Title: An interrupted time series study using administrative health data to examine the impact of the COVID-19 pandemic on alternate care level acute hospitalizations in Ontario, Canada
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Reviewer 1: Sharmistha Mishra
Institution: Medicine, University of Toronto
General comments (author response in bold)

The team has conducted a population-level study to determine if rates of "delayed discharges" among inpatients changed during the COVID-19 pandemic. The team provides an overall well-executed study, with appropriate methodology.
1.   My main areas of confusion (and thus, suggestions for clarification) were surrounding the objectives and results as presented in the main text. The first objective is answered in the results section (Page 9, lines 46-48], followed by a description of the ALC rates by a few covariates. The 2nd objective was to compare the characteristics of individuals by ALC status vs. non-ALC status, but initially I thought the team would examine if COVID had an impact on the rates of ALC status by these characteristics, or changes in the characteristics of ALC vs. non-ALC across the time-periods of interest. These results are all included in the Results section (page 10, lines 4-22), but it was a bit difficult to tease apart the key findings. Could the team rephrase and clarify Objective 2 re: additional precision to help the reader take away the key findings and as they relate to or add to Objective 1? The key findings for this reviewer were that the differences between ALC and non-ALC patients remained stable during COVID. That is, COVID-19 and hospital-level efforts to open up spaces for a surge, was not associated with a change in who received ALC (vs. who did not receive ALC) or their probability/rate of ALC. It would also help to lead up to Objective 2 in the introduction with a hypothesis or rationale as to why we might expect to see changes in the ALC vs. non-ALC characteristics during the time-periods of interest.
Thank you for this comment. We have made modifications to clarify the objectives and related hypotheses. The results section have been revised to provide more clarity.

Hospital harm is also mentioned in the results and receives a paragraph in the discussion (and is an important finding), but it is not in the objectives. Were these meant to be considered under the "characteristics of individuals hospitalized' (i.e. objective 2), and can they be considered a separate or sub-objective?
Thank you for this comment. We added more details in objective 2 to be clear that hospital harm was captured within this objective.

Please include and state rationale for segmented ITS and not regression discontinuity, difference in difference, etc. i.e. provide justification for model specification and selection given the research objective. What were the time-segments used?
An interrupted time series is an appropriate model for our specific research inquiry as it uses multiple pre and post 'event' observations in this case COVID, and integrates time.
Difference in difference design refers to a controlled before and after study, where the outcome of interest is measured once in the before time period and once in the after time period. This type of design is susceptible to confounding.

Regression discontinuity design is typically used to determine casual effects of an intervention using a threshold above or below an intervention is assigned. We provided more details on why an interrupted time series model was chosen but note that we also cognizant of word limits.

The discussion surrounding the potential reasons for unchanged/stable ALC rates could be more substantive given the centrality of this in the research question. The fact that ALC rates did not change could stem from various reasons, including, as briefly mentioned in the Discussion, the "persistent flow of individuals coming into hospital at risk of ALC status"). I would first recommend rephrasing the statement to be more patient-centered in the language (does the finding and the potential reason cited, not suggest that patients who end up requiring ALC are also the patients in need of inpatient care?). As currently framed, it reads as though the team may suggest that patients who needed ALC in the end should not have been admitted to hospital?
Thank you for this comment. We have revised the language to be more person-centred.

Overall, there are times when the terminology and phrasing in the paper could be more patient-centered. The "hospital-related avoidable admissions"; "homecare supply" could also benefit from some language that is more patient-centered. E.g. availability and access to homecare, early preventative and outpatient care to reduce the need for inpatient care, etc.
Thank you for this comment. We have altered language as flagged.

The limitations could benefit from more specific discussion of the interpretation of results rather than broad-strokes around generalizability, etc. How valid are the inference drawn re: the hospital measures for increasing space having little impact on ALC? Segmented time-series were conducted, but what does that mean re: counterfactuals and causal inference?
We added an additional limitation to interrupted time series, noting that other confounders are possible.

I found the title confusing as it referred to "immunity of delayed acute discharges.." It became more clear after re-reading the abstract, but suggest the term "immunity" here could potentially confuse readers as it did this reviewer at first. The term "immunity" also suggests that ALC is a good thing (is there data to support that it is with respect to quality of life, patient care, etc.?).
Thank you for this comment. We altered the title.

Abstract
2. Suggest clarifying for a more general audience, what is meant by delayed discharges (i.e. that a delayed discharge occurs in the context of XXX, and here is defined as classifying inpatients as requiring an Alternate Level of Care [ALC]).
Thank you for this comment. We altered the text.

3. What was the team's hypothesis (it was hinted at in the background suggestion, but could benefit from being explicit).
Thank you for this comment. We added a hypothesis.

4. The 2nd objective …"to describe the characteristics of individuals experiencing ALC before and during the onset of the pandemic." is not addressed in the results section of

the abstract. I recognize the challenges with word count, but suggest either remove the objective from the background or reduce word count elsewhere to include some findings/results from the 2nd objective. For example, the 2nd sentence of the background section in abstract could be shortened or removed to allow for the results of Objective 2 to be shared in the abstract.
Thank you for this comment. The abstract has been modified.

Interpretation: the following line does not seem to be supported by the results presented in the abstract, as no data on rapid discharges were presented. "Future research should examine patient outcomes of persons who were rapidly discharged during the pandemic, especially among those who were ALC." Instead, the interpretation would be more valid if team could suggest future research to examine why ALC rates remained high despite the COVID-19 hospital measures.
Thank you for this comment. The abstract has been modified.

6. Introduction. The issue of delayed discharges could be clarified more for the general medical audience. What is meant by "next point of care not available" – are they in reference to a) housing (e.g. persons experiencing homelessness); b) retirement homes and/or long-term care homes; c) rehab beds; etc.? Its not clear how "hallway healthcare" is related to ALC in paragraph 2 of the introduction.
We added more examples to clarify.

7. Introduction. On Page 6, lines 11-14 suggest that there are data to suggest "…patients were quickly transitioned out of hospital to other care settings…". How does this relate to the proposed research question re: existing knowledge gap [especially since the findings, as we later learn, are not consistent with rapid discharges/quick transitions]? E.g. does reference 2 and reference 5 not include an analyses of ALC patients?
While reference 2 and 5 highlight policies and procedures adopted during COVID-19, they do not examine the impact of these changes on actual ALC rates. These references set the context of why our research is important.

Reviewer 2: Mon Tun
Institution: Pediatrics Department, University of Alberta
General comments (author response in bold)

The manuscript described delay in discharge (ALC rates) in Ontario, Canada during COVID-19 pandemic utilizing population-level data.
Overall, the definitions of the variables were well defined, and the study background reflected the current knowledge in this area.
ALC represents an inefficiency in health system and the study did not find any impact of COVID-19 first wave on the ALC rate. It will be interested to look at the impact of subsequent waves on the ALC rate which the authors have addressed in the limitation section
Thank you for this comment.

Could not find the result (pg. 9, line 7-8) in text in the Table 1.
We added this information in Table 1.

Page 9, line 10-11, 55 (IQR 29-74) is different from the Table 1. Also, in line 12, 4.7 (SDE=7.4) reported as SD 7.5 in the Table 1.

Thank you for flagging this – we revised accordingly.

Could not find the result (line 20-21) in Table 1.
We revised accordingly.

Table 1, heading: to consistently use either "-" or "to".
Thank you for flagging this – we revised accordingly.

Figures 1 & 2 : to add a label for the March 1, 2020
We modified the Figures.