Reviewer's report

Title: The Spatial Epidemiology, Clinical Presentation, and Environmental Risk Factors Influencing the Transmission of La Crosse Virus in West Virginia

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Reviewer: Giovanni Rezza

Reviewer's report:

The study is rather interesting, focusing on a very hot topic (i.e., the emergence of La Crosse virus infection in west Virginia). However, the paper has several weak points. First of all, the spatial analysis may be quite difficult to understand for the average reader of the journal and should be better explained. For example, the meaning of terms as census and county tracts may be obscure for many biomedical scientists, especially for those who are from countries other than US. Furthermore, it is not clear to me whether the incidence risk is a measure of association or a frequency measure (actually it seems a sort of incidence density or maybe a risk and not an association measure. Actually the term "incidence" risk is not commonly used in epidemiology, where they use incidence or risk, depending on the method); this should be better explained. Secondly, it is not clear whether the study is a methodological exercise and whether it is possible to provide a clear take-home message (i.e., geographical variation of La Crosse virus infection can be detected only at the census level or, for example, there wide variation both at the larger - county - and smaller - census - level, etc.). Thirdly, clinical data analysis is, to some extent, out of context in this paper, unless signs and symptoms are presented at the beginning of the results to describe the study population. Finally, environmental analysis is very poor. In absence of a control group, no inference can be made from the frequency distribution of environmental variables (i.e., risk factors may be identified exclusively from a case-control study).

Minor points
Information on clinical and environmental variables was incomplete
Definition of confirmed cases is not reported in the text

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
'I declare that I have no competing interests'