

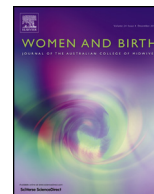


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Original Research - Quantitative

# More than a name: Heterogeneity in characteristics of models of maternity care reported from the Australian Maternity Care Classification System validation study

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### ABSTRACT

**Background:** Without a standard terminology to classify models of maternity care, it is problematic to compare and evaluate clinical outcomes across different models. The Maternity Care Classification System is a novel system developed in Australia to classify models of maternity care based on their characteristics and an overarching broad model descriptor (Major Model Category).

**Aim:** This study aimed to assess the extent of variability in the defining characteristics of models of care grouped to the same Major Model Category, using the Maternity Care Classification System.

**Method:** All public hospital maternity services in New South Wales, Australia, were invited to complete a web-based survey classifying two local models of care using the Maternity Care Classification System. A descriptive analysis of the variation in 15 attributes of models of care was conducted to evaluate the level of heterogeneity within and across Major Model Categories.

**Results:** Sixty-nine out of seventy hospitals responded, classifying 129 models of care. There was wide variation in a number of important attributes of models classified to the same Major Model Category. The category of 'Public hospital maternity care' contained the most variation across all characteristics.

**Conclusion:** This study demonstrated that although models of care can be grouped into a distinct set of Major Model Categories, there are significant variations in models of the same type. This could result in seemingly 'like' models of care being incorrectly compared if grouped only by the Major Model Category.

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### Statement of significance

#### Problem or issue

Classification or grouping of models of maternity care by their name or type does not account for variation in model characteristics that influence perinatal outcomes.

#### What is already known

Outcomes for women and babies vary by maternity models of care. A Cochrane systematic review identified

considerable heterogeneity of models of care of the same type but there has been no way of systematically defining models of care that accommodates this heterogeneity. The Maternity Care Classification System (MaCCS) is the first system developed to classify models of maternity care using both the model characteristics and the overarching model category.

#### What this paper adds

This study identified extensive variation in models of maternity care grouped into the same high-level model category or type. In doing so, the study demonstrated that classifying models of maternity care using descriptors alone (the model type or category) does not adequately capture the inherent variation between models of care, rendering classification by model category inadequate for informing policy and research. The use of the MaCCS to classify models of care based on model characteristics

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accommodates the model variation that influences maternal and perinatal outcomes and provides a more accurate method for grouping and classifying models of care.

## 1. Background

It is believed that the term ‘model of care’ originated in the nursing profession<sup>1</sup> and is commonly used throughout the healthcare system to describe different ‘packages’ of care. Davidson et al. define a model of care as “an overarching design for the provision of a particular type of health service that is shaped by a theoretical basis, EBP [evidence-based practice] and defined standards”.<sup>2</sup>

Models of maternity care are complex, often dynamic structures that have developed over time to meet the changing needs of women and the social context of the day, the maternity workforce, and in response to an expanding evidence base of maternity research. Models of care can have different names and meanings depending on the context and location of care. Without a standard terminology to classify models of care, it is problematic to compare

and evaluate clinical outcomes across the range of differently named and designed care models.<sup>3</sup>

There is an increasing evidence base and ongoing debate regarding different clinical and economic outcomes<sup>4</sup> as well as women’s satisfaction of maternity care under different models.<sup>5</sup> This highlights the importance of being able to define models accurately for valid comparison. Defining models of care in a systematic way, using a common nomenclature or classification system, enables the collection, analysis, and reporting of health-care outcomes in relation to the type or model of maternity care.

The world-first Maternity Care Classification System (MaCCS) was developed by the National Perinatal Epidemiology and Statistics Unit (NPESU) and Australian Institute of Health and Welfare (AIHW) between 2011 and 2015.<sup>6</sup> The MaCCS classifies models of care using fifteen different attributes that potentially influence outcomes for women and babies. These model attributes or characteristics (see [Box 1](#)) were identified in the literature and refined through extensive stakeholder consultation and testing.<sup>6</sup>

As part of the MaCCS classification, models with similar defining characteristics are also allocated to one of eleven overarching Major Model Categories,<sup>7</sup> as shown in [Box 2](#). The Major

### Box 1. Model of care attributes from the Maternity Care Classification System (MaCCS)<sup>(a)</sup>

1. **Restriction criteria**<sup>(b)</sup> for entry into a model of care
2. **Target groups** a model of care is designed for
3. Profession of the **designated maternity carer/s** in a model of care
4. **Midwifery caseload** model of care
5. **Caseload size** of a midwifery caseload model of care
6. **Extent of planned continuity** of the designated carer in a model of care
7. Profession of other **planned collaborative carer/s** in a model of care
8. **Planned transfer** to another location for intrapartum care and birth
9. Planned **location of antenatal care** offered for a model of care
10. Planned **location for birth** offered for a model of care
11. Planned **location for postnatal care** offered for a model of care
12. Care provided in **group or individual sessions**
13. Planned **visits with a medical practitioner**
14. **Additional rural/remote services** provided in a model of care
15. **End of postnatal care** after discharge in a model of care

#### Notes:

(a) The characteristics or data elements in this list and used in this study are from an early version of the MaCCS. There have been some modifications to these in the final version of the MaCCS. The full data standards for the MaCCS are available at <http://meteor.aihw.gov.au/content/index.phtml/itemId/559937>.

(b) Bold text represents the abbreviated name of the attribute or characteristic as it is referred to in the results.

### Box 2. The Major Model Categories from the Maternity Care Classification System<sup>(a)</sup>

Private obstetrician (specialist) care  
Private midwifery care  
General Practitioner obstetrician care  
Shared care  
Combined care  
Public hospital maternity care  
Public hospital high-risk maternity care  
Team midwifery care  
Midwifery Group Practice caseload care  
Remote area maternity care  
Private obstetrician and privately practising midwife joint care

#### Notes:

(a) The study reported in this paper used an early version of the MaCCS and Major Model Categories that did not include the last category *Private obstetrician and privately practising midwife joint care*, which was added to the MaCCS later.

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