SafeSurgery2020 (SS2020) is a multi-stakeholder initiative funded by GE Foundation that aims to improve access to surgical, obstetric, and anesthesia care in developing countries. During 2016-2017, four interventions were implemented in 10 intervention hospitals across two regions of Ethiopia as part of the Federal Ministry of Health’s national surgical plan, “Saving Lives Through Safe Surgery.”

The following describes Year 1 results (2016-2017) after the implementation of four SS2020 interventions in five facilities across Tigray:

- **Leadership and Surgical Safety Training**: conducted by SS2020 partner Jhpiego to empower surgical teams to identify context-specific problems and devise creative solutions.
- **Facility Accelerator Fund**: implemented by SS2020 partner Assist International (AI) which in surgical teams submit grant proposals of $10,000 for facility-specific innovations.
- **SPECT Training**: classroom training, on-site mentoring, and assessment of sterilization techniques and processes provided to surgical teams by SPECT partners under AI support.
- **Mentorship**: on-site mentoring provided to interventions sites by multidisciplinary surgical, obstetric, and anesthesia teams from specialized hospitals to assess progress, provide surgical safety training, mobilize resources, and promote teamwork and communication.

**Methods**

The study included three components:  
1. a facility-based surgical assessment tool administered at baseline and midline  
2. longitudinal prospective data collection of surgical volume and referral (transfer-out) rates  
3. 36 retrospective qualitative interviews with administrative and surgical staff.

**Findings**

<table>
<thead>
<tr>
<th>Change in Reported Infrastructure Availability</th>
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<tbody>
<tr>
<td>Water</td>
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<td>-----------------</td>
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<tr>
<td>Negative Change</td>
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**Figure 3**: Persistent infrastructure challenges were observed with inconsistent availability of running water, electricity, generator, and internet. A total of 3 hospitals improved or maintained consistent availability of running water, 4 in electricity, 3 in a generator, and 1 in internet.

- **Figure 1**: Data is presented from SS2020 Year 1 (2016-2017) in five intervention hospitals across the Tigray Region of Ethiopia.
- **Figure 2**: SS2020 partners Jhpiego and Assist International (AI) implemented (1) Leadership and Surgical Safety Training, (2) the Facility Accelerator Fund, (3) SPECT Training, and (4) Mentorship in an effort to strengthen the surgical services in SS2020-selected facilities.
- **Figure 4**: No identifiable trend observed in surgical volume across the five intervention hospitals.
- **Figure 5**: No identifiable trend observed in referrals-out rates across the five intervention hospitals.

**Interpretation**

The improved surgical service delivery reported in qualitative interviews was not reflected in quantitative data. Reasons for this discrepancy include:

1. **Faults in overall M&E design**: inappropriately selected process and outcomes indicators, insufficient time between implementation of interventions and data collection, and unmatched controls that precluded their inclusion in our analysis.
2. **Facility-level factors**: infrastructure and human resources challenges, service interruptions, and varying facility goals. Furthermore, three hospitals in close proximity to our sample sites introduced surgical services during the study period, influencing surgical volume and referral rates.
3. **Data quality**: baseline data gaps, survey tool modifications and subjectivity, and lack of training on quality data collection and reporting at the facility-level. This assessment informed our year two SS2020 study design in Ethiopia and year one in Tanzania with a particular focus on data quality strengthening.

**Acknowledgements**

Presented research and activities was supported by the GE Foundation as part of the SafeSurgery2020 Project. Authors acknowledge all partners involved in implementation of this project: Ethiopian Federal Ministry of Health, Tigray Regional Health Bureau, Assist International, Dalberg, and Jhpiego. We would also like to thank the Tigray mentors involved in implementation: Haftom Berhane, Yibrash Berhe, Tadesse Teklit, and Reiye Esayas.