PROGRAM IN GLOBAL SURGERY AND SOCIAL CHANGE
Harvard Medical School

Assessment of Surgical Data Collection Systems in Five Primary Hospitals in Amhara, Ethiopia

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Host Organizations

- Safe Surgery 2020 & GE Foundation
- Ethiopia Federal Ministry of Health (FMOH)
- Surgical Society of Ethiopia
- Amhara Regional Health Bureau

Background

Ethiopia's Federal Ministry of Health (FMOH), has aimed to measure the capacity and quality of surgical care at its hospitals through surgical Key Performance Indicators (KPIs), an essential pillar of the National Surgical Plan. *Harvard's Program in Global Surgery and Social Change*, as part of Safe Surgery 2020, has assisted the FMOH with the definition, methodology, and dissemination of these surgical indicators. To establish best practices in surgical data collection, we assessed the current system at five Safe Surgery 2020 intervention hospitals in Amhara.

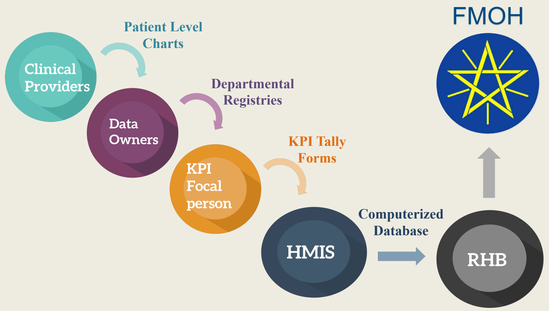
Objectives

- To determine current data collection methods for surgical indicators in five primary hospitals in Amhara
- To develop sustainable local capacity around the collection and analysis of surgical indicators
- To provide evidence based recommendation for data intervention

Methods

- Assessed data collection systems through review of Admission/Discharge, Operating Room, Anesthesia, Surgical Ward and Blood Bank registries
- Reviewed facility level data flow
- Graded each hospital's data collecting systems for 10 surgical KPI's based on:
  1. KPI data elements are included in all the registries
  2. Key personnel with defined data collecting roles responsible for data entry
  3. Standardized HMIS data input validation system assessing consistency between patient level charts, registries & finalized KPI inputs
  4. Adherence & fulfillment of accurate KPI definitions in the finalized reporting forms
- KPI's that fulfilled all of the above 4 criteria were placed in the A category, those with 1 or 2 missing criteria were placed in the B category, and those missing 3 or more of the above criteria were placed in the C category

Figure 1. Data flow from patient level data inputs to aggregate KPI's reported from each facility to FMOH



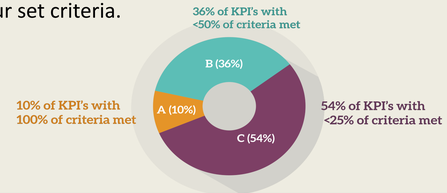
Results

- Each hospital has a general reporting system for summative KPI forms reported from the HMIS to the FMOH (Figure 1)
- On-site evaluations revealed significant barriers to quality surgical data collection
- With the exception of of Surgical Volume, each of the remaining 9 KPI's failed to fulfill the 4 set criteria (Table 1) with 36% in the B category & 54% of the KPI's in the C category (Figure 2)
- Reasons for poor surgical data collection include:
  - Lack of adequate training in data collection
  - Lack of standardized data collection systems
  - Ill-identified facility level roles & responsibilities
  - Varying applications of KPI definitions

Table 1. Assessment of KPI data collection system based on four criteria listed in "Methods" for the 5 hospitals in Amhara

Hospitals:	1	2	3	4	5
Surgical Volume	A	A	A	A	A
Referral Rates	B	B	B	B	C
Anesthe. Adverse Ev.	B	B	C	B	B
Surgical Site Infection	C	C	C	C	C
Surgical Safety Checklist Utilization	B	B	B	B	B
Delay for Elective Surgical Admission	C	C	C	C	C
Peri-Operative Mortality Rate (POMR)	B	B	B	B	B
Blood Unavail. ratio	C	C	C	C	C
Patient Satisfaction	C	C	C	C	C
Pre-Elective Op. Stay	C	C	C	C	C

Figure 2. Categories of KPI data elements fulfilling the four set criteria.



Next Steps

This assessment of surgical data collection highlights the need for facility-level interventions through:

1. Education on the proper definition of each KPI
2. Proper identification of facility level roles and responsibilities
3. Clear step-wise model for data element collection relevant to each KPI (Figure 4)
4. Development of data validation system

Based on inputs from this assessment, PGSSC in collaboration with the FMOH has developed an 8 week data intervention (Figure 3)

Figure 3. Amhara Data Intervention Plan

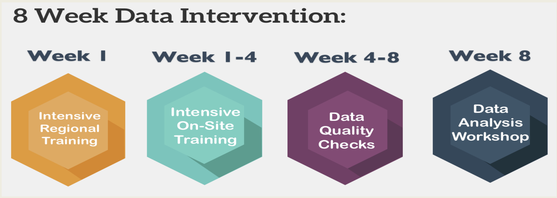
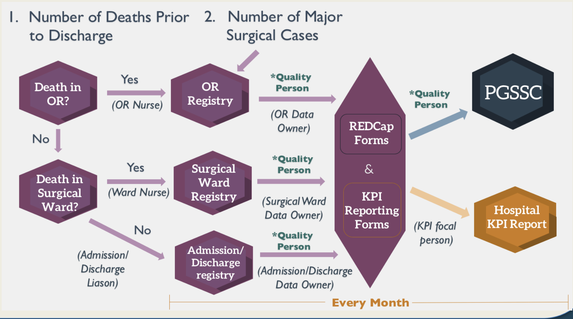


Figure 4. POMR model relevant data elements: 1. number of deaths prior to discharge & 2. number of surgical cases



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