Reviewer’s report

Title: Health impacts of the July 2010 heat wave in Quebec, Canada

Version: 2 Date: 2 December 2012

Reviewer: Peter English

Reviewer’s report:

MAJOR COMPULSORY REVISIONS

The research question should be more clearly defined, and the methods section needs to be improved

The definition of a “heat wave” is unclear, for example – vital, given that the paper is about the effects of a heat wave. “The days in July 2010 when the …temperatures… were equal to or exceeded certain thresholds.” What thresholds? Why are we not told?

The statistical analyses section is extremely short, and it does not properly describe the statistical methods used. I am not very expert in statistics; but I do not get the impression that the appropriate statistical methods were used (though the paucity of information could conceal an appropriate methodology). Given that there may be considerable variation in mortality rates and emergency department visits, I would want to be reassured that appropriate methods were used to be clear whether or not the events observed were not unlikely to arise from random variation; and from the description of the research I am not sure that the data demonstrate this.

Reference is made in the discussion to the absence of a “greater increase in deaths in the elderly”. This is not clear from the way that this is described in the results section. It may be true; but it is not clear. And is this a result that can be stated with confidence (i.e. if the appropriate statistical tests were done, what would the P value be); or could it be that the study did not have the power to detect a true signal?

The use of language in this article is poor – it could be greatly improved by an experienced editor.

MINOR ESSENTIAL REVISIONS

None.

DISCRETIONARY REVISIONS

Please state what “RSS” stands for. (The actual words, not just the translation “health region”.)

The article refers to “mortality displacement”. Can you explain this concept? I am
not sure that the readership of this journal will all recognise the meaning of the expression; yet it could easily be explained in a sentence or two of plain English.

SPECIFIC QUESTIONS
1. Is the question posed by the authors well defined?
The article describes a piece of epidemiological observation. The research question is implicit rather than explicit. The article might be better if it were made more explicit.

2. Are the methods appropriate and well described?
Up to a point they are; but there are important omissions. See above.

3. Are the data sound?
The data appear to be sound.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes, as far as I know (I am not sure about what the relevant standards are).

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Given the complexity of analysis required for this sort of study (due to the background variation), and the paucity of information on the analyses performed, it is hard to be sure of this.

6. Are limitations of the work clearly stated?
I think this section is reasonable.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
They appear to do so.

8. Do the title and abstract accurately convey what has been found?
Yes.

9. Is the writing acceptable?
No.

**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.