Reviewer's report

Title: A population-based study of HIV in south India reveals major differences from sentinel surveillance based estimates

Version: 1 Date: 30 October 2006
Reviewer: Geoff Garnett

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General
The is an interesting carefully performed study, which has major implications for our understanding of HIV prevalence in India. Unfortunately, the manuscript is far too long and the writing quite dense. I would suggest that the manuscript could be halved to make a much more accessible paper.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
The paper is far too long and loses much of its impact because of this. The detail of HIV testing is provided in a bit too much detail and is repeated in Figure 3.
A number of the tables could be removed or merged. Table 1 provides essentially the same message as table 9 and isn't needed. Table 10 is not needed - these other studies are dismissed so a full description of them is irrelevant. The bottom 3rd and right hand 3rd of tables 3 and 4 sum the more detailed breakdowns and are not needed. Table 5 and 6 could be merged and I am not sure tables 2, 4 and particularly 8 add much. There is a lot of repetition, particularly in the discussion.
I wasn't exactly sure how sampling was done even though it was presented in great detail. What is 'Systematic random sampling'? What is mean by ' which usually required a sampling interval between 3 and 5 for households'?

Prevalence is a proportion not a rate. The authors are measuring HIV prevalence not the HIV rate. This should be corrected throughout.

The problem with using STI samples in the estimate is clear and was never really appropriate. However, my understanding was that this was the way at attempting to estimate prevalence in men. This could be made clearer. It is only with household surveys of men that the sex bias from ANC estimates can really be identified and this study provides useful data.

The bias in ANC attendance is interesting and could be related to that seen in sentinel surveillance from Africa. In Africa the ANC tend to undersample low SES , very rural subsistence farming populations which tend to have a lower prevalence. This is the reverse of the situation in India where the low SES are sampled but have a higher prevalence. The comparison with studies comparing ANC with general populations from Africa by Flykesnes, Gray and Gregson could usefully be included to put this work in context internationally.

On page 21 - because prevalence is similar between populations does not mean it has reached an equilibrium.

The Discussion of the DHS survey results needs to wait until they are published. I hin that current results are finding the opposite, but without the publication cited it is hard to explore further.

The style of language is a bit of a problem. The authors have a tendency to write long discursive sentences - if they could work at shorter pithier prose that would help. In addition, the definitive article is under used.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)
**Which journal?**: Appropriate or potentially appropriate for BMC Medicine: an article of outstanding merit and interest in its field

**What next?**: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Statistical review**: No

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