



Home birth research

[AIMS Journal, 2015, Vol 27 No 4](#)

Gemma McKenzie looks at additional evidence on birthing at home

Recently, there have been a number of studies published that focus on home birth. This review will explore the main points raised in two of these.^{1,2} Both studies stemmed from the results of the Birthplace England Research Study³ (BPE), which was carried out in 2011.

First Study

The results of the BPE showed that there were a number of women classed as 'higher risk' whom obstetric guidance would have advised to birth in an obstetric unit (OU) but who planned to give birth at home. The first study analysed the outcome of these planned home births when compared with the 'higher risk' women who planned to give birth in an OU. This covered 8180 'higher risk' women from the BPE cohort.

Women considered 'higher risk' were those who had:

- Pre-existing medical conditions, such as epilepsy, asthma and cardiac disease;
- Complications in a previous pregnancy such as a retained placenta or a caesarean section;
- Conditions that could affect the current pregnancy, for example, pre-eclampsia, a BMI over 35, gestational diabetes or a pregnancy that had gone beyond 42 weeks.

The outcomes that the researchers were analysing, as in the main BPE study, were:

- Intrapartum-related mortality and morbidity of the baby, intrapartum stillbirth, early neonatal death, neonatal encephalopathy, meconium aspiration syndrome, brachial plexus injury and fractured humerus or clavicle;
- Admission of the baby to the neonatal unit within 48 hours of the birth, for at least 48 hours;
- interventions carried out on the mother during birth and adverse maternal outcomes;
- Straightforward vaginal birth.

Glossary

- **Intrapartum** - during labour or birth.
- **Perinatal** - the time just before and just after birth.
- **Intrapartum stillbirth** - stillbirth after the start of labour.
- **Early neonatal** - new born.

- **Neonatal encephalopathy** - neurological (nerve) problems observed in the newborn's first days of life, sometimes caused by lack of oxygen. The terminology NE is preferred to Hypoxic Ischemic Encephalopathy (HIE) as it is not always possible to document a significant hypoxic incident and there are potentially other causes.
- **Meconium aspiration syndrome** - a condition which occurs in association with a baby inhaling meconium into their lungs.
- **Brachial plexus injury** - damage to the baby's nerves between its spine and arm, shoulder or hand.
- **Humerus** - the bone between the shoulder and elbow.
- **Clavicle** - collar bone.

Results

The first interesting point to come out of the study was that the 'higher risk' women choosing a planned home birth were more likely to have had more than one previous pregnancy. Further, out of all of the women in the study, the proportion of women who gave birth at 42 weeks' gestation or more was higher in the planned home birth group. The results also showed that women with a number of risk factors were more likely to give birth in the OU.

There was a very low rate of intrapartum-related mortality and morbidity in both the home birth and OU babies and the difference was so small that it was not statistically significant.

Surprisingly, the research showed that the risk of a baby being admitted to the neonatal unit was higher in the OU births. This was still the case even when the researchers restricted their analysis to women who did not have any pre-existing medical conditions.

In planned home births, the risk of neonatal admission was significantly higher for 'higher risk' women than in 'low-risk' women. It did not make much difference whether this was the woman's first baby or whether she had given birth before. However, when the researchers removed the women who had pre-existing medical conditions (see 'higher risk' criteria listed above) from the analysis, the risk of neonatal admission for babies born to women considered 'higher risk' was not statistically significant when compared to 'low-risk' women.

Compared with a planned OU birth, a planned home birth was associated with a significantly lower risk of intrapartum interventions and adverse maternal outcomes. This was regardless of whether the woman had given birth before. In addition, planned home birth was associated with a significantly higher probability of 'a straightforward vaginal birth'.

The researchers asked the question 'why would a higher risk woman choose to birth at home?' They suggested that a possible answer to this could be that these women may want to avoid the interventions associated with an OU birth, but they are excluded from midwifery-led units. This means that to avoid an OU, their only real option is a home birth. They concluded that more research needs to be done to see whether the criteria for midwifery-led units could be safely relaxed so that some 'higher risk' women could also have the option of using that facility if this is what they want.

Second Study

The second study compared the place of birth and outcomes of all low-risk women who gave birth in New Zealand between 2006 and 2010. This was then compared with the results of the BPE. For inclusion in the study all of the women had to have had a singleton pregnancy, have a baby in the head down position, and be at least 37 weeks 0 days when they gave birth.

Results

Firstly, both the New Zealand study and the BPE found that fewer women having their first babies (nulliparous) planned to birth at home than women having subsequent babies (multiparous). Further, the rates of transfer from planned home births to hospital were lower in New Zealand than in England (16.9% and 21% respectively). Forty-five percent of the English transfers were for women having their first baby, whereas this was only 35.8% in New Zealand.

All types of adverse outcomes were rare. Neonatal unit admission and perinatal mortality were significantly higher for babies born to women who transferred from home after labour had commenced. Overall, women who gave birth in their planned place of birth had lower levels of perinatal mortality than women who were transferred to hospital from home.

The researchers concluded that for low-risk women, the risk of adverse neonatal outcomes is low and that this is not affected by whether the mother chooses to give birth at home or in another maternity setting.

AIMS Comments

These studies provide useful information, but, as is so often the case, the research also raises many questions. The researchers observed in the first study that a number of women had multiple risk factors. They also noted that a greater proportion of the 'higher risk' women who planned a home birth had had a previous pregnancy. The research was not designed to find out why, so we do not know what other factors influenced these women's decisions to plan a home birth for their next baby. Could it be that for some 'higher risk' women, previous experiences of hospital births influence their decision to birth at home, even when this goes against medical advice? Arguably, this could also be linked to a woman's growing confidence in her own body's abilities, especially as the second study highlighted that fewer women having their first babies chose to home birth than those having subsequent babies. This decision

may also be influenced by the woman's midwife. Perhaps midwives are less encouraging of home births when the mother has yet to experience labour and birth.

Another question raised by the first piece of research was why the risk of neonatal admission was higher for babies whose mothers were 'higher risk' but had chosen to birth at the OU instead of at home? Could something happening in the OU birth room be affecting the initial health of the baby? Examples could be the use of syntocinon to induce labour, or forceps delivery of the baby, both of which would not be used during a home birth. Given that the results showed that home births had a higher probability of resulting in 'a straightforward vaginal birth', is it this lack of 'a straightforward vaginal birth' that is causing the problems? Could it be linked to over-monitoring of babies born in an OU, which could result in over-cautionary treatment of the newborn?

Could the proximity of the neonatal unit influence decisions made, especially where there is an assumption that a baby born to a 'higher risk' woman will need extra medical care? Alternatively, perhaps some of the conditions recognised and treated within the OU are being adequately treated at home following a home birth. The authors point out that: 'The high neonatal admission rate in planned OU births at term is costly and the separation of mother and baby may have negative consequences.'

The researchers suggested that a possible explanation for the apparent additional treatment required by babies born in the OU was due to 'under-treatment' of the planned home birthed babies. However, this argument does not sit well with their conclusion that the difference between intrapartum-related mortality and morbidity within the OU and home birth groups was not statistically significant.

In the New Zealand study, the researchers found that women who gave birth in their planned place of birth had lower rates of perinatal mortality than women who were transferred from home to hospital. Does this suggest that moving a woman during labour carries its own risks and therefore in borderline cases moving a woman from home to hospital could actually do more harm than good? Or is it indicative of correct assessments by midwives whereby women in real need of medical assistance are being appropriately transferred to the hospital? Without further research, the answer is unclear.

These two studies show that home birth is safe and has significant benefits for mothers. The authors of the first study acknowledge, however, that the number of women included in the study meant that it had 'limited power to detect a difference in risk' but that 'Planned home birth was associated with a reduced risk of maternal intervention or adverse outcome requiring obstetric care and an increased probability of having a "straightforward birth" compared with planned OU birth.'

All women need a range of birth place options and need to be treated as individuals. More research is needed to ensure that women are informed and well supported to have a safe and positive birth experience, whether they plan to birth at home or elsewhere.

References

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