Author's response to reviews

Title: Supporting Option B+ Scale Up and Strengthening the Prevention of Mother-to-Child Transmission Cascade in Central Malawi: Results from a Serial Cross-Sectional Study

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Author's response to reviews: see over
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Dr Elijah Paintsil
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Dear Dr Paintsil:

On behalf of my colleagues in Malawi and the United States, I wanted to thank you and the reviewers for your constructive comments. We have reviewed each comment carefully and have made the changes noted below, which we believe have substantially strengthened the manuscript. We have enclosed two versions of the revised manuscript—one with changes highlighted under “track changes” in Microsoft Word (uploaded under “Additional material files”) and a second “clean” version with all changes accepted (uploaded under “Main manuscript”).

Please find here our point-by-point responses to reviewer comments, organized by headings taken from the pdf files downloaded from the BioMed Central website (also, please note that for ease of reference the lines below refer to the “clean” version of the revised manuscript):

I. Comments to the Author
A. Reviewer #1 (Dr Warnow Elon Isaac)

Major compulsory revisions
1. “Selection criteria: how were the 136 health facilities selected? Was there a sampling frame?”
We implemented Safeguard the Family (STF) project interventions in all 136 government health facilities in our 5-district catchment area. As such, no sampling frame was used in selecting facilities for STF interventions, or for carrying out this serial cross-sectional study. On lines 184-185, we have more clearly indicated that we aimed to evaluate the impact of our interventions on outcomes for all facilities served and that no sampling frame was used.

2. “If there were other facilities that the STF project did not intervene within the districts, could they not have served as controls if they were also implementing Option B+ in addition to the national programme level performance?”
Since all government health facilities in our catchment area were reached by STF project interventions, there were no control facilities available for comparison. Rather, we used baseline indicators and national averages as comparator groups to evaluate the impact of STF interventions.
3. “A rapid situation analysis should have been done to inform/ guide the STF programme interventions.”

In response to this helpful comment, we have more clearly indicated on lines 173-175 that all STF interventions were informed by nearly a decade’s worth of PMTCT operational research and situation analyses conducted by UNC in Lilongwe district. On line 175, we cite the 7 studies (completed and ongoing) that informed the design and implementation of Safeguard the Family interventions. In fact, we were invited to apply for USAID funding and asked by the Ministry of Health to implement Safeguard the Family in response to a need to translate this body of evidence into programmatic action.

Minor essential corrections
1. “Were incentives/ remunerations given to the women psychosocial support groups?”

On lines 261-263, we now include a description of the supplemental food package incentive given to women to participate in STF psychosocial support groups. The support group incentive was based on findings from an operational research study conducted by our group in Lilongwe showing that vitamin-fortified soya-based porridge was acceptable to HIV-infected pregnant women, promoted mother-infant pair retention in post-natal care and contributed to decreased diarrheal disease incidence in HIV-exposed infants weaning from breast milk. We have cited this study on line 263, and have included it in the References section (#25).

2. “Why were only 25 data managers trained in relation to 136 health facilities?”

After reviewing this helpful comment, we have added a clarification on lines 216-218 that we provided data management training to 25 health information management officers and relevant program coordinators based in each of the 5 district health offices. These personnel served mostly in a supervisory capacity, working with facility staff to compile and synthesize routine reporting data to meet the data management needs across the entirety of their respective districts. As such, we did not need to train staff in every health facility to improve data management for the districts in our catchment area.

3. “What are the specific interventions for strengthening transport? This is a major challenge in sub-Saharan Africa.”

We have incorporated this helpful comment in our Discussion section on lines 497-500 by addressing how challenges with client transportation contribute to mother and infant loss to follow-up in Option B+ programs in sub-Saharan Africa. Based on the relevance of this and other structural barriers in preventing access to care, we call for scale up and further evaluation of promising community-facility linkages to mitigate this important challenge.

4. “Would the percentage of HIV +ve infants enrolled/linked into care and treatment of HIV be of concern?”

We agree with the reviewer about this important issue, namely that PMTCT programs should concern themselves with ensuring that every HIV-positive infant is successfully enrolled into HIV care and treatment. Unfortunately, the absence of individual-level data on infant ART uptake limited the analyses we could perform for HIV-exposed infants. As such, we did not have the longitudinal data necessary to assess the proportion of HIV-positive infants who ultimately linked into HIV care. Indeed, conducting such a longitudinal analysis was beyond the scope of our study, which had an operational research focus and aimed mostly to assess facility-level utilization of services along the antenatal and immediate postnatal PMTCT cascade. In response to the reviewer’s comment, we acknowledge on lines 525-528 that we had limited ability to determine the proportion of HIV-infected infants who
successfully linked into HIV care and treatment. Moreover, on lines 528-532 we mention that additional studies are currently underway using longitudinal data to estimate HIV-infected infant linkage into HIV treatment and care under routine program conditions in central Malawi.

Discretionary
1. “Demographic details of Malawian districts not stated.”
On lines 190-194, we now include population estimates and World Bank poverty data to describe the demographics of STF districts.

2. “Criteria for high-volume hospitals not stated clearly.”
Because we could not identify a standard numerical threshold to designate a facility as “high-volume,” we have replaced this term with “busy” on line 242 and have removed the term from line 244.

3. “Line 419 to read... 'some’ health sector needs.”
We have included the word “some” on line 429.

We have provided appropriate citations (#s 12, 49) to substantiate our claim that “women have also faced challenges in accessing HIV care for their HIV-exposed infants.” This citation appears on line 440 in the revised manuscript, and reference #49 has been added to the manuscript.

5. “Could recommendations and lessons learned have been made in order to inform programme sustainability?”
On lines 492-500, we have made new recommendations for improving EID services and community-facility linkages to promote timely HIV diagnosis for HIV-infected infants and optimal retention for mother-infant pairs navigating the PMTCT cascade. On lines 543-546, we now more explicitly state that we believe STF interventions are sustainable, as the MoH has adopted several STF interventions for the national Option B+ program. We believe such integration into the government program suggests that STF interventions will continue to benefit clients in our districts even now that our project has ended.

B. Reviewer #2 (Dr Echezona Ezeanolue)

Major compulsory revisions
1. “A concise description of the serial cross-sectional design as used by the authors should be explained.”
In response to this helpful suggestion, we have added a sub-heading under the Methods section (lines 283-289) entitled “Study Design,” which concisely describes our cross-sectional approach to evaluating facility-level and individual-level outcomes of interest.

Minor essential corrections
1. “Multiple spelling errors should be checked.”
We have reviewed the manuscript in detail and have made a few edits to correct spelling errors. Please note that we have opted to use US English in this manuscript. If British English is preferred, we are happy to change the spelling accordingly.
Finally, we reviewed our manuscript in detail and have made additional minor edits for grammar and clarity of prose. We have also made several edits to ensure that our manuscript conforms to *BMC Infectious Diseases* style and formatting. Please note that these edits have been highlighted in the revised manuscript using the “track changes” function in Microsoft Word.

We appreciate the time you and the reviewers have invested in reviewing our manuscript. Please do not hesitate to contact me at the email address above should you or any of the reviewers have additional questions or concerns.

Kind regards,

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