

## Peer Review File

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### Reviewer A

In this paper, through a two-year retrospective study, the authors investigated the disease characteristics and medical measures of AECOPD patients, from pre-hospital, to ED, and then to further treatment stage. The prognosis predictors were explored through multivariate logistic regression models.

This is a well-written paper with a large sample size, containing abundant results which offer guiding significance for clinical practice.

However, a number of points need clarifying and certain statements require further justification. There are given below.

Comment 1. The primary outcomes are “admission; hospital length of stay (LOS) and mortality”. But part of “Result” section (paragraphs preceding “predictive factors”) is too cumbersome, thus the primary outcomes are not prominent and clear.

Reply: We greatly appreciate these positive comments from Reviewer A.

Thank you for highlighting the importance of the Primary Outcomes of this study. In response to this suggestion, the Primary Outcomes are now presented more clearly by having their own subheading in the results section on page 10 of the clean version with changes accepted (Predictive Factors for the Primary Outcomes). These primary outcome results have also been moved to the start of the results section to highlight their importance. The primary outcomes have also been highlighted more clearly in the first paragraph of the Discussion.

Comment 2. The “Introduction” section is also too lengthy. It is recommended to focus on problems of overwhelming medical burden, difficulties in rapid and correct identification, irregular treatment measures, and poor prognosis in COPD patients. Despite these problems, relevant data in complete emergency healthcare pathway is lacking and this paper would collect these data and explore relevant scientific issues.

Reply: Thank you for this suggestion. The Introduction has been considerably shortened to 2 paragraphs (page 5), from the original 8 paragraphs, in response to this comment. A particular focus has also been placed on the problems of overwhelming medical burden, difficulties in rapid and correct identification, irregular treatment measures, and poor prognosis in COPD patients.

Comment 3. There are too many descriptions of data in “Discussion” section, being duplicate with “Result” section. This part should focus on the analysis of data. For example, in this paper, recommendations of oxygen therapy and drug use, discussion about discrepancy between ED and hospital principal diagnoses, different readmission rates in emergency and general wards are highlights.

Reply: The Discussion has been edited to remove duplication. A number of sentences listing data results have been deleted to draw more attention to concepts in the Discussion and synthesizing the findings.

Comment 4. Table 5 “Model 2 LOS<3.6 days” might be modified to be“LOS>3.6 days”.

Reply: Thanks, this correction has been made.

## **Reviewer B**

It is interesting to read the information about the relationship of pre-hospital emergency response such as ambulance usage, pre-hospital oxygen administration, pre-hospital medication, frequency of ambulance usage et al with the clinical outcomes (admission; length of hospital stay and mortality) , when COPD patients suffer exacerbation in Queensland. There are some concerns and comments regarding the study design and results.

Comment 1. The total of 16,166 patients were included in this analysis, from which 69% of subjects took ambulance to ED. We suggest to divide these patients into ambulance to ED patients vs non-ambulance to ED patients and then compared the differences

between these two groups.

Reply: We greatly appreciate the helpful comments from Reviewer B.

Thank you for this comment. Ambulance transport to hospital was a variable in the logistic regression and therefore it has been accounted for in the analysis. The results section and discussion also list findings which compare patients who travelled by ambulance and patients who self-presented including hospital admission and representation factors.

Comment 2. For Fig2, Fig3 and Fig4, these figures contain relatively small information, and these are suggested to be presented in words or tables, other than figures.

Reply: We agree that the number of figures could be reduced. Figure 4 has been deleted and the results presented in words instead. We believe the other figures add to the diversity of the paper and communication of key findings.

Comment 3. In discussion, the author described some of the results in details, and it seems like a repeat of the previous part. We suggest to change this writing style and pay attention to the differences from other similar researches and provided novel perspective to improve healthcare of COPD patients in the future.

Reply: Thank you for this suggestion. The discussion has been edited to remove repetition of results and present synthesis of ideas more clearly (as per Reviewer A, comment 3).