Reviewer's report

Title: Population-based prevalence survey of tuberculosis in the Tigray region of Ethiopia.

Version: 2 Date: 5 July 2013

Reviewer: Achilles Katamba

Reviewer's report:

I would like thank the authors for conducting the study entitled “Population-based prevalence survey of Tuberculosis in the Tigray region of Ethiopia

The Abstract: The abstract is well written clearly outlining the objective of the study, the methods used to address the objective, presenting relevant results and a conclusion that is supported by the data.

The background is well written and coherent clearly proving the rationale for undertaking the study.

Major Compulsory Revisions

Methods:

In the methods section in the sampling protocol figure 1 page 17, it is stated that randomly selection with proportional to sample size was used to select 5 urban district (out of 12) and 10 rural districts (out of 34). It is not clear what the authors mean by proportional to size. Is it proportional to population? What is stated is that only 19.5% of the population lives in urban areas? Actually in the final sample, the urban population represented 38% of the study population and no adjustment was made to adjust for oversampling of urban dwellers. This might lead to over estimation of the prevalence of TB in the community. The authors need to compute an overall prevalence weighted (Mantel Hanzael) by rural and urban distribution of the population. Thus on that basis it is very hard to fully evaluate the results and discussion sections of the study

Results: Based on the methodological error of oversampling the urban settings, the computed prevalence of PTB may over estimate the true prevalence in the Tigray region.

In the results section, page 9 paragraph 1, the statement “The ratio of culture-positive cases newly detected by the survey (active case finding) to those detected through passive case finding (diagnosed at the health facilities through self-presentation) was about 1.5: 1 indicating one undiagnosed T case in the community for nearly-two smear-positive TB case receiving treatment during the survey period (Table 2) is not clear and needs revision.
Given the methodological error of not adjusting for over sampling urban dwellers, it is difficult to evaluate the appropriateness of the discussion. Authors should review the analysis and discuss the study in line with the revised results after adjustment for over sampling of urban dwellers.

Minor Essential Revisions

In the same sub-section, sample size and Sampling techniques, page 5, it is stated that that one urban district was added to the five town districts by simple random sampling making the altogether six districts. However, the authors do not reflect the statement in figure1 Sampling protocol of prevalence survey on page 17 of the manuscript.

Please note that both the comments entered here and answers to the questions below constitute the report, bearing your name that will be forwarded to the authors and published on the site if the article is accepted.

Level of interest: An article of importance in its field

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 below