Reviewer's report

Title: Using Web Data to Improve Surveillance for Heat Sensitive Health Outcomes

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Reviewer: Lindsey Butler

Reviewer's report:

This article is very well written. The methodology is novel and has important implications as a future technique for heat-health surveillance. The methods were detailed and easy to understand and the statistical analysis was quite robust.

There are, however, some key limitations which the authors mention briefly but understate.

One -- the utility of of this technique as a surveillance tool for public health departments relies on the department having the resources, employees, and technology to conduct real-time surveillance of Twitter and Google. It is rare that a public health department be so suited.

Secondly -- while the authors mention that users of Twitter and Google are not representative of the general population, this limitation should be expanded upon. The authors should expand on the notion that their lack of an association for cardiovascular and renal disease is likely impacted by the age of patients suffering these illnesses are not likely to be Twitter/Google users.

Moreover, another key limitation of this method as a surveillance tool is that those groups most vulnerable to heat-related illness are those same groups most likely to be missed employing internet related surveillance -- the elderly, young children, and those who are low income (lack access to the internet). Therefore the authors should highlight that this technique is not an appropriate stand-alone tool for heat surveillance but may be used in conjunction with other surveillance methods.

Lastly, it appears that the study was conducted only on English language Tweets and Google search terms. If this is not the case the authors should state other languages that were surveyed. If English was the only language, this is a certain limitation given the high proportion of Spanish speakers in this region.

With minor revisions emphasizing the aforementioned limitations I would be happy to recommend this paper for acceptance.
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An article of importance in its field

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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