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[Intervention Review]

# Midwife-led continuity models versus other models of care for childbearing women

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## ABSTRACT

### Background

Midwives are primary providers of care for childbearing women around the world. However, there is a lack of synthesised information to establish whether there are differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led continuity models and other models of care.

### Objectives

To compare midwife-led continuity models of care with other models of care for childbearing women and their infants.

### Search methods

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (25 January 2016) and reference lists of retrieved studies.

### Selection criteria

All published and unpublished trials in which pregnant women are randomly allocated to midwife-led continuity models of care or other models of care during pregnancy and birth.

### Data collection and analysis

Two review authors independently assessed trials for inclusion and risk of bias, extracted data and checked them for accuracy. The quality of the evidence was assessed using the GRADE approach.

### Main results

We included 15 trials involving 17,674 women. We assessed the quality of the trial evidence for all primary outcomes (i.e. regional analgesia (epidural/spinal), caesarean birth, instrumental vaginal birth (forceps/vacuum), spontaneous vaginal birth, intact perineum, preterm birth (less than 37 weeks) and all fetal loss before and after 24 weeks plus neonatal death using the GRADE methodology: all primary outcomes were graded as of high quality.

For the primary outcomes, women who had midwife-led continuity models of care were less likely to experience regional analgesia (average risk ratio (RR) 0.85, 95% confidence interval (CI) 0.78 to 0.92; participants = 17,674; studies = 14; *high quality*), instrumental vaginal birth (average RR 0.90, 95% CI 0.83 to 0.97; participants = 17,501; studies = 13; *high quality*), preterm birth less than 37 weeks (average RR 0.76, 95% CI 0.64 to 0.91; participants = 13,238; studies = eight; *high quality*) and less all fetal loss before and after 24 weeks plus neonatal death (average RR 0.84, 95% CI 0.71 to 0.99; participants = 17,561; studies = 13; *high quality evidence*). Women who had midwife-led continuity models of care were more likely to experience spontaneous vaginal birth (average RR 1.05, 95% CI 1.03 to 1.07; participants = 16,687; studies = 12; *high quality*). There were no differences between groups for caesarean births or intact perineum.

For the secondary outcomes, women who had midwife-led continuity models of care were less likely to experience amniotomy (average RR 0.80, 95% CI 0.66 to 0.98; participants = 3253; studies = four), episiotomy (average RR 0.84, 95% CI 0.77 to 0.92; participants = 17,674; studies = 14) and fetal loss less than 24 weeks and neonatal death (average RR 0.81, 95% CI 0.67 to 0.98; participants = 15,645; studies = 11). Women who had midwife-led continuity models of care were more likely to experience no intrapartum analgesia/ anaesthesia (average RR 1.21, 95% CI 1.06 to 1.37; participants = 10,499; studies = seven), have a longer mean length of labour (hours) (mean difference (MD) 0.50, 95% CI 0.27 to 0.74; participants = 3328; studies = three) and more likely to be attended at birth by a known midwife (average RR 7.04, 95% CI 4.48 to 11.08; participants = 6917; studies = seven). There were no differences between groups for fetal loss equal to/after 24 weeks and neonatal death, induction of labour, antenatal hospitalisation, antepartum haemorrhage, augmentation/artificial oxytocin during labour, opiate analgesia, perineal laceration requiring suturing, postpartum haemorrhage, breastfeeding initiation, low birthweight infant, five-minute Apgar score less than or equal to seven, neonatal convulsions, admission of infant to special care or neonatal intensive care unit(s) or in mean length of neonatal hospital stay (days).

Due to a lack of consistency in measuring women's satisfaction and assessing the cost of various maternity models, these outcomes were reported narratively. The majority of included studies reported a higher rate of maternal satisfaction in midwife-led continuity models of care. Similarly, there was a trend towards a cost-saving effect for midwife-led continuity care compared to other care models.

### **Authors' conclusions**

This review suggests that women who received midwife-led continuity models of care were less likely to experience intervention and more likely to be satisfied with their care with at least comparable adverse outcomes for women or their infants than women who received other models of care.

Further research is needed to explore findings of fewer preterm births and fewer fetal deaths less than 24 weeks, and all fetal loss/ neonatal death associated with midwife-led continuity models of care.

## **PLAIN LANGUAGE SUMMARY**

### **Midwife-led continuity models of care compared with other models of care for women during pregnancy, birth and early parenting**

#### **What is the issue?**

There are several ways to look after the health and well-being of women and babies during pregnancy, birth and afterwards - these ways are called 'models of care'. Sometimes, an obstetrician or another doctor is the lead healthcare professional and at other times it is a midwife. Sometimes, the responsibility is shared between obstetricians and midwives. One of the models is called 'the midwife-led continuity model'. This is where the midwife is the lead professional starting from the initial booking appointment, up to and including the early days of parenting. We wanted to find out if women and babies do better with this midwife-led continuity model, compared with other models.

#### **Why is this important?**

Midwife-led continuity models provide care from the same midwife or team of midwives during the pregnancy, birth and the early parenting period, and many women value this. These midwives also involve other care-providers if they are needed. Obstetrician-led or family doctor-led models are not usually able to provide the same midwife/wives throughout. We need to know if the midwife-led continuity model is safe, and if it brings benefits to mothers and babies.

#### **What evidence did we find?**

We identified 15 studies involving 17,674 mothers and babies (search date 25 January 2016). We included women at low risk of complications as well as women at increased risk, but not currently experiencing problems. All the trials involved professionally-qualified midwives and no trial included models of care that offered home birth. We used reliable methods to assess the quality of the evidence and looked at seven key outcomes: preterm birth (birth before 37 weeks of pregnancy); the risk of losing the baby in pregnancy or in the first month after birth; spontaneous vaginal birth (when labour was not induced and birth not assisted by forceps; caesarean birth; instrumental vaginal birth (births using forceps or ventouse); whether the perineum remained intact, and use of regional analgesia (such as epidural).

The main benefits were that women who received midwife-led continuity of care were less likely to have an epidural. In addition, fewer women had episiotomies or instrumental births. Women's chances of a spontaneous vaginal birth were also increased and there was no difference in the number of caesarean births. Women were less likely to experience preterm birth, and they were also at a lower risk of losing their babies. In addition, women were more likely to be cared for in labour by midwives they already knew. The review identified no adverse effects compared with other models.

The trials contributed enough high quality evidence for each key outcome to give us reliable results for each one. We can be reasonably confident that future trials would find similar results for these outcomes.

**What does this mean?**

Most women should be offered 'midwife-led continuity of care'. It provides benefits for women and babies and we have identified no adverse effects. However, we cannot assume the same applies to women with existing serious pregnancy or health complications, because these women were not included in the evidence assessed.