Author's response to reviews

Title: A cross-sectional survey to evaluate knowledge, attitudes and practices (KAP) regarding seasonal influenza vaccination among international travellers

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Author's response to reviews: see over
A cross-sectional survey to evaluate knowledge, attitudes and practices (KAP) regarding seasonal influenza vaccination among international travellers

Ms No. 4127179873200373

Dear Melissa Norton

Thank you and the reviewers for their useful comments. As requested, we have revised our manuscript completely and we have added new data from a similar survey performed early this year. We have addressed the comments point-by-point within the next pages.

Overall, the following main aspects were included:

- The reporting of our survey was checked according to the STROBE statement.
- The statistical procedure used was explained more precisely in the METHOD section. Within the footnotes of the Tables, the statistical test used was described.
- The data analysis was performed in more detail including a multivariate logistic regression analysis with seasonal influenza vaccination as outcome.
- The DISCUSSION section was revised to include more interpretation and to discuss the representativeness of our sample and potential biases as well as to highlight the implications of this study for both, the general practitioners and the travel medicine specialists.

With interest we are looking forward to your response.

On behalf of all authors,

Yours sincerely,

Margot Mutsch
Response to Reviewers’ Comments

Reviewer’s Comment 1223259844365290: Robert M West

1. This proposed article reports descriptively on 3 surveys with respect to knowledge, attitudes, and practices towards seasonal influenza vaccination: their own cross-sectional survey and two previous studies. The authors state that this comparison enables changes over time to be determined.

Response
In agreement with the other reviewers we only present the data of our Centre for Travel Health (CTH) surveys in the RESULTS section. Comparisons to the two published surveys were transferred to the DISCUSSION section.

We have included the results of a new follow-up survey which we have performed early 2010 at the Centre for Travel Health. Significant changes were made and the article was revised to be more consistent.

2. Reporting of methods is vague, with only superficial mention of any statistical analysis. Specifically there appears to be no method stated which addresses testing for variation over time.

Response
The METHOD section was revised. Data on the statistical analysis was added.

3. Data is from three very diverse surveys. The authors establish that these comprise very different populations. There are major issues with recruitment to all three studies that they authors partially reveal although without clearly stating the limitations and consequences of recruitment biases. Their own survey of 600 individuals waiting at a travel clinic is certainly a ‘convenience sample’ from travellers seeking health advice and will no doubt contrast from travellers that do not attend such a clinic.

Response
When compared to national data of travel destination surveys we know that travellers to popular destination, such as North Africa, Caribbean or Middle East, are underrepresented in our Travel Clinic because there are no mandatory vaccinations and/or malaria risk. In addition, we know that university graduates are overrepresented in our Travel Clinic similar
to this survey. Therefore, we know the kind and extent of selection bias we have in our sample of travellers. These people are known to be more health literate and therefore, are more prone to be vaccinated according to recommendations. This is why our sample may represent a best case estimate rather than a simple convenience sample.

*We have discussed potential biases more detailed in the DISCUSSION section.*

4. Reporting is not structured to any standard familiar to this reviewer and appears confused with aspect of the previous studies. The STROBE statement would provide very suitable standards and this is recommended to the authors.

**Response**
*The article was revised according to the STROBE statement.*

5. The authors approach their subject with some enthusiasm to yield their findings without regard for a balanced viewpoint.

6. There are a great number of limitations to be discussed for any convenience sample but these receive little attention.

**Response**
*We have included a more detailed discussion of potential limitations and biases.*

7. Work by others is acknowledged.

8. The title reflects the authors focus although the abstract overstates what might be concluded from a convenience survey of 600.

9. There is also one specific concern: from 624 contacts only 566 complete responses were analysed. No attempt has been made to consider what bias may have arisen from the analysis of complete records only. This bias is likely however to be far smaller than the bias due to the convenience sample.

10. More generally, from a statistical perspective, the reporting is weak. The source of the data, a convenience sample, and the data against which this current survey is compared increase the importance of thorough and robust statistical investigation.

**Response**
*The reporting and the discussion of the limitation of this study was substantially expanded and improved.*
11. In conclusion, in this reviewer's opinion, although attitudes to influenza vaccination for travellers is of very considerable public health interest, there should be a major compulsory revisions to the reporting before this proposed article can be considered for BMC Public Health.
Reviewer’s Comment 1292157819358805: Gerrit van Essen

This is an interesting report on the vaccination rate against influenza in travellers in the Zurich Travel Clinic waiting room. The result is that the vaccination rate is low and that the reasons for not being vaccinated are slightly different from those in the general population. The population is quite different also, as are the methods.

Response

In agreement with the other reviewers we present the data of our two CTH surveys in the RESULTS section. Comparisons to the two published surveys were transferred to the DISCUSSION section.

We have included the results of a new follow-up survey which we have performed early 2010 at the Centre for Travel Health. Significant changes were made and the article was revised to be more consistent.

The authors describe the methods of three studies in their method section. This is confusing, because they only performed one study (ZRM) and compared their data with parts of two earlier published studies (airport and EVM). I think the comparison belongs to the discussion section.

Response

The METHOD section was elaborated in more detail.

As recommended the other, already published studies, were transferred to the Discussion section.

As stated above, the methods and the population were quite different. The conclusion of the authors are intriguing but not based on the results. In the abstract they compare the vaccination rate (in decimals!) in the age group >65y based on only 5% of the subjects (30 persons). The authors do not try to correct for any confounder.

Response

We included a multivariate logistic regression analysis. In addition, the DISCUSSION section highlights strengths and limitations of the described study.

I think a short report on the vaccination rate of persons visiting the vaccination
clinic could be the outcome of this study. Interesting, but not enough to attract an international readership.

Response

Our article describes more than just vaccination rates. We also describe predictors for being vaccinated as well as factors that influenced the decision making process and which would be important for future studies to be considered and implemented.
Reviewer’s Comment 8625086813705530: Nicola Principi

The authors compare the incidence of influenza vaccination among travellers leaving Switzerland this year with those found in 2 previous studies carried out in subjects with different characteristics. This is, in my opinion, not possible even if data collected this year are, at least in one case, quite similar to those found some years ago. Moreover, one of the studies used to compare data collected this year is mentioned only in the methods but it is not used later when results are discussed. I think that the best solution is to avoid any comparison and only cite the previous studies in the discussion, underlying differences and similarities.

Response

In agreement with the other reviewers we only present the data of our Centre for Travel Health (CTH) surveys in the RESULTS section. Comparisons to the two published surveys were transferred to the DISCUSSION section.

We have included the results of a new follow-up survey which we have performed early 2010 at the Centre for Travel Health. Significant changes were made and the article was revised to be more consistent.

Moreover, because influenza vaccination is not recommended in adult healthy subjects it is not surprising that travellers that remain in the same hemisphere are not vaccinated. It should be interesting to compare the incidence of vaccination between subjects that leave Zurich to rich a Country sited in a different hemisphere with that of subjects that remain in the same hemisphere.

Response

In Table 2, the multivariate logistic regression model compares the vaccination rates by hemispheres N vs. S we found no significance difference in vaccination outcomes. The same occurred when we adjusted for the influenza season on the corresponding hemisphere.

In Table 2 we added results of the multivariate regression analysis evaluating the hemisphere as predictor for seasonal influenza vaccination.