Reviewer's report

Title: Water and sewage systems, socio-demographics, and duration of residence associated with endemic intestinal infectious diseases: A cohort study

Version: 2  Date: 9 September 2010

Reviewer: Clarence Tam

Reviewer's report:

Major essential revisions:
1. If I understand the analysis correctly, the authors have modelled the log odds of a healthcare consultation during the study period. The dataset, however, is made up of individual person-days of observation, and different participants contribute varying lengths of person-time to the study. The results presented, however, do not seem to account for clustering of observations within individuals. In the last paragraph of the methods, the authors allude to using generalized estimating equations to account for repeated measures and state that estimates and inferences remained unchanged. The modelling approach should be clearly explained, and even if estimates are unchanged, the correct results to present, however, are still those from an analysis of clustered data. The effect of clustering will almost invariably be to give wider confidence intervals to reflect the additional uncertainty.

2. It's not very clear exactly how some of the exposure variables were modelled, e.g. was total rainfall accumulation measured in number of mm of rainfall over 2 weeks, and was it modelled as a continuous or ordinal variable? What about chlorination? Perhaps these details can be added as supplementary material.

3. Related to the above, a number of these exposures appear to be time varying, e.g. rainfall, and therefore associations are potentially subject to confounding due to seasonal and other long-term trend patterns. Did the authors account for this in the analysis?

Minor essential revisions:
1. Abstract, sentence 1 – presumably this should refer specifically to water-related GI diseases
2. Background, para 1 – should be Escherichia coli O157

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests