

Background

- Global surgery is an emerging field and has been identified as a cost effective target for reducing the global burden of disease.
- 6 core indicators define the state of surgical care and correspond to global targets.
- 17.5 million more surgeries required to meet current need in Sub-Saharan Africa.
- East Pokot (aka Tiaty) sub-county is found in Baringo County within the northwestern Rift Valley region of Kenya.
- Chemolingot Subcounty Referral Hospital (CSRH) serves 180,000 people.

Methods

- Health records and interviews with medical officers at CSRH used to determine which "diagnostic categories" corresponded with surgical interventions.
- Healthcare providers from multiple cadres estimated percent of each diagnostic category needing surgery in an ideal world (no delays) and in the real world.
- Multiplied percent estimates by average monthly cases to estimate counts and percent differences in ideal and real surgical need and capacity.
- Used Norms and Standards to determine discrepancy between expected and available personnel and infrastructure at CSRH, Kabarnet, and Nginyang facilities.



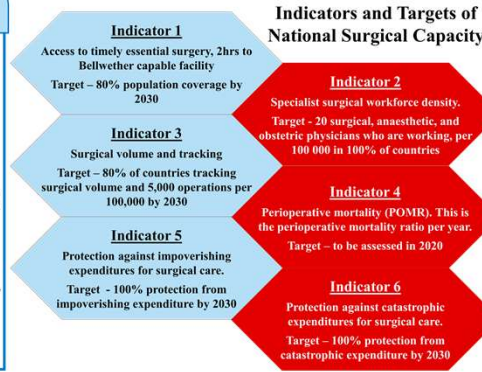
Entrance to CSRH operating ward construction site



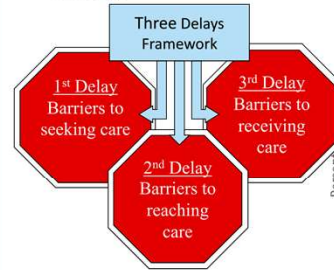
Derelict surgical equipment at CSRH

Conclusions

- The adoption of a National Surgery, Obstetric, and Anesthesia Plan (NSOAP) would benefit Kenya through capacity and infrastructure building for surgical programs.
- Differences in expected surgical burden based on literature and estimates by health practitioners in Baringo County suggest a granular approach would be valuable for NSOAPs.
- Biggest challenges for surgical access involve barriers at each delay: seeking, reaching, and receiving care.
 - Seeking Delay = education and cost aversion
 - Reaching Delay = poor transportation and communication networks
 - Receiving = weak SAO infrastructure and personnel, low capacity



- Core indicators define surgical system strength and capacity. These were outlined by the 2015 Lancet Commission on Global Surgery.



- The Three Delays Framework is used to categorize barriers to healthcare.



- Map of East Pokot (Tiaty) in Baringo County, Kenya with health facilities.

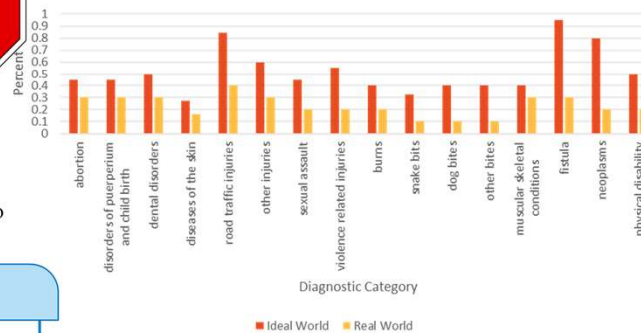
Results

- Fistula, road traffic injury, neoplasm, and violence related injury are the highest diagnostic categories requiring surgical care, respectively.
- Skin diseases represent the largest surgical burden for all diagnostic categories examined.
- Poor health seeking behavior, related to cost aversion and health education often delays care and results in poorer health/surgical outcomes.
- Longer than 2 hours to Kabarnet (Bellwether capable) from most of Tiaty.
- 1 ambulance in Tiaty with limited fuel, patients must pay for gas when monthly allotment is used up.
- Severely limited blood supply county wide.
- None of three surveyed health facilities met the expected personnel and infrastructure given their facility levels.

Next Steps

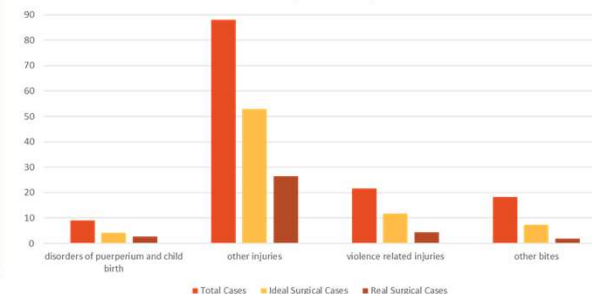
- Ensure adequate funding for additional SAO personnel in Baringo County.
- Develop programs to improve health seeking behavior to improve surgical outcomes.
- Transition from paper to electronic records (independent of internet).
- Assess surgical capacity and need in other counties for context-specific insights.
- Wide scale study of Norms and Standards compliance in facilities across Kenya.

Percent of Cases Receiving Necessary Surgical Care in "Ideal World" and "Real World" Scenarios



- Estimated % cases in 16 diagnostic categories receiving surgical care in ideal and real world scenarios.

Total, Ideal-Surgical, and Real -Surgical Monthly Case Number Estimates for Select Diagnostic Categories



- Estimated monthly average cases for 4 diagnostic categories and # requiring surgical care in ideal and real world scenarios.

Citations

- Meara, J.G., et al., *Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development*. The Lancet, 2015, 386(9993): p. 569-624.
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- Rose, J., et al., *Estimated need for surgery worldwide based on prevalence of diseases: a modelling strategy for the WHO Global Health Estimate*. The Lancet Global Health, 2015, 3(S2): p. S13-S20.
- Human Resources for Health Norms and Standards Guidelines for the Health Sector*, M.O. Health, Editor. 2014: Nairobi, Kenya.