Reviewer’s report

Title: Association of dengue fever outbreaks and climate in China

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Reviewer: Peng Bi

Reviewer’s report:

This manuscript raises an important public health issue which has and will continue to challenge the already overloaded healthcare system in China, and the manuscript should fall in the general readership of the BMC Public Health.

However, I do have several reservations for the manuscript, especially for its data analytic approach.

There have been many similar published articles in this area already, and most used very similar methodology to deal with such time-series data, either ARIMA (SARIMA) or poission regression analysis with considering the impact of seasonality and long-term trend (I've listed most of these literatures below). Unfortunately, the authors only use correlation analysis in their manuscript, which is obviously not enough at all. I suggest the authors to read through below literatures and then re-do the analysis--I understand this could be a painful process because it takes time to learn to analyse the time series data and deal with auto-correlation and multi-collinerarity etc.

You may also want to go further in discussion section to talk about the impact of climate change to vector-borne disease (mainly dengue here) in China and more specifically, what kind of relevant response mechanisms should be established?

I would also suggest the authors to have an English proof reading.

RELEVANT LITERATURES:


Hu w, Nicholls N, Lindsay MD, McMichael AJ, Mackenzie JS, Tong S. Development of a predictive model for Ross River virus disease in Brisbane,


Minor points:

page 1, title: epidemic or outbreak? Climate or weather?
page 4, first paragraph could be condensed
page 5, materials and methods section: what does your "Confirmed DF cases" mean? Laboratory confirmed or clinical diagnoisis? In addition, what is your definition for your study cities? Is it for metro only or does it include its rural areas?

page 5: sources of weather data: I would like to see more detailed description about the weather data, daily average maximum or minimum temperatures? Is your relative humidity measured at 9am or 3pm?

Page 5, A reference for your epidemic definition (1/100 000) should be provided;

page 7, in your linear regression analysis, which method do you use? forward or backward?; also a reference for your probability definition should be provided;

Page 7, how did you deal with the lagged effect in your data analysis?

page 21, figure 4, I notice you used 1990 to 2006 data for modelling and then predicted values for 1952 to 2006? Do you have observed vaules from 1952 to 1989 as well? Could also also provide statistical evidences to indicate that your predictity is good?

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests