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Primary Maternity Units in rural and remote Australia: Results of a national survey

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ABSTRACT

Background: Primary Maternity Units (PMUs) offer less expensive and potentially more sustainable maternity care, with comparable or better perinatal outcomes for normal pregnancy and birth than higherlevel units. However, little is known about how these maternity services operate in rural and remote Australia, in regards to location, models of care, service structure, support mechanisms or sustainability. This study aimed to confirm and describe how they operate.
Design: a descriptive, cross-sectional study was undertaken, utilising a 35-item survey to explore current provision of maternity care in rural and remote PMUs across Australia. Data were subjected to simple descriptive statistics and thematic analysis for free text answers. Setting and Participants: Only 17 PMUs were identified in rural and remote areas of Australia. All 17 completed the survey.
Results: the PMUs were, on average, 56 km or 49 minutes from their referral service and provided care to an average of 59 birthing women per year. Periodic closures or downgrading of services was common. Low-risk eligibility criteria were universally used, but with some variability. Medically-led care was the most widely available model of care. In most PMUs midwives worked shift work involving both nursing and midwifery duties, with minimal uptake of recent midwifery workforce innovations. Perceived enablers of, and threats to, sustainability were reported.
Key conclusions and implications for practice: a small number of PMUs operate in rural Australia, and none in remote areas. Continuing overreliance on local medical support, and under-utilisation of the midwifery workforce constrain the restoration of maternity services to rural and remote Australia.

Introduction

Approximately 30 per cent of Australian birthing women live in rural and remote areas (Hilder et al., 2014) representing a significant demand for pregnancy, birth and postnatal health services. Yet the provision of these services is challenging. The large

Abbreviations: CS, Caesarean section; DDI, Decision to delivery interval; GP, General Practitioner; MGP, Midwifery Group Practice; NMSCF, Australian National Maternity Services Capability Framework; NMSP, National Maternity Services Plan; SMO, Senior Medical Officer

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geographical spread of women, small numbers of birthing women per community, the challenges of attracting and retaining skilled midwifery and medical staff, and the costs of providing on-site surgical services for caesarean section (CS), have all contributed to the 41% ($n=255$) reduction in maternity services seen in Australia over the last 20 years (Kildea et al., 2015).

Maternity services with 24/7 surgical capacity are the preferred service level for rural communities of sufficient size to sustain a surgical service (Grzybowski et al., 2009). Many small rural communities, however, do not have sufficient birth numbers or resources to sustain the workforce, equipment and physical infrastructure to perform 24/7 onsite surgery. When service provision exceeds that required to support the annual birthing numbers, over-servicing can result in service instability, higher clinical intervention rates and difficulties with recruitment and retention of staff (Grzybowski et al., 2009).

Internationally, there are a variety of terms used to describe and define maternity services which offer birthing services but are geographically separated from obstetric, neonatal and anaesthetic services (see Table 1). These terms reflect varying models of care and physical infrastructure in which services are provided. However, all offer antenatal, planned birthing services and postnatal care to women without identified obstetric risks and have no onsite emergency CS capability. Further, they all have limited obstetric, anaesthetic, laboratory and paediatric support available on site. They operate within a network of secondary and tertiary obstetric facilities, with varying levels of support and encouragement for the low-resource practice. It is these shared characteristics that this study used to define Primary Maternity Units (PMUs).

Published research demonstrates that PMUs, compared to secondary or tertiary maternity services, provide safe care in a range of locations with good clinical outcomes for women and infants including: no differences in perinatal mortality (Leeman and Leeman, 2002; Birthplace in England Collaborative Group, 2011; Monk et al., 2014); no differences or improved outcomes for perinatal morbidity (Leeman and Leeman, 2002; Birthplace in England Collaborative Group, 2011; Overgaard et al., 2011); improved outcomes for maternal morbidity (Overgaard et al., 2011); improved outcomes for birth interventions including fewer CS (Leeman and Leeman, 2002; Birthplace in England Collaborative Group, 2011; Davis et al., 2011; Overgaard et al., 2011; Tucker et al., 2013; Monk et al., 2014) and improved neonatal outcomes (Wax et al., 2010; Davis et al., 2011; Dixon et al., 2014; Monk et al., 2014).

Two recent studies of PMUs in Australia, one representing urban and regional (Monk et al., 2014) and one rural setting approximately an hour from the tertiary unit (Kruske et al., 2015), also demonstrated safe clinical outcomes for mothers and infants and less intervention.

Conversely, the long distances women in rural and remote Australia now travel for birth have been associated with significant risk and poorer outcomes (Alston et al., 2006; Dietsch et al., 2010; Kildea et al., 2010; Tucker et al., 2013). Between 1992 and 2011, the closure of maternity units in Australia was found to be associated with a statistically significant increase in the rate of infants born before arrival to hospital (unplanned out of hospital births) from 3.23 to 4.15/ 1,000 (Kildea et al., 2015). Relocating for birth is also associated with: increased financial burden on families (Monk et al., 2013); negative psychosocial consequences including increased stress, feelings of isolation and loneliness and decreased bonding time with family members (Chamberlain and Barclay, 2000; Kornelsen et al., 2001; Kornelsen, 2005; Arnold et al., 2009; Hoang et al., 2011). Lack of local access maternity services is also associated with less favourable clinical outcomes for mothers and infants including increased perinatal mortality (Nesbitt et al., 1990; Allen and Kamradt, 1991; Grzybowski et al., 2011).

Table 1
Varying terms and characteristics of PMUs.

Origin	Term	Location	Model of care	Level of service capability	Client population
England (Rowe, 2011)	Freestanding midwifery unit	Freestanding (geographically separated from hospital)	Midwifery-led, may have GP involvement	Antenatal, birthing and postnatal care, without onsite obstetric, neonatal and anaesthetic services	Women with low risk pregnancies, anticipating uncomplicated labour and birth.
New Zealand (Grigg et al., 2015)	Primary Maternity Unit	freestanding or within/alongside small community hospital	Midwifery-led		Women with obstetric risks may receive some antenatal and postnatal care
Canada (Kornelsen and McCartney, 2015)	No widely adopted term. Mostly commonly described as Primary Maternity Units without local access to Caesarean Section	Small rural community hospitals	GP or Midwifery-led		Emergency (unplanned) birthing services provided if required (eg preterm birth or women refusing transfer).
Australia (Australian Health Ministers' Advisory Council, 2008; Queensland Health, 2014)	Primary maternity services or Level 2 maternity services	Public hospital maternity units, birth centres, in the community, or combination	Midwifery-led or GP-led		