Reviewer’s report

Title: Does the organisation of health service delivery determine delay in tuberculosis treatment in Tajikistan?

Version: 1 Date: 17 August 2009

Reviewer: David Hausner

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- Major Compulsory Revisions

(1) Methods: Data Analysis: Paragraph 1: You should describe the data analysis methods here rather than refer the readers to a submitted paper. The submitted paper may not be accepted and then the reader has no way to find the details.

(2) Results: Study population and health care seeking; Second half of Paragraph 2: You state definitively that 86% of patients received TB treatment only after visiting the district TB facility. You should stop there in the Results section. The rest of this paragraph is speculative and therefore should be moved to the Discussion. Otherwise, it leaves the reader to wonder about a speculation with no obvious evidence. Alternatively, if there is definitive evidence, then state it. Even in the discussion section, you should think about strengthening these speculative statements with some evidence, as much as possible.

(3) Results: Determinants of Delay: Second half of paragraph: Starting with sentence beginning, “This is not surprising…” till the end of the paragraph: This is interpretation. Move to Discussion.

(4) Discussion: Limitations: Another limitation that this study has is the overwhelming majority of patients are rural with very small samples from peri-urban and urban (Table 4). This is likely what made it difficult to pick up a difference in delay by the residence variable.

(5) Discussion: Limitations: Paragraph 3 and Discussion: Delay: I believe there is a selection bias to the results since only patients on TB treatment are included in the study. This is somewhat described in this paragraph. However, I think it should be described more clearly. Individuals with active TB who are not yet in treatment are probably more likely to be experiencing both patient and health system delays. Some may never get treatment or will have severely delayed treatment and will die. These individuals are not being measured at all in this study. By interviewing those who are in treatment, you have chosen the best patients, consequently with the least delays. It is correctly stated that this likely means the study has underestimated the amount of delay. However, it also means that the study has likely missed some of the reasons for delays. In fact, it might be stated that the low level of case detection in Tajikistan has lead to this selection bias because this study only picks up those among the detected. Completely missed are the TB (would be) patients who are among the
undetected and these are the patients who represent the biggest problem.

(6) Discussion: Limitations: One more limitation that should at least be mentioned is seasonality bias. Given that the data was collected from December to March (Table 2), which is the winter season, there could be some effect on delay as compared to patients receiving treatment during other seasons.

- Minor Essential Revisions

(1) Abstract: Background: You mention that the Tajikistan health system still bears many features of the Soviet system. However, to the reader unfamiliar with the Soviet health systems, this statement is meaningless. You should modify it to explain why this is important – vertical systems, for example.

(2) Background: Second Paragraph: Last Sentence: All reports that I have heard say that the migrants are returning from Russia due to the economic crisis as jobs are disappearing, not that more migrants are going to Russia. This may still affect the TB epidemic in Tajikistan as more TB infected migrants come back and potentially spread TB to others. (We are especially worried about this for HIV transmission).

(3) Background: Third Paragraph: Sentence starting “The sum of patient and (health) system…”: Remove brackets from the word ‘health’.

(4) Discussion: Determinants of Delay: It is stated that District was found to be a significant determinant of delays in TB treatment. However, looking at Table 6, it seems that really only one district, Muminobod, shows a significant difference. Perhaps this is due to the choice of comparison group, or perhaps District as a significant variable is overstated.

(5) Figure 1: Map: Needs labels. What do the different shades mean? Can you label the districts. Also, I don’t remember seeing a reference in the paper to the figure. There should be a reference, probably where the site selection is discussed in the Methods section and when the districts are discussed as determinants to delay in the Discussion section.

- Discretionary Revisions

(1) Title: Consider stating a major result in the title rather than a question. This helps pull the reader in. For example: “Patient’s site of first access to health system determines length of delay for TB treatment in Tajikistan,” or “TB treatment delay determined by patient’s site of first access to health system in Tajikistan.”

(2) Background: Last Paragraph: It would have been nice to also look at perceived quality of previous contacts with health service. In fact, there are probably a whole host of qualitative factors that could influence patient delay that should be investigated. I don’t know if you have the data for looking at this or not.

(3) Results: Study population and health care seeking; Middle of Paragraph 2:
Revise sentence starting with “It is noteworthy…”: “It is noteworthy that the district TB facilities were visited at some stage before initiation of anti-TB chemotherapy by a large majority (86%) of patients.”

(4) Discussion: First Paragraph: You could mention as a last sentence in this paragraph that some sort of international referral and treatment system needs to be worked out between Russia and Tajikistan since migrant workers with TB have the longest delays. This would complete the introduction to the Discussion session.

(5) Discussion: Limitations: It is up to you but my preference is to put limitations at the end of the Discussion session. I think it reads easier that way and otherwise it can distract the reader from other things you want to say in the Discussion.

(6) Table 6: I think I would make the district TB hospital the comparison group since the delays are shortest here and that is the ideal. Then everything else compares against the ideal with longer delays. Doing this would make the longer delays stand out more.

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.