Reviewer's report

Title: Analysis of the effectiveness of interventions used during the 2009 H1N1 influenza pandemic

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Reviewer: George Rachiotis

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General
Mathematical models have been used in order to simulate the spread of a pandemic and consequently to estimate the effectiveness of different control measures.

The authors presented the results of analysis of interventions used during the A/H1N1 2009 pandemic by using a detailed individual based model of a real community. This is a quite interesting paper and it should be included. However, before the publication some issues have to be clarified in order to strengthen the study.

Major Compulsory Revisions

1. Title: The authors have concluded that the aggressive use of antiviral drugs together with extended school closure may substantially slow the rate of influenza epidemic development. This finding has significant implications, and on the base of the above I believe that this conclusion should be reflected in the title of the paper (MCR).

2. Methods: The model used in the study did not take into account other essential non- pharmaceutical interventions like workplace closure, hand washing, etc. It would be interesting if the model and thus analysis could be enriched, and enlarged by including some of these parameters. I would like to see authors’ response about the feasibility of this option (MCR).

3. Discussion: If the analysis does not include some of the above mentioned factors, this has to be clearly mentioned in the discussion as a limitation of the study (MER).

4. Discussion: It seems that the main finding of the study is that the combined aggressive use of antiviral drugs and extended school closure may be effective for the control of A/H1N1 2009 influenza pandemic. However, the prophylactic use of antiviral drugs could lead to antiviral resistance development. Authors have already discussed this issue but I feel that it deserves further attention in the discussion section and in particular when discussing the limitations of the study (DR).
5. Discussion: Regarding school closure strategies authors found that closure of one week has limited impact in the pandemic control while closure of two or more weeks is more effective demonstrating a linear pattern. Furthermore, the finding that the combined application of school closure and antiviral strategies further reduced the impact of epidemic is a notable finding given the low acceptance rate of A/H1N1 2009 vaccine. (DR)

Minor essential revisions:

References should be properly cited with all necessary information (e.g. date; see for instance ref. 5,6,7).

It is suggested to use the term “A/H1N1 2009 influenza pandemic”.