Reviewer's report

Title: Post-exposure prophylaxis during pandemic outbreaks

Version: 1 Date: 16 November 2009

Reviewer: John D Mathews

Reviewer's report:

1. Is the question posed by the authors new and well defined?
   Yes. The paper addresses the relative values of post-exposure prophylaxis and treatment with antivirals in the presence of transmissible resistance.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?
   Yes.

3. Are the data sound and well controlled?
   As this is a simulation study, the "data" can be considered to be the parameter values used for the model simulations. The range of values used seems generally plausible, although one might quibble with the rates assumed for the emergence of drug resistance.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   The manuscript is of adequate standard. One might quibble with the use of R0 rather than R - as the former implies that all members of the population are susceptible, and this may not be the case, even with a pandemic strain such as H1N1v 2009. However, from a practical point of view, the model outcomes in this study are not affected by the R0/R difference.

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes, the conclusions are well supported by the simulation results, provided that one accepts the assumptions about model parameters. Indeed, the basic message is that if resistance develops as rapidly as is assumed in this paper, the most efficient and effective strategy is to concentrate on treatment rather than PEP. Indeed, in view of the difficulty of contact tracing to support PEP, the conclusions will be reassuring for public health authorities and particularly for clinicians who have had concerns about the possibility that antivirals might be "wasted" on PEP.

6. Do the title and abstract accurately convey what has been found?
   Yes.

7. Is the writing acceptable?
   Yes.

Please make your review as constructive and detailed as possible in your
comments so that authors have the opportunity to overcome any serious deficiencies that you find and please also divide your comments into the following categories:

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore) Improved discussion about emergence rates would be helpful.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct) There is a typo H1H1 on page 13.

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached) None

Once you have done this, there are also some questions for you to answer, including one that asks whether you think the article is of sufficient importance to be published in BMC Medicine or whether it is more suited to one of the subject-specific BMC journals. If the work is sound but not up to the standard required by BMC Medicine we will give the authors the option of publication in a subject-specific BMC journal.

**Which journal?:** Appropriate or potentially appropriate for BMC Medicine: an article of importance in its field

**What next?:** Accept for publication in BMC Medicine after minor essential revisions

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I was an expert witness to the Victorian Supreme Court in 2007-8, in an action relating to antivirals for influenza. My evidence related solely to the epidemiology of influenza, and potential utility of antivirals.