Reviewer’s report

Title: Distribution and quality of emergency obstetric care service delivery in the Democratic Republic of the Congo: It is time to improve regulatory mechanisms

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Reviewer: Andrea Solnes Miltenburg

Reviewer's report:

I thank the editor for being given the opportunity to review this manuscript. Overall I think an important study, and in particularly relevant because of the lack of research coming from the DRC, for obvious reasons. Perhaps the authors could emphasise this as well. I believe the focus of the study was on availability of EmOC rather than quality, which requires major revision in the text. I acknowledge that the structural aspects and some process aspects of the Donabedian framework are indeed addressed, however the authors have not actually assessed processes of care provision, which in my opinion is a true reflection on quality. The figures and tables are very clear and helpful. I feel the results should be related to the political situation and health system structure in DRC and I would ask the authors to make recommendation how the availability, and through this indirectly the quality of care could potentially be improved.

Please find my comments and suggestions per section below.

Introduction:
Page 5, Line 31-34: Please review the sentence 'Maternal deaths accounted for 35 % of all females aged between 15-49 years [6].' - I think you mean 35% of all female deaths not all females in general.
page 5, line 23-24: please remove capital letter C of cesarean, and perhaps rephrase. Induction of labour is not operative delivery. Perhaps you can say ... assisted delivery (e.g. cesarean section, vacuum extraction). If that is correct.
Page 7, line 8-9: please remove 'the strategy of'
Page 7, line 8-15. The introduction of AMTSL and Partograph seems a but out of the blue, these are not part of EmOC, so perhaps introduce this a bit more clearly, its relevance for your study? Or leave it out.

page 7: The section on DRC health system should be placed under method section which possibly a subheading study setting. . Perhaps also useful to give some demographics and basic health indicators. Population, fertility rate, MMR, SBA, ANC attendance etc. Also some minor spelling and language errors. For example please revise 'at each level are attach' and 'consist of minima'. And perhaps explain what you mean when stating reproductive health services. Do you mean ANC, Birth, PNC or also Family planning, post abortion care etc? I dont think that is necessarily important to mention but therefore perhaps simply state these facilities all need to deliver ANC, Intrapartum and PNC? Or specify primary health facilities should provide Basic and district Comprehensive EmOC. Health posts and referral health centres, should they provided Basic EmOC? Also with regards to setting, would it be useful to explain a bit more
about the context, political context (e.g. how is the MoH functioning, is there an ongoing conflict or not etc)

Methods
Page 7, line 55-58. Objective should be at the end of the introduction. Perhaps specify the study objective rather than paper objectives. Also include information on if this is a nationwide, or region wide or district wide Emergency Obstetric and Newborn Care assessment as first objective, followed by: 'to identify ways to improve distribution and quality'

page 8, line 10-11: I don't think you need a reference to this as you are simply stating which type of facilities were included. Which you have introduced earlier.

page 8, line 46: Would it be useful to say something about the total number of HF, to position your sample within the total?

page 9, line 33: remove 'at childbirth', specify what was considered assisted delivery. How was offering defined? Offered within the last three months? What is the difference between service use and offering? I believe in the Manual for Assessment of EmOC (https://www.unfpa.org/sites/default/files/pub-pdf/obstetric_monitoring.pdf) recommends to assess based on if it has been performed in the past three months.

page 9, line 51: I think there needs to be more information about the importance of assessing quality in relation to EmOC. This deserves more introduction, for example referring to the recent WHO recommendations focussing on quality (WHO 2016). Introduce donabedian already in the background section, so that this does not need to be explained while also explaining the data collection process.

page 10, line 5: training on Basic or Comprehensive?

page 10, line 10: Isn't equipment a prerequisite for availability of care as well? If the equipment is not available you can't offer it.

page 10, line 39: what about Helping Babies Breath training? Is this being done?

page 10, line 5-6: How does the availability of guidelines inform if they were used according to standards? Then the focus remains focussed on structure aspect of Donabedians framework. Also there is no reference to the third component or the donobedian approach. So perhaps the authors can consider only focussing on the structure aspect of the framework? Process of care would be properly reviewed if researchers had done direct observations of actual situations where EmOC needs to be used. Which based on the current paper has not been done. So I am in doubt if it is appropriate to present your study has reviewed the quality of care.

page 12, line 20: Please present ethics clearance number and state this was the national ethics committee in DRC.

Results:
Page 12, line 59 and Figure 1: I miss a definition of what you defined as 'reproductive health services' and 'skilled childbirth care' they are not mentioned as variables in the methods section.

Page 16: Referring to earlier comment on the QoC, if you describe availability of drugs and equipment, it does not give us information if these were actually used, or used in accordance to guidelines. So again I am in doubt if it is accurate to refer to this as high or low quality of care. It does give information about the potential ability to provide quality care, which is the structure aspect of the framework which you referred to earlier.
General: Can you say something about the geographical distribution of the facilities? Was this adequate? This goes to true availability of facilities to meet the needs of the population. Standards are I think one CEmOC for every 500,000 population.

Discussion:
P21, Line 3-13: Again similar to previous comment you haven't explained earlier what RHS is
P25, Line 19-29: Referring to previous comments, these facilities are providing services without the necessary equipment etc available, which indeed likely means it is of poor quality, but based on the study findings these challenges were similar in the other health facilities. I can imagine these facilities offer such services precisely because the coverage in their facilities of higher level facilities is poor. Perhaps this needs to be mentioned, if this is the case?
P26, L19-29: I think such information could be provided earlier in the background. Also, this only is informative if the reader knows that what is recommended is one CEmOC in 500,000. I think this can be better structured throughout the paper.
P26, L32-35: Here you refer to guidelines mother and child health, while the study focusses on EmOC, it is important to keep coherence throughout the manuscript.
P26, L35-43: This was not described in the results. How did you assess if it was operationalised?
P25, L45-46: Perhaps this tool should have been introduced earlier? L56: I think it requires a bit more explanation why simple presence of a physician would mean a facility would be upgraded. This raises more questions and I think this should be rephrased or left out. Is beyond what this study looks like. Or at least it would be helpful to be more clear in the beginning who is considered skilled to provided EmOC, basic and comprehensive.
General: I believe it would be important to reflect both in the background and discussion more on how the health system is functioning, budget allocation for Maternal and or Reproductive health, how the supply chain system works etc. Somehow the discussion is focussed on the health workers in the facilities, while they operate in larger institutions and systems which in my opinion are insufficiently addressed.

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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