graduates want to work in a continuity of care model and employing MWTPPP in the RMCLHN is an important strategy to attract and keep these early career midwives.[105] In a recent review of ten papers on early career midwives' job satisfaction and intention to leave midwifery, common positive themes for staying in the profession included a passion for midwifery, autonomy and being supported in collegial relationships.[106] Midwives who have positive experiences gained while working in continuity of care models early in their career appear to strengthen their commitment to remain in midwifery and often led to plans to continue working in continuity of care in the long term.[105] Graduate midwives working in continuity of care models report feeling better supported, more confident and more competent during their transition from student to registered midwife than those working in fragmented models of care.[107]

Having a dedicated midwife at each site who has a reduced caseload while mentoring and supporting MWTPPP and new/early career midwives is essential to enabling new graduates to work in a continuity of care model.[108] However, supportive strategies to provide a good student/graduate experience are often challenged by organisational constraints, such as inadequate staffing coupled with a lack of protected time.[109] Student and MWTPPP requires collaboration between health services and education providers to allocate students appropriately and need consideration of the impact on staff workload within the region.[100] Benefits reported for both midwifery and nursing staff who have supported student placements include; a fresh perspective, new knowledge, promoting self-reflection practices, and job satisfaction from supporting student placements by strengthening the workforce.[100] Rural clinical placement experiences impact rural career intention.[100]

Other strategies that have been successfully used to attract midwives (and nurses) to regional/rural areas have been exchange programs[99] and MWTPP regional/rural placements.[110] In a recent population-based report on the state of the Victorian midwifery workforce (FUSCHIA - Future proofing the midwifery workforce in Victoria) examining midwifery expertise and retention, a number of strategies were suggested as to improve workforce sustainability. Strategies broadly included; workforce planning and flexibility, including self-rostering, workplace culture, early career midwives and skill mix, and the midwifery profession.[111]

## Strengths and Weaknesses

This evaluation provides a comprehensive review of the effectiveness of the implementation, acceptability, and sustainability of the MMoC 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 the potential for subjectivity of self-reported responses, using quantitative and qualitative methods to triangulate data for convergence of information increased validity and rigor to further substantiate results and conclusions. Restrictions and lockdowns due to the pandemic meant that the first focus groups originally planned to be held on site by the UniSA team had to 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.

For women who may have birthed in a previous model and staff who may have worked in previous work arrangements there were no direct comparators. However, one of the strongest recommendations from women is 98% reported they would birth in the model again and recommend this model to their friends. By using many of the same validated tools and instruments as the Yorke and Northern LHN evaluation comparisons could be made between the two MMoC. Findings were remarkably similar in terms of women's experiences and outcomes. The main differences appeared to be in leadership roles, DON changes, workforce shortages, and the experience of the midwifery workforce. The combination of these two evaluations adds evidence to support what is likely to become the model to improve workforce sustainability across regional SA birthing services.

# Conclusion and Recommendations

## Recommendations & Lessons learned for the RMCLHN and SA

The RMCLHN shifted to a midwifery-led continuity of care model to address local midwifery workforce shortages and preserve birthing services for women. In planning the model, experience was drawn from the YNLHN and other regions in Australia that had successfully introduced the model. The MMoC was aligned to the national maternity strategy*: Woman-centred care: strategic directions for Australian maternity services*, incorporating the values of safety, respect, choice and access.[16]

Recommendations and lessons learned from this evaluation are summarised below for both quality improvement for the RMCLHN specifically around their experience and more broadly, regional/rural SA MMoC based on the experiences from the YNLHN and the RMCLHN.

The MMoC offers greater sustainability for the region, is highly desired by consumers and provides women with good outcomes. An interim report was provided to the MMoC Advisory Committee six months into the evaluation which assisted in the decision-making process to proceed with the MMoC at Murray Bridge. Learnings taking on board over the course of this evaluation have assisted in the planning of the remaining birthing sites in the RMCLHN to be re-opened with the MMoC model. Most of these learnings have been examined in the discussion part of this report and are supported by national and international evidence as well as the findings reported herein. We acknowledge that each region/local health network will be different and influenced by the blend of skills locally available and the geographic, social, and political environment.

We also acknowledge the limitations of these evaluations in that our focus was largely limited to the experiences of the women, the three service provider groups and state/nationally reported outcome clinical indicators. The hard work behind the scenes in terms of planning, rostering, workforce skills preparation, liaisons and economic outcomes were not assessed, but are reported from sourced materials from the program director where available. Recommendations also need to be considered in the context of major national and state reports which have been released over the course of this evaluation and have implications for progressing midwifery-led care (Appendix 5). One such report is the first SA Health State-wide Midwifery Framework (2023) which promotes strategies, enablers and pillars under the headings of: workforce, professionalism, care and innovation.[112]

The most evident recommendation from this evaluation is that the MMoC should continue in the RMCLHN as the standard maternity care. For the broader SA perspective, we appreciate that each region/local health network will be different and influenced by the blend of skills locally available and the geographic, social, and political environment. With this understanding, the following recommendations are made for RMCLHN and the broader SA regional LHNs.

- The MMoC should be replicated as the standard care in the remaining birthing sites in the RMCLHN; Loxton (commenced May 2023) and Waikerie with consideration of the local environment at each site.
- In considering implementation of the MMoC over the four sites in RMCLHN, resource and workforce sharing plans will need to be assessed and developed. There is a need for continued shared vision for the model and for reduced caseload to be considered in

workload arrangements, including those for the midwifery unit managers at each of the main birthing hospitals.

- Partnership with Aboriginal family birthing services and development of professional pathways for Aboriginal midwives and AMIC workers should be prioritised for regional SA.
- It is imperative that there is sufficient advanced planning and lead in time to the introduction of a MMoC.
- Future consideration of the regional/rural medical workforce in maternity care should take into consideration Australian Medical Association Rural and Remote Policy and Workforce Initiatives (2023) including: retention strategies providing extra funding and resources to rural and regional hospitals to support the provision of adequate facilities, improved staffing levels and flexible work arrangements and supporting the practice of existing private practices in these areas. https://www.ama.com.au/rural-communities.
- The issue of private and salaried doctors and how this can be resolved long term will need to be considered for regional and rural services.

### *Leadership and collaboration*

- Midwifery-led models of care need strong visionary leadership and well-developed overarching management, commitment, and hard work; this will influence how well the team functions.
- The current MMoC management structure of one Advanced RN/RM level 4 and two RN/M level 2 positions with each carrying a nearly full caseload at RGH and MBSMH puts significant strain on the MMoC. At a minimum, onsite midwifery unit managers (level 3) with significantly reduced caseloads should be considered for each of the two largest birthing hospitals. This takes into consideration the important leadership and oversight role of the midwifery unit managers (most RMCLHN MMoC midwives are level 1 with over half having <5 years' experience) and critical responsibilities of workload management, emergency preparedness, executive support services to DON/M and professional development.
- On-going support for weekly team midwifery meetings are vital for the team and for quality and safety reasons.
- A commitment of nursing and midwifery leadership in making progress towards interdisciplinary collaborative care. This will require intentionally nurturing respectful, open communication and trusting professional relationships.
- Foster better collaborative learning opportunities with GPs, midwives, and nurses. Inter-professional learning opportunities are recommended as a means to build feelings of credibility and confidence in each other's role.[2]
- Flexibility and openness to adapt to different ways of doing things and promote interprofessional behaviours. Having the openness and flexibility to adjust to each other's personalities and capabilities.[3]
- Team size should be considered - smaller team sizes promote shared responsibility and leadership among team members and sometimes a "champion" in teams may improve collaboration.[3]

### *Education and Continuing Professional Development*

- Skills and need assessments (as measured early on in RMCLHN) are important in tailoring education and ongoing professional development for midwives.
- Educational needs of midwives (working in a caseload) include time management, being on-call, managing a caseload and CPD to individual needs and experience.
- Educational needs of nurses and inclusion in planning, changes to roles and responsibilities, especially for nurses unfamiliar with maternal and newborn care. In this model of care, nurses should have skills to provide care for neonates and, provide supported care for antenatal and postnatal women.
- Quarantined funding for midwifery and nursing education and team building.
- Encourage midwifery one-on-one teaching to nurses when performing postnatal care.
- Collaborative learnings such as PROMPT and interprofessional case reviews and debriefs should be included for all service providers.
- Financial support- Because teams in rural areas are smaller and workloads are high, financial support is particularly important to protect paid time to coordinate an initiative.[3]

### *The Midwife role, staffing factors*

- Incorporation of midwifery students with local employment as AiMs. This provides support and reduces workload for midwives. This also introduces students to a midwifery continuity of care model and the regional environment.
- Review caseload/allocations with regards to the caseload complexity and acuity, to ensure the wellbeing of midwives and sustainability of the MMoC. It has been suggested in several studies that a caseload of 38FTE is too high for regional/rural midwives.
- Continuity of care requires careful consideration to how many midwives each woman is likely to see for her care if backup is provided by a larger team. This also needs to be considered from the perspective of a more cohesive team environment with a smaller team.
- Midwives in as much as possible should have control over their own schedules and have the opportunity to participate in planning and negotiating their rosters.
- For dually qualified hospital midwives, provide more non-shift opportunities to maintain their midwifery skills and include engagement with the MMoC. Fully utilise their midwifery capabilities within the hospital setting.
- Individual staffing consideration should include the need to consider level of experience, backfill capacity, protected time off work.
- Flexible working options for midwives include consideration of part-time arrangements and self-rostering.
- Midwives new to a caseload model need support in learning negotiation and communication of professional boundaries between the personal and professional relationships with women.

### *Workforce sustainability*

- Midwifery graduates and early career midwives should be encouraged to work in the model and be well supported with supervision and assistance close by.
- The MMoC needs to be supported by the LHN, with the operations of the model well embedded. This includes the establishment and adequate support for midwifery unit managers.
- Multiple approaches to recruitment will be needed including collaborating with universities to ensure midwifery student placements, incentives such as relocation assistance, offering flexible work arrangements, and ensuring that recruitment efforts are culturally sensitive. Relationships, culture, flexibility, and autonomy are all important considerations in sustainability.
- Midwives' ability to "be with" and build relationships with women to work to full scope of practice.
- Support and promotion of midwives as lead care providers.

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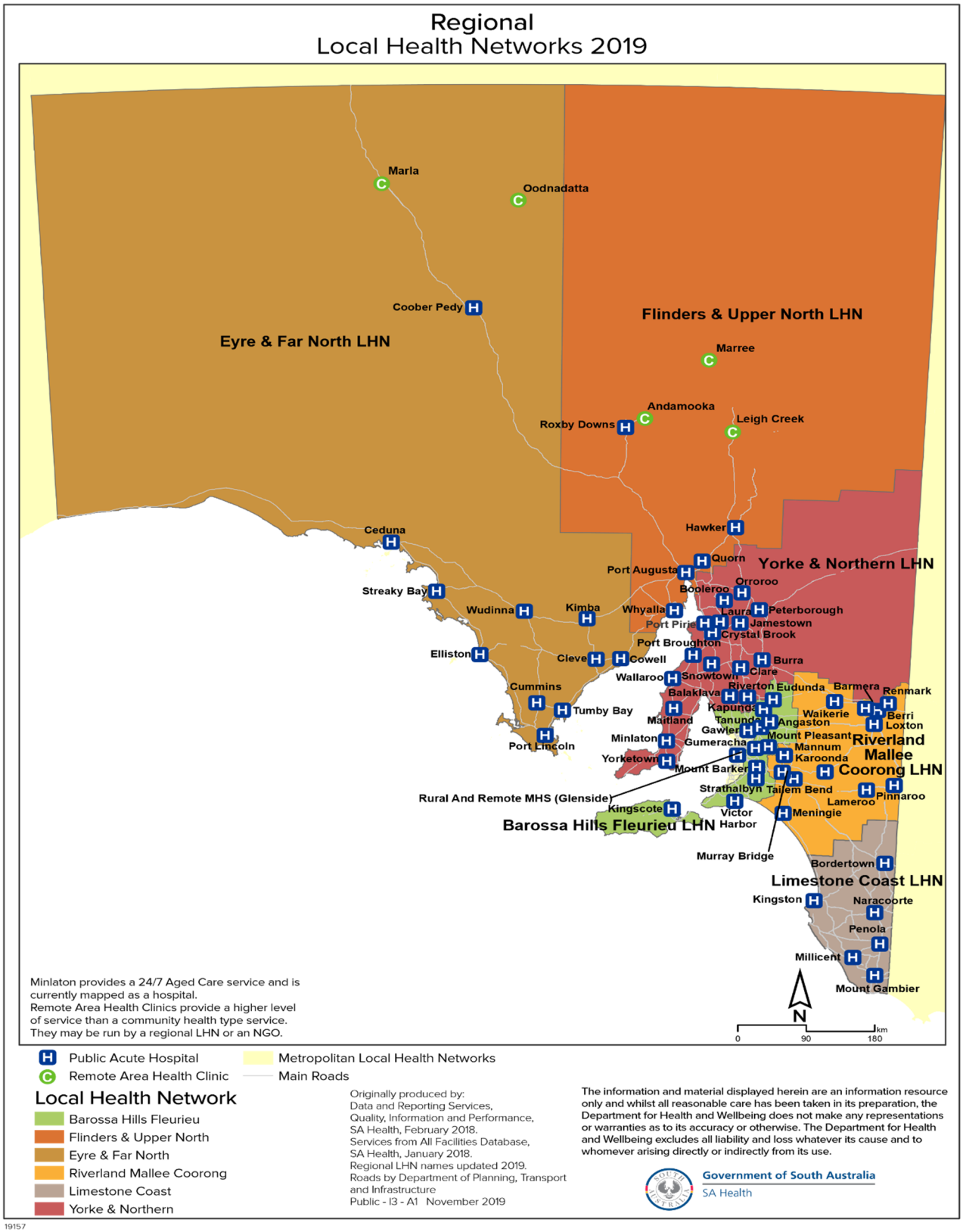
## Appendix 1: SA Regional Health Local Health Networks



