**SURGICAL SAFETY CHECKLIST IMPLEMENTATION AND QUALITY IMPROVEMENT IN THE LAKE ZONE OF TANZANIA**

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**Background & Research Objective**

- Research shows that Surgical Safety Checklists (SSC) can reduce surgical complications.1
- However, benefits depend on effective implementation including buy-in from leadership and clinical staff.2
- We hypothesize that SSC implementation embedded in a leadership training and mentorship program as part of the Safe Surgery 2020 (SS2020) initiative will improve adherence to critical perioperative steps and reduce surgical site infection (SSI) and sepsis rates in hospitals in rural Tanzania.

**Methods**

- Part of a quasi-experimental evaluation of Safe Surgery 2020 in 10 intervention and 10 control hospitals in the Lake Zone of Tanzania
- Baseline study population: 1237 elective and emergency cesarean sections and major surgical procedures directly observed by Tanