Reviewer's report

Title: Implications of the HIV testing protocol for non-response bias in seroprevalence surveys

Version: 1 Date: 11 August 2008

Reviewer: Patrick Sullivan

Reviewer's report:

Major compulsory revisions:

1. This is a paper about an important topic, but the presentation of the methods and results is not clear, and therefore it is hard for me to make a judgment about its merits. As far as I can tell, the analysis relies on estimates of HIV prevalence among persons presenting to the hospital with different conditions, who consent to test. You then apply these proportions to persons who refuse to test, and reach the conclusion that refusal to test predicts HIV+ status. This approach is confusing, because your thesis is that those who refuse to test have different HIV prevalence than those who consent.

This approach might work, if you had unbiased data on prevalence of HIV associated with different admission diagnoses, but your data on probability of infection are subject to the same bias you are trying to evaluate. Please verify whether the likelihood of infection estimates were based on testing of patients who consented. If so, then this seems to be a fatal flaw for the analysis you wish to conduct.

2. The IRB status of this research is not described.

3. Page 4, “Post-test counseling is often implied in study participation”: Do you mean that it is implied, but not stated, that post-test counseling might happen after the testing? Or do you mean required? The lack of clarity about this term is an issue throughout the manuscript.

4. Page 5: You refer here and in many other places to “post-test counseling”, but I think you mean return of HIV test results. Test results can be returned without providing counseling. Counseling can be provided without returning test results. Please look at this term as it is used and say return of HIV test results when that is the meaning.

5. Page 6. The discussion of surveillance is not clear. Was the first part of this report this a study, or a surveillance system? Collecting information on HIV prevalence and diagnoses for several months is a study, not an ongoing system to collect data to guide public health decision making. If this was part of an ongoing surveillance effort, please describe that context. Also, there is no information about the refusal rate from the "surveillance system" portion of your analysis.
6. There is no discussion of whether interaction terms were evaluated in your LR models, or how the model was built.

Minor essential revisions:

7. Page 4, not clear why population mobility is related to refusal to test.
8. Page 5. The Background contains information that belongs in the methods and discussion. The information about the setting, and the design belong in the methods. The description of the strengths and weaknesses of the setting belong in the discussion.
9. Page 7, not clear why the sex of the counselors is relevant, as it is not set up and not discussed later.
10. Page 8. Were admission diagnoses coded as part of the routine hospital administrative data collection, or especially for this study? If the latter, how was that coding blinded from the HIV status or information about participation in the study?
11. Page 8: The assumptions of the model error terms are mentioned, but no information is provided later about whether those assumptions were met.
12. Not clear why the exclusions of children < 16 years is justified by problems with diagnosis in infants.
13. If the TB clinic was excluded from the study, should the data from TB clinics on likelihood of HIV also be excluded?
14. Page 9: for those who said they already knew their HIV status, especially the negatives, how did they know they were negative? For example, if someone tested negative 5 years ago, did you accept that as a known negative?
15. Page 9. Does “religion and birth are weak predictors” mean that they were significant predictors but with a small effect size, or that they were not significantly associated?

Discretionary revisions

17. Presenting percentages to the hundredth is probably too much precision, consider rounding to tenths.
18. Your conclusion about the decline of refusals after introduction of ART would be more compelling if the data were presented graphically so that the reader could assess the validity of the model assumption that prevalence of refusal was steady until ART introduction.

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

Quality of written English: Needs some language corrections before being
Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests