PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (see an example) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Effectiveness of involving private medical sectors in the National TB Control Programme in Bangladesh: evidence from mixed methods
AUTHORS	Zafar Ullah, Abu ; Huque, Rumana; Husain, Ashaque; Akter, Salma; Islam, Akramul; Newell, James

VERSION 1 - REVIEW

REVIEWER	Dr. MMH Khan Assistant Professor Department of Public Health Medicine School of Medicine Bielefeld University Germany I declare no conflicts of interest.
REVIEW RETURNED	06-Aug-2012

THE STUDY	TB is an important public health problem in Bangladesh and hence the topic addressed by the authors is relevant from public health point of view. In this paper, the authors mainly attempted to report the impact of Public-Private Partnership (PPP) in reporting TB suspects and cases in four areas of Dhaka city. Frankly speaking, this study has valuable information for health policymakers; however, I found several limitations of the study. Although the journal structured the review process focusing on several questions in relation to the results and conclusion, it is difficult to answer 'yes' or 'no'. Therefore I have written my comments as a text. The research questions or outcomes are not clearly reflected by the title of the study. It should be revised according to the main findings of the study in the abstract and introduction. The overall study design is not clearly written. Authors mentioned many methods (as a triangulation) combining quantitative and qualitative methods. However, these methods are not adequately described. Some of the crucial things are missing. For example, authors mentioned that four areas are selected. What does the 'area' mean? Moreover, they did not mention which areas from the Dhaka city were selected for this study. Dhaka is a megacity with about 15.4 million population (not about 10 million) (see the United Nations publication (2012) "World Urbanization Prospects The 2011 Revision: Highlights") and intra-urban differences are huge in terms of socio-economic conditions, economical and commercial activities, and settlement types (i.e. slums versus non-slums). Authors should clearly report the characteristics of four areas and five DOT centre in Dhaka. Discussion regarding the representativeness of the study is also missing. Statistical methods are not discussed too.

	Results are highly summarized, although some of the results are credible. Study subjects are not adequately described. For a better understanding, results of the TB suspects and cases should be presented by sex (male versus female), age group and by area. Otherwise intra-urban differences, inequities by sex and age group will be ignored. Results should be logically presented according to methods. In the present form, results of some methods are missing. Limitations of the study should be provided in the discussion section. Other comments: Some abbreviations such as NTP (in abstract), SEED, and BRAC are not given in the first appearance. In the introduction, the authors have written about private healthcare. To my opinion, it is too short because private sectors include not only private medical practitioners but many other medically untrained or semi-trained providers such as people working in pharmacies/drugstores, traditional healers, homeopathic and Unnai/Ayurvedic providers. The quality of services by the private healthcare sectors is often questionable. Referring some suitable articles, authors should provide more information about private healthcare sector in Bangladesh. Authors mentioned in the method section that in the study areas three NGOs are working for TB case reporting and management. Two of them are not well-known like BRAC. So some descriptions are also needed for these NGOs. Statements regarding ethical permission should be elaborated. Particularly what is name of the Ethical board under the Directorate General of Health Services?

REVIEWER	Dr Lal Sadasivan Senior Specialist Strategy, Investment and Impact Division The Global Fund to Fight AIDS, Tuberculosis and Malaria Switzerland
REVIEW RETURNED	10-Aug-2012

THE STUDY	1. Research question: There is no research question stated. 2. PPM scale up: It is not clear where the scale up was done. In the abstract, under objectives, it is said that the scale up happened in two other bigger cities. Under objectives, it is stated that scale up happened in other areas of Dhaka and in two major cities. In the main text of the article, under introduction, it is said that PPM model was scaled up in two other big cities in addition to continued implementation in Dhaka 3. Reference 1 has 2011 version. Reference 2 and 3 are old. Check for a better reference for 5. Page 2: Lines 26, 27: Please provide reference for the comment Page 2: line 18: it can not be 'appropriately trained' which is a positive thing. Line 51: What is SEED?
RESULTS & CONCLUSIONS	1. Table 2: From 2007 to 2008, there is a decline in SS+ cases in

	the non-PPM sector while the PPM cases go up steadily. This is not explained. Did the PPM start getting the cases that would have later gone to the public sector? This may actually avoid diagnostic delays. Same question about figure 3. 2. Table 2 and 4: There is higher positivity rate among the suspects referred by the PPM (23%) compared to non-PPM (16%). Is it because of a different criteria for referral or due to stricter selection? 3. Figure 1: decline in case notification from 2007 to 2008 in PPP is not explained 4. Figure 2: No need for a figure in this case. 5. Page 8: line 45: Discussion: What is the evidence to say that the access and quality of care has improved? 6. Discussion is weak and is mostly repetition of some findings. It brings in new findings also. Needs to be rewritten to clearly convey the message.
GENERAL COMMENTS	This article has a good scope becasue it comes from a well quoted PPM site. However, it needs a careful rewriting. Please also note some points below. 1. It is not clearly stated what is meant by referral by PPM. 2. Please say why there is no information in figure 3 for the years beyond 2008? 3. Why treatment outcomes are not reported? 4. Page 8: lines 14 and 53: Using terms like 'commercial interests' and 'harmful care' can be objectionable

VERSION 1 – AUTHOR RESPONSE

Reviewer: Dr. MMH Khan
Assistant Professor
Department of Public Health Medicine
School of Medicine
Bielefeld University
Germany

Comments: TB is an important public health problem in Bangladesh and hence the topic addressed by the authors is relevant from public health point of view. In this paper, the authors mainly attempted to report the impact of Public-Private Partnership (PPP) in reporting TB suspects and cases in four areas of Dhaka city. Frankly speaking, this study has valuable information for health policymakers; however, I found several limitations of the study. Although the journal structured the review process focusing on several questions in relation to the results and conclusion, it is difficult to answer ‘yes’ or ‘no’. Therefore I have written my comments as a text.

Response: Thank you.

Comments: The research questions or outcomes are not clearly reflected by the title of the study. It should be revised according to the main findings of the study in the abstract and introduction.

Response: The study was aimed at developing a partnership between the NTP and different elements of the private sector in Bangladesh such as Private Medical Practitioners (PMPs) and NGOs. We used both quantitative and qualitative methods (mixed methods) for the data collection of the study. We think the title reflects the study aim and methodology.

Comments: The overall study design is not clearly written. Authors mentioned many methods (as a

triangulation) combining quantitative and qualitative methods. However, these methods are not adequately described. Some of the crucial things are missing. For example, authors mentioned that four areas are selected. What does the 'area' mean? Moreover, they did not mention which areas from the Dhaka city were selected for this study. Dhaka is a megacity with about 15.4 million population (not about 10 million) (see the United Nations publication (2012) "World Urbanization Prospects The 2011 Revision: Highlights") and intra-urban differences are huge in terms of socio-economic conditions, economical and commercial activities, and settlement types (i.e. slums versus non-slums). Authors should clearly report the characteristics of four areas and five DOT centre in Dhaka. Discussion regarding the representativeness of the study is also missing. Statistical methods are not discussed too.

Responses: We have revised the methods section accordingly (highlighted texts) - see page 3 and lines.6-34; and page 4 lines 15-16 and lines 18-22. We have added the following texts:
Considering the research objectives and intended outcome of a change in policy and practice, an operational research methodology16,17 was thought to be appropriate. A set of criteria underpinning the broader scope of operations research was employed to make the implementation process more participative and resource-effective, and to facilitate the scale up. Specific techniques and approaches drawn from both quantitative and qualitative research methods were used to collect multiple kinds of data for the study.18,19

The study was set within the policy environment of government-NGO collaboration, enabling participation of Society for Empowerment, Education and Development (SEED) and three other NGOs – Bangladesh Rural Advancement Committee (BRAC), Progoti Samaj Kallyan Protisthan (PSKP) and Population Services Training Centre (PSTC), who were undertaking TB control activities jointly with the NTP.

Four areas of Dhaka City namely Mirpur, Rampura, Dokkhinkhan, and Kamrangirchar were selected purposively as the study sites, where the selected partner NGOs were located and had a DOTS centre; and where PMPs were major providers of health services. These study sites generally represent the geographic catchment areas of the selected NGOs covering a population of nearly one million.

Within this partnership, SEED was the lead research partner, BRAC, PSKP and PSTC provided TB services (diagnosis, treatment and follow-up) through designated health centres whereas the NTP provided the overall policy guidelines and supported the organisation and management of the research activities. In Mirpur, PSKP provided TB services through two DOTS centres and PSTC had one DOTS centre in Rampura; whereas BRAC covered both Dokkhinkhan, and Kamrangirchar through one DOTS centre in each area. PMPs were agreed to refer the TB suspects and patients to these designated DOTS centres following the NTP guidelines. A technical committee was formed with representation from the NTP, partner NGOs and PMPs to advise on the operational issues and to support the smooth running of the partnership. A local Project Coordinator coordinated the project activities.
Analysis of quantitative data was done primarily by tabulations and graphs using SPSS and Microsoft Excel programmes, and of qualitative data by thematic analysis.

Ethical approvals were obtained from University of Leeds, United Kingdom and also from relevant in-country institutions including the Directorate General of Health Services, and Bangladesh National TB Control Programme. We have ensured all respondents their rights to anonymity and confidentiality. A written informed consent was obtained from each participant of the in-depth interviews and FGDs.

Comments: Results are highly summarized, although some of the results are credible. Study subjects are not adequately described. For a better understanding, results of the TB suspects and cases

should be presented by sex (male versus female), age group and by area. Otherwise intra-urban differences, inequities by sex and age group will be ignored.

Response: We were mindful to remain within the recommended word-length of the journal. In fact, the PPP project in Bangladesh yielded big dataset/findings since its inception in 2004. We recognised that this manuscript would have higher impact if we remain focused within the stated objective of the paper. We also planned to publish a series of papers based on the results/data of the PPP project. As part of this plan, we have already published two papers (Zafar Ullah et al, 2004 and Zafar Ullah et al, 2010); current manuscript is the third in the serial. The fourth one is in the drafting stage; the analyses on gender, inter-area differences will be part of that forthcoming publication. However, we are willing to incorporate the age and gender related analyses, if that is strongly felt by the editor/reviewer.

Comments: Results should be logically presented according to methods. In the present form, results of some methods are missing.

Response: In this paper, we have presented the results according to the project phases (e.g. pilot implementation and scale up), and outcomes of the partnership (e.g. TB control indicators). We have analysed/used data from both quantitative (service statistics from the NTP and five DOTS centres) and qualitative (in-depth interviews, FGDs and workshops) while organising and presenting the article content. Data from baseline has already been published elsewhere (see Zafar Ullah et al. Public-private partnership for TB control in Bangladesh: role of private medical practitioners in the management of TB patients. World Medical & Health Policy, 2010; 2 (1), Article 13, for details). As we mentioned above, some results and analysis have been kept aside for forthcoming publication(s). However, we have added two sub-headings, as suggested (see pages 5 line 18 and page 8. Line 19).

Other comments:

Comment: Some abbreviations such as NTP (in abstract), SEED, and BRAC are not given in the first appearance.

Response: We have revised as below (see page 3. Lines 14-16)
Society for Empowerment, Education and Development (SEED) and three other NGOs – Bangladesh Rural Advancement Committee (BRAC), Progoti Samaj Kallyan Protisthan (PSKP) and Population Services Training Centre (PSTC).

Comments: In the introduction, the authors have written about private healthcare. To my opinion, it is too short because private sectors include not only private medical practitioners but many other medically untrained or semi-trained providers such as people working in pharmacies/drugstores, traditional healers, homeopathic and Unnai/Ayurvedic providers. The quality of services by the private healthcare sectors is often questionable. Referring some suitable articles, authors should provide more information about private healthcare sector in Bangladesh.

