Reviewer's report

Title: Country Characteristics and Acute Diarrhea in Children from Developing Nations: A Multilevel Study

Version: 2 Date: 3 November 2014

Reviewer: Niko Speybroeck

Reviewer's report:

The topic of the paper is interesting but I have a few concerns:

1. The models are developed based on the available data and not on a conceptual model. This creates the risk of a mis-specified model. I would like to see such a conceptual model, based on a literature review followed by estimating those parameters (of this conceptual model) that the data allow for. Such a review will also allow understanding which important variables were omitted.

2. Two levels are considered in the models uses, namely country and individuals. In a multilevel analysis the household should be considered as a level, separate from the individual level. Furthermore, the authors say that a stratified sampling procedure is used. However, this survey design characteristic is not taken into account in the model.

3. The authors mention that they have been “Using hierarchical linear modelling”. This is too vague. The exact model, with the random effects etc… should be specified.

4. It is unclear how the interaction effects were estimated.

5. A map, indicating the differences between countries may be needed.

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

Quality of written English: Acceptable

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

Declaration of competing interests:

I have no competing interests