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Anaesthesia Capacity of District-Level Hospitals in Malawi, Tanzania, and Zambia: A Mixed-Methods Study

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Background

- District-level hospitals are the main providers of surgical services for rural populations in Sub-Saharan Africa (SSA).
- The density of anaesthesiologists in SSA is very low
- These are concentrated in urban areas
- Anaesthesia care in rural settings being primarily provided by nurses and non-physician clinicians (NPCs)

Methods

- In-depth investigation of anaesthesia capacity in 76 DLHs across Malawi, Zambia and Tanzania
- July to November 2017, using a mixed-methods approach.
- District-level anaesthesia capacity using a standardized scoring system: adapted (using WHO-WFSA recommendations) and extended Personnel, Infrastructure, Procedures, Equipment and Supplies (PIPES) Index + a qualitative interview.

Results

- **None of the surveyed DLHs met international minimum safety standards (WHO-WFSA International Standards).**
- Anaesthesia PIPES index scores in Malawi (M = 8.0), Zambia (M = 8.3), and Tanzania (M = 8.4) were similar (P = .59), but an analysis of individual PIPES components and the qualitative data revealed important cross-country differences.

Results

- Malawi: only 29% of facilities have uninterrupted access to electricity and 23% have constant access to water, among other challenges.
- Zambia: mostly affected by staffing shortages, with 30% of surveyed hospitals lacking an anaesthesia provider.
- Tanzania: non-availability of functioning anaesthesia machines, frequent shortages of staff and equipment.

Results

- Anaesthesia care at the district level in these countries is provided only by non-physician anaesthetists, some of whom have no formal training.
- Ketamine anaesthesia is widely used in all hospitals, compensating for shortages of other forms of anaesthesia.
- Paediatric size supplies equipment were frequently missing.

Results

Number of trained anaesthesia and surgical providers at district hospitals by country

	Malawi					Tanzania					Zambia				
	Tot	Min	Max	Mean	SD	Tot	Min	Max	Mean	SD	Tot	Min	Max	Mean	SD
Anaesthesia providers	48	1	4	2	0.66	68	0	4	2	0.94	24	0	2	1	0.78
Surgery providers	364	9	31	17	6.42	265	2	24	9	4	88	1	8	4	1.62

Conclusions

- Tanzania, Malawi, and Zambia are falling short of ensuring universal access to safe and affordable surgical and anaesthesia care for district and rural populations
- Country-specific interventions are urgently needed to improve anaesthesia care at the district level if the surgical needs of rural populations are to be addressed.

Thank you

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