Reviewer’s report

Title: The influence of climatic factors on the development of hemorrhagic fever with renal syndrome and leptospirosis during the peak season in Korea: an ecologic study

Version: 1 Date: 19 Nov 2016

Reviewer: Ashwin Swaminathan

Reviewer's report:

This is a well considered and designed study assessing the associations between climatic variables and the incidence of leptospirosis and HFRS in Korea over the period 2001 - 2009.

I would recommend review by a statistician regarding the appropriateness and robustness of the methods used for this time-series analysis.

The author's conclusions are reasonable based on the findings of the study and are discussed along with the relevant literature where available.

A few comments for consideration:

* Page 4, Line 46: presumably the authors mean "hantavirus longevity" rather than HFRS longevity?

* Page 4: The authors should review their description of the aetiology of HFRS - the causative viruses are hantaviruses from the family Bunyaviridae, examples of which are Hantaan Virus (HTNV), Seoul, Puumala etc. Line 8 needs to be consistent with this and also with lines 56/57. The authors discuss HTNV in the background and discussion as if it is the only cause of HFRS in Korea (see page 12 and 13). Suggest, changing HTNV-infected rodents to hantavirus infected rodents.
* Page 6: The paragraph under the heading "Epidemiology of HFRS and lepto in Korea" belongs in the background section, not methods. Also, there is repetition of information that can be tidied up - eg. when lepto was first reported in Korea and the outbreak related to the war.

* Page 8: Statistical analysis: Can the authors be more specific as to why the 8 provinces were chosen - was it based on the highest incidences?

* Page 8: Line 31: Could the term "relatively distributed" be clarified? Do the authors mean that the population was spread evenly across the provinces ie. not in concentrated areas?

* Page 8: Line 47 Suggest adding the word incidence to "peak period" eg peak incidence period

* Page 9: Results: Are there statistical differences between the genders / age groups / occupational groups? There are no p values / confidence intervals in the text or table 1 to be able to determine this. ie. was the incidence in men statistically higher than in women?

* Page 15: Discussion of limitations: Some mention should be made of the influence of housing/accommodation on the potential exposure to both environmental factors (e.g. humidity/rainfall/ heat) and vector-borne diseases. Do Koreans in rural areas have less access to air conditioning, treated water, temperature controlled living and work conditions than those in the city?

* Figures and Tables: suggest some measure of statistical significance for Table 1. Also, I can't see Figure 5 or 6?
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 recommend additional statistical review

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