



## OBJECTIVE 1: CAPACITY - RESULTS

### Section A: Infrastructure

- Catchment population: 43,124
- Beds: 224
- Total Admissions in 2013: 8,816
- Total Outpatients in 2013: 52,411
- Average patient travels 5-20km to get to hospital - boda boda
- 2 Major + 2 Minor Operating Theatres
- Water: plumbing throughout, supply unpredictable
- Electricity: daily outages with reliable back-up
- Anesthesia Machines: 3 functional with continuous intraop vital monitoring
- Inconsistent access to/use of management guidelines
- Access to Hgb/urine tests, x-rays, blood but shortage of vital monitoring equipment outside theatre

## OBJECTIVE 1: CAPACITY - RESULTS

### Section B: Human Resources

- Surgeons (qualified, i.e. consultant): 0
- Obstetricians/Gynecologists (qualified): 1
- General doctors providing surgery (including obstetrics): 5 (medical officers)
- Clinical officers providing surgery: 1 (ophthalmology)
- Anesthetists: 2 (clinical officers)
- Nurses-Theatre: 5
- Midwives: 56
- Paramedics: 0
- Engineers/Repair technicians: 6

## OBJECTIVE 1: CAPACITY - RESULTS

### Section C: Interventions

	Do you perform these procedures?									
	Yes/No		Do you refer?		If you refer, is it due to... (circle ALL that apply)					
	Y	N	Y	N	Lack of skills?	Lack of functioning equipment? / Non-supplies/ drugs?				
27. Resuscitation (airway, hemorrhage, peripheral percutaneous intravenous access, peripheral venous cut down)	(Y)	N	Y	(N)	Y	N	Y	N	Y	N
On children:	(Y)	N	Y	(N)	Y	N	Y	N	Y	N

- Laparotomy (intestinal obstruction, injuries)
- Neonatal and Congenital conditions
- Most non-cataract ophthalmic surgeries
- Orthopedic

## OBJECTIVE 1: CAPACITY - RESULTS

	0 absent	1 available with frequent shortages or difficulties	2 fully available for all patients all the time
<b>Capital Outlays</b>			
61. Resuscitator bag valve & mask (adult)		✓	

### Frequent Shortages:

- soap
- eye protection
- tourniquets
- splints
- Resuscitator bag valve & mask (adults + peds)
- blood pressure measuring equipment for children
- catheters for children


## SIAYA VS. MOH LEVEL 4/5 STANDARDS

	Level 4	Level 5	Siaya CRH
<b>Minimum Human Resources</b>			
Medical Officers	6 (at least 2 outpatient, 3 inpatient)	15 (at least 4 outpatient, 8 wards, 2 maternity, 1 intensive care unit)	5
Anaesthesiologist	2	4	2
Nursing Staff-Theatre	10	40	5
Nursing staff-Intensive Care Unit		12	0 (no ICU)
ENT Clinical Officer		1	0
Ophthalmology Clinical Officer		3	1
Obstetricians/Gynaecologists		4	1
Surgeons		3	0
Ophthalmologists		2	0
ENT Specialist		1	0
Orthopaedic surgeon		1	0

## SIAYA VS. MOH LEVEL 4/5 STANDARDS, cont.

	Level 4	Level 5	Siaya CRH
<b>Minimum Physical Infrastructure</b>			
Minor theatre in OPD	1	1	2
ENT services room in OPD	1	1	0
Laboratory	1	1	1
Operating theatre beds	2	4 (1 Gynae emergencies, 1 cold case, 1 general emergencies, 1 ophthalmic)	2
X-ray room	1	1	1
Ultrasound room	1	1	1
Source of running water	Yes	Yes	Yes but inconsistent
Water reservoir	Yes	Yes	Yes
Water storage for roof catchment	Yes	Yes	Yes
Generator house	1	1	1, reliable with several-minute delay in turning on
Ambulance	1	1	2
Medical Engineering Unit		Yes	Yes

### GAPS - METHODS



**GAPS =**

Examination of handwritten logbook of referrals in 2013 for cases likely to require surgical intervention.

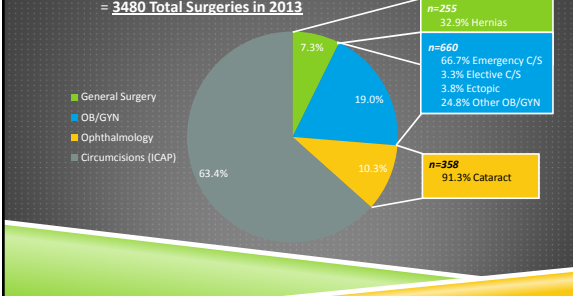
Urgent Referrals Out of the main theatre in 2013 as recorded in logbook of General Surgery, OB/GYN, Ophthalmology

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Urgent Referrals Out of the main theatre in 2013 as recorded in logbook of General Surgery, OB/GYN, Ophthalmology

### OBJECTIVE 2: GAPS - RESULTS

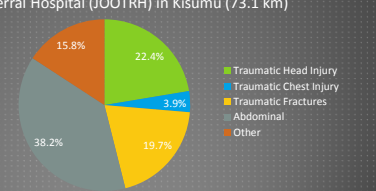
- General Surgery + OB/GYN + Ophthalmology + Circumcisions (ICAP) = **3480 Total Surgeries in 2013**



Category	Percentage	Sub-category	Percentage
General Surgery	7.3%		
OB/GYN	19.0%		
Ophthalmology	10.3%		
Circumcisions (ICAP)	63.4%	Hernias	32.5%
		Emergency C/S	66.7%
		Elective C/S	3.3%
		Ectopic	3.8%
		Other OB/GYN	24.8%
		Cataract	91.3%

### OBJECTIVE 2: GAPS - RESULTS


- Total of **76 Referrals** Out of Siaya County Referral Hospital in 2013 for Likely Surgical Interventions
- At least **75%** of those cases were referred to Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kisumu (73.1 km)



Category	Percentage
Traumatic Head Injury	22.4%
Traumatic Chest Injury	3.9%
Traumatic Fractures	19.7%
Abdominal	38.2%
Other	15.8%

### OBJECTIVE 3: CAUSES OF GAPS - METHODS

- Developed an 8-question survey to administer to hospital staff (goal n=10-15) involved in the care of surgical patients

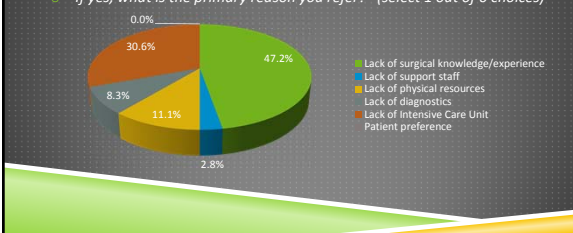


### OBJECTIVE 3: CAUSES OF GAPS - RESULTS

- "Do you experience any constraints in caring for surgical patients?"
  - 78.8% of respondents circled "Yes"
- "What are the biggest problems experienced by Siaya District Hospital in caring for surgical patients?" (rank top 5 out of 12 choices)
  - 81.0% respondents chose "not enough consultant surgeons" as their #1 biggest problem
  - Top 5 Problems:
    - not enough consultant surgeons
    - lack of equipment
    - not enough healthcare support staff (including nurses, clinical officers, etc.)
    - not enough anesthetists/anesthesiologists
    - lack of diagnostics (labs, imaging, etc.)

### OBJECTIVE 3: CAUSES OF GAPS - RESULTS

- "Do you refer any surgical cases to a higher-level facility?"
  - 100% of respondents circled "Yes"
- "If yes, what is the primary reason you refer?" (select 1 out of 6 choices)
  - Lack of surgical knowledge/experience (47.2%)
  - Lack of support staff (30.6%)
  - Lack of physical resources (11.1%)
  - Lack of diagnostics (8.3%)
  - Lack of Intensive Care Unit (2.8%)
  - Patient preference (0.0%)



## CONCLUSIONS

- ▶ *Surgical Capacity*
  - ▶ Siaya County Referral Hospital has decent capacity for most aspects of basic emergent and essential surgical care
  - ▶ Significant insufficiencies exist in infrastructure (consistent water supply and use of management guidelines), human resources (consultant surgeons, MOs, theatre nurses), and equipment and supplies (soap, pediatric equipment) that prevent it from achieving an appropriate level of care
- ▶ *Gaps between Surgical Provision & Need*
  - ▶ With more than 3000 surgeries performed in 2013, Siaya demonstrates clear need for trained surgeons (especially in General, Urologic, Orthopedic, OB/GYN, and Ophthalmic surgeries)
  - ▶ Majority of the cases referred out of Siaya for likely surgical intervention are trauma-related

## CONCLUSIONS, *continued*

- ▶ *Causes of Gaps*
  - ▶ vast majority of hospital staff agree we face constraints in caring for surgical patients
  - ▶ the biggest problem they experience is not having enough consultant surgeons with the appropriate level of knowledge and experience
    - ↳ the primary reason we have to refer
  - ▶ 2<sup>nd</sup> most common reason we refer is not having an ICU

## RECOMMENDATIONS

- ▶ *Ensure the Fundamentals*
  - ▶ Consistent water and soap supply
- ▶ *Institutional Employment of Management Guidelines, especially for Emergencies*
  - ▶ FAST Exam training for abdominal trauma
  - ▶ Consider acquisition of a CT scanner and necessary support (e.g. head trauma)
- ▶ *Standardize, and if possible Digitize, Documentation of Surgical Cases*
  - ▶ ICD-10 coding
  - ▶ Ensuring patient ID, name, age, surgery type, indication, etc. are always documented
- ▶ *Maintain a Standardized, and if possible Digitized, Record of ALL Referrals*
  - ▶ Currently non-urgent outpatient referrals for likely surgical conditions are not being documented

## RECOMMENDATIONS, *continued*

- ▶ *Work with County Officials and the Ministry of Health*
  - ▶ To develop methods of incentivizing surgeons to come and to stay working at Siaya County Referral Hospital
  - ▶ To develop programs of rotating consultant surgeon coverage (e.g. borrowing a surgeon for 3 months at a time)
  - ▶ To determine if there is a national shortage of consultant surgeons and if so, developing programs to train more surgeons
  - ▶ To develop more robust mentorship programs to ensure adequacy and competency in training of Medical Officers despite training site
- ▶ *Longer-Term Goals:*
  - ▶ Consider provisions for providing more intensive level of perioperative monitoring (towards an Intensive Care Unit)

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