Article details: 2022-0168
Title: Understanding the physician and administrator experience of preparing to implement Ontario's ICU Triage Emergency Standard of Care during the COVID-19 Pandemic: a qualitative study
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Reviewer 1: Mr. Christian Hui
Institution: Toronto Metropolitan University Yeates School of Graduate Studies, CIHR Canadian HIV Trials Network
General comments (author response in bold)

1. Overall, I believe the manuscript can be strengthened if your team can: 1) provide more descriptions in the manuscripts; and 2) reorganize the paper by presenting the data and discussion in a way that supports them in telling the story of the findings.
Thank you for your thorough comments. We have included the reference to the published Ontario ESoC framework and direction to readers that they can access this reference for more information: "More information on the ESoC can be found in Downar et al., 2022. (4)", (Introduction, pg. 3).
As per CMAJ Open style, we present our exemplary quotes in a table.

2. The provision of themes, subthemes and exemplary quotes in a table is not the best way to present the data in a qualitative study. Instead, it would be more effective if the quotes were integrated in the actual text of the manuscript. [Ed note: It is CMAJ Open style to present quotes in boxes]
Thank you for your suggestion. As per CMAJ Open style, we present our themes, subthemes, and exemplary quotes in a table.

3. For a qualitative study, your team could consider presenting the findings of the study's major thematic areas in a way that establishes the "story" which the data is trying to convey. Your team can accomplish this by highlighting the voices of the studies' participants and integrating notable quotes in the RESULTS and INTERPRETATION sections. I would encourage the team to consider merging the INTERPRETATION section into/adding a DISCUSSION section. [Ed note: Please follow CMAJ Open style]
Thank you for your suggestion. As per CMAJ Open style, we present our themes, subthemes, and exemplary quotes in a table. Additionally, we have kept our Interpretation section structured as per CMAJ Open style guidelines, keeping all required subsections.

4. Your team conveyed the sentiment that you wished the findings could demonstrate the transferability of the study's results, yet qualitative studies often focus on providing adequate depth on a topic within a particular context.
In our study, we sought to identify opportunities for improvements of critical care triage processes for future pandemics. Although typically qualitative studies are meant to reflect their specific context, it is possible that some of the learnings from this study may still apply to future studies. Further, the editors have asked us to comment specifically upon transferability.

5. Your team noted the potential conflict of interest between two of the study's authors and study participants. This was noted in the limitations section. Perhaps this could have been listed earlier, such as after the REB section.

We have moved the Conflicts of Interest statement regarding the two study authors into the Methods section.
See above response to comment #11.

Reviewer 2: Dr. Khara Sauro
Institution: University of Calgary
General comments (author response in bold)

6. Rigor of qualitative methodology. While the authors describe their methods (semi-structured interviews) they do not state their qualitative approach and their rationale for choosing that approach. Without knowing their approach, it is challenging to assess the appropriateness of the remainder of their methods. Moreover, many of the required information to assess rigor of the methodology was lacking. For example, reflexivity, transferability, credibility/confirmability.
Thank you for your thoughtful review of our manuscript.
We indicate our qualitative approach (i.e., Reflexive Thematic Analysis) in the Methods section: "We analyzed transcripts using Reflexive Thematic Analysis developed by Braun and Clarke. This method develops, analyses, and interprets patterns across a qualitative dataset and systematically processes data coding to develop themes.(10,11)", (Data Analysis, pg. 5).
We appreciate the reviewer's interest in obtaining more details to assess reflexivity, transferability, credibility, and confirmability. We have added a table in our methods appendix that addresses how our manuscript meets these measures of methodological rigour.
See the above response to comment #9.

7. Sampling. The authors note purposive and snowball sampling which are often at odds with each other. As currently written, it appears that snowball sampling of the target population was used. Could the authors clarify their approach? Also, was this approach congruent and appropriate for the qualitative approach?
We started with purposive recruitment by deliberately seeking out the participation of senior staff at the highest levels of involvement in their hospital's or region's ESoC implementation activities, whether in clinical or administrative positions. Emails were sent by Dr. Andrew Baker, the Incident Commander of the Ontario Covid-19 Critical Care Command Center, directly to eligible potential participants. Then, due to low response rates, we opted to invite participants to reach out to others in their organization or health regions who were also involved in implementation planning (i.e., adding snowball recruitment).
Our recruitment process has been expanded upon in our methods appendix. "We started with purposive recruitment by deliberately seeking out the participation of senior staff at the highest levels of involvement in their hospital's or region's ESoC implementation planning, whether from a clinical or administrative standpoint. This was accomplished through the Incident Commander of the Ontario Critical Care COVID-19 Command Centre (OCCCCC), who sent recruitment emails to eligible potential participants in LHINs across Ontario.
However, due to low response rates, we also introduced snowball sampling, allowing current study participants to discuss the study with their colleagues, and to send them the study recruitment email." (Methods Appendix, Recruitment, pg. 1)

8. Data collection. Could the authors expand on how they engaged the bioethicist, physician, and researcher to develop the interview guide? What it an iterative process? Was there a pilot test?

The bioethicist (A.F.), physician (J.D.), and researcher (S.R.I.) collaborated to create the first iteration of the interview guide. Pilot tests were conducted with A.F. and J.D., after which the interview guide was modified. The development of the interview guide was an iterative process. Guiding questions were modified after each pilot test, as well as again after the first five interviews.

This information has been included in our methods appendix.

"The development of the interview guide was an iterative process. Guiding questions were modified after each pilot test, as well as again after the first five interviews. We decided to incorporate the data generated from the two pilot interviews into the study data, as it was rich with insight.

We concluded that the interview guides were finalized when no new themes or codes were generated while reviewing transcripts." (Methods Appendix, Data Collection – Interview Guides, pg. 3)

9. Data Analysis. The authors clearly articulate their analytic methods and how it aligns with the steps of reflective thematic analysis. Since we the reader is not aware of the qualitative methodological approach it is hard to determine if reflective thematic analysis is the appropriate method for analysis. Also, it is unclear if only one analyst analyzed the data or if multiple analysts review and the process of agreeing on themes. More information about the analysts is needed to understand reflexivity and credibility. Was confirmation and triangulation of the analysis conducted among the research team and/or participants?

Thank you for this comment. The authors chose Reflective Thematic Analysis as it is an appropriate methodology for handling the analysis of patterns or themes in a given data set. It is also very commonly used in health services research.

Multiple authors (2-3) coded each transcript, and all analysts agreed on themes in discussions. We have provided more details about our coding process in the methods appendix, as well as information about how we addressed reflexivity and credibility in our table in said appendix.

We did not have the opportunity to member check. Given that our data collection took place during the throes of the pandemic, and our participants were heavily involved in resource planning in addition to clinical care, it was difficult enough to get them to participate for a single interview let alone a follow up one.

10. Ethics. Could the authors expand on the consent, especially around consent to publish quotes and to ensure safety and confidentiality of data? To this point, two of the participants are authors which raises issues around anonymity and reflexivity.

We have included our verbal consent form as an attachment with this Response to Reviewers. Please note the following phrase included in the consent form: "The results of this study may be published, but the data will be de-identified and presented so that it will not be possible to identify any participants without their specific consent." (Consent Form - Sharing Study Findings, pg. 3).

The two authors in question were not involved in the review, coding, or analysis of any transcripts, which we believe addresses the reviewer's concerns around anonymity and reflexivity.

Minor comments:

11. Expand on second short paragraph in introduction – what were physician's perspective (findings from previous study)? what step are involved?
The goal of this paragraph is to frame the novelty of our research aim. We are trying to convey that while previous studies examined physician perspectives on triage, there are no studies that have examined *encountered implementation barriers*.
We have expanded on the findings from the two referenced previous studies: "Previous studies examined physicians' perspectives regarding the use and structure of triage protocols. Physicians differed in their attitudes towards the directive nature of the protocols (5), some feeling that the protocols would conflict with their decision-making autonomy.(6)" (Introduction, pg. 3)

12. I would encourage the authors to consider distilling the written findings, so they are more consolidated and have improved flow (e.g., avoid 1 or 2 sentence paragraphs).
Thank you for your comment. We have followed your suggestion and condensed these shorter paragraphs into larger paragraphs to improve flow (Results, pgs. 6-10).

Reviewer 3: Dr. Erica Barbazza
Institution: University of Amsterdam
General comments (author response in bold)

13. Introduction – while it is clear the ESoC was not activated, it would be helpful to document some clarification as to why (e.g. because the absolute threshold for its use was not reached?). Important to be explicit on this otherwise a reader is left unsure as to why.
We are not able to clarify why the ESoC was not activated. Possible explanations include: (1) Demand for critical care did not exceed critical care capacity; (2) "Informal triage" took place such that demand did exceed capacity, but patients were informally excluded from critical care to preserve; or (3) "macro triage" took place, such that capacity was increased through the reallocation of resources from other areas of the healthcare sector. Our research group is currently engaged in looking at this specific research question, but we think it would be premature to speculate at this point. We can correctly state that the ESoC was not formally activated.

14. Study design and participants. This section appears to miss some clarification as to a sampling quota. In the analysis, there is mention to thematic saturation, but at the outset, was a target number or distribution of informants defined? For the province, was a minimum range of geographic diversity targeted? If so, this should be reported in the demographics table as well. If no attention was given to the geographic differences, rural/urban distribution of informants, this should also be commented on in the limitations.
A target number or distribution of informants was not explicitly defined at the outset of recruitment. Our goal was to continue recruiting participants until we reached thematic saturation. A minimum range of geographic diversity was not explicitly targeted. However, we tried to have geographic diversity by reaching out to potential participants in different regions. We included the 9 health regions represented by participants in the methods appendix, and added this information to the demographics table (Table 1.). We did not categorize participants by

geographic or rural/urban distributions; though certain LHINs are more rural than others, there is still diversity within each LHIN. Several participants discussed challenges experienced by smaller more rural hospitals, while other hospitals were in major metropolitan areas. We do not believe that not geographically categorizing LHINs is a limitation of our study, as these participants were still sampled and still contributed their insights; we just did not label these insights as being more urban or rural.

15. In the study design, it would be helpful to introduce the profile of the study team (x number of clinicians, number of interviewers, etc). This is addressed in the limitations but the full composition of the team for clarity should be aired in the design.
We have included the following phrase in the methods appendix:
"The research team consisted of a clinician (J.D.), a bioethicist (A.F.), a researcher with expertise in qualitative research and the principal investigator of the study (S.R.I.), a research coordinator (B.A.H.), and a research volunteer (A.D.). Interviews were conducted by B.A.H. and S.R.I." (Methods Appendix, Research Team, pg. 1)

16. Data collection – was the interview guide piloted? Could clusters for the nature of questions be described in text? From the appendix it is clear the questions are listed rather than subgrouped but in text it would be helpful to give some indication of the nature of the questions.
The interview guide was piloted with co-authors involved in the ESoC implementation. See the above response to comment #6.
We have included the following section regarding the grouping of questions in the methods appendix: "Broadly, interview guides began with introductory questions about the participant's professional background and current role. Next, questions were asked about the participant's general perspective on the ESoC. Then, questions were asked about supports and ethical concerns. The guide then transitioned to questions regarding improvements." (Data Collection – Interview Guides, pg. 3)

17. Results – the description of improvements in text does not appear balanced with the summary of perspectives/experiences in the previous subsection (presumably due to word limit limitations). I would encourage the authors to provide more elaboration in text though (rather than relying solely on Table 3). Do the themes identified as improvement areas relate/address those identified in the previous section as barriers/enablers to preparing for implementation?
We documented what participants labelled as improvements. Additionally, there was a specific question asking participants for improvements at the end of each interview. It may be notable that participant improvements didn't always match the four themes identified in our results section. One reason may be that there were barriers that participants did not feel could easily be improved. For example, although the concept of withdrawal of care was mentioned by almost every participant as a concern, it's an issue with no straightforward hospital or region-level solution.

Abstract: minor comments related to the previous comments:

18. In the background "through qualitative interviews" can be deleted as it reported in the methods section to follow

We deleted "through qualitative interviews" (Abstract – Background, pg. 2)

19. Methods: if a geographic distribution of informants is relevant/was considered, this should be noted as well

We modified the first sentence of the Methods section in the Abstract: "We conducted semi-structured qualitative interviews with 11 physicians and 10 hospital administrators representing 9 health regions, involved in ESoC implementation planning at the hospital or regional levels in Ontario." (Abstract – Methods, pg. 2)

20. Results: "We identified four themes" requires clarification this is reference to the first research aim (otherwise not clear what these themes pertain to).

Our identified themes are in reference to our research aims. We have modified the phrase as follows: "We identified four themes regarding participants' preparation to implement the ESoC:…"(Abstract – Results, pg. 2)

21. "Suggested improvements to the ESoC and STMR are also presented" requires more detail to be meaningful; suggest to either refer to the main themes and/or note how these relate to the previous themes reported. Perhaps the interpretation can be shorted slightly to accommodate.

We have included the following phrase: "Participant suggestions on how to improve preparation for ESoC implementation are also presented." (Abstract – Results, pg. 2)