

Maternity model of care NBPDS 2020–21: Maternity Care Classification System, 2021; 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; and
- aspects of how care is provided.

Data about a model of care is collected at the maternity service level and each model of care classified has a unique model of care number. For this reason, models of care in different locations may be similar with respect to their key characteristics. Each model of care is also categorised into 1 of 11 [major model categories](#).

The Australian Institute of Health and Welfare (AIHW) developed and maintains the MaCCS Data Collection Tool (DCT), allowing 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. The DCT uses a series of questions to help guide services to classify each of their models of care, and the information entered about each model forms the basis of the [Model of Care National Best Practice Data Set](#) (MoC NBPDS).

A report on maternity models of care using the MoC NBPDS was published for the first time in 2021. In 2021, 242 (90%) maternity services with birth facilities contributed to the MaCCS collection and had at least 1 'active' (i.e. in use) model of care classified in the DCT, at 30 April 2021. Around 833 active models of care were classified in these services and 828 (99%) of these were included in national analyses. There were 5 models of care excluded from national analyses because of remaining data quality queries.

Summary of key issues

A national baseline for all available maternity models of care is not yet available. This is because:

- Providing models of care information for the MaCCS collection is voluntary.
- While most (90%) services have entered at least 1 active model of care in the DCT, it is unknown whether *all* available models of care have been entered by these services as yet.
- The *major model category of private midwifery care* has poorer coverage than other model categories (although this is a relatively uncommon type of model). This is because AIHW engages directly with maternity services and not with private midwives.

The coverage and quality of the MoC NBPDS has improved over time as engagement with the MaCCS DCT increased. At 30 April 2021, 90% of maternity services with birth facilities had at least one 'active' (i.e. in use) model of care classified in the DCT. Coverage rates vary by jurisdiction from 80% of maternity services in South Australia to 100% 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 AIHW is responsible for the collection, analysis and reporting of maternity models of care.

The Australian Institute of Health and Welfare (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 confidentiality requirements in the AIHW Act, 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 vision and strategic goals (www.aihw.gov.au/about-us/what-we-do).

The MaCCS was developed as part of the National Maternity Data Development Project (NMDDP). Data on maternity models of care in 6 jurisdictions are submitted to the AIHW's MaCCS DCT by individual maternity services directly. Registered users in each service, such as unit managers or clinical consultants, provide information about their models of care to the DCT.

Timeliness:

The MaCCS DCT went live in August 2016. The AIHW sought nominations of a staff member from each maternity service that provides planned maternity services 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 to date has been on increasing the coverage of the collection, validating all 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 'active' models (i.e. in use models of care) in the DCT. These are considered to be the current models of care being used by women at a maternity service. For the 2019–20 and 2020–21 collection periods, the AIHW focused on improving the data quality and coverage of the collection. This included validating and following up on data quality queries and engaging with services that had yet to engage with the MaCCS DCT.

The 2020–21 collection began in October 2020. Data from this collection was finalised for reporting by 30 April 2021. A web report was developed and data released publically for the first time on 18 November 2021. The data for this report is based on the number of 'active' (i.e. in use) models of care in the MoC NBPDS at 30 April 2021, in those services with birth facilities.

Accessibility:

Aggregated national and state-level data are available for the first time in the AIHW web report, *Maternity care in Australia: first national report on models of care, 2021*. This report, available on the [AIHW website](#) is the first to use data from the MoC NBPDS and is based on the number of 'active' (i.e. in use) models of care in the MoC NBPDS at 30 April 2021, in those services with birth facilities. It includes interactive data visualisations, excel supplementary tables, data quality information and technical notes.

In addition, basic information on the models of care submitted to the MaCCS DCT, by each maternity service (including the MoC ID, model name, and major model category) can be found at <https://MaCCS.aihw.gov.au>.

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 the AIHW on (02) 6244 1000, by email to 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 care in Australia: first national report on models of care, 2021* 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, e.g. 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. Both of these issues will need to be kept in mind for future 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 is 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. In 2021, 242 (90%) maternity services with birth facilities contributed to the MaCCS collection and had at least 1 active (i.e. in use) model of care classified in the DCT, at 30 April 2021.

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 1 of 11 *major model categories*.

Collecting model of care information 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 of care ID code can then be added into each woman's perinatal data record. Reporting on outcomes for mothers and babies, by different model characteristics will be possible, once model of care data elements are collected routinely 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 characteristics of women a model is designed for; carers working in the model; and aspects of how care is provided. Key data items include target groups, designated and collaborative carers, the extent of continuity of carer, and the *major model category*.

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 be analysed at jurisdictional and remoteness area level.

The denominators used for percentage calculations are the number of active (i.e. in use) models of care at a point in time.

Accuracy: The AIHW relies on maternity services to enter accurate information about their models of care, to provide information on all of 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 inbuilt 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 a midwife employed by AIHW and any potential errors queried with services. Corrections and resubmissions are made in response to these queries.

To ensure data quality, as part of the 2019-20 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 2020-21 collection with all new or updated models of care being validated. Common validation queries were around potentially inaccurate data (for example inconsistent target group categories selected) 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.

By the end of the 2020-21 collection, most services (90%) had provided data that could be included in national analyses. Just 5 models of care out of 833 were excluded from national analyses, due to remaining data quality queries.

It should be noted that although most maternity services with birth facilities around Australia have now engaged with the MaCCS DCT and input at least 1 active model of care, it is not known whether all current models of care have been added. 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. Methods to further systematize and automate the collection and validation of models of care will continue to be explored.

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 enable the identification, description and reporting on the models of care available to women in Australia. The MaCCS underpins the first data collection on maternity models of care in Australia and is the basis of the MoC NBPDS. Similar collections are not undertaken elsewhere in Australia or internationally. A report on maternity models of care using the MoC NBPDS was published for the first time in 2021 and is available on the [AIHW website](#). This will be updated on an annual basis. While this release only reports on the characteristics of the models themselves, future reporting will also look at the number and characteristics of women using these models of care. Data from the collection will eventually be linked with perinatal data on mothers and babies and included in other maternal and perinatal health reports.

Source and reference attributes

Submitting organisation: Australian Institute of Health and Welfare

Relational attributes

Related metadata references: Has been superseded by [Maternity model of care NBPDS 2021–22: Maternity Care Classification System, 2022: Quality Statement](#)
[AIHW Data Quality Statements](#), Superseded 11/10/2023