Reviewer's report

Title: The impact of regular school closure on seasonal influenza epidemics: a data-driven spatial transmission model for Belgium

Version: 1 Date: 20 Jun 2017

Reviewer: Hongjiang Gao

Reviewer's report:

This manuscript was well written and the experiment in the simulation was carefully designed. Math was also correctly annotated throughout the manuscript and in supplementary material. However, the methodology applied in this research are not completely new. The results are not unexpected nor unprecedented. I also want to share several general comments below:

1) In the simulation setup, I don't see any consideration for the possibility of infected or exposed individual becomes asymptomatic, in other words, individuals get infected but don't develop symptoms. It probably doesn't alter your results and conclusions, but it is a questionable assumption that all infected will become symptomatic.

2) The time-step in your simulation is half-day, 12 hours. Let's say one day consists of one day-time step and one night-time step, however, the contact matrix C in this paper is assumed a constant value across the whole simulation timeline. Would that be possible to have a day-time contact matrix and night-time contact matrix between adults and children? Or use regular weekend contact matrix as night-time contact during the weekdays? Otherwise, it is just hard to believe kids and adults will interact the same way no matter day-time or night-time, for example, there might be more contacts in day-time step for kids because of school, same among adults because of work.

3) It is a very thoughtful idea to explore different timing in section 3.4. I'm wondering if authors can also explore other seasonal influenza characteristics, such as some seasons have higher attack rate among kids, but other seasons have higher attack rates among adults. Please note, this is just a minor comment compared with above two major ones.
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.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
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Yes

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Not relevant to this manuscript

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Please indicate the quality of language in the manuscript:

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