Author’s response to reviews

Title: First nationwide web-based surveillance system for influenza-like illness in pregnant women: participation and representativeness of the French G-GrippeNet cohort

Authors:
Paul Loubet (paul.loubet9@gmail.com)
Caroline Guerrisi (caroline.guerrisi@iplesp.upmc.fr)
Clément Turbelin (clement.turbelin@iplesp.upmc.fr)
Béatrice Blondel (beatrice.blondel@inserm.fr)
Odile Launay (odile.launay@aphp.fr)
Marc Bardou (marc.bardou@u-bourgogne.fr)
Thierry Blanchon (thierry.blanchon@upmc.fr)
Isabelle Bonmarin (i.bonmarin@invs.sante.fr)
François Goffinet (francois.goffinet@aphp.fr)
Pierre-Yves Ancel (pierre-yves.ancel@cch.aphp.fr)
Vittoria Colizza (vittoria.colizza@inserm.fr)
Thomas Hanslik (thomas.hanslik@aphp.fr)
Solen Kernéis (solen.kerneis@aphp.fr)

Version: 1 Date: 29 Jan 2016

Author’s response to reviews:
Dear Editor,

We are pleased to resubmit our manuscript entitled “First nationwide web-based surveillance system for influenza-like illness in pregnant women: participation and representativeness of the French G-GrippeNet cohort.” (PUBH-D-15-01031) for publication as a Research Article in BMC Public Health. We have carefully revised the paper in light of the helpful comments of the reviewers. Specifically, we have clarified methods and discussion sections.

Please find enclosed the revised version of the paper and a detailed letter responding to each of the comments made by the reviewers. All the revisions are highlighted in the manuscript. We look forward to hearing from you, and thank you for your consideration.

Sincerely yours.

Solen Kernéis, M.D. Ph.D.

PUBH-D-15-01031: Loubet et al.

Authors’ response to editors and reviewers

Reviewers' Comments to authors:

Response to reviewer 1
General comments

This is an article reporting the participation and representativeness of pregnant women in a nationwide web-based surveillance system for influenza-like illness among French pregnant women. Its aims and background information are clear. However, the structure of the methods, results and discussion sections is somehow confusion.

Authors’ response: As requested by the reviewer, we have edited methods and discussion sections (see in particular detailed responses to the comments 3,8 & 9).

Specific comments

1) Please give examples of influenza-like illness symptoms as this would be helpful to readers unfamiliar with this condition. These could be included within the section on data collection (page 4).

Authors’ response: As requested by the reviewer, a precise definition of Influenza-like illness symptoms derived from the one of the European Centre for Disease Control has been added to the methods section:

Methods section, data collection subsection page 5, line 95-98:

“Women enrolled were followed throughout the influenza season and asked weekly whether or not they experienced any influenza-like illness. ILI was defined as the combination of the three following criteria: (i) the sudden onset of symptoms, (ii) at least one of the following signs: fever or chills or headache or myalgia or asthenia and (iii) at least one of the following respiratory symptoms: cough, sore throat, shortness of breath (dyspnea) [9]. “
2) Recruitment of participants on page 5: please add more detail regarding selection of the 10 maternity centres out of the 145 largest centres in France for the display of advertising poster. For example mention the sampling procedure followed.

Authors’ response: As requested by the reviewer, we have added more details on selection of maternity centres where advertising was displayed.

Methods section, data collection subsection page 5-6 line 113-117:

“We promoted the project through articles published on web sites dedicated to pregnant women and young mothers’ health. Advertising posters were also displayed in the waiting rooms of ten of the 145 largest French maternity centres (accounting for 4% of the total number of delivery per year in the country). Two national clinical research networks (iREIVAC and GO-CIC), including 30 maternity centres, were also solicited by the investigators. Among them, 10 agreed to participate and promoted the study by displaying advertising posters in their waiting rooms. These 10 maternity centres accounted for 4% of the total number of delivery per year in the country. No incentives were offered for participation in the study. “

3) Are the subheadings immediately below the statistical analyses (i.e. representativeness and participation) part of the statistical analysis section or not? If yes, they don't quite fit nicely. If no, then I would suggest these sections be rephrased and placed before the statistical analysis section to allow a smooth read.

Authors’ response: The subheadings were, indeed, part of the statistical analysis. As suggested by the reviewer, we have removed these subheadings and thus made only one statistical analysis paragraph.

4) Which statistical analysis software package was used (SAS, STATA…)?
Authors’ response: All analysis were performed using R. This point was added to the statistical analysis part.

Methods section, statistical analysis subsection page 7 line 151:

“Statistical analysis was performed using R software (version 3.2) [27].”

5) Page 7 line 154, could the authors please restate the study period to remind the reader the period it took to enroll 153 participants into this study?

Authors’ response: As requested by the reviewer, we have added the study period to the concerned paragraph. However, to avoid repetition, the detailed study period was removed from the participation subsection.

Results section, participants subsection page 8, line 165:

“Over the study period - from November 19th 2014 to April 14th 2015 - 153 women were enrolled among 780 000 eligible (coverage: 20 individuals per 100,000 pregnant women).”

Results section, participation subsection page 8, line 180:

“Between November 19th 2014 and April 14th 2015 During the study period, 152 pregnant women filled in at least one WQ, and a total of 1363 WQ were completed.”
6) Could the authors please clarify the model building strategy followed to determine predictors for active participation? It seems only three variables (education level, occupation and previous GrippeNet.fr participation) were included in the multivariable model.

Authors’ response: The multivariate model was indeed composed of three variables. As requested by the reviewer, the model building strategy was clarified.

Methods section, statistical analysis subsection page 7, line 144-150:

We first tested all sociodemographics and pregnancy-related variables in univariate analyses. Second, we entered explicative variables with a p-value < 0.20 in a multivariate model. Variables with a p-value > 0.20 in the univariate analysis were entered in a multivariable model. We then used a backward stepwise selection procedure (removal criteria: p > 0.05) to build the final model. Finally, the variable “participation to a previous season of GrippeNet.fr”, which was a known factor of higher active participation in literature [12,26], was added to the model as an adjustment variable.

7) The authors mention retention rate in the abstract and study strengths but do not explain how this was measured. Or is it used interchangeably with participation rate? If so, why?

Authors’ response: We thank the reviewer for pointing out this error. The term “retention rate” was inappropriate. It has been changed by “active participation rate” and the sentence modified as follows:

Abstract:

Conclusion: Despite small sample size and lack of representativeness, the active participation rate retention rate was high, suggesting that pregnant women are prone to adhere to a longitudinal follow-up of their health status via the Internet.
Discussion section, page 9, line 208:

“The strengths of our study are: a wide geographical distribution of participants at a national scale, and a high active participation rate retention rate.”

Conclusions section, page 11, line 252:

“Despite the small sample size and lack of representativeness on certain demographic variables, the active participation rate retention rate was high, suggesting that pregnant women are prone to adhere to a longitudinal follow-up of their health status via the Internet.”

8) The structure in which the results are presented and discussed is confusing. The authors might find it helpful to separate the results and discussion sections. A summary of main results main be placed in the first paragraph of the discussion section, followed by study strengths and limitations and then the discussion of study results in light of other comparable existing evidence.

Authors’ response: As requested by the reviewer, results section and discussion section have been separated to allow a smooth reading. The discussion section has been edited following the reviewer suggestion (“main results main be placed in the first paragraph of the discussion section, followed by study strengths and limitations and then the discussion of study results in light of other comparable existing evidence »).

9) The subsection on study strengths and limitations needs more detail. Such detail appears in other subsections e.g. in the first paragraph of interpretation of study findings.

Authors’ response: As requested by the reviewer, the subsection strengths and limitations has been detailed.
“Only a few web-based studies have been conducted so far in the pregnant population. Most of them were large transversal studies assessing women behaviour or effects of interventions [16,18,28–30]. To our knowledge, no web-based survey has offered a longitudinal follow-up on a weekly basis. The strengths of our study are: a wide geographical distribution of participants at a national scale, and a high active participation rate. The latter being probably related to the simplicity of follow-up (taking only few minutes per week with weekly automatic email reminders).

Main limitations are the small sample size and the non-representativeness of the sample. Despite our efforts, we calculated that our sample represented only 0.02% of French women who were pregnant during the study period. Our communication campaign was based on both online (websites dedicated to pregnant women and young mothers’ health) and offline methods (advertising posters displayed in waiting rooms of large maternity centres). Among women who agreed to participate, half reported to have heard about the study via the Internet and only 15% through health care workers. This suggests that the Web and associated online media (e.g. mobile phone app) are of crucial importance to assemble a large cohort and ensure high participation for the next influenza seasons. Moreover, previous work has shown that in France, contrary to what observed in other Influenzanet countries, participants recruited through online communication have a higher follow-up participation [31]. The lack of representativeness of our sample, likely induced by the non-representative nature of the Internet population, thus translating into coverage biases, and the self-selection of participants, also called the ‘volunteer effect’ (i.e. those who choose to volunteer for studies may differ in lifestyle and health from those who decline) [11] was similarly observed for the entire Grippenet.fr cohort in comparison to the general population. In previous GrippeNet.fr seasons, other authors reported a large underrepresentation of the youngest and oldest age classes in the participants compared to the French population [12,24]. These findings were also reported in web-based birth cohorts [18]. This underlines that the next communication campaigns should preferentially target younger pregnant women. Again, the use of new, Internet-based communication channels is likely to have the largest impact in this population.”
General comments:

Generally the article is well written and articulated. Overall, the research makes a useful article.

Specific comments:

1) Page 2, lines 27 to 29: The stated objective in your abstract is not consistent with the stated aim in the background section (page 4, line 72 & 73)

Authors’ response: We thank the reviewer for pointing out this error. We have made correction so that distinction between objectives of the GrippeNet project and those of the current study appear clearly.

Abstract, background section:

“Our objective was to assess the representativeness and participation of French women to a new web-based collaborative tool for data collection and monitoring of Influenza Like Illness (ILI) during pregnancy.”

Background section, page 4, line 72-76:

“The G-GrippeNet (Grossesse-GrippeNet in French, Pregnancy-GrippeNet) project study aimed to describe the epidemic circulation of seasonal influenza among pregnant women in France. Here we Objectives of the present study were to report data on representativeness of the cohort and factors associated with participation for the opening season 2014/2015.”
2) Also, did you mean the study aimed to describe the EPIDEMIOLOGY of seasonal influenza or was there an epidemic of seasonal influenza?

Authors’ response: The study aimed to describe the epidemiology of seasonal influenza. This was clarified.

Background section, page 4, line 73:

“The G-GrippeNet (Grossesse-GrippeNet in French, Pregnancy-GrippeNet) project study aimed to describe the epidemic epidemiology of seasonal influenza during the influenza season among pregnant women in France.”

3) In Methods section you mentioned that you carried out a multivariate analysis of predictors of active participation but this is not reflected adequately in your discussion and conclusion.

Authors’ response: As requested by the reviewer, we have emphasized the fact that predictors of active participation have been found using a multivariate analysis.

Discussion section, page 11, line 233-235:

“In this study, the active participation rate was high and our findings on factors that we found associated with active participation in multivariate analysis are in line with previous research that has shown that different factors can influence participation rate.”

Conclusion section, page 11, line 254-255:

“In multivariate analysis, higher educational level and previous participation tended to be associated with an active participation.”
4) The discussion section highlights important limitations in such studies i.e. online surveys (volunteer bias) however it would have been nice to see a detailed discussion on what impact this programme could have or anticipated to have on outcomes (such as IMR) in France.

Authors’ response: As requested by the reviewer, we have added a part of discussion underlining the likely impact of such a project.

Discussion section, page 11, line 244-248:

“Social medias and widening of the Internet coverage have opened the way to real-time collaborative data collection and led to the development of innovative approaches for disease surveillance. This longitudinal web-based surveillance study proved feasible in pregnant women and will bring original data on the epidemiology of influenza in this population. It will be helpful to promote vaccination in this population.”