Reviewer’s report

Title: Disparities in access to diagnosis and care in Blantyre, Malawi identified through enhanced tuberculosis surveillance and spatial analysis

Version: 0 Date: 04 Sep 2018

Reviewer: Mareli Claassens

Reviewer's report:

Major concerns:

The enumerated people from the census ranged from 162-13,066 per catchment area. Why is the range so broad, and can the smallest areas be directly compared to the largest areas?

Which are possible strategies to confirm low case detection? Wouldn't one such a strategy have been to include a symptom screen in the census, which would in addition address the "detection gap" as was mentioned a few times in the article?

Which pro-poor strategies could be feasible in this setting?

Consider including a flow diagram showing how many areas in total, out of which how many were included in the analysis, and for those included, how many cases according to the NTP. Also, how many cases excluded and were they different from those included? According to the analysis, only 3723/7788 possible participants were included - comment on why the other 50% was not included (i.e. are they not from Blantyre? why were they not captured in ePAL?) Were any dwellings excluded and why?

Why were 55% of cases not bacteriologically confirmed? Does this reflect on the quality of the NTP? Could the stratification according to smear status therefore not be valid, i.e. is there a possibility that many smear positive cases were not diagnosed as smear positive? Why were there so many missing results?

Was any validation done on the ePAL/Mapbook data? I.e. did the researchers physically visit any of the dwellings to confirm the application's accuracy and consistency?

Table 1: normally missing data are included in the column percentages. Was the smear stratification done according to lab smear status or clinic smear status and what is the difference between the two? Were the enhanced surveillance data only for the lab? Why was "scanty" a category for the lab smear status but not for the clinic smear status?

Were other options for "enhanced surveillance" considered, for instance Xpert on all samples instead of culture, which could have given an indication of drug resistance in addition?
The higher CNRs in areas with a higher proportion of women: were there more women in certain age groups or other gender issues which might explain the higher rates?

Minor concerns:

Page 2, line 26: rather use "catchment area" CNRs instead of "neighborhood" CNRs?

Page 5, line 56: the "head of dwelling" was interviewed rather than the "head of household"?

Page 7, line 42: Xpert is not mentioned in the tables - should this be corrected?

Page 16, line 49: "greater diagnostic barriers are likely to be reflected by a higher proportion of smear positive patients..." - but in an area with a high HIV prevalence, this might not be the case?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Not applicable

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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