Reviewer's report

Title: A big temperature decrease between two neighbouring days may increase the risk of childhood pneumonia

Version: 3
Date: 25 May 2014
Reviewer: Wan Yang

Reviewer's report:

Authors addressed some of my comments and revised the manuscript. Now the introduction, methods, and results read more fluent. However, the discussion still has some redundancy (see comments below). Further, I am still not convinced that the impact of TCN is greater during 2006-2010.

Major comments:
(1) Authors maintained that the impact of TCN was greater during 2006-2010, yet they did not provide any statistical test on this. Looking at Figure 10, the y-axis intercept on the top is greater than that in the bottom; however, the range of temperature drop (x-axis) in the bottom plot (i.e. 2006-2010) is wider than that in the top (2001-2005). That is, if both figures were plotted in the same x-asix scale, the y-axis intercept would probably be similar. Given the broad confidence interval (the surrounding grey area), I don’t think the difference is significant. I suggest the authors revise their statement accordingly throughout the manuscript (including the abstract). Authors should at least state whether the difference is statistically significant.

Minor comments:
(1) Figure 7, 8, and 10 could be combined in one single figure (multiple panels).
(2) page 2 line 22, delete ‘and’ before ‘hence’.
(3) page 3 line 10, change ‘testify’ to ‘test’.
(4) page 5, line 15, change ‘While’ to ‘In contrast’.
(5) page 5 lines 22-23: change to something like “older children (5-14 year olds vs. <5 yr of age), female children (vs. male), and Indigenous children (vs. non-indigenous) appeared to be more vulnerable to the TCN impact.” These are 3 pairs of comparison, and the divisions are not exclusive among the 3 pairs.
(6) page 6 line 17, change ‘were at particular risk’ to ‘were particularly at risk’.
(7) page 6 lines 20-22. move and combine with the paragraph on page 7 lines 22-29.
(8) page 6 line 28 ‘While, …’ I don’t understand the logic here. Maybe the authors are trying the say something like “The time lag of TCN impact is probably due to
two factors: (1) the temperature change which exceeds certain limits may take a few days to trigger subsequent symptoms in children with underlying conditions; (2) there may be another delay between the onset of symptoms and seeking for medical attention.” The way ‘while’ was used in the manuscript sounds weird to me.

(9) page 7 line 1, delete ‘With regard to prior studies looking at the impact of TCN on human health’.

(10) page 7 lines 5-8. delete this sentence. It is repeated in page 7 lines 26-29.

(11) page 7 lines 14-15, change to ‘... argued that such an effect is variable among locations and populations...’

(12) page 7 line 21: change ‘impacta’ to ‘impact’.

(13) page 13 line 9-10. maybe change the sentence to ‘In addition, that effect of TCN on the risk of contracting pneumonia appeared to differ by age, gender, and race/ethnicity’.

**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.