PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Factors affecting the acceptability of isoniazid preventive therapy among health care providers in selected HIV clinics in Nairobi County, Kenya: A qualitative study
AUTHORS	Wambiya, Elvis; Atela, Martin; Eboreime, Ejemai; Ibisomi, Latifat

VERSION 1 – REVIEW

REVIEWER	Yael Hirsch-Moverman ICAP, Mailman School of Public Health at Columbia University, USA
REVIEW RETURNED	11-Jun-2018

GENERAL COMMENTS	This is a very interesting qualitative study exploring the acceptability of providing IPT to PLHIV among healthcare providers in Kenya. The topic – acceptability of IPT in this vulnerable population – is of great importance and relevance as IPT has been shown to be very effective in preventing TB in this at-risk population. The sample of 18 health care providers is purposively selected and captures diverse views and opinions. The authors used an appropriate and relevant conceptual framework for their inquiry. **Introduction:** 1. Suggest you update global TB stats based on the latest WHO report from 2017; also would be good to include overall incidence of TB in Kenya for context. 2. Line 18 – INH dose for adults is 300 mg, not 300 mg/kg 3. Line 21 – no need to specify those receiving ART as all PLHIV are eligible for IPT regardless of ART status. 4. Please clarify who initiates IPT in PLHIV in the Kenya context and the roles of key players, i.e., clinical officers, nurses, counsellors, pharmacists. **Methods:** 5. Under study design, the authors mentioned complying with COREQ but they report on SRQR. 6. The study period should be clarified. The eligibility for the study says Jan-Jun 2017 but under study setting it is listed as Jan-Apr 2017 and under data collection Feb-Apr 2017. 7. Page 6, lines 25-38 – re the numbers of patients initiated on IPT in the last quarter, were they all initiated in last quarter of 2016 or as of the last quarter of 201? Also, the authors cite the total number of patients in each facility. Do they mean patients eligible for IPT or all patients seen in the facility? 8. When describing Table 1, length of stay at the facility is actually years of experience. 9. Under research team, it may be good to start with the qualifications of EW currently in lines 24-25. 10. Were actual interview transcripts shared with study participants

	or was it summary of findings/themes? If the former, was it their own interview or other random interviews that were anonymized? 11. Under ethical considerations authors state that all participants signed an informed consent form. However, at the end of the article under patient consent is states that it wasn't required as study participants were health care providers. Please clarify whether participants signed informed consent. **Results:** 12. I think it would be helpful for the reader if the authors consistently followed the same order of categories when they describe factors affecting acceptability of IPT according to the framework. The order of the five categories vary between Methods, Results, and Discussion. 13. For the quotes it would be interesting to know which cadre of health care provider states what is quoted. This is a small sample and the authors are protecting participant confidentiality and only giving the facility ID, which is not very informative however. The issue is that there are only 2 pharmacists in the sample. I wonder if the authors can group participants as clinical (clinical officers, nurses, pharmacists) vs. non-clinical (counsellors) and use those designations without facility ID. 14. For patient-related factors, it would be good to remind the reader that these are providers perceptions of patient-related factors. **Discussion:** 15. I am wondering if any of the providers reported lack of or insufficient tools to track and monitor IPT? 16. Be consistent with use of health workers vs. care workers vs. health care providers. 17. Can the authors discuss health care provider training vs. mentorship for the provision of IPT? 18. In the Conclusion, the authors summarize what factors will help ensure optimal acceptability of IPT among providers but they don't mention some of the very important structural factors that emerged from the findings such as the inadequate high level commitment and support for IPT. **Tables/Figures:** 19. Figure 2 – as mentioned above it would be good to have the figure better tie to the presentation of the Results. Under Organization factors, maybe say inconsistent drug supply instead of INH drug stock-outs. For Innovation, maybe say unclear guidelines. **Abstract:** 20. The Results and Conclusion sections of the abstract should tie better to the key messages in the article.

REVIEWER	Cecily Miller, PhD MPH Institute for Global Health Sciences, TB Research Group, University of California San Francisco, USA
REVIEW RETURNED	05-Jul-2018

GENERAL COMMENTS	This is a qualitative research study of provider experiences with and attitudes toward isoniazid preventive therapy for preventing TB among PLHIV in clinics providing HIV care in Nairobi County, Kenya. The subject is an important one and the study provides valuable insight into the topic that could help inform future implementation of IPT in this and other similar settings. However this paper needs some revision before it is ready for publication.

	Overall, the paper needs to explain and justify why eliciting providers' thoughts and opinions on IPT is important (rather than those of patients). Some further development of the analysis is needed. The authors interviewed 4 different types of providers at 3 clinics. Were there any meaningful differences in findings between provider type or clinic type? Why or why not? The paper also needs to explain the direct policy implications of the findings. I would also suggest the authors could put forward specific interventions developed to address the specific findings. Throughout, please make sure to cite the most up-to-date global data (i.e. the 2017 WHO Global TB Report) and global TB policies (i.e. the current WHO End TB Strategy). Additionally, there are minor grammar and syntax errors throughout (too numerous to include in these comments) that need copy editing. Comments per section: Introduction - The introduction is long and has a lot of statistics about TB/HIV coinfection. Not as much introduction is given on providers, why their acceptance of IPT matters, and why it is important to elicit their opinion on this subject – only 1 sentence stating that the literature on acceptability among health care providers is scant. Please devote some more space to introducing the reader to why your approach is the appropriate one to study this subject (for example, rather than interviewing patients about their acceptability to IPT). - Page 4: - Lines 28-32 – The second sentence in your introduction "The threat is more pronounced for PLHIV" does not make sense given your first sentence is talking about the threat of TB/HIV coinfection. - Lines 28-56 – A lot of statistics on TB/HIV and the burden in Kenya/SSA – perhaps choose the most relevant ones to cite. Also, update the figures cited to the most recently available data – in this case probably the WHO Global TB Report summarizing 2016. - Page 5: - Lines 18-23 – "WHO guidelines strongly recommend…" This sentence doesn't make sense, these are overlapping categories (i.e. PLHIV and those receiving ART) - Lines 27-29 – Countywide or country-wide? Began rather than begun - Lines 27-42 – If the policy was adopted in 2012, why was it not implemented until 2015? Throughout this paragraph, the proportions presented are more informative to the reader than the actual raw numbers - Line 48 – We know now that Kenya is a high TB/HIV burden country since it was stated previously in the introduction, no need to repeat. - Last paragraph could use one more sentence framing the study Methods - Page 6 lines 29-39 – Some of this data could be presented in the results section. - Page 7: - Lines 19-32 – I am not sure this level of detail is necessary.

	- Lines 50-55 – Information on ethical oversight including institutional review board approval should be included in the main text of the paper. Results - This section presents a mix of factors that affect the providers (workload, stockouts) with factors that affect the patients (adverse events, duration of the treatment). It seems for this paper it would be helpful to separate those out and focus on the factors affecting the providers, since that is the stated goal of this paper. - Is it possible to include stratification of the findings by clinic type and provider type to see if there are any meaningful differences? Either finding would be interesting. - Page 8 lines 52-56 – This was already stated in the methods. Discussion - Page 15 line 13 – "Luke-warm" rather than "look-warm" - Some of the suggestions presented could be formalized into new interventions proposed to address the findings of the study .

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Yael Hirsch-Moverman
Institution and Country: ICAP, Mailman School of Public Health at Columbia University, USA
Competing Interests: None

This is a very interesting qualitative study exploring the acceptability of providing IPT to PLHIV among healthcare providers in Kenya. The topic – acceptability of IPT in this vulnerable population – is of great importance and relevance as IPT has been shown to be very effective in preventing TB in this at-risk population. The sample of 18 health care providers is purposively selected and captures diverse views and opinions. The authors used an appropriate and relevant conceptual framework for their inquiry.

**** Thank you, Dr Yael Hirsch-Moverman , for your detailed review of our manuscript and the very helpful comments you have provided.

Introduction:
1. Suggest you update global TB stats based on the latest WHO report from 2017; also would be good to include overall incidence of TB in Kenya for context.
****Again, we appreciate your comments and have made the following revisions as suggested:

• Overall TB incidence and proportion of PLHIV updated to the latest estimates using the 2017 global TB report. Citation updated (Page 4, line 18-19).
• Global TB mortality in PLHIV in 2016. Citation updated (Page 4, line 21-22).
• Co-infection burden in Africa. Citation updated using 2017 global TB report (Page 4, line 24).
• Overall TB incidence for Kenya indicated (Page 4, line 26-27).
• 2016 HIV/TB co-infection rate and citation updated (Page 4, line 28).
We retained the IPT coverage statistics (Page 5, line 29-30) as this is the only nationally available data for year 2015 (From the 2016 annual report). The National TB, leprosy and lung disease control program (NTLD-P) is the single source of IPT uptake/coverage data. The 2017 report – which would provide 2016 data on IPT-is still currently not available to the public for reference.

2. Line 18 – INH dose for adults is 300 mg, not 300 mg/kg
****We appreciate this observation and have now corrected the dosage as recommended from 5

mg/kg and 300 mg/kg to 5 mg and 300 mg respectively (Page 5, line 5).

3. Line 21 – no need to specify those receiving ART as all PLHIV are eligible for IPT regardless of ART status.
****"Those receiving anti-retroviral therapy (ART)"removed from the sentence on people eligible for IPT. Page 5, lines 5-7 now reads:
"WHO guidelines strongly recommend at least 6 months of IPT for children and adults including pregnant women, PLHIV and those who have successfully completed TB treatment"

4. Please clarify who initiates IPT in PLHIV in the Kenya context and the roles of key players, i.e., clinical officers, nurses, counsellors, pharmacists.
****The roles of health care providers in the IPT cascade in Kenya have now been clarified on Page 5, line 17-27.

"Implementation is supported by various cadres of health care providers. IPT is prescribed by a registered clinician (usually clinical officers in most HIV clinics), who also assesses IPT eligibility by ruling out contraindications such as peripheral neuropathy or liver disease and recommend confirmatory laboratory tests if deemed necessary. Nurses are involved in measuring vital signs and linking new patients to care. Clinicians and nurses are also involved in intensified TB case finding procedure using a standard ministry of health standard ICF/IPT screening tool. They also monitor the treatment of patients that remain in care and update their IPT registers. Counsellors are involved in counselling new patients, caregivers (in the case of child patients) and patients that remain in care on the benefits of IPT to enhance adherence. Pharmacists dispense the drugs to the patients at initiation as well as during monthly re-fill visits. Social workers and community health volunteers are involved in contact tracing and linking both HIV and TB missing cases to care."

Methods:
5. Under study design, the authors mentioned complying with COREQ but they report on SRQR.
****Thank you for this observation. We have now corrected this to reflect the SRQR guidelines which were followed by the authors. Citation has been updated accordingly (Page 6, line 15).

6. The study period should be clarified. The eligibility for the study says Jan-Jun 2017 but under study setting it is listed as Jan-Apr 2017 and under data collection Feb-Apr 2017.
****The study period has now been clarified to reflect the period of data collection which is February to April 2018 (Page 6, line 17-18; page 7, line 16)

7. Page 6, lines 25-38 – re the numbers of patients initiated on IPT in the last quarter, were they all initiated in last quarter of 2016 or as of the last quarter of 2016? Also, the authors cite the total number of patients in each facility. Do they mean patients eligible for IPT or all patients seen in the facility?
The numbers presented are those of patients initiated on IPT as of the last quarter of 2016 to give an idea of the uptake of IPT at the time of study. The totals presented are of patients enrolled in care at the facilities and not the number of patients eligible. To give a better picture of the uptake, percentages have been reported rather than the counts, as reported by the facility EMR systems (Page 6, line 24-30). The section now reads:
"At the time of the study, Facility A had about 45 health personnel of different cadres supporting 10,226 HIV patients in its CCC. The facility's IPT uptake was 70% in the last quarter of 2016. An average of 1,974 patients visited the clinic per month in the last quarter of 2016. Similarly, Facility B had about 25 health care providers in the CCC, supporting 4860 patients and an IPT uptake of 68% in the last quarter of 2016. On the other hand, Facility C had about 25 health care providers in the CCC, 1,133 patients enrolled in care, 65% of whom were on IPT in the last quarter of 2016." (Page 6, line 24-30)

8. When describing Table 1, length of stay at the facility is actually years of experience.
****Years of experience has now been revised to length of stay of health care provider at the HIV clinic in Table 1 (Page 8-9).

9. Under research team, it may be good to start with the qualifications of EW currently in lines 24-25.
****Thank you for this suggestion. The section under research team has now been updated as advised (Page 7, line 17-18).

10. Were actual interview transcripts shared with study participants or was it summary of findings/themes? If the former, was it their own interview or other random interviews that were anonymized?
For 'member checking', a summary of the major findings -and not the transcripts- from random interviews was shared with randomly selected health care providers to establish trustworthiness, validity and credibility of the study. We have now indicated that the summary of findings from random interviews was anonymized (Page 8, line 12-15).
"As part of a validation process and to elicit feedback from the participants, an anonymised summary of the findings was shared with randomly selected participants." (Page 8, line 1).

11. Under ethical considerations authors state that all participants signed an informed consent form. However, at the end of the article under patient consent it states that it wasn't required as study participants were health care providers. Please clarify whether participants signed informed consent.

Participants in this case referred to the health care providers who took part in the study. They were all required to give informed consent to be interviewed. We have clarified this in the ethical considerations section as well as the patients consent section at the end of the article (Page 8, line 19) as follows:
"Participants were briefed about the study and their rights and provided with an information sheet. Informed consent was obtained from all study participants prior to the interviews." (Page 8, line 9-11; Page 19, line 17-18)

Results:
12. I think it would be helpful for the reader if the authors consistently followed the same order of categories when they describe factors affecting acceptability of IPT according to the framework. The order of the five categories vary between Methods, Results, and Discussion.
****Thank you again for this observation. We have now re-ordered the categories to be consistent in the methods, results, discussion sections and figures. The order is as follows: structural factors, innovation characteristics, provider-related factors, patient-related factors and organizational factors.

13. For the quotes it would be interesting to know which cadre of health care provider states what is quoted. This is a small sample and the authors are protecting participant confidentiality and only giving the facility ID, which is not very informative however. The issue is that there are only 2 pharmacists in the sample. I wonder if the authors can group participants as clinical (clinical officers, nurses, pharmacists) vs. non-clinical (counsellors) and use those designations without facility ID.
****We appreciate the reviewer for this very helpful comment and suggestion. We have now grouped respondents into clinical (clinical officers, nurses, pharmacists) and non-clinical (counsellors). These designations are now used for the quotes without facility ID to maintain participant anonymity but also to show the diversity in perception (throughout the results section).

14. For patient-related factors, it would be good to remind the reader that these are providers' perceptions of patient-related factors.

****We have clarified this in the introduction of patient-related factors as follows: (Page 12, line 10-11)
“The following are health care providers’ perceptions of patient-related factors affecting their own acceptability of IPT.”

Discussion:
15. I am wondering if any of the providers reported lack of or insufficient tools to track and monitor IPT?
****Issues relating to tools for tracking, monitoring and evaluating IPT among patients did not emerge from the health care providers as major concerns. This is probably because the study and the line of enquiry focused on factors affecting implementation within the HIV clinic. However, there were some themes that pointed towards monitoring patients’ adherence and preventing loss to follow-up. We have incorporated these in two different sections of the the discussion as follows:

“Integration could entail incorporation of all or most of the IPT-related procedures in one room/space. This can reduce challenges such as loss-to-follow-up in TB/HIV treatment thereby assisting health care providers monitor the patients started on IPT.”(Page 15, line 30-31)

“Despite poor adherence being a key factor affecting acceptability, there was lack of information on evidence-based methods to monitor IPT adherence among patients. This might signify poor or lack of implementation of methods such as use of treatment buddies, lay health providers community-based directly observed preventive therapy to monitor and enhance IPT adherence. The availability of resources for close monitoring, supervision and evaluation of IPT outcomes is strongly recommended by WHO.”(Page 16, line 27-33)

16. Be consistent with use of health workers vs. care workers vs. health care providers.
****Health care worker changed to health care provider (Page 15, line 10)

17. Can the authors discuss health care provider training vs. mentorship for the provision of IPT? –
****Thank you for your suggestion. We have discussed health care provider training vs. mentorship for IPT under provider-related factors.
“Providers in our study also reported that lack of on-the-job training and support through mentorship and supportive supervision left them feeling inadequately equipped to handle emerging challenges associated with IPT implementation. These challenges highlight the need for tailor-made technical assistance during implementation including mentorship, retraining of the providers, training new staff, emotional support, and mechanisms that take into consideration the contextual challenges.”(Page 16, line 17-22)

18. In the Conclusion, the authors summarize what factors will help ensure optimal acceptability of IPT among providers but they don’t mention some of the very important structural factors that emerged from the findings such as the inadequate high level commitment and support for IPT.
Thank you for the suggestion. We have now highlighted structural factors in the conclusion section, especially the commitment and support for IPT implementation by policy makers and program managers (Page 18, line 25-29).
“Ensuring optimal acceptability of IPT among health care providers will require a robust engagement with both providers and patients by policy makers and IPT program managers, as well as on-the-job design specific actions to support providers in implementation. This high level commitment and support for IPT could improve provider acceptability and ultimately delivery of the intervention.”

Tables/Figures:
19. Figure 2 – as mentioned above it would be good to have the figure better tie to the presentation of the Results. Under Organization factors, maybe say inconsistent drug supply instead of INH drug

stock-outs. For Innovation, maybe say unclear guidelines.
****We have now adjusted Figure 2 to better tie to the results by matching the description of influencing factors in line with the results section. The specific items under each factor have been revised to reflect how they were described in the results section.
Abstract:

20. The Results and Conclusion sections of the abstract should tie better to the key messages in the article.
**** Thank you for this observation. We have now thoroughly revised the abstract to reflect a better alignment with the key messages (Page 2, line 22-34)

Reviewer: 2
Reviewer Name: Cecily Miller, PhD MPH
Institution and Country: Institute for Global Health Sciences, TB Research Group, University of California San Francisco, USA
Competing Interests: None declared

This is a qualitative research study of provider experiences with and attitudes toward isoniazid preventive therapy for preventing TB among PLHIV in clinics providing HIV care in Nairobi County, Kenya. The subject is an important one and the study provides valuable insight into the topic that could help inform future implementation of IPT in this and other similar settings. However this paper needs some revision before it is ready for publication.
****Thank you Dr Miller, for your detailed review of our manuscript which serves to improve its quality

Overall, the paper needs to explain and justify why eliciting providers' thoughts and opinions on IPT is important (rather than those of patients).

****Just to note that the study looks at the implementation (supply/provider) angle rather than uptake (demand/patient) angle. Thus, the health care providers are the appropriate study population in this context. We have now explained and justified the importance of eliciting providers' thoughts and opinions on IPT in the introduction section. The section reads:

"Moreover, limited information exists on popular perceptions regarding its acceptability and factors influencing its application among health care providers in Kenya. Yet, it's widely recognised that health care providers are the front-line people delivering health care interventions and their acceptability is key to successful implementation and effectiveness of health care interventions. Assessing IPT acceptability among health care providers can help to better understand barriers and facilitators of IPT delivery at health facilities and therefore guide TB preventive care."(Page 5, line 32-34; Page 6, line 1-2)

Some further development of the analysis is needed. The authors interviewed 4 different types of providers at 3 clinics. Were there any meaningful differences in findings between provider type or clinic type? Why or why not?
****Thank you for your suggestion. We have grouped health care providers into clinical (clinical officers, nurses, pharmacists) and non-clinical (counsellors). These designations have been used for the quotes without facility ID to maintain participants' anonymity but also to show the diversity in perception. The provider type has been factored into the results and discussion sections.

****The findings were not stratified by facility type as there were no observable differences in the findings by facility. The CCCs in the three public health facilities offer the same package of integrated HIV/TB services despite being different tier facilities. The assumption therefore that health facility tier/type is not an influencing factor of IPT acceptability was validated by the findings.

The paper also needs to explain the direct policy implications of the findings. I would also suggest the authors could put forward specific interventions developed to address the specific findings.
****We have added policy implications and recommended interventions from the study findings to improve IPT acceptability among health care providers (Page 17, line 18-21)
"The findings of this study have important policy implications. Firstly, the lack of clarity of IPT guidelines highlights a need for revision and standardization which would promote consensus among health care providers. Secondly, the findings highlight the need for strengthened monitoring and evaluation with a well-defined feedback mechanism of reporting by health care providers on IPT indicators. Finally, building both technical and logistic capacity in HIV clinics is important to improving the acceptability and ultimately the delivery of IPT." (Page 17, line 18-21)

Throughout, please make sure to cite the most up-to-date global data (i.e. the 2017 WHO Global TB Report) and global TB policies (i.e. the current WHO End TB Strategy).
****We appreciate your comments and have made the following revisions as suggested:
• Overall TB incidence and proportion of PLHIV updated to the latest estimates using the 2017 global TB report. Citation updated (Page 4, line 19-20).
• Global TB mortality in PLHIV in 2016. Citation updated (Page 4, line 22).
• Co-infection burden in Africa. Citation updated using 2017 global TB report (Page 4, line 25).
• Overall TB incidence for Kenya indicated (Page 4, line 29-30).
• 2016 HIV/TB co-infection rate and citation updated (Page 4, line 31-32).
We retained the IPT coverage statistics (Page 6, line 2-3) as this is the only nationally available data for year 2015 (From the 2016 annual report). The National TB, leprosy and lung disease control program (NTLD-P) is the single source of IPT uptake/coverage data. The 2017 report – which would provide 2016 data on IPT-is still currently not available to the public for reference.

Additionally, there are minor grammar and syntax errors throughout (too numerous to include in these comments) that need copy editing.
****We appreciate the reviewer for this observation. We have identified and corrected the errors during revision. We also employed the use of software. We are hopeful that all grammatical errors have now been fully addressed.

Comments per section:

Introduction
- The introduction is long and has a lot of statistics about TB/HIV coinfection. Not as much introduction is given on providers, why their acceptance of IPT matters, and why it is important to elicit their opinion on this subject – only 1 sentence stating that the literature on acceptability among health care providers is scant. Please devote some more space to introducing the reader to why your approach is the appropriate one to study this subject (for example, rather than interviewing patients about their acceptability to IPT).
****We have now added some text and literature justifying the importance of measuring the acceptability of IPT among health care providers (Page 6, line 8-12). This part now reads:
"Yet, it is widely recognised that health care providers are the front-line people delivering health care interventions and their acceptability is key to successful implementation and effectiveness of health care interventions. Assessing IPT acceptability among health care providers can help to better understand barriers and facilitators of IPT delivery at health facilities and therefore guide TB preventive care."(Page 5, line 33-34; page 6, line 1-2 & 4-6)

- Page 4:
- Lines 28-32 – The second sentence in your introduction "The threat is more pronounced for PLHIV"

does not make sense given your first sentence is talking about the threat of TB/HIV coinfection.
****The sentence “threat is more pronounced for PLHIV” has now been deleted (Page 4, line 18)
- Lines 28-56 – A lot of statistics on TB/HIV and the burden in Kenya/SSA – perhaps choose the most relevant ones to cite. Also, update the figures cited to the most recently available data – in this case probably the WHO Global TB Report summarizing 2016.
****Again, we appreciate your comments and have made the following revisions as suggested:
• Overall TB incidence and proportion of PLHIV updated to the latest estimates using the 2017 global TB report. Citation updated (Page 4, line 19-20).
• Global TB mortality in PLHIV in 2016. Citation updated (Page 4, line 22).
• Co-infection burden in Africa. Citation updated using 2017 global TB report (Page 4, line 25).
• Overall TB incidence for Kenya indicated (Page 4, line 29-30).
• 2016 HIV/TB co-infection rate and citation updated (Page 4, line 31-32).
We retained the IPT coverage statistics (Page 6, line 2-3) as this is the only nationally available data for year 2015 (From the 2016 annual report). The National TB, leprosy and lung disease control program (NTLD-P) is the single source of IPT uptake/coverage data. The 2017 report – which would provide 2016 data on IPT-is still currently not available to the public for reference.

- Page 5:
- Lines 18-23 – “WHO guidelines strongly recommend…” This sentence doesn’t make sense, these are overlapping categories (i.e. PLHIV and those receiving ART)
***“Those receiving anti-retroviral therapy (ART)” has now been removed from the sentence on people eligible for IPT. Page 5, lines 5-7 now reads:
“WHO guidelines strongly recommend at least 6 months of IPT for children and adults including pregnant women, PLHIV and those who have successfully completed TB treatment” (Page 5, line 5-7)

- Lines 27-29 – Countywide or country-wide? Began rather than begun
****Thank you for this observation. We have now corrected the grammatical error. (Page 5, line 13).

- Lines 27-42 – If the policy was adopted in 2012, why was it not implemented until 2015? Throughout this paragraph, the proportions presented are more informative to the reader than the actual raw numbers

****This observation is appreciated. We have now elaborated that IPT implementation for PLHIV in Kenya started in 2012 through PEPFAR implementing partners in pre-determined pilot treatment facilities. Specified that country-wide roll-out of IPT began in 2015. Citation updated (Page 5, line 10-14).
“However, IPT implementation for PLHIV started in 2012 at selected facilities under the United States government supported initiative, the President's Emergency Plan For AIDS Relief (PEPFAR) County-wide scale-up of IPT began in March 2015 with Siaya, Kisumu, Migori, Homa-bay and Nairobi being the pioneer Counties due to the high HIV prevalence rates.(Page 5, line 10-14)”
****We have retained percentages and deleted the actual counts throughout the paragraph (Page, 5 line 29-32)

- Line 48 – We know now that Kenya is a high TB/HIV burden country since it was stated previously in the introduction, no need to repeat.
****We have now deleted the phrase “high TB/HIV burden country” as this is already defined in the introduction (Page 5, line 32-33).

- Last paragraph could use one more sentence framing the study
****We have added an additional sentence framing the importance of assessing IPT acceptability among health care providers (Page 6, line 4-6). The sentence reads:

“Assessing IPT acceptability among health care providers can help to better understand barriers and facilitators of IPT delivery/implementation at health facilities and therefore guide TB preventive care.” (Page 6, line 4-6).
Methods

- Page 6 lines 29-39 – Some of this data could be presented in the results section. – Reviewer 1 suggested clarifications of IPT uptake rates in the facilities at the time of study in the section. The clarification has been made and in our opinion reads very well now.

- Page 7:
- Lines 19-32 – I am not sure this level of detail is necessary.
****Thank you for your suggestion on this. We considered the details important being requirements based on the SRQR guidelines on researcher characteristics and reflexivity, hence the level of detail. We have revised the title of this section for clarity to ‘research team and reflexivity’ (Page 7, line 17).

- Lines 50-55 – Information on ethical oversight including institutional review board approval should be included in the main text of the paper.
****We have included information on the institutional review boards’ approval in the main text under the ethical considerations section (Page 8, line 3-7).

Results
- This section presents a mix of factors that affect the providers (workload, stockouts) with factors that affect the patients (adverse events, duration of the treatment). It seems for this paper it would be helpful to separate those out and focus on the factors affecting the providers, since that is the stated goal of this paper.
****Thank you for this suggestion. We chose to include patient related factors since they arose from the providers themselves as factors that influenced their acceptability of IPT. Furthermore, the conceptual framework followed in this study posits that patient-level factors affect implementation outcomes. We have made clarification under the patient-related factors section as below:
“The following are health care providers’ perceptions of patient-related factors affecting their own acceptability of IPT.”(Page 12, line 10-11)

- Is it possible to include stratification of the findings by clinic type and provider type to see if there are any meaningful differences? Either finding would be interesting.
****Thank you for your suggestion. We have grouped health care providers into clinical (clinical officers, nurses, pharmacists) and non-clinical (counsellors). These designations have been used for the quotes without facility ID to maintain participants’ anonymity and also to show the diversity in perception. The provider type has been factored into the results and discussion sections.
****The findings were not stratified by facility type as there were no observable differences in the findings by facility. The CCCs in the three public health facilities offer the same package of integrated HIV/TB services despite being different tier facilities. The assumption therefore that health facility tier/type is not an influencing factor of IPT acceptability was validated by the findings.

- Page 8 lines 52-56 – This was already stated in the methods.
**** Thank you for this observation. We have deleted the sentence on adaptation of the conceptual framework accordingly (Page 9, line 7).

Discussion
- Page 15 line 13 – “Luke-warm” rather than “look-warm”
****We have now corrected this grammatical error. Thank you for pointing this out (Page 15, line 16)
- Some of the suggestions presented could be formalized into new interventions proposed to address

the findings of the study
****Thank you for your suggestion. We have proposed interventions from the study findings to improve the acceptability of IPT among health care providers. The section reads:
"We recommend a number of interventions to improve health care provider acceptability in the context of the study clinics. First, involving health care providers in IPT guideline development and revision will make them more comfortable with implementation. Secondly, better integration of all IPT-related services in the same facility may help improve patient initiation, retention and follow-up of IPT. Additionally, training and continuous mentorship on IPT implementation for both clinical and non-clinical providers should be promoted in the health facilities to improve IPT acceptability and delivery"(Page 17, line 24-30)

VERSION 2 – REVIEW

REVIEWER	Yael Hirsch-Moverman Mailman School of Public Health at Columbia University
REVIEW RETURNED	14-Sep-2018

GENERAL COMMENTS	Thank you to the authors for thoroughly addressing reviewers' comments. Some minor questions/comments remain from my side. 1) Don't use parenthesis when giving important information; for example page 4 line 35. 2) In lines 43-50 on page 4, the authors use 3 different sources, which makes it seem like the TB incidence in Kenya went up from 81,518 to 169,000 between 2015 and 2016. My guess is that it is probably due to the TB prevalence survey. In the sentence where the rate of co-infection is noted, maybe don't mention out of how many. 3) Page 5 line 10, please correct the dosage of INH. For kids it is weight based and for adults it is not. As currently stated it is not correct. 4) Thanks for changing 'health care workers' to 'health care providers' for consistency. It would be good if you also conformed 'care providers' to match unless they are different. 5) Page 11 line 41, please demonstrate with a quote from a non-clinical provider. 6) Page 12 line 32, when referring to 'others', do you mean other patients or providers? 7) Page 12 lines 37-40, the sentence that starts with "Due to…" should be clarified. 8) Page 14 lines 42-44, the last sentence in the Results section would be better placed in the beginning of the section. 9) Page 14 line 51, change the order of the factors. 10) Page 14 last line, you should highlight what is new in your paper as currently sounds that all these constructs are all in agreement with the literature so not clear what paper is contributing to the literature. 11) Page 15 lines 21-22, change 'most respondents did not own the guidelines'. 12) Page 15 last paragraph, you start with 'similarly' but not clear what this is similar to. 13) Page 16 line 8, what is the IPT approach? 14) Page 16 lines 46-47, adherence to IPT is not only critical in LMIC. 15) Page 16 lines 42-25, explain how poor adherence and pill burden affect providers' acceptability. Are they less likely to prescribe? 16) Page 17 line 22, 'into IPT' is incorrect.

	17) Page 17 line 33, don't call the patients 'IPT patients'. 18) Page 17line 50, the interventions recommended go beyond the study clinics, correct? 19) Page 18 lines 51-53, reorganize the factors in the Conclusion section.

REVIEWER	Cecily Miller University of California San Francisco USA
REVIEW RETURNED	24-Sep-2018

GENERAL COMMENTS	The authors have sufficiently addressed my concerns as well as those brought up by the other reviewer. The paper is now ready for publication and represents a valuable contribution to the literature surrounding IPT implementation from the provider's perspective.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Yael Hirsch-Moverman
Institution and Country: Mailman School of Public Health at Columbia University
Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below
Thank you to the authors for thoroughly addressing reviewers' comments. Some minor questions/comments remain from my side.

1) Don't use parenthesis when giving important information; for example page 4 line 35.

****We have removed the parentheses.
The sentence in page 4 line 21 now reads: "Moreover, TB is the leading cause of death among PLHIV. In fact, 374 000 deaths among PLHIV in 2016 were attributed to TB."
Sentence in page 4 line 27-28 revised to: 'Nonetheless, Kenya has made considerable progress in reducing the HIV/TB co-infection rate which fell from 45% in 2008 to 30% in 2016.'

2) In lines 43-50 on page 4, the authors use 3 different sources, which makes it seem like the TB incidence in Kenya went up from 81,518 to 169,000 between 2015 and 2016. My guess is that it is probably due to the TB prevalence survey. In the sentence where the rate of co-infection is noted, maybe don't mention out of how many.

Thank you for your observation.
****We have removed the counts in the sentence concerning co-infection in the paragraph to avoid confusion with the sentence on TB incidence (Page 4, line 28).

3) Page 5 line 10, please correct the dosage of INH. For kids it is weight based and for adults it is not. As currently stated it is not correct.

****Thanks for the observation. The dosage has now been corrected to reflect the treatment guidelines. The correction reads:
"The recommended dose is 10 mg/kg daily for children and up to 300 mg/day for adults." (Page 5, line 4)

4) Thanks for changing 'health care workers' to 'health care providers' for consistency. It would be good if you also conformed 'care providers' to match unless they are different.

****We have conformed ‘care providers’ to ‘health care providers’ for consistency. (Page 10, line 19; page 15, line 1; page 15, line 3; Page 16, line 4)

5) Page 11 line 41, please demonstrate with a quote from a non-clinical provider.

****We have now added a quote from a non-clinical provider as follows:
“I have never attended any training. It is just what I read in school and in books. We should be included in IPT training here. It would help a lot.”(Non-clinical health care provider) (Page 11, line 29 – 31)

6) Page 12 line 32, when referring to ‘others’, do you mean other patients or providers?

****Others in this case refers to patients. We have therefore replaced ‘others’ with ‘other patients’ (Page 12, line 18).

7) Page 12 lines 37-40, the sentence that starts with “Due to…” should be clarified.

****We have clarified the sentence which now reads as thus:
“Non-adherence was thought to be more likely among patients with poor immunological, virological and clinical state as well as those on second line anti-retroviral therapy, which made health care providers reluctant in initiating IPT to these patients.” (Page 12, line 21-24)

8) Page 14 lines 42-44, the last sentence in the Results section would be better placed in the beginning of the section.

****We have moved the last sentence in the results section to the beginning under the heading ‘Factors affecting acceptability of IPT among health care providers’ (Page 9, line 7)

9) Page 14 line 51, change the order of the factors.

****We have changed the order of the factors to reflect that of the rest of the document i.e. ‘structural factors, innovation characteristics, provider, patient-related factors, and organizational factors.’ (Page 14, line 27-28)

10) Page 14 last line, you should highlight what is new in your paper as currently sounds that all these constructs are all in agreement with the literature so not clear what paper is contributing to the literature.
We appreciate the observation. Here, we wanted to bring out the fact that we adapted an existing framework (which hasn’t been explored for this topic).

****We have revised the sentence as follows:
‘Based on an adapted framework, identified factors have been grouped into five broad categories viz. structural factors, innovation characteristics, provider, patient-related factors, and organizational factors.’ (Page 14, line 26-28)

11) Page 15 lines 21-22, change ‘most respondents did not own the guidelines’.

****We have revised the sentence to now read: ‘As a result, most respondents were not comfortable implementing the guidelines in their clinics.’ (Page 15, line 9-10)

12) Page 15 last paragraph, you start with ‘similarly’ but not clear what this is similar to.

****We have deleted the word ‘similar’ from the paragraph. (Page 15, line 26)

13) Page 16 line 8, what is the IPT approach?

****We have now clarified that Kenya’s approach to ICF involves a symptomatic algorithm using a standard Ministry of Health ICF/IPT screening tool. The sentence now reads:
‘…providers questioned the efficacy of Kenya’s IPT approach to identifying latent TB which involves a symptomatic algorithm using a standard Ministry of Health ICF/IPT screening tool and no Tuberculin Skin Test for IPT eligibility.’ (Page 16, line 2-3)

14) Page 16 lines 46-47, adherence to IPT is not only critical in LMIC.

****We have revised the statement by deleting the statement ‘In low and middle income settings’. We have instead added the statement ‘especially is areas with high TB incidence rates’, considering most LMICs are reported to have high TB incidence rates. The sentence now reads:
‘Adherence to IPT treatment is a critical factor to be considered when scaling treatment services, especially in areas with high TB incidence rates.’ (Page 16, line 27-29)

15) Page 16 lines 42-25, explain how poor adherence and pill burden affect providers’ acceptability. Are they less likely to prescribe?

****We have explained how poor adherence and pill burden affect provider’s acceptability. We also added citations of studies that have found these factors as barriers to IPT implementation. The section reads:
‘Previous studies have associated poor adherence to IPT with isoniazid resistance, which has made health care providers less likely to prescribe IPT. Pill burden has also been perceived by health care providers as a cause of non-adherence causing them to be hesitant in prescribing IPT to patients with high number of pills.’ (Page 16, line 24-27)

16) Page 17 line 22, ‘into IPT’ is incorrect.

****This has been corrected. The sentence now reads ‘…discouraged providers from initiating IPT, fearing poor adherence and associated side effects among their patients.’ (Page 17, line 12-13)

17) Page 17 line 33, don’t call the patients ‘IPT patients’.

****We have deleted IPT and retained patients as such (Page 17, line 19).

18) Page 17line 50, the interventions recommended go beyond the study clinics, correct?

****Since the study was purposive, the interventions are mainly recommended for the study context. However, the interventions can be explored in other HIV clinics. We have therefore indicated that the recommended interventions may be explored or adapted in other similar contexts.
The revised sentence reads ‘We recommend a number of interventions to improve health care provider acceptability of IPT in the study clinics and other similar contexts.’ (Page 17, line 27)

19) Page 18 lines 51-53, reorganize the factors in the Conclusion section.

****We have reorganized the factors in the conclusion section to reflect that of the rest of the document. (Page 18, line 26-27)

Reviewer: 2

Reviewer Name: Cecily Miller
Institution and Country: University of California San Francisco, USA
Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below
The authors have sufficiently addressed my concerns as well as those brought up by the other reviewer. The paper is now ready for publication and represents a valuable contribution to the literature surrounding IPT implementation from the provider's perspective.

****We thank the reviewer for the valuable feedback from the review and for giving a go-ahead for publication of the manuscript.