Reviewer's report

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

Version: 1  Date: 17 February 2015

Reviewer: Selena An

Reviewer's report:

Major Compulsory Revisions

1. Please consider editing and copyediting to ensure consistency throughout the manuscript.

2. Comments on the manuscript:

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

   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.

   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?

   Results: Data appear to be sound and figures appear to be genuine.

   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.

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

2. 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.

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?
   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.

Discretionary Revisions
1. The tables are a little difficult to read. The authors may consider shading different rows.
2. For the analysis, have the authors considered interaction between different factors?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.