Response: We have revised the introduction section and added the following texts. We have also updated the references (see page 2 lines 24-32).
Private healthcare is common in Bangladesh and popular amongst all, regardless of income or location. Apart from the NGOs, all other private or non-government sector health providers are generally considered to be as medically trained providers working for-profit and located outside of the government health system. The private sector also incorporates a large number of privately-managed auxiliary health services such as diagnostic laboratories, ambulance services and pharmacies/drugstores.8 These private health care providers are available in abundance in urban areas.9–11 However, there are countless untrained or non-qualified providers in Bangladesh who

offer a combination of traditional (e.g. Unani, ayurbedic etc.) and western (allopathic) types of medicine but they are primarily found in rural areas.8

Comments: Authors mentioned in the method section that in the study areas three NGOs are working for TB case reporting and management. Two of them are not well-known like BRAC. So some descriptions are also needed for these NGOs.

Response: We have revised accordingly (see page 3 lines 13-34). Also see the following additional information:

BRAC, PSKP and PSTC are registered non-governmental organisations primarily work in the areas of health services delivery, and are among the existing collaborating partners of the NTP in implementing TB control activities.

Comments: Statements regarding ethical permission should be elaborated. Particularly what is name of the Ethical board under the Directorate General of Health Services?

Response: We have revised as follows (see page 4 lines 15-18).
Ethical approvals were obtained from University of Leeds, United Kingdom and also from relevant in-country institutions including the Directorate General of Health Services, and Bangladesh National TB Control Programme. We have ensured all respondents their rights to anonymity and confidentiality. A written informed consent was obtained from each participant of the in-depth interviews and FGDs.

Reviewer: Dr Lal Sadasivan
Senior Specialist
Strategy, Investment and Impact Division The Global Fund to Fight AIDS, Tuberculosis and Malaria Switzerland

Comment: Research question: There is no research question stated.

Response: We have now explained the rationale and aim of the paper (see page 2 lines 39-49 and page 3 lines 1-2)
Given the above context, the task of increasing access to and quality of TB care as well as increasing the case detection rate is enormous. To achieve this task, the NTP has recognised the need for an increased collaborative effort between the public and private health sector providers.

In this context, we conducted research to develop and evaluate a Public-Private Partnership (PPP) model to involve Private Medical Practitioners (PMPs) in the NTP's urban TB control activities, and to measure to what extent the outcomes of this partnership affect access to and quality of TB care. The development and piloting of the PPP model took place in four selected research sites in Dhaka city which spanned between 2004 and 2008. Since 2008, this PPP model has been scaled up in two other cities - Chittagong and Sylhet, in addition to scaling up in other areas of Dhaka City. This paper reports the outcomes from this development, evaluation and scale up.

Comments: PPM scale up: It is not clear where the scale up was done. In the abstract, under objectives, it is said that the scale up happened in two other bigger cities. Under objectives, it is stated that scale up happened in other areas of Dhaka and in two major cities. In the main text of the article, under introduction, it is said that PPM model was scaled up in two other big cities in addition to continued implementation in Dhaka.

Response: The PPP has been scaled up in two other cities – Chittagong and Sylhet. It was also scaled in other areas of Dhaka city after the completion of the pilot phase. We have now revised the relevant sections to make it more consistent. We added the following texts (see page 2 lines 48-49 and page 3 lines 1-2)
Since 2008, this PPP model has been scaled up in two other cities - Chittagong and Sylhet, in addition to scaling up in other areas of Dhaka City. This paper reports the outcomes from this development, evaluation and scale up.

Comments: Reference 1 has 2011 version. Reference 2 and 3 are old. Check for a better reference for 5.

Response: We have updated reference 1. Reference 2 and 3 are to justify the WHO's prediction about TB deaths by 2020 which was declared in 2002.

We have replaced the reference 5 with Guda DR, Khandaker IU, Parveen SD, and Whitson T. Bangladesh: NGO and Public Sector Tuberculosis Service Delivery—Rapid Assessment Results; Published for the United States Agency for International Development by the Quality Assurance Project; December 2004.

Comment: Page 2: line 18: it can not be 'appropriately trained' which is a positive thing.

Response: We have now revised the sentence, as below (see page 2 lines 12-14)
However, major obstacles to implementation remains primarily due to insufficient infrastructure and shortage of appropriately trained health personnel.6,7

Comment: Line 51: What is SEED?

Response: We have provided the full name of SEED as below (see page 3 line 14)
Society for Empowerment, Education and Development (SEED)

Comment: Table 2: From 2007 to 2008, there is a decline in SS+ cases in the non-PPM sector while the PPM cases go up steadily. This is not explained. Did the PPM start getting the cases that would have later gone to the public sector? This may actually avoid diagnostic delays. Same question about figure 3.

Response: We tend to agree with the reviewer's explanation but we did not have enough evidence to claim that. We can confirm that there were no changes in the project implementation in 2007 and 2008. There are several hypotheses (epidemiological and programmatic) for this decrease in the case notification rate. The strongest epidemiological argument is that there might be reduction of number of TB cases in the PPP areas due to successful implementation of the PPP. However, we think it is too early to confirm this hypothesis - we have to observe the trend for much longer period to claim that.

Comment: Table 2 and 4: There is higher positivity rate among the suspects referred by the PPM (23%) compared to non-PPM (16%). Is it because of a different criteria for referral or due to stricter selection?

Response: Our PMPs have used the NTP guidelines (WHO recommended) for indentifying TB suspects. They used a referral form developed by the PPP project. Sputum microscopy was done by the NGO-run DOTS centres involved in this project. There was no Table 4 in our manuscript.

Comment: Figure 1: decline in case notification from 2007 to 2008 in PPP is not explained.

Response: We can confirm that there were no changes in the project implementation in 2007 and 2008. There are several hypotheses (epidemiological and programmatic) for this decrease in the case notification rate. The strongest epidemiological argument is that there might be reduction of number of TB cases in the PPP areas due to successful implementation of the PPP. However, we think it is too early to confirm this hypothesis - we have to observe the trend for much longer period to claim that.

Comment: Page 8: line 45: Discussion: What is the evidence to say that the access and quality of care has improved?

Response: We have included the following text (see page 9 lines 43-46)
The PPP model was highly effective in improving access to and quality of TB care in urban settings, as evidenced by a steady increase in case notification since implementation of the partnership, exceeding internationally agreed targets, and consistently maintained much higher rates than the national average.

Comment: Discussion is weak and is mostly repetition of some findings. It brings in new findings also. Needs to be rewritten to clearly convey the message.

Response: We have substantially revised the discussion section (see highlighted texts in page 9 lines 43-49; and page 10 lines 1-26)

Comment: This article has a good scope becasue it comes from a well quoted PPM site. However, it needs a careful rewriting.

Response: Thank you. We have now updated the information and substantially revised the manuscript, as suggested.

Comment: Please also note some points below.
• It is not clearly stated what is meant by referral by PPM.
• Please say why there is no information in figure 3 for the years beyond 2008?
• Why treatment outcomes are not reported?
• Page 8: lines 14 and 53: Using terms like 'commercial interests' and 'harmful care' can be objectionable

Response:
• Referral within PPP means sending TB suspects and/or TB patients by the selected PMPs to the designated DOTS centre for diagnosis and/or treatment. The PPP project has developed a systematic approach (and a referral form) for the referral system. We have explained this in the methods section (see page 3 lines 25-34).
• Figure 3 represents data from the pilot phase only which spanned from 2004 to 2008. Data beyond 2008 are presented under “scale up section”.
• The rationale for this PPP project was to increase case detection rate which was low at the start of the project, and therefore we considered the case notification and referral as the key outcome indicators to demonstrate PPP success. The treatment outcomes within the national TB control programme in Bangladesh are mostly near or above the WHO targets throughout the PPP period. Nevertheless, the treatment outcomes in the PPP areas have been consistently higher than the national average.
• We have removed the term 'harmful care', and added ‘professional and’ before the term 'commercial interests', as suggested (see page 9 line 13).

VERSION 2 – REVIEW

REVIEWER	Dr. MMH Khan Assistant Professor Department of Public Health Medicine School of Medicine Bielefeld University Germany I declare no conflicts of interest.
REVIEW RETURNED	16-Oct-2012

GENERAL COMMENTS	The revised version of the manuscript is much improved than the initial one. Although authors did not agree, still I imagine a title "Effectiveness of involving private medical sectors in the national TB control programme in Bangladesh: evidence from mixed methods", which is more suitable than their proposed one. Some discussion should be made about the representativeness of the study. It is still missing. Authors can also write something whether their results are somehow affected by the improved diagnostic facilities In spite of my previous comment, authors did not add area-, age-, and sex-specific results because they are planning another manuscript. I think, it should not be the main argument to avoid these issues. Many readers are interested to see the intra-urban differences (by study areas) including sex- and age-specific inequities. It may happen that case notifications are different in different areas. Therefore, I propose to add at least some graphs to explain these vital issues. I hope, authors will take these points and address them in the final version.

VERSION 2 – AUTHOR RESPONSE

Reviewer: Dr. Mobarak Khan
Department of Public Health Medicine
Bielefeld University
Germany

Comment: The revised version of the manuscript is much improved than the initial one. Although

authors did not agree, still I imagine a title “Effectiveness of involving private medical sectors in the national TB control programme in Bangladesh: evidence from mixed methods”, which is more suitable than their proposed one.

Response: We have revised the title as suggested. The revised title is:
“Effectiveness of involving private medical sectors in the National TB Control Programme in Bangladesh: evidence from mixed methods”

Comment: Some discussion should be made about the representativeness of the study. It is still missing. Authors can also write something whether their results are somehow affected by the improved diagnostic facilities

Response: We have revised the manuscript and added the following texts (page 13 of 15, lines 19 – 28):
The selected study sites were drawn from urban DOTS areas in Bangladesh and the research was deliberately embedded within the NTP programme activities. The PPP service components were aligned with the NTP guidelines and were implemented through the NTP/NGO’s designated DOTS centres. The health system elements, particularly the type of health facilities, composition of health staff, and organisation of the TB control activities through government-NGO collaboration were similar in the study areas and in other urban areas of Bangladesh. Moreover, the type and characteristics of urban health care provided by private sector providers follow a similar pattern in all urban areas of the country. Therefore, the PPP can be scaled up in other urban DOTS areas providing that human and financial resources are provided for the partnership activities.

Comment: In spite of my previous comment, authors did not add area-, age-, and sex-specific results because they are planning another manuscript. I think, it should not be the main argument to avoid these issues. Many readers are interested to see the intra-urban differences (by study areas) including sex- and age-specific inequities. It may happen that case notifications are different in different areas. Therefore, I propose to add at least some graphs to explain these vital issues.

Response: We had incorporated further analysis (texts and graphs) based on the above comment. We have added the following texts (page 6 lines 8 – 13; and page 7 lines 9 – 14) The presence of BRAC’s extensive community network influenced the total number of new SS+ cases identified in the PPP areas (Figure 2). In Dokkhinkhan and Kamrangirchar areas, the number of new SS+ TB cases was higher than Mirpur and Rampura areas where BRAC’s community health workers (known as Shasthya Sebika) work closely with the community to identify persons with chest complaints and advise them to go for a sputum test from a designated DOTS centre.

Almost three-quarters of the reported TB cases were between 15 and 54 years of age: most male cases were detected in the 35-44 age-group, while the peak in females was observed in the 15-24 year age-group. The number of male cases was always higher than females except in children of 0-14 age group. Only one-third of new SS+ TB cases were female. This analysis reflects the national distribution and trend observed by the NTP and other collaborating NGOs (Figure 4).

We have also added two figures – Figure 2 and Figure 4 (page 6 and 8).

Comment: I hope, authors will take these points and address them in the final version.

Response: We have addressed all the comments. Thank you very much for the comments and suggestions.