Reviewer’s report

Title: The IMPROVE-GAP Trial aiming to improve evidence-based management of community-acquired pneumonia: study protocol for a stepped-wedge randomised controlled trial.

Version: 0 Date: 27 Sep 2017

Reviewer: Erik Cobo

Reviewer’s report:

I read the paper about the protocol of the IMPROVE-GAP trial and I think it is well designed and reported. I just have some minor comments:

1) To allow reproducibility and to protect against selective outcome reporting risk of bias, please either provide a fully specified Statistical Analysis Plan, or state that this SAP will be provided before opening the database —for example, in the form of a Trials (free) Update. Please, specify if you will (logarithmically) transform LOS. Please, specify how you will treat deaths (13%?) in your analysis.

2) On page 17, line 10 you state that your analysis will be based on the "intention to treat" population (please, review your "n/a" in your Spirit table, item 20c) . Please note that now Consort and Spirit recommend "as randomized". Please, find useful advice to prevent and treat missing data at http://www.nejm.org/doi/full/10.1056/NEJMsr1203730.

3) Please, note that the Consort figure (flowchart) is for the results, not the design; but Spirit suggests an alternate figure to highlight that recruitment precedes allocation. Please, consider to include a Spirit figure adapted to a SW design.

4) You stated that patients will be masked; but this could not be true (because they could know the intervention administered in each cluster). Please, consider to address how will you control, analyse or protect your design against selection (patients avoiding some clusters), attrition or evaluation bias.

5) Please, specify if alpha will be one or two-sided in your sample size rationale.

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable
Quality of figures
All images and figures within the manuscript should be genuine i.e. without evidence of manipulation. No specific feature within an image may be enhanced, obscured, moved, removed, or introduced. If you have concerns about the veracity of the figures you should choose the first option below.

Statistical review
Is it essential that this manuscript is seen by an expert statistician? If so, please give your reasons in your report.

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.
I agree to the open peer review policy of the journal