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

Version: 0 Date: 20 Sep 2018

Reviewer: Wit Wichaidit

Reviewer's report:

The authors should be commended on undertaking a large amount of work on a relatively unexplored topic. The subject matter of the study, the lack of existing data on EmONC in the DRC, and the quality of the paper warrants publication. However, a number of revisions is needed before the article can be accepted for publication, as follows:

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ABSTRACT
Background:
The aim did not match the methods.
You conducted a cross-sectional study on availability of basic and comprehensive EmONC and problems reported by the staff through interviews, document reviews, and direct observation. Saying that you identify 'ways to improve' implied intervention, which you did not do. Suggest revising the wording to make the objective more accurate.

Methods:
The information in this section is unclear. Did the authors test all assumptions? If so, between what and what?

Results:
- State that the survey included n=1555 facilities. This is a landmark paper!
- 'A few facilities' is unclear.
- State how many facilities yielded complete information, how many had EmONC care; Otherwise just state the number of facilities with complete information and go with the 9.1% and 2.9% figures.

Conclusion:
Re: "The lack of regulation appears to be a key contributing factor to this state of affairs."
- Is it the lack of regulation, or is it the lack of monitoring for appropriate standard procedures for providers that contribute to the state of affairs? If so, please state that in the RESULTS part

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INTRODUCTION
- Page 5, Line 8: "...Africa and Asia carry the greatest burden [of maternal mortality] [1].
- Move the objective statement from the first paragraph in the METHODS section to the beginning of the final paragraph in the INTRODUCTION section.

METHODS
- Page 8, Line 31: What are the 11 strata in sample selection?? Provinces? Districts? Please specify
- Page 8, Line 54: Generally, it was unclear as to how stratified sampling (of 11 strata and 4 sub-strata) was done in order to obtain the 1568 facilities that was the final sample size.
- Page 9, Line 26: (The index of availability of EmONC, #2 Staff): Does the staff member has to be on standby in the room at all times, or can this person work in another ward and be on all for EmONC? Please specify.
- Page 10, Line 10: (Index quality of EMONC, #3): Does the EMONC delivery guideline have to be in the form of a book or document? Please specify.
- Page 10, Line 29: The index quality of comprehensive EMONC was confusing. I suggest that you turn all of the information here into a table or a box with lists.
- Page 12, Lines 13 thru 18: (Data Analyses) Why did you mention Odds Ratios if they were never shown in the results section?

RESULTS
I wonder if the data in Figures 1 thru 4 can be presented as tables? Right now the information seems to be somewhat redundant, or the amount of used space seems copious.
In Table 2, it was unclear what the P-values were for? Was it simply to look at the heterogeneity of distribution of hospitals meeting guidelines on basic EmONC, HW trained in Basic EmOND, Ambulance, and Operational Capacity Score disaggregated by province, type of facility, administrative identity and location? If so, and if this is not the main research question, I wonder how much information the P-values actually yield? Also, given the large sample size, any noticeable difference would be statistically significant, but this significance only indicates that the difference was not due to chance? A much better use of Table 2 would be in the interpretation: what does it mean for only 3 of 91 hospitals in Equateur to have basic EmONC as opposed to 35 of 91 in Kinshasa? What contributes to the heterogeneity and what can be done to overtime these gaps? These issues would be insightful to talk about in the DISCUSSION section

DISCUSSION
"The health system in the DRC is facing the challenge of poor regulation"
- As I mentioned in the comments in the Abstract section, is it the lack of regulation or is it the lack of standards / enforcement of standards? Please be careful of the wording to avoid ambiguity
- Also, which part of your study data points to this lack? Please specify
Strengths and Limitations
- Strengths: Please mention your high response rate and its implication on selection bias, or lack thereof
- Limitations: What was the results of data validation process, when supervisors sampled and visited 10% of the facilities? Any cause for concern with regard to the limitation? If no, then it's one of your strengths; if yes, then it's a limitation.

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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