Author’s response to reviews

Title: Factors associated with influenza-like-illness: a crowdsourced cohort study from 2012/13 to 2017/18

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Version: 2 Date: 05 Mar 2019

Author’s response to reviews:

Dear Editor,

Dear Reviewers,

We would like first to thank you for giving us the opportunity to submit a revised version of our manuscript titled: “Factors associated with influenza-like-illness: a crowdsourced cohort study from 2012/13 to 2017/18” (PUBH-D-18-04145R1).
We are grateful to the editor and reviewers for their interesting suggestions and proposed corrections to improve our paper. Detailed point-by-point responses to reviewers’ comments are available hereafter.

We have revised the manuscript accordingly and submitted a new version for your consideration.

All authors have read and approved the new version of the manuscript.

Yours sincerely,
Caroline Guerrisi

Response to the report of Catherine Lichten, Reviewer #1

This is a clear and well structured article documenting analysis of ILI data from a voluntary, crowdsourced cohort in France. The data covers individuals' personal health and lifestyle factors and symptoms they experience during influenza seasons, and the analysis shows which factors are associated with episodes of ILI. Overall, I think the analysis is sound and the conclusions are justified. The findings show that the information in this online crowdsourced dataset is consistent with existing knowledge and highlights areas for further investigation.

--> We would like to thank Catherine Lichten for finding our work clear and well-structured, and for her specific comments that helped us clarifying some aspects of our results. We provide hereafter a point-by-point reply to the various comments.

In lines 224-9, the article discussed the association with public transport and says the difference in conclusions reached about this association in other studies may be due to differences in the public transport covariate definition (line 229). I think it would be helpful to add another 1-2
sentences explaining what specifically the difference was and how that would impact the different conclusions reached about this factor.

--> We now added a sentence to better address the difference observed with ref. [32] and how it impacts the conclusions made, based on the public transport covariate. We add the explicative sentence in the text, Discussion section, lines 233-236, page 12:

“In this last article, the public transport covariate was defined using three categories (bicycle/foot, car and public transport), whereas here we opted for two categories (private vs. public transports) in order to better observe any impact of public transports with respect to other modes of daily locomotion, where individuals do not have close contacts.”

In line 85, the article says that extremes of age are a documented risk factor for influenza, but the cited references (4 and 5) say that young age is a risk factor for influenza, but older age is a risk factor for complications and mortality from influenza (older people do not get more influenza infections, like young people do, but it's more serious when they do get infected). It would be worth clarifying this point because one of the findings from the analysis was that older individuals have fewer ILIecd episodes, which would be at odds with the statement currently in line 85.

--> We thank the reviewer for the suggestion. We clarified this point in the manuscript, Introduction section, lines 85-86, page 6:

“Documented influenza risk factors are related to (i) individual characteristics, such as age (higher risk of infection for young age, higher risk of complication and mortality for older age) [4, 5], immunodeficiency [1], pregnancy [6], chronic underlying medical conditions and respiratory diseases [7]; (ii) individual’s household features, such as living with children [8]; or (iii) individual’s profession like having contacts with children [9] or infected individuals [10].”

I believe the article is understandable as it is, however some edits would improve accuracy:

line 245/6: 'few' should be 'a few'

--> Done.

line 138 should say 'closer to'

--> Done.
And some edits for clarity:

line 230: should be 'had a higher chance of experiencing'
--> Done.

line 131 should say 'participated in'
--> Done.

line 150: should say 'participated in'
--> Done.

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Response to the report of Monique Chilver, Reviewer #2

The authors present an analysis of trends of influenza-like illness (ILI) over 6 influenza seasons from the GrippeNet.fr crowdsourced cohort in France. Overall, the paper was written clearly, and identifies risk factors associated with ILI.

--> We thank Monique Chilver for finding our work clear. Her review helped us making clearer some aspects of the methodology. We answered her comments hereafter.

I have a few comments:

Line 118 makes reference to multi user accounts being utilised to facilitate participation (ie. multiple household participant's data being entered by one household member), however there is no reference to this in the results. If a person was reporting on behalf of the whole household and this household did not have a car (ie. use of public transport by all participants in this household)
and they had pets at home, that this would affect the overall results. Would recommend that adjust OR are reported or sensitivity analysis undertaken.

--> Multi-user accounts are used to facilitate participation and report for younger and older people, or any other household members, who do not have easy access to the Internet. Each participant added in this way has all her/his individual information filled in the platform (as filled by the participant responsible for the multi-user account). So all individuals, whether owner of their online accounts or being part of a multi-user account, are considered in the cohort with their individual information.

We clarified this point in the manuscript, Methodology section, lines 119-122, page 7: “Participants can also answer to profile surveys and weekly symptoms surveys for other household members through multi-user accounts to facilitate for example participation and report of children and elderly. Each participant added in this way has all her/his individual information filled in the platform and was considered as an individual participant in our analyses.”

It is not clear as to whether a sensitivity analysis was undertaken on certain covariates which may have differences in participants less than 18 years of age eg. Smoking.

--> We did not implement any sensitivity analysis on the covariates included in the study. The only sensitivity analysis undertaken was done through the variation of the ILI case definition, as we wanted to observe the impact that different definitions may have on the covariates. This is rather central, as different surveillance systems use different definitions. In addition, our multivariate analysis assesses the role of specific subgroups, e.g. accounting for gender, presence of children in the household composition, etc. Given our results, we plan to conduct a further study to assess more specifically the factors related to gender that may result in a higher risk.

Would recommend including population demographics into table 2, where available.

--> We added a column in Table 2 (tables section, page 16) to include metropolitan French demographic data in order to better understand our cohort characteristics as regards the general population. We report data from 2015 as they are the most recent ones that fulfill all categories related to age, gender, household composition, occupation, and place of residence. A full study on the representativeness of the Grippenet.fr population along all indicators was reported in [17]. This is now reported also in the Table caption.