Author's response to reviews

Title: Assessing the quality of record keeping for cesarean deliveries: results from a multicenter retrospective record review

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Author's response to reviews: see over
October 23, 2013

Dear Dr. Van den Akker,

Enclosed please find a substantially revised manuscript about the retrospective CS record review in five countries. We have reduced the word count from 5,156 to 4,925 (231 word); this may still be too long, however we believe it is better organized. We added in a few additional commentaries/analyses based on review comments. We have re-titled the paper: “Assessing the quality of record keeping for cesarean deliveries: results from a multicenter retrospective record review”.

We appreciate the thoughtful comments from the reviewers. We have addressed each reviewer’s comments; see below.

The data collection was conducted by two person consultant teams in each country. The research teams were trained by Fistula Care staff.

We have added, as an annex, the data collection tool we adapted from AMDD; it may be too lengthy to include with the final manuscript.

Please let me know if you need further information.

Sincerely,

Evelyn Landry
Deputy Director
Fistula Care
EngenderHealth
Dear Janelyn Ann Cruz and Thomas van den Akker

Thanks for considering me to review the manuscript “Cesarean section: The importance of telling the woman's story for effective clinical audit - findings from a multi-center record review study”.

I find the study to be a coherent and sound addition to scientific knowledge, revealing some important quality issues that are widespread in developing countries. It is an interesting multi-country criterion-based audit of cesarean section cases including findings on suboptimal maternal and fetal monitoring during labor, severely poor record keeping of key assessments, alarming diversity among study sites in when to perform (emergency) cesarean sections and due to which medical indications, and what seems to be unnecessary high rates of poor maternal and fetal outcomes. While there are reports on audits on various aspects of maternal care, there are still few reports similar to this, and to my knowledge there are none that are this big with nearly 3000 cases.

Please see my suggestions for revisions below.

Compulsory and Essential Revisions

Background:
1. Another reference should be applied for “CS also exposes women to an increased risk of complications and perinatal mortality in subsequent pregnancies”. Souza et al. only considered outcomes (maternal and perinatal) up to hospital discharge of the current pregnancy.

Two additional references have been added:
Methods:

2. More details should be given on how the study sites were “purposively selected”.

   So noted by reviewer Dr. Thoms van de Akker and we have explained this more clearly in the methods section.

3. It is described how the two-person research consultant teams interviewed key informants. However, these interviews are not mentioned in the result section of the manuscript. It should be clearer whether the interviews are a part of this paper. Also, it is unclear whether it is the consultants who collected the retrospective data.

   The consultants collected the retrospective data from the records and this is now explicitly stated. Inclusion of data from those interviews is more clearly stated where appropriate in the results and discussion sections.

4. The description on how the AMDD module 8 questions on primary indications was “substantially modified” and on the collapsing of indications into 18 groups according to Stanton et al.’s proposed classification (reference 19) is unclear. The authors may consider a diagram/figure to explain this. While Stanton et al. recommend division of indications into absolute maternal indications and non-absolute indications, table 4 is divided into maternal and fetal indications. The reasons for this should be explained. Please also see the questions to table 4 below (9.).

   We have added a diagram (Figure 2) to show how list of indications was expanded from the AMDD tool to the Fistula Care tool and then recoded for analysis. We have removed reference to the further analysis we did to review the indications based on the proposed system put forth by Stanton et al. This analysis is subject of another manuscript which has been written and will be submitted to a journal this month; this is a secondary analysis of the data. We have simplified the description. Presentation of the indications in Table 4 remains the same, sorted by maternal, fetal, and other indication groups (with maternal, fetal, other marked in bold).

5. The definitions of when to classify the indication as ‘other’ and ‘data missing’ are overlapping?

   Data missing means no indication was found in the records. Other means that an indication was recorded, however the information was not conclusive enough to recode to one of the standard indications in our list. We have added additional information to the methods section and changed the labeling in Table 4 to make clearer.

Results:

6. ‘Type of CS: emergency or non-emergency’ - How are emergency and non-emergency cesarean sections defined in this study?
Cesarean type is often recorded in patients record/chart and/or surgeon’s operations notes and/or theatre registry as emergency or elective. If this was not noted in the files the data collector used the following guide to help determine the response (this has been added to the methods section):

- **If decision to perform cesarean surgery was made after woman has already started active labor, code as Emergency**
- **If decision to perform cesarean surgery was made before active labor starts, code as Elective.**
- **If none of the above information is available, code as No Information. Do not make the judgement about the type of cesarean delivery**

7. ‘Use of the partograph’: How did the authors define incorrect completeness of partographs?

Completeness of the partograph was assessed by the lead research consultant using a check list to assess cervical dilation, descent of presenting part, contractions, membranes, fetal heart rate and maternal monitoring. The researcher was also instructed to review the partograph to determine if the action line had been reached or crossed while plotting cervical dilation during labor monitoring. We have added this description to the methods section.

According to WHO, a crossed action line does not necessarily indicate “the need for emergency surgical intervention”, but indicates that obstetric action should be taken. Importantly, less invasive procedures such as artificial rupture of membranes, oxytocin, or assisted vaginal delivery should be considered – if applicable - prior to surgery.

**We agree.**

8. ‘Timing of care’. The time interval from admission to delivery as a proxy measure for decision-to-delivery interval seems irrelevant. For instance, if a woman was admitted early in labor and developed a poor fetal heart rate at 9 cm of cervical dilation leading to an emergency cesarean section, a long interval is acceptable and shows good quality of labor management.

**We agree. We have removed this proxy measure from the paper. We did not collect information on intrapartum care, a limitation, which is noted in the limitation section of the manuscript.**

9. ‘Table 4: Primary indications for all cesarean sections by hospital’: The list of indications is a little confusing. Consider emphasizing (by e.g. bold typing) the main groups of indications applied, which currently is ‘maternal indications’ and ‘fetal
indications’. Alternatively, consider dividing into groups of absolute and relative indications as well as – if applicable – cesarean sections without medical indication.

We have left the indications sorted by maternal and fetal groups (these two labels were highlighted in bold). The other group includes some indications which could be considered non medical indications, however we prefer to leave labeled as “other” as in many cases there was insufficient information to make a clear determination about the category.

How do the authors distinguish between ‘obstructed labor’, ‘failure to progress’ and ‘cephalopelvic disproportion’? It seems that there is disagreement internationally in the use of these terms, and it might be argued that cephalopelvic disproportion and obstructed labor are diagnosed only when a trial of labor shows failure to progress (unless there is a grossly abnormal pelvis or obvious fetal hydrocephalus). The authors may consider whether all of these indications should be considered as “failure to progress / prolonged labor”?

There is disagreement internationally about these indications. We are presenting the data as was recorded in the records reviewed. In the discussion we highlight the need for a clear classification system with clear definitions of indications.

Also, the indications ‘maternal medical disease’ and ‘pre-eclampsia / eclampsia’ seem overlapping?

The category ‘maternal medical disease’ refers to pre-existing conditions, such as cardiac disease or co-morbidities, such as HIV. While pre-existing hypertension predisposes to PET and eclampsia, these conditions are excluded from the category, because they are pregnancy specific. We added a footnote to Table 4.

What is the definition of ‘precious pregnancy’ as indication for cesarean section?

Precious pregnancy is defined as a pregnancy coming after a series of pregnancy losses, such as miscarriages or still births. We added a footnote to Table 4. The following indications were found in patient records which were coded as precious pregnancy:

• Bad obstetric history
• Prolonged subfertility
• Previous perinatal death
• Previous stillbirth

10. ‘Table 6: Fetal and maternal labor outcomes by site’:

What does “Experienced complications” include?
Maternal complications, as noted in the manuscript included anemia, wound infection. We have rephrased to make this clearer.

The “Birth outcomes” are unclear. E.g. consider rephrasing “No. of fetal deaths” to “No. of perinatal deaths”, and “Dead” to “Stillbirths”.

Agree, so we have changed to number of perinatal deaths further disaggregated by early neonatal death and stillbirth.

Discussion:
11. In general: In the background section, the authors write: “This paper explores the relationship between the quality of data found in obstetric records and the quality of decision making and how this relationship impacts the quality of care for CS.” Please make this clearer in the discussion.

This has been revised and we have substantially changed content of the manuscript around the issue of decision making. There was too much missing data from the records reviewed to draw any conclusions about decision making.

12. ‘Improving the quality of labor monitoring – use of the partograph’: - Are the authors a little too certain in their conclusion regarding obstructed labor and uterine ruptures as being correlated to pre-hospital delays? Some studies from resource poor settings report a high number of these complications to arise after admittance due to suboptimal surveillance at the labor wards. Information on labor progress at the time of admittance for these cases would be interesting. Alternatively, in cases where uterine rupture or obstructed labor was the indication for cesarean section, the time interval from admission to delivery might be seen as a proxy indicator of whether the complication was due to pre- or intra-hospital delay.

We agree with the reviewers comments that many of the delays women experience will be at the facility, but there certainly are many delays in the community. We removed the discussion/analysis of the proxy measure (time admission to delivery) since it is weak based on the fact that data were missing from many of the files that were reviewed. We did, at the reviewer’s suggestion, examine the time interval for the women who were listed with an indication of obstructed labor or uterine rupture. The median time to delivery among women with uterine rupture ranged from 2.25 hrs (Bangladesh, 1 patient) to 3.41 hrs (Niger A, 58 women). Among women with obstructed labor, the median time ranged from 4.03 hrs (Niger B) to 7.46 hrs (Guinea A).

Conclusion:
13. This needs a rewrite. It should clearly conclude on the objectives mentioned in the background section, which were “to assess the overall quality of cesarean section recordkeeping and data management, and to assess the quality of care in cesarean
section services to identify areas for quality improvement”. In the conclusion (as well as the title), it seems that the focus on poor record keeping outweighs concluding on the suboptimal quality of care found.

This section has been revised.

The manuscript in general:
14. The paper is unnecessarily long. The authors need to make the presentation more concise and shorten the overall length of the article (especially the sections on background and discussion).

The paper has been reduced and background and discussion section substantially revised.

Discretionary Revisions
Results:
15. ‘Characteristics of the women’:
   Consider ‘referrals’ as a paragraph heading after ‘characteristics of the women’.
   Do the authors have information on how far in labor (e.g. latent phase, or first/second stage of active labor) the women were when referred?

   We do not have information about the stage of labor were in when they arrived at the hospital from referring centers. We have collapsed the information about referral into one paragraph section about the characteristics of women.

16. ‘Key aspects of surgery and care’: Consider changing the heading. The manuscript does not report key aspects of the surgery, but of care and decision making on cesarean section.

   We have removed this heading.

17. ‘Indications for CS’: - The study reports a very big number of cesarean sections performed due to clinical signs of uterine rupture. Do the authors have information from the operation descriptions on whether there was an actual rupture? And as mentioned above (12.), do the authors have information on whether the ruptures occurred pre- or intra-hospital?

   We have no data from the review to be able to determine if there was an actual rupture.

18. ‘Maternal outcomes’: The study reports a high rate of maternal deaths (46 deaths in 2941 cases). Do the authors have information on the causes of these deaths and when they occurred (intra- or post-partum)?

   Information about the cause of death was only available for 6 cases: anemia (3); cardiac arrest (2) and hemorrhage (1).
Among the 46 deaths, timing was recorded as (this has been added to the manuscript):
- 9 intrapartum
- 12, within 24 hrs after delivery
- 15, 2-7 days postpartum
- 5, 8-42 days postpartum
- 5, no information

19. ‘Fetal outcomes’: Regarding the high rates of perinatal deaths, it would be interesting to know when during labor the women were admitted (latent phase, first/second stage of active phase), and if there were positive fetal heart rate found at the time of admission?

We did not collect this information.

Also, have the authors looked at how many cesarean sections were performed on intra-uterine fetal deaths? If known to be stillbirths at decision to deliver, a vaginal delivery (including destructive delivery if necessary) should be aimed for.

Information was not available on how many cesarean sections were performed on intra-uterine fetal deaths. Except for macerated stillbirths (see below). The authors acknowledge the principle that to avoid unnecessary risk to the mother, dead babies should be delivered vaginally where possible (while also bearing in mind that specific characteristics of the case or situation may influence mode of delivery). We have added this statement to the manuscript.

There were a total of 323 births which were classified as stillbirths; 209 (64.7%) described as fresh stillbirth and 114 (35.3%) as macerated stillbirth. We believe that the physician/medical team needs to weigh the pros and cons of other options besides CS. Factors that they must consider include resources, skills, equipment, etc. as well as specific circumstances relating to the woman’s condition.

Discussion:
20. ‘Improving the quality of record keeping’: - The authors write that “no standard format or terminology was used for patient files or documentation”. What about the partograph?

The partograph is a standard tool, and we have corrected this statement in the manuscript.

21. ‘Improving the quality of labor monitoring – use of the partograph” The authors may consider including this section under the sub-heading on improving the quality of record keeping. The partograph is a kind of record keeping and record keeping is correlated to the quality of labor monitoring (at least if labor monitoring is recorded prospectively).
We disagree about where the discussion of the partograph should go in the paper. While the partograph certainly provides a record of labor progress, its main function is as more than a routine medical record; it is a decision-making specialized tool for monitoring labor. Thus, managing labor and therefore, we have chosen to discuss its use and significance in a separate section.

22. ‘Reducing the decision-to-delivery interval: The authors may consider including the decision-to-delivery interval of 45 minutes, which is suggested by RCOG and might make more feasible in resource poor settings.

Thanks for this suggestion. We have removed the discussion about time to delivery since the quality of the data on this variable were weak. However we have discussed the need for some standards for this important indicator in the discussion section of the paper.

23. ‘Cesarean section indications’: The authors may consider phrasing all sub-headings in the discussion as recommendations to improve quality of care (as the previous sub-headings). - With the data available, would it be possible for the authors to estimate how many of the cesarean sections that were performed unnecessarily at the time, when considering the indication mentioned and/or the preceding labour management (e.g. artificial rupture of membranes and assisted vaginal delivery)?

We have revised headings in the discussion section and simplified the presentation of the discussion section. We do not feel that we have sufficient information from the data collected to make estimates about the number of CSs done unnecessarily.

24. ‘Improving access to delivery at health facilities’: This was not a part of the current study and should shortly be included in the paragraph below on ‘limitations’.

Thank you. Agree; and this has been moved to the limitations section.

Limitations:
25. The authors write: “Despite its limitations, we believe the institutional CS rate to be a useful descriptive indicator that sheds light on the volume that a site is managing and on the site’s place in the broader health care system”. This seems contradicting to the findings of the study showing great differences in hospital-based cesarean section rates, which do not seem to be correlated to workload (when considering table 1), and diversity in the indications used for when to decide on cesarean section. When analyzing the findings of this and other studies on the quality of care preceding cesarean sections, it may be suggested that there is a tendency in low resourced settings to perform cesarean sections without clear medical indications when other less invasive interventions have not yet been considered, and conversely, that some women in need of the procedure do not receive it. Hence, it may be concluded that without assuring that the quality of the decision process is acceptable, increasing hospital-based CS rates are not a proxy indicator of improved emergency obstetric care or of
“the volume that a site is managing”.

Thank you for this observation. We have removed this statement from the limitations section, however we believe the concept of using institutional rates can be important to understand access issues as we all know many women who need CS do not get it. We agree other data, like indications, in conjunction with CS institutional rates can tell us more than rates alone.

Minor issues not for publication
26. In the background section, the sentence “the risk of severe adverse maternal and perinatal outcomes is increased when cesarean section (CS) is performed without medical indication” is unclear. The risk is higher than for vaginal birth, but not higher than for cesarean sections performed due to evidence-based medical indications.

Yes, we agree and have modified the statement to include this qualifier.

27. In the background section, the sentence “…in Latin America and South Asia and some low-income countries…” is unclear.

We have removed this statement and made the point clearer with an example from Bangladesh.

28. The abbreviation ‘FC’ is not used continuously.
So noted and fixed as necessary.

29. “About one-third of the women referred in Mali came with a partograph, as did more? than 10% from Niger B“
This has been corrected.

30. Underlining of headings is inconsistent.
So noted and style updated.

31. Please rephrase “…or a the model developed at large maternity in Bangladesh”.

Removed reference as it would require more explanation without a proper citation.
Reviewer: Thomas van den Akker
Reviewer's report:
Dear authors, this is a potentially important paper for which I congratulate you. However, in order to get it up to publishable level, I recommend a number of revisions. I hope these will encourage you to resubmit, because I do believe that your messages are highly relevant in this era.

Major compulsory revisions:

1. The paper is too long. In particular the discussion section needs to be significantly reduced, the background section to a lesser extent. I believe this will also bring across the paper’s important messages more clearly.

The paper does not include much information on intrapartum management, which is an important omission/limitation. Notably: what were the percentages of assisted vaginal deliveries/ventouse/forceps? Was artificial rupture of membranes performed before diagnosing obstructed labour? In how many women had labour been augmented? These are important issues that need to be addressed in order to explain the generally high institutional CS rates noted by the authors.

We did not collect information about the number of assisted vaginal deliveries by mode. We did not collect information about whether the woman had labor augmented except in cases where women were referred. In cases of women being referred the data collector reviewed the referral notes (if they existed) to see if she had had any augmentation. The questions was:

*If woman arrived with referral notes, do the referral notes indicate that she had had uterotonic initiation or augmentation of labor?*

In total, 38.3% of all women were referred (n=1,127). Among those referred only one fifth came with referral notes (21%, n=237) and among those with referral notes, the notes indicated 10 women had had some form of uterotonic administered (1 from Guinea A, 5 from Niger B and 4 from Uganda B).

2. The objective of the study as included in the background section is broad and vague. The final paragraph of that section can be shortened and the objectives more clearly described, e.g. primary objective to study quality of CS care and recommend improvements, secondary objectives to study record keeping, indications, timing, etc.

   *This has been revised.*

3. The methods section needs to be improved with regard to the following issues:
A. How were the facilities selected? Simply stating they were ‘purposely selected’ is not enough. This has been expanded to clarify the selection of sites.

B. Can the modified data collection tool be included in the submission? Yes, included as an annex.

C. Exactly which data came from ‘key informant interviews’ and who were the key informants? Key informants included persons involved in the care for women undergoing cesarean delivery and/or had some responsibility for record management, e.g., obstetricians/gynecologists, nurses, midwives, record room staff. Interviews were conducted with a structured interview guide.

4. In the fetal outcomes paragraph as well as in Table 6, it is mentioned that many babies died prior to the caesarean delivery. Especially taking into account the considerable decision-to-delivery intervals, it is necessary to discuss intrapartum care during the waiting time, including assisted vaginal deliveries, and including destructive procedures (craniotomy, decapitation) to prevent unnecessary caesarean sections, especially in settings where sections are likely to have high rates of complications.

Maaloe has a similar observation. See our response to question 19 above.

5. More information is needed with regard to the indications for CS: how was the list of indications constructed? Which definitions were used, especially with regard to obstructed labour and CPD (and particularly in case a partograph was not used). In case it was only based on medical records it must be discussed that CPD is often over-diagnosed.

Maaloe had a similar comment (see # 4 above) and we have provided additional information for this in the methods section of the manuscript.

No definitions were used regarding obstructed labor or CPD. We collected the data on indications as recorded in the patient file; we have expanded the explanation of how this done in the methods section. None of the sites were formally using any classification system so we don’t know how they were defining these terms. As noted in the expanded section on these results, we found many terms used in the patient files which were not on our precoded list, and the authors made the judgment about how to categorize those indications into more ‘standard’ indications where possible. As noted, if the information extracted from the patient file was recorded in the other category and was determined by the authors (JR, CP) that the information was not conclusive enough to recode to one of the standard indications in our list, we coded as other.

We agree that CPD is often over-diagnosed.
Minor compulsory revisions:

1. **Background:** it is stated that the (community! Not mentioned) CS rate in ‘Africa’ is low (4%). A crude statement of this sort may lead to the conclusion that the problem of unnecessary CSs may not be important in many African countries, which contradicts reality. Previous studies have shown that at facility level many CSs have dubious indications (Maaloe N et al, BJOG 2012; Beltman J et al, Acta Obstet Gynecol Scand 2011). The reason why overall CS rates are low in much of ‘Africa’ is a matter of access.

   **Thanks for these additional references. We have included them in the background section and clarified the statements about low rates in Africa.**

2. The paper mentions that women were ‘referred for CS’. This is unlikely, since the indication is usually diagnosed at the referral facility. They were probably referred for higher level labour care. This needs to be adjusted or clarified.

   **Yes, you are correct, women were referred for higher level of labor care and this has been revised to more clearly state.**

3. As the authors indicate in the discussion section the results of this paper concern a wide variety of study settings. Although I agree that some recommendations may not be relevant for the general public, some information about results and recommendations for the specific settings is warranted.

   **We have added a section in the discussion section with examples of recommendations and follow-up actions from a few sites. The editors may want to include or if you feel the manuscript is too long, this could be excluded.**

4. If an explanation would be given as to how exactly the partograph was not correctly completed in different settings the paper would become of higher educational benefit.

   **We have responded to a similar question about the partograph from Dr. Maaloe (comment # 7 above).**

5. The discussion section contains several vague statements such as ‘A disadvantage… quality of services’ on page 14.

   **We have edited the manuscript extensively and attempted to remove vague statements.**

6. It may be difficult to compare Denmark or Britain to the settings described in this paper with regard to decision-to-delivery interval (page 17-18). However, if the authors think this comparison is relevant, the difficulties with it must be mentioned.
We have removed this discussion from the paper but have included in the discussion section the importance of this indicator for monitoring quality.

7. Were local researchers/authors included in this study? Please explain, perhaps in the cover letter.
Yes, they were. See cover letter and revised methods section.

Discretionary revisions:

1. The authors must proofread for typing errors, e.g. the beginning of the third paragraph on page 4 should read ‘evidence or recommendation’ not ‘recommendations’. Noted and have carefully proofed this version.

2. I found the use of the terminology ‘Guinea B’, ‘Niger B and C sites’ on page 9 unclear at the first reading.
   
   We clarified the use of the labeling in the methods section.

3. The tables are still of poor quality.
   
   Table labels have been revised and table with maternal and fetal outcomes revised
Reviewer: Karlyn Frank
Reviewer’s report:

1. Major Compulsory Revision: Title: Emotive, does not adequately convey what the study is about.

   We have changed the title to: Assessing the quality of record keeping for cesarean deliveries: results from a multicenter retrospective record review.

2. Major Compulsory Revision: Introduction and review of the literature: adequate, however, the section beginning “EngenderHealth’s Fistula Care …performance of services” is irrelevant to the subject at hand and should be left out. Methods: The participating hospitals should have been labelled in the methods section and not introduced in the results, thereby adding confusion e.g. Guinea A and B, Mali A etc.

   We have removed the information about EngenderHealth’s Fistula Care project. The identification of sites has been included in the methods section.

3. Major Compulsory Revision: The authors do not explain how randomization was conducted, and in hospitals where there were fewer than 350 records, randomisation could not have taken place, therefore introducing potential for information bias.

   We have clarified in the methods section how randomization occurred. Hospitals were not randomly selected however CS records were at all sites. At sites with less than 350 CS we reviewed all CS records. Agree that it could be a bias and is a limitation.

4. Major Compulsory Revision: Some variables were not made clear in the methods section including those alluding to quality of maternal care. Other variables from the 38 which were collected from the records are not well defined e.g. “intake” (What is this referring to?), “operating theatre” (in what context?).

   Methods section has been expanded to provide more clarity.

5. Major Compulsory Revision: The section of text beginning “A total of … where possible” best belongs in the results section, instead of the methods. (last paragraph of methods section)

   Agree and moved to the results section.

6. Major Compulsory Revision: Results: This detail in this section is overwhelming. The tables are crowded, and contain too much information. The authors should have presented the most important results more succinctly. The current presentation of the results suggests the authors were unable to prioritise the most important information to convey to the reader. Also from a technical point of view, there is a lack of uniformity of the labelling of the tables and presentation of data – Table 3 omits the “%” in the title. Table 6 looks clumsy with the
percentage sign next to each number in each cell of the table. Discussion: The
discussion addresses each of the findings of the results and the objectives
appropriately, however this study cannot show whether any of the
recommendations will make a difference to the state of affairs described in the
study, as it was not a clinical audit.

We thank the reviewer for these observations. We have made substantial
revisions to the manuscript and believe we have presented the most important
points in a clearer fashion. Tables have been revised with clearer labels.

7. Major Compulsory Revision: What the authors do not make clear is whether they are
passing this paper off as an audit or suggesting an audit be undertaken on the basis of
their findings. Further, the data collected was from 2008, and given that most countries
are striving towards attaining the Millennium Development Goals (MDGs), we cannot
assume that the findings from 2008 are still the case in 2013, five years later.

My impression: The authors ambitiously attempt to describe too many variables from
too many sites thereby creating a study with a great deal of information, much of which
is interesting but not scientifically useful. Most importantly, this study cannot, with any
degree of certainty assume that their recommendations for better record keeping,
transfer notes and use of the partogram would actually improve maternal or perinatal
outcomes.

We have revised the paper to be clearer that this was not an audit, but was a focus on
the quality/state of maternal records which are important for conducting clinical audits.
We believe we have strengthened this point in the discussion section of the paper.