



A MIXED-METHODS ASSESSMENT OF SURGICAL CAPACITY IN THE LAKE VICTORIA ZONE OF TANZANIA

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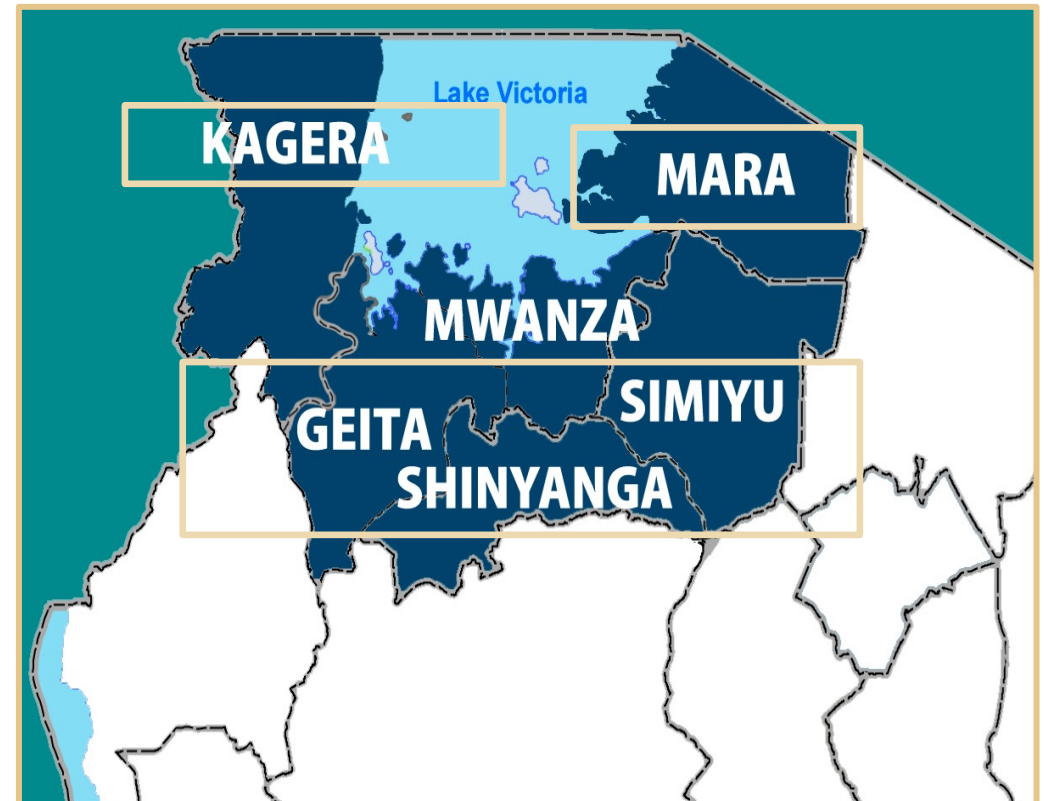


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BACKGROUND:TANZANIA

- Population 55 million (WHO, 2016).
- 5.6% of GDP on health (WHO, 2014) and has a **decentralized** healthcare system.
- Two major players in the healthcare system (COWI, 2017):
 - **The Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC)**
 - Primary responsibilities are: national policy, regulatory framework, standards setting, inspections, monitoring and auditing
 - **President's Office - Regional Administration and Local Government (PORALG)**
 - Primary responsibility is service delivery



BACKGROUND: SURGICAL CAPACITY

- In 2015, Carlson et al. performs a systematic review on surgical capacity assessments and finds the following 3 principal methods
 - The WHO Tool (GIEESC)
 - PIPES – Personnel, Infrastructure, Procedures, Equipment and Supplies Assessment (Surgeons Overseas')
 - Harvard Humanitarian Initiative Tool
- Also in 2015, **Lancet Commission on Global Surgery** defines core indicators
- 2017 WHO & Program in Global Surgery and Social Change (PGSSC) publish Surgical care systems strengthening: developing national surgical, obstetric and anaesthesia plans
 - Introduces the **Surgical Assessment Tool (SAT)** jointly developed by WHO and PGSSC

RESEARCH GAP AND WHY WE CARE

- This is **not** the first assessment of surgical capacity in TZ
 - 2009 - WHO Tool (Penoyar, 2011) - Found deficits in human resources, essential equipment and infrastructure
 - 2012 – Service Availability and Readiness Assessment (SARA) administered by MoHSW
 - SurgAfrica – PIPES in Lake Zone
- Gaps do exist regarding:
 - Information management and financing
 - Current state (as of 2018) of TZ surgical capacity
- We care so **we can better understand factors contributing to surgical capacity and what may act as a barrier in the framework of meeting LCoGS targets**
- **Safe Surgery 2020 a secondary research aim is "examining changes in surgical capacity"**

METHODS

- **Quantitative data:**

- WHO-PGSSC SAT tool
- Collected at 10 intervention and 10 control hospitals by trained physician data collectors

- **Qualitative data:**

- Conducted at the 10 intervention hospitals
- 40 interviews with hospital administrators, surgical team members, anesthesia providers, surgical nurses and SS2020 data collectors

- **Time frame**

- Data collected between February 1st and April 30th 2018

CHARACTERISTICS OF FACILITIES

Characteristics	Facilities (n = 20) n (%)	Intervention Sites (n= 10) n (%)	Control Sites (n= 10) n (%)
Level of Facility			
Health Centre	4 (20%)	2 (20%)	2 (20%)
District Hospitals	11 (55%)	6 (60%)	5 (50%)
Regional Referral Hospital	5 (25%)	2 (20%)	3 (30%)
Facility Ownership			
Government	15 (75%)	6 (60%)	9 (90%)
Faith-Based*	5 (25%)	4 (40%)	1 (10%)
Number of inpatient beds			
0-100	5 (25%)	3 (30%)	2 (20%)
101-300	13 (65%)	6 (60%)	7 (70%)
300+	2 (10%)	1 (10%)	1 (10%)
Average monthly surgical volume (n)	1644	750	895
Average monthly bellwether procedures			
Cesarean sections	880	461	419
Laparotomies	129	54	75
Open-fracture repairs	0	0	0

*Please note four of the Faith-Based facilities also receive Government funding due to their status as Designated District Hospitals

BASIC INFRASTRUCTURE

Region(s)	Electricity	Water	Internet	Oxygen	Blood
Mara	76-99%	76-99%	1-25%	76-99%	51-75%
Kagera	76-99%	76-99%	51-75%	100%	76-99%
Geita	100%	51-75%	1-25%	100%	76-99%
Shinyanga & Simiyu	76-99%	76-99%	26-50%	100%	51-75%

SURGICAL WORKFORCE (n=20)



	Anesthesiologists	Surgeons	OB/GYNs	MDs providing surgery	non-MDs providing surgery	non-MDs providing anesthesia
Mara	0	1	0	21	10	13
Kagera	0	1.5	1	35.5	31	14
Geita	0	1	0	21	16	16
Shinyanga & Simiyu	0	2	1	26	25	19
Avg. per facility	0	0.3	0.1	5.2	4.1	3.1

*Full-time staff were counted as 1.0. Part-time staff were counted as 0.5.

FINANCING



On average, only 1-25% of patients are covered by health insurance

Average Out-Of-Pocket Expenditure

Procedure or Test	All regions (n=20)
Cesarean section*	\$0.00 (n=20)
Open fracture repair	\$83.25 (n=5)
Laparotomy	\$47.82 (n=20)
Complete Blood Count	\$3.45 (n=12)
Chest X-ray	\$5.50 (n=15)
Lodging per week	\$2.45 (n=20)

INFORMATION MANAGEMENT

On average, there are **1.8 research projects** ongoing in each facility, with an average of **1.1 research projects** in the department of surgery.