## Appendix 2. Focus Group One Facilitator's Guiding Questions

### Midwifery Caseload of Care in the Riverland (RMCLHN)

### Focus group questions for MMoC midwives

Thank you for taking the time to participate in this focus group and share your views and experiences regarding implementation of the Midwifery Caseload Model of Care (MMoC) in the Riverland Mallee Coorong Local Health Network (RMCLHN).

As you may know, the Rosemary Bryant Research Centre (RBRC) at the University of South Australia is undertaking a post-commencement review of the MMoC. As part of this review process, we are having a focus group at approximately 4 months post commencement to gain an understanding of the implementation process of the MMoC, its associated barriers and facilitators to success, and opportunities for improvement.

Understanding the experiences and views of individuals who have been involved in the MMoC and its implementation is vital to the review process. Therefore, we greatly appreciate your willingness to share your thoughts. Please be assured that you will remain anonymous, and your responses will remain confidential and will only be reported at aggregate level. For those who are unable to participate or wish to elaborate further an online survey will be available after the focus group. ***Have you all had a chance to complete the consent form to participate and with your permission I will record the session?***

**Question 1: How has the implementation of the MoC been received at your local birthing site in the Riverland Mallee Coorong LHN?**

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 MMoC made a difference to the organisation of care in terms of administration/practice processes (e.g., streamlined services, increased teamwork) or do you feel like you have a heavier administrative burden?
- At the local hospital level is the new MMoC 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 MMoC ?**

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 MMoC?
- How was your organisation impacted by the implementation process?

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

**Question 4: What service-level modifications can be made (if any) to strengthen the MMoC ?**

- 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 MMoC 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?
- Do you feel that the restrictions imposed by Covid-19 have impacted your ability to provide woman-centred care?

**Final comments**

- Do you have any further comments about the MMoC or other areas we may not have covered?
- What else would you like to tell me as you transition into the new caseload model of care?

## Appendix 3. Focus Group Two Facilitator's Guiding Questions

### Midwifery Caseload of Care in the Riverland (RMCLHN)
### Focus group questions for MMoC midwives

Thank you for taking the time to participate in this focus group and share your views and experiences regarding implementation of the Midwifery Group Practice in the Riverland Mallee Coorong Local Health Network (RMCLHN).

As you may know, the Rosemary Bryant Research Centre (RBRC) at the University of South Australia is undertaking a post-commencement review of the MGP. As part of this review process, we are having a focus group at approximately 6 months post commencement to gain an understanding of the how the implementation process of the MGP, its associated barriers and facilitators to success, and opportunities for improvement.

Understanding the experiences and views of individuals who have been involved in the MGP and its implementation is vital to the review process. Therefore, we greatly appreciate your willingness to share your thoughts. Please be assured that you will remain anonymous, and your responses will remain confidential and will only be reported at aggregate level. For those who are unable to participate or wish to elaborate further an online survey will be available after the focus group. ***Have you all had a chance to complete the consent form to participate and with your permission I will record the session?***

**Question 1: How has the implementation of the MoC been received at your local birthing site in the Riverland Mallee Coorong LHN?**

For example:

- In your view how successfully was the MGP implemented? Have you been satisfied with various aspects of the implementation process?
- Was the MGP well received at your site/region; how well has it been adopted?
- What are the aspects of the MGP that are working well and meeting or exceeding expectations? Have these worked from the get-go or changed/ improved over time, in what way?
- What are the aspects that are not meeting expectations and are in need of improvement?
- Has the MGP model made a difference to the organisation of care in terms of administration/practice processes (e.g., streamlined services, increased teamwork) or do you feel like you have a heavier administrative burden?
- At the local hospital level is the new MGP being integrated within structures and services, i.e., integration with the Aboriginal family birthing program, AMIC/ MW/nurses feeling valued, informed, handover, etc.

**Question 2: What have been the barriers or facilitators to working in the MGP?**

For example:

- Thinking about the past 6 months 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 MGP?
- How was your organisation impacted by the implementation process?

**Question 3: How well do you think interdisciplinary collaboration and communication is working at Murray Bridge?**

- Is the MGP well accepted with doctors?
- Are there any concerns over collaborative practice?
- Are there ways to continue to foster collaboration?
- Have you found the handover/communication of the women adequate with both nurses and doctors?
- Have there been occasions to meet to build rapport and collegiality?
- Do you feel education needs of staff are being addressed?
- Do nursing/ ward staff require additional support to provide care for women and neonates on the ward?
- Are there clear process for when to call MGP for midwifery care and or Dr to escalate care when needed?

**Question 4: What service-level modifications can be made (if any) to strengthen the MMoC ?**

- 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 MMoC 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?
- How have you found the skill mix with RMs – do you have new graduates, TPPP working with RMs who have previously worked in MGP models or are all new to the model?
- Do you feel that the restrictions imposed by Covid-19 or the floods have impacted your ability to provide woman-centred care?

**Final comments**

- Do you have any further comments about the MGP model or other points to raise that we may not have covered?
- What else would you like to tell me about the transition into the new model of care?

## Appendix 4. Women's Survey

Note. This is a downloaded copy from the REDCap online software program. The survey was an electronic "smart" survey with logic fields, which are not necessarily reflected here.



*Confidential*



# Midwifery Model Of Care Survey, Riverland Mallee Coorong Local Health Network. Questionnaire for Women

The Riverland Mallee Coorong Local Health Network (RMCLHN), Midwifery Group Practice (MGP) is in its first year of operation. You are invited to take part in a survey as your views and experiences of the program are important and will help us evaluate and improve the program.

We know it may be hard to find the time. If it would be easier for you to work through this questionnaire with someone, please call midwife Kate Greenlees on 0409 883 731 to make a time to complete it.

This survey will take 10-15 minutes to complete. If you want to return to a previous section, click on the "previous page" button at the bottom of the page, not the web-browser back button. When finished on the last page, please press the "submit" button.

This questionnaire is anonymous: your name will not be asked or recorded. We ask for your date of birth and baby's date of birth to make sure we only have one response per family. Responses go directly to independent researchers at the University of South Australia, Rosemary Bryant AO Research Centre and will be kept strictly confidential by research staff. SA Health staff do not have access to your response and researchers do not have access to records which could identify you by your date of birth. Your responses are completely confidential.

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 Group Practice Manager, Vanessa Drummond, 0479 177 663. This project has been approved by the Women's and Children's Human Ethics Committee and the University of South Australia's Human Research Ethics Committee. If you have any ethical concerns about the project or questions about your rights as a participant please contact the Human Ethics Executive Officer at University of South Australia, Tel: +61 8 8302 6630, quoting study ID 204461; Email: humanethics@unisa.edu.au

Thank you.

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Demographics

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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 following areas with maternity services did you start your care?

- ◯ Berri
- ◯ Murray Bridge
- ◯ Loxton
- ◯ Waikerie
- ◯ I did not start my care in the Riverland Mallee Coorong Region

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Baby's place of birth:

- ◯ Riverland General Hospital (Berri)
- ◯ Murray Bridge Soldiers' Memorial Hospital
- ◯ Loxton Hospital Complex
- ◯ Waikerie Hospital and Health Services
- ◯ I did not give birth in the Riverland Mallee Coorong Region

| | |
|---|---|
| Did you birth out of the region for any of the following reasons ? | ◯ Elected to birth out of the region<br>◯ Transferred because maternity service not available at the time<br>◯ Planned birth away (for reasons such as BMI, twins, etc.)<br>◯ Transferred out of region due to medical or obstetric complications<br>◯ I birthed out of the region for another region not listed above |
| If you wish, please provide any additional comments about the place of birth here: | _____ |
| Please indicate where your baby was born: | ◯ Women and Children's Hospital<br>◯ Flinders Medical Centre<br>◯ Lyell McEwin Hospital<br>◯ Private Hospital<br>◯ Other (please specify) |
| Please type the location of your baby's birth: | _____ |

*Confidential*



| **Before the Birth** | |
|---|---|
| What were your main sources of information about pregnancy and labour? | ☐ Midwife(s)<br>☐ General practitioner (GP)<br>☐ Obstetrician (specialist doctor)<br>☐ Hospital information/antenatal clinic<br>☐ Family and friends<br>☐ Internet<br>☐ Books, magazines<br>☐ Other (please specify)<br>( Please select all that apply) |
| Other sources: | _____ |
| Did you attend any childbirth preparation or parenthood classes during your pregnancy? | ◯ Yes<br>◯ No |
| If you attended childbirth or parenthood classes, who taught them? | ◯ Midwifery Group Practice (MGP midwives)<br>◯ Private midwife<br>◯ Private online classes (not taught by MGP midwives)<br>◯ Other (please specify) |
| Other source of childbirth or parenthood class: | _____ |
| I did not attend classes because: | ◯ My midwife told me everything I needed to know<br>◯ Too far away<br>◯ Too inconvenient<br>◯ Did not know about them<br>◯ Attended classes in my previous pregnancy(cies)<br>◯ I had enough information already<br>◯ Cancelled due to COVID-19<br>◯ Other (please specify) |
| Other reason you did not attend classes: | _____ |
| How did you find out about the Midwifery Group Practice in your region? | ☐ MGP midwives when I booked into the hospital<br>☐ General Practitioner (GP)<br>☐ Obstetrician or GP obstetrician (doctor who provides pregnancy and birth care)<br>☐ Medical clinic staff (i.e. Berri Medical Clinic or other)<br>☐ SA Health or other website<br>☐ Family or friends<br>☐ First found out when I was referred for my pregnancy<br>☐ Other (please state)<br>(Please select all that apply) |
| Other way you found out about the MGP: | _____ |

| | |
|---|---|
| Who was your main pregnancy care provider? | ◯ MGP midwife(s)<br>◯ GP obstetrician<br>◯ MGP midwives and GP obstetrician (Shared care)<br>◯ MGP midwives and specialist obstetrician (Shared care)<br>◯ Private obstetrician<br>◯ Private midwife<br>◯ Other (please state) |
| Other: | _____ |
| I met all of the MGP midwives/s that provided my care before I was in labour | ◯ Yes<br>◯ No |
| I had most of my pregnancy care with my allocated midwife | ◯ Yes<br>◯ No |
| I knew who to contact if I had wanted to change my allocated midwife | ◯ Yes<br>◯ No |

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

Thinking about the care provided by your MGP 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 MGP with your doctor:

Thinking about the care provided by the midwife (midwives) who worked with your main care provider (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 |
|---|---|---|---|---|---|
| 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 MGP care.

Thinking about the care provided by your main doctor provider (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 |
|---|---|---|---|---|---|
| I was treated with respect | ○ | ○ | ○ | ○ | ○ |
| I felt I had too little say in what was decided | ○ | ○ | ○ | ○ | ○ |

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| | | | | | |
|---|---|---|---|---|---|
| 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 | ○ | ○ | ○ | ○ | ○ |

Please indicate the degree to which you agree or disagree with the following statements regarding the private midwife who provided your care.

Thinking about the care provided by your main private midwife provider 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 to 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 | ○ | ○ | ○ | ○ | ○ |

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?

- ○ MGP midwife(s)
- ○ GP obstetrician and/or specialist obstetrician and MGP midwives (Shared care)
- ○ Private obstetrician
- ○ Public obstetrician or private obstetrician (and hospital midwives not working in the MGP)
- ○ 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?

- ○ MGP midwife (s)
- ○ Hospital midwife(s) (not MGP midwife)
- ○ GP obstetrician or specialist obstetrician (working with the MGP midwives)
- ○ GP obstetrician (not working with MGP midwives)
- ○ Public obstetrician (not working with MGP midwives)
- ○ Private obstetrician
- ○ Private midwife
- ○ Not sure

| Thinking about your 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(s) 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 | ○ | ○ | ○ | ○ | ○ | ○ |

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| **At home, after your baby was born** | |
|---|---|
| Who was your main care provider after your baby was born? | ◯ MGP midwives<br>◯ GP obstetrician and MGP midwives (shared care)<br>◯ GP only<br>◯ Specialist obstetrician (and midwives working in the MGP)<br>◯ Other (please state) |
| Other: | _____ |
| How many visits did you receive from the MGP midwife after your baby was born (not including your Maternal and Child Health Nurse)? | ◯ 1<br>◯ 2<br>◯ 3<br>◯ 4<br>◯ 5<br>◯ 6 or more<br>◯ I didn't have any visits |
| Where were these visits conducted? | ◯ At home<br>◯ Not at home<br>◯ A combination of at home and not at home |
| Did you have any virtual visits or telephone calls with your MGP midwife when home after the baby was born? | ◯ Yes<br>◯ No |
| Please indicate the number of virtual visits such as Zoom, Skype or other | ◯ 0<br>◯ 1-2<br>◯ 3-4<br>◯ 5-7<br>◯ 8-10<br>◯ >10 |
| Please indicate the approximate number of consultation telephone calls (or text messages) when home after the baby was born | ◯ 0<br>◯ 1-2<br>◯ 3-4<br>◯ 5-7<br>◯ 8-10<br>◯ >10 |

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

◯ Excellent ◯ Very good ◯ Neutral ◯ Fair ◯ Poor

Midwife Number 1:

Were any of these in-person or virtual visits with a midwife you had met before?

◯ Yes ◯ No

Midwife Number 2:

Were any of these in-person or virtual visits with a midwife you had met before?

◯ Yes ◯ No ◯ Not Applicable

Midwife Number 3:

Were any of these in-person or virtual visits with a midwife you had met before?

◯ Yes ◯ No ◯ Not applicable

| | |
|---|---|
| How old was your baby when the midwife stopped visiting? | ◯ 1 week<br>◯ 2 weeks<br>◯ 3 weeks<br>◯ 4 weeks<br>◯ 5 weeks<br>◯ 6 weeks<br>◯ Greater than 6 weeks |
| Would you have liked more visits from the midwife(s)? | ◯ Yes<br>◯ No |
| Did you use or were your referred to any of the following community support services? | ☐ Child health nurse<br>☐ Aboriginal services<br>☐ Physiotherapy<br>☐ Social work<br>☐ Mental health<br>☐ Drug and alcohol<br>☐ Lactation consultant<br>☐ Continence nurse<br>☐ Other (please list)<br>☐ None<br>( 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 MGP midwife?

○ 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.)

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| | |
|---|---|
| Why did you decide to stop breastfeeding? | ☐ Did not want to breastfeed<br>☐ Nipple trauma<br>☐ Nipple pain<br>☐ Personal reasons<br>☐ Taking medications<br>☐ Mastitis<br>☐ Felt there was not enough milk<br>☐ Unable to get baby to attach/suck<br>☐ Baby very premature<br>☐ Lack of help/ support/supervision with breastfeeding<br>☐ Family/peer pressure<br>☐ Other (please describe)<br>(Please indicate all that apply) |
| Other: | _____ |

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**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 | ○ | ○ | ○ | ○ | ○ |

## The impact of COVID-19 on you and your care

**Thinking about the impact COIVD-19 had on you and your care, how much do you agree or disagree with the following statements?**

| | Strongly agree | Agree | Somewhat agree | Somewhat disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| I felt anxious about the impact of COVID-19 on my wellbeing | ○ | ○ | ○ | ○ | ○ | ○ |
| I felt anxious about the potential impact of COVID-19 on the wellbeing of my baby | ○ | ○ | ○ | ○ | ○ | ○ |
| I was happy with the changes to the way that maternity care was delivered (due to COVID-19) in my local area | ○ | ○ | ○ | ○ | ○ | ○ |
| I felt like I received timely and clear answers to the questions about the impact of COVID-19 on me, my baby and family | ○ | ○ | ○ | ○ | ○ | ○ |
| The social distancing measures and the use of PPE (masks, goggles and shields) required because of COVID-19 meant that I felt isolated from my caregivers | ○ | ○ | ○ | ○ | ○ | ○ |
| I was happy with the way the midwives and doctors working in the MGP model were managing the risk of COVID-19 | ○ | ○ | ○ | ○ | ○ | ○ |
| Compared with my expectations, some of my care experiences turned out better than I thought they might during COVID-19 | ○ | ○ | ○ | ○ | ○ | ○ |

