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Nomenclature for models of maternity care: consultation report, December 2012

Foundations for enhanced maternity data collection and reporting in Australia: National Maternity Data Development Project Stage 1

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Authoritative information and statistics to promote better health and wellbeing

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Foundations for enhanced maternity data collection and reporting in Australia

National Maternity Data Development Project Stage 1

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Contents

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Abbreviations

ACCHO	Aboriginal Community Controlled Health Organisation
DSS	data set specification
FIFO	fly-in-fly-out
GP	general practitioner
MaCCS	Maternity Care Classification System
MMC(s)	Major Model Category(ies)
NMDS	National Minimum Data Set
NMoC	Nomenclature for Models of Care
PDC	Perinatal Data Collection
VBAC	vaginal birth after caesarean

Summary

The National Maternity Data Development Project seeks to develop a standardised nomenclature for maternity models of care that will enable current and future models of care provided in Australia to be identified and described. Following the findings of a literature review, the Nomenclature for Models of Care Working Party approved one of three proposed solutions for classifying models of care using a data framework combined with a set of defined Major Model Categories (MMCs). This proposed solution, known as the Maternity Care Classification System (MaCCS), was then presented at a series of consultation forums in each jurisdiction as well as at a national workshop that reviewed proposed amendments from the jurisdictional forums. Following consensus at the national workshop on all proposed changes, the resulting data items and MMCs were sent out for further consultation via an electronic survey instrument.

A total of 98 participants attended the consultation forums held in each state and territory and over 360 people responded to the electronic survey. Feedback was received from a wide range of stakeholders including obstetricians, midwives, general practitioners, consumers, policy-makers, data managers, neonatologists, researchers and academics. Feedback was overwhelmingly positive. All stakeholder groups acknowledged the need for a classification system that would capture the different characteristics of models of care without relying solely on the name of the model. The results of the consultation echoed the findings of the literature review—that there were too many differences between models of care sharing the same category or name for a simple naming system to be effective in identifying models of care for evaluation or reporting.

Forum participants and survey respondents supported collecting data about characteristics of models of care at the institutional rather than the individual level to reduce the burden on clinicians. Using the MaCCS annually at a hospital to create the 'model of care' codes will make data collection easier. Nonetheless, there were still some concerns about when the model of care would be recorded for each woman, given the retrospective nature of the Perinatal Data Collection forms. Without the use of a shared electronic antenatal record, recording practices for the model of care during the antenatal period and changes to the model may be variable and these data may not be accessible to the midwife at birth, which could result in inaccurate data.

The content of the proposed MaCCS was improved and refined as a result of consulting [or consulting and engaging with] all relevant stakeholder groups. This resulted in a more robust and workable set of model characteristics. The positive feedback from the consultation process confirms that the proposed MaCCS should be progressed as the most suitable tool to define and record models of maternity care in Australia.

1 Introduction

Many actions in the National Maternity Services Plan relate to increasing the availability of and access to a range of models of care and to providing evidence-based information to both consumers and health services (Australian Health Ministers' Conference 2011). Monitoring the effectiveness of these actions relies on collecting and reporting not only consistent information on maternal and perinatal mortality and morbidity but also data relating to models of care. The NMSP acknowledged the need for improvements in this area. Standardising a nomenclature and definitions for maternity models of care would allow data to be collected nationally. This would facilitate meaningful analysis and comparisons of maternal and perinatal outcomes in differing models of care and would assist in evaluating the signs of success of the NMSP.

The National Maternity Data Development Project seeks to address this need by developing a standardised nomenclature for maternity models of care that will enable current and future models of care provided in Australia to be identified and described.

The Nomenclature for Models of Care (NMoC) project began with a review of the literature relating to models of maternity care, and the development of an appropriate nomenclature. (The literature reviewed including national and jurisdictional policy documentation and published literature from Australia and internationally.) Informed by a data framework provided by members of the NMoC Working Party, the review was not intended to identify which aspects of models of care were more important than others or which overall models produced better outcomes than others. The review concluded that, although no standard nomenclature for describing models of care existed, there were a range of characteristics that could be used to differentiate between them and to define them as part of a standardised classification system. The review demonstrated that, while there were broad categories of models of care in Australia (Major Model Categories [MMCs]), there were substantial variations within those categories that prevented any meaningful evaluation of models using their MMC only. Models of care are also evolving; a nomenclature that does not allow for this dynamic would not be meaningful or useful.

Following the findings of the literature review, the NMoC Working Party approved one of three proposed solutions for classifying models of care (Appendix A). This proposed solution—known as the Maternity Care Classification System (MaCCS)—uses a data framework presented as a data set specification (DSS) to capture the unique characteristics of models of care, with an assigned MMC to be used as a label in health information systems and for reporting purposes. Figure 1.1 shows how the MaCCS is proposed to work.

It is essential that the proposed solution meets the needs of potential users, is practical, encompasses all models and is understandable. Stakeholders were consulted to assess whether the MaCCS would be suitable. Chapter 2 of this paper describes the consultation process. Consultation forums in each jurisdiction were followed by a national workshop that reviewed amendments proposed by these forums. Consensus on these amendments was reached before the revised MaCCS data items and MMCs were sent out for wider stakeholder consultation via an electronic survey instrument. Chapter 3 of this paper details the feedback and amendments to the MaCCS as a result of this wider consultation.

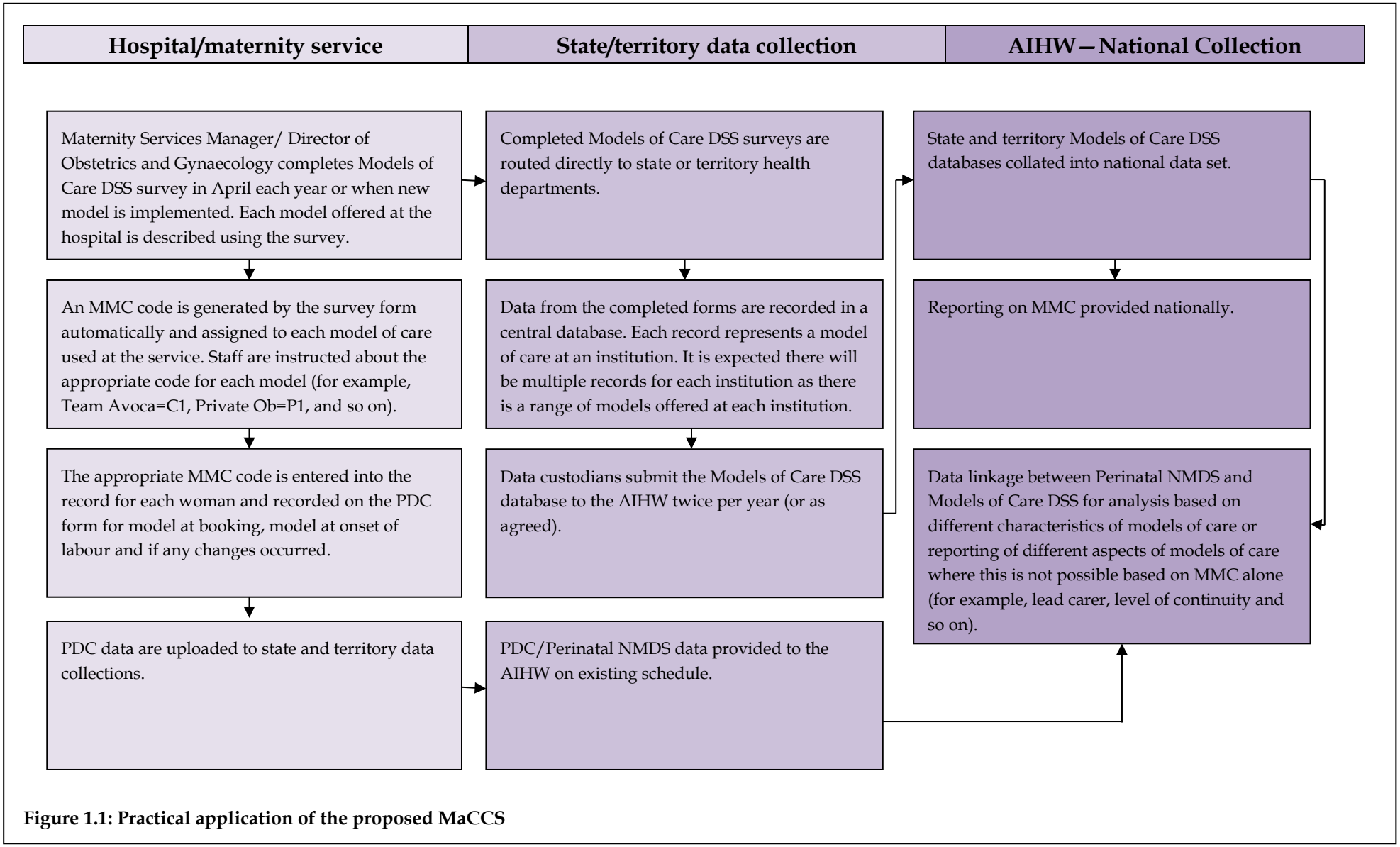


Figure 1.1: Practical application of the proposed MaCCS

2 Method

Figure 2.1 represents a summary of the process used to seek stakeholder feedback on the proposed MaCCS.

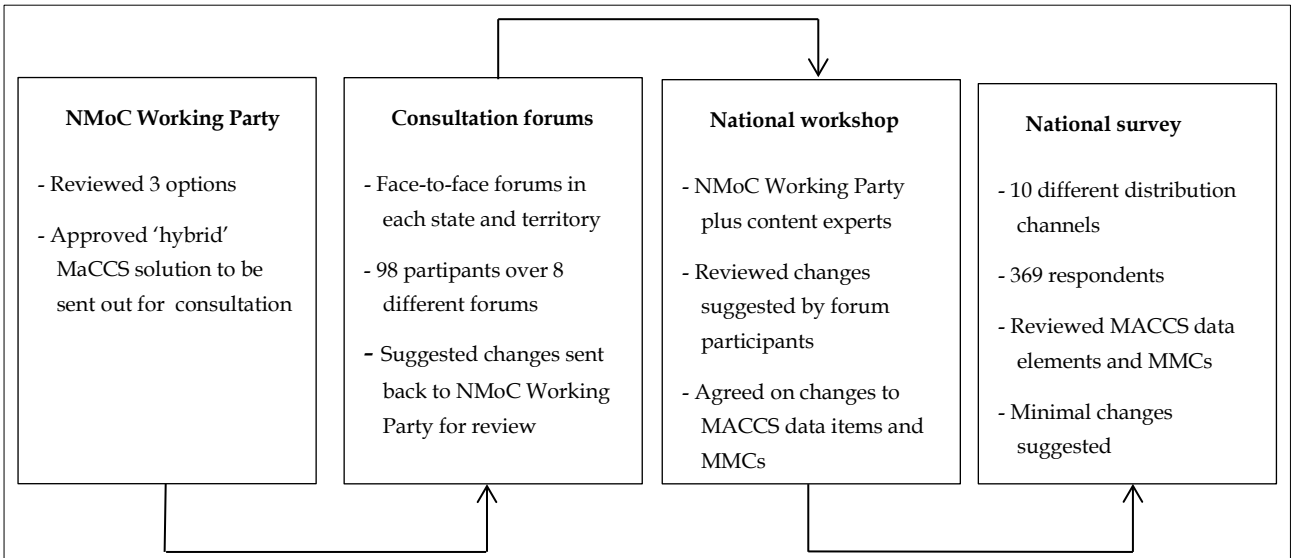


Figure 2.1 Process for seeking feedback on the MaCCS

2.1 Communication plan

Given the complexity of the MaCCS, face-to-face consultation forums were deemed essential to ensure that the concept was well understood by stakeholders and that the feedback was relevant. A communication plan guided the consultation phase and was a companion document to the internal work plan used to keep the project on track. The communication plan identified all relevant stakeholder groups, the key messages to be communicated throughout the consultation process and risk minimisation strategies to ensure the consultation process was a success.

2.2 Consultation forums

The consultation phase began with a presentation to the National Maternity Council in Alice Springs on 5 July 2012. The Council is a voluntary organisation, established in 2009, with representatives from each state/territory and from the Australian Government. Members include clinical leaders, policy-makers, academics and service providers committed to strengthening maternity services in Australia. As many members are the key policy advisors from their jurisdiction, it was felt that addressing the National Maternity Council would gain initial buy-in from key stakeholders in each jurisdiction and provide important contacts for organising the consultation forums around the country. These aims were achieved, with jurisdictions agreeing to assist with coordinating forums.

Feedback from the short presentation to the National Maternity Council was positive. It was acknowledged that a system to classify models of care was greatly needed and that the process used to develop the MaCCS had been very comprehensive.

Between 31 July and 3 September 2012, seven face-to-face consultation forums were conducted, with Northern Territory being the only jurisdiction unable to host one.

Before each forum, a jurisdictional representative was contacted (predominantly the senior policy advisor). He or she was given background information on the project and asked to assist in hosting a face-to-face forum of approximately 3–4 hours. Jurisdictional contacts were then asked to identify and invite approximately 15 appropriate representatives from all stakeholder groups. A template invitation was provided along with background reading material for all participants. Suggested stakeholders included:

- obstetric and midwifery advisors (from state/territory departments of health)
- a consumer representative
- PDC data manager/custodian
- senior clinical representatives, including maternity service managers
- rural and/or remote midwifery/maternity manager
- general practitioner (GP) obstetrician
- information systems representative (especially if Obstetrix or other maternity health information system is used)
- members of state maternity services clinical reference group/committee.

To enable stakeholders from remote or rural settings to participate, jurisdictions were encouraged to have teleconference/videoconference facilities to complement the live forums. All jurisdictions took advantage of this modality which increased the participation. Table 2.1 provides information about each of the consultation forums.

Table 2.1: Consultation forums, date and size

Location	Date	No. of participants
South Australia	31 July 2012	12
New South Wales	1 August 2012	12
Queensland	9 August 2012	16
Western Australia	17 August 2012	11
Victoria	23 August 2012	13
Tasmania	24 August 2012	17
Northern Territory (teleconference)	29 August 2012	3
Australian Capital Territory	3 September 2012	14
Total		**98**

2.3 National workshop

Following the jurisdictional consultation forums, a national workshop was convened on 6 September 2012. As well as members of the NMoC Working Party, content experts from midwifery, research and obstetrics were invited to participate. A total of 18 participants representing all of the disciplines attended the workshop. The group systematically reviewed collated feedback from the consultation forums. Discussion of each item continued until

consensus was reached on each proposed amendment, addition and deletion to the data elements and to the MMCs. The agreed data elements and MMCs are presented in Chapter 3.

2.4 National electronic survey

The final stage of the consultation process was the distribution of an electronic survey using SurveyMonkey® to seek feedback on the data elements and MMCs that made up the proposed MaCCS. To ensure broad coverage of all relevant stakeholders, a range of distribution networks was identified which, although had some overlaps, would guarantee the widest possible reach. The distribution networks used were:

- Australian College of Midwives
- Australian College of Rural and Remote Medicine
- Childbirth Australia
- CRANAplus
- Maternity Coalition
- Perinatal Society of Australia and New Zealand
- The Australasian Maternity Outcomes Surveillance System
- The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
- Women's Healthcare Australasia
- all participants of the jurisdictional consultation forums.

The survey provided background information on the proposed MaCCS (including a diagram of how it was envisaged to work in practice) and asked respondents if they agreed with each of the data element descriptions, the proposed values and the MMCs. Respondents were given the opportunity to comment on any element, value or MMC they disagreed with, and to provide further comments about the MaCCS. A copy of the survey is provided at Appendix B.

An email was sent to a relevant person in each of the identified distribution networks and followed up with a phone call (in some cases) to ask if a link to the survey could be distributed to members of the network. A template email with background information was also sent. Within SurveyMonkey®, a separate collector was created for each distribution channel with a separate hyperlink to assist in identifying the source of the respondents. The survey responses were anonymous and the only 'personal' information captured was the profession of the respondent. The survey was available for completion between 15 October and 7 November 2012. It is not possible to find out the number of people who were sent a link to the survey due to the use of third-party distribution channels, although an estimate puts it into the thousands. The results of the survey are presented in Chapter 3.

3 Results

3.1 General feedback from the consultation forums

Feedback from all forums was generally consistent. Overall, it favoured a system to classify models of care; however, that system should be one that was least onerous on data collection systems and would need to be based on an NMDS to guarantee adoption by the jurisdictions (including the private sector).

Issues related to state-specific terminology and labels were raised in all forums, such as the term for a lead/primary care provider, the name of a public hospital labour and delivery ward, and how risk was labelled (normal versus low, high versus complex). These issues highlighted why, in the absence of universally agreed definitions for models of care, each state or territory could refer to the same thing by many different names.

The data elements in the original framework that got the most feedback and suggestions for change were:

- type of risk
- continuity of lead carer
- number of maternity care providers
- continuity of location of care
- continuity of information
- geographical location of model.

The concept of defining models of care by their characteristics was supported by all jurisdictions except Victoria where it was considered that maternity care was provided in service pathways rather than as discrete models of care. The other jurisdictions could relate the contents of the MaCCS to the models of care provided in their hospitals. Participants at the Victorian forum, however, were of the view that maternity services provided by their hospitals followed a service pathway set by the needs of each woman and were not described by the data items suggested in the MaCCS. (The exception was a small number of Midwifery Group Practice models that were recently introduced.) There was some concern that the terminology used in the MaCCS would undermine the work done in Victoria to introduce a multidisciplinary team approach and to reduce the role-delineated terminology previously in place (such as *midwifery-led* care). Although some maternity services in Victoria provided discrete models of care, such as Midwifery Group Practice, the Victorian Department of Health had been moving towards providing service pathways. These pathways were often designated as 'red' or 'green' (that is, standard care pathway provided by 'level 1' clinicians such as midwives or junior doctors versus more complex care provided by 'level 2 or 3' clinicians such as specialist obstetricians, maternal-fetal medicine subspecialists and other medical specialties). According to participants at the Victorian forum, models of care targeted at specific groups of women—such as diabetes clinics, vaginal birth after caesarean (VBAC) clinics, bariatric clinics and the like—were not part of the model of service provision in Victorian hospitals nor were there lead/primary carers in their service pathways.

As a result of the issues raised at the Victorian forum, extra values were proposed for inclusion in some of the data items to accommodate the multidisciplinary team approach provided in Victoria. After much debate, participants at the Victorian forum agreed that the

service pathway 'model' provided in hospitals was, in effect, described by the MMC 'Public hospital maternity care' and could still be characterised by the data items in the framework.

3.2 Feedback on implementation issues

The forums also highlighted potential implementation issues not yet identified. These related to the reference points in pregnancy that the model of care should be and could be collected. The initial proposal was to collect the model of care at three different reference points: at booking, at 37+ weeks (term) and at onset of labour. It was also proposed that, if a woman changed her model of care during pregnancy, the reason for this was captured and the gestation at which it occurred. During the forums, it became clear that without a shared electronic antenatal record (at the jurisdictional level or nationally) this proposal was aspirational and not possible to accurately achieve. At present, the majority of jurisdictions (except Tasmania) collect their perinatal data during the birth episode either electronically or through a paper midwives' data collection form (known by different names in each jurisdiction). Data about the antenatal period is collected retrospectively either by reviewing the clinical history located in paper or electronic records or by asking the woman.

Two issues arise about collecting information about the model of care before the birth episode. The first is that, in many cases, it would be difficult to ascertain from the clinical record what model of care a woman may have had at booking unless it had been recorded on her hand-held record (if one is present); as well, the quality of this retrospective data would be questionable. Determining the reason for a change in models and when this occurred would also be difficult from the notes and many women may not even be aware that they have changed model of care.

The second issue arises if a woman got her antenatal care at a different hospital/service to the one in which she gave birth. The model of care code (based on the MMC) generated by the MaCCS is applicable only to the hospital where the code was created. It cannot be used on the PDC form at a different hospital or it will be linked to a different set of characteristics recorded by the Models of Care DSS. For example, Hospital A will have a Midwifery Group Practice caseload model assigned with a code MGP1 that has been created based on a set of characteristics answered in the Models of Care DSS questionnaire at Hospital A at the start of the year. Hospital B also has a Midwifery Group Practice caseload model assigned with a code MGP1, but it has a slightly different set of characteristics (it takes all women as opposed to Hospital A MGP1 which takes only women with no identified risk factors). If a woman starts her pregnancy care at Hospital A with care by MGP1 at booking but during the pregnancy she moves cities and joins Hospital B where, at term and in labour, she is under the care of MGP1 at Hospital B, the staff completing her PDC form after birth cannot put in MGP1 as the model of care at booking as this would make it look like she was looked after under *their* MGP1 not that at Hospital A. Instead, they would need to put in the code for 'Model at other hospital'. If a single electronic pregnancy record was used across a jurisdiction (as is the case in Tasmania with ObstetrixTas), the data about model of care could be entered in live at the different reference points in pregnancy and be attributed to the correct hospital. For example, at the booking appointment, staff at Hospital A would put in their MGP1 code in the field 'MoC at booking', which would be tagged with their institution ID automatically. Then, when the woman changed to Hospital B, staff there could access her electronic record and record *their* MGP1 code in the 'MoC at term' field and also at what gestation she came to them and why the change occurred. As these data would be recorded live at the point of entry, there would be no issues relating to accuracy of retrospective data collected during the birth episode, and

the correct model of care code would be entered at each reference point. This is not going to be possible with health information systems currently used around Australia, which is why the added MMC of 'Model of care at other hospital' was created.

Another concern raised during the consultation forums was how the data collected by the MaCCS would be used, particularly to evaluate outcomes for mothers and babies. Some jurisdictions were concerned that conclusions would be drawn about the effectiveness of some models of care over others based purely on data elements collected through the MaCCS taken in isolation. Given the complexity of models of care and that there are many aspects of models that cannot be isolated and measured (such as philosophy of care, organisational processes and policies, individual staff skill levels to name a few), care needs to be taken when using data collected through the MaCCS and linked to PDC records. Any requests to use the data collected through the MaCCS would need to be submitted through the same ethics processes as other health data, including for its use for epidemiological research.

Given concerns expressed about extra time burdens on staff—and to improve the process of completing the MaCCS questionnaire in subsequent years—participants suggested that hospitals are sent back their previous year's records to review and to make changes/add new models only if needed. Participants also suggested that the manager who completes the MaCCS each year should do this with the assistance of staff who work in the different models to ensure the data are captured accurately.

3.3 Feedback and actions agreed by consensus

This section gives an overview of the collated feedback for each data element of the MaCCS and MMC and lists the action adopted by consensus at the national workshop.

Type of risk

Feedback:

The lack of national criteria for defining risk in pregnancy made this a contentious item for many jurisdictions. Despite common usage of the terms 'low risk', 'normal risk' and 'high risk' among clinicians and widespread use of the Australian College of Midwives Guidelines for Consultation and Referral (which categorises different conditions in pregnancy based on their risk and need for consultation or referral), the need for standardised criteria to define levels of risk resulted in a recommendation to the national workshop for this item to be replaced with an alternative data element—*Clinical restriction criteria*. The national workshop agreed to proceed with a new item that would identify if women were excluded from entry to a model of care based on clinical restriction. This would be an indicator item only (yes/no values).

Action:

Remove *Type of risk* and replace with *Clinical restriction criteria*.

Target group

Feedback:

There was general consensus at the jurisdictional forums that this was a useful item and that it should have a list of values populated from the most common target groupings. There was

concern that this list should be comprehensive without being too long and that it should include the value of 'low risk/normal' pregnancy.

Action:

Keep the data element and create a value list of the most common target groups.

Professional affiliation of lead/primary carer

Feedback:

There were many issues raised at the consultation forums about different terminology for this data element. Some jurisdictions use the term 'lead carer', some prefer 'primary carer' and others 'maternity care coordinator'. Some jurisdictions objected to any reference to a main or lead carer. There were also suggestions for more values, including separate values for private and public clinicians and more shared care combinations.

Action:

Change the name to *Professional affiliation of designated maternity carer* and expand the value list.

Organisation of maternity care providers

Feedback:

This item had very polarised feedback from the forums with participants either strongly in favour or against it. In many cases, particularly in jurisdictions where the use of annualised salaries for caseload midwives was only a recent issue, the data element was not well understood and there were requests for the description to be enhanced. The national workshop concurred with this view and recommended the item be kept, with extra descriptors added to enhance understanding of the data element.

Action:

Keep the data element but enhance the description.

Size of caseload

Feedback:

Some jurisdictions did not see the relevance of this item while others felt it was important to identify, in particular for midwifery-led models of care. The national workshop concluded that the item should be kept with an enhanced description and some minor changes to the value set.

Action:

Keep the data element but enhance the description and modify the value list.

Continuity of lead carer

Feedback:

This data element was subject to much debate in the forums, with some jurisdictions having a preference for continuity of **care** rather than **carer**. There is a considerable difference between these two characteristics and the literature review supported the benefit of continuity of carer. Many fragmented models of care provide continuity of care through providing a small team of carers sharing the same philosophy and processes of care; this does not equate to continuity of carer. The national workshop agreed to keep the data element with some minor rewording to maintain consistency with changes made to other elements.

Action:

Keep the data element but reword to *Continuity of designated carer*.

Professional affiliation of other routine collaborative carer(s)

Feedback:

The forums were generally in favour of this data element, with suggestions for extra values to be added. The main suggestion for change was to replace the word 'routine' with 'planned'.

Action:

Keep the data element but reword to *Professional affiliation of other planned collaborative carer(s).* Extra values to be added to the value list.

Number of maternity care providers

Feedback:

All jurisdictions expressed concern about the accuracy of the data that would be collected for this data element when it was being collected prospectively for a model of care. There were suggestions that this might be broken into three data elements, one for each stage of pregnancy. There were also concerns that this data element might be misleading and be mistaken for a lack of continuity of carer in models of care for complex pregnancy management when the majority of care was provided by one carer but there is a need for a multidisciplinary care plan. The national workshop recommended that this data element should be removed due to the likelihood of low-accuracy data being collected—therefore, data of low value.

Action:

Remove the data element.

Continuity of location of care

Feedback:

While there was clear support for the intention of this data element, particularly in relation to rural and remote models of care, there were polarised views in the forums about how best to measure it. Some participants were of the view that distance from intrapartum care was a better measure while others believed that the time taken to travel was better. For some models

of care, this data element would have been difficult to answer as women may travel a range of distances. After further discussions with clinical experts working in remote maternity care, it was recommended that the item could be replaced with one assessing if all women need transfer to a different location for birth. This would still identify the disconnect experienced by women and their families when birthing services are not offered in their local community.

Action:

Remove *Continuity of location* of care and replace with *Planned transfer for birth*.

Continuity of information

Feedback:

As with the previous data element, forum participants supported the intention of capturing this information; however, they doubted the accuracy (and therefore the usefulness) of the data. Even if hand-held records were a part of a model of care, the data element does not measure the quality of the content (and therefore the usefulness of the record) or if the record is available to all care providers. It is unlikely that any health service would select that there was no continuity of information. The national workshop concurred and recommended removing this data element.

Action:

Remove the data element.

Main planned location of antenatal care

Feedback:

Most forum participants were in favour of this data element; however, the Northern Territory participants did not believe it was relevant to outcomes so was not important to capture. Feedback was mostly related to the value list and to ensuring that this was a multiple value field. In terms of data development, there were some concerns that the value for 'Aboriginal Community Controlled Health Organisation' (ACCHO) was a different concept from the other values and this would need to be examined more closely at the time of data development.

Action:

Keep the data element but enhance the description and add to the value list.

Main planned location of intrapartum care

Feedback:

Discussion in the forums centred on the terminology used in the value list. There were concerns about the definition of 'birth centre' and that in some locations there are different terms for a 'labour/delivery ward'—such as 'birth suite', 'multipurpose birthing room' and 'maternity room'. The same concerns about the value for ACCHO (listed above) were relevant to this data element too.

Action:

Keep the data element but reword to *Main planned location for birth* and enhance the description and add to the value list.

Main planned location of postnatal care

Feedback:

There were similar comments about the value list for this data element as for the preceding two data elements. Participants reiterated the need for this to be a multiple value field and to expand the value list.

Action:

Keep the data element, enhance the description and add to the value list.

Individual or group care

Feedback:

The only noteworthy feedback for this data element was from a jurisdictional representative who was not aware of group care models. There was a suggestion to enhance the description for this data element; however, the national workshop participants believed there was already enough information to explain it.

Action:

Keep the data element with no changes (one minor wording edit was subsequently made).

Trimester of first clinical assessment

Feedback:

There were concerns raised in the forums about how this data element would be interpreted: whether this would be mistaken for a booking visit and whether the first visit to a GP would be considered the first clinical assessment. While many models of care are designed to start care for women at a particular gestation, there are also many (such as high risk services) that have women start the model at any gestation. There could also be a large difference between the intention of the model and the reality of when women can get a place to start care. After discussion of this issue at the national workshop, it was recommended to remove this data element.

Action:

Remove the data element.

Geographical location of model

Feedback:

Feedback for this data element—designed to identify models of care in regional and remote locations, even if the women in the model birthed in urban or metropolitan settings—was similar to that for *Continuity of location*. Participants could see the value in the intent but were

not convinced the data element would capture this accurately. Also, there were issues in defining where remote models were located. These various issues were considered at the national workshop and discussed further with rural/remote clinical experts. It was then recommended that this data element be removed and replaced with one that identified added services that might be provided in a model specifically for rural or remote women, such as fly-in-fly-out (FIFO) services and telehealth services.

Action:

Remove the data element and replace with *Additional antenatal services*.

Postnatal care end

Feedback:

The feedback on this data element related predominantly to the wording in the description and how 'postnatal care' is defined: ongoing care or just the availability of care if needed. There were some participants who suggested that a GP would be available to provide postnatal care for women indefinitely if they were also the family practitioner although it would not necessarily be a series of scheduled visits after discharge. After considering these issues, the national workshop recommended the data element be amended to reflect when all care within the model is completed and responsibility for ongoing care no longer rests within the model.

Action:

Keep the data element but reword to *Model completion*, enhance the description and amend the value list.

Extra data elements suggested by forum participants

Feedback:

During the forums, participants were given an opportunity to suggest other data elements that may not have been included in the proposed MaCCS. Some of the suggested new elements were replacements for existing data elements and others were unrelated. The new data elements put forward to the national workshop (not already included as replacements above) were:

- Planned medical visits—are there planned medical visits for all women?
- Named carer—is there a named carer across all stages of pregnancy?
- Number of planned antenatal visits—how many antenatal visits are built into the model?
- Out-of-pocket costs—are there out-of-pocket costs for women in this model?

The national workshop considered all these extra data elements and concluded that only the first one was relevant and suitable to be added into the proposed DSS.

Action:

Add the data element *Planned scheduled medical visits* as an indicator item—yes/no values.

Major Model Categories

Feedback on the MMCs was generally positive, with discussion focused on wording in the definitions. There was also debate about separating GP obstetricians from specialist obstetricians. Other themes drawn out from the forums were about whether there was a need to identify 'eligible' midwives as opposed to non-eligible independently practising midwives, and how GP shared care was practised differently among the jurisdictions. Participants felt that with the addition of a separate category for GP obstetrician care, all models of care would fit into the suggested MMC.

Private obstetric care

Feedback:

There were mixed views by participants as to whether this MMC should include GP obstetrician care or whether this should be a separate MMC. Many participants felt that it was important to distinguish between specialist obstetric care and care provided by GPs with obstetric qualifications. After considering these issues, the national workshop agreed that a separate MMC should be created for GP obstetric care that was not 'shared care'.

Action:

Change this MMC to *Private obstetrician (specialist) care* and amend definition accordingly.

Private midwifery care

Feedback:

Discussion about this MMC focused on the wording in the definition relating to collaborative arrangements and insurance. There was some suggestion by participants that there should be a separate MMC for 'eligible' midwives as well as distinguishing between care by a single private midwife and a group of private midwives. These suggestions were considered by the national workshop which agreed to amend the definition to remove reference to collaborative agreements or insurance but decided that further MMCs were not needed. The issue of 'eligibility' relates to the availability of Medicare rebates only and does not reflect a difference in the model itself. There is no differentiation in GP models of care in relation to whether there are out-of-pocket costs for women so this should be the same for private midwifery care.

Action:

Keep this MMC but amend the definition to be consistent with other MMCs.

Shared care

Feedback:

The only issue identified for this MMC was to ensure there was a separate MMC for GP obstetrician care that is not part of a shared care arrangement (see Private obstetrician [specialist] care).

Action:

Keep this MMC with no changes.

Combined care

Feedback:

As this MMC is very closely related to 'Shared care', many forum participants suggested the definition needed strengthening to differentiate between the two. There needed to be an emphasis on this being a private clinician providing antenatal care and birth being in a public hospital with different care providers and not as part of a formal arrangement. There were also requests to ensure that wording in the definition was consistent with that of other MMCs in relation to the provision of postnatal care continuing in the home.

Action:

Keep this MMC and enhance the definition.

Public hospital clinic care

Feedback:

Most participants were happy with the wording for this MMC but to accommodate the 'service pathways' in Victoria as well as to recognise that not all hospitals have a formal 'clinic' setting, the national workshop agreed to amend the name of this MMC to *Public hospital maternity care* and remove the reference to clinics. It was also suggested and agreed to enhance the definition to indicate this MMC may be provided by a multidisciplinary team and also in outreach settings.

Action:

Keep this MMC but reword it to *Public hospital maternity care* and enhance the definition.

High risk public hospital care

Feedback:

There was little feedback on this MMC; however, to keep it consistent with the changes made to the previous MMC, the national workshop agreed to change the name to *High risk public hospital maternity care* and to enhance the definition to emphasise that this MMC was for women with complex/high risk pregnancies.

Action:

Keep this MMC but reword it to *High risk public hospital maternity care* and enhance the definition.

Team midwifery care

Feedback:

The feedback for this MMC related to ensuring wording in the definition was consistent with that of other MMCs (remove the reference to collaborative arrangements) and to emphasise this is a team of rostered midwives. The national workshop agreed to enhance the definition to reflect these suggestions.

Action:

Keep this MMC and enhance the definition to be consistent with that for the other MMCs.

Caseload midwifery care

Feedback:

There were issues with the terminology used in the name of this MMC between different jurisdictions. In some places, this model is known as Midwifery Group Practice and in others it is Midwifery Caseload. Both names describe the same model of care and describe how the care providers are organised. Similar feedback was also received about consistency with other MMCs in wording and the removal of the reference to collaborative arrangements. The national workshop agreed to change the name of the MMC to *Midwifery Group Practice caseload care* and update the definition to be consistent with that of other MMCs.

Action:

Keep this MMC but reword it to *Midwifery Group Practice caseload care* and enhance the definition to be consistent with that of the other MMCs.

Remote area care

Feedback:

There was only a small amount of feedback on this MMC with agreement that it was a good category to capture. Feedback included adding remote nurses into the definition as well as providing extra services such as FIFO and telehealth services. The national workshop agreed with the changes as well as with rewording the name of the MMC to be consistent with that of the other MMCs.

Action:

Keep this MMC but reword it to *Remote area maternity care* and enhance the definition and make it consistent with that of the other MMCs.

No formal care

Feedback:

All forums agreed that this category was necessary to capture women who may arrive at hospital late in pregnancy or in labour without receiving any formal antenatal care. During the forums, it also became apparent that if the MMC was to be captured retrospectively for earlier reference points in pregnancy (that is, the MMC at booking and at term), there would need to be an added MMC of *Model of care at other hospital* for women who may change hospitals during pregnancy. As the MMC is linked to a different set of characteristics (recorded in the DSS) at each hospital, a MMC for one hospital cannot be applied at another hospital. This makes it necessary to have a means to record the model of care for women who have transferred from one hospital to another. This new MMC would be for administrative purposes and used in jurisdictions that do not have a single shared electronic record or if women move between jurisdictions.

Action:

Keep this MMC and add an extra MMC to be used when women transfer to a different hospital at any time before birth called *Model of care at other hospital*.

Extra Major Model Categories

Feedback:

As already discussed, many forum participants requested a separate category for GP obstetrician care. This was the only extra MMC agreed to by the national workshop (except for the administrative MMC above for transfers).

Action:

New MMC of *GP obstetrician care*.

Summary tables

A comparison of the data elements and MMCs before the consultation forums and after consensus at the national workshop appears in Table 3.1 and Table 3.2, respectively. The data elements achieved after consensus are indicated as *After consensus* and were used in the next phase of the consultation process (the electronic survey).

Table 3.1: Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Women	Type of risk REMOVED AND REPLACED	Type of risk for women usually admitted to the model. For example, risk equates with an additional level of complexity or medical/psychosocial/obstetric conditions that result in pregnancy no longer being 'normal' risk.	Normal Mixed/all risk High risk only
After consensus	Clinical restriction criteria	Are there clinical restriction criteria for entry into this model of care? For example: only 'low risk' women or women with diabetes, or high medical risk, and so on. If the model is available to all women, the answer is 'no'.	Yes; No
	Target group AMENDED	Is the model designed for a specific group of women (for example, cultural group, vulnerable group, medical group)?	Diabetic clinic VBAC Aboriginal or Torres Strait Islander women and so on
After consensus	Target group	Is this model designed primarily for a specific target group of women? For example: women with diabetes, VBAC, Aboriginal and Torres Strait Islander women, young mothers, low risk women, and so on.	Diabetes, VBAC, Aboriginal or Torres Strait Islander, Drug and alcohol, Bariatric, Multiple pregnancy, Vulnerable women, Young mothers, Migrant or refugee, Mental health, Low risk/normal pregnancy, Complex/high risk pregnancy, Planned homebirth, Other cultural, Other medical, Other social, Other
Carers	Professional affiliation of lead/primary carer AMENDED	Many models of care are defined by the professional who is the 'lead carer'—also known as the 'maternity care coordinator', 'primary carer' (for example, midwifery-led models, GP-led models). The prospective data values also include whether there is more than one lead carer.	Midwife Obstetrician GP obstetrician GP Maternal-fetal medicine specialist Aboriginal health worker Shared care: GP + midwife Shared care: midwife + Aboriginal health worker

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Carers (continued) *After consensus*	Professional affiliation of designated maternity carer	Many models of care are defined by the professional who is the designated maternity carer, sometimes known as the 'lead carer', 'maternity care coordinator' or 'primary carer' (for example, midwifery-led models, GP-led models). The available data values also include whether there is more than one type of designated carer in a shared-care model.	Specialist obstetrician—public, Specialist obstetrician—private, GP obstetrician, Midwife—public, Midwife—private, GP, Maternal-fetal medicine subspecialist, Nurse, Shared care—GP + obstetrician, Shared care—GP + hospital clinic, Shared care—GP + midwife, Shared care—GP + midwife + Aboriginal health worker, Shared care—Midwife + obstetrician, Multidisciplinary team
	Organisation of maternity care providers AMENDED	Documented structure of the core group of maternity care professionals that are in contact with the woman. For example, a Midwifery Group Practice offering a caseload model may have a self-managed caseload but a team midwifery model may have a rostered organisation.	Rostered Self-managed (that is, has a capped caseload) Self-managed without a capped caseload
After consensus	Organisation of maternity care providers	Documented work management (and remuneration) structure of the core group of maternity care professionals who are in contact with the woman. For example, a Midwifery Group Practice offering a caseload model may have a self-managed capped caseload (and be remunerated on an annualised salary) but midwives in a team midwifery model may be rostered within an award structure. Public hospital clinics staffed by doctors may be rostered but a private obstetrician may be self-managed without having a capped caseload.	Rostered within an award structure, Self-managed with a capped caseload, Self-managed without a capped caseload
	Size of caseload AMENDED	If the model has a capped caseload, what is the usual capped number of women per annum per carer?	<30 30–40 40–50 >50
After consensus	Size of caseload	If the model has a capped caseload within an industrial agreement or award, what is the usual capped number of women per annum per full-time-equivalent carer? If the model does not have a caseload or there is no cap, then select N/A.	<30; 31–40; 41–50; 51–60; >60; N/A.

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Carers *(continued)*	Continuity of lead carer AMENDED	This element describes the extent of continuity of the lead or primary carer across the different stages of maternity care. For example: a midwife in private practice might have continuity of lead carer throughout antenatal and postpartum, or the whole duration of maternity care.	Whole duration of maternity care Antenatal period Antenatal and intrapartum Antenatal and postpartum No continuity
After consensus	Continuity of designated carer	This element describes the extent of continuity of the designated or primary carer across the different stages of maternity care. For example: a midwife in a Midwifery Group Practice caseload might offer continuity of designated carer throughout antenatal and postpartum only, or for the whole duration of maternity care.	Whole duration of maternity care, Antenatal period, Antenatal and intrapartum, Antenatal and postpartum, No continuity
	Professional affiliation of other routine collaborative carer(s) AMENDED	This is designed to capture the scope of other recognised and named professional roles who routinely collaborate with the lead care provider in the model of care. These professionals have a designated role in the model as opposed to being referred to on an ad hoc basis as required for some women.	Midwife Doctor (includes GP or specialist obstetrician) Nurse Aboriginal health worker Medical specialist (other than obstetric) Perinatal mental health worker Other allied health practitioner Nil
After consensus	Professional affiliation of other planned collaborative carer(s)	This is designed to capture the scope of other recognised and named professional roles who routinely collaborate with the designated care provider in the model of care. These professionals have a designated role in the model as opposed to being referred to on an ad hoc basis as required for some women.	Specialist obstetrician—public, Specialist obstetrician—private, GP obstetrician, Midwife—public, Midwife—private, GP, Maternal-fetal medicine subspecialist, Aboriginal health practitioner, Medical specialist (other than obstetric), Nurse, Perinatal mental health worker, Other allied health practitioner, Nil
	Number of maternity care providers REMOVED	This refers to the number of different maternity care providers that would **routinely** see the women in this model throughout the three stages of maternity care. For example: for a particular model of care, there may be 6 people in the group practice, but only 2 midwives actually see the woman, so the number would be 2.	1–2 3–6 >6 Not defined

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Care	Continuity of location of care REMOVED	This element describes the extent of continuity of the context of the model. Does the model provide continuity across locations of care? For example: a model may be able to provide only antenatal care in a remote community with all women being transported to an urban hospital for intrapartum care by a different team of providers.	All care provided in one area Intrapartum care >50 km from antenatal Intrapartum care >150 km from antenatal Intrapartum care >500 km from antenatal (values to be set)
After consensus	Planned transfer for birth ADDED	Do all women in this model of care require transfer to another location for intrapartum care and birth? This is a planned transfer for all women and not just for those women who require a higher level facility for birth or in an emergency. For example: a remote maternity care model may require all women to be transferred from their remote community to an urban hospital at 36 weeks to wait for labour and birth.	Yes; No
	Continuity of information REMOVED	This element describes whether there is informational continuity regardless of the continuity of care providers or location. For example: women in this model of care are given a hand-held pregnancy record for the duration of care.	No continuity of information Single paper hand-held record for all care Single shared electronic record
	Main planned location of antenatal care (most care is provided here) AMENDED	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example: a Midwifery Group Practice caseload model might offer antenatal care at a hospital clinic or home.	Hospital clinic Clinicians' rooms Community facility ACCHO Home Mixed
After consensus	Main planned location of antenatal care	This element describes the scope of location offered within this model of care for the provision of antenatal care. Some models of care offer multiple options and all applicable locations may be selected. This is the location(s) where the majority of antenatal care is provided For example: a Midwifery Group Practice caseload model might offer antenatal care at a hospital clinic or home. This is a multiple-value field so all locations provided in the model can be selected.	Hospital clinic—onsite, Hospital clinic—outreach, Clinicians' rooms / Medicare Local, Community facility, ACCHO facility, Home, Other

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Care *(continued)*	Main planned location of intrapartum care (most care is provided here) AMENDED	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example: a team midwifery model may offer birth in a hospital or birth centre.	Home Birth centre—stand alone Birth centre—in hospital Hospital labour ward Other hospital area ACCHO Varies depending on availability or choice
After consensus	Main planned location for birth	This element describes the scope of location offered within this model of care for birth. Some models of care offer multiple options and all applicable locations may be selected. This is the location(s) where the majority of care is provided for birth. For example: a team midwifery model may offer birth in a hospital or birth centre.	Home, Birth centre—stand alone, Birth centre—in hospital, Birth suite, Hospital labour/delivery/maternity ward, Other hospital area including theatre, ACCHO facility, other
	Main planned location of postnatal care (most care is provided here) AMENDED	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example: a shared care model may offer postnatal care in hospital or home.	Only hospital care Hospital and home care Only home care ACCHO Other
After consensus	Main planned location of postnatal care	This element describes the scope of location offered within this model of care for the provision of postnatal care. Some models of care offer multiple options and all applicable locations may be selected. For example: a shared care model may offer postnatal care in hospital or home.	Home, Birth suite, Hospital labour/delivery/maternity ward, ACCHO facility, Hotel/hostel, Community facility, Clinicians' rooms/Medicare Local, Other
	Individual or group care AMENDED	To identify whether the model of care offers antenatal and postnatal care in individual or group sessions. For example: a team midwifery model offering group antenatal care such as *Centering Pregnancy*®.	Individual one-to-one care Group session Mix

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Care *(continued)* *After consensus*	Individual or group care	To identify whether the model of care offers antenatal and /or postnatal care in individual or group sessions. For example: a team midwifery model offering group antenatal care such as *Centering Pregnancy*®.	Individual one-to-one care, Group sessions, Mix
	Trimester of first clinical assessment REMOVED	In which trimester is the first clinical appointment or assessment routinely conducted? This is not an administrative booking visit unless there is a clinical assessment done as well.	First (0–12 weeks) Second (13–26 weeks) Third (27–40 weeks)
After consensus	Planned scheduled medical visits ADDED	Does this model include planned visits with a doctor for all women? For example: a Midwifery Group Practice caseload model may include 2 planned visits to a specialist obstetrician for all women, and a public hospital maternity care model run by midwives may not schedule medical visits for all women and refer them to a specialist obstetrician only when needed.	Yes; No
	Geographic location of model REMOVED AND REPLACED WITH 'Additional antenatal services'.	To describe at the broadest level the geographical location of the majority of care provision of this model. For example: if antenatal care is provided in a remote community but intrapartum care is in a metropolitan hospital, this would be a 'remote' location. This item acknowledges the origin of the model rather than the location of the birth.	Metropolitan Rural inner region Rural outer region Remote
After consensus	Additional antenatal services ADDED	Are additional antenatal and/or postnatal services provided in this model of care, particularly for women in remote or rural areas who reside at a considerable distance from a maternity service? For example: a high risk maternity clinic that offers telehealth services to remote communities or a public hospital maternity care model that provides FIFO clinicians to remote communities.	N/A, FIFO clinicians, Telehealth, Community-based remote-area clinicians
	Postnatal care end: RENAMED AND AMENDED	At how many weeks after birth is *regular* postnatal care terminated? In the case of a single 6-week postnatal consultation with a GP/obstetrician, this does not mean 6 weeks.	At discharge <1 week 1–2 weeks 3–4 weeks 4–6 weeks >6 weeks Negotiable

(continued)

Table 3.1 (continued): Proposed Models of Care DSS data items before and after consensus at the national workshop

Dimension	Data element	Description	Sample data values
Care *(continued)* *After consensus*	Model completion	How many weeks after birth (or at discharge) does postnatal care within this model end? For example: a GP obstetrician model may provide ongoing regular postnatal care to women for 2 weeks after birth and a public hospital maternity care model may complete care for women in that model at discharge.	At discharge, <1 week, 1–2 weeks, 2–4 weeks, 4–6 weeks, >6 weeks

Table 3.2: MMCs before and after consensus at the national workshop

MMC presented to consultation forums	MMC after consensus at national workshop
Private obstetric care Antenatal care provided by a private obstetrician (GP or specialist). Intrapartum care is provided in either a private or public hospital by the private obstetrician in collaboration with hospital midwives. Postnatal care is usually provided in the hospital by the private obstetrician and hospital midwives	**Private obstetrician (specialist) care** Antenatal care provided by a private specialist obstetrician. Intrapartum care is provided in either a private or public hospital by the private obstetrician in collaboration with hospital midwives. Postnatal care is usually provided in the hospital by the private obstetrician and hospital midwives and may continue in the home, hotel or hostel.
Private midwifery care Antenatal care is provided by a private midwife or group of midwives. The midwife may have a collaborative arrangement in place to involve doctors in the event of complications. Homebirth is an option provided by some carers but care providers are not currently covered by professional indemnity insurance. Postnatal care is provided in the hospital and at home by the private midwife involving doctors when needed.	**Private midwifery care** Antenatal, intrapartum and postnatal care is provided by a private midwife or group of midwives in collaboration with doctors in the event of identified risk factors. Antenatal, intrapartum and postnatal care could be provided in a range of locations including the home.
	GP obstetrician care Antenatal care provided by a GP obstetrician. Intrapartum care is provided in a public hospital by the GP obstetrician in collaboration with hospital midwives. Postnatal care is usually provided in the hospital by the GP obstetrician and hospital midwives and may continue in the home or community.
Shared care Antenatal care is provided by a community maternity service provider (doctor and/or midwife) in collaboration with hospital doctors and midwives under an established agreement and can occur both in the community and in hospital outpatient clinics. Intrapartum and early postnatal care usually takes place in the hospital by hospital midwives and doctors often in conjunction with the community doctor or midwife (particularly in rural settings).	**Shared care** Antenatal care is provided by a community maternity service provider (doctor and/or midwife) in collaboration with hospital doctors and midwives under an established agreement and can occur both in the community and in hospital outpatient clinics. Intrapartum and early postnatal care usually takes place in the hospital by hospital midwives and doctors often in conjunction with the community doctor or midwife (particularly in rural settings).
Combined care Antenatal care provided by a community maternity service provider (doctor and/or midwife) in the community. Intrapartum and early postnatal care provided in the public hospital by hospital midwives and doctors.	**Combined care** Antenatal care provided by a private maternity service provider (doctor and/or midwife) in the community. Intrapartum and early postnatal care provided in the public hospital by hospital midwives and doctors. Postnatal care may continue in the home or community by hospital midwives.
Public hospital clinic care Antenatal care is provided in hospital outpatient clinics by midwives and/or doctors. Intrapartum and postnatal care is provided in the hospital by midwives in collaboration with hospital doctors if required.	**Public hospital maternity care** Antenatal care is provided in hospital outpatient clinics (either onsite or outreach) by midwives and/or doctors. Care could also be provided by a multidisciplinary team. Intrapartum and postnatal care is provided in the hospital by midwives in collaboration with hospital doctors. Postnatal care may continue in the home or community by hospital midwives.
High risk public hospital care Antenatal care is provided by maternity care providers (specialist obstetricians and/or maternal-fetal medicine specialists in collaboration with midwives) with an interest in high risk maternity care in a public hospital. Intrapartum and postnatal care is provided by hospital doctors and midwives.	**High risk public hospital maternity care** Antenatal care is provided to women with medical high risk/complex pregnancies by maternity care providers (specialist obstetricians and/or maternal-fetal medicine subspecialists in collaboration with midwives) with an interest in high risk maternity care in a public hospital. Intrapartum and postnatal care is provided by hospital doctors and midwives. Postnatal care may continue in the home or community by hospital midwives.

(continued)

Table 3.2 (continued): MMCs before and after consensus at the national workshop

MMC presented to consultation forums	MMC after consensus at national workshop
Team midwifery care Antenatal, intrapartum and postnatal care is provided by a small team of midwives (size varies but usually 6 to 8), with collaborative arrangements in place to involve doctors in the event of complications. Intrapartum care is usually provided in a hospital or birth centre.	**Team midwifery care** Antenatal, intrapartum and postnatal care is provided by a small team of rostered midwives (size varies but usually 6 to 8) in collaboration, with doctors in the event of identified risk factors. Intrapartum care is usually provided in a hospital or birth centre. Postnatal care may continue in the home or community.
Caseload midwifery care Antenatal, intrapartum and postnatal care is provided by a known primary midwife with a secondary backup midwife providing cover and assistance, with collaborative arrangements in place to involve doctors in the event of complications. Antenatal care and postnatal care is usually provided in the community (or home), with intrapartum care in a hospital, birth centre or home.	**Midwifery Group Practice caseload care** Antenatal, intrapartum and postnatal care is provided by a known primary midwife, with secondary backup midwife/midwives providing cover and assistance, with collaboration with doctors in the event of identified risk factors. Antenatal care and postnatal care is usually provided in the hospital, community or home, with intrapartum care in a hospital, birth centre or home.
Remote area care Antenatal and postnatal care is provided in remote communities by a remote area midwife or group of midwives, sometimes in collaboration with a remote area nurse and/or doctor. Intrapartum and early postnatal care is provided in a city hospital (involving temporary relocation before labour) by hospital midwives and doctors.	**Remote area maternity care** Antenatal and postnatal care is provided in remote communities by a remote area midwife (or a remote area nurse) or group of midwives, sometimes in collaboration with a remote area nurse and/or doctor. Antenatal care may also be provided via telehealth or FIFO clinicians in an outreach setting. Intrapartum and early postnatal care is provided in a regional or metropolitan hospital (involving temporary relocation before labour) by hospital midwives and doctors.
No formal care Not strictly a 'model' of care, but this category includes women who have received no formal antenatal care and present to hospital late in pregnancy or in labour.	**No formal care** Not strictly a 'model' of care, but this category includes women who have received no formal antenatal care and present to hospital late in pregnancy or in labour.
	Model of care at other hospital* This is an administrative model category to be used when recording the model of care retrospectively for women who have transferred from another hospital before birth.

* This MMC was not included in the electronic survey as it is used for administrative purposes for women who transfer between hospitals during pregnancy.

3.4 Electronic survey results

The exact number of people who were sent a link to the survey is unknown due to the use of distribution networks. There were 369 respondents, of whom 183 (50%) completed all questions. The results for each data element vary, although there was an overwhelming positive response to all data elements and MMCs.

Further discussion about the importance of the negative responses is included in Chapter 4. Most negative responses indicated a lack of understanding about the purpose of the MaCCS and its role in collecting data at the level of the model of care rather than at the level of the individual woman's journey (which is the role of the PDCs).

Responses per collector

To monitor from which distribution channel each respondent came, organisations that agreed to distribute the survey were each assigned their own link to the survey. This enabled

responses from members to be grouped. The number of respondents and the contribution to the total responses from each distribution channel are shown in Table 3.3.

Table 3.3: Number of responses per collector

Collector	Responses	
	No.	%
Australian College of Midwives	17	4.6
Australian College of Rural and Remote Medicine	9	2.4
Childbirth Australia	2	0.5
CRANAplus	5	1.4
Forum participants	73	19.8
Maternity Coalition	0	0.0
Perinatal Society of Australia and New Zealand	59	16.0
The Australasian Maternity Outcomes Surveillance System	104	28.2
The Royal Australian and New Zealand College of Obstetricians and Gynaecologists	1	0.3
Women's Healthcare Australasia	99	26.8

Profession of respondents

The first survey question asked respondents to select the profession in which they were working. A list of choices was provided with the option of 'Other', and free-text to provide more information. The distribution channels selected for the survey was to ensure that respondents came from the range of different professions working in maternity care.

Only one response was received through The Royal Australian and New Zealand College of Obstetricians and Gynaecologists collector; however, obstetricians received the link through other channels such as the Perinatal Society of Australia and New Zealand and Women's Healthcare Australia. Similarly, many midwives completed the survey through channels such as The Australasian Maternity Outcomes Surveillance System rather than through the Australian College of Midwives.

An analysis of respondents who selected 'Other' identified four extra professional categories that enabled 56 out of 74 responses to be re-categorised. Table 3.4 shows how many responses were received per professional group.

Table 3.4: Number of responses per professional group

Profession	Responses	
	No.	%
Midwife	217	(58.8)
Obstetrician (specialist)	35	9.5
Obstetrician (GP)	14	3.8
Data manager	12	3.3
Health department advisor	11	3.0
Consumer	6	1.6
Other (please specify)	74	20.1
Manager[1]	24	6.5
Neonatologist[1]	10	2.7
Nurse[1]	5	1.4
Researcher[1]	17	4.6
Uncategorised[1,2]	18	4.9

Notes

1. These are subcategories of 'Other'.
2. The remaining 'Other' professions included students, doulas, educators and other medical specialists.

Data elements

Respondents were asked two questions for each data element: whether they agreed with the description of the data element and whether they agreed with the proposed data values. Table 3.5 provides information on the percentage of respondents who indicated either 'Yes' they agreed with the description or data values, or 'No' they did not agree. The number of respondents for each question varied so the total responses received for the question is also included. Respondents were given the opportunity to comment if they did not agree.

In all cases, a large majority of respondents agreed with the proposed data element description and values. The lowest rate for agreeing with the description was 89.7% and the highest was 98.4%; the lowest and highest rates, respectively, for agreeing with the proposed data element values was 77.9% and 97.3%.

Table 3.5: Responses to each data element question

Data element	Agree (%)	Disagree (%)	Total (no.)
Clinical restriction criteria—description	93.4	6.6	228
Clinical restriction criteria—values	89.9	10.1	228
Target group—description	94.7	5.3	228
Target group—values	82.9	17.1	228
Professional affiliation of designated maternity carer—description	92.3	7.7	195
Professional affiliation of designated maternity carer—values	77.9	22.1	195
Organisation of maternity care providers—description	90.8	9.2	195
Organisation of maternity care providers—values	88.7	11.3	195
Size of caseload—description	91.3	8.7	195
Size of caseload—values	82.6	17.4	195
Continuity of designated carer—description	89.7	10.3	195
Continuity of designated carer—values	86.7	13.3	195
Professional affiliation of other planned collaborative carer(s)—description	93.3	6.7	195
Professional affiliation of other planned collaborative carer(s)—values	83.1	16.9	195
Planned transfer for birth—description	95.2	4.8	188
Planned transfer for birth—values	95.7	4.3	188
Main planned location of antenatal care—description	98.4	1.6	188
Main planned location of antenatal care—values	94.1	5.9	188
Main planned location for birth—description	95.2	4.8	188
Main planned location for birth—values	81.4	18.6	188
Main planned location of postnatal care—description	94.7	5.3	188
Main planned location of postnatal care—values	82.4	17.6	188
Individual or group care—description	93.6	6.4	188
Individual or group care—values	95.2	4.8	188
Planned scheduled medical visits—description	95.2	4.8	188
Planned scheduled medical visits—values	97.3	2.7	188
Additional antenatal services—description	96.3	3.7	188
Additional antenatal services—values	92.6	7.4	188
Model completion—description	94.7	5.3	188
Model completion—values	95.7	4.3	188

Major model categories

In addition to reviewing the proposed data elements contained in the MaCCS, survey respondents were asked to review the MMCs and whether they agreed with the definitions used. Respondents were also invited to leave further comments if they did not agree with an MMC. Table 3.6 shows the percentage response rate for each of the MMCs. In every case, there was overwhelming support for the MMC with the percentage agreeing with the definitions ranging from 87.4% to 96.2%.

When respondents were asked if there were any other MMCs that should e included, in every case, the model of care suggested would already fit into the existing MMC or is not appropriate to be considered as an MMC (such as freebirth, or care by a doula).

Table 3.6: Responses to each MMC question

MMC	Agree (%)	Disagree (%)	Total (no.)
Private obstetrician (specialist) care	94.0	6.0	183
Private midwifery care	93.4	6.6	183
GP obstetrician care	92.9	7.1	183
Shared care	95.1	4.9	183
Combined care	89.1	10.9	183
Public hospital maternity care	95.6	4.4	183
High risk public hospital maternity care	96.2	3.8	183
Team midwifery care	93.4	6.6	183
Midwifery Group Practice caseload care	95.1	4.9	183
Remote area maternity care	96.2	3.8	183
No formal care	92.3	7.7	183
All MMCs are accounted for in the MaCCS	87.4	12.6	183

Additional comments on the MaCCS from the survey

Respondents were given the opportunity to provide additional comments about the MaCCS at the end of the survey. There were 23 comments left, with the main themes being:

- timing of the collection of data—the need to collect model of care at various points in pregnancy
- the complexity of trying to measure models of care
- concerns about collecting the data as part of PDCs
- the politics of maternity care provision among the professions.

4 Discussion

4.1 Face-to-face consultation forums

Consultation for the proposed MaCCS was comprehensive, involving face-to-face forums with key stakeholders in every state and territory as well as a nationally distributed survey. Models of care are complex constructs; hence, any method or tool for classifying them must reflect this complexity but still be functional. The consultation forums ensured that stakeholders had a thorough understanding of how the proposed MaCCS (given its complexity) would be applied at the institutional level and enabled informed feedback to be provided during open discussion. Many misdirected concerns were raised during the forums about collecting information about the model of care as it pertained to the individual woman's journey, rather than to how the MaCCS would operate at the institutional level in describing the intention of each model of care. (This, incidentally, was also true of the comments left by survey respondents.) Such concerns could be addressed immediately in the face-to-face forums, with discussion then redirected to the appropriate level.

Other benefits of conducting jurisdictional-based forums included the ability to identify issues that may be unique to a particular location, or differences in terminology use. This was especially important for the Victorian forum where participants were initially strongly opposed to some of the concepts presented in the MaCCS. This was predominantly due to terminology differences. In recent years, maternity services in Victoria have been moving towards a program of delivering maternity care via 'service pathways', with these pathways no longer considered as a 'model of care'. After much debate in the Victorian forum, it became apparent that these pathways were really versions of 'Public hospital maternity care' open to all women (that is, there were no clinical restriction criteria) and that care was provided in a multidisciplinary team 'clinic' with referrals made to specialists and allied health clinicians as needed. If women had complex pregnancy needs, their care—rather than being providing in a discrete 'high risk clinic'—was tailored to their individual needs but still within a 'service pathway' model. The benefit of discussing this in a face-to-face forum meant that these issues could be drawn out and addressed, with changes to the proposed data items immediately identified in a collaborative environment. Identifying that many issues were based on differences in terminology rather than on the actual content of the MaCCS would not have been possible through desk-top consultation alone. To gain further buy-in and to be certain that the changes made to the MaCCS to accommodate the Victorian model were successful, a senior obstetrician from that jurisdiction was included in the national workshop.

As well as reviewing the proposed data items, the forums also highlighted potential data collection issues for recording the model of care accurately at earlier points in pregnancy, before the birth episode. For states and territories that do not have a shared electronic antenatal record, it may be difficult to collect what model of care a women was in at booking and at term, or if the model changed during pregnancy. This information would need to be located in the medical record retrospectively when the PDC form was being completed after birth, and may result in a lower level of accuracy. Women who got their care at a different hospital before the intrapartum period will need to have earlier models of care recorded as 'Model of care at other hospital' as the model of care code derived from the MaCCS is hospital-specific. These issues can be suitably addressed in the future as the national personally controlled electronic health record is further implemented.

While feedback from the consultation forums favoured a system to classify and define models of care, there were concerns about adding more items to existing PDC systems, and the impact this would have on staff. Most jurisdictions reported that their data managers and staff were already under-resourced (and had workload issues), and were mindful of adding to their responsibilities and tasks. In addition, several jurisdictions were reluctant to add items to their data collection forms as they were already filled to capacity. This is less of an issue for jurisdictions which have moved to paper-less data collections. In addition, the model of care data items that would be added to the PDC will replace similar items that some jurisdictions have added to their own collections (outside of the Perinatal NMDS).

The need for a comprehensive education package to accompany the MaCCS if it were implemented was highlighted by many forum participants. Once participants understood that the MaCCS questionnaire would be completed only once per year (or when a new model was introduced) about each model of care offered by a hospital/maternity service and not for every woman—and that it would take less time each year to complete than when first completed—there was less concern about the time burden for staff.

4.2 National survey

Feedback from the consultation forums and the national workshop resulted in changes to the data items (Table 3.1) and some of the MMCs (Table 3.2) in the MaCCS. The final draft was included in the content of the electronic survey. The purpose of the survey (Appendix B) was to obtain feedback on the proposed data items and their values, as well as the MMCs, from all interested individuals. It is clear from some of the comments that some respondents may have had some difficulty in completing the survey or misinterpreted the meaning and intention of some of the data elements. This is a recognised limitation of using a survey to seek feedback and underlines the importance of including face-to-face forums for the first stage of the consultation process. Some respondents interpreted the MaCCS as being a system for defining how care should be delivered to women rather than as a tool to describe what existed. This misunderstanding is reflected in comments that objected to how maternity care was being provided, and to issues between the professions. Some respondents also used the survey as an opportunity to comment politically rather than to solely critique the contents of the MaCCS.

Some survey responses echoed feedback at the forums about local issues, such as what a labour/delivery ward is called locally or how GP shared care is practised differently. Responses to the MMC descriptions focused on how that MMC was practised in that respondent's location, which may be slightly different from the broad definition of the MMC. The definitions of the MMCs are designed to be broad and descriptive rather than prescriptive, and the use of the Models of Care DSS is to capture and account for the differences in how models are actually designed in practice. For example, one respondent commented that the team midwifery model at their hospital offered homebirth, so that should be added into the description of the MMC 'Team midwifery'. Similarly, another respondent did not support homebirth so wanted that removed from the MMC descriptor for 'Private midwifery care' as the definition included the involvement of doctors when required and this would not occur at home. Rather than reviewing the applicability of the data items and MMCs to all different contexts, some respondents viewed them only within their own frame of reference. Having a large number of respondents neutralises this effect to some degree.

The survey results in tables 3.5 and 3.6 in the previous chapter indicate overall support for the data elements and the MMCs that make up the MaCCS. In most cases, there was more disagreement with the value list than with the data element itself, with added values being suggested. There were also suggestions for how some data elements could be better described to make them better understood. Based on the percentage of respondents who agreed with each of the proposed data elements and MMCs, the content of the MaCCS is suitable to be used to define and categorise models of maternity care across Australia.

5 Conclusion

The results of the consultation to seek feedback on the contents and concept of the proposed MaCCS support the proposition that this is a valid solution as a nomenclature for models of maternity care in Australia.

Feedback has been received from stakeholders across the wide spectrum of maternity care providers, consumers, academics and policy-makers in all jurisdictions in Australia, including both public and private health sectors. Forum participants and survey respondents acknowledged that a complex and comprehensive system is needed to enable models of care to be accurately identified and defined in a way that will allow meaningful analysis and reporting.

The consultation process supported the findings of the literature review that a simple naming system will not be sufficient to differentiate between models of care adequately, due to the many variations in how care within models of the same category is provided. There was overwhelming support for developing a classification system, such as the MaCCS, to enable data to be collected about models of care. However, that support did not come without some caveats and reservations. As a result of the consultation process, the content of the MaCCS has been refined and strengthened.

The results from the electronic consultation process will be sent to the NMoC Working Party to assess the need for any further changes to the MaCCS before preparing the final project report.

Appendix A: Three options presented to the NMoC Working Party

Option 1: Nomenclature based on the Major Model Categories of maternity models of care

The NMoC Working Party initially considered seven MMCs that were identified in the first cut of the literature review (Table A1). (These were subsequently expanded to 9 MMCs plus an option for 'No formal care' and presented in Table 4.2 of the literature review *Nomenclature for maternity models of care: literature review* (see 'Related publications')). These MMCs are broad categories and there is significant variation between models that fall into the same category (as identified in the literature review). The seven MMCs could be used as a basic nomenclature for models of care at a population level. However, at a hospital level, the sensitivity and specificity of the categories would be more limited due to the variations that exist between models in the same MMC.

Table A1: Narrative description of categories of maternity models of care in Australia

Category	Description
Private care	Antenatal care provided by a private maternity professional; this could be a GP obstetrician, obstetrician, midwife or a combination of these. Intrapartum care is provided in either a private or public hospital by hospital midwives in collaboration with the private professional. Homebirth is an option provided by some carers but care providers are not currently covered by professional indemnity insurance. Postnatal care is usually provided in the hospital by hospital midwives or at home in the case of private midwives.
Shared care	Antenatal, intrapartum and postnatal care is shared between a maternity professional in the community (GP, obstetrician or midwife) and a hospital maternity service under an established agreement. Intrapartum care usually takes place in the hospital by hospital midwives often in conjunction with a GP or obstetrician (particularly in rural settings).
Combined care	Antenatal care provided by a GP or obstetrician in the community with intrapartum and postnatal care provided in the public hospital by hospital midwifery and obstetric staff.
Public hospital clinic care	Antenatal care is provided in hospital outpatient clinics by midwives and doctors; intrapartum and postnatal care is provided in the hospital by midwives with the assistance of obstetricians or registrars if required.
High risk public hospital care	Antenatal, intrapartum and postnatal care is provided by midwives and maternal-fetal medicine specialists in a public hospital high risk unit.
Team midwifery care	Antenatal, intrapartum and postnatal care is provided by a small team of midwives (size varies but usually 6 to 8) with intrapartum care usually provided in a hospital or birth centre.
Caseload midwifery care	Antenatal, intrapartum and postnatal care is provided by a known primary midwife with a secondary backup midwife providing cover and assistance. Antenatal care and postnatal care are usually provided in the community (or home), with intrapartum care in a hospital, birth suite or home.

Option 2: Classification system based on Models of Care framework

The Models of Care framework can be developed as the basis of a system for classifying all models of maternity care in Australia today. The Models of Care framework is presented in Table 5.1 of the *Nomenclature for maternity models of care: literature review* (see 'Related publications') and has been reproduced below as Table A2. The value for each data element in the framework would contribute to the model description, and the codes combined into a string to form the 'Model of Care' code. The process to define the model(s) of care available within each service would be completed locally by each maternity service on an annual basis or at the start of a new model of care.

Each hospital would use the Model of Care classification tool (from the framework) to produce a code for each model of care at their service: XX-NNNNNNNNNNNNNNNN, where each of the characters 'N' is formed from the value of each of the data elements in the framework and XX is the applicable MMC.

The appropriate Model of Care code would be recorded for each woman undergoing maternity care at various stages of care such as at booking and at onset of labour and reported as part of the NMDS.

Standard algorithms applied to the Model of Care codes would need to be agreed to enable grouping of models into a limited number of relevant groups such as the midwifery continuity of care models or the GP shared care models for analysis. Workforce and service planning may use different groupings from those used by other professionals carrying out audits or assessing outcomes of maternity care.

Table A2: Framework for classifying models of maternity care

Dimension	Data element	Purpose of element	Sample data values
Women	Type of risk	Type of risk for women usually admitted to the model. For example, risk equates with an additional level of complexity or medical/psychosocial/obstetric conditions that result in pregnancy no longer being 'normal' risk.	Normal Mixed/all risk High risk only
	Target group	Is the model designed for a specific group of women (for example, cultural group, vulnerable group, medical group)?	Diabetic clinic VBAC Aboriginal or Torres Strait Islander women and so on
Carers	Professional affiliation of lead/primary carer	Many models of care are defined by the professional who is the 'lead carer' also known as the 'maternity care coordinator', 'primary carer' (for example, midwifery-led models, GP-led models). The prospective data values also include whether there is more than one lead carer.	Midwife Obstetrician GP obstetrician GP Maternal-fetal medicine specialist Aboriginal health worker Shared care: GP + midwife Shared care: midwife + Aboriginal health worker
	Organisation of maternity care providers	Documented structure of the core group of maternity care professionals who are in contact with the woman. For example, a Midwifery Group Practice offering a caseload model may have a self-managed caseload but a team midwifery model may have a rostered organisation.	Rostered Self-managed (that is, has a capped caseload) Self-managed without a capped caseload
	Size of caseload	If the model has a capped caseload, what is the usual capped number of women per annum per carer?	<30 30–40 40–50 >50

(continued)

Table A2 (continued): Framework for classifying models of maternity care

Dimension	Data element	Purpose of element	Sample data values
Carers *(continued)*	Continuity of lead carer	This element describes the extent of continuity of the lead or primary carer across the different stages of maternity care. For example, a midwife in private practice might have continuity of lead carer throughout antenatal and postpartum, or the whole duration of maternity care.	Whole duration of maternity care Antenatal period Antenatal and intrapartum Antenatal and postpartum No continuity
	Professional affiliation of other routine collaborative carer(s)	This is designed to capture the scope of other recognised and named professional roles who routinely collaborate with the lead care provider in the model of care. These professionals have a designated role in the model as opposed to being referred to on an ad hoc basis as required for some women.	Midwife Doctor (includes GP or specialist obstetrician) Nurse Aboriginal health worker Medical specialist (other than obstetric) Perinatal mental health worker Other allied health practitioner Nil
	Number of maternity care providers	This refers to the number of different maternity care providers who would routinely see the women in this model throughout the three stages of maternity care. For example, in a particular model of care, there may be 6 people in the group practice, but only 2 midwives actually see the woman, so the number would be 2.	1–2 3–6 >6 Not defined

(continued)

Table A2 (continued): Framework for classifying models of maternity care

Dimension	Data element	Purpose of element	Sample data values
Care	Continuity of location of care	This element describes the extent of continuity of the context of the model. Does the model provide continuity across locations of care? For example, a model may be able to provide only antenatal care in a remote community, with all women being transported to an urban hospital for intrapartum care by a different team of providers.	All care provided in one area Intrapartum care >50 km from antenatal Intrapartum care >150 km from antenatal Intrapartum care >500 km from antenatal (values to be set)
	Continuity of information	This element describes whether there is informational continuity regardless of the continuity of care providers or location. For example, women in this model of care are given a hand-held pregnancy record for the duration of care.	No continuity of information Single paper hand-held record for all care Single shared electronic record
	Main planned location of antenatal care (most care is provided here)	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example, a caseload midwifery model might offer antenatal care at a hospital clinic or home.	Hospital clinic Clinicians' rooms Community facility ACCHO Home Mixed
	Main planned location of intrapartum care (most care is provided here)	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example, a team midwifery model may offer birth in a hospital or birth centre.	Home Birth centre—stand alone Birth centre—in hospital Hospital labour ward Other hospital area ACCHO Varies depending on availability or choice

(continued)

Table A2 (continued): Framework for classifying models of maternity care

Dimension	Data element	Purpose of element	Sample data values
Care *(continued)*	Main planned location of postnatal care (most care is provided here)	This element describes the scope of location offered within this model of care. Some models of care offer multiple options. For example, a shared care model may offer postnatal care in hospital or home.	Only hospital care Hospital and home care Only home care ACCHO Other
	Individual or group care	To identify whether the model of care offers antenatal and postnatal care in individual or group sessions. For example, a team midwifery model offering group antenatal care such as *Centering Pregnancy*®.	Individual one-to-one care Group session Mix
	Trimester of first clinical assessment	In which trimester is the first clinical appointment or assessment routinely conducted? This is not an administrative booking visit unless there is also a clinical assessment done.	First (0–12 weeks) Second (13–26 weeks) Third (27–40 weeks)
	Postnatal care end	At how many weeks after birth is *regular* postnatal care terminated? In the case of a single 6-week postnatal consultation with a GP/obstetrician, this does not mean 6 weeks.	At discharge <1 week 1–2 weeks 3–4 weeks 4–6 weeks >6 weeks Negotiable
	Geographic location of model	To describe at the broadest level the geographical location of the majority of care provision of this model. For example, if antenatal care is provided in a remote community but intrapartum care is in a metropolitan hospital, this would be a 'remote' location. This item acknowledges the origin of the model rather than the location of the birth.	Metropolitan Rural inner region Rural outer region Remote (values to be set)

Option 3: Hybrid solution

A proposed third option combines elements from *Option 1: Nomenclature based on the Major Model Categories of maternity models of care* and *Option 2: Classification system based on Models of Care framework* from *Agenda Paper 5.1 Options for progressing Nomenclature for Models of Care project* presented at the NMoC Working Party teleconference on 29 May 2012.

This 'hybrid' solution retains a limited number of MMC from Option 1 (which provides simplicity for data collection in state and territory PDCs) while including the specificity and granularity provided by the full data framework of models of care (provided in Option 2), which will be reframed as a Models of Care DSS.

1. Development of MMCs (from Option 1)

- An expanded nomenclature based on the existing Table 4.2 from *Nomenclature for maternity models of care – literature review* (see 'Related publications') will capture an extended range of specific categories of models that take into consideration location (rural, remote, and so on) and primary care provider. It would potentially be a list of 10–15 MMCs.
- This list of MMCs would be reviewed and validated during the consultation phase.
- Each MMC would be assigned a code and used as a value for a new data element. This data element would have the pregnant woman as the object class. Examples potentially include Caseload=C, GP shared care=G, and so on.

2. Development of the Models of Care DSS (from Option 2)

- The existing framework from Table 5.1 of *Nomenclature for maternity models of care: literature review* (see 'Related publications') is reviewed and validated during the consultation phase.
- Each data element from the framework and the MMC data element are developed as a data item by the NMoC Working Party, following stakeholder consultation, and referred to the National Perinatal Data Development Committee for endorsement before completing a business case for inclusion of the set of data elements into the National health Data Dictionary (NHDD).
- These data elements will have the institution as the object class.
- The Models of Care DSS would also include the establishment ID and the establishment MMC.

Maternity Care Classification System

The hybrid solution was subsequently renamed and further developed into the MaCCS. The MaCCS will allow individual maternity services to classify and label the models of maternity care provided by their service using a standardised set of model names as well as identification through unique characteristics of the model.

Models will be defined based on the data elements included in the Models of Care framework developed as a DSS (Models of Care DSS) and classified according to one of the MMCs. Collecting information about the defining characteristics of different models of care from the dimensions of 'Woman', 'Carer' and 'Care' in the framework will enable detailed analysis of models of care and outcomes for women and babies, while also using commonly

used names for models from the MMC that can be recorded on clinical records and data collection systems for individual women.

Data about models of maternity care collected by states and territories can be analysed and reported in the following two ways:

- An annual audit of the range of models provided across the state can be reported using the MMC data submitted with the Models of Care DSS. This would give an overview of the models available to women using the broad descriptive terms used by consumers and maternity services such as 'GP shared care', 'Private obstetric care', and so on.
- Standardised data for the Perinatal NMDS and other maternity data collections will enable analysis relating to the individual characteristics of models of care. This could be completed at an institutional or jurisdictional level or nationally, using a process of data linkage between the Perinatal NMDS and the Models of Care DSS. This would allow analysis of outcomes for women and babies based on different characteristics of models—such as the level of continuity, the lead care provider, the risk category of the model, and so on—and would be independent of the MMC.

The following is an example of how MaCCS will work in practice.

- A survey tool will be developed that will present the Models of Care DSS as a series of questions, with the answers being provided by the allowable data values. Each question is effectively a data item from the DSS. For example:
    - Q: What is the risk category of women who participate in this model of care?
        1. Low risk
        2. All risk
        3. High risk only
    - Q: What is the professional affiliation of the lead carer(s) in this model?
        1. Obstetrician
        2. Midwife
        3. GP obstetrician
        4. GP
        5. Maternal-fetal medicine specialist
        6. Shared care: GP + midwife
        7. Shared care: Midwife + Aboriginal Health worker

- Each maternity service/hospital would complete this Maternity Care 'survey' annually at an agreed time and if a new model is introduced. Based on the answers submitted to the survey, an appropriate MMC would be automatically generated and assigned to the model.
- The completed survey is automatically sent to the state or territory Health department for entry into a jurisdictional database.
- At each maternity service/institution/health authority, the MMC code generated by the survey is used in all clinical records and data collections that include information about maternity care within the hospital or health authority. For example at Hospital A:
    - Caseload Team Avoca = C1
    - Caseload Team Bennelong = C2
    - Public midwifery clinic = P1

    - Public medical clinic = P2
    - GP shared care = G1

- Various options for the format will be explored during the consultation: a paper survey, an Excel spreadsheet, ACCESS database, and a web-based survey. The costs of development for each of these options would be different as would the ease of use of each for hospitals and the needs for the state or territory collation and maintenance.
  - While paper-based forms would have the lowest cost for development, they would also have the highest maintenance needs for the jurisdictional Health departments and an intensive labour need for follow-up. A paper-based form would also lack the ability to automatically generate the MMC code.
  - Development of an electronic survey such as through a web-based form would have higher initial development costs but a lower maintenance need and could be largely automated. This format would also be platform-independent and have no existing software requirements for users.
  - Both ACCESS database and Excel spreadsheet formats would have development costs somewhere between those for a paper survey and a web-based survey but would have higher maintenance costs and ongoing resource needs.

MaCCS outputs for the Perinatal NMDS

The Perinatal NMDS contains data that are collected on all births in Australia in hospitals, birth centres and the community. It includes both live and stillbirths, of at least 20 weeks gestation or at least 400 grams birthweight. The NMDS includes data items relating to the mother (including demographic characteristics and factors relating to the pregnancy, labour and birth) and data items relating to the baby (including birth status, sex and birthweight). Some data elements in the NMDS are collected for all women who gave birth (for example, Onset of labour), or apply only to women who gave birth in a hospital or birth centre (for example, Separation date), while others are collected for babies (for example, Sex). Data are collected by midwives or other birth attendants using administrative and clinical records and are forwarded to the relevant state or territory Health authority on a regular basis. Data for each year ending 31 December are provided to the AIHW for national collation.

MMC data elements can be incorporated into the Perinatal NMDS, jurisdictional data collections and other maternity-relevant data collections. The reference points in pregnancy for reporting the MMC and related data element(s) are:

- First antenatal visit
- At term (37 completed weeks)
- Onset of labour
- Gestation at which the model changed (if applicable)
- Reason for change from previous model (if applicable)

The values for the model of care at first antenatal visit and at onset of labour come from the MMC codes assigned to the models at the institution. For example:

- A woman is assigned to Caseload Team Avoca at her first antenatal visit but during her pregnancy changes to the public medical clinic due to having a medical complication. This would be recorded on her PDC form as:
  1. Model of care at booking: C1
  2. Model of care at onset of labour: P2

3. Gestation model changed: 24
4. Reason for change: medical

- In this way, standardised information about models of care can be incorporated into perinatal and other maternity records for individual women.

Appendix B: Maternity Care Classification System—electronic survey

Introduction (sent to respondents with the survey)

One of the actions to support the National Maternity Services Plan is the National Maternity Data Development Project. This project includes developing a standardised nomenclature and definitions for models of maternity care. A review of policy, published and grey (not commercially published) literature confirmed the lack of consistent definitions for models of maternity care used in Australia, and the absence of any established nomenclature or tool for classifying models of care here or overseas. The review identified a range of variables that not only differentiate between models, but also may have an impact on outcomes for mothers and babies.

This review and a National Working Party for Models of Maternity Care informed the development of a standardised classification system: the Maternity Care Classification System (MaCCS). This system is proposed as the basis for a tool to classify models of maternity care so that services provided to women can be recorded in a standardised manner for every woman receiving maternity care in Australia.

The MaCCS constitutes a standardised data set based on three domains: Women, Care, and Carer. A range of data elements are proposed for each domain to enable precise and highly specific definitions of all available and proposed models of maternity care. Using the characteristics identified through the data elements, it is proposed that a standard set of algorithms will assign each specific model to one of 11 proposed Major Model Categories (MMCs) that will be used to record the model of care on all maternity information systems (such as antenatal records, midwives data collection, and so on) and when the model of maternity care is required for national reporting.

It is proposed that the process of classifying models of care offered at a hospital, based on their individual characteristics, will be conducted once per year (and when new models are introduced) via an electronic questionnaire. The resulting Major Model Category for each model of care offered by a hospital could then be recorded on antenatal and other hospital records (including Perinatal/Midwives data collection forms) for each woman.

The MaCCS has passed through a national series of consultation forums to seek feedback from relevant stakeholders. This survey aims to receive final feedback on the proposed data elements in the Models of Care data set and the Major Model Categories.

The first part of the survey examines the proposed data elements. The description and potential data values for each data element are presented separately to allow you to provide feedback on each component.

The second part of the survey asks you to provide feedback on the Major Model Categories. The whole survey should take approximately 25–30 minutes and will be available for completion until 7 November 2012.

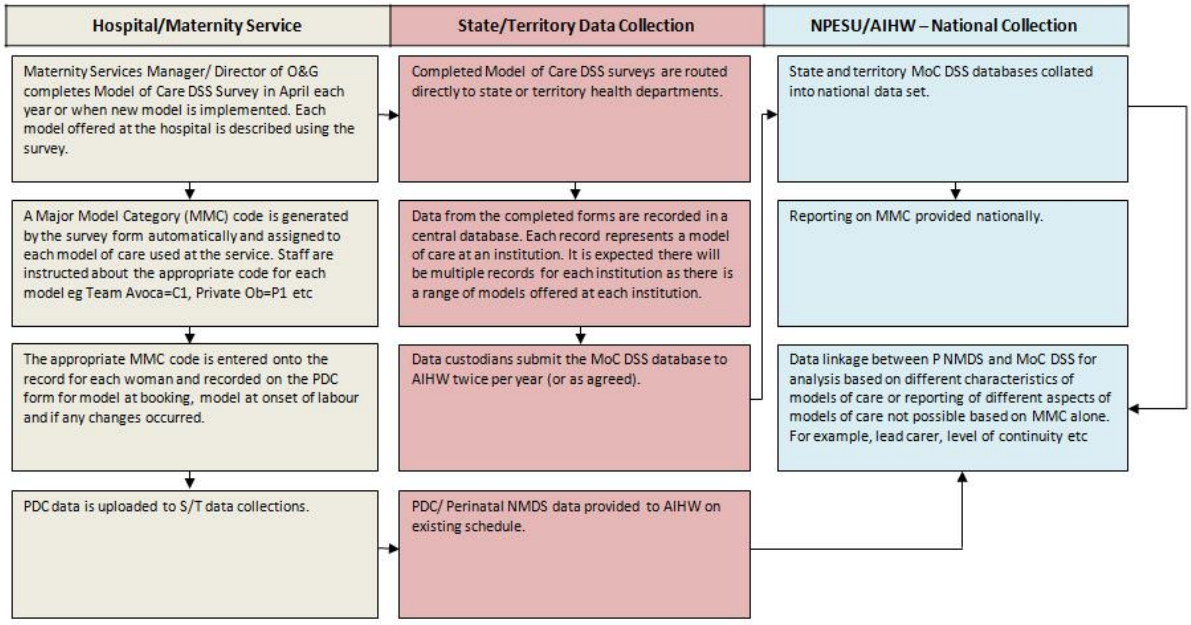
Please complete all of the questions in the survey. Your feedback on the proposed MaCCS is greatly appreciated. If you have any questions about the MaCCS, please email Natasha Donnolley at xxx@unsw.edu.au or call on xxx. Many thanks.

Prof Elizabeth Sullivan and Ms Natasha Donnolley

AIHW National Perinatal Epidemiology and Statistics Unit

Page 2: Practical application of the MaCCS

Before reviewing and commenting on the data items and Major Model Categories being proposed for the MaCCS, please review the following diagram. It outlines how the MaCCS is envisaged to work in practice between the individual maternity services, state and territory Health departments and the national data collection centres.



1. Before starting the survey, please indicate what your role is within the maternity care sector.

- Midwife
- Obstetrician (specialist)
- Obstetrician (GP)
- Data manager
- Health department advisor
- Consumer
- Other (please specify)

Page 3: Section 1– Models of Care Data Set Specification Domain—Women

The data elements on this page relate to the domain of Women. It is important to remember that these questions relate to the model of care and the women for whom the model is intended. Not all women in a particular model of care will experience the same journey. The MaCCS is designed to classify the overall model of care and the intended characteristics of each model. Other data collection systems (such as the Perinatal Data Collection) capture data elements about individual women's journeys. When answering these questions, please keep in mind that they are about the model of care and the characteristics of the model as a whole.

1. Data element: Clinical restriction criteria
Description: Whether or not there are clinical restriction criteria for entry into this model of care?

Some models of care have restrictions on entry to the model based on clinical criteria. For example only 'low risk' women or women with diabetes, or high medical risk, and so on. If the model is available to all women, the answer is 'no'.

- I agree with the description for this data item
- I do not agree with the description of this data item (please specify why)

Comment on why you disagree

2. Data element: Clinical restriction criteria
Data values:

Yes
No

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

3. Data element: Target group
Description: The target population group this model of care is primarily designed for or aimed at.

Some models of care are targeted to specific groups of women. These groups may be based on medical or obstetric conditions, ethnic or cultural background, social circumstances or even 'risk' status. For example, women with diabetes, women wanting a VBAC, Aboriginal and Torres Strait Islander women, young mothers, low risk women, and so on.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

4. Data element: Target group
Data values:

No target group—all women
Diabetes
VBAC
Aboriginal or Torres Strait Islander
Drug and alcohol
Bariatric
Multiple pregnancy
Vulnerable women
Young mothers
Migrant or refugee
Mental health
Low risk/normal pregnancy
Complex/high risk pregnancy
Planned homebirth
Other cultural
Other medical
Other social
Other

- I agree with the data values for this data item

- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

Page 4: Domain—Carers

The data elements on this page relate to the domain of Carers. It is important to remember that these questions relate to the model of care and the typical carers who work in the model. Not all women in a particular model of care will experience the same journey. The MaCCS is designed to classify the overall model of care and the intended characteristics of each model. Other data collection systems (such as the Perinatal Data Collection) capture data elements about individual women's journeys. When answering these questions, please keep in mind that they are about the model of care and the characteristics of the model as a whole.

1. Data element: Professional affiliation of designated maternity carer(s)
Description: Many models of care are defined by the professional who is the designated maternity carer, sometimes known as the 'lead carer', 'maternity care coordinator' or 'primary carer' (for example, midwifery-led models, GP-led models). The available data values also include whether there is more than one type of designated carer in a shared-care model.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

2. Data element: Professional affiliation of designated maternity carer(s)
Data values:

Specialist obstetrician—public
Specialist obstetrician—private
GP obstetrician
Midwife—public
Midwife—private
GP
Maternal-fetal medicine subspecialist
Nurse
Shared care—GP + obstetrician
Shared care—GP + hospital clinic
Shared care—GP + midwife
Shared care—GP + midwife + Aboriginal health worker
Shared care—Midwife + obstetrician
Multidisciplinary team

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

3. Data element: Organisation of maternity care providers
Description: The documented work management (and remuneration) structure of the core group of maternity care professionals who are in contact with the woman.

For example, a Midwifery Group Practice offering a caseload model may have a self-managed capped caseload (and remunerated on an annualised salary) but midwives in a team midwifery model may be rostered within an award structure. Public hospital clinics staffed by doctors may be rostered but a private obstetrician may be self-managed without having a capped caseload.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

4. Data element: Organisation of maternity care providers
Data values:

Rostered within an award structure
Self-managed with a capped caseload
Self-managed without a capped caseload

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

5. Data element: Size of caseload
Description: If the model has a capped caseload within an industrial agreement or award, what is the usual capped number of women per annum per full-time-equivalent carer? If the model does not have a caseload or there is no cap, then select N/A.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

6. Data element: Size of caseload
Data values:

<30
30–40
41–50
51–60
>60
N/A

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

7. Data element: Continuity of designated carer
Description: This element describes the extent of continuity of the designated or primary carer across the different stages of maternity care.

For example, a midwife in a group midwifery caseload practice might offer continuity of designated carer throughout antenatal and postpartum only, or for the whole duration of maternity care.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

8. Data element: Continuity of designated carer
Data values:

Whole duration of maternity care
Antenatal period
Antenatal and intrapartum
Antenatal and postpartum
No continuity

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

9. Data element: Professional affiliation of other planned collaborative carer(s)
Description: This is designed to capture the scope of other recognised and named professional roles who routinely collaborate with the designated care provider in the model of care. These professionals have a designated role in the model as opposed to being referred to on an ad hoc basis as required for some women. All applicable carers should be selected.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

10. Data element: Professional affiliation of other planned collaborative carer(s)
Data values:

Specialist obstetrician—public
Specialist obstetrician—private
GP obstetrician
Midwife—public
Midwife—private
GP
Maternal-fetal medicine subspecialist
Medical specialist (other than obstetric)

Nurse
Perinatal mental health worker
Aboriginal health practitioner
Other allied health practitioner
Not applicable

- I agree with the data values for this data item

- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

Page 5: Domain—Care

The data elements on this page relate to the domain of Care. It is important to remember that these questions relate to the model of care and aspects of the care typically provided to the majority of women in the model. Not all women in a particular model of care will experience the same journey. The MaCCS is designed to classify the overall model of care and the intended characteristics of each model. Other data collection systems (such as the Perinatal Data Collection) capture data elements about individual women's journeys. When answering these questions, please keep in mind that they are about the model of care and the characteristics of the model as a whole.

1. Data element: Planned transfer for birth
Description: Whether or not all women in this model of care require transfer to another location for intrapartum care and birth. This is a planned transfer for all women and not just for those women who require a higher level facility for birth or in an emergency.

For example, a remote maternity care model may require all women to be transferred from their remote community to an urban hospital at 36 weeks to wait for labour and birth.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

2. Data element: Planned transfer for birth
Data values:

Yes
No

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

3. Data element: Main planned location of antenatal care
Description: This element describes the scope of location that is offered within this model of care for the provision of antenatal care. Some models of care offer multiple options for where antenatal care is provided and all applicable locations may be selected.

For example, a caseload midwifery model might offer antenatal care at a hospital clinic or home. This is a multiple-value field so all locations provided in the model can be selected.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

4. Data element: Main planned location of antenatal care
Data values:

Hospital clinic—onsite
Hospital clinic—outreach
Clinicians' rooms / Medicare Local
Community facility
Aboriginal Community Controlled Health Organisation facility
Home
Other

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

5. Data element: Main planned location for birth
Description: This element describes the scope of location that is offered within this model of care for birth. Some models of care offer multiple options and all applicable locations may be selected. This is the location/s where the majority of care is provided for birth.

For example, a team midwifery model may offer birth in a hospital or birth centre.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

6. Data element: Main planned location for birth
Data values:

Home
Birth centre—stand alone
Birth centre—in hospital
Birth suite
Hospital labour/delivery/maternity ward
Other hospital area including theatre
Aboriginal Community Controlled Health Organisation facility
Other

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

7. Data element: Main planned location of postnatal care
Description: This element describes the scope of location that is offered within this model of care for the provision of postnatal care. Some models of care offer multiple options for where postnatal care is provided and all applicable locations may be selected.

For example, a shared care model may offer postnatal care in hospital or home.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

8. Data element: Main planned location of postnatal care
Data values:

Home
Birth suite
Hospital labour/delivery/maternity ward
Aboriginal Community Controlled Health Organisation facility
Hotel/hostel
Community facility
Clinicians' rooms/Medicare Local
Other

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

9. Data element: Individual or group care
Description: To identify whether the model of care offers antenatal and/or postnatal care in individual or group sessions.

For example, a team midwifery model offering group antenatal care such as Centering Pregnancy®.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

10. Data element: Individual or group care
Data values:

Individual one-to-one care
Group sessions
Mix

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

11. Data element: Planned scheduled medical visits
Description: Whether or not this model of care includes planned visits with a doctor for all women.

For example, a Midwifery Group Practice caseload model may include 2 planned visits to a specialist obstetrician for all women and a public hospital maternity care model run by midwives may not schedule medical visits for all women and only refer them to a specialist obstetrician when needed.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

12. Data element: Planned scheduled medical visits
Data values:

Yes
No

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

13. Data element: Additional antenatal services
Description: Specific additional antenatal and/or postnatal services provided in this model of care, particularly for women in remote or rural areas who reside at a significant distance from a maternity service.

For example, a high risk maternity clinic that offers telehealth services to remote communities or a public hospital maternity care model that provides fly-in-fly-out clinicians to remote communities.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

14. Data element: Additional antenatal services
Data values:

Fly-in-fly-out clinicians
Telehealth services
Community-based remote-area clinicians
Not applicable

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

15. Data element: Model completion
Description: The length of time (in weeks) after birth (or at discharge) that postnatal care within this model ends.

For example, a GP obstetrician model may provide ongoing regular postnatal care to women for 2 weeks after birth and a public hospital maternity care model may complete care for women in that model at discharge.

- I agree with the description of this data element
- I do not agree with the description of this data element (please specify why)

Comment on why you disagree

16. Data element: Model completion
Data values:

At discharge
<1 week
1–2 weeks
2–4 weeks
4–6 weeks
>6 weeks

- I agree with the data values for this data item
- I do not agree with the data values for this data item (please specify why and suggest alternatives)

Comments on data values for this item

Page 6: Section 2—Major Model Categories

This page contains questions relating to the Major Model Categories. Every model of care can be categorised into one of 9 major model categories based on their characteristics defined from the data elements proposed in the Models of Care DSS. These Major Model Categories are the names or labels for models of care traditionally used in the workplace and their characteristics might vary from hospital to hospital. The Major Model Categories will allow hospitals to record the model of care on relevant information systems and record systems using common and simple agreed terminology, while more in-depth analysis of different models of care will be possible by using the data recorded in the Models of care DSS.

Please review each of the Major Model Categories and indicate whether you agree or disagree with the categories and their descriptions and if you have any comments.

1. Major Model Category: Private obstetrician (specialist) care
Description: Antenatal care provided by a private specialist obstetrician. Intrapartum care is provided in either a private or public hospital by the private obstetrician in collaboration with hospital midwives. Postnatal care is usually provided in the hospital by the private obstetrician and hospital midwives and may continue in the home, hotel or hostel.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

2. Major Model Category: Private midwifery care
Description: Antenatal, intrapartum and postnatal care is provided by a private midwife or group of midwives in collaboration with doctors in the event of identified risk factors. Antenatal, intrapartum and postnatal care could be provided in a range of locations including the home.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

3. Major Model Category: GP obstetrician care
Description: Antenatal care provided by a GP obstetrician. Intrapartum care is provided in a public hospital by the GP obstetrician in collaboration with hospital midwives. Postnatal care is usually provided in the hospital by the GP obstetrician and hospital midwives and may continue in the home or community.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

4. Major Model Category: Shared care
Description: Antenatal care is provided by a community maternity service provider (doctor and/or midwife) in collaboration with hospital doctors and midwives under an established agreement and can occur both in the community and in hospital outpatient clinics. Intrapartum and early postnatal care usually takes place in the hospital by hospital midwives and doctors often in conjunction with the community doctor or midwife (particularly in rural settings).

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

5. Major Model Category: Combined care
Description: Antenatal care is provided by a private maternity service provider (doctor and/or midwife) in the community. Intrapartum and early postnatal care is provided in the public hospital by hospital midwives and doctors. Postnatal care may continue in the home or community by hospital midwives.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

6. Major Model Category: Public hospital maternity care
Description: Antenatal care is provided in hospital outpatient clinics (either onsite or outreach) by midwives and/or doctors. Care could also be provided by a multidisciplinary team. Intrapartum and postnatal care is provided in the hospital by midwives in collaboration with hospital doctors. Postnatal care may continue in the home or community by hospital midwives.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

7. Major Model Category: High risk public hospital maternity care
Description: Antenatal care is provided specifically to women with medical high risk/complex pregnancies by maternity care providers (specialist obstetricians and/or maternal-fetal medicine subspecialists in collaboration with midwives) with an interest in high risk maternity care in a public hospital. Intrapartum and postnatal care is provided by hospital doctors and midwives. Postnatal care may continue in the home or community by hospital midwives.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

8. Major Model Category: Team midwifery care
Description: Antenatal, intrapartum and postnatal care is provided by a small team of rostered midwives (size varies but usually six to eight) in collaboration with doctors in the event of identified risk factors. Intrapartum care is usually provided in a hospital or birth centre. Postnatal care may continue in the home or community by hospital midwives.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

9. Major Model Category: Midwifery Group Practice caseload care
Description: Antenatal, intrapartum and postnatal care is provided by a known primary midwife with secondary backup midwife/midwives providing cover and assistance with collaboration with doctors in the event of identified risk factors. Antenatal care and postnatal care is usually provided in the hospital, community or home with intrapartum care in a hospital, birth centre or home.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

10. Major Model Category: Remote area maternity care
Description: Antenatal and postnatal care is provided in remote communities by a remote area midwife (or a remote area nurse) or group of midwives sometimes in collaboration with a remote area nurse and/or doctor. Antenatal care may also be provided via telehealth or fly-in-fly-out clinicians in an outreach setting. Intrapartum and early postnatal care is provided in a regional or metropolitan hospital (involving temporary relocation before labour) by hospital midwives and doctors.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

11. Major Model Category: No formal care
Description: Not strictly a 'model' of care, but this category includes women who have received no formal antenatal care and present to hospital late in pregnancy or in labour.

- I agree with this Major Model Category
- I do not agree with this Major Model Category (please specify why)

Comment on why you disagree

12. Are there any other Major Model Categories that you believe have not been accounted for? If so, please provide further details below.

- No—there are no other Major Model Categories
- Yes—I think there are other categories not listed (please provide details)

Other Major Model Categories not covered

13. If you have any further comments regarding any aspect of the proposed Maternity Care Classification System, please complete the section below.

*****End of survey*****

References

Australian Health Ministers' Conference (AHMC) 2011. National Maternity Services Plan 2010. Canberra: Australian Government Department of Health and Ageing.

List of tables

List of figures

Related publications

Australian Institute of Health and Welfare 2014. Foundations for enhanced maternity data collection and reporting in Australia: National Maternity Data Development Project Stage 1. Cat. no. PER 60. Canberra: AIHW.

Australian Institute of Health and Welfare 2014. Nomenclature for models of maternity care: literature review—Foundations for enhanced maternity data collection and reporting in Australia: National Maternity Data Development Project Stage 1. Cat. No. PER 62. Canberra: AIHW.

This report presents the findings of consultation on a proposed system for classifying models of maternity care in Australia. It is one of several components of the National Maternity Data Development Project and is a companion report to the publication, *Foundations for enhanced maternity data collection and reporting in Australia: National Maternity Data Development Project Stage 1*.