Reviewer's report

Title: Community-level Risk Factors for Notifiable Gastrointestinal Illness in the Northwest Territories, Canada, 1991-2008

Version: 2 Date: 6 January 2013

Reviewer: Emily Jenkins

Reviewer's report:

Re-review:

This study is much improved, and represents an important contribution to the field (socioeconomic and cultural determinants of health). It is still difficult to follow the logic of the authors at times, and the jargon is still off putting for a non-epidemiologist (but perhaps this is appropriate for the journal audience). Although there are no word limits, some tightening up would increase readability and prevent overinterpretation. I hope the authors take these comments in the spirit in which they are intended, which is to maximize the impact of all their hard work.

My comments are addressed to my satisfaction, with the following exceptions:

Results comment 3: my point was that whether a community had a nursing station, health centre, or hospital was likely a surrogate for community size, and I wondered why community size was not included in the analysis as it seems like the data would be easily obtained. This was not a comment regarding sample size or power.

Discussion comment 1: the line number given in the author rebuttal directs me to the title of the discussion?

Conclusion comment 1: I appreciate the definition of nondifferential exposure misclassification, but this still required me to do a Google search – can you rephrase in lay terms? Is this a specific concern for this study (and thus critical), or just a general reminder of the limitations of ecological studies (and thus probably best to leave out)?

Detailed comments (minor essential):

L 35-36: “There was an increased risk of infection with Salmonella for communities with higher proportions of households in core need” ADD: up to 42% of the households in the community in core need.

L38-39: what about communities with only a nursing station? Were these pooled with those having a health centre?

L 50: database limitations? Such as missing data?
Generally one would expect to see citations for the published studies mentioned here.

Good to emphasize that these are laboratory confirmed cases, as misclassification is unlikely. Also good to mention in the discussion that these likely represent underestimates due to underdiagnosis. Scallan et al. (2011) uses underdiagnosis modifiers of 30, 29, and 46 for Campylobacter, Salmonella, and Giardia, respectively, in the US population; conceivably these could be even higher in the Canadian north.


“Zoonotic transmission of giardiasis is not believed to play a major role in human infection” – there really isn’t the molecular epidemiological data to support this statement or its converse – we really don’t know. Authors may also be interested in 2 other reports of zoonotic (vs animal species specific) genotypes of Giardia in muskoxen and dogs in the NWT:


As suggested, the authors have provided a more balanced view of the benefits and risks of country food consumption.

In more remote locations, increased food prices, as well as country food consumption and trapping together, were associated with decreased risk of Campylobacter. Authors may wish to consider that the connection here is that consumption of store bought chicken and eggs (highly linked with Campylobacter in people in numerous case control and cohort studies) is decreased in such communities.

And yet higher consumption of country foods (with a corresponding decrease in consumption of retail meats) is probably protective against Campylobacter in chicken and eggs, and Salmonella in pork... This sentence also seems to contradict Lines 249-252.

“The percentage of households in core need at the community level was positively associated with salmonellosis” Add: up to 42% of the households in the community in core need.

Three variable states are mentioned in the table: nursing stations, health care centres, and hospitals. What happened to the nursing stations?
L328-350: These are a welcome discussion of the study limitations, but are not conclusions of the study. These lines should be moved to the discussion, in order to keep this section tightly focused on the conclusions supported by the study findings, and their significance in the broader context of the field.

Table 1:
The first sentence of the definition for households in core need is grammatically incorrect and a bit unclear.
Definition of traditional foods: last word should be harvested, vs harvesting?
Population density: should be area, vs are?
Figures 1 and 2: the x axis title should be on the top with the scale (or move the scale to the bottom)

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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