Reviewer's report

**Title:** Determinants of adults' intention to vaccinate against pandemic swine flu

**Version:** 1 Date: 19 May 2010

**Reviewer:** Bevin Cohen

Reviewer's report:

The authors aimed to address an important and well-defined research question: what are the factors that influenced adults' decisions to intend to be vaccinated for 2009 H1N1? Suggestions to the authors are as follows:

Introduction:

1. The introduction is somewhat long and could be condensed by (a) using more parsimonious language and (b) reducing the amount of discussion about the history of various behavior models. Defining and providing a brief overview of the validity of social cognition models for explaining health behaviors is helpful and important, but much of the paragraphs on pages 5-6 seem superfluous.
   (Discretionary Revision)

2. It might be confusing for readers in other fields to keep track of the various models and abbreviations, especially in a sentence like this: “The purpose of extending the TRA to the TPB through the addition of PBC…” (p. 5).
   (Discretionary Revision)

3. The discussion of which variables were included in the authors' study at the bottom of first paragraph on page 7 seems premature and should be moved to the methods section.
   (Minor Essential Revision)

4. The two informational leaflets mentioned in the last paragraph on page 7 should be described in detail, either in the introduction or in the methods. Important facts include who published the material, when it was disseminated, and what specific information was included.
   (Major Compulsory Revision)

Methods:

5. An extra sentence in the “participants” paragraph describing the larger international study and how these data fit into the larger study would improve understanding of the data.
   (Major Compulsory Revision)

6. It would be helpful to list the other priority vaccination groups (either here or in the introduction), or provide a reference to such a listing.
7. The number of participants, their age and gender, and comparisons between online and paper responses should be moved to the results.

8. The sampling procedure is not well enough defined. The authors state that some respondents filled out a paper questionnaire, but the distribution/sampling methodology for this is not described. The online survey was disseminated using “snowballing” methodology by posting links on “general” and “social networking” websites, but it is important to define more specifically the types of websites used, as different sites are trafficked by different demographic populations.

In the “measures” section:
9. Omit abbreviations for each measure; these are short enough to spell out and difficult to remember throughout the paper.

10. Enumerate all possible choices on each response scale used.

11. Briefly list all items asked in each category instead of providing just one example.

12. Avoid repetition by reporting all chronbach alphas in one statement at the end of the section, e.g., “Items within the attitude, self efficacy [etc.] categories measured the same constructs and responses were highly correlated (alpha=0.97, 0.89 [etc.] respectively) so the mean of items within each category were used. No internal validity analyses were conducted for perceived barriers and benefits of swine flu vaccination because items within these categories measured separate constructs.” Alternatively, this can be reported in the results, since the reliability testing is not mentioned until the subsequent “statistical methods” section.

13. Results of the demographic questions should not be reported in the methods section. Also, the authors should explain how categories were collapsed, since all respondents were placed into either black, white, or Asian without use of an “other” category.

Results:
14. A simple table of univariate analyses should be provided (to include N and distribution of responses for each question). This would be very helpful for
describing the “knowledge” and the “intention to have a swine flu vaccination” paragraphs.

(Major Compulsory Revision)

15. The last paragraph of the results repeats methods (i.e. the sentence “To investigate the determinants of intention…”) and also introduces new information that should have been included in the methods (i.e. information about variable blocking).

(Minor Essential Revision)

Table 1:

16. Although the statistical aspects of the analysis should be reflected in the table, either in the title or in a footnote, the title should be phrased in a way that reflects the research question, e.g. “Hierarchical multiple regression analysis of factors associated with intention to receive 2009 H1N1 vaccination.”

(Minor Essential Revision)

17. Names of all scales (e.g. “TPB”) should be spelled out.

(Minor Essential Revision)

18. There is no mention of how variables were coded. For example, “attitude” is clearly a significant predictor of intention to be vaccinated, but it is unclear what the negative beta coefficient means. Are people with more positive attitudes more likely to be vaccinated? More negative? These questions really need to be clarified for each and every variable in order for readers to be able to properly interpret the meaning of the various coefficients. As mentioned previously, the methods do not clearly state what, exactly, was asked of each respondent and how responses were categorized. It is not stated whether all items on each scale were asked in a “positive” direction or were mixed, and this is very important given response scales of “valuable-worthless” and “strongly agree-strongly disagree.” Variable names in the table must also be expanded to clarify meaning, using the same language as in the methods section when possible.

(Major Compulsory Revision)

19. Exact p=values should be reported.

(Minor Essential Revision)

Discussion:

20. In general, the discussion appropriately compares these results to that of previous studies and identifies practical uses for the authors’ conclusions. However, the following statements require clarification, either due to grammatical or conceptual issues:

“During the current swine flu pandemic, the availability of the vaccination…with have met with limited success.” (p. 14)

“It might be in this study…for a similar vaccination programme.” (p. 15)
"A means to incentivize people to have pandemic vaccination...they cannot be bothered." (p. 15)

"On the whole, knowledge of swine flu vaccination...distributed to every household in the UK in the early stages of the swine flu alert." (p. 16) -- This sentence seems to contradict itself. Wouldn't knowledge be better given that leaflets were distributed?

(Major Compulsory Revision)

21. The authors could cite more studies about differences in intention to receive vaccination based on race and also articulate the findings of those studies more specifically, as they did investigate the reasons for vaccination receipt and beliefs surrounding vaccination based on race.

(Major Compulsory Revision)

22. The authors should cite their “snowball” sampling method as a limitation, since this method is likely to result in selection bias. The sample size was also somewhat small.

(Major Compulsory Revision)

Conclusions:

23. The conclusion that “This study has shown that a social cognition model can be used as the basis of an intervention to improve uptake of vaccination...” seems to reach beyond the results and the stated aims of the study. This study used a social cognition model to identify factors that influence people’s intentions to be vaccinated. A more appropriate conclusion would reflect the actual findings (e.g. that perceived control, but not self-efficacy affected people’s intentions) and suggest that (1) future studies could use social cognition models to identify predictors of actual vaccine uptake (and potentially compare these findings to predictors of people’s intentions to be vaccinated) and (2) once identified, these factors could be used to craft targeted interventions aimed at increasing vaccine uptake.

(Major Compulsory Revision)

General:

24. Some of the language is rather casual. For example:
   “...and more per head than any other country...” (p. 4)
   “We wanted to know whether we would have a similar pattern...” (p. 7)
   “Knowledge was not particularly good.” (p. 12)

(Minor Essential Revision)

25. The authors at times abandon conventional formatting of research manuscripts; there are methods reported in the introduction, results reported in the methods, and methods reported in the results.

(Minor Essential Revision)
26. There are many minor but distracting punctuation and grammatical errors.  
(Minor Essential Revision)

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

**Quality of written English:** Needs some language corrections before being published

**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.