Reviewer's report

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

Version: Date: 27 April 2014

Reviewer: Mareli Claassens

Reviewer's report:

Major compulsory revisions

1. Methods:
   a. Study participants and sampling: Were all districts/health facilities in Zimbabwe included in the sampling frame? Because of the multi-stage design, would clustering per facility not be expected? Is there a possibility of missing data, i.e. are all cases diagnosed/started on treatment registered?
   b. TB diagnosis under the NTP: For the facilities included in the study, were all microscopy centres or were the primary healthcare facilities’ samples sent to other facilities? Is there a possibility that some patients could not be traced and therefore not registered/included in the study?
   c. Statistical analysis: Please clarify why a cut-off point of >15 days were used to investigate health system delay when the median in this study was 2 days (refer Finnie et al. where most of the quantitative studies used the median as cut-off). Were different cut-off points investigated? Especially since laboratory turnaround time for sputum samples (smear and GeneXpert) is expected to be less than 72 hours, so in effect patients should be started on treatment before 15 days after presentation to the facility. Account for missing data, i.e. which patients were included in the logistic regression models? Only those with no missing values for any of the variables?

2. Results:
   a. Patient characteristics: how many patients did not give consent to take part in the study? Could this have influenced the results?
   b. Patient delays and associated factors: Did the patients accessing rural facilities also access traditional healers or other healthcare providers first? Is there any information available on the patients’ perception of rural facilities, i.e. that they might choose to access district/mission hospitals rather than primary healthcare facilities? Are the district/mission hospitals better funded or managed? Are these hospitals in general further away from patients compared to primary facilities? Add the significant association “visited a drug store yes/no”.
   c. Health system and associated factors: Patients with >4 visits to facilities, were these patients also those accessing primary healthcare facilities or other (traditional, private practitioners, pharmacies) first?
   d. The tables should be clarified in the sense that all variables are not accounted
for in tables 1 (ever heard of TB diagnosis before), 2 (type of diagnostic test, diagnostic centre, marital status, self-medication, number of healthcare visits) and 4 (previous contact with TB patient, marital status, self-medication, traditional medicine, private practitioner). Why were certain variables left out?

For the figure, it would be interesting to split the columns according to patient and health system delay to visualise the cut-off values used in the logistic regression.

Minor essential revisions

1. TB diagnosis under NTP: clarify the algorithm for the use of GeneXpert – are all smear negative and all HIV positive patients investigated with GeneXpert? Were patients who were GeneXpert positive all smear negative?

2. Study definitions:
   a. Patient delay: clarify whether “registered nurse or medical doctor” refers only to NTP staff members or to private practitioners as well. When a patient visited a pharmacy, traditional healer or private practitioner first, was this visit defined as the “first visit” or only visits to NTP facilities?

3. Results: clarify that “taking self-medication” refers to “visiting a drug store” in the tables.

4. Tables: include N= total no and N=total yes for patient delay and health system delay in tables 2 and 4. Account for missing data.

5. Discussion:
   a. With regards to limitations, the sample size to determine patient delay was adequate according to the sample size calculation, but the number of participants who experienced health system delay (n=22) and had >4 visits (n=8) was small, limiting the interpretation of those results.
   b. Was there a validation done of the questionnaire to curb the possibility of bias because of healthcare workers administering questionnaires?

6. Conclusion: consider recommending a qualitative study to elicit patient responses on why they thought delay was associated with access to primary healthcare facilities.

Discretionary revisions

Please consider using line numbers in future submissions.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

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