Reviewer's report

Title: The role of facemasks and hand hygiene in the prevention of influenza transmission in households: results from a cluster randomised trial; Berlin, Germany, 2009-2011.

Version: 1 Date: 23 November 2011

Reviewer: Benjamin Cowling

Reviewer's report:

This is a report of a randomized controlled trial of NPIs in households in Berlin. It follows the design of previous similar studies conducted in Hong Kong and Bangkok. Although the sample size was small, the authors performed a number of subset analyses and found evidence of an intervention effect in some subsets.

Major compulsory revisions

None

Minor essential revisions

1. Top of page 9, I wonder whether "subclinical" would be better terminology than "asymptomatic"

2. Near top of page 9, please clarify whether EUR150 was paid per participating person (i.e. to each index case and each household member) or per participating household. If per person, this seems like a large amount.

3. Near top of page 9 - please consider slightly expanding the description of sample collection, so that this manuscript can be read and the study replicated without reference to [#9].

4. Bottom of page 9, power calculation, please could you add a note on the observed overall effect sizes in the Hong Kong and Bangkok studies, i.e. point estimates ranging from a 43% reduction to a 20% increase in risk.

5. Page 10 - "... adjusting for potential confounders." Please note that these variables should not be confounders assuming your randomization was implemented as stated. To be a confounder here, a variable must be associated with the intervention as well as the outcome. Perhaps rephrase as "...variables potentially associated with risk of secondary infection..."

6. Table 1 contains a lot of numbers and some may be redundant. For example in the first Control group column, all the "/13" may be deleted since n=13 is stated at the top of the column, and a footnote added for chronic illness that data were missing for one participant.
7. Please confirm in the methods whether swabs from household contacts were tested for both A and B regardless of index case influenza type, and if so please mention in the results whether all PCR-confirmed infections in household contacts were of the same type as the index case. More detailed analysis to confirm household transmission could be done by viral sequencing (as reported by Papenburg 2010 Clin Infect Dis, Poon et al. 2011 J Clin Virol) but comparison of types would be an easier way to reassure readers that secondary cases were infected by the corresponding household index case.

8. In Table 3 please clarify whether the ORs are univariable or multivariable. It seems from the footnote that the ORs come from separate models each only including one variable plus the intervention group.

9. Discussion, bottom of page 32 could one other reason for greater reported adherence be the greater frequency of home visits compared to the Hong Kong and Bangkok studies? Please consider showing a little more caution in comparing self-reported adherence between studies, since reporting behaviors may differ for cultural or other reasons. The last sentence may clarify that there was "high overall /reported/ adherence". Certainly the magnitude of the effect observed in this study is consistent with good adherence to the interventions.

**Level of interest:** An article of importance in its field

**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 no competing interests.