Author's response to reviews

Title: "Cough officer screening" improves detection of nosocomial pulmonary tuberculosis

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Version: 3 Date: 5 March 2010

Author's response to reviews: see over
Dear Dr. Puebla,

We have reviewed the additional criticisms of our manuscript and have revised our manuscript accordingly. In addition, we have provided a point-by-point response to these new comments below. We look forward to your continued support of our work and your future correspondence.

Sincerely,

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Comments from Referees.

Referee 1:
Reviewer's report
Title: "Cough officer screening" improves detection of nosocomial pulmonary tuberculosis
Version: 2  Date: 30 November 2009
Reviewer: Daniel Datiko

Reviewer's report:
Title: Effect of “cough officer screening” on detection of pulmonary tuberculosis among hospital inpatients
Reviewer: Daniel G. Datiko

General comments
The paper addresses important aspect of tuberculosis case finding in health institutions. This could help to reduce delay due to the health service including the health workers to improve early case finding. It also reduces nosocomial transmission. The authors describe important topic in tuberculosis control and the article is now well done. However I have few comments.

Minor essential revisions
1. Page 2, abstract conclusion should be written as the COS system has reduced the delay in TB detection. Done!
2. Page 3, in the background omit …high quality… Done!
3. Page 14, line one the sentence…This suggests that improvements could be made in cost-effectiveness, a topic which will be addressed in a forthcoming study…could be replaced with ‘However, the cost effectiveness of the COS system requires further study.' Done! We have replaced the sentence with “This requires cost effectiveness analysis of the COS system in future study.”
4. Page 3, paragraph 1, line 7, omit the word ‘alone’. Done!
5. Page 3, paragraph 2, the first sentence….write the limitation of PCF and include why active case finding may be required not only by some clinicians but some countries may need to do that for some reasons. Please re-write the sentence. Omit the phrase ‘in addition to DOTS’. Done!
6. Page 9, in the last sentence… However, a Wilcoxon rank-sum test indicated that the median time from alarm to action was significantly less during Stage I than during Stage II, omit …’ a Wilcoxon rank-sum test indicated that ….and add p-value. Done!
7. Page 10, last sentence of the results delete ... (table 3). Done!
8. Page 10, the first sentence delete ...the rate of TB detection. Done!
9. Page 13, paragraph 3, delete the phrase ‘…and outbreak of TB’. Done!
10. Page 14, second sentence… This suggests that improvements could be made in cost-effectiveness, a topic which will be addressed in a forthcoming study. …should replaced with ….This requires cost effectiveness analysis of the COS system. Done! We have replaced the sentence with “This requires cost effectiveness analysis of the COS system in future study.”

11. Page 14, paragraph 3, the sentence…” Each year, about 8 million people develop TB and about 2 million die from TB worldwide. Implementation of an effective COS program may contribute to a significant reduction in the TB incidence and death rate, particularly in Africa and
Eastern Europe, where the challenges appear to be greatest ' should be cautiously written it is more than what the study could offer. Better removed or re-written. Done!

12. In the recommendation could you make it more applicable considering the limitations of your study. Done! A sentence that express our recommendation has been added at the end of Discussion.

“In addition, we recommend that the cough duration for COS system should be optimized and the cost effect of the COS system should be analyzed before implementation.”

Level of interest: An article of limited interest
Quality of written English: Needs some language corrections before being published
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

Referee 2:
Reviewer's report
Title: "Cough officer screening” improves detection of nosocomial pulmonary tuberculosis
Version: 2 Date: 16 December 2009
Reviewer: Cynthia Bin-Eng Chee

Reviewer's report:
Major compulsory revisions:
1. In response to my query (Q1) if all three investigations (chest radiograph, sputum AFB smear and sputum TB culture) were undertaken for each patient picked up by the COS whom the physician decided to investigate for TB, the authors had responded that the physician could choose between chest radiograph and sputum smear/culture. Yet, under “Tuberculosis diagnostic procedures” it is stated that three sets of sputum were collected from each patient who tested positive in the COS system. Could the authors please clarify?

Response:
The physician could prescribe chest radiography, sputum smear/culture, or both for the diagnosis of patients who tested positive in the COS system. The physician might only prescribe sputum smear/culture if the patient had a previous chest X-ray, in which case, three sets of sputum were collected. Except for the outcome of chest radiography and sputum smear/culture, the physician might make a diagnosis of TB based on clinical manifestations (symptoms) of the patient, even if the sputum smear/culture was negative. The “Methods” section was appropriately edited.

2. Results, last paragraph : “It took as long as 14 days for some patients to be diagnosed with TB in Stage I, but it was reduced to 12.5 days in Stage II”. These numbers are median number of days (as stated under table3). This sentence should be re-worded. Perhaps the authors could report separately the time to diagnosis for those who were smear negative.

Response:
In Table 3, patient demographics were summarized as median (Q1,Q3) for the duration of cough
and time from alarm to diagnosis with a non-parametric Wilcoxon rank-sum test, due to the small sample size. In addition, since the standard deviation is large within the group, it is better to present the data by median with Q1 and Q3. The last paragraph of the “Results” was appropriately edited.

3. The response to Q4 did not address my question, which was whether there were any demographic or clinical factors which could identify patients for better targeting of the COS.

**Response:**
Our COS system was designed for general screening of inpatients. Focusing on a high-risk population might improve the efficiency of the system, but would miss TB patients in the low-risk population. Nevertheless, this would be an interesting subject for a future study.

4. The suggestion that the COS should be implemented in the Internal Medicine Department as the majority of COS (+) patients were in this department should be substantiated by demonstrating that the yield of this system is high in this department. Data showing the distribution of patients by departments was also not given.

**Response:**
By excluding TB patients in the ICU, we found that 81% and 100% of TB patients were in the Internal Medicine Department in Stage I and Stage II, respectively (see table below). We modified the first paragraph of the “Results” accordingly.

<table>
<thead>
<tr>
<th>Department</th>
<th>Stage I</th>
<th>Stage II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Surgery</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>OB/GYN</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intensive Care Unit</td>
<td>21</td>
<td>ICU patients were excluded</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>12</td>
</tr>
</tbody>
</table>

Minor essential revisions:
1. Abstract, Methods, line 2 : September 2005 should be 2004  **Done!**
2. Background, third paragraph, line 2 “The number of TB cases….” should be “The incidence of TB cases….”  **Done!**