Reviewer's report

Title: Assessing secondary attack rates among household contacts at the beginning of the influenza A (H1N1) pandemic in Ontario, Canada, April-June 2009: A prospective, observational study.

Version: 1 Date: 15 January 2011

Reviewer: Udo Buchholz

Reviewer's report:

The paper is a straightforward household transmission study which adds to other studies that attempted to determine SAR in households and if children are more susceptible than adults.

Major revisions:

(1) The paper has in my view a few weaknesses that could be remedied with doing some reanalysis. The first is that households with co-primary cases were not excluded. This is normally done. The reason being that the co-primary cases could be a true secondary, or alternatively a true co-primary. In the second case the infection pressure on household contacts is doubled, so the conditions are not the same in all households. The second point is that there is variable and, in my eyes, much too long, follow-up time. A secondary case occurring 12 days after symptom onset of the primary case was hardly infected by the primary case. I would therefore recommend to (i) remove households with co-primary cases, and (ii) include only those households where you have equal follow-up time, e.g. 8 days. Then also cut cases that occur after that period.

(2) The handling of household contacts who were symptomatic before the "primary case" seems odd. Why 3 days? If they occurred within a range of say 5 days I would simply treat them as the true primary case if they match the ILI case definition. If they dont and were just symptomatic I would probably exclude the household altogether, but it may be discussable to just exclude that household contact from analysis.

(3) For the calculation of the serial interval I would not include potential tertiary cases because you dont know from whom they were infected.

Minor points:

- Abstract: "range" is given for attack rates, but I suppose one is the ILI, and the other is the ARI attack rate. I would not call it a range.
- page 7: what is iPHIS? (spell out)
- Is it really true that primary cases were not treated with oseltamivir? Was it ascertained if they were? It influences to a certain extent the results because antiviral treatment can reduce infectivity.
- You have not discussed the paper by Suess (AJE 2010).
- page 13: another reason why children have higher attack rates may be their contact behaviour within the household.
- Overall the paper seems to long for the contents, even if there is no space requirement.
- The last sentence in both the abstract and the conclusion really comes out of the blue, I don't find it much supported or following from the study as presented.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**
I declare that I have no competing interests