Author's response to reviews

Title: Prevalence of HIV and syphilis infections among pregnant women attending antenatal clinics in Tanzania

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Author's response to reviews: see over
Dear Editor

BMC Public Health

Please find enclosed manuscript entitled “Prevalence of HIV and syphilis infections among pregnant women attending antenatal clinics in Tanzania, 2011” which we are resubmitting for consideration by BMC Public Health.

Please also find attached itemized responses to reviewers’ comments. The authors appreciate the constructive comments and have attempted to modify the manuscript as requested.

We hope the revised manuscript is now acceptable for publication in BMC Public Health.

On behalf of all authors,

Yours sincerely,

Joel Manyahi
Author's response to reviews

Title: Prevalence of HIV and syphilis infections among pregnant women attending antenatal clinics in Tanzania

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Version: 1 Date: 17 February 2015

Reviewer's report 1:

Major Compulsory Revisions

Please consider editing and copyediting to ensure consistency throughout the manuscript

Response: Thanks, editing has been done throughout the manuscript

Abstract: The abstract can be much stronger, in particular the conclusion section. What are the implications of this study?

Response: Requested modification and implications of the study has been made

Background: The background section needs significant strengthening to provide context for the study. In addition, the research question and the purpose of the study are not clear, as the authors seem to draw conclusions about prevalence in the general population as well as implications about pregnant women/PMTCT from antenatal surveillance. The authors also discuss sentinel population-based surveillance in terms of monitoring change over time, but the study represents only one time point.

Response: Background section significant change has been made

Methods: The methods section should include a little more detail. How were the sites chosen? What are the characteristics of antenatal clinics (for example, are they health centers, hospitals, health outposts, or a combination of the above)? How were specimens transported to MUHAS for DBS testing? What are the potential confounding factors that were taken in consideration?
Response: More detail has been added on methodology, characteristics of ANC clinics have been addressed and specimen storage and transportation of DBS to MUHAS have been addressed. Potential confounding factors were taken care by performing quality assurance at reference laboratory.

Discussion: The manuscript needs some significant strengthening in the discussion section as well. The authors should discuss how their paper adds to existing knowledge about HIV/syphilis prevalence in Tanzania, for example in comparison to the 2011/12 THMIS and the DHS. Implications of the results are not clear. The authors mention pregnant women as a sentinel population; however, it is not clear how the results presented in the study relate to the policies and programs mentioned at the beginning and end of the manuscript. The authors mention programs particular to this population (e.g. PMTCT) as well as the general population, and both parts would benefit from some additional in-depth discussion. For example, the authors touch upon important points at the end of the conclusion section and should consider expanding upon these and moving them into the discussion. In addition, the authors began discussing differences in prevalence rates between regions and rural/semi-urban/urban settings. Expanding upon these differences would provide better understanding of the implications of the results. As the literature is expansive in this area, the authors may choose to select a framework to guide their discussion section.

There are several methodological weaknesses to antenatal sentinel surveillance, which should be discussed.

Response: We appreciate for the valid comments, discussion has been strengthened including implication of our findings to both PMTCT program and general population and limitation of ANC surveillance have also been addressed.

Minor Essential Revisions

Please include the timeframe of the study in the title to reflect HIV/syphilis prevalence at a particular time.

Response: Timeframe has been added and the title read “Prevalence of HIV and syphilis infections among pregnant women attending antenatal clinics in Tanzania, 2011”

The cover sheet does not cite authors’ affiliations in the order in which the authors appear. Please correct the order of the affiliations, unless the current cover sheet is acceptable to editors.

Response: Modification has been made

3. Editing comments:

Line 31, 35 – comma, not semicolon, Line 41 – replace the semicolon with “representing”

Line 42-46 – Please consider rephrasing. The sentence is too long and a little confusing; Line 48 – delete semicolon, Line 50 – syphilis should not be capitalized

Line 51 – full stop is missing
Line 52 – possibly instead of possible
Line 61 – “including Tanzania” instead of “Tanzania inclusive”
Line 62 – “time” instead of “times”
Line 69 – “planning” instead of “plan”
Line 86 – delete the second “s” in surveillance
Line 96 – replace semicolon with “from”
Line 101 – space between “prepare” and “DBS”
Line 113 – Who are the “ANC survey nurses”? Do they also perform maternal and child health services? Yes, they are the same but those who participated in syphilis testing and DBS collection were trained
Line 131 – “performed on” instead of “performed”
Line 141 – delete semicolon
Line 148 – replace semicolon with comma
Line 150 – space between Table and 1
Line 158-159 – add “women” after “married” and “divorced”
Line 164 – add “areas” after “rural,” “semi-urban,” and “urban”
Line 165-166 – switch “the risk of HIV” and “education, duration of stay in residence and distance from the clinic”? Line 167 – replace “on” with “with,” add “for” after “adjusting”
Line 170 – add “areas” after “rural”
Line 201 – replace “on” with “of”
Line 248 – full stop is missing
Line 249 – consider rephrasing; the sentence is a little confusing
Line 251-253 – Please expand upon the point about the experience level of health care workers. How does this affect syphilis testing, and how does this limit the interpretation of the results?
Table 1 – Where do the numbers for estimated pregnant women come from?
Table 2 – What’s the unit for HIV prevalence? Percentage? For the “percent”
column, what’s the denominator?

Table 3 – What’s the unit for syphilis prevalence? Percentage? For the “percent” column, what’s the denominator?

Table 4 – The authors may consider moving the numbers for the “total” row to the right side of the cells and align them with the rest of the columns.

Response: All requested modification have been made

Discretionary Revisions

1. The tables are a little difficult to read. The authors may consider shading different rows.
   We appreciate for the comment, but we think this is the best we could.

2. For the analysis, have the authors considered interaction between different factors?
   Yes we did logistic regression.
Author’s response to reviews

Title: Prevalence of HIV and syphilis infections among pregnant women attending antenatal clinics in Tanzania

Version: 1 Date 2 March 2015

Reviewer’s report 2:

Major

The authors claim a decline in prevalence but only present data from one set of surveys

Response: Conclusion has been rephrased and the decline claim has been omitted

It is not clear why the malaria survey is referenced in the abstract

Response: The survey referenced is a household survey titled “Tanzania HIV/AIDS malaria indicator survey” our main interest was on HIV not malaria.

I’m not sure why would distance to a clinic have anything to do with HIV or syphilis prevalence? This might make more sense it was adherence to a treatment or something similar.

Response: Thanks for a comment, modification has been made and the distance from the clinic has been omitted from the table.

It seems in places that the categories of previous pregnancies differ for the syphilis and HIV analyses. In the tables it is clear this is not the case, so it is a matter of presenting the data more clearly. Also, with such a large sample isn’t it possible to look at prior pregnancies as a continuous variable (up to 5 or more)? It is not clear in the abstract what the reference category is.

Response: All requested modification have been made

In the intro a major routine data source is left out: household surveys. These are typically less biased than either ANC or STI. Many believe that ANC doesn’t really represent the ‘general’ population, particularly globally. Serial surveys however can reveal trends in that particular population.

Response: We appreciate for the comment, more detail have been added in the background including information on household surveys

The stratified random sampling strategy is not really described.

Response: How site were chosen has been well explained

Was any QC done on the RPR testing? This is particularly the case if it is performed by different types of staff at different sites, and especially concerning given the contradictory data regarding syphilis and HIV. In the discussion some doubt is cast regarding the integrity of the data from rural sites.
Response: No any QC on the RPR testing was done as testing was performed at on site ANC clinic.

Line 162: “Compared to women who had more than 5 pregnancies, women with 1 to 4 pregnancies had significantly greater likelihood of being HIV infected."What about no previous pregnancies? And stats?

Response: Thanks for the comment, previous pregnancies was used as our reference point in the univariate and multivariate analysis.

Lines 167-71: The presentation of the multivariate analysis does not include any statistics, and the table is not referenced.

Response: Thanks, multivariate analysis and table have been referenced. Is it odd that rural and semi-urban have more syphilis than Urban? Has this been observed in other regions?

Response: Yes, this has been discussed in our discussion

Lines 192-94. “Apparently, there was no clear association in the occurrence of the two infections. For example, while the prevalence of HIV infection in Iringa region was 14.82% that of syphilis was only 1.91%. Similarly, the prevalence of HIV infection in Mbeya region was 11.31%, while that of syphilis was 2.2%.” In addition to citing examples, it would be useful to know what the correlation value is between syphilis and HIV. Were the analysis stratified by site? Are there major variables that differ between sites? Also were there any associations between syphilis and HIV on an individual (not regional) level?

Response: We appreciate for the comments, but due to low rate of HIV syphilis co-infection we thought that analysis were of no added value.

Line 212-13. “These observed differences are probably due to differences in social-economic activities and level of wealth in urban versus semi-urban and rural areas (15, 16).” Could this also be due to other factors, specifically around sexual networks and prevalence of sex work?

Response: We are grateful for the comment and editing has been done.

Line 233-34: This is merely re-stating results and should not be in the Discussion. Same comment applies for re-presentation of major findings elsewhere in the Discussion.

Response: All requested modification have been made.

Line 248: “Possible explanations for lack of correlation could be part to the use of non-treponemal test for diagnosis of syphilis” It is not clear what this means.

Response: Non treponemal tests are nonspecific for syphilis mainly used as a screening test. Therefore this may overestimate or underestimate the prevalence of syphilis, but this has well been explained in our discussion.

Minor

OR and confidence intervals should stick to the same # of sig figs – typically either 1 or 2 rather than 3
**Response:** all requested modification have been accepted and change made

Typo on p4, line 86 – surveillance

**Response:** Modification made

Line 164: “Moreover, the likelihood of being HIV infected was significantly less frequent among women residing in rural (3.13%) compared to semi-urban (5.82%) and urban (6.59) (cOR= 0.458, 95% CI 0.401-0.523; p<0.001). Only one cOR given here but there are 2 comparisons.

**Response:** All requested modification have been made cOR included

Line 221: “The relatively low HIV prevalence (3.9%) among women aged may signify a reduction in the number of new infections however this need to be substantiated by trend analysis studies.” Appears to be a typo – aged (?)

**Response:** Typographic error already addressed.