Reviewer’s report

Title: A systematic review of heterosexual anal intercourse and its potential role in Papua New Guinea’s HIV epidemic

Version: 1 Date: 21 September 2013

Reviewer: Richard Steen

Reviewer’s report:

Following please find comments on the manuscript following the journal's guidelines for reviewers. These are discretionary revisions with the exception of comments under 4 and 5 below which are minor essential revisions.

1. Is the question posed by the authors well defined?
   - Yes, this is clear and it is an important public health question.

2. Are the methods appropriate and well described?
   - Methods for both the systematic review and the modeling parts of the paper are appropriate and well described.

3. Are the data sound?
   - They appear to be, the methods are appropriate and data presented clearly

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   - There is some lack of clarity in reporting some data, which may be misunderstood by readers. Here I refer mainly to the data on male sex workers and transgenders. In one place, it states that male sex workers were asked about HAI with female clients. Is this exclusively what is reported in the tables or does it also include HAI with the male clients of male sex workers. For transgenders, the data are even more ambiguous – do they represent receptive anal sex only? are transgenders included in general statements about HAI among females? on bottom of page 10, for example, I really don’t know what you mean by HAI and ‘same sex anal intercourse’ when you’re talking about TG...

   same comments apply to reported condom use rates during HAI among these groups.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   - This is my main area of comment. While the discussion and conclusion are well supported by the data, the balance could be improved. I would suggest revising to address following points...

   Too much of the discussion centres around recommendations for improving behavioural surveillance and there is some unnecessary repetition. I would
simply state one time that HAI should be included in BSS, perhaps discussing how this might be done, keeping in mind limitations of BSS, which cannot go into as much detail as full research studies. As countries are looking for ways to streamline BSS instruments, what are the critical questions that should be added on HAI? More discussion should focus on prevention of transmission through HAI. The paper really only mentions education to increase awareness, and promotion of condom use. There are other potential interventions including asking about HAI during medical checkups, examining for discharge or lesions, STI screening. As recommendations for checkups likely differ for different populations in PNG, what importance should be given to HAI for sex workers, MSM, TG and lower-risk women? STIs... something more should be said. Were no STI data reported in any of the studies? If not, this gap in the findings and direction for future research should be stated.

HAI appears to be common in PNG but also, as well documented in the background, in many other parts of the world. This could be mentioned in conclusion and abstract with simple statement along the lines of ‘as in many other parts of the world, HAI is commonly practiced in PNG’

In prevention work, knowledge is important but often secondary to underlying cultural and structural factors that override rational decision making. Brief mention is made of possible reasons for having HAI – violence and ‘traditional beliefs about contagion from blood during menses as well as its contraceptive importance...’ Choosing HAI over vaginal sex to avoid pregnancy, often a greater concern to young people than infection, is a topic that calls out for attention. Was there anything in any of the studies on this?

6. Are limitations of the work clearly stated?
- yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
- yes, very well

8. Do the title and abstract accurately convey what has been found?
- yes

9. Is the writing acceptable?
- yes, generally very clear, a few editorial comments follow.

Specific editorial comments...

last sentence of first paragraph of background... ‘The contribution of HAI to HIV epidemics, and as a result STI epidemic, is unknown in many settings’ I don’t understand what ‘as a result STI epidemic’ means. It implies that STI epidemics are somehow dependent on HIV epidemics, which does not make sense.
note misplaced extra ‘HIV’ in opening sentence of background, ‘Penile-anal intercourse HIV is much more likely to transmit HIV’

Style... in discussion, I would suggest less use of imperative statements like ‘must’ ‘urgently required’, ‘needed’, etc. Recommendations and priorities suggested with ‘should’ and backed by clear logic grounded in the data can be more persuasive.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests