Author’s response to reviews

Title: Predictors of Knowledge of H1N1 Infection and Transmission in the U.S. Population

Authors:

Elana Savoia (esavoia@hsph.harvard.edu)
Marcia A Testa (testa@hsph.harvard.edu)
Kasisomayajula Viswanath (vish_viswanath@dfci.harvard.edu)

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Author’s response to reviews:

Date February 2, 2012

Title: Predictors of Knowledge of H1N1 Infection and Transmission in the U.S. Population

Re: Resubmission and response to the reviewers

Dear Editor,

We are very grateful to the reviewers for their positive and helpful suggestions and we feel that the quality of the manuscript has been significantly improved. Below we provide detailed responses to each comment including the two major revisions outlined by the editor: the survey response rate and the potential misinterpretation of ORs. Revisions were made based on the reviewers’ suggestions as described point by point below. The manuscript was also reviewed for language, grammar and punctuation.

Sincerely,

Dr. Elena Savoia
Phone: 617-384-9055

Comments from Referee 1: Major Compulsory Revisions

In the section on Methods: Data analysis, the authors describe their use of multivariate ordered logistic regression as the primary statistical method to assess the outcomes. However, the outcomes (knowledge about H1N1 transmission and knowledge about signs and symptoms of H1N1) are relatively common (44% checked both correct answers for H1N1 transmission and 69% checked all 3 correct answers for signs and symptoms). Although the authors are technically correct in that they always present the results as odds ratios or % increased odds,
in my opinion, some readers may not be technically sophisticated and may misinterpret these results as reflecting the relative risk. The odds ratio in this case likely significantly overestimates the true proportion ratios, prevalence ratios or relative risk. Especially since this is an article about public communication, it is essential that it presents its results in the clearest possible fashion for the potential audience. Consultation with a statistician would be useful to determine the best statistical method for this data in addition to using logistic regression, to provide a more accurate estimate of the true relative risk. If this is not done, at a minimum, the discussion should emphasize that increased odds does not equal the same amount of increased risk.

Response from the authors:
Data analysis: We agree with the reviewer that the interpretation of the results of the ordered logistic regression can be misleading to a reader with limited statistical background. We are aware of this limitation which is due to the technique we chose. The reviewer suggested we consult with a statistician outside of our group (please note that one of the authors Dr. Testa is a senior lecturer in Biostatistics at HSPH) to understand if there are other statistical techniques that we could use to avoid potential misinterpretations. We also made additional consultation with another biostatistician who also was supportive of our approach of using ordered logistic regression model as the best fit for the outcome variable we selected. The outcome variable we selected is not a disease or clinical status but level of knowledge, because we believe that level of knowledge is commonly perceived as a ordered variable we think the reader is less likely to misinterpret the ORs derived from the analysis compared to what could happen with a different type of outcome. However, we understand the need to make sure that the reader correctly interprets the results taking into account all limitations of the technique being used. We avoided the use of the words “increased odds” throughout the manuscript and now replaced it with likelihood. Also, we now address such limitations in a new paragraph added after the results section on page 13 namely “study strengths and limitations”. In this paragraph we address the issue of the likelihood of overestimation of the true proportion ratios. We also include some of the references suggested by the reviewer.

Comments from Referee 1: Minor Essential Revisions
The authors do not present the number of individuals invited to participate in this study, the overall response rate, or the final survey completion rate. This information is necessary, in my opinion, and would be useful to better interpret the generalizability of the results of the study.
Response from the authors:
The response rate was high for this type of surveys (RDD) 66.3% and we now report it in the abstract, in the results and in the new paragraph on “strengths and limitations” on page 13 as a strength of the study with potential impact on the generalizability of the results.

Comments from Referee 1: Discretionary Minor Revisions
In addition to using household income, another area-based socioeconomic indicator that
may be useful for the authors to examine is the census tract level measure, “% of persons
below poverty.” (Krieger et al. Race/Ethnicity, Gender and Monitoring Socioeconomic
Gradients in Health: A comparison of Area-Based Socioeconomic Measures – The Public
Health Disparities Geocoding Project. AJPH 2003; 93: 1655-1671.) It might be interesting
to use this measure in a mixed model or multilevel analysis, assuming that the census
tract of respondent’s residence is available to the authors.

Response from the authors:
We agree with the reviewer and it is a good suggestion. However, in the current data set, we do not have the data necessary to derive area based socioeconomic measures. We are familiar with the work performed by Krieger et al. and plan to include this type of data in future studies.

Comments from Referee 2:Major Compulsory Revisions:
Results (p. 9): Despite the authors’ detailed description of the study methodology, the authors failed to mention the response rate obtained from the RDD and address-based sample. The response rates reported for some RDD samples have been underwhelming (e.g, 5-40%). Hence, if the response rate is low, the findings would not be very useful when developing policies to reduce transmission of H1N1 in the United States.
Before further consideration of this manuscript, this reviewer requests that the authors provide information on:
1. The response rate in the RDD and address-based sample.
2. How their findings would be generalizable to the US population if the response rate from the RDD and address-based sample is low, as reported in similar studies.
Conclusion (p. 15): The authors do not address any limitations (bias) related to RDD and address-based sampling in general, and cross-sectional studies in particular: How would such bias influence the direction of the estimates derived from their regression models?

Response from the authors:
We agree with the reviewer we omitted to report the response rate. For this survey the response rate was good 66.3%. We now report the rate in the abstract (line 10), in the results and in the specific section that we developed in response to the reviewers’ comments named “study strengths and limitations” on page 13. We now address the generalizability of the results in the discussion with emphasis on the use of the development of policies to reduce transmission of H1N1 in the US.

We agree with the reviewer that we did not address the study limitations and now have a new paragraph focusing on this on page 13. The paragraph includes the limits of the cross sectional design and statistical methods used for this study.

Comments from Referee 2: Minor Essential Revisions:
Please address the following items:
1. Page 4: Change “Pew Hispanic Center Survey of Latinos” to “Pew Hispanic Center of Latinos”.
2. Page 7: Change “considerations” to “consideration”.
3. Page 9: Change “included: 14% of the population” to “included: 14% of the population”.
4. Page 9: Change “diploma); 14% had an income” to “diploma); 14% had an income”.
5. Page 11: Change “significant predictor of knowledge suggesting” to “significant predictor of knowledge suggesting”.

Response from the authors:
All minor revisions have been addressed.

Comments from Referee 2: Minor Discretionary Revisions
Conclusion (p. 15): It would be great if the authors would describe how the predictors (the level of education and house ownership) could be used to effectively increase the knowledge of H1N1 transmission.

Response from the authors:
We have revised the discussion to translate the results into practical recommendations. However we keep in mind that our study has limitations and
prefer to be conservative in deriving strong recommendations from our results.