Reviewer's report

Title: A cross-sectional survey of emergency and essential surgical care capacity in a Central African country

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Reviewer: PABLO TARSICIO Uribe-Leitz

Reviewer's report:

This manuscript reports on the implementation of the WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care (EESC) which evaluates the following sections: a) Infrastructure, b) Human Resources, c) Interventions, and d) Emergency & Essential Surgical Care Equipment and Supplies; to assess capacity in different types of hospitals across Cameroon. The authors convenience sample surveyed 12 hospitals providing different levels of care (District, Regional, General and Missionary) located in 4/10 regions, namely: Southwest, West Littoral and Center Regions. Their work provides valuable insights to better understand capacity and access to EESC in Cameroon.

Their findings suggest inadequate infrastructure; scare human resources; limited interventions provided by all hospitals; and restricted equipment and supplies available for all patients all the time to provide EESC. The study design and data analysis is straightforward. The authors provide a current illustration of surgical and trauma care systems in Cameroon; and thus contribute to better understand the increasing surgical burden of injury and disease in low and middle-income countries.

Major Compulsory Revisions:

• Do you cover all hospitals within the regions? Elaborate on the limitations of convenience sampling.
• The authors seem to use mean and median indistinctly between tables and manuscript, please verify, and clarify if using both. Examples given below.
• Figure 2: Include availability of functioning pulse oximeter, if possible
• Table 2:
  o Did you consider the population served by each hospital in the denominator of your calculation? E.g. Qualified surgeons General Hospital: 11.5/3,000,000 x 1,000,000=3.83 vs 11.5/6,000,000 (adding the estimated populations from each hospital) x 1,000,000=1.92? Similarly for this particular example could you use the exact estimates instead of >3 mil?
  o Are values median number of providers per 1,000,000 population?
  o Total should add up to n=11, if the Missionary hospital is not included.

Minor Essential Revisions:
• Line 30: additional “of” before heads of facilities.
• Line 115: Which sociodemographic characteristics of the population in this area? Is it representative of Cameroon?
• Line 118: Why is the unsafe use of motorbikes more prevalent in the West Region? Could you provide a reference? Is this not the case for the rest of the country?
• 126: Did the investigators receive a standardized training? Was the survey tool implemented in English? Was it translated to French? If so, who did the translation and were there mechanisms in place to reach consensus?
• 126: Were there mechanisms in place to reduce the likelihood of transcription errors?
• Line 161: Consider reporting the actual number, instead of “most” since there were only three. E.g. “Three district hospitals had 81 to 100 beds and most reported 501 to more than 5000 admissions annually.
• Line 176-177: Although it is probably true that both General hospitals had between 101 and 200 children (<15 years) requiring surgical procedures, this cannot be inferred from your table 1. Consider including this to the last sentence, which refers particularly to Laquintinie Hospital, if this is the case.
• Line 217: You mention a range of paramedics and/or midwives for district hospitals and one for general hospitals, and later report on a single number per million population for each type of Hospital. How was this number obtained?
• Line 234: was dilatation and curettage included in the Ob/Gyn category referred the least or Ob/Gyn category as a whole? Please clarify.
• Line 246-248: Is this mean or median score?
• Line 248: Consider including a total column to table 4? 1.4 is the mean overall score? If not consider rewording line 246. Mean calculated values based on table 4: District 1.6, Regional 1.4, General 1.6, Missionary 1.9
• Line 254: Please change regional for Missionary per table 4.
• Line 256: shouldn’t this also be Missionary per table 4?
• Line 259: s missing in hospitals.
• Line 380: K (M’K’N) initial missing in conducted and supported data analysis section.
• Figure 1:
  o Missionary hospital does not show up in the figure.
  o It would be interesting to include population density map of the region.
• Figure 2:
  o Please edit label “Available emergency care management..”
• Table 1:
  o Label General instead of Referral, for consistency in the since it is manuscript
and across tables.
- Please clarify * for Regional Hospitals if the estimated population was not reported.
- Table 3:
  - Not clear how you came up with these percentages, could you please clarify. Perhaps consider including the N and % in parenthesis?
  - Is obstetric fistula repair (Line 225) included in Ob/Gyn procedures**?

Discretionary Revisions
- Line 164: please clarify what you mean by: the past year, calendar year from August to July or from January up to August? Was this standardized across hospitals? Please clarify in Selection of Hospitals or Survey implementation.
- Line 168: there are no other hospitals in the Southwest region? Also, please reference and clarify population, since Table 1 shows not reported.
- Line 210: please consider- “surgery and anesthesia combined at 13.86”
- Line 205-218: human resources paragraph is hard to follow given the data from table 2. Please consider including the data from table (e.g. median of 11.5 [3.8 per million population] qualified surgeons available) to the text and/or vice versa.

The authors examine a key issue when looking at capacity of hospitals to deliver EESC. They use a standardized WHO survey to bridge the gap between burden of disease and allocation of available resources, and their efforts are commendable. Their work informs the overall policy debate; the authors should be encouraged to continue with this valuable work in Cameroon and other LMICs.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests