Author's response to reviews

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

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Author's response to reviews: see over
Thank you for your feedback. Below are my responses. Changes are also highlighted in yellow in the document.

1. 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.

*APA: We (authors and Gov of NWT) decided to use population density instead of population size as we felt that the spatial distribution of residents (sparse in many areas) was important for understanding socio-economic, accessibility (e.g. health care, other resources), cultural, environmental and political issues as well as for planning interventions and guiding policy recommendations. Generally the literature shows a pattern of increasing disadvantage as population density declines.*

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

*APA: Sorry please see lines 214-217*

3. 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)?

*APA: I’ll leave it out*

**Detailed comments (minor essential):**

4. 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.

*APA: ok changed it*

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

*APA: no they were not pooled together. Nursing stations was not a significant variable in the model. Please see table 2.*

6. L 50: database limitations? Such as missing data?

*APA: yes I added “(e.g. missing data)”*
7. L 58-60: Generally one would expect to see citations for the published studies mentioned here.

APA: References 1-6 cited in the sentences following L58-60 were the published studies I was referring to but I have now added [1-6] at the end of L58-60 to make it more evident.

8. L99: 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.

APA: ok please see lines 100-101 and 336-344

9. L225: “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.

APA: ok I rephrased it please see lines 227-230

10. L273-275: 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.

APA: ok rephrased it please see lines 251-254

11. L284: “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.

APA: ok

L309: Three variable states are mentioned in the table: nursing stations, health care centres, and hospitals. What happened to the nursing stations?

APA: Not a significant variable in the model please see Table 2
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.

*APA: ok added limitations to discussion section*

**Table 1:**

The first sentence of the definition for households in core need is grammatically incorrect and a bit unclear.

*APA: ok changed it*

Definition of traditional foods: last word should be harvested, vs harvesting?

*APA: ok changed it to harvested*

Population density: should be area, vs are?

*APA: ok changed it to area*

Figures 1 and 2: the x axis title should be on the top with the scale (or move the scale to the bottom)

*APA: ok moved scale to the top*

**Editors comments**

1. Change abstract to appropriate format
   
   *APA: ok revised it*

2. Remove white space from figures
   
   *APA: ok no more white space*