



A Cross-Sectional Survey of Emergency and Essential Surgical Care Capacity in Cameroon

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Background

- The global burden of surgical disease is increasing, disproportionately affecting low- and middle-income countries (LMICs).
- An estimated 11% of the global burden of disease requires surgical treatment.
- In sub-Saharan Africa, the burden of surgical disease is characterized by emergency and essential procedures requiring immediate attention.
- Realizing universal coverage of essential surgery in LMICs could avert an estimated 1.5 million deaths per year.

Objectives

- To assess the capacity of hospitals in Cameroon to deliver emergency and essential surgical care (EESC).
- To inform evidence-based decision making for appropriate allocation and provision of resources for EESC.

Methods

- WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care
- Examined four domains:
 - Infrastructure
 - Human Resources
 - Interventions/Procedures
 - Equipment and Supplies
- 12 hospitals surveyed: 7 district level, 2 provincial, 2 general, 1 missionary hospital

Results

Infrastructure

- Largest gaps in availability of oxygen concentrator supply, on-site blood bank, and pain relief management guidelines.
- District hospitals were least likely to have EESC infrastructure available.

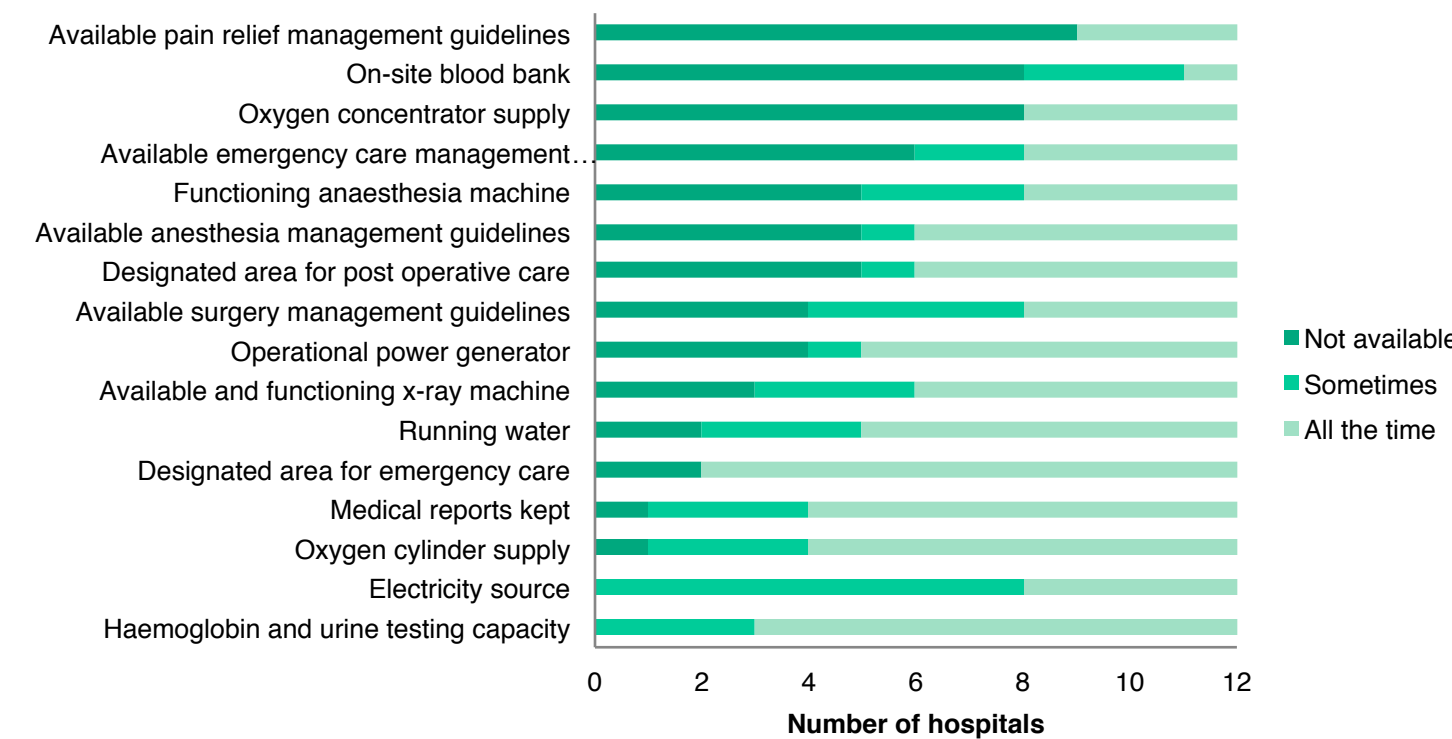


Figure 1. Frequency of available infrastructure for emergency and essential surgery

Equipment and Supplies

- All hospitals had access to 9 of 67 pieces of equipment/supplies.
- No hospital had a cricothyroidotomy set.
- General and missionary hospitals demonstrated greatest availability of equipment and supplies for resuscitation.

Table 2. Mean score of availability of essential equipment and supplies for resuscitation

Indicator	District (n=7)	Provincial (n=2)	General (n=2)	Missionary (n=1)	Total (N=12)
Airways and breathing equipment	0.88	1.19	1.40	1.73	1.13
Equipment for circulation	1.79	1.55	1.71	1.97	1.67
Equipment and skills for management of special injuries	1.66	1.45	1.61	1.90	1.58
Equipment for diagnosis and monitoring	1.82	1.32	1.77	2.00	1.61
Equipment for security of health workers	1.92	1.58	1.58	2.00	1.66

0 – Not available*, 1 – Available with frequent shortages or difficulties, 2 – Fully available for all patients all of the time.

Human Resources

- Combined total of 6 surgeons, 7 obstetricians/gynecologists, and no anesthesiologists across district, provincial, and missionary hospitals.

Table 1. Human resources available for emergency and essential surgery per million population

Occupational categories	District (n=7)	Provincial (n=2)	General (n=2)	Total (N=11)
Qualified surgeons	3.65	0.77	3.83	8.25
Qualified anesthesiologists physicians	0.00	0.00	1.33	1.33
Qualified obstetrician/gynecologists	2.19	3.08	2.00	7.26
General doctors providing surgery	8.75	0.77	0.33	9.85
General doctors providing anesthesia	5.10	0.00	0.00	5.10
Nurse/clinical/assistant officers providing anesthesia	10.94	2.31	2.17	15.41
Clinical/assistant officers providing surgery	13.13	0.00	0.00	13.13
Paramedics/midwives	165.53	46.15*	95.17	306.85

*Only 1 provincial hospital reported.
Note: Missionary hospital not included in table due to skewed representation upon scaling to one million population.

Interventions/Procedures

- Of the total 35 surgical interventions, 16 were provided by all hospitals.
- General hospitals provided all interventions except for cataract surgery and ketamine anesthesia.

Table 3. Mean percentage of hospitals performing specified interventions

Category	District (n=7)	Provincial (n=2)	General (n=2)	Missionary (n=1)	Total (N=12)
Incision and drainage of abscess	100	100	100	100	100
Suturing	100	100	100	100	100
Wound debridement	100	100	100	100	100
General surgery procedures	100	100	100	100	100
Biopsy	100	100	100	100	100
Obstetrical/gynecology procedures	95	100	100	100	97
Burn management	93	100	100	100	96
Orthopedic procedures	86	100	100	100	92
Chest tube insertion	86	100	100	100	92
Urology procedures	79	100	100	75	85
Resuscitation	71	100	100	100	83
Pediatric surgery procedures	68	75	100	75	75
Ear, nose, and throat procedures	50	100	100	100	71
Anesthesia	61	63	88	100	69
Ophthalmology procedures	0	0	50	100	17

Note: The 35 surgical interventions were grouped into the categories indicated in the table, as appropriate.

Conclusions

- Severe gaps exist in EESC infrastructure, human resources, interventions performed, and essential equipment and supplies.
- There is significant need for investment in EESC infrastructure, equipment, supplies, and skilled human resources to cope with the increasing surgical burden of disease and injury in Cameroon.

Policy Implications & Future Research

- There has been considerable political will and stakeholder interest in improving the EESC capacity of health facilities.
- This baseline data is a starting point from which to make informed policy and investment decisions for adequate EESC delivery.
- There is continued need for comprehensive, rigorous assessment of EESC capacity as a mechanism of identifying where resources and investment will prove most valuable.
- Future longitudinal follow-up assessments will reveal which and how investments result in the greatest improvement in Cameroon's hospital-based resources for delivery of surgical care.

