Reviewer's report

Title: Impact of Chronic Obstructive Pulmonary Diseases clinical pathway on clinical outcomes: A Case Study In A Teaching Hospital In Malaysia

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Reviewer: Carl Llor

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MAJOR COMPULSORY REVISIONS:

First of all, not all the readers are used to the term ‘clinical pathway’ (CP) and this should be explained more in detail. Table 1, explaining the phases of the development of CP, is clearly insufficient. When you explain in the Introduction that CP translates evidence based medicine into a clinical setting, you should also explain how patients assigned to non-CP were treated. In addition, since the authors compared different outcomes between COPD patients assigned to CP implementation and those without, the compliance to this CP implementation should be described more precisely.

Secondly, the authors use the terms ‘intervention’ and ‘control’ several times when this study is actually a before and after study (before: non CP, and after: CP). I am particularly concerned about the bias of patient selection and design. The authors use a retrospective analysis for patients assigned to ‘non-CP’ and a prospective analysis for those assigned to ‘CP’. The bias could be important for the non-CP, since out of 281 cases admitted, only 160 were available (please state the reasons for this high drop-out rate) and only 98 patients fulfilled the inclusion and exclusion criteria. However, in the second paragraph of the Methods section the authors state that non-CP patients were matched for diagnosis and severity. If only patients with COPD were supposed to be recruited I do not understand why these patients were matched for diagnosis (are you referring to concomitant comorbidities?). And how did you define the severity? Please describe.

Thirdly, since it was a before-and-after design, the authors should also describe confounders or variables that could explain the improvement in the two outcome variables (length of stay and complications) other than the clinical pathway. This is an important issue because no randomization was used in this study. The study design used by the authors is perhaps not appropriate to address the objectives of the study and this should be commented in depth in the Discussion section.

MINOR ESSENTIAL REVISIONS:

How was the diagnosis of COPD defined? When talking about the inclusion criteria you say you included adults over 12 yr. If we are talking about COPD this age seems inappropriate. You should also define acute exacerbations of COPD.
Please describe both diseases more clearly.

Different acronyms appear in the text without having first been explained. For instance, UKMMC in the Abstract should be defined, as should several complications such as NIPPV, IPPC, CCF, UGIB, ARF and this is also valid for table 4. In addition, CP should be defined the first time that it appears in the text (Introduction).

Page 2, Abstract, in the beginning of the conclusions sentence, there is a spelling mistake. Please correct.

Page 5, in the first line of the last paragraph, there is a spelling mistake. Please correct.

Some tables are not necessary. For instance, table 6 describing the mortality rates in both groups is described in the text. Please delete it and put the p-value in the text.

**Level of interest:** An article of limited interest

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests