Bridging the data gap in global health

An electronic surgical outcomes database (SQUAD) at Mbarara Regional Referral Hospital, Uganda

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We declare no disclosures.

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BACKGROUND

Surgery & anaesthesia

Data gap

Uganda

PURPOSE

CONCEPT

DRAFT:

ABSTRACT:

REFERENCES

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Many millions of individuals undergo surgical procedures each year, with millions of these occurring in low-resource settings. Given that many millions of people lack access to surgical care, a global data gap exists which hampers efforts to improve surgical care and outcomes. This gap is multifaceted, including issues around infrastructure, computer literacy, funding, resources, and perioperative mortality. The burden and cost of surgical care in these environments are staggering, and addressing these gaps is crucial for improving global health outcomes.
UGANDA

39 million

<1 surgical specialist/100K

~600 procedures/100K

MBARARA

Teaching hospital: 450 beds
Emergency, OB/GYN, ENT, paediatrics, ICU
4 theatres

Mbarara University of Science and Technology (MUST)

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Global surgery
Data gap
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PURPOSE

SQUAD

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Surgical services Quality Assessment Database

**Electronic register:** capture of surgical patients

**Customisable, open software:** ”OpenMRS”

**Local ownership:** committee, author guidelines

**Advisory committee:** State-side

**Structure:**
Health system level

**Processes:**
Clinical level (treatment, interventions)

**Outcomes:**
Sentinel events (mortality)
PURPOSE

SQUAD

To organise the hospital record system in a high-quality, electronic searchable database at Mbarara Regional Referral Hospital

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DATA COLLECTION

**Quality improvement**

**DATA USE**

- Research
  - Risk-adjusted mortality

**DATA YIELD**

- Patients
- Operation
- Diseases or Conditions
- Caregivers
- Intervention
- No operation
- Outcomes

**Diseases or Conditions**

**Caregivers**

**Intervention**

**No operation**

**Outcomes**

**Operation**

**No operation**

**160 SQUAD variables**

**ICD-10**

**ICD-9-CM**

**Risk-adjusted mortality**

**Data collection**

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CHALLENGES

THE DATA
Missing & incomplete files
Data entry agreement

QUALITY CONTROLS

PROSPECTIVE VALIDATION
Capture 93%
Completeness 86%
Agreement k=0.81 "near perfect"

INFRASTRUCTURE
Funding, HR
Regular blackouts

COLLABORATION
Past experiences
Tradition, priorities

EXTERNAL
GENERATOR
LOCAL NEEDS

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CHALLENGES
OUTCOMES (2013-17)

49,000 SQUAD PATIENTS

20,500 OB/GYN

17,000 gen. surgery

11,000 ENT

40 ICU

...etc...

... to measure and guide expansion and provision of quality surgical care and build research capacity at MRRH.

Data sharing
- Medical Records Dpt & wards
- District/national reports
- Resident theses

Research T.B.P.
OUTCOMES

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IMPACT & FUTURE

**Ongoing**

- **OUTCOMES MONITORING**
  - Trauma
  - Burns
  - Motorbike accidents
  - ENT studies
  - Laparotomies
  - Paediatric surgery
  - ICU
  - ...

- **QUALITY IMPROVEMENT & PLANNING**

**Capacity-building**

- **RESEARCH**

**Future**

- **NEW PROSPECTIVE REGISTRY**

**Scalable**: reproducible, long-term integration

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PROGRAM IN GLOBAL SURGERY AND SOCIAL CHANGE
Harvard Medical School
SQUAD is a surgical database in Uganda

One way to bridge the data gap

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REFERENCES

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