**Author’s response to reviews**

**Title:** Bridging the knowledge-practice gap in tuberculosis contact management in a high-burden setting: a mixed-methods protocol for a multi-center health system strengthening study

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Response to Editor

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Dear Editor,

Thank you for the opportunity to address these points. Please find the point by point responses, including page numbers for changes in the text as below.
Editor comments:

Before we can proceed further, we first need you to address the following issues:

Please enhance your reporting of the ITS aspect of the study according to the framework proposed by Ramsay et al (2003); this should include stating the design in the title.


Response:

We have added the study design in the title as follow: Bridging the knowledge-practice gap in tuberculosis contact management in a high-burden setting: a mixed-methods study protocol for a multi-center health system strengthening intervention

We have followed Ramsay’s eight quality criteria for ITS studies as described in the table below

Ramsay’s criteria

1. Intervention occurred independently of other changes over time: A suite of interventions will be implemented in a staggered way over 24 months, independent of other changes in TB program. Line 164-166

2. Intervention was unlikely to affect data collection: Sources and methods of data collection before and after interventions will be the same, except for a newer standard TB form for child TB screening (TB15) and TB contact investigation (TB16) that were not available in the study sites before the intervention started. Line 203-206
3. The primary outcome was measured objectively: The primary outcome measure is the number of individuals completing IPT that is abstracted from individual patient record. Line 250-257

4. The primary outcome was reliable: Cross-checking against original sources will be undertaken where data are incomplete and TB staff will then be asked to complete missing data. Additional data validation will be undertaken from each participating site every three months to determine data reliability. Line 237-241

5. The composition of the data set at each time point covered at least 80% of the total number of participants in the study: Data of all TB cases from five initial participating centres will be collected every two weeks and checked for completeness. Line 237-238

6. The shape of the intervention effect was prespecified: A set of interventions to be implemented in this study has been described in a specific section. Line 471-528

7. A rationale for the number and spacing of data points was described: Study period and spacing of data points were selected pragmatically based on availability of data. There will be more than three data points before and after the intervention. Line 307-314

8. The study was analyzed appropriately using time series techniques: Segmented regression and Auto-regressive Integrated Moving Average (ARIMA) techniques will be used to analyse interrupted time series data. Line 315-352

Editor comments:

The process evaluation component is not sufficiently well reported for our purposes. Please provide additional detail on sampling and plans for data analysis and integration.
Response:

Participating clinics were selected purposively based on the burden of TB cases and their location. A description of the model for clinic participation is described in lines 188-197.

All TB patients treated at selected health facilities are included in the quantitative component of the study. The estimated sample size for contact investigation and preventive treatment is described in lines 274-304.

Participants for the qualitative component of the study will represent providers and patients, who will be selected purposively with a maximum variation approach. The qualitative sampling plan is described in lines 409-413. The targeted number of qualitative participants is shown in Table 4.

The analysis plan for quantitative time-dependent data using segmented regression and ARIMA have been described in line 306-352.

The analysis plan for the qualitative component of the study is described in lines 420-432.

Process evaluation will be conducted based on the Consolidated Framework for Implementation Research (see table 5) and RE-AIM framework (Table 6). Significant change in the practice of contact investigation and preventive treatment identified using ARIMA models will be use as one indicator of program effectiveness.

Thank you for re-assessing the manuscript after these changes.

Best wishes,

Dr Trisasi Lestari