Reviewer's report

Title: Applying Verbal Autopsy to Determine Cause of Death in H River Basin, China

Version: 1 Date: 21 April 2011

Reviewer: Kathleen Kahn

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Major Compulsory Revisions

1. Is the question posed by the authors new and well defined?

The question posed in the paper is of interest, ie to determine whether the rates of mortality due to tumours in three counties/districts of China are higher than in control areas and higher than national estimates. However, the aim of the paper should be stated clearly – it is currently embedded in the background section and the reader needs to hunt for this. The question also needs to be more clearly defined and the limits of the paper circumscribed: the background provided suggests that the work might at least produce hypotheses regarding environmental pollution as a potential cause of differentials in tumour rates, but this is not explored in any way in the paper.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The following issues need to be addressed:

• Explain the selection of study and control areas in each of the three counties/districts? How were the countries/districts divided into study and control areas? What were the criteria for defining the boundaries of the study and control areas? Are the study areas closer to River H and the control areas further away? Is the age distribution between study and control areas the same or different?

• What denominator was used to determine tumour prevalence rates? Are these population-based rates or percentage clinical cases?

• Data analysis, paragraph 2: this is a mix of analytic methods and study objectives; this should be clarified in the writing.

• Results, section 1: county X should be mentioned

• Results, section 3, paragraph 1: how was the impact of aging of population controlled for?

• Results, section 3, paragraph 2: 0.96 is not an increase

• Results section 4, paragraph 1, lines 9 and 10: mortality and prevalence rates of various malignant tumours in S County and Y District were not all higher in the study compared to control areas; some were lower (Table 4). Statement in text needs to be adjusted
3. Are the discussion and conclusions well balanced and adequately supported by the data?

• Study limitations and quality control measures were well discussed.
• Can the authors cite relevant literature from any other countries?
• In the background, mention is made of high levels of environmental pollution in the three counties/districts, presumably in relation to River H. This idea is never returned to and is left hanging for the reader. Given the differentials in tumour mortality and prevalence rates found between control and study areas, what hypotheses are generated for further study?

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

The abstract should be re-drafted as the reader is unclear on several issues in its current form:

• What defines control and study areas?
• Prevalence study of what?
• Change “tendency” to “trends”
• Results, line 5: these are rates not numbers
• Conclusions: could higher rates of gastrointestinal tumours be environmentally linked? Conclusion of main paper also mentions lung cancer

The title is very general and does not inform the reader that the focus is on mortality due to tumours.

5. Is the writing acceptable?

• Requires editing and spelling check.
• There is repeated use of the word “tendency” in the abstract and text. This needs to be replaced with the word “trends” in most instances.

Minor Essential Revisions

• Table 2
  o title needs to indicate that the excess mortality is between control and study areas
  o column 2 “cancer”: is this national estimates?
• Table 3
  o Title should indicate the two time periods. Are the figures in the table the RR? Indicate in title
• Table 4
  o column 2 “cancer”: is this national estimates?

Minor issues not for publication
Typos / spelling errors

• Background, paragraph 2, line 1: deaths
• Data analysis, paragraph 2, last line point 1): mortality
• Results, section 2 and 3, line 2: malignancy
• Discussion paragraph 2, line 3: factors
• Discussion paragraph 3, line 1: limitations

Other
Discussion, paragraph 2, line 2: add the word “information” after COD at end of sentence

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests