Author's response to reviews

Title: Millennium development health metrics: where do Africa's children and women of child bearing age live?

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Author's response to reviews: see over
Dear Sir/Madam,

Please find enclosed our revised manuscript, now entitled ‘Mapping populations at risk: Improving spatial demographic data for infectious disease modeling and metric derivation’. We thank the reviewers for their comments and believe that the manuscript is now improved as a result.

Our responses to the reviewer's comments are below in red:

Reviewer 1: Archie Clements

This paper demonstrates that spatial heterogeneity in population age and sex structures is profound, and has a major impact on the accuracies of summaries of disease burden, or of access to health services, that use a fixed age structure for an entire country. The work is presented in the context of evaluating progress towards the millennium development goals 4, 5 and 6 and this provides a compelling motivation for the work. This is important research and will be of interest to readers of population health metrics. I have no major comments regarding the methodological approach or the scenarios used to demonstrate the approach.

Minor essential revisions:

In some instances the language is a little convoluted and could be tightened up – I suggest a thorough going-over with an editorial eye.

We have read through and done some minor editing, though as the reviewer suggests, this is a job for the editor here.

Discretionary revisions:

Below are some minor typographical errors or suggestions:

1. Page 7, second paragraph, the first sentence does not make grammatical sense – should it be “where applicable”?

This has been corrected.
2. Page 7, third paragraph, line 4, remove “here”.

This has been corrected.

3. Page 8, second paragraph, last sentence – place in past tense (“the focus was on the change”).

This has been corrected.

4. Page 10, third paragraph, third sentence – should be “data were”.

This has been corrected.

5. Page 12. Third paragraph – I suggest the authors cite some published references rather than, or in addition to, the websites. E.g., for thiswormyworld, consider citing:


This reference has now been included, and the weblinks have all been replaced with references.

6. In the discussion section on uncertainty, it might be worth talking about Bayesian methods that have been applied to spatial prediction and the capturing of uncertainty.

We have now included reference to Bayesian approaches.

Reviewer 2: Hebe Gouda

Somewhat lacking is the discussion of the differences observed between countries with regards to the impact of using the high resolution population data set. The authors mention population size of some countries in passing but a brief expansion on this and other potential explanations would be welcomed.

We have added extra information to the discussion which gives individual country examples.

Minor Revisions:

- Figures are not appropriately labeled

We have edited and clarified the figure labeling throughout where appropriate.

- Abstract is not appropriately formatted and could be more informative
We are unsure about the formatting issue mentioned, since a previous paper of ours in the journal had identical abstract formatting. We have endeavoured to make the abstract a little more informative, but are constrained by the word limits.

• Deeper (but brief) exploration of the difference between countries with regards to the impact of using the high resolution population data set.

See response to the same comment above.

Best wishes,

Dr Andrew Tatem

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