Reviewer's report

Title: Carbon monoxide and risk of outpatient visits due to cause-specific diseases: a time-series study in Yichang, China

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Reviewer: Ken Lee

Reviewer's report:

Thank you for inviting me to review this article. Wang et al conducted a time-series study to evaluate the association between ambient carbon monoxide and cause-specific outpatient clinic attendance in Yichang, China. The study reported an association between 1 mg/m3 increments of ambient CO at lag 6 days and increased daily outpatient clinic visits across respiratory, cardiovascular, genitourinary, gastrointestinal and neuropsychiatric diseases. They reported that the association was stronger during the warmer seasons compared to the cool seasons.

This is a large city-wide study with a good description of the methodology and adjustment for potential confounders. I have a few comments you may wish to consider:

Major comments:

1) The article could benefit from some description of the structure of the local health service. The article states that the most significant increase in outpatient visits is at lag06. Could this be because it takes a few days to arrange an outpatient appointment rather than the time it took for CO to exert its health effects? It is therefore difficult to ascertain whether the individual lag estimates for outpatient clinic attendances accurately describe the time course of the acute effects of CO compared to acute hospitalisations for instance.

2) Whilst the authors noted that the associations appeared more notable in older patients, a statistical comparison between different age groups should be performed. The same could be done for gender and season as well to strengthen the argument.
3) I struggled to understand figure 1. As I understand it, the x-axis before the green vertical line indicates individual lags and those after are for moving averages. I would suggest splitting them into two separate graphs to make it clearer. Also, for the moving averages, the x-axis labels only states lag 03.

Minor comments:

1) Overall, the article could benefit from language corrections to improve readability. Particularly the abstract.

2) Table 3 and 4 contains a lot of information. You may wish to consider presenting this as a forest plot to provide a clearer message.

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