Maternity model of care NBPDS 2022–23: Maternity Care Classification System, 2023; Quality Statement

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Identifying and definitional attributes

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Data quality

Data quality statement summary:

The Maternity Care Classification System (MaCCS) is a data collection on the maternity models of care available to women in Australia. The scope of the MaCCS includes antenatal, intrapartum and postnatal care. The data elements within the MaCCS describe the characteristics of a maternity model of care around 3 domains:

- the women a model is designed for
- the carers working within the model
- aspects of how and where care is provided.

Information about a model of care is collected at the maternity service level and every model of care gets a unique model of care number. Models of care in different locations may be similar to, or different from, each other with respect to their key characteristics, but every model of care can be categorised into one of 11 major model categories.

The Australian Institute of Health and Welfare (AIHW) developed and maintains the MaCCS Data Collection Tool (DCT) that allows maternity services to report and classify the range of maternity models of care they offer. The DCT ensures data is collected consistently across services and is of a high quality. It uses a series of questions to help guide services to classify each of their models of care, and the information entered for each model of care forms the basis of the Model of Care National Best Practice Data Set (MoC NBPDS).

A report on maternity models of care in Australia, using information from the MoC NBPDS was published for the first time in 2021 and has been updated in 2022 and 2023. At 30 June 2023, 251 (96%) maternity services with birthing facilities have contributed to the MaCCS collection and have at least one active (i.e. in use) model of care classified in the MaCCS DCT. Over 1,000 active models of care are classified across these services and are included in national analyses; 4 models of care are excluded from national analyses due to data quality issues.

Summary of key issues

Most (96%) maternity services have entered at least one model of care in the MaCCS DCT. However, a national baseline for all available maternity models of care is not yet available because:

- Providing information to the MaCCS collection is voluntary.
- It is not known whether all available models of care have been entered by these services.
- The model category private midwifery care has poorer coverage compared with other model categories, although this is a relatively uncommon model of care.

The coverage and quality of the MoC NBPDS has improved as engagement with the MaCCS DCT increases. At 30 June 2023, 96% of maternity services with birthing facilities have at least one active (i.e. in use) model of care classified in the DCT. Coverage rates vary by jurisdiction from 89% of maternity services in South Australia to all (100%) services in Queensland, Tasmania, the Australian Capital Territory, and the Northern Territory. The completeness and quality of the MoC NBPDS will continue to improve as familiarity with the MaCCS DCT grows, with increased engagement by maternity services and maternity service providers and with the inclusion of two model of care data elements into the National Perinatal Data Collection (NPDC).

Institutional environment:	The Australian Institute of Health and Welfare (AIHW) is responsible for the collection, analysis and reporting of maternity models of care.

The AIHW is an independent corporate Commonwealth entity under the *[Australian Institute of Health and Welfare Act 1987](#)* (AIHW Act), governed by a [management Board](#) and accountable to the Australian Parliament through the Health portfolio.

The AIHW is a nationally recognised information management agency. Its purpose is to create authoritative and accessible information and statistics that inform decisions and improve the health and welfare of all Australians.

Compliance with the confidentiality requirements in the AIHW Act, the Privacy Principles in the *[Privacy Act 1988](#)* (Cth) and AIHW's data governance arrangements ensures that the AIHW is well positioned to release information for public benefit while protecting the identity of individuals and organisations.

For further information see the AIHW website www.aihw.gov.au/about-us, which includes details about the AIHW's governance (www.aihw.gov.au/about-us/our-governance) and our role and strategic goals (www.aihw.gov.au/about-us/our-vision-and-strategic-goals).

The MaCCS was developed as part of the National Maternity Data Development Project (NMDDP) which is funded by the Department of Health and Aged Care. Data on models of care in 6 jurisdictions are submitted to the MaCCS DCT by maternity services directly. Registered users in each service, such as unit managers or clinical consultants, provide information about their models of care. Health departments in two jurisdictions — Western Australia and the Northern Territory, submit models of care to the DCT on behalf of their maternity services.

Data specifications for the MaCCS are documented in the AIHW's online metadata repository, [METEOR](#).

Timeliness:	The MaCCS DCT went live in August 2016. The AIHW sought nominations from each maternity service to act as a registered user for the service, and to be responsible for inputting model of care information. Since then, AIHW has worked with maternity services to develop the models of care data collection and to help services enter their models of care into the DCT. The focus has been on increasing the coverage of the collection, validating the models of care entered to the DCT and following up any queries with services.

Models of care can be added to the MaCCS DCT at any time, however maternity services are asked to review and update their information in the DCT annually.

The MoC NBPDS is based on all models of care in the DCT. 'Active' models of care, that is, those without an end date, are considered to be the current models of care available to women at a maternity service. For the 2023 collection period, the AIHW focused on maintaining data quality and improving the coverage of the collection. This included validating and following up on data quality queries and engaging with maternity services that had not yet engaged with the MaCCS DCT.

The 2023 collection began in January 2023. Data from this collection was finalised for reporting by 30 June 2023. An updated web report using MoC NBPDS data finalised at 30 June 2023 was released on 11 October 2023. This web product reports on the number of active models of care in the MoC NBPDS. In addition, a *[Maternity models of care in focus](#)* report was developed and released at the same time. This report used linked data from the MoC NBPDS and the National Perinatal Data Collection (NPDC), for the first time, to report on the models of care women giving birth in Queensland in 2021 used.

Accessibility:	Summary information on the models of care submitted to the MaCCS DCT, by each maternity service – including the MoC ID, model name, and the major model category it falls into – are at https://MaCCS.aihw.gov.au.

Aggregated national and state-level data are available in the AIHW web report *Maternity models of care in Australia, 2023*. This report uses data from the MoC NBPDS and is based on the number of active models of care at maternity services with birthing facilities, at 30 June 2023. It includes interactive data visualisations, excel supplementary tables, data quality information and technical notes.

A *Maternity models of care in focus* report is also available at the AIHW website. This looks at the maternity models of care available to women across Australia with a focus on two areas of interest with respect to these—the 11 model categories they fall into, and the extent of continuity of carer within them. It also uses Queensland 2021 perinatal data to explore, for the first time, the models of care women in Queensland actually use, by linking data from the MoC NBPDS and the National Perinatal Data Collection (NPDC).

In future, data from the MoC NBPDS will be able to be linked to data from the NPDC. Products published by the AIHW using data from the NPDC include:

- Australia's mothers and babies in-brief reports
- Australia's mothers and babies data visualisations
- National Core Maternity Indicators (NCMI) reports and data visualisations

Requests for unpublished data can be made by contacting AIHW on (02) 6244 1000, by emailing info@aihw.gov.au or through the AIHW's custom Data on request service. Requests that take longer than half an hour to compile are charged for on a cost-recovery basis. Requests for access to unpublished data may require additional approval from jurisdictional data custodians or the AIHW Ethics Committee.

Interpretability: Data were collected from maternity services using the web-based MaCCS DCT. Information on the quality and use of the MaCCS is available in the web report *Maternity models of care in Australia, 2023* on the AIHW website. The statistical analyses in this report are descriptive. Numbers and percentages are used to report on models of care at the national and jurisdictional level. The report also includes a range of information to assist in the interpretation of data, including a glossary and information on data quality. Readers are advised to read caveat information to ensure appropriate interpretation of data.

A characteristic of the collection is that the number of services in scope and submitting data for the collection may change each year. While for the most part it is the same services contributing to the collection, the number may change due to changes at the local level, for example new maternity services are introduced, or services may no longer provide antenatal or birthing services.

Another characteristic of the collection is that the services submitting valid data may change over time. Models of care with significant quality issues at the cut-off date for each collection are excluded from national analyses. These characteristics should be kept in mind if doing time series analyses.

Metadata for the MaCCS are published in the National Health Data Dictionary (NHDD) on METEOR. More information about the development of the MaCCS can be found in this report *Maternity Care Classification System: Maternity Model of Care Data Set Specification national pilot report November 2014*

Relevance:

The MaCCS is a data collection on the maternity models of care available to women in Australia. Data are collected on the models of care available at each maternity service and reviewed and updated on an annual basis. A report on maternity models of care using the MoC NBPDS was published for the first time in 2021 and was updated in 2022 and 2023. At 30 June 2023, 251 (96%) maternity services with birth facilities contributed to the MaCCS collection and had at least one active (i.e. in use) model of care classified in the DCT.

The MaCCS comprises data items as outlined in the MoC NBPDS. The purpose of the MaCCS is to provide a nomenclature to classify maternity models of care and to allow for reporting of maternity models of care in each jurisdiction and nationally, to inform policy development and planning, driving improvements in healthcare outcomes. Each model of care is categorised into one of 11 *major model categories*.

This collection also facilitates the inclusion of maternity model of care data elements into the NPDC. The DCT allocates a unique model of care ID to each model of care submitted to it. The appropriate model ID code can then be added into each woman's perinatal data record. In 2023 the AIHW released its first report using models of care data from both the MoC NBPDS and the NPDC. *Maternity models of care in focus* uses 2021 Queensland perinatal models of care data to report on the models of care women in Queensland actually use. Reporting on outcomes for all mothers and babies, by different model characteristics will be possible, once model of care data elements are routinely collected as part of the NPDC.

Two model of care data elements, *Primary maternity model of care* and *Maternity model of care at the onset of labour or non-labour caesarean section*, were included in the NPDC data specifications from 1 July 2020. The NPDC is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for both live births and stillbirths, where gestational age is at least 20 weeks or birthweight is at least 400 grams. The NPDC 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, gestational age at birth, birthweight and neonatal morbidity and deaths).

The MaCCS DCT enables the collection of data on the models of maternity care available to women in Australia at the service-level. It includes information on the whole maternity period, including the antenatal, intrapartum and postnatal periods. The MaCCS data items classify models of care across 3 domains: the women a model is designed for; carers working in the model; and aspects of how and where care is provided. Key data items include whether the model targets a particular group of women, designated and collaborative carers, the extent of continuity of carer within a model, and the major model category a model falls into.

Data presented in national reports are reported at an aggregated level and provide general information about the models of care offered, for example their major model category, type of designated carer, extent of continuity of carer, and target groups. The data can also support other geographic levels of reporting, for example, at jurisdictional and remoteness area level.

Accuracy:	The AIHW relies on maternity services to provide accurate information about their models of care, to provide information on all their models of care and to review and update this information annually. To ensure the quality of the MoC NBPDS the DCT has a user guide and tool tips to help users enter their models of care accurately, and in-built validation at the point of data entry to reduce reporting errors. The AIHW also maintains a helpdesk (via phone and email) to support services to classify their models of care.

Inaccuracies may occur in data entered to the DCT. The AIHW validates all models of care submitted to the DCT and follows up any queries with the maternity service. Submissions are checked for accuracy and consistency by the AIHW and any potential errors queried with services. Corrections and resubmissions are made in response to these queries.

As part of the 2020–21 data collection, AIHW examined all active models of care for accuracy and sent validation queries to services if anything needed checking or clarification. This process continued for the 2021–22 and 2022–23 collections with all new or updated models of care being validated. Common validation queries were around potentially inaccurate data (for example inconsistent target groups) and whether the characteristics selected applied to all women within the model (for example target group and collaborative carer selections). Where significant data quality queries remained after follow-up, then these models of care were excluded from national analyses.

Most maternity services with birth facilities in 2023 (96%) provided data that could be included in national analyses. Just 4 models of care were excluded from national analyses, due to remaining data quality queries.

It should be noted that while most maternity services in Australia have engaged with the MaCCS collection and have at least one active model of care in the MaCCS DCT, it is not known whether all models of care have been reported. This will not be known until jurisdictions have added the two model of care data elements to their perinatal collections.

As the data for the MoC NBPDS is collected at the service level, a reporting burden exists for the registered users who input and review model of care information in the DCT and some maternity service providers do not have time to spend inputting data and addressing queries. AIHW is trying to simplify this process and to reduce the burden on maternity services by inputting information on behalf of providers where possible. Before publication, the models of care included in the report are referred back to jurisdictions for information and review.

Coherence:	The MaCCS was developed as a standardised nomenclature to identify, describe and report on the models of care available to women in Australia. The MaCCS underpins data collection on maternity models of care in Australia and is the basis of the MoC NBPDS. Similar collections do not exist elsewhere in Australia or internationally. A report on maternity models of care using the MoC NBPDS was first published in 2021. This was updated in 2022 and 2023 and is available on the [AIHW website](#). These releases report on the characteristics of the models themselves. The AIHW has also released a [*Maternity models of care in focus*](#) report that includes perinatal models of care data for the first time. Queensland perinatal data are used as a case study in this report to show how models of care data from two collections may be linked and used together. Future reporting will extend this to other jurisdictions, once models of care data are routinely collected in respective perinatal collections. The AIHW will include models of care reporting in other maternal and perinatal health reports such as [*Australia's mothers and babies*](#) and the [*National Core Maternity Indicators*](#).

Data products

Implementation start date: 01/05/2022

Source and reference attributes

Submitting organisation: Australian Institute of Health and Welfare

Relational attributes

Related metadata references:

Supersedes [Maternity model of care NBPDS 2021–22: Maternity Care Classification System, 2022; Quality Statement](#)
[AIHW Data Quality Statements](#), Superseded 11/10/2023