Author's response to reviews

Title: Influenza vaccination of healthcare workers in acute-care hospitals: a case-control study of its effect on hospital-acquired influenza among patients

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Author's response to reviews: see over
The Editor  
*BMC Infectious Diseases*  
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Sir/Madam,

Please find enclosed our revised manuscript, entitled “Influenza vaccination of healthcare workers in acute-care hospitals: a case-control study of its effect on hospital-acquired influenza among patients”, submitted for publication as an original research article in *BMC Infectious Diseases*.

Our point-by-point responses to the reviewers’ comments appear below.

**Referee 1**

*This is an interesting study; however several suggestions should be taken under consideration, before a final decision is made.*

1. Abstract, page 3, background, line 1: please correct to "acute-care hospitals".  
We corrected the sentence in the Abstract and added the term “acute-care hospitals”.

2. Abstract, page 3, conclusions, line 1: please instead of "high proportion" change to "more than 35%". Overall, 35% vaccination rate is not a high rate!  
We replaced "high proportion" by "more than 35%" in the Abstract.

As suggested by the Reviewer, we added this reference in the Background section.

4. Same paragraph: please clarify that these studies (4,5) concern studies in long-term care facilities, same for study [6].  
We clarified the source population of the studies cited [4-6].

5. Background, page 4: please mention here the difficulties for conducting a similar study in acute-care hospitals because of the rapid turn-over of patients.  
We now mention in the Background section that clinical studies are difficult to conduct in acute-care hospitals because of rapid patient turnover.
6. Results: please provide the total number of hospitalized patients, so the rate of nosocomial infection can be estimated (%).

7. Discussion, page 9, paragraph 2: please rewrite the sentence "Moreover, in a simulation study...", it is difficult for the reader to follow the meaning.
As suggested, we rewrote the above sentence in the Discussion section.

8. Conclusions, page 11, first line: please change "high proportion" to "more than 35%".
Again, 35% is not a high proportion.
We replaced "high proportion" by "more than 35%" in the Conclusions section.

Referee 2

The authors report the findings from a case control study undertaken to explore the effectiveness of influenza vaccination on lab confirmed hospital acquired influenza amongst patients.

Minor essential revisions

Abstract
1. The first line in the results section should be updated to: ‘In total, 55 patients were analysed, of which 11....
We updated the sentence: “In total, among 55 patients analysed, 11 (20%) had laboratory-confirmed HAI”.

Introduction
2. It should be highlighted that the papers cited in the first paragraph of the intro (Ref- 3-5) are not hospital based studies. They are actually studies conducted looking at the effectiveness of the flu vaccine in preventing disease spread in elderly populations residing in aged care facilities. Very different settings and population groups to what you have studied.
Indeed, we emphasized that elderly patients in long-term facilities were the source population in the study cited. We also noted, in the Introduction section, that it was different from our study population.

Methods
3. What% of units at the hospital does the 36 represent? Were they settings in which there was a higher risk of respiratory virus transmission?
Totally, 36 (84%) of the hospital’s short-stay units participated. We added this information in the Methods section.
Participation in the study was voluntary. However, units with more exposed or susceptible patients were included (3 intensive care units, haematology units, geriatrics department, etc.).

4. In regards to vaccine receipt, did you rely on self report or did you seek confirmation of vaccination?
Vaccination of HCW was confirmed by data from our hospital’s occupational health department, and not by self-reporting. We added this point in the Methods section.
Results

1. Did any patients with ILI refuse to participate?
Unfortunately, we did not record data on patients who refused to participate. However, their proportion was very low; we estimated that less than 5% of eligible patients were not included in the study.

2. When you refer to HCW vaccination, is this only relating to Physicians and nursing staff? If so, are there any ancillary and allied health staff that work in the units? These categories of staff may also been responsible for disease transmission. Did you record their vaccine coverage rates?
We included all categories of HCW in short-stay units: physicians, nursing staff, ancillary and allied health staff. We added this information in the Methods section.

3. Did you document the number of visitors that these patients had? This may have been another source of exposure outside the patient/HCW source.
We agree with the Reviewer: visitors may constitute another source of exposure to influenza. However, data on visitors were not recorded; such information was difficult to document prospectively. We added the point as a study limitation in the Discussion section.

There are a number of grammatical errors throughout the paper which need correcting.
The paper has been edited by a professional English language medical editor.

Thank you for your interest in our work. Do not hesitate to contact us, if necessary.

Sincerely yours,

Thomas Bénet, MD, MPH