Reviewer’s report

Title: Acute effects of fine particulate matter (PM2.5) on hospital admissions for cardiovascular disease in Beijing, China: A time-series study

Version: 0 Date: 02 Jan 2019

Reviewer: Matteo Renzi

Reviewer’s report:

The paper "Acute effects of fine particulate matter (PM2.5) on hospital admissions for cardiovascular disease in Beijing, China:A Time-series study" treats the short-term effects of PM2.5 on hospital admissions for cardiovascular diseases in Beijing during 2013-2017 period. The authors used a time-series study design to answer to the study question. They applied generalized additive models and evaluated the single pollutant effects as main analysis, and two-pollutant, and subgroup analyses as sensitivity approaches. The paper is well written but nor the study question nor the methodologies applied are novel for this field.

Below I report my comments:

Daily count of events: In the Figure 1, the authors reported the daily count of total hospital admissions for cardiovascular events and daily averages of pollutant concentrations. Regarding the daily count of outcome, there is a clear reduction of events in a specific moment (the resolution of the figure is not good enough to recognize the year) with a subsequent reduction of daily variability. The count returns normal during the very last period suggesting a clear bias during the previous years. Maybe some hospitals did not participate to the daily counts for that period? However, this is a critical issue that need to be resolved or explained in details.

Discussion: The Discussion is scarce and need to be implemented. Especially for the comparison with other similar studies, where the authors limited to a few sentence. Please improve this section to allow the readers to better understand what this paper gives to the literature.

Analyses for period: The authors could improve the statistical analyses with some supplemental approaches. For example, the authors could apply an analysis by year to evaluate some possible temporal trends in the health effects.

Table 1: Please remove the "WHO Target" column as it is informative only for O3, PM10 and PM2.5.

Level of interest
Please indicate how interesting you found the manuscript:

An article of limited interest
Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal