Author's response to reviews

**Title:** A comparison of microbiology and demographics among patients with healthcare-associated, hospital-acquired, and ventilator-associated pneumonia: a retrospective analysis of 1184 patients from a large, international study

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Nathaniel Nazareno
Journal Editorial Office
BioMed Central
on behalf of Prof. Pierre-Edouard Bollaert

To the *BMC Infectious Diseases* Editorial Team,

On behalf of my co-authors, Andrew Quartin, Ernesto Scerpella, and Sailaja Puttagunta, thank you for your recent response to our submission of the manuscript “A comparison of microbiology and demographics among patients with healthcare-associated, hospital-acquired, and ventilator-associated pneumonia: a retrospective analysis of 1184 patients from a large, international study.”

We have revised the manuscript, with changes shown in track changes in the submitted Word document. A detailed response to the reviewers’ comments is included in this letter. All authors have approved this version for resubmission.

Thank you again for considering this manuscript for publication in *BMC Infectious Diseases*.

Kind regards,

Daniel Kett, MD
Reviewer 1:

1. As I previously suggested in my first review (“BACKGROUND When the authors say that references 12-15 describe lower frequencies of MDR infections they are possibly underestimating the differences with USA and Asia studies since in many European studies the microbiological pattern is simply CAP-like.”) I think that references 12-15 do not only report “lower MDR pathogens” but report that HCAP in Europe show a microbial etiology very similar to CAP, a quite different concept. I would appreciate to see it reflected in the manuscript despite its conclusions in order to give a fair scientific overview of the issue.

   We are not insensitive to the reviewer's concerns, and feel we have previously made it clear that the microbiology of pneumonias in patients with HCAP, and hence the utility of the classification itself, may vary with geography. In fact, the Discussion section of the manuscript ends on this point. At the reviewer's request, we have modified our wording in the Background section to make it clear that an absence of MDR organisms would make selection of antibiotics for HCAP much like CAP. However, we believe the reviewer overstates the case for definitively stating that HCAP should be considered as CAP in Europe, and have added additional references to support this point.

2. The fact that a deeper description of HCAP subgroups (% of different HCAP categories) cannot be given is an important limitation that should be addressed and discussed since I can imagine for instance patients with recent hospitalization to be potentially different from those of a nursing home.

   We disagree. Our interest was in testing the utility of the classification. Others have already speculated, based upon previous data sets, that that pooling the different risk factors into a single category would be useful. We found that it was.

3. Finally I would suggest reconsidering the conclusions (the most frequently read part of the paper) about antibiotic recommendations by clarifying that your data suggest that “in USA” HCAP should be covered as HAP. Please consider the importance of this clarification since the application of your final suggestions in Europe by inexperienced doctors would lead to a usefulness and possibly dangerous overuse of broad spectrum antibiotics.

   The evolving body of literature suggests that HCAP presents with substantial risk for MDR organisms in most geographies that have been studied (including parts of Europe). We would therefore prefer to leave our Conclusion as is. However, if the editor prefers, we offer the following revision to the last sentence of the manuscript:

   The prevalence of potentially MDR organisms, particularly gram-negatives, was similar across groups. This lends support to the recommendation that, in most parts of the developed world, initial empiric antibiotic therapy should be similar for HCAP, HAP, and VAP and include agents with activity against MDR organisms.