Author's response to reviews

Title: The influence of geographic and climate factors on the timing of dengue epidemics in Peru, 1994-2008

Authors:

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Author's response to reviews: see over
Submission of a research article

Tempe, April 10, 2011

Dear Editor,

Please find enclosed a revised manuscript, “The influence of geographic and climate factors on the timing of dengue epidemics in Perú, 1994-2008”, by Gerardo Chowell, Bernard Cazelles, Helene Broutin, Cesar V. Munayco, which we wish to resubmit for publication in BMC Infectious Diseases.

We have carefully revised our manuscript following the additional Reviewer comments. Please find below our point-by-point response to the Reviewer.

This paper has not been submitted elsewhere, and all authors have approved the final version of the manuscript.

Thank you very much for your consideration.

Sincerely,

Gerardo Chowell

Corresponding author:
Gerardo Chowell, PhD
Assistant Professor
School of Human Evolution and Social Change
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And
Fogarty International Center, NIH
Dear Prof Chowell,

Thank you very much for your email. Please accept our sincerest apologies for the delay in my response. Your manuscript has now been peer reviewed by a third referee, who has assessed the revised version of your manuscript in the light of the previous reports from the referees.

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Referee 3:
Reviewer's report:
'This is a very interesting manuscript that is well worth publishing. However I believe that the authors have not completely answered the points raised by the reviewers and that these need to be addressed.

I will first address the two questions raised by the BMC editorial team:

1. Whether the authors are correct in their assertion that it is generally acceptable to use 'probable' cases of dengue fever as well as definite cases?
I believe that the authors are correct in their assertion as they are using definitions that are based on guidelines that have been set by the World Health Organization.

Response:
We are glad the Reviewer agrees with us. We further note that Probable cases which correspond to clinical cases (instead of only confirmed cases) are really commonly used for studying the infectious diseases spatio-temporal dynamics and globally consist in surveillance data (that also includes some biologically confirmed data). It would be strongly unrealistic to imagine getting confirmed cases for any disease at the national scale in most of the countries in the world.
2. Whether the statistics the authors have chosen are correct and appropriate? Given that Referee 2 thought regression analysis was needed rather than simple correlation and the authors do not really answer this point.

I believe that the reviewer is correct that multivariate regression analysis would be more appropriate that simple correlation analysis in order to adjust for confounders. Therefore I recommend that the authors replace their correlation analysis with multivariate regression analysis.

Response:
We agree that it will be interesting to use multiple regression analysis, but our data are very intermittent and it's important to take into account the nonstationary features of our data (see Cazelles & Hales, 2006, PLoS Med). This is the main reason for our use of wavelet time series analysis in this study.

I have some additional points that the Reviewers have raised that the authors should address:

1. To clarify & simplify the manuscript I would suggest that the authors move some of the Figures in the Appendix into the main text (e.g. S1 and some of the S2-S6) and certain of the more complex Figures in the main text into the Appendix. Currently seven multi-part complex Figures are included in an article that is fairly concise so the Figures 'overwhelm' the text. I also suggest that the authors provide a short description of wavelet analysis in the main text (this is fairly easy), and a longer description in the Appendix, so that the reader has a greater understanding of the results that are displayed in the Figures.

Response:
We have reorganized the figures as suggested by the Reviewer. We have now provided an extended description of Wavelet time series analysis in the Supplement.

2. I agree with the Reviewer that the authors do not show that dengue is frequently imported into coastal regions through infective sparks from endemic areas. If the authors want to make this statement they should make clear that it is a hypothesis that needs to be tested. They may want to consider including some alternative hypothesis in the discussion section.'

Response:
We note that we never mention in the manuscript that the jungle areas are responsible for multiple importation of dengue into coastal areas. In fact, it is worth noting that the original Reviewer of our manuscript over-interpreted our results since we never mention in the manuscript that the jungle areas act as a reservoir. We have clarified this in the manuscript and highlight the need for future work in the region to test the hypothesis that jungle areas of Peru act as a reservoir that spark dengue in other areas of the country.
As you see, the referee raised some concerns with regard to this study, and we would be grateful if you could address these comments in a revised manuscript and provide us with a cover letter giving a point-by-point response to these concerns. Once we have receive this, we will seek further advice from the referee, therefore we very much recommend you that you elaborate on the points above.

Please also highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript to make it easier for the Editors to give you a prompt decision on your manuscript.

Please also ensure that your revised manuscript conforms to the journal style ([http://www.biomedcentral.com/info/ifora/medicine_journals](http://www.biomedcentral.com/info/ifora/medicine_journals)). It is important that your files are correctly formatted.

We look forward to receiving your revised manuscript by 24 April 2011. If you imagine that it will take longer to prepare please give us some estimate of when we can expect it.

You should upload your cover letter and revised manuscript through [http://www.biomedcentral.com/manuscript/login/man.asp?txt_nav=man&txt_man_id=1837850748406449](http://www.biomedcentral.com/manuscript/login/man.asp?txt_nav=man&txt_man_id=1837850748406449). You will find more detailed instructions at the base of this email.

Lastly, once again, please accept our apologies for the delay you have experienced, due to the fact that the reviewer was late in providing us with the report on your manuscript.

Please don't hesitate to contact me if you have any problems or questions regarding your manuscript.

With best wishes,

Sonia

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