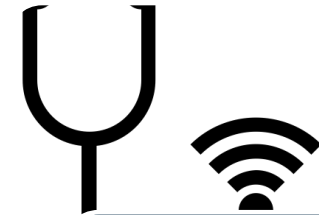
Most facilities (18/20) keep records both electronically and on paper



All but 1 facility has a person at the facility responsible for record keeping



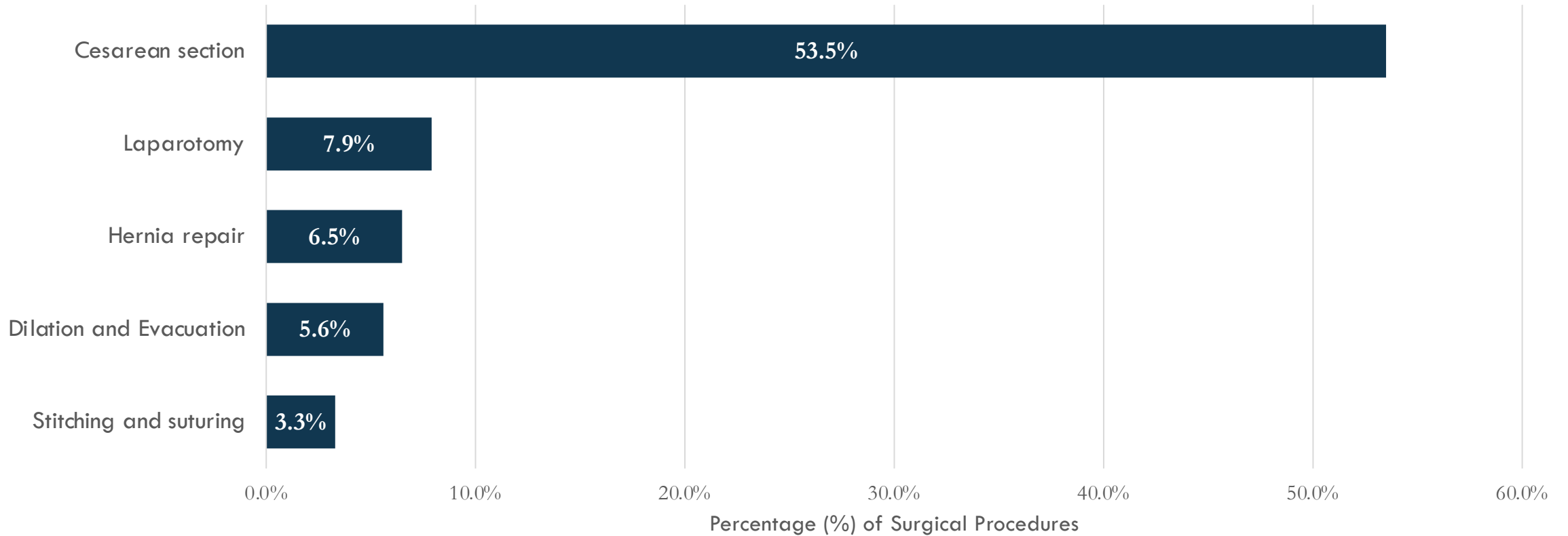
11 of the 20 facilities do not have charts accessible across multiple visits



2 of the 20 facilities uses telemedicine

SERVICE DELIVERY

Most Common Surgical Procedures in the Lake Zone from February 1st- April 30th, 2018



KEY TAKEAWAYS

- **Infrastructure:** Internet is lacking across the facilities, CT scanners and MRI machines are nowhere to be found across the 20 facilities and the majority of facilities cannot perform a CBC, chemistry panel, coagulation studies
- **Service delivery:** 32 of the 39 equipment and supplies listed were available >76% of the time at the 20 facilities
- **Human resources:** Major deficit, SAO density is extremely low. Serious deficits in surgeons, anesthesia and Ob/Gyn specialist providers. Surgery/CS provided by general doctors and anesthesia provided mostly by non-physicians
- **Information management:** Both paper and electronic records with designated personnel. Telemedicine not used and data is often not prospectively collected for patient outcomes
- **Financing:** 1-25% of patients have health insurance and 1-25% of the budget is on average allotted to surgery/anesthesia

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