Reviewer's report

Title: Social determinants of pulmonary tuberculosis in Brazil: an ecological study.

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Reviewer: Yael Hirsch-Moverman

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This is an interesting article about the social determinants of pulmonary TB (PTB) in Brazil using an ecological study design. The authors set out to analyze the correlation between social determinants and PTB incidence and treatment outcomes. For consistency, they used PTB data from 2010 to match the year of the latest estimates of social indicators and population numbers (2010). They found very weak correlations and great variation between social indicators and PTB incidence and treatment outcomes. I found their discussion very illuminating and think that their hypothesis that PTB under-notification may be driving the decreasing incidence despite worsening TB services, is very interesting and the issue of under-notification should be further explored.

General comments

1. The manuscript is generally well written but should be reviewed carefully for grammatical and typographical errors as well as data errors such as page 19, line 48-49. Also please try to use less colloquial language such as 'as a matter of fact' on line 31 in page 4.

2. Don't use stigmatizing language to describe treatment outcomes (default) or patients (default cases). The authors keep switching around between default and abandonment of treatment, both in the narrative and the tables. Please eliminate all references to stigmatizing language and replace with language such as lost to follow-up; please see guidelines posted here http://www.stoptb.org/assets/documents/resources/publications/acsm/LanguageGuide_ForWeb20131110.pdf.

Methods

3. Explain to readers why limiting cases to PTB.

4. The definition of medium city is confusing. Please confirm that the definition is population size of 50-100K or population density >80? It is surprising because small cities use both criteria (population size <50k and population density <80). Not clear to me which criterion
trumps, population size or density. For example city with population size 120K and population density >80. Is that medium or large? Could be both depending what you prioritize.

Results

5. When discussing Table 1, it would be interesting if the authors could comment on large cities being similar across metropolitan areas vs. not metropolitan areas.

6. On page 11, the incidence rate is listed as 36% per 100,000. Also on the same page, the last line of the first paragraph (lines 41-43) is not clear to me as it doesn't seem to tie to any presented data. In lines 48-49, the rate of AIDS incidence in Southeast is listed as 10.3/100,000 but is listed as 10.2/100,000 in the table.

7. The cure rate in the North region is strikingly higher than in any other region, which deserves a mention in this section. Why do you think that is?

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.

Yes

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.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

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