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: Projestine Muganyizi

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REPH-D-18-00337
Title: Distribution and quality of emergency obstetric and neonatal care service delivery in the Democratic Republic of the Congo: How can be improved the regulating mechanisms?

General:
Thanks for presenting the results of a relevant survey in DRC. The paper needs some work to improve the quality of the message and readability. The most important area to concentrate on is the Methodology which lacks important information.

The title: The subheading: How can be improved the regulating mechanisms? Is out of scope of the study.

The stated Objective: ... to identify ways to improve the distribution and quality of emergency obstetric and neonatal care in the Democratic Republic of the Congo [Pg.7, L55-60] does not seem in line with the study.

Terminology: It is advised to be consistent with the use of standard terminology. Your current Ref. No. 23 can be used to guide the right terminologies. You need to use EmOC rather than EmONC since newborn signal functions per se have not been described. You may need to read also the publication by Gabrysch et al 2012 that defined emergency obstetric care signal functions.

METHODOLOGY:
* Revise the reference to EmONC as interventions rather than the standard terminology of signal functions
* On Line 28-29, Pg 10 (index number 3) mentions the seven interventions offered at childbirth while actually this should not be necessarily at childbirth. Moreover, in reference No.23 this should be offered within last 3 months if a health facility is to be classified as BEmOC or CEmOC.
* Revise the wrong labelling of facilities as BEmONC and CEmONC without timing reference [Pg. 10, L28-47.
* Overall, the index of availability needs more detailed explanations: Index no.1 The presence of a delivery room infrastructure does not mean that evacuation of products of conception or Cesarean section can be done in that facility; Index no.2: Staff: having a member of staff assigned to Reproductive Health services says very little about the provision of EmOC
services. The staff could just be providing Family planning services. Index 3: Much has already been said on this. When are these services provided? During the day of survey or at a specified period? Index 4: Was this meant for assisted vaginal birth alone or for all the 9 EmOC signal functions?

* Wrong inclusion of unqualified terms "assisted deliveries" "Neonatal resuscitation" and "uterine evacuation after childbirth" as standard EmOC signal functions, Pg 10, L33-34.

* Statement of index of EmONC availability No.4, pg 10, L44-47 which states: Service utilisation based on service statistics that at least one assisted delivery recorded during the six months preceding the survey. It is quite unclear why assisted vaginal delivery which is not a normal delivery procedure has been taken as the benchmark of service utilisation and the other 8 EmOC functions have not been considered. This is not in line with the standard WHO assessment of availability of EmOC services in facilities.

* The Methodology should give details on how the NHIS is used and how quality of data is controlled in DRC.

* The results that 76.9% of facilities offered Reproductive Health Services is contrary to a statement in the Methodology on Pg. 8, L10-31 which shows that there was cross-checking to ensure the facilities were currently functional.

* The statement on Pg. 12-13 "...shows that skilled childbirth service was the most available (74.8 %) of the seven basic interventions package of EmNOC, followed by uterine evacuation after childbirth (71.0 %), manual removal of the placenta (68.4 %) and neonatal resuscitation (68.0 %)" should be rewritten because skilled childbirth is not a recognisable EmOC signal function. Uterine evacuation after childbirth and neonatal resuscitation should be qualified in this section and throughout the document as already pointed out above.

* It should be clearly stated in the Methodology and well presented in the results how availability of EmOC services was measured. Is it that the service was available on the day of survey, is it in past 3 or 6 months? Were these directly observed or only electronic case reports were used?

* "Of all health facilities, 9.1 % offered basic EmONC as defined by the index of availability, which represents up to 16.0 % of facilities with Reproductive Health Services." Pg 13, L10-19. These results cannot be interpreted without clear explanations of the indices of availability.

* "...Cesarean sections and blood transfusions were provided in a few health centres (6.5 % and 9.0 % respectively) and health posts (2.3 % and 2.3 % respectively)".Pg.13, L29-34 It is difficult to interpret these results if the methodology does not say which level of facility is expected to do what.

* The analysis therefore should strictly consider: Calculating % of facilities that are entitled to give the service which actually provided.

* It is even more important that such %ages consider a sub-analysis of those facilities that actually attended cases of the nature that needed the specified EmOC functions during a specified period. It will be useless to calculate and present % of health posts that performed
evacuation of products of conception while in fact just few of them received abortion cases during the period in question.

* Table 1: Gives the number of facilities providing BEmOC and CEmOC. For Kinshasa province this number is 28+11=39 out of the total 147 health facilities. Table 2 assesses the basic operational capacity of health facilities to provide EmOC and for Kinshasa province 91 facilities in total were assessed. Why not all the 147 facilities assessed for their capacities? This number should have been 39 facilities with EmOC services available because a facility without EmOC services available is not expected to provide quality BEmOC services. Where the 91 facilities come from in Table 2? There is need to reanalyze data or give sufficient explanations in these two tables since the case of Kinshasa applies to all other provinces

* Table 3: In Kinshasa only 11 health facilities have CEmOC services available according to Table 1. Can you explain the 66 facilities for Kinshasa in Table 3?

* Table 1-3 no need for the footnotes if the detailed explanations were included in Methodology section. What do P-values in Table 2 compare?

* Figure 1 edit the EmOC signal functions nomenclature according to suggested corrections above.

* Figure 3: The index is expected to result into facilities with high and low Quality. Instead, here the individual index components are displayed. Needs revision.

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