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"A safe space"; A statewide evaluation of Midwifery Antenatal and Postnatal Service (MAPS) using the quality maternal newborn care, evidence informed framework

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A B S T R A C T

Background: The World Health Organization recommends Midwifery Continuity of Care (MCoC) due to the consistent improvements in outcomes for mothers and babies. Surveys from the United Kingdom and Australia reported large numbers of midwives are unable to commit to the on call component required to provide MCoC across the continuum. To address this challenge a modified MCoC model called Midwifery Antenatal and Postnatal Services (MAPS) has been introduced. The aim of this study was to evaluate MAPS services in six sites across one State in Australia. Methods:
A multi-site qualitative descriptive study was undertaken framed by the Quality Maternal Newborn Care (QMNC) Framework. The QMNC framework was used to develop focus group questions for data collection, and as a lens for analysing data. Data were collected via focus groups from midwives and women at six sites ranging from metropolitan to regional and rural settings and thematically analysed.
Findings: Participants (n=80) included women (n=28), midwives (n=44) and MAPS managers (n=8). This paper reports the findings from the women and midwives, presented under three themes: Getting onto the program, Knowing the story and Building confidence by sharing information. Each theme had subthemes and the findings were aligned either positively or negatively with the QMNC framework.
Conclusion: This study found the MAPS model aligns in positive ways with the QMNC quality care framework with some recommendations to improve quality care. Midwives want to provide continuity of care and MAPS is a useful model for providing continuity through the antenatal and postnatal periods.

Statement of Significance.

Problem or issue

Implementation of midwifery continuity of care is recommended on an international scale but has not occurred on a large scale. Staffing midwifery continuity of care is complex restricting women's access to all the known benefits.

What is already known

New models of care are emerging, in addition to Midwifery Group Practice caseload care (MGCP), to meet the demand for continuity.

What this paper adds

An evaluation of a Midwifery Antenatal and Postnatal Service (MAPS) implemented widely in one State of Australia using the Quality Maternal Newborn Care framework. The findings can inform the introduction of MAPS in other settings to assist health services to scale up midwifery care.

Background

Midwifery Continuity of Care (MCoC), defined as care from one midwife or a small group of midwives to a woman through pregnancy, birth and the early parenting period is recommended by the World Health Organization (WHO) to improve the uptake and quality of antenatal care and for a positive intrapartum and postpartum experience [1] [2,3]. Midwifery continuity of care is cost effective for the health service, reduces obstetric interventions including caesarean section [4], reduces the rate of preterm birth, increases spontaneous birth with a known midwife [5–8] and provides high levels of satisfaction for women [9–11]. The WHO recommendations are context specific for countries with an available midwifery workforce and a well-resourced health

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system [1–3].

An international scoping review on the global implementation of MCoC found that in high income countries, the most dominant model of MCoC was provided by a small group of midwives for designated women, across the antenatal, birth and postnatal care continuum, known as caseload midwifery or midwifery group practice [12]. In low- and middle-income countries there is wide variation in the way MCoC is provided [13]. Factors that influence provision of MCoC such as midwifery education, standards for practice and a well-resourced health system vary widely in low to middle income countries [13]. Despite the variation in the organisation of care, the improved outcomes for mothers and babies who receive MCoC are similar to those in high income settings [7].

In Australia, a high income country with a well-established health system, the latest maternity service policy document recommends continuity of care including midwifery continuity of care [14]. Midwifery Group Caseload practice (MGCP) is defined as antenatal, intrapartum, and postnatal care provided within a publicly funded caseload model by a known primary midwife, with secondary backup midwives providing cover and assistance, and collaboration with doctors in the event of identified risk factors [15]. Providing midwifery continuity of care is beneficial for midwives with less reported levels of burnout and high levels of empowerment and autonomy [16]. In New Zealand, the emotional wellbeing of midwives was measured and found stress and depression were high for all midwives but those self-employed and providing continuity of care had better emotional health and less burnout [17]. Despite the well documented benefits of midwifery continuity of care for women and midwives continuity of carer through pregnancy, birth and postnatal period is recorded as 31.7 % of public hospital midwifery care [15].

A number of studies have described the necessary components to implement and scale up MCoC in Australia [18–21]; however, to date only 14.8 % of all Australian maternity models are classified as MCoC [15]. The success of implementing MCoC is variable however evidence does exist to support a slow and steady increase throughout Australia. According to a national cross-sectional survey conducted in 2016 only 8 % of women could access midwifery continuity of care [22]. At that time only 31 % of the hospitals reported offering caseload care however many respondents were planning to implement or expand caseload [22]. The first national report on maternity services published in 2021 stated that 15.1 % of all Australian Models of care were MGCP [23]. More recently the updated 2023 report stated MGCP as 14 % of all major models of care [15]. There are large variations in each jurisdiction with Queensland reporting 24.2 %, South Australia 21.1 %, Australian Capital Territory 18.2 %, Tasmania 17.4 %, New South Wales 10.9 %, Victoria 10.1 % and the Northern Territory at just 8.3 % [15]. Queensland also reported an estimated 18 % of women across the State were able to access MCoC in 2017 [24] demonstrating a large increase in women's access from that first estimate in 2016 [22]. Similarly, in the United Kingdom (UK) there has been a government directive to implement MCoC for every woman in England [25], though, targets are yet to be achieved. New Zealand is the only high income country that has managed to scale-up continuity of midwifery care at a national level [12].

Staffing the MCoC models has been identified as a barrier to widespread expansion [22]. A survey of midwives' perspectives of MCoC in England found that due to personal caring responsibilities, a willingness to work in a MCoC being on call for intrapartum care was low [26]. Almost a quarter of participants reported a need to work on the same day each week with around 30–40 % working 12-hour shifts and unable to do any on-call or night shifts [26]. A recent national Australian survey of midwives working in MCoC models found 82.4 % of the midwives worked full-time with only 23.1 % reducing to part-time after starting full time [27]. In this survey midwives who worked part-time described having to be on-call the same amount of time as a full-time midwife and some services did not offer a part-time employment model [27].

To address the challenges of implementing MCoC in the UK, a model of care providing continuity through the antenatal and postnatal period was established and evaluated [28]. In this model, six midwives provided care with a named or 'back-up' midwife, and 94 % of women received continuity antenatally and 70 % of women received continuity in the postnatal period [28]. Antenatal-postnatal midwifery continuity models were well accepted by women and midwives [28]. The midwives reported manageable caseloads, extended appointment times, increased team stability, and flexible working patterns and job satisfaction. Women reported continuity was integral to building trust with the midwives who encouraged them to disclose mental health issues and increased their confidence in making birth choices [28].

In Norway, a model of relational continuity of care was implemented, where the midwife responsible for the woman during pregnancy provided one or more visits to the family during the postnatal period [29]. These women stressed the importance of being visited by a midwife they already knew [29]. Home visits carried out by the midwife a few days after childbirth became even more important in helping the woman to believe in her ability as a mother, due to the short postnatal stay in hospital. The authors concluded the importance of relational continuity models of midwifery care to address the emotional aspects of the postnatal period [29].

In Australia, a midwifery led model, known as Midwifery Antenatal Postnatal Service (MAPS), has been implemented and provided by 18 % of midwives working in a public hospital setting [15]. In a MAPS model of care, women have a primary midwife allocated for the antenatal and postnatal period. Labour and birth care is provided at the birth site of a woman's choice by midwives working in the maternity services. The MAPS model of care has a focus on outpatient services where women birth with, and receive any inpatient/ unplanned care by midwives who work within the existing standard Birthing Unit/ Maternity wards. Collaboration with other health care professionals is provided at all stages of pregnancy, birth and postnatal care as needed. One qualitative study explored the value and acceptability of a MAPS model of care and found women felt safe and connected and felt well prepared for birth [30]. Midwives in this study reported having more quality time at each visit with the woman because they knew her and could provide a more comprehensive debrief following the birth [30]. In this setting there was a strong sense of community that enabled respect for cultural and social diversity and the authors concluded the findings aligned with quality care as defined in the Quality Maternal Newborn Care Framework [31]. The authors cautioned that these finding should not detract from the scale up of MCoC that includes intrapartum care with all the associated benefits [32]. However, implementation and scale up of MCoC is slow [33]. Health services have responded by introducing MAPS to provide increased access to midwifery continuity of care to women.

The aim of this research was to describe service users (women) and service providers (midwives and midwifery managers) experiences of MAPS including the impact on workforce, at six sites using evidence informed framework.

Methods

A multi-site qualitative descriptive study was undertaken framed by the Quality Maternal Newborn Care (QMNC) Framework. A qualitative descriptive approach is useful to explore the characteristics of a phenomenon [34] rather than the causal mechanism. The QMNC Framework (Fig. 1) was developed by 35 experts' analysis of evidence from the Cochrane Pregnancy and Childbirth Group and the Partnership for Maternal, Newborn and Child Health Review [31]. The framework has five components: practice categories, organisation of care, values, philosophy and care providers. The authors propose the QMNC Framework can be used to assess quality of care; support workforce development, resource allocation, an education curriculum; or identify evidence gaps for future research [31]. Following the publication of the framework a call was made for research that would identify the facilitators and

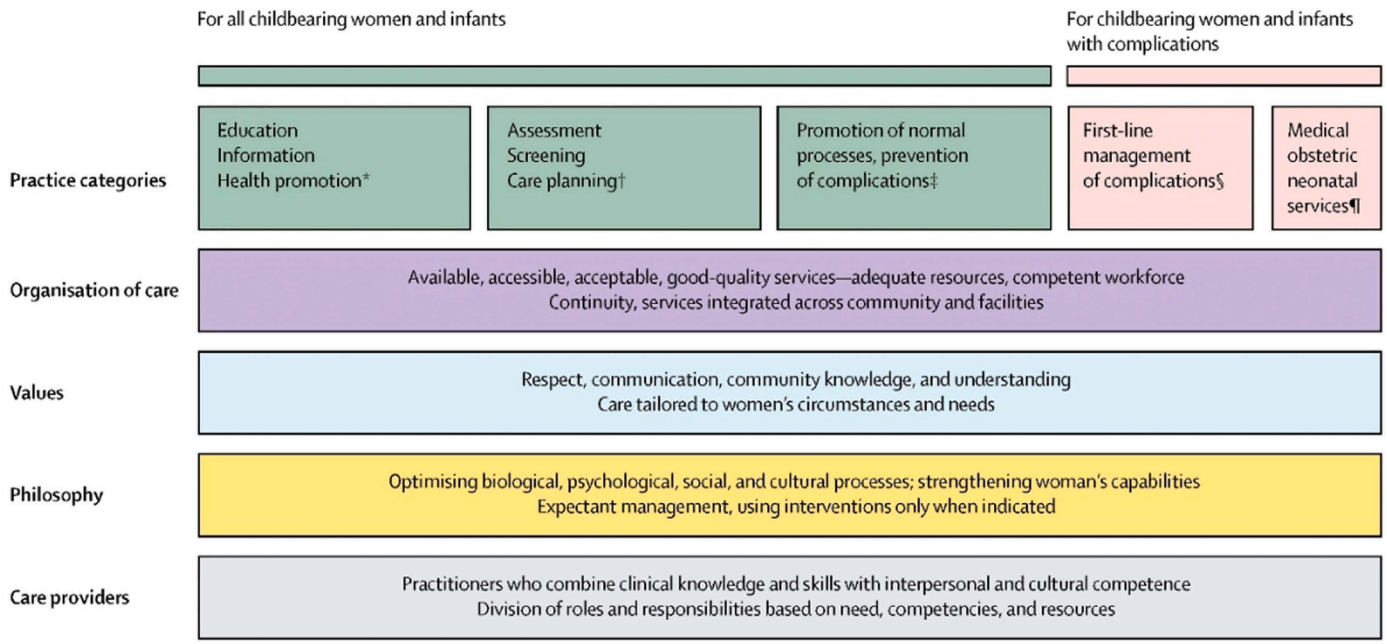

Fig. 1. Quality Maternal Newborn Care Framework, reproduced with permission.

barriers to implementing MCoC as reflected in the QMNC Framework [35]. The framework has been pilot tested to understand the constituent elements of quality maternity care in both Scotland and Australia demonstrating the feasibility of adapting the QMNC framework to develop focus group questions for data collection, and as a lens for analysing data [36,37].

Ethics

Statewide ethical clearance was granted Human Research Ethics Committee (HREC) reference number: 2022/ETH01295 Site-specific approval was granted all six sites.

Setting

Set in New South Wales, Australia and included six public health service maternity sites. Details of the sites are provided in Table 1.

Data collection and analysis

Data were collected via focus groups which were audio recorded and transcribed verbatim. All data were managed and stored as per the HREC approval requirements. The Quality Maternal Newborn Care (QMNC) Framework was used to develop topic guides for the focus groups (supplementary file) [38]. The transcripts were read by the authors who collected the data and initial codes developed for each focus group. Data were further coded in the qualitative software NVivo 12 by AC and CB using the QMNC Framework as a lens. The coded data were then shared with the other authors who, using the Braun and Clarke [39,40] approach to thematic analysis, began to further identify codes and develop themes. During the analysis, the QMNC framework was used as a visual tool to align the themes with the framework components positively or negatively. Themes were then reviewed and finalised as a group.

Reflexivity

The first author has previously used the QMNC framework to evaluate MCoC models in Australia and conducted a small study to evaluate the value and acceptability of a MAPS model using the QMNC. The pilot study led to this larger Statewide Study. All authors are midwives, who are convinced of the benefits of continuity models of care, given the large body of evidence that supports this model. The authors are committed to midwifery continuity of care across pregnancy, birth and the postnatal period however the Health Services are implementing a MAPS model and we set out to evaluate the quality of this service. During analysis we sought to stay close to the data, including looking for conflicting data, and discussed internal biases.

Results

Participants

There was a total of 80 participants in this study, women (n=28) who received the service, midwives (n=44) and MAPS managers (n=8). This paper reports the finding from the women and midwives and their demographic data are provided in Tables 2 and 3.

Findings

The findings are presented under three themes: *Getting onto the Program, Knowing the Story* and *Building confidence by sharing information*. Each theme had subthemes and the findings aligned either positively or negatively with the QMNC framework. See Table 4.

Getting onto the program

Women were asked how they decide where to access pregnancy care and what model of care they requested. The theme '*Getting onto the program*' encompasses several concepts, including women who did not know about the MAPS program:

> "how do you find out about these things? It's quite difficult unless it's been recommended to you" Shayla.

Another participant was only alerted to the program by word of mouth:

> "I had no idea about MAPS, I had a client of mine that was a midwife and she said, "Try MAPS." And I was like, "Okay, what's that?" Kirsten

Table 1
Site description.

Site number	Role delineation	Number of births in 2021	Metropolitan, regional or rural
1	Level 6 – provides care for all women regardless of gestational age or clinical risk and complex major obstetric procedures.	4116	Metropolitan
2	Level 4 - Antenatal, intrapartum and postnatal care for women ≥34+0 weeks gestation which may be in consultation with the specialist obstetrician or maternal-fetal medicine specialist within the Tiered Perinatal Network (TPN). Has well defined linkages for consultation and/or referral must be in place with a delineated higher-level maternity and neonatal service. Selected Major obstetric procedures. Collaborative care is provided by midwives, junior medical officers, GP obstetricians and obstetricians.	1441	Metropolitan
3	Level 3 - Antenatal, intrapartum and postnatal care for women following consultation and development of a management plan with a suitably qualified clinician within the Tiered Perinatal Network (TPN). Collaborative care is provided by midwives, GP obstetricians and/or specialist obstetricians. Intrapartum care for women from ≥37+0 weeks gestation, including induction of labour, vacuum and/or forceps births, vaginal birth after caesarean section. Provide Common and Intermediate obstetric procedures (e.g. planned Lower Segment Caesarean Section (LSCS) ≥39 weeks gestation).	920	Regional and rural
4	Level 6 – as above	5195	Metropolitan
5	Level 4 – as above	1358	Metropolitan
6	Level 4 – as above	1279	Rural

Table 2
Women's demographic details.

Age	Highest level of education	Pregnancy number	Ethnicity	Postcode	SEIFA by postcode
26–30	Bachelor's degree	1	Pakistani	2160	Advantaged
26–30	Bachelor's degree	1	New Zealander	2152	Most advantaged
26–30	Bachelor's degree	1	Australian	2151	Neutral
31–35	PhD	2	Australian	2152	Most advantaged
26–30	Bachelor's degree	2	Irish	2153	Most advantaged
26–30	Certificate 4	2	Australian	2154	Most advantaged
20–25	High School	3	Australian	2117	Most advantaged
20–25	High School	1	Malay	2195	Disadvantaged
31–35	High School	1	Africa	2193	Most advantaged
36–40	Year 10	1	Australian Caucasian	2321	Neutral
31–35	Year 12 Diploma	1	Australian Caucasian	2325	Advantaged
31–35	Diploma	1	Caucasian	2539	Disadvantaged
31–35	Graduate Diploma	2	Caucasian	2539	Disadvantaged
36–40	Masters	3	Caucasian	2538	Disadvantaged
26–30	High School Diploma	1	Caucasian	2540	Most disadvantaged
31–35	High School Diploma	1	Colombian	2540	Most disadvantaged
26–30	Bachelor's degree	2	Caucasian	2534	Most advantaged
31–35	Certificate 3	4	Caucasian	2535	Advantaged
26–30	Certificate 4	3	Caucasian	2540	Most disadvantaged
31–35	Bachelor's degree	2	Australian	2034	Most advantaged
31–35	Master's degree	2	Australian	2031	Most advantaged
36–40	Master's degree	2	Sri Lankan	2035	Advantaged
20–25	High School	2	Australian	2035	Advantaged
36–40	Masters Degree	3	Australian	2230	Advantaged
31–35	Bachelor Degree	2	Australian	2229	Advantaged
31–35	High school	3	Not stated	2234	Advantaged
26–30	Bachelor degree	1	Australian	2230	Advantaged
26–30	Bachelor degree	1	Australian	2229	Neutral

Some women felt a sense of luck, or being in the right place at the right time, to have secured a position in this model of care:

> "I think it was just luck that I got into this program because the midwife who picked up my file was from MAPS" Molly.

One woman assumed that MAPS was a mainstream model of care, and only realised during the focus group that this was not the case:

> "I just assumed that this is how it happened [MAPS] and now I'm realising that I was actually really fortunate" Eloise.

The way women described feeling lucky to be on the MAPS program contrasts with the frameworks' component organisation of care that should be accessible.

Next best thing

Both women and midwives described MAPS as the 'next best thing'. Women talked about how they had heard of Midwifery Group Caseload Practice (MGCP) and in some instances felt they had missed out:

> "I'd heard of caseload; I hadn't necessarily heard of [MAPS]" Sabera.

Women described how MAPS was offered as an alternative to MGCP:

> "You didn't get into that program [MGCP], but we're going to put you in the MAPS program and I had no idea what that was" Sarah.

Similarly, the midwives often viewed women being allocated to MAPS as second best to MGCP:

> "We tend to think that MAPS is possibly silver class… women don't know any different, a lot of the women are so happy with the service that they receive. I think it's just hard when you know what it could be and how it could be better" Shirley.

MAPS was described in terms of being a preferred alternative to fragmented care:

> "If women are going to get some continuity it's better than no continuity. It's got massive benefits" Jean.

Table 3
Midwives demographic details.

Participant	Age	Education pathway to becoming a midwife	Highest level of education	Years of experience	Mode of employment Full time Part time Casual
1	41–45	Bachelor Degree	Bachelor degree	19	Part-time
2	36–40	Graduate Diploma	Graduate Diploma	4	Part-time
3	26–30	Graduate Diploma	Graduate Diploma	5	Part-time
4	36–40	Bachelor's degree Graduate Certificate in prescribing	Bachelor's degree	3	Part-time
5	41–45	Bachelor's degree	Bachelors degree	Not stated	Part-time
6	36–40	Graduate Diploma	Graduate Diploma	Not stated	Part-time
7	36–40	Bachelor of Midwifery	Masters	Not stated	Part-time
8	41–45	Bachelor's degree	Bachelor's degree	Not stated	Part-time
9	20–25	Bachelor's degree	Bachelors degree	Not stated	Full-time
10	41–45	Nurse first	Bachelor's degree	Not stated	Full-time
11	61–65	Graduate diploma	Grad Dip	Not stated	Part-time
12	30–35	Bachelors degree	Bachelors degree	4	Part-time
13	46–50	Bachelors degree	Bachelors degree	5	Part-time
14	61–65	Postgrad RN/RM	Graduate Diploma	17	Part-time
15	26–30	Postgrad RN/RM	Graduate Diploma	5	Part-time
16	26–30	Bachelors degree	Bachelors degree	5	Part-time
17	20–25	Postgrad RN/RM	Graduate Diploma	2	Part-time
18	50–55	Postgrad RN/RM	Graduate Diploma	3	Part-time
19	36–40	Bachelors degree	NOT STATED	30	Part-time
20	56–60	Postgrad RN/RM	Not stated	25	Casual
21	50–55	Postgrad RN/RM	Graduate Diploma	Not stated	Part-time
22	50–55	Graduate Diploma	Graduate Diploma	25	Part-time
23	50–55	Graduate Diploma	Graduate Diploma	7	Part-time
24	50–55	Graduate Diploma	Graduate Diploma	8	Part-time
25	41–45	Graduate Diploma	Graduate Diploma	20	Part-time
26	56–60	Graduate Diploma	Gradaute Diploma	40	Part-time
27	56–60	Bachelors degree	Bachelors degree	15	Part-time
28	56–60	Graduate Diploma	Masters degree	30	Part-time
29	65–70	Graduate Diploma	Graduate Diploma	43	Casual
30	30–35	Graduate Diploma	Graduate Diploma	7	Part-time
31	36–40	Graduate Diploma	Graduate Diploma	14	Part-time
32	26–30	Bachelor degree	Bachelor Degree	5	Part-time
34	41–45	Bachelor degree	Bachelor degree	20	Part-time
34	41–45	Master of Science	Masters	13	Part-time
35	46–50	Graduate Diploma	Graduate Diploma	20	Part-time
36	50–55	Graduate Diploma	Graduate Diploma	19	Part-time
37	50–55	Graduate Diploma	Graduate Diploma	40	Part-time
38	41–45	Graduate Diploma	Graduate Diploma	22	Part-time
49	41–45	Graduate Diploma	Graduate Diploma	19	Part-time
40	30–35	Bachelors degree	Bachelors degree	10	Part-time
41	30–35	Bachelors degree	Masters	9	Part-time
42	30–35	Bachelors degree	Bachelors degree	10	Part-time
43	50–55	Bachelors degree	Bachelors degree	8	Part-time
44	30–35	Graduate Diploma	Graduate Diploma	10	Part-time

Table 4
Themes and sub-themes aligned to the QMNC framework.

Themes and subthemes		**Alignment with the QMNC framework**	
Theme	Subtheme	Positive	Negative
Getting onto the program		*Organisation of care*: good quality	*Organisation of care:* accessible
	Next Best Thing	*Organisation of care*: continuity	*Care providers*: division of roles and responsibilities based on need and adequate resources.
Knowing the story	Feeling safe	*Organisation of care*: good quality *Values*: respect and communication, community knowledge and understanding Care Providers: clinical knowledge and skill with interpersonal and cultural competence. Philosophy: tailoring care to the woman's circumstances and needs	
	Being the only one		*Care providers:* division of roles and responsibilities based on need and resources
Building confidence by sharing information	Prepared to give birth.	*Philosophy*: strengthening women's capabilities and expectant management, Optimising physiology *Values*: care tailored to women's circumstances and needs	*Organisation of care*: good quality
	Conflicting advice		*Care providers:* division of roles and responsibilities based on need and resources

"it's just not as easy for midwives to all be in that model, then definitely this is the next best thing" Aimee.

The midwives noted how other clinicians would recommend women with a complex pregnancy to the MAPS program, partly because of the benefits that a continuity model brings:

"This woman [complex pregnancy] really would benefit from MAPS… every woman benefits from continuity" Aimee.

These findings contrast with the QMNC framework's component of *care providers* with *division of roles and responsibilities based on need and adequate resources*. Continuity of care aligns with the QMNC Framework's *organisation of care* component specifically *continuity* and links to the next theme *'knowing the story'*.

Knowing the Story

The women described that their midwife knew their story, retold here:

"It was really nice to have the same person and not having to repeat yourself at every appointment" Tessa.

And:

"it's so beneficial to have that one person that knows you, knows your story, knows what's going on, and you don't have to rehash everything every single time" Bupe.

Women described how the midwives knew the family:

"I've got two teenage daughters, just taking the time to get to know them as well and involve them in the care". Jasmin

Knowing the woman meant the midwives had more time to share information that could then be tailored to her needs as described by this midwife:

"you get to know what personality type, what their expectations are, what their partner is like, what their family's beliefs around birth are. I find that we've got more time for education and preparation that way" Regina.

The midwives described getting to know the woman to the point that they could anticipate what she would be asking next.

"You can almost anticipate what the next appointment's going to involve sometimes, so you can prepare what they're going to walk in with. … just from what's been happening in the pregnancy" Regina.

Due to the ongoing relationship between the MAPS midwives and the woman there were several examples of how MAPS midwives knew the women on a physical, social and emotional level. In the following example the MAPS midwife, who knew the woman was scheduled for an induction of labour, visited her in the birthing room. At the time of the visit the MAPS midwife was able to assist in the care assessment and planning, aptly described by the woman here:

"The first midwife tried to do it [artificial rupture of membranes], couldn't …really hard to get to my waters… and they were going to send me off for a caesarean, then [my midwife] was there and she's like, I did a stretch and sweep two days ago. I know where it [cervix] is. I know how to get it and so she did it and straight away popped my waters" Tessa.

In the MAPS model, this example is an outlier because the MAPS midwife would not normally be there during an induction. Such a finding demonstrates the value of continuity models that include intrapartum care.

Knowing the story aligns well with the framework concept of *continuity* in the *organisation of care* component and *values* component of *respect*, *communication* and *community knowledge and understanding*. A subtheme of *knowing the story* was *feeling safe* described next.

Feeling safe

Women felt emotionally and physically safe with their midwife as discussed here:

"[It] felt like you really knew them…I felt I could be really vulnerable, and they could tell when something was up, when something wasn't going right. So, I think listening, really listening and not just what you have to say but looking at the whole picture" Jessica

The women described that the midwives often picked up on subtle changes because of this close relationship.

"your blood pressure was a little bit higher or you weren't yourself then, you're still not yourself now, let's look into doing something" Kirsten.

This woman described the relationship as offering a safe space for disclosure:

"she's just been amazing the whole way through – supportive, almost like a safe space" Katy.

Midwives also described knowing the woman through a trusting relationship as described here:

"you get to know [them] and you are more trusted… any information or referral, it's coming from a trusted place. I think women are much more open" Ally.

The midwives offered a safe space without judgment:

"never once did I ever feel judged or anything for being a young mum" Makenzie.

The safe space allowed midwives to open the conversations.

"the program gives us the opportunity to unpack all that stuff with them and ask them, where's this coming from and what is your concern because at booking in, in your very first contact with someone they're not going to necessarily open up" Regina.

Knowing the woman was described as a positive experience for both the women and the midwives as relayed here:

"I've really noticed the difference in knowing women's stories and that whole continuity. It's so different to just turning up cold and visiting someone and it's really positive for the women but also for me" Trish.

The theme *knowing the story* aligns with the QMNC framework components, *Values, community knowledge and understanding* and *Care Providers who use clinical knowledge and skill with interpersonal and cultural competence*.

Although rewarding, providing continuity of care also made the midwives feel more accountable in their role, as described in subtheme; '*being the only one*'.

Being the only one

The midwives described how being the primary care provider did entail a level of responsibility and accountability that was different to working in a wider team. As described here:

"You're the one – only midwife looking after that woman, so you feel like you have to be very thorough and not miss anything" Barbara.

The midwives felt accountable for the women's wellbeing from their attendance at antenatal visits, giving blood or ultrasound results to providing mental health support.

There was tension between the midwives' satisfaction from knowing the women and the emotional toll it took on their workload:

"It's a massive mental load to take on, as you are their sole carer, and they need you" Julia.

Again here:

"the longer I've been in the role, it feels heavier. Like all the extra things that we do" Melina.

The extra pressure articulated by these midwives indicate a misalignment with the QMNC framework *Care Providers: division of roles* and *responsibilities based on need and resources*.

Despite these findings the women articulated how well prepared they felt for birth and mothering.

Building confidence by sharing information

Women felt that their confidence increased because of the information that was shared with them by their midwives. This was particularly important for this woman:

"I think the education was probably the best part for me being my first…she'd always just kind of really explained things very thoroughly and made sure that I understood everything that I was doing" Sarah.

Importantly, involving the family was evident as part of sharing information:

"My partner managed to come to all the appointments as well. He found it really helpful because my midwife would happily answer all his questions. He often had different questions" Molly.

This midwife reiterated the importance of involving the family in information sharing:

"just letting them know they've got a voice. Making sure their support people are aware" Ally.

Specifically, being prepared for labour and birth enabled women to feel they could manage the labour and birth without a known midwife, described here:

"I feel armed with that kind of knowledge so that even though she's not going to be there at the birth I would still feel confident to say whether or not I want something" Sabera.

Midwives viewed this as important as they knew it would be other midwives how would be providing care in labour, as discussed here:

"we kind of prep them, let them go, then we don't have any ability to support them in labour and birth" Melina.

Confidence building was described by both the midwives and the women as an inherent quality in the MAPS model of care, stated here:

"seeing the same person, you know, does take that pressure off and I do think it builds that confidence and I think we all know that when people are relaxed, they birth much better" Nazrin

This woman also explains the support that increased her confidence:

"Just her literally telling me that I was doing a great job, just those simple words just really reassured me. I was like, okay, I do have this. If my midwife is telling me that I'm doing a good job, then clearly, I must be doing a good job, because they see everything" Sabera.

Sharing information and building confidence went beyond labour and birth and included postnatal care - an important feature of MAPS is the continuity into the postnatal period.

"I feel like every woman who has a baby should have postnatal follow-up by a midwife that they know" Shirley.

This extends to breastfeeding support, which commenced at the beginning of the relationship:

"we talk about it [breastfeeding] from the beginning if somebody wants to breastfeed… explore it and to provide information" Ally

Sharing information and building confidence aligns positively to the framework components of *Values: care tailored to women's circumstances and needs* and *Philosophy: optimising physiology and strengthening women's capabilities* however this depends on *care providers division of roles and responsibilities* and the *organisation of care* that provides *continuity*.

Prepared to give birth

Women's confidence in their ability to give birth was garnered through this ongoing relationship with the MAPS midwife, and through the confidence building that occurred:

"It was great having her before and after preparing… I didn't feel like I was missing anything by not having my midwife at the birth". Khadija

And Sarah states:

"I wasn't concerned at all, she went through it [birth] with me, what to expect… I felt like I knew what would happen and didn't have any concerns about who was going to be caring for me at that point".

Whilst this woman describes her disappointment that the midwife could not be there, she still had the confidence to believe in her ability to give birth:

"The one thing that kind of disheartened me a little bit about MAPS is knowing that I wouldn't have had my midwife there when I was actually giving birth…It would have been nice to have my midwife there, but [I] definitely didn't feel like I couldn't do it without her"" Hannah.

For some women, having a midwifery student filled this gap in continuity for the birth:

"I was also lucky enough to have a student midwife as well and she was incredible. Luckily, she was there for my birth, which was really good to have a familiar face" Katy.

The student eased this woman's fears about a caesarean:

"I had to have an emergency caesarean. My midwife had a … [student] midwife, and she was there… which really helped because the whole theatre process was a lot more daunting … I was really grateful to have that familiar face" Bupe.

Midwives understood that women are disappointed if they are not at the birth:

"But the one disappointment I think some of the women have is, that we're not at the birth [of] their babies" Gabi.

Some midwives described wanting to be at the birth:

"I still in my mind wish I could be there for them, I wish all women could have that, but the reality of midwives' lives and everything means that not everybody can do that, so I think this is a step in the right direction personally" Jean.

These findings mostly align with the *philosophy* component of the framework *in strengthening women's capabilities* and *values: care tailored to women's circumstances and needs* however the lack of birth attendance contradicts the *continuity* in the *organisation of care*. There are further detractions from the quality of care provided through a lack of collaboration with the wider maternity team in the final subtheme of feeling undermined.

Conflicting advice

A theme that demonstrated inconsistent advice sometimes occurred

between the MAPS midwives and other care providers in the birthing environment. One midwife explains she had a sense of feeling undermined and felt she had to repair the relationship post birth:

> "I'd done all the right things, but it came time to near her birthing and someone else undermined that and kept saying to her well your midwife should have done this or that. I hadn't done anything wrong, but it took a bit to repair" Mary.

The following midwife describes the responsibility experienced of preparing women not to come into the birth unit too early in labour or the midwife would be held responsible:

> "The birth suite midwives, I get the feeling that they want us to be doing that education as well. If the women come in too early, I feel like it's a reflection on what we've told the women" Shirley.

Having the confidence to give birth aligns with the framework component of *Philosophy*: *Strengthening women's capabilities* and *expectant management*. The disappointment described by both women and midwives indicates a lack of the crucial component of *continuity* for intrapartum care.

Discussion

In this study women described being "lucky" to access the MAPS model of care and some were unaware that MAPS existed. The *Organisation of Care* component in the framework includes *accessibility*, which speaks to the importance of women being made aware of all the options of care available to them. Within the Connecting, listening and responding: A Blueprint for Action – Maternity Care in NSW document, a goal of pregnancy care is for "up-to-date information about the full range of local maternity services to be made publicly available" [41]. The findings from this study demonstrate an opportunity to strengthen women's knowledge of and accessibility to the MAPS model of care. These findings are consistent with a survey Australian women completed almost a decade earlier where, despite most women (90.4 %) wanting access to clear and trustworthy information on models of care, only 26.7 % of women had heard of all models of care available to them [42].

Knowing the woman's story demonstrated quality care through *continuity* and *community knowledge and understanding*. These findings are consistent with an earlier study that identified women's desire to know their caregiver and have someone caring for them who knew their story [43]. A pilot study exploring the value of a MAPS model identified similar themes of 'feeling safe and connected' [30]. For the midwives, this also resulted in feeling increased job satisfaction; knowing the woman made it easier to provide tailored care. Though MAPS midwives did not provide intrapartum care, through sharing information and building confidence, women felt prepared for birth with a focus on *Optimising physiology and strengthening women's capabilities.* The presence of a midwifery student for some women provided an increased sense of continuity. Women have had a positive experience when they experience continuity of care through antenatal, intrapartum and postpartum care from a midwifery student [44]. Having a student available for the intrapartum period was appreciated by the women.

Midwives discussed that knowing the woman's story also took a toll on their workload due to a substantial sense of responsibility, highlighting the need for systems, managerial and peer support for midwives working in continuity models. These findings contrast with studies from Australia, Denmark and New Zealand that found lowered scores for burnout for MCoC midwives compared to other midwives in large cross-sectional studies [45–47] indicating there is something about the trusting relationship that provides job satisfaction and prevents burnout. The benefits of MCoC for midwives include higher rates of empowerment, autonomy and better emotional health in addition to less burnout [16,17]. However not all midwives are able to provide continuity of care due to [26] working part-time [27]. We found there were tensions between the MAPS midwives and wider staff and this has been noted before when there are diverse professional, social and personal influences creating an 'us and them' dynamic between professionals [48]. This is incongruous with the *Care Providers: division of roles and responsibilities based on needs and resources*.

In the current study, women articulated the concept of feeling safe to disclose sensitive information to their midwife, sometimes sharing information with their midwife that was not disclosed even to their partner. One midwife described this phenomena as *"we're not ticking boxes, we're opening boxes"*, indicating truly personalised care, a quality of MCoC [49] and aligns with the *Values component of tailoring care to women's circumstances and needs*. In a recent study from the UK, having a known midwife antenatally encouraged women to disclose mental health issues through the trusting relationship [28]. In this study, midwives were able to detect subtle changes in the woman's condition. In one instance the midwife provided critical information to prevent a caesarean section because she knew the woman so intimately, aligning with the framework concepts of *good quality* care and *care providers who combine clinical knowledge and skills with interpersonal competency*. The relationship between safety and midwifery continuity has been well established in the literature, dating back to the first Cochrane review that compared midwifery continuity of care with other models of care that did not provide continuity [49–51]. Inherent in safe practice is for practitioners to accept accountability. When midwives assume a primary care provider role and provide more continuity, they are using higher order knowledge and skills than when working in shift-based models and the midwives in our study reported this as 'being the only one' which calls for more support for resources to support the appropriate scale up of MCoC. The theme conflicting advice reiterates what we already know about fragmented care where women have to repeat their story and navigate conflicting advice [52].

The MAPS model in this study excluded intrapartum care that is included in the literature on MCoC however the UK study that evaluated antenatal and postnatal continuity also described midwives as 'safeguarding' the woman [28]. Research from other settings has found midwives with personal caring responsibilities, i.e. children, were not able to work in MCoC [26]. In Australia, the majority (82.4 %) of midwives who worked in MCoC models worked full-time [27] despite recent research that indicated part-time midwives have a role to play in sustaining MCOC models [53]. All midwives in this study, except two, worked part-time and wanted to provide continuity articulated in the findings as "*wish I could be there for them [at birth], I wish all women could have that, but the reality of midwives' lives and everything means that not everybody can do that* NSW health has published a continuity of care models: a midwifery toolkit that promotes the implementation of MGCP and includes an emerging midwifery antenatal and postnatal service [54]. To date we do not have any evidence on the perinatal outcomes for this new model of care and this paper can only offer insight into the value and acceptability of women and midwives who receive and provide MAPS care.

Conclusion

This study found the MAPS model aligns in positive ways with the QMNC quality care framework, and the findings are similar to those in the qualitative literature focused on MCoC with intrapartum care. Midwives want to provide continuity of care, but a number of them are unable to commit to the flexibility required due to life commitments. MAPS is a useful model for providing continuity through the antenatal and postnatal periods and could be used in international settings where the positive effects of scaling up midwifery care have been reiterated in research.

Strengths and limitation

A strength of the study was that the sample was drawn from a range

of sites, including regional and rural settings with different role delineations making the MAPS model implementable in all sites. The evidence informed QMNC framework has been used in other settings to evaluate models of care [36,37,55], which builds on the use of this framework as an analytical tool. A limitation of this methodology is the study was unable to measure maternal and neonatal outcomes of MAPS compared with midwifery continuity that includes intrapartum care. This is an area of future research. Other work has focussed on producing a quantitative measure of Quality Maternal Care as described in the Framework [56].

Author Agreement Statement

We the undersigned declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us.

We understand that the Corresponding Author is the sole contact for the Editorial process. They are responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

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Ethical Statement

Statewide ethical clearance was granted Human Research Ethics Committee (HREC) reference number: H-2022–0350. Site-specific approval was granted all six sites. SSA reference numbers: 2022/STE02565, 2022/ETH01295, 2022/STE02566, 2022/STE02562, 2022/STE02567, 2022/STE02561, 2022/STE0256.

Declaration of Competing Interest

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