Reviewer's report

Title: Protocol: systematic review and meta-analyses of birth outcomes for women who intend at the onset of labour to give birth at home compared to women of low obstetrical risk who intend to give birth in hospital

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Reviewer: Therese Dowswell

Reviewer's report:

Thanks for sending me this protocol for systematic review to look at.
The subject of the proposed review is very important. The place of birth is important to women, and in some settings the safety of home birth has been the subject of debate for several decades. The authors are right to point out that trial evidence on this subject is extremely limited and it would be very difficult in most health care contexts to conduct an RCT. The authors also point out that previous reviews on place of birth have been criticised for methodological reasons.

Most of my concerns about the protocol are relatively minor.

1. Introduction.
   How is a well-resourced setting defined?
   The second sentence is confusing – it sounds as though the Loudon publication was from 1921.
   The quotation also suggests that home birth is the business of midwives, whereas in some settings general practitioners and others have been involved in maternity care for women giving birth at home.

2. Introduction and throughout.
   Several terms used throughout the protocol were potentially problematic; that of obstetric risk and the idea of women planning place of delivery at the start of labour are not straightforward ideas.
   Definitions of risk in pregnancy and during the birth are different in different settings and change throughout pregnancy – and many “low risk” women nevertheless experience complications. For example, a fifth of women in the UK (and more than that in some countries) undergo induction of labour; throughout pregnancy these women would mainly be regarded as “low risk”; their “risk” status only changing once they have passed a given gestational age (which varies considerably in different contexts). In the context of home birth risk status may also be influenced by perceptions re women’s home circumstances, geographical and other non-obstetric factors.
   The start of labour is even more difficult to pin down.
   I was troubled that the planned review intended to exclude altogether those
women in the home birth group who transferred to hospital care during pregnancy – this potentially means that a large proportion of women intending to give birth at home are excluded from the analysis. Does this mean that studies that include cohorts of women who plan home or hospital birth and report results by “intention” will all be excluded?

Women who intend to give birth at home very close to the time of birth are a highly selected group. Women frequently make decisions about their planned place of birth very early in pregnancy (women may well be asked about preferred place of birth at their first antenatal appointment). At the point in early pregnancy when women decide to opt for home birth they are likely to have been designated as being at low risk (for obstetric, social and other reasons). Women opting for home birth may also receive different antenatal care from those opting for hospital birth. Attempting to match those women who remain “low risk” and committed to home birth at “the onset of labour” with a hospital comparison group is no mean feat in a single study; doing this at the level of meta-analysis will be very challenging. Women that select themselves for home birth are different from those that select hospital care in many ways that are difficult to adjust for in statistical analysis.

3. Search Strategy – I do not have expertise to comment on this. Do the review team have a strategy for dealing with papers that are not reported in English?

4. Study selection- I could not find a description of what types of study would be included. Are studies included irrespective of design – eg. Studies with historical controls? The review team mention subgroup analysis by study design, would each type of study be looked at separately?

5. Outcomes. Why is epidural included as an outcome? Is it a bad intervention? Women may select hospital birth because they want to minimise pain in labour. Clearly women giving birth in hospital are much more likely to have epidural analgesia- it is not available at home. Having this as an outcome seems to imply that many women choose an “adverse outcome”.

6. Data extraction: Some of the data extraction sections seem to require considerable judgement on the part of the data extractors – question 6 re transfers in labour “assuming it was not an emergency” – I cannot imagine any paper reporting the level of detail that would be needed to answer eg. d. Would home birth care providers and their clients be treated respectfully by other care providers while in hospital? Question 7 re fee for home care – there could also be a fee for hospital care?

7. Re data collection, I was not sure what “we will try to calculate event occurrences when studies do not report our primary outcome?” means?

8. Mean Apgar – Apgar scores are not normally distributed, I can’t see any value in combining mean scores.

9. The protocol is well written.

This is such an important topic. The review is very ambitious and the results are likely to be scrutinised very carefully. It is a very controversial subject, emotive and highly politicised. I applaud the authors for planning this very difficult review.
Therese Dowswell

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

No competing interests.