

## Peer Review File

Article information: <https://dx.doi.org/10.21037/ace-21-15>

### Reviewer comments

#### Abstract

**Comment 1:** First, in the title please clearly indicate the clinical research design of this study; “Retrospective Study” is inadequate.

- Thank you, we added “retrospective cohort study” and also reflected this in the title. We also noted that the title was too wordy: now shortened.

**Comment 2:** Second, the abstract is also not adequate.

In the objectives part, please indicate the clinical needs for this research topic during the pandemic.

- The authors would like to inform you that the proposed study was started 2019 (prior to the pandemic) and not directly linked to the COVID-19 pandemic. However, we noted a longer hospital LOS during the pandemic; the LOS became more relevant for these patients when additional assistance was often needed prior to discharge (especially for patients with socioeconomic constraints). This was included in the introduction of the abstract (page 2, lines 52-57).

**Comment 3:** In the methods part, please briefly describe the inclusion of subjects and the assessments of LOS, SES, and other potential clinical factors.

- The definitions of LOS, and clinical factors were clearly defined. However, due to the word limit, we were unable to provide details of SES in the abstract. These were detailed in the body of the manuscript (page 6, lines 176-179).

**Comment 4:** In the results part, in addition to P values, please report the effect size measures such as coefficients or RRs and indicate specific level of the factor such as holding Medicare.

- RR, p-values and the effect size measures are included in the results section of the abstract.

**Comment 5:** The conclusion should be specific to clinical implications, in particular in the context of the COVID-19 pandemic.

- This was clarified in page 3, lines 80-85.

#### Body of the manuscript

**Comment 6:** Third, in the **introduction** part, the clinical significance and needs for analyzing factors associated with LOS of low-SES can patients in the context of the pandemic remains unclear.

**Comment 7:** The authors need to clearly indicate this, in particular the context of COVID-19 pandemic.

- The study authors would like to apologize for any confusion in this manuscript submission. The investigators would like to clarify that this study planning started in 2019, and is not directly linked to the COVID-19 pandemic. However, since a longer hospital LOS during the pandemic was observed on the hospital wards, especially for patients with socioeconomic constraints, the study became even more relevant. Therefore, the authors sought to evaluate patient-specific sociodemographic factors and LOSi across different solid cancer diagnoses.
- We modified the entire introductory section of the manuscript with suggested changes.
- These included 1) the importance of LOS, 2) the current problem and the inequities related to the LOS, 3) why it became more relevant during the pandemic and the unmet need, and 4) our preliminary data/hypothesis (page 5, lines 1547-150). The revised manuscript reflects these changes in the introduction of the manuscript.

**Comment 8:** Fourth, in the **methodology** of the main text, please use a flowchart to describe the inclusion of subjects.

**Comment 9:** Please also describe the clinical research design of this study.

- Thank you for this suggestion. We included a flow chart, figure 1, page 14 of 23.
- Clinical research design and the flow chart were described in the methods section (page 6, lines 157-166).

**Comment 10:** In **statistics**, please first test the distribution of LOS data and consider whether Poisson regression is appropriate for the data. Please describe the statistical software and P value of statistical significance.

**Comment 11:** The measures used to quantify the association between a factor and LOS should be provided.

- While we did use Poisson regression as a tool, our analysis does not assume a Poisson distribution for LOS. In generalized linear models (including Poisson regression) the consistency of the estimation only depends on the mean model, so in our case we expect Poisson regression to provide correct estimates of the relative risks (LOSi, LOSi-ratio). The calculation of standard errors, confidence intervals, and p-values does rely on correctly specifying the variance, and regular Poisson regression would indeed be invalid. Thus, we used heteroskedasticity-robust standard errors which resolve this problem (Ref 44- line 199).
- P-value- clarified in statistical analysis section (lines 203-206).
- Software- clarified in lines 206-207.