Reviewer’s report

Title: Trajectories of seasonal influenza vaccine uptake among French people with diabetes: a nationwide retrospective cohort study, 2006-2015

Version: 0 Date: 09 Apr 2019

Reviewer: Lin Yang

Reviewer's report:

It is important to identify the characteristics of chronic patients with vaccine hesitancy. The authors conducted an interesting study to explore the clinical characteristics of DM patients with different vaccination behavior. The sample is large and the follow-up period is long. The related clinical and demographic factors identified in their model echo previous studies. However, the authors did not collect any data about the knowledge and attitude against SIV from these DM patients, which are important drivers of vaccination behaviors. The authors may add some discussions about this.

There is other information the authors may consider adding into this paper if available. For example, was it easy and convenient for these patients to get vaccinated? Were all vaccines claimed under insurance (i.e. outcome data completeness)? It was mentioned that free vouchers were distributed, but did all eligible people use it?

The authors selected the samples of working populations covered by insurance, which excluded retired elderly one of the priority groups for vaccination campaigns, in addition to self-employed people as claimed by the authors. Also the behaviors of those without insurance could be very different. The authors shall add some discussions about this point.

I suggest the authors to separate type I and II DM in their analysis, as their age distribution and medication are very different. Stratified analysis could be considered.

The definitions of trajectories are quite confusing, were these based on the number of total injections or based on some distribution probabilities? Predefined by the authors or data driven? The authors list six categories, but it seems to me that these six excluded those who continuously got vaccinated for a couple of years and then stopped and got vaccinated again at the end. Some mean+/−SD are larger than 10 or low than 0, which is not reasonable. The authors may consider showing data range instead. More technical details of GBT models could help readers better understand the results.
In discussion, the authors made a lot of statement without support from literature or their data. For example, P11, L22, is this statement based on their own data? P12, L31, this over interprets their findings, no evidence supports that a new GP could more likely persuade a patient to get vaccinated.

Minor comments:

Abstracts: Which trajectories does "stable SIV behaviors" refer to? The statement " Most patients with diabetes had stable SIV behaviors, but others adopted or abandoned SIV in relation to increasing age, health events, or contextual factors (e.g., controversies about vaccine safety or efficacy)" over-interpreted their results, as they have not collected the opinions of these participants.

P7 L15, it is not clear how the authors handled missing data in data analysis. More information about data completeness is also needed.

P10, L58, does "systematically" mean continuously?

Table 1. Formats and headings need tidy up. For example, "Hospitalized for diabetes or its complications between 09.01.n-1 and 08.31.n" could change to "Annual rate of hospitalization for diabetes or its complications". Delete "n/n+1" in caption.

Table 2. Reference groups for each variable should move to the note under the table. "Average annual number of consultations during follow-up ≥ Median" may change to "Frequent consultation.

Appendix table 4 is not referred in main text. Were those deceased cases excluded from data analysis?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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I recommend additional statistical review

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