Author’s response to reviews

Title: Revising acute care systems and processes to improve breastfeeding and maternal postnatal health: A pre and post intervention study in one English maternity unit

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Author’s response to reviews: see over
Reviewer 1:

2. Discretionary revision: The content of the intervention is presented with some examples like introducing new postnatal records, revision of routine hospital systems and longer stay on delivery suite to encourage skin to skin contact and initiation of breastfeeding as well as practical infant demonstrations. The multifaceted QI intervention entailed obviously so many things not specified, as it was a very extensive intervention. Here it becomes a problem with the span of research areas as breastfeeding and maternal health might need different interventions and it would be interesting if the authors could hypothesise which of the interventions they thought could be of special importance for a positive outcome related to breastfeeding and related to maternal health. Then they could also motivate why the breastfeeding results are not published separately.

3. Major Compulsory Revisions. The survey of the women was conducted at 10 days and at 3 months post-birth for two groups of women before and after the implementation. Was it a questionnaire sent to the mothers or did they get them to bring home at discharge. Was it all yes/no questions? How many questions at each point in time. How were the forms collected from the mothers?

Authors response

As we refer to on p5 of our paper, we wanted to support practice in line with NICE guidance for postnatal care. The guideline includes evidence based recommendations for identification of maternal health problems and support for infant feeding. We feel that improving postnatal care entails focusing on all of these aspects. Skin to skin care following birth is clearly associated with uptake of breastfeeding which is why it was specified as part of the intervention, however this is one element which should be supported as part of a continuum of effective care. Breastfeeding results are not presented separately as our intent was to improve experiences and outcomes as a consequence of improving all aspects of care.

Women were recruited on the postnatal ward. The 10 day questionnaire was handed to the women to complete at home, the 3 month questionnaire was sent to women, both were returned by mail, which we have clarified in the text. Some open questions were included. We could include number of questions at each point in time but do not consider that this would add to our paper.

We have added a sentence on this on p19

Mode of birth was included as a covariate in the model. All covariates used are now shown in Table1 Baseline maternal, obstetric and service
Both related to breast-feeding and maternal health, In this material did it not matter for the outcome after intervention? Could it not be interesting to analyse C/S separately as it was around 30% of all.

Parity is mentioned but does not show in results or discussion.

In the results part there are three tables on maternal health problem. Where 11-13 problems are listed and analysed comparing the 2 groups – Does difference mean that it is clinical significant? And how is it related to the intervention. Is there a statistical risk here??

Maybe not all the tables have to be included.

There is not a single question to the mothers about if the child has any problems, if they have been asked it would be nice to present them.

In the results part it would be interesting to show how many hours the mothers stayed after delivery in the two groups. Did the intervention make them characteristics. For brevity model estimates for covariates have not been included in the primary analysis because our main aim was to ascertain whether there was a difference pre and post intervention, adjusting for selected covariates, rather than a predictive/correlational analysis

Yes this would be interesting to do but this would an unplanned sub-group analysis that was never part of the original analysis plan

Parity was included in our baseline characteristics table was included in all analyses models but as we were not looking at risk factors for health problems, parity and other maternal variables are not reported separately.

It is difficult to gauge the extent to which differences in outcomes were clinically significant as we did not ask women to rate severity, duration or include information on clinical care which may have been sought to resolve a problem. If a problem was less likely to be experienced as a consequence of our intervention, it would be assumed that this was clinically significant.

We prefer to retain all tables to provide data and details of the health issues we were interested in

We did not ask about infant health as part of our study.

Whilst the labour ward protocol was revised so that women did stay longer, we did not collect data on this as it would have put more pressure on
stay longer??

4. Discretionary Revision: In the discussion maybe issues like antenatal care related to breastfeeding could be moved to the background section.

Under limitations maybe also statistical limitations could be discussed as above.

What were the opinions of the staff after the end of the study?

clinical staff. We have however provided statistical information on length of stay in Table 1.

We feel it is more appropriate in the Discussion as it enables our findings to be set in context.

A statement has been made in the discussion about size of sample and the ability to test for statistical significance of rarer events.

This is reported in a separate publication (Bick et al 2011) which is now cited in the text (ref: 37)

**Reviewer 2:**

I feel that the purpose of this particular paper is sometimes difficult to distinguish from other aspects of the programme of work which is or may be reported elsewhere, some elements of which are alluded to here but not included. Likewise, the description of the intervention is a little unclear in the methods section, some parts are core clearly described in the discussion and I feel that it would improve the clarity of the paper to have more explanation earlier. I have identified some specific points below.

As requested these are identified as **minor essential revisions:**

**Methods**

1. The model of Continuous Quality Improvement - more information about the model would be helpful for example the engagement between senior management and project teams, what specifically was this?

2. The importance of engaging as many staff as possible was recognised – this sounds quite central to the process but nothing more is said about this.

3. I feel that this paragraph should, but doesn’t, explain the CQI model, I wondered if a diagram

We refer in several places to engagement between the senior managers and project team, as appropriate to inform the current publication. Engagement was ongoing in terms of regular meetings and feedback rather as a specific aspect in it’s own right with particular outcomes of interest.

We report on clinical staff views in a separate paper (Bick et al 2011) which is now referred to in the Discussion.

Further details have been provided.
outlining the steps involved would improve clarity?

Planning the intervention

4. I think a clearer overall picture of the elements of the intervention would be helpful. Some important aspects, for example the use of MEWS, asking women what support information etc, and the information that support for breastfeeding was commenced as part of antenatal information, are mentioned for the first time in the discussion. These practical elements make the picture clearer and possibly could be included earlier in the paper.

5. A wide range of focus groups were held and pathway maps were developed. It would be really interesting to get even a flavour of what these found and how they fed into the changes implemented.

6. The new hand held maternal record was evaluated as part of the evaluation- is the evaluation reported elsewhere? Can more be said about this?

Discretionary revisions

1. I am not sure what the heading ‘project review’ means.

2. The experiences of the women are reported elsewhere – would it be possible to include a few comments from this data and is there anything that could be reported from the focus groups or pathway mapping which would help the reader understand how the subsequent changes were determined?

3. Paragraph 2. Is it possible to describe compliance with CNST standard 5?

Data collection

4. There is very little information about the questionnaire used with the exception that the EPDS was included. Was the questionnaire developed specifically for this study?

We refer on p7 to the provision of information for women being given antenatally in line with NICE guidance. We have included information on the MEOWS here as well to ensure content of the interventions is clearer.

As the aim of this paper is to present our main findings, it is difficult to include all details of the work undertaken, however we have added a few more details where appropriate.

The evaluation is further described from the midwives’ perspective in another paper (Bick et al 2011) and with respect to the use of the symptom checklists data on which are presented.

This has been deleted in response to Reviewer 3’s comment on moving the first paragraph of the ‘Methods section’

These are covered in previously published papers (Beake et al 2010, Bick et al 2011), and we feel it is important that readers are directed to these rather than repeat data here. We have included further information on pathway mapping.

We have revised this section to describe compliance with the CNST standards in more general terms rather than specific criteria for PN care which can change annually.

The questionnaire was developed specifically for the study which has been indicated in the text. The content reflected aspects of NICE guidance, and need to assess impact of the intervention on physical and psychological maternal morbidity.
**Results**

5. Women were recruited to the study by a research midwife which presumably means that there were times when women were not recruited and/or that some women did not accept the questionnaire. Is it possible to say whether the characteristics of the women returning questionnaires were similar to the overall characteristics of women who gave birth in the hospital?

**Discussion**

The discussion provides a very useful overview of previous research in this area in relation to the findings of this study. The discussion is well balanced addresses the main findings of the study building on previous work of the authors and others.

Overall this is a very useful paper which addresses a topic area of current clinical importance.

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<td>The manuscript is written in an objective and professional tone; however, it was difficult to read due to a number of run on sentences and due to the multiple interventions and outcomes described. This manuscript would be improved by dividing into two papers – one on interventions and outcomes related to breastfeeding and one on interventions and outcomes related to maternal postnatal health. This type of work is difficult to describe succinctly but these data are important to add to the medical literature.</td>
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<tr>
<td>1. The title is clear and informative and describes the manuscript.</td>
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<td>We have revised sentences where appropriate.</td>
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<td>We do not wish to split this into two papers as we feel that all women require an effective continuum of care which covers all of their postnatal needs, including infant feeding issues (which are also likely to be influenced by maternal health).</td>
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We compared maternal-obstetric characteristics of women who did or did not participate, and there were no differences. This is now reported on p10. The women were also recruited by the midwives on the postnatal ward when the research midwife was not there, this has now been made clearer in the text.
methods, findings, and conclusion.

3. No misspelled words were identified.

**Major compulsory revisions**

4. Background –

   a. page 4, line 1: Spell out United Kingdom the first time it appears in the manuscript.

   b. There needs to be a transition sentence at the end of the first paragraph. However, if this paper were divided into two papers it would be less confusing and less need for transitions between maternal health needs and breastfeeding issues.

   c. Second paragraph, second sentence – I don't think it adds anything to include in parentheses the breastfeeding rates for England. However, if this paper were divided into two papers it would be less confusing and less need for transitions between maternal health needs and breastfeeding issues.

   d. Need a transition between second paragraph and the third paragraph.

   e. Need to insert the primary and secondary aims of the study at the end of the background section and before the methods.

5. Methods –

   a. The statement about ethical approval on page eight needs to be moved to the end of the first paragraph on page 6.

   b. Page 6, first sentence under Setting, delete “a” between 57% and spontaneous.

   c. Third sentence in the paragraph on Setting is a run on sentence and hard to read.

   d. First sentence under Planning the intervention – run on sentence and hard to read.

   e. Second paragraph under Planning the intervention – Was revision of the way postnatal care was documented a part of the planning or part of the intervention? This is not clear. Headings for each step that were

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<td>It was part of the intervention, as part of the introduction of new postnatal records.</td>
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<td>Headings would not be useful as some sections</td>
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taken prior to implementing change would increase clarity.
f. Content of intervention – Divide into specific interventions that occurred and list in chronological order.

g. Data collection - Primary and secondary aims should be moved to the end of the background section.

h. Statistical analyses – In the last sentence, the information in parentheses is confusing – not sure why it is there.

6. Results –
a. Page 10, impact on breastfeeding outcomes – p value of 0.05 for initiation of breastfeeding. It is acceptable to report outcomes with p value of 0.05 but it needs to be stated that there was a trend toward a significant difference. A p value of 0.05 is statistically significant.

b. Page 11, second sentence is confusing. Needs to be reworded.

c. Page 11, maternal health outcomes – please define offensive vaginal loss for the international readers.

d. Page 12, please indicate the significance of a score of >13 on the EPDS.

e. Page 12, experiences of care – It would be less confusing to be presented with pre intervention results before post intervention results.

7. Discussion –
a. Third paragraph, first sentence: “doing the right thing at the right time” should be deleted. This paragraph needs transitional words to move the reader from one intervention to the next.

b. Page 14, second paragraph. CS needs to be spelled out the first time it is mentioned.

As changes were implemented across the organization at the same time, it is not appropriate to provide a chronological list.

We consider that aims are more appropriate where included at the moment, especially as reference to these is already made based on revisions already suggested.

This was to highlight the symptom which, on one occasion was so rare that it could not be presented as an OR with a 95% confidence interval.

Thank you for pointing this out. The paragraph has been amended distinguishing between those differences that are statistically significant and/or on the cusp of significance.

Done

Done

Done

We have presented the pre-intervention results first as instructed.

This is an important message and one which is promoted by those working to improve the quality and safety of maternity care.

It is spelled out in ‘Background’
used. How is confidence and cesarean section related?

c. The discussion was difficult to read – it would be greatly improved by being split into two papers: one on breastfeeding and one on maternal health and satisfaction.

d. Limitations of the work were clearly stated.

e. In the discussion the authors clearly acknowledge previous work upon which this work was based

| Women who are better supported post operatively may be more likely to commence breastfeeding. |
| Please see previous comment re why we do not wish to split the paper into two. |
| Thank you. |
| Thank you. |