Author's response to reviews

Title: Birthplace in New South Wales, Australia: an analysis of perinatal outcomes using routinely collected data

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Author's response to reviews: see over
AUTHOR'S RESPONSE TO REVIEWER'S REPORT

Title: Birthplace in New South Wales, Australia: an analysis of perinatal outcomes using routinely collected data

Version: 1 Date: 17 March 2014

Thank you for the opportunity to respond to the reviewers. We have detailed our responses to the reviewer who made suggestions and made changes in the paper – we have underlined the altered sections. The second reviewer did not make any suggestions for changes.

Reviewer: Charles Algert

Major compulsory reviews:

The definition and reliability of place of birth reporting is not assessed. The authors need to demonstrate that “birth centre” on the MDC means the same thing as what the authors intend (no induction, no epidural/spinal, no augmentation? private hospitals?). The authors also need to compare the purported timing of the decision for planned birth with reported labour onset.

We have made many exclusions (outlined below in the methods section) to accurately approximate the place of birth at the time of labour but with this type of dataset there is no completely accurate way of ensuring that the planned place of birth as recorded on the PDC and planned place of birth at the onset of labour are the same. We have now mentioned this in our limitations section. A further issue is that the planned place of birth variable as recorded in the PDC cannot be guaranteed to equate to the planned birth of birth at labour onset. We have endeavoured to approximate this as accurately as possible by excluding induction of labour which would not have occurred in the homebirth or birth centre setting. Where there are no complications, as is seen in this cohort, women are unlikely to change their minds after 37 weeks. Taking a term gestational age (37 weeks) as intended place of birth also reduces the problems seen in previous studies with choice of birth place documented at booking.

We agree that it would be valuable to undertake validation work on the accuracy of intended place of birth at onset of labour. The fact that the outcomes of our study approximate those of the UK Birthplace study is reassuring.

In NSW there are no birth centres in private hospitals and augmentations do occur in birth centres.

Abstract

The last sentence of the Results paragraph should be in the Conclusion.

This has been changed. Sentence added to the conclusion- “very large data sets will be required to measure rare outcomes associated with place of birth in low risk population, especially in countries like Australia where homebirth rates are low.”

Methods

Exclusion criteria (page 10): Why are inductions excluded?
Inductions of labour have now been totally excluded and the methodology section has been amended to highlight this and the number of women altered throughout as well as updating the tables accordingly. In the first version women who had planned a home birth and were recorded as having undergone an induction of labour were excluded from the dataset as this procedure would not occur in a home birth setting in Australia. Women who were recorded as having undergone an induction of labour for fetal distress, fetal death, chorioamnionitis, blood group isoimmunisation, pre-labour rupture of membranes or suspected intrauterine growth restriction were also excluded as these women would not undergo this procedure in a birth centre setting in Australia. In this amended version, all women undergoing an induction of labour regardless of their intended place of birth have been excluded from the study. This conservative approach was adopted in order to remove the potential for bias in the hospital group where there was a greater proportion of the induced labours.

If using trial ITT methodology, an intention to deliver as a homebirth or at a birth centre is the salient fact. Women would have had to be transferred from a birth centre, but this is part of using the place of birth field. If augmentation of labour is not excluded, and the timing of delivery plans cannot be stated with certainty, inductions probably should similarly be included in the analyses.

We have addressed this comment in the above amendment.

It is vital that the authors specify what constitutes induction.

The specific type of induction is not able to be ascertained due to the fact that the variable in the PDC is induction/augmentation and as augmentation occurs in the birth centre, this would not assist the validation process. The variable ‘reason for induction’ is available, but as stated above all women undergoing induction have now been excluded. While it was the intention of the Birthplace in England study not to include inductions of labour it was not always possible to determine whether induction of labour, previous caesarean section and known group B strep carriage could be identified or reliably inferred from the data for 2008. The data collection form for the study was modified in 2009 to capture data on induction of labour and previous caesarean section [2]. As induction of labour means an added layer of risk we have now excluded all these woman and written more in the paper regarding this rationale.

Is augmentation with oxytocin acceptable as “birth centre” management? They can check whether any of this occurred. Data definitions (page 12):

Augmentation with oxytocin is not usual birth centre management. However in this study, if women started with birth centre as their planned place of birth and then needed augmentation in the hospital labour ward we still included them in the birth centre group.

The composite infant outcome, taken from a UK study, is an unsatisfactory composite.

We were attempting to approximate the Birthplace in England study as closely as possible and this is the composite primary outcome used within that study. It is also the definition we used in the NHMRC grant which we were awarded in 2012. We agree, as do many others, that this type of composite outcome is not always satisfactory, yet we were only able to work with what was the precedent. A sentence in the limitations section reflects this.

“This study aimed to determine whether a retrospective linked data study using routinely collected data was a viable means to compare perinatal and maternal outcomes and interventions in labour by planned place of birth in one Australian state using the composite primary outcomes outlined in the Birthplace in England Study. In order to fulfil this endeavour, we were limited to the outcomes listed in the study.”
An additional problem with the components of the composite is that neonatal encephalopathy had a different ICD10 code prior to 2006, of which the authors seem unaware.

We thank the reviewer for pointing this deficit out to us. We have now searched by this code and an additional 158 cases have been added to the primary outcome. The results in Table 2 and those throughout the document have been adjusted to reflect this. The addition of these additional cases did not alter the ultimate findings of the research.

The stated list of pregnancy conditions which leads to pregnancies being labelled complicated is certainly not complete.

We appreciate that this list is not complete, but once again we are attempting to replicate the Birthplace study and these are the conditions listed in that study to be included in the complicated cohort.

For pregnancies ending in a stillbirth or neonatal death, the authors have done individual data record review to exclude additional pre-labour complications. Why could the authors not use an algorithm to identify those same conditions in all birth records?

An algorithm could have been used to identify all maternal complications but as this study was an attempt to replicate the Birthplace in England Study, only the conditions listed in the original paper were searched for. In order to provide a greater level of accuracy, the hand searching was conducted. This was conducted for all cases where a perinatal death occurred to ensure an unbiased approach.

For this study, it would appear to be important to include malpresentation and disproportion codes and placenta praevia, amongst others.

Not necessarily so as breech deliveries are sometimes undertaken deliberately in the home birth setting and disproportion is a postnatal diagnosis – not one which could be made antenatally. The greater proportion of the women with placenta praevia would have been excluded due to their undergoing an elective caesarean section.