## Your experience with a student (if applicable)

| | |
|---|---|
| Did you have a student or students (midwife, nurse or doctor) attend to you during your pregnancy and/or birth? | ○ Yes<br>○ No |
| Please indicate the type of student(s) you had: | ☐ student midwife<br>☐ student nurse<br>☐ student doctor |
| Please indicate the number of times you had a student midwife attending your care | _____ |
| Please indicate the number of times you had a student nurse attending your care | _____ |
| Please indicate the number of times you had a student doctor attending your care | _____ |

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**Please indicate your degree of satisfaction with the student experience**

| | not as good as you hoped | as good as you hoped | better than you hoped |
|---|---|---|---|
| Were you satisfied with the way the student listened and responded to your questions and concerns? | ○ | ○ | ○ |
| Were you satisfied with the emotional support you received from the student? | ○ | ○ | ○ |
| Were you satisfied with the care the student provided? | ○ | ○ | ○ |
| Did the student positively contribute to your care? | ○ | ○ | ○ |

Do you have any comments you wish to make about your experience(s) with a student attending to your care? _____

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**Your Overall Experience**

Was this your first baby?
○ Yes
○ No

Was the care for your previous pregnancy provided in the Riverland region?
○ Yes ○ No

How do you rate the care provided for this pregnancy and birth against your previous experience?
○ excellent
○ very good
○ neutral
○ fair
○ poor

Who provided most of your care for your previous pregnancy and birth?
○ Public hospital midwives clinic
○ Shared care (GP and hospital staff)
○ Private obstetrician
○ Private midwife
○ Other (please state)

Please specify other main care provider for your previous pregnancy _____

**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 | ○ | ○ | ○ | ○ | ○ | ○ |
| 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 | ○ | ○ | ○ | ○ | ○ | ○ |





**Please rate each of the following with 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 | ○ | ○ | ○ | ○ | ○ | ○ |

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**If you received care from MGP midwives AND other care providers such as GPs, or specialist obstetricians, 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 | ○ | ○ | ○ | ○ | ○ | ○ |

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**Final Questions**

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 MGP model of care in your region?

○ Yes
○ No

If no, can you please indicate why not?

_____

Would you recommend the MGP model of care you received to a friend?

○ Yes
○ No

If no, can you please indicate why not?

_____

Is there anything else you would like to tell us?

_____

Thank you very much for completing this questionnaire.
We are very grateful for the time and trouble you have taken to complete it.
All the very best.

## Appendix 5. Links to relevant state and national strategies and reports

- *Unleashing the Potential of our Health Workforce Review*. A recommendation of the Strengthening Medicare Taskforce (due to be completed in the second half of 2024 and will have implications for the midwifery workforce.) The ACM has welcomed the announcement of this review. https://www.health.gov.au/our-work/scope-of-practice-review

- *SA Rural Nursing and Midwifery Workforce Plan 2021–26.* https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/sa+rural+nursing+and+midwifery+workforce+plan+2021-26

- *SA Health Statewide Midwifery Framework 2023-26.* The Framework is intended to support and complement Local Health Network workforce, service provision and clinical planning as an overarching systems-thinking and planning tool to support and enable; improved attraction, recruitment, and retention of midwives across South Australia; sustainability of the midwifery workforce across the career spectrum. https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/sa+health+statewide+midwifery+framework

- *The Future of the Midwifery Workforce in Australia, Position Paper*. Midwifery Advisory Group of the Council of Deans of Nursing and Midwifery (ANZ). https://irp.cdn-website.com/1636a90e/files/uploaded/130723%20Midwifery%20workforce%20position%20paper%20AUS_v1.pdf

- *The National Rural and Remote Nursing Generalist Framework 2023-2027.* https://www.health.gov.au/resources/publications/the-national-rural-and-remote-nursing-generalist-framework-2023-2027?language=en

- *Supporting equal access to healthcare for rural communities.* AMA Rural and Remote Medical Workforce Policy Summary. https://www.ama.com.au/rural-communities

- *Health Workforce, AIHW.* (updated 7 July 2022) https://www.aihw.gov.au/reports/workforce/health-workforce

- *Australian College of Midwives.* See website for guiding documents, position statements and policies https://midwives.org.au/Web/Web/About-ACM/Guiding-Documents.aspx

- *Riverland Mallee Coorong Local Health Network Strategic Plan 2021-2026.* https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/riverland+mallee+coorong+local+health+network+strategic+plan+2021-2026


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