Reviewer’s report

Title: The impact of healthcare visit timing on reported pertussis cough duration: Selection bias and disease pattern from reported cases in Michigan, USA, 2000-2010.

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Reviewer: Aaron Wendelboe

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This manuscript is a brief and narrowly focused study using an approach combining surveillance data and data simulation to demonstrate the effect health care seeking bias and case-exclusion bias has on determining the effectiveness of antibiotic treatment in reducing cough length caused by infection with Bordetella pertussis. I appreciate the study design, the simplicity, and the hypothesis. However, I find the methods and results confusing. While I admit the authors' expertise likely exceeds my own in conducting the present study, I should be able to follow their methods and results sufficiently to make an evaluation of the merits of the study. I fear among the journal's broad audience, only a small fraction would be able to follow this paper. I recommend the following:

1) the authors provide greater detail in the methods such that others could replicate their work.

   1a) page 5, line 34: explain in more detail how the mean theoretical cough duration was calculated 5 times.

   1b) define "left truncated." I actually think they defined it on page 5, lines 37-41. However, the organization of the paragraph is confusing that I'm not sure that's what they are defining.

   1c) clarify the relationship between the simulated data and the surveillance data. Perhaps add a table that shows the surveillance data and the simulated data and the difference between them.

2) Reorganize Table 1 so that the results are clear and jump out at the reader (this is an extension of 1c above). For example, I expected to see a column that shows Observed data (which are hypothesized to be biased). Then a column showing the "corrected" results as a results of the simulation. Then a column showing the degree of over- or under-estimation (in days).

   2a) the text of the results should be very easy to read - that even if you're not a modeler, that you can clearly understand that under assumption A, you get RESULT 1, under assumption B you get RESULT 2, etc. (Even after reading the methods and results through several times, I still can't tell you what the results of the study are.)

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Unable to assess

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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