

We thank the reviewer for all the comments. We really appreciate the efforts taken by the reviewer for reviewing the manuscript. We found all the comments relevant and important. We felt that addressing those comments have immensely improved the quality of our manuscript. Once again, we take the opportunity to thank the reviewer for all the guidance and comments.

The point by point responses to the reviewer's comments and the actions taken by us are summarised below. All changes were done in track changes for easy identification.

Reviewer's Comments	Author's Response and Action Taken	Reviewer feedback 5 December
7.5% decline between when and when?	Clarified in line 13	addressed
Change 'captive' to 'stationary' or 'relatively stationary'?	Changes done as suggested in line 27, 230	addressed
Replace 'manned' to 'staffed'	Changes done as suggested in line 47	addressed
7.5% decline refers to notifications or incidence? If incidence, then these numbers are based on incidence estimates – please indicate in your reference at which point in the video this statistic is cited	Its incidence. Time mentioned in Reference 5.	addressed
Presumptive examination rate cited – is this facility based, ACF, or all efforts are included in this figure? Please provide a reference	All efforts are included. Clarified in line 56. Reference provided as suggested	addressed
And notified how many cases in the baseline (2015)? Also clarify if these are all forms or new and relapse only.	Clarified in lines 58,59	addressed
Again you refer to incidence here but I think you mean notifications.	We referred to incidence.	addressed
It seems like the overarching message is that presumptive identification rates went up, while yield went down, is that correct? And that this was the reason for a felt need for improved efficiency due to overstretched lab capacity. Try to bring together your main takeaway message more concisely in the last paragraph	Modified as suggested. Changes in Line 65-66	addressed
materials & methods should be in the same header style as the introduction and other sections	Modified as suggested. Line 70	addressed

Does this mean that PLHIV were excluded from your study population, based on the assumption that they are receiving TB screening services?	Yes	Can you please indicate this in the manuscript?
Please explain how the vulnerability factor weights were assigned to the PAR's or relative risk estimates reported in the Rakesh 2020 study? There appears to be a direct association but this information would be helpful. Malnutrition showed the highest risk estimate and PAR in the rakesh 2020 study. Therefore, although MUAC is imperfect, was this or visual observation of the individual's weight & height (potential evidence of stunting or wasting) considered as a proxy measure?	Modified as suggested. Changed in line 71-78 We have not considered malnutrition. The reason for non-considering malnutrition was given in Line 86-87	Thank you for the updates, however this information is repeated in what are now lines 95 – 98. Also, how the weights were determined is not clearly described. Why a weight of 2, 3, 5? Rationale of landing on these precise weights should ideally be clarified. Understood re: MUAC, but this should then be listed as a limitation given its significance.
'Logistics and strength of the systems were given high weightage with epidemiological factors...'	Clarified in line 97-98	'While fixing the arbitrary cut offs, along with epidemiological factors, operational feasibility was also given high weightage.' → this is still unclear in English.
What is 'cascade training'? patient care cascade sensitization?	Removed the word and clarified. Line 111	addressed
Which software was used for data entry and analysis?	Mentioned in line 112	It does not appear in line 112 (or anywhere else that I have seen) excel is mentioned in 113, but it does not say that excel was used for analysis, only entry.
It seems the process was 1) vulnerability score calculation [YEAR] → 2) development of a vulnerability database for the 22+ million population [YEAR] → 3) attempted validation of vulnerability score (scale) by evaluating no or TB cases occurring in 2019 amongst the	Modified the fig 1 as suggested by the reviewer.	Some of the changes made are good and necessary improvements. However, The methods section needs to be restructured to follow something like:

different vulnerability score groups from step 2 [Q1 2019] → 4) 2 rounds of vulnerability based ACF [Q4 2019, Q4 2020]. Is that correct? Based on the current text in the methods it is difficult to discern that, and figure 1 also does not clarify that very well – please adjust this figure to make the timing clearer. I believe it would be better to refrain from the term ‘validation’ in this manuscript as it is often used when conducting a series of statistical tests to ascertain the validity, reliability, sensitivity and specificity of a score or scale.	Removed the term ‘validation’ as suggested’ Line 116	Conceptual framework → data management → data analysis, and it can be repeated or modified as needed for the different steps, but as it stands now, the data analysis steps are split up between lines 98-99, 121- 124, and 135- 137, which makes it very confusing to read & understand
Figure 1 should have dates / years/ time periods Comparison of notified cases in Q1 2019 with the DB of 22+ million population needs to be explicitly mentioned here and separated from the 2 rounds of vulnerability-based ACF Consistent use of terminology is missing here i.e. ACF versus vulnerability-based acf etc	Details added in Fig 1 as suggested. As suggested, consistency in terminology maintained throughout.	There are a number of (new?) English spelling mistakes in the figure. Although time periods are indicated, they are shown in the middle of text and not easy to find. Please include them in a standard, consistent manner like: ‘YEAR: ACTIVITY’
Denominators for percentages in each cell should somehow be clear. Currently they are not. Inconsistent language used to describe the vulnerability groups B+ ? new and relapse? PTB? or AFTB cases notified? This is unclear in many passages of the text and tables	Clarified the denominators. As suggested, we clarified the same across the passages.	Table 1 Denominators still not indicated for percentages – can you mention in which lines you have added this clarification if you have in fact done this?
It does not appear to be mentioned that there is a significant difference in the 95% CI’s of the moderate and high vulnerability score groups.	Mentioned in line 148-149	addressed

P-values should be shown for all statistical tests performed for data. Statistical tests were not reported for table 2? Chi-square tests? This should be clear in methods section and in table 2. Also in methods section the software used to conduct these tests should be mentioned. What is the numerator and denominator for indicator I of population based ACF in 2018? Are these B+ or AFTB? For F it is unclear. For G, H and I it is indicated	P values mentioned lines 163,164. Added data analysis section under methods and described. Line 128-133 Clarified for I (Table 2) Clarified for F (Table 2)	Good that this is now mentioned, but the results should indicate that these are the results of the chi-square tests, somehow.
In table 2, define 'high vulnerability' I.e score of 5 or above on what scale (obviously the one this paper is about but the table needs to be clear on its own	Defined as suggested, in Table 2	addressed
Is this for B+ or AF TB? And based on ACF, or PCF only? Or both?	Clarified.	addressed
Change incident → notified or you could write 'newly notified'	Changed as suggested, in line 199	addressed
t wasn't 'surveillance' which was 4S-based, but verbal screening for TB, and I would say 'reducing' instead of 'limiting'. Or better 'improving the specificity of presumptive identification'	Changes done as suggested, in line 202-204	addressed
It seems that this is a transition to limitations, but that is not clear. Some kind of transition is needed here as there is an abrupt change in topic.	Sentence modified- line 194 to smoothen the transition.	addressed
Remove 'itself'	Removed as suggested in line 216	addressed
'We presented the results of two rounds of individuals' vulnerability based ACF and the results from serial screening could provide more insights.' do you mean screening	Clarified as suggested, in line 217-2018	Addressed

within the same population screened in the first round? Do you mean to say 'but' instead of 'and' here? What message do you wish to convey with this sentence? It is unclear.		
Perceptions on what? Feasibility? Costs? Validity of the model? Please be more specific.	Specified as suggested, in Line 220	addressed
'system generated alerts' alerts with what purpose?	Clarified as suggested, in line 225	How so? (no track changes)