Title: Water purification and sanitation infrastructure is predictive of diarrheal disease burden in remote Nicaragua

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Reviewer: Donald Cole

Reviewer's report:

When assessing the work, please consider the following points:
1. Is the question posed by the authors well defined?
   Yes, p 2

2. Are the methods appropriate and well described?
   p.4 say more re 30/7 for those readers like me who do not know it.
   p.5 I think the authors are referring to collinearity in choosing the socio-economid indicator i.e. not appropriate to use poverty index, when sanitation within it.
   would move consent and ethical review from statistical analysis among water tx, latrine use and diarrhea....?
   should use the more general term covariates, prior to going at effect modification and confounding

3. Are the data sound?
   Yes, nicely done.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes for the former, not sure what the latter are....

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Nice use of prevalence difference – adds something in NNT, that not as apparent in systematic reviews of water and sanitation interventions.
   Contextualizing in the flood plain environment may be helpful. i.e. political and social marginalization, plus ecosystem challenges.

6. Are limitations of the work clearly stated?
   Some yes.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   Could reference the intervention effectiveness literature better, and hence the
complementarity of their findings.

8. Do the title and abstract accurately convey what has been found?
More or less…I would emphasize the specific opportunity to reduce burden in a marginalized, flood plain population, rather than the causation findings. The nuance is not currently well captured in the title, results or conclusions. Suggest reducing the background and methods to make room for it.

9. Is the writing acceptable?

• Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

None of the above....