Reviewer's report

Title: How much is TB Screening Worth? Estimating the Value of Active Case Finding for Tuberculosis in South Africa, China, and India

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Reviewer: Helen Ayles

Reviewer's report:

Review: How much is TB screening worth? Estimating the value of active case finding for tuberculosis in South Africa, China and India

1. Is the question posed by the authors new and well defined?
This paper presents a modelling study that addresses one of the key issues facing public health practitioners working in tuberculosis control; what do we need to do to reach our targets? They argue successfully, according to their model, that active case finding for tuberculosis may be cost effective but only if you look take a longer viewpoint than can be assessed using traditional studies and therefore argue the case for using a modelling methodology to answer the questions.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?
As discussed above the paper argues that modelling may be the only way to be able to answer these types of questions. I am not a mathematical modeller per se and so cannot comment on the details of their model but the model is well described as are the assumptions that have gone into the model. They have used data to inform the model both from the ZAMSTAR trial and also from national programme data available from WHO, UNAIDS and other national data repositories.

3. Are the data sound and well controlled?
No original data has been used for this paper, rather data available in the public domain

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
No original data has been used for this paper, rather data available in the public domain. The authors have provided a link to the source code for their model.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
The discussion is appropriate to the results and is well balanced. The authors lay out the limitations of the use of modelling and specific limitations brought about in their approach to answer this question. They present a compelling argument that the effectiveness of a case finding intervention may not be realised for many
years after the intervention has happened due to the long time span of TB infection and disease. This hampers the ability of traditional field based research to answer specific questions. The issues will be whether any policy makers are prepared to provide the resources (which are not inconsiderable per case found) in the short term in the hope of long-term gain, with only mathematical modelling evidence

6. Do the title and abstract accurately convey what has been found?
   Yes

7. Is the writing acceptable?
   Yes

Revisions

Major revisions:
1. I cannot see in the methods how the cost of the case finding intervention and treatment is obtained. What are the assumptions about case finding costs- what methods of case finding are proposed to be used?

Minor revision:
2. You assume all values of TB risk are the same for an individual on ART as one who is HIV+ with a CD4 count >350. Is this true? Could you make some statement to this effect and why you chose to adopt this parameter

3. Figure 3 is difficult to read which figure relates to what in panel A – can this be improved? It may be better in colour but often this will be read in black and white.

4. Figure 3 is the title correct? I think these are the costs per case detected but the title seems to imply the costs need to be increased by 1000x?

5. I do not fully understand how the rates of getting onto ART for CD4<350 have been derived. As I understand it there seems to be a lower rate of progression in South Africa than in India or China- is this correct? Can you reference the source?

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

The paper uses data from a recently published study that I conducted as the basis for some of its assumptions