Author’s response to reviews

Title: Management and referral for high-risk conditions and complications during the antenatal period: Knowledge, practice and attitude survey of providers in rural public healthcare in two states of India

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Version: 1 Date: 09 Jun 2019

Author’s response to reviews:

Dear Reviewers,

Thank you for your time and effort put in the review and suggestions to improve the manuscript.

We here have attempted answers to your comments and made necessary edits in the main text.

Reviewer #1:

Comments and required edits

Thank you for the opportunity to review this manuscript. It aims to evaluate the providers' knowledge, attitudes and practices with respect to management of high risk pregnancy conditions and complications in a rural Indian setting. This was done through a survey of 147 providers at different facility types, as well as facility surveys, and a descriptive analysis of the gaps was provided. The study is an important addition to the literature - providing evidence that more needs to be done to reduce maternal deaths due to pregnancy complications .The study found significant gaps in essential knowledge and training for staff who are tasked with managing high risk pregnancies

Thank you for acknowledging the importance of this work

Edits
1. Abstract results section: add the actual numeric values as well as the text e.g. "n=xx (25%) mentioned screening for all common high-risk conditions."

We note your suggestion and have edited the results with specific definition. Edited line 19-20 on page 2.

2. Table 1 Mean years and S.E. but seems like confidence intervals or ranges are given

Thank you for noticing this, we have corrected it. Edited table 1

3. For some of the quality checks, it would have been ideal to have a checklist, say WHO or some other internationally recognized checklist for quality of care / facility readiness. This would help the reader compare the findings of this study to such list.

Thank you for the advice, this could have been useful. Note that when we initiated our research, several of the new WHO guidelines were not published. The use of WHO safe childbirth checklist is for women going in labour, while we discussed here the antenatal period as a whole. We however developed our tools based on the clinical guidelines for obstetric care in primary health care, in India, and referred WHO’s Integrated management of pregnancy and childbirth 2015.

Reviewer #2: Notes on the Review of ANC Paper

1. Management and referral for high-risk conditions and complications during the antenatal period. This paper breaks new ground especially on the matter of management of HR and complications during the antenatal period hence the need for sources on such standards

Thank you for appreciation

2. Cite source for: Maternal death as a "consequence of the poor quality of preventive and promotive antenatal care…", (Lines 14 to 21 p 5)

Source Reference added. Edited in Line 12 page 5.

3. Please consider whether the WHO reference on management of obstetric complications cited (Cit. no. 7) is appropriate for PHC provision when it is designed for district level hospitals (Lines 33-37, P.5). More appropriate reference would be Integrated Management of Pregnancy and Childbirth (IMPAC)

Thank you for your suggestion. We are aware of this. A sentence prior to this, mentions of the guidelines for primary level care (Ref 2), and then this was mentioned for district secondary level care (Ref 7). Both are documents of IMPAC. The paragraph builds the argument about guidelines for different levels of care but ambiguity in real administration of these services, at the
different levels of EmOC. We have clarified this in the main text for better readability. Edited in lines 18-21 page 5

4. In discussing India’s Guidelines on SBA (Lines 1-4, P. 6), please elaborate current Scope of Practice of different providers in the antenatal period to improve readers' understanding of expected behavior.

The SBA guidelines are developed for the care providers (Doctors, nurses and nurse-midwives) to manage the low-risk as well as common high-risk conditions and complications during pregnancy, childbirth and postpartum care at the primary and secondary level of care. Text added in lines 5-9 page 6.

5. Please correct inconsistency between Objectives (lines 15 -21, p.6) which focus on assessing providers’ KAP for "screening and referral" with the English summary objective, which included assessing "pre-referral treatment" (Lines 8-14, P.4) and description of study results (Lines 14 -39, P.4).

Thank you for noticing that. We corrected this in the Plain summary. Pre-referral first aid was one of the aspects assessed as part of referral care. Edited lines 6-7 page 4.

6. For research methods, please clarify what you mean by "cross-sectional survey." (Line 47, P. 6) Does this refer to the KAP semi-structured interview? (Lines 32-35, P.7) Is it valid to derive proportions or quantitative measures from semi-structured interviews—a qualitative method? If yes, please provide references. (Lines 43-46, P. 8).

The tool was a mix, with most questions being structured and two open ended questions. We also took notes for additional observations and discussions. We thus thought it appropriate to call it a semi-structured tool. As the term semi-structured questionnaire cause confusion we have changed it to ‘survey tool’ and then elaborated the nature of questions in it. This is clarified in the text. Lines 2-14 on page 8

7. For research method, please clarify if the facility survey/checklist (Lines 12-15, P.18) was answered by respondents from health facilities or by the researchers based on observations.

We agree that we should have provided more details here. It included a mix, interviewing, extraction of data from registers and physical verification of infrastructure. Edited in main text. Lines 2-14 on page 8

8. On methodology, please consider using different terminologies to refer to the semi-structured interview and the facility checklist, instead of using the common term "survey." Semi-structured interviews are usually thought of as qualitative methods, while surveys are quantitative methods. The facility checklist method is also unclear if survey respondents provided data, or if data came from researchers observations.
We use ‘survey tool’ for interview schedule and ‘checklist’ for Facility survey tool as you suggest. Edited in methods section and other places.

9. Please clarify aspects of Table 2 on childbirth services available at the facilities (Lines 1-47, P.10): Elaborated in methods section and other relevant places.
   
a) Are these direct observations of the researchers or responses of facility providers? These were responded by the obstetric head of the facility, for the services that were routinely performed/ available in past 3 months. Edited in methods, lines 22-26 page 8.

b) Do these refer to the actual performance of services, such as specified for EmOC signal functions, or only to the availability of providers and resources? These were routinely performed/ available at the centre; however there was no proper documentation of them actually being provided. We cross-verified the relevant equipment/infrastructure, but did not observe the practice directly. Edited in methods, lines 22-26 page 8. Edited in results lines 16-17, page 10.

c) If performed, what is the timeframe? (e.g., EmOC assessment guidelines by WHO/UN agencies require performance in the last 3 months)

We asked for routine provision of services for past 3 months and data on deliveries and referrals for 6 months. Added in the text. Edited in results lines 16-17, page 10.

10. Please explain how findings from the semi-structured interview--including the "unprompted responses" mentioned in the KAP findings (Line 23, P11; Line 19, P. 12); pre-referral management scenarios (Pp. 13-14); and referrals, (esp. Lines 31-34, P.14) -- were converted into numbers. Please discuss this in appropriate length in the section on methodology.

We have added the details in the methods. The responses were marked on the pre-listed options provided for the most structured questions, which were then computed as proportions. Edited Lines 2-14 on page 8.

Any extra information was noted and is summarised at appropriate places.

11. Please see if Table 3 on referral of ANC problems etc. belongs more appropriately to the Findings section rather than the Discussion.

This is definitely indexed under findings. We have moved it up.

12. Please cite basis for the proportion ("a quarter") estimated for antenatal screening of high risk and early complications in the study (lines 41-43, P.17). Please cite the methodology for coming up with the one quarter estimate.
Thank you for your comment. In the analysis section, we have now elaborated on the computation for individual proportions and overall estimates. Edited lines 8-21 page 9.

13. Please cite basis of statement that PHCs and CHC can well manage pre-eclampsia, gestational diabetes and previous caesarean section (Lines 43-46, P. 17)

The next line clarifies that 'the CHCs in India are meant to operate as a CEmOC or at least a BEmOC level, that can manage common obstetric complications. Edited line 4 page 20.

14. Please clarify confusing statements in limitations, specifically that provider practice was derived from interviews (Line 52, P. 19); but that there was no planned qualitative aspect to the study (Line 58, P. 19 and Lines 1-4, P.20); and that the KAP findings were consistent with each other and with other qualitative findings (Lines 56-58, P. 19).

We are sorry for the confusion caused. We just had two open ended questions to study the challenges in referral of antenatal women and suggestions for improvement. We did not have an explicit in-depth qualitative enquiry into other systemic issues around quality of antenatal care. We have clarified in the methods. Edited lines 8-21 page 9 and lines 9-14 page 21.

15. Please cite basis for statement that reluctance to manage complications at appropriate levels can lead to overreliance on tertiary facilities and poor health care outcomes (Lines 4-14, P. 19)

Reference added. (41)

16. Please reconsider the use of the term "unjustified referrals" (line 23, p.19) to refer to referrals by lower to higher facilities because of the perception that they cannot manage basic emergency antenatal and delivery care.

The term ‘unjustified referrals’ is used based on the systematic review referred which classifies inappropriate referrals into inadequate, misdirected and unjustified from the systems perspective. We have added the reference (41).