Reviewer's report

Title: TB treatment delays and associated factors within the Zimbabwe National Tuberculosis programme

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Reviewer: Chandrashekhar Sreeramareddy

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MS 'TB treatment delays and associated factors within the Zimbabwe National Tuberculosis programme'

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This MS reports about an important area of operational research about TB care from high burden African country. The research seems well designed covering a large geographic area one country and obtaining a representative sample of TB (pulmonary) patients. The whole article is succinctly written but has not cited some important literature about this area of research. The authors have used sound analysis techniques, but I suggest a different (details below) suggestions for analysis and tables.

I would for classify my comments/suggestions as major or minor revisions since this article from national sample has merit for publication.

Abstract:

Background could be cut down to say "insufficient (no) literature from Zimbabwe and state their objective. state smear positive pulmonary TB cases in the objective. Please delete "consecutively registered and treated in the Zimbabwe National TB programme"

Methods: Suggest to write two-stage, random sampling technique to obtain a nationally representative sample.

Should write 'smear positive pulmonary TB cases' here as well. Provide briefly how patient and health care system delay.

Typo (95% CIs)

Patient characteristics is not a suitable term as they have other factors related to health system as well.

Results: Inconsistency in provide number and % for background characteristics. Conclusions as high or low or majority (even if not 80%) should be avoided. mission vs primary health care facility and increased patient delay are incorrect
interpretations. please modify. aOR and 95% CIs are standard acronyms. To avoid double brackets.

Conclusion:

Health system delay was uncommon (short) is mainly due to recruitment of the patients within the framework of national TB control program framework. 4 or more visits was associated with health system delay. So the authors first conclusion is both right and wrong (read the following by Lambert et. al. http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2005.01485.x/pdf )

Last conclusion "who should be trained? Staff of NTP or private sector or missionary or government hospital staff. What was the basis from the results for this?

Main MS.

Background:

2st and 3Rd paragraphs should be combined. Last sentence of 2nd and first sentence of 3rd paragraph are the same and should be cited. Importantly 2-3 systematic reviews (Sreeramareddy et. al. Storla et. al and Finnie et al.and their conclusions should be cited since this research is conducted within the framework of studies included in these systematic review.

Results from some studies from Africa (or Zimbabwe) should be brief in the background.

1979-2004 is not recent but 10 years old. Please update these numbers.

Authors should be consistent with the terminology throughout the MS. treatment delays are different from diagnostic delays i.e. Patient delay, health system delay as mentioned in abstract. Please read Sreeramareddy et. al. 2014 http://www.ncbi.nlm.nih.gov/pubmed/24670558

Methods:

Which random method (Simple, systematic, stratified) was used?

It is not clear which type of health facilities were selected. Private, Public Mission hospitals, etc. Were these urban or rural health facilities. Were they primary care or secondary/tertiary care hospitals? The delay would be longer tertiary care, rural hospitals? So it is important to know these since seeking care depends a lot of health services (type, number, accessibility, user fees, quality etc).

Microbiologically confirmed (either sputum smear or gene expert) Pulmonary TB cases should be written clearly.

Authors wrote a good description about NTP some of which are beyond the scope of this MS. For example smear-negative TB definition and EPTB case
definition and the next paragraph starting with "Once traced............"

Variables: Abstracted or extracted

The last sentence about questionnaire translation should be written before questionnaire piloting for correct sequence of activities. Sex is missing in the list of variables and once again authors fail to explicitly write smear-positive Pulmonary TB.

Number is visits occurs twice in one paragraph. Statements about consent appear thrice in the MS.

I have an important suggestion about use of an arbitrary cut-off for delay. Read the systematic review and editorial in this topic. I would suggest the authors to use time durations between onset of symptoms until first contact with nurse/medical doctor and there onwards until treatment initiation as continuous (though skewed) variable to test associations in their multivariate a models. For HSD, they had very small number of cases leading to wide 95% CIs due to categorization of a continuous variable (loss of data) and probably not detecting any associations.

Also tables 2 and 3 and tables 4 & 5 are redundant.

Present the time durations (in days) according to variables tested for associations for patient, health system (if required total delays) in one table for a comparison of delays (days) according to variables tested. If overall median (IQR) values for delays are provided in this table figure 1 is not necessary.

Later one table for associations

Table 3

Smoking is not reported whereas alcohol is reported. Studies show smokers may seek care very late attributing the cough to their smoking but not TB (Bam et al.).

Took traditional medicine, visited drug store, and consulted private practitioners should be one variable as first action taken after onset of symptoms. I am not sure how the question/s were phrased.

Definition of patient delay: It should refer to onset of first symptom.

Health system delay TB treatment or anti-TB treatment?

Criterion for Fisher's exact test? How small was small?

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

'I declare that I have no competing interests'