Reviewer's report

Title: Barriers and enablers to implementing antenatal magnesium sulphate for fetal neuroprotection guidelines: a qualitative study using the Theoretical Domains Framework

Version: 3

Date: 6 June 2015

Reviewer: Elizabeth McCarthy

Reviewer's report:

Overall: This qualitative study is a moderately interesting, clinically relevant study from the WISH group.

Discretionary Revisions: shorten the text and use principles of plain English. I find the Plain English websites helpful.
http://plainenglish.co.uk/how-to-write-in-plain-english.html
http://plainenglish.co.uk/medical-information.html

Using plain English principles also often reduces the word count, improving the reading experience for everyone, including editorial board members!

Minor essential revisions:

ABSTRACT: I strongly advise reducing the word count to 250 to improve readability, especially when in Pubmed format which may truncate the abstract at this point.

BACKGROUND: Please shorten. As submitted, there are 7 paragraphs compared with the 5 in the WISH protocol from the same author group (BMC Pregnancy Childbirth. 2013; 13: 239.) and 3 from the group’s RCT (BJOG: Volume 121, Issue 5, pages 595–603, April 2014).

Either BACKGROUND or METHODS: Please add the following information, for example as a box e.g.
BOX: Theoretical Domains Framework
1. Knowledge
2. Skills
3. Social/Professional Role and Identity
4. Beliefs about Capabilities
5. Optimism
6. Beliefs about Consequences
7. Reinforcement
8. Intentions
9. Goals
10. Memory
11. Attention and Decision Processes
12. Environmental Context and Resources
13. Social Influences
14. Emotions and Behavioural Regulation

METHODS (Setting):
Please rewrite assuming an international reader knows nothing about Adelaide or South Australia. Instead of “the largest tertiary maternity centre in Adelaide, SA”, I suggest a couple of other indicators which readers as disparately sited as in Oxford, Omaha or Orinoco (Brazil, according to Google) might understand e.g.

• number of births per annum, either total or, better still, number of babies born or mothers giving birth at < 30 weeks (? No. of NICU beds, No of maternity beds???)

• An idea of the distances involved in in utero transfer e.g. what is the longest distance which pregnant women travel to WCH for the purposes of preterm birth

• Possibly… some idea of population captured e.g. state population? Or numbers of females aged 15 to 45…? Or, numbers of tertiary maternity centres serving the state +/- interstate population

I don’t think you need to include all these suggestions, just a couple of illustrative facts to help with generalisability to other settings

METHODS: Please provide a copy of the Interview schedule as a supplementary file

METHODS (Data analysis): Please list the 14 theoretical domains e.g. as a box as already suggested

DISCUSSION: Paragraph 1 reiterates the aim which is a little repetitive. Please omit and replace with one or a few summary sentences about the main findings or the most important findings or the most interesting finding… I leave the choice to the authors about what they consider important or interesting.

Discretionary Revisions:

BACKGROUND In general, an original research article is different from a review article or literature review which informs a clinical guideline. The authors should be able to summarise known research and what question their study addresses within about 3 paragraphs, for example

PARAGRAPH 1: Brief comment on the importance to preterm birth in general and of its contribution to cerebral palsy in particular and the availability of national guidelines to reduce cerebral palsy with antenatal magnesium sulphate for certain risk groups.

PARAGRAPH 2: That guidelines only work if they are implemented in practice.
Some research is already available on what promotes and what impedes guideline implementation. I suggest that many readers will know about CP and MgSO4 but will not be familiar with the term “Theoretical Domains Framework”. This could usefully be listed as a box of the 14 domains to save the lazier (or busier) clinician researcher from looking up the original article. It also makes your results headings grouping easier to understand.

PARAGRAPH 3: What question(s) your study particularly addresses

The interesting reader can be referred to the NHMRC guideline and indeed, the authors’ other publications, for more detailed background (and it won’t do your citation statistics any harm, either!) I estimate that many readers will be very familiar with this field already.

METHODS: shorten word count, use principles of plain English discussed above.

RESULTS: Paragraphs 1 and 2 could be shortened by eliminating information already well-illustrated in figures 1 to 4. Active voice will also shorten these paragraphs e.g.

Participants in 2012-3 were more likely than participants in 2011 to say they “routinely” or “sometimes” administered magnesium sulphate to women at risk of preterm birth (see figure 1).

RESULTS: Omit raw figures and % as in the suggested sentence, above. Alternatively, add some or both numeric data back to the sentence or add to the figure. I am not sure the reader really needs this degree of detail, particularly as the sample size of 21 to 24 means there is some error around any % estimate.

DISCUSSION: Shorten the text and use principles of plain English, as suggested above.

CONCLUSIONS: shorten the text and use principles of plain English. For example, I have retained the authors’ first sentence and then changed the following which results in about 30 fewer words.

Our qualitative study, using the Theoretical Domains Framework, has identified some of the barriers and enablers to the evidence-based implementation of antenatal magnesium sulphate for fetal neuroprotection at the WCH, South Australia, as perceived by obstetric and neonatal health professionals. Respondent health professionals identified difficulty in predicting preterm birth, which is sometimes precipitous or imminent and often requires complex administrative procedures in a short time, as key barriers to implementing antenatal magnesium sulphate. Regarding enablers to implementation of antenatal magnesium sulphate, respondents commonly suggested education, reminders, audit, feedback and decision-support systems, expanding the range of service areas, pre-prepared syringes, and support from colleagues and influential individuals. Results for this study will guide further implementation strategies with the goal of improving neuroprotection of very preterm infants in our local setting. We encourage research into barriers and enablers in different
settings: some may prove common and others may be setting specific. Pregnant women’s views of barriers and enablers to magnesium sulphate for neuroprotection are also important to enhance implementation.

TABLE 1: The authors may find some useful tips about table presentation in a video tutorial provided by BMJ https://www.youtube.com/playlist?list=PLXU14EQbU_V9JpmolAKsaCC0VjJzbxzAN
I have certainly improved my own tables since viewing this video and the authors could consider modifying the format of Table 1.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.