Reviewer's report

Title: The effect of physician's recommendation on seasonal influenza immunization in children with chronic diseases

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Reviewer: Sean O'Leary

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This was a fairly large study in Italy that addresses an important issue: influenza immunization of children with chronic medical conditions. I think the study adds to the body of literature on influenza immunization but could be made more clear by addressing some of the questions below.

In general, the written English is excellent for a non-native speaker. However, there are minor grammatical errors and some awkward wording that could be easily corrected by going through the manuscript with a native speaker.

Major compulsory revisions

Background: The major problem in the background is that there it is not clear what the gap in the literature is that this study is trying to address. This could be addressed with a sentence like this: ‘While it clear that provider recommendation for influenza vaccination is a strong predictor of vaccination, the likelihood of vaccination by type of provider is poorly understood. Therefore, the objectives of this study were to…’ and then continue with the objectives above, or something similar.

The other major issue is to set up the importance of the ‘immunization path.’ While this is an interesting concept, it may be somewhat unique to the healthcare system in Italy. For example, what I can discern from the figure is that very few specialty physicians stock flu vaccine and around half of family pediatricians do. It would be helpful if the authors could explain why the ‘immunization path’ is important and how these findings are generalizable to a broader population.

Methods: Was proof of vaccination required to consider the child vaccinated? Were there any families who said that their child was vaccinated that did not bring in their immunization card? Or were children excluded if they did not bring in an immunization card? Did anyone decline to be part of the study?

Were the differences in specialty related to the practices of a few physicians? If the interviewer visited the health centers on the same day of the week, it is conceivable that they could be interviewing patients of a single physician. The use of three different regions is a strength, but within each region, was there just one center involved in the study? It would be helpful to know not just the study population of the patients interviewed (which is presented), but since the authors are drawing conclusions about the providers, the population of providers as well.

Another major issue is that asthma is not considered a chronic disease for the
purposes of this study, since it is the most common chronic disease for which flu vaccination is recommended. There may be any number of good reasons why the authors chose to exclude these patients (infrequent contact with specialty physicians in Italy?) but this should be made clear in the paragraph on why the conditions that were studied were included.

Results: The numbers in the figure don’t add up. For example, the boxes for ‘recommendation’ add up to 294, not 275. This may be because some of the 275 got recommendations from more than one provider, but that is not clear. Also, the number of unvaccinated patients adds up to 125 in the figure, which would make the percentage vaccinated 54.5, not 57.5. Why the discrepancy?

I am not able to check the odds ratios from the information given. This could be fixed by adjusting the figure to have 5 options for recommendations: 1) family pediatricians, 2) specialty pediatricians, 3) community vaccinator, 4) recommendation from more than one type of provider (with a footnote describing this population), and 5) those receiving no recommendation. Not only would this clarify the figure, but it would also be interesting to see the odds ratio for those patients receiving more than one recommendation. Theoretically, all of these children should receive a recommendation for a flu vaccination at every visit with a medical provider, at least in influenza season.

Why are the odds ratios by specialty not shown in Table 3? Table 3 shows odds ratios by disease, but the text of the abstract and results gives results by specialty. In these calculations, did the authors adjust for random effects? When doing a logistic regression like this, I think this would be important.

Discussion:

Fourth paragraph about the ‘immunization path’ is simply a restatement of the results. Again, somehow the authors need to convey why this is important.

Minor essential revisions:
None.

Discretionary revisions:

Abstract:

Background: Make into one paragraph. ‘Authorities’ is misspelled. Change ‘medical profiles’ to ‘medical providers.’ A stylistic issue: rather than stating ‘we measured…’, clearly written objectives would help the reader. For example: “In this study of a nationally representative sample of children with chronic medical conditions, we sought to assess: 1) percent of children with documented receipt of influenza vaccine in the prior season by type of medical provider; 2) factors associated with receipt of influenza vaccine; and 3) the mechanisms by which these children received their immunizations.”

Methods: Information on recommendations by physicians (should this be ‘providers’ since presumably community vaccinators are not physicians?) was collected by face-to-face interview, but it appears that information on influenza recommendation was collected only by proof of vaccination.
Results: Way too many digits in the Odds Ratios, particularly for the CIs. One or two is fine.

Conclusions: Good, although would recommend changing the wording of the last sentence. ‘Improving the attitude of any physician…’ is awkward and could be taken as offensive.

Main text

Background: The first sentence shouldn’t be a paragraph by itself. The mechanisms paragraph is helpful although it could be tightened up a bit. Also, actual mechanisms are stated for CF, neurologic conditions, and diabetes, but for HIV and Down Syndrome, no mechanisms are listed – just a re-statement that they are high risk.

Next paragraph – ‘contrarily’ is awkward.

Methods:

Regarding the actual interviews, was there a standardized form that the interviewer used to collect the information, or were these more open-ended qualitative interviews? Based on the results, it seemed that only information collected was “Did you receive a recommendation from a provider for flu vaccine last season? If yes, from who?” And then an examination of the vaccine card. Was there more to this interview?

Results

The first two paragraphs of the text of the results are generally clear. However, the sentence that begins ‘Community vaccinators..’ should be re-stated since there is no denominator information. While technically correct, it is somewhat misleading. Would suggest re-stating to say something like ‘Fewer families reported receiving an influenza recommendation from community vaccinators, although it is unclear how many families had contact with one.’ For all the sub-specialties, the reader has some idea that they have been seen by that provider, since they are actually in their clinic. Presumably, most also have a pediatrician too, although conditions with more frequent visits may be less likely to see their general pediatricians than their specialist (like CF and HIV).

It might be useful to include p values in Table 1 so that the reader can more easily see the differences in the 5 patient populations.

Why isn’t neurologic disease in Table 3? It looks like maybe it’s the reference, but that’s not clear from the table.

The n’s are left off of the row on immunization coverage in Table 2.

Discussion

First two paragraphs are generally fine. Third paragraph should be part of the second paragraph.

The fifth paragraph fairly wordy, and it’s not clear why it starts with the discussion of what is effective in improving immunization coverage. The first four sentences are extraneous. It appears that the authors are stating current evidence, but are not really relating it back to the current study. Also, the sentence “In our study we
found that even a specific recommendation by a physician alone is effective…” is not entirely accurate. It would be more correct to say, “In our study, we found that a specific recommendation from a physician was highly associated with receipt of influenza vaccine” since there were many factors that were unmeasured. The next paragraph that begins ‘our path’ could actually conclude the preceding paragraph and would suggest saying ‘our study’ instead of ‘our path.’

In the next paragraph, what is a ‘clinical reference centre?’ Is it a large referral center? That paragraph and the one following appear to be the ‘Strengths and Limitations’ section. This should be made clear (“This study had several strengths and limitations. First…”). Also, the writing is a little awkward through these two paragraphs and could be tightened up. There are two more paragraphs that are single sentences and should be included all as one paragraph. A further limitation of this study (as alluded to above) is that there is not denominator data on patient encounters with specific types of providers. For example, in the figure, only 10 patients received a recommendation from a community provider, but we don’t know how many actually came in contact with a community provider, other than to get an immunization. Community providers may actually be doing an excellent job of making recommendations to patients, but we don’t know that (for them or any of the others).

In the concluding paragraph, would suggest using a different word than ‘attitude.’

In the bibliography, some of the titles are in italics and some aren’t.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests