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Title	The challenges of measuring quality of care indicators in rural emergency departments in Quebec — a cross sectional descriptive study
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Reviewer 1	Dr. Kelly Chessie
Institution	University of Saskatchewan, Dept. of Sociology, Saskatoon
General comments (author response in bold)	<p>This paper poses an interesting and useful question – can indicators developed for tracking quality care in the emergency department be applied to rural EDs? You introduce material (in your “background”) that suggests you will answer this question in terms of “is it feasible (i.e., practical)?” (this question is as opposed to the question of “are they valid for rural ED?”). Your “title” suggests that you will identify the challenges to using these indicators in the rural ED. In the “conclusion,” however, you then largely comment on the validity of the indicators and under-describe the challenges (e.g., you say it took time, but don’t really say why and of course it takes time, it is new work. Perhaps you could comment on why you deem this investment of time not worth the outcomes. I think with some modifications (see below) you can strengthen the paper and then it would present new and useful info.</p> <p>Major:</p> <ol style="list-style-type: none"> 1. Id all guiding questions (are you assessing the validity of these indicators to rural setting? Are you assessing the practicality of collecting the info? Are you assessing the strength of the databases the workers access?) and discuss relevant literature and methods for each Response: The reviewer is right about the confusion that may be induced in the article concerning the aim of the study. We specifically sought to assess the practicability of collecting the required information to measure QCI and to identify potential barriers that could hinder the implementation of this practice in rural settings. We included a sentence in the conclusion section of the abstract and included some modifications in the body of the text in order to clarify the aim of the study. We would like to thank the reviewer for her advice. 2. Strengthen your opening (tell me more about your methods, like rater training and inter-rater reliability checks and tell me more about the relevant literature) 3. Shuffle some conclusion material to opening and results sections (a lot of new info appears in conclusion; it should be reorganized and introduced in earlier sections). Response: We included information related to the realities of rural patients and their access to health centers in the introduction of the article. This, we believe, should alleviate the comprehension of the information that previously only appeared in the concluding section of the article. <p>Minor:</p> <p>Abstract</p> <ol style="list-style-type: none"> 1. Page 3, “Background” sentence 2: should it be “urban/academic”? Or “urban and academic” or “urban or academic”? What are you trying to say with this slash? Response: we changed it <p>Introduction</p> <ol style="list-style-type: none"> 2. Page 4, Opening paragraph: You should strengthen your opening. You cite only 1 factor, regionalization, as possibly having had an impact on the quality of care in rural EDs. Is that really the only thing that could be affecting ED care in the rural area? There are other plausible factors (e.g., access to technology, access to expertise, limited use of certain skills for more rare conditions, etc). Is regionalization and knowing whether it has affected quality of care really the only reason we to do your study? Response: Rural tend to be older, in poorer health, and more frequently exposed to trauma than are urban citizens. In the absence of standards of care in rural emergency medicine, it is debatable whether or not the Quebec rural population has appropriate access to care. However, in an effort to limit the costs inherent in rural health care, several Canadian provinces have reduced or regionalized services. As a result, several hospitals have been forced to reduce services or to close altogether. The impact of this on quality of care is not well known and attempts to measure and monitor quality of care in rural areas are thus warranted.

3. Page 4, Second paragraph: drop the word “urgently” from your opening line. It is an over-statement.

Response: we deleted it

4. Page 4, Second paragraph: you say QCI are needed to enhance accountability. I don't see how indicators relate to accountability. I could see how they would flag safety issues or ensure quality of care, but I am not seeing the tie to accountability. I would suggest modifying the words or beefing up the statement with more explanation.

Response: We modified this sentence: “To reach this goal, evidence-based and measurable Quality of Care Indicators (QCI) are required with the overall objective of enhancing the quality of care while respecting the expectation of all stakeholders in the healthcare system”

5. Page 5, top paragraph: “equitable and coherent” I don't think these are the right words. Would “valid and reliable” be better? Similarly, in the next line you say “The development of these ...” and I wonder if rather than “development” you want to say “measuring and tracking”? Your words don't seem maximally accurate.

Response: we changed for valid and reliable and measuring.

6. Page 5, second paragraph: You say “To the best of our knowledge ...” Can you tell me what you did to check? Did you search PubMed? Talk to the researchers who developed of the QCIs you then use? How do I know you did more than nothing?

Response: We have searched the literature for articles pertaining to QCI in rural ED settings using Pub med. We have found no published study using Schull et al's QCI in the rural ED setting.

7. Page 5, second paragraph: Refer to the indicators that you intro on page 4 in consistent ways (page 4 you use title, page 5 you use author so it sounds like two different indicator sets).

Response: We modified this by including the authors and title on page 4 and by solely citing the authors in the rest of the article, including page 5. This way, we think there should be no more confusion.

Methods

8. Page 6, top paragraph: You say “The study was approved ...” Should this have been in the prior section on study design? It seems out of place here.

Response: we moved it

9. Page 6: Tell the readers in detail how you went from 26 possible sites to the 19 in the conference call to the 15 you then code. When at the bottom of the page you say you coded from 1 to 15, I was still expecting 19.

Response: Please see participating centre flow diagram in figure 1.

Results

10. Page 7: ED Characteristics: this info is not really a result, but rather are still part of your methods (describing who declined).

Response: The title of this section has been modified in order to reflect the information it contains. The new title is: “Sample size and participation rate”

11. Page 7: QCI Measurements: The second sentence “Over 50% of the centers ...” should be moved (it is not a result that is summarized in the Table you are describing. Perhaps it could be the opening sentence in this paragraph?

Response: we moved this paragraph.

12. Page 7: QCI Measurements: You say “duration stay” and likely mean “duration of stay”, and you say “patient security” and likely mean “patient safety”

Response: we changed this.

13. Page 7: QCI Measurements: Will you tell me why less than 40% they were measurable?

14. Page 7: Database for QCI measurement: You say “Archivist use ...” Is it more accurate to say “Archivists ability to successfully use ...”?

Response: Archivists ability to successfully measure the 27 QCI by using database varied across centres.

15. Page 7: Database for QCI measurement: The Centre id numbers are not useful to reader. This sentence would be more informative to readers if you provided us an

actual summary or analysis of this info.

Response: NA

16. Page 7: Database for QCI measurement: You say they searched 15 different databases; you should name and describe them for the reader.

Response: This would be confusing as multiple corporations and programs were involved in healthcare databases in Quebec at the time of this study. The issue of electronic healthcare databases is frequently changing in the province of Quebec. There are currently discussions of uniformizing databases. We cannot provide more current information at this time.

17. Page 8: Time to measure: opening sentence should say 27 indicators ranged (not varied).

Response: we changed for "ranged"

18. Page 8: Time to measure: Tell the reader more. Why did the time vary?

Response: Times most probably varied based on access to individual QCI in electronic databases and the time requirements for manual data extraction.

Discussion

19. Page 8: Discussion: You say the "results showed that the existing ED databases do not permit ..." Describe this better and more accurately. Is it that they do not quickly or easily or accurately or reliably and validly permit ...

Response: Yes .This is explained in the discussion.

20. The discussion is not the place to intro new material. This is where you intro the idea of whether these indicators are valid in a rural setting. Intro this idea earlier and tell the reader more about what Schull et al did to assess.

Response: We have rearranged some of the content from the discussion to the intro in response to this and previous comments.

21. Concur not the best word.

Response: We changed it for coincide

22. Page 9: tell reader more about the "higher-priority indicators for ED operations." What do you mean by this?

These were defined / designated by Schull et al through the Delphi process.

23. Should Lindsay et al work have been introduced earlier in paper?

24. "Of the 29 QCI (similar to Schull) ..." What does this mean? It sounds as though there are a new, but similar set of indicators, when I think you are trying to say something very different. Perhaps "Similar to Schull's findings, the 29 QCI..."

25. I challenge your claim that Ontario is reputed for the quality of its databases. Can you support this claim with some references?

Response: ICES is a not-for-profit research institute encompassing a community of research, data and clinical experts, and a secure and accessible array of Ontario's health-related data. (ICES.on.ca). ICES data is an inventory of coded and linkable health data sets. It encompasses much of the publicly funded administrative health services records for the Ontario population eligible for universal health coverage since 1986. In 2013, this includes health service records for almost 13 million people. The breadth and scope of ICES data is the foundational resource for creating unbiased evidence to drive health system policy, planning and evaluation. It also supports hundreds of research projects each year undertaken by researchers across the province.

26. If health care personnel are interested in measuring the quality of care (as you suggest), than why is rummaging through databases, in some cases for mere minutes, not worth it? What is the opportunity cost that is making this time investment seem invaluable to you and them?

Response: The healthcare system is faced with many challenges, funding being a major one. Decision-makers need the best information to help guide resource-allocation to equate the best quality of care. While rummaging through multiple databases may be valuable to determine certain QCI it is not a feasible long term approach. We need uniform, user-friendly databases with dedicated personnel to manage these and insure data quality. This was not what we found in our rural EDs.

	<p>27. The details on page 10 about weekly follow up by doctor and nurse should be in methods section. Response: We moved this sentence to the data collection subtitle of the methodology section.</p> <p>28. This page is where you enter the idea of applying the indicators to rural settings and begin to challenge the developers. Did they not consider this? Should this weakness of their work not have been introduced by you earlier in your paper when you intro their QCI? It is good to question the validity, but you need to set it up better and start earlier in your paper.</p> <p>29. Page 3, "Interpretation" you say it was "difficult." But you never in the body of your paper tell me why. Was it time-consuming? Inaccurate? Not cost-efficient? What was the difficulty?</p>
Reviewer 2	Dr. Fred Sarrazin
Institution	Thunder Bay Regional HSC, Emergency Department, Thunder Bay
General comments (author response in bold)	<p>In the Study Design and Context section:</p> <ol style="list-style-type: none"> 1. It would be informative to include a short description of the larger cross-sectional multi enter study developed by Fleet et al. Response: We provided further details and reference to study protocol. <p>In the Methods section:</p> <ol style="list-style-type: none"> 2. I would include the comment on REB approval by Hôtel-Dieu de Lévis hospital in is section. 3. Developing the methods section by including a description of the statistical methods and software used for data analysis would add to the overall clarity of the methods section. Response: This was added.