

Reviewer's report

Title: The effect of participant non-response on the HIV prevalence estimates in a population based survey in two informal settlements in Nairobi city

Version: 1 **Date:** 25 October 2009

Reviewer: J. Ties Boerma

Reviewer's report:

Population-based HIV prevalence surveys are an important vehicle for assessment of the size and course of the epidemic in African countries with generalized epidemics. Non-response due to absence or refusal may lead to under and overestimates depending on the relative HIV prevalence among non-responders to responders. This issue that has been addressed in the context of DHS surveys, and it was concluded that the potential effect of non-response was relatively small in most circumstances if non-response rates were below 25% or so.

This paper contributes two new perspectives to this issue. First, it is concerned with urban slum populations, which are often missed or underrepresented in DHS or similar surveys. Non-response is likely to be a larger issue. Second, the HIV survey is nested in a DSS, which implies that good data could be available on mobility from an independent source.

The size of the bias depends on how different the HIV prevalence is between the two groups, which in the analysis is approached by:

- (1) describing how different the absentees are from participants; how different refusals are from participants - both are done extensively in the paper
- (2) describing how different the HIV prevalence is by major background characteristics - the paper should provide more detail here.
- (3) applying (1) and (2) to get the best estimate of the bias for absentees and refusal and both combined

The paper should describe in greater detail the biases by individual variables and whether or not they cancel out. In general, within each sex stratum HIV prevalence variation is greatest by age (typical age patterns by sex, with e.g. five to tenfold differences in HIV prevalence between some age groups), to a lesser extent marital status (widows), in this case ethnic group (given the very uneven distribution of prevalence within Kenya). Other variables like education and wealth especially within the same area are less likely to have an impact. Table 2 should be expanded - adding a column with the HIV prevalence among the survey participants for each of the categories - this would probably show why the adjustment is small. All other adjustments for variation are unfortunately more or less speculative.

Mobility index may be important, although it often is not a lead determinants compared to age in many studies. This study should be able to throw more light on the different types of mobility that have resulted in non-response, based on the DSS or other work conducted in this study. If there are no clear HIV-associated determinants of mobility /non-contacting, then indeed the effect on the overall prevalence estimate is likely to be small.

I do not find Table 5 very helpful. The main point of the paper is to come up with the best estimate of RR of HIV infection among those that were absent and among those that refused (present separately) and as well as provide the best overall estimate of the RR among the non-participants.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'