PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (see an example) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Access to facility delivery and caesarean section in north-central Liberia: a cross-sectional community-based study
AUTHORS	Gartland, Matthew ; Taryor, Victor; Norman, Andy; Vermund, Sten

VERSION 1 - REVIEW

REVIEWER	Ingrid Friberg Assistant Scientist Johns Hopkins Bloomberg School of Public Health United States of America I have no competing interests.
REVIEW RETURNED	17-Jul-2012

THE STUDY	I think the authors need to update reference 11 to the most recent version, which was published early in 2012. The quality of the English is fine. However, I believe that more clarity and precision of language is necessary to finalize this paper. The details have been added directly to the paper itself. The analyses are generally appropriate, but more attention to missing data is needed as well as considering some important characteristics as categorical instead of continuous.
RESULTS & CONCLUSIONS	In general, I believe that this is a relatively straight-forward, but interesting study. It summarizes the basic characteristics of a population of women who are part of the catchment area for a particular hospital, both in the community and at the hospital level itself. I think that the biggest flaws of this paper are not related to the conduct of the study, but in its presentation. For example, after several readings, it is very clear how the two pieces are linked, but this needs to be clearer upon first reading. Describing the interrelationship as a hospital and one piece of the catchment area may be adequate. Even more importantly, the tables and the text need to match in terminology and the precision of the language must be greater. For example, in table 1 (page 10), the phrase is 'lost a child during pregnancy'. This is very unclear as it is not stated if this is ever has a miscarriage or stillbirth, or had a miscarriage or stillbirth in the most recent pregnancy. This is just one example of the terminology and writing that needs to be clarified. The other major issue I have is regarding the results. First, the analysis of the community study. There is inadequate information on the women who were not at home when the interviewers came. At least some acknowledgement of this concern is necessary, even if the data itself is not available. Next, the results could potentially be different if parity and age were assessed categorically instead of continuously. This should be explored, or a least mentioned. Also, in the discussion, the authors over-reached (page 7, lines 32-36) when

	discussing the perception of the safety of the TBA. Given that the results are mutually exclusive, I do not believe the conclusion that 17% of the women believe that TBAs are safe – it is likely to be much more. In addition, missing data needs to be accounted for in the tables. Secondly, the analysis of the medical records. In the results, the authors mention the quality of the data (page 8, line 55). This should be expanded. What pieces of the data was poor. What data was missing. This information would be helpful in allowing the reader to interpret the remaining results more appropriately. In the introduction, you mention the low c-section rate. I think it would be useful to include a comparison of the c-section information from the two studies with the DHS information and the WHO recommendations. This would strengthen this part of the analysis. In summary, I think that this study can be published, but would need some minor additional analyses as well as at least one more round of editing for both conclusions and writing.
GENERAL COMMENTS	I have made extensive comments on the paper itself. I think most of my concerns can be easily handled with some editing of the text. In general, I believe that this is a relatively straight-forward, but interesting study. It summarizes the basic characteristics of a population of women who are part of the catchment area for a particular hospital, both in the community and at the hospital level itself. I think that the biggest flaws of this paper are not related to the conduct of the study, but in its presentation. For example, after several readings, it is very clear how the two pieces are linked, but this needs to be clearer upon first reading. Describing the interrelationship as a hospital and one piece of the catchment area may be adequate. Even more importantly, the tables and the text need to match in terminology and the precision of the language must be greater. For example, in table 1 (page 10), the phrase is 'lost a child during pregnancy'. This is very unclear as it is not stated if this is ever has a miscarriage or stillbirth, or had a miscarriage or stillbirth in the most recent pregnancy. This is just one example of the terminology and writing that needs to be clarified. The other major issue I have is regarding the results. First, the analysis of the community study. There is inadequate information on the women who were not at home when the interviewers came. At least some acknowledgement of this concern is necessary, even if the data itself is not available. Next, the results could potentially be different if parity and age were assessed categorically instead of continuously. This should be explored, or a least mentioned. Also, in the discussion, the authors over-reached (page 7, lines 32-36) when discussing the perception of the safety of the TBA. Given that the results are mutually exclusive, I do not believe the conclusion that 17% of the women believe that TBAs are safe – it is likely to be much more. In addition, missing data needs to be accounted for in the tables. Secondly, the analysis of the medical records. In the results, the authors mention the quality of the data (page 8, line 55). This should be expanded. What pieces of the data was poor. What data was missing. This information would be helpful in allowing the

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REVIEWER	K A Kelly McQueen, MD, MPH Fellow Harvard Humanitarian Initiative USA No competing interests
REVIEW RETURNED	26-Jul-2012

THE STUDY	The documents are appropriate and description -- no changes needed.
GENERAL COMMENTS	Excellent manuscript and timely survey process. This information is essential for improving MMRs in low income countries!

VERSION 1 – AUTHOR RESPONSE

Reviewer # 1, Dr. Ingrid Friberg

Suggested revision #1: (p1)
"Need to update reference 11 to the most recent version"
• Response: This reference has been updated and included in two references in the first page of the manuscript.
Suggested revision #2: (1)
"Be more clear about what process indicators are and differentiate them from outcomes more clearly."
• Response: See tracked changes on p1. We have drawn a clearer connection relating the outcome of maternal mortality and process indicators such as the proportion of women who deliver in a health facility under skilled attendance and the rate of cesarean delivery.
• Response: Appropriate revisions were made.
Suggested revision #3: (3)
"You mention the existing outreach programs here, but never again. You need to discuss this in your conclusions in better detail."
• Response: We added additional details about the outreach programs ("programs for antenatal education and childhood immunizations") and clarified this further in the 'Discussion" section as part of the study's limitations: "outreach programs in maternal-child health may have over-represented "health-seekers…unfortunately we do not have data from communities without hospital outreach programs for comparison."
Suggested revision #4: (4)
"What tools did you use to do your analyses? Excel, by hand, stata, etc..."
• Response: We have added, "All analyses were performed with SAS version 9.1.3 (SAS Institute, Cary, NC)."
Suggested revision #5: (5)

“You need some data on households approached as well as refusals and missing information.”
• Response: We expanded the explanation on recruitment to reflect that in addition to visiting all households in the community, many women were also approached in public spaces such as community meeting places. Care was taken to avoid repeated surveying. Unfortunately, women who refused or were ineligible for the study were not documented in a standardized way. We attempt to deal with this in a transparent manner by reporting a single documented refusal and the addition of this limitation in methodology in our ‘Discussion’ section.
• Response: A statement of how we handled missing data was added to the methods section: ‘’Respondents with missing data were dropped from all analyses.” Additionally, a footnote was added to Table 1 to report the “N” for continuous variables.
Suggested revision #6: (5)
“The tables all use the abbreviation TM for traditional midwife while the text uses TBA. Make these consistent.”
• Response: Thank you for this edit. We have changed all instances of traditional birth attendant / TBA to traditional midwife / TM to reflect the terminology used in Liberia.
Suggested revision #7: (5)
“'Previous parity' is very unclear.”
• A sentence was added to clarify who was excluded in the analysis of this question: “There were 6 (2.0%) nulliparous women and 21 (6.8%) who chose not to answer questions regarding the site of delivery in the immediate prior pregnancy.”
Suggested revision #8: (5)
“The results could potentially be different if parity and age were assessed categorically instead of continuously. This should be explored, or a least mentioned.”
• We included both categorical and continuous analysis of age and parity in our analysis and found no significant result from either method. We believe the consideration of these variables as continuous is more robust.
Suggested revision #9: (5)
Referring to the question “Why did you choose to deliver your child in this place?” in ‘Results’ (p.6) and ‘Discussion’ (p.8) the reviewer stated, “The answers to the question appear to be mutually exclusive.”
• Response: We clarified in the text that multiple answers were accepted and that answers were not mutually exclusive: “Interviewers then asked the open-ended question, “Why did you choose to deliver your child in this place?” for which multiple responses were accepted.” In the ‘Discussion’ we agree with the reviewer and removed the conclusion that, ‘only 16.9% of women believed that delivery with a TM is safe.’
Suggested revision #10: (6)
“You may wish to clarify catchment areas and describe other possible hospitals in the area. Explain if this is the only one with c-section capabilities, etc...”
• Response: The following sentence was added in the discussion: “Additionally it is the only facility within a 35km radius with capacity to provide cesarean delivery service. While smaller health facilities in the region equipped to offer assisted vaginal delivery may provide services in a portion of the births in the catchment area, the delivery number at the study site is still very low and reflects the trend toward home delivery found in interviews.”
Suggested revision #11: (8)
“Summarizing some of the data limitations would be a useful addition”
• We summarized the data limitations by saying: “Additionally, the hospital-based portion of our study was limited by poor medical record keeping and organization, and missing data.”

VERSION 2 – REVIEW

REVIEWER	Ingrid Friberg Assistant Scientist Johns Hopkins Bloomberg School of Public Health

	Baltimore, MD USA
REVIEW RETURNED	06-Sep-2012

GENERAL COMMENTS	I think the authors clearly improved their document. I am still slightly confused on one minor detail. However, I think that the overall paper is more than adequate and quite interesting.