Author’s response to reviews

Title: A snapshot of Pneumonia research activity and collaboration patterns (2001–2015): a global bibliometric analysis

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Author’s response to reviews:

2-8-19

Dear Editor,

Please find attached the revised version of our manuscript (BMRM-D-19-00157), entitled “A snapshot of Pneumonia research activity and collaboration patterns (2001–2015): a global bibliometric analysis” for your renewed consideration to be published in BMC Medical Research Methodology.

We have revised the manuscript according to the reviewers’ helpful comments, and below we include a point-by-point inventory of the changes made. Moreover, our manuscript is marked with track changes in order to clearly show the modifications.

Thank you once again for your consideration, and we look forward to receiving your editorial decision.

Cordially,
José M. Ramos

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Editor Comments:

As the Reviewer 1 comments, you have retained some confusing figures and maps. Please help your readers and give guidance how to interpret Figures 1-2 (lines, colors).

Response: In order to facilitate the interpretation of the content of the figures and maps, the following additional information has been provided in Material and methods:

Collaboration between countries.

(…) To specifically analyze collaboration between countries, collaboration networks were generated for each of the three quinquenniums using Pajek software. The collaboration network is a graphic representation (graph), wherein the nodes represent authors’ countries (as determined from their institutional affiliations) and links between the nodes represent coauthorships between countries, that is, an international collaboration in published research. The more intense the collaboration, the thicker the links between the nodes. The spatial distribution of the nodes responds to the execution of the kamada-kawai algorithm in Pajek, which places the most prominent nodes (those with a greater number of documents and collaboration links) in the center of the map, and the nodes with a smaller number of publications and degree of collaboration towards the periphery.

Topic network analysis.

Based on an analysis of MeSH terms, we identified the main research focus of the studies in the area, generating density maps using the VOSviewer program with a spatial description of the
main MeSH terms for each type of pneumonia [22]: (A) “Pneumonia, Aspiration” (B) “Pneumonia, Bacterial,” (C) “Pneumonia, Ventilator-Associated,” (D) “Pneumonia, Viral,” and (E) “Pneumonia, Pneumocystis”). The process of generating and interpreting the maps proceeded as follows:

- Determination of the co-occurrence of the descriptors assigned to the documents and generation of a matrix of absolute values. The joint assignment of two descriptors in a single document implies a thematic affinity, as both aspects are addressed simultaneously in the same paper. This affinity will be more intense as it is repeated a greater number of times in the collection of documents analyzed.
- Elimination of generic descriptors. In order to facilitate the analysis, we eliminated some excessively generic descriptors (like “humans” or “animals”), along with geographical descriptors and those related to age groups. These descriptors showed very high-density relationships, complicating the analysis and the interpretation of the results, so we analyzed their frequency more specifically.
- Visual representation of the network. To establish the main topics that exist for each type of pneumonia and to represent them visually, we used a clustering algorithm in the VOSViewer program, which helps to detect the communities (clusters) within a network, made up of groups of homogeneous items that are strongly related to each other.

The different groupings, in the form of "islands" in red tones, represent the main clusters of the thematic networks, while the chromatic gradation illustrates the areas with a lower density of relations between the MeSH in yellow and green tones. The spatial distribution of the MeSH and their proximity to each other responds to the intensity of co-occurrence between them.

In page 8 (sub-paragraph 3.4, lines 38-50), update the figure numbers.

Response: we thank the editor and have updated the figure numbers.

Reviewer reports:

Carol Pierannunzi (Reviewer 1): In general this manuscript has improved. The clarity of the authors' purpose is defined more specifically. It could be helpful as the authors note on p 3, to new researchers and to understand the growth of international research collaborations. The tables are useful and provide the reader detail by country and region. The authors have addressed some of the concerns with the improved limitations section and discussion.
My remaining concern is that the authors retain a number of Figures which are not helpful to readers. For example, p 39 is a figure which is basically not understandable: no title and obscured labels due to the large number of lines to country names. Page 41 is really not informative either in that it includes so many dimensions that it obscures any conclusions. What can the reader derive from this map?

Response:

We have included a footnote for Figure 1 and Figure 2 to improve the comprehension of the figures.

We have changed figure 1.

Legends of figures

Fig 1. Networks generated from international collaborations, by quinquennium: (A) 2001–2005, (B) 2006–2010, and (C) 2011–2015

Footnote: The intensity of collaboration is reflected through the thickness of the links. Single line is 5 collaborations. The most prominent nodes (those with a greater number of documents and collaboration links) are in the center of the map, while the nodes with a smaller number of publications and lower degree of collaboration are located on the periphery.

Fig 2. Subject area maps with the main MeSH terms associated with different types of pneumonia-(A) “Pneumonia, Aspiration” (B) “Pneumonia, Bacterial,” (C) “Pneumonia, Ventilator-Associated,” (D) “Pneumonia, Viral,” and (E) “Pneumonia, Pneumocystis.”

Footnote: Groupings in the form of "islands" in red tones represent the main clusters of the thematic networks, while the chromatic gradation in yellow and green tones illustrates the areas
with a lower density of relations between the MeSH. The spatial distribution of the MeSH and their proximity to each other responds to the intensity of co-occurrence between them.

I have noted a few minor grammatical errors in the table below. The manuscript needs further proof reading.

P 3 Line 34-35  Sentence beginning with "the aim…” needs to be reworded.
Response: Done.

P 3 line 40  Sentence fragment at end of paragraph.
Response: Fixed.

P 3 line 28  "the a" needs to be reworded
Response: Fixed.

P 10 lines 58-61  This whole sentence is confusing. Needs to be two sentences
Response: it is done.

Andreas Halgreen Eiset (Reviewer 2): The authors have managed to address all of my initial concerns. This is an interesting and well written manuscript.

Response: We thank the reviewer for this positive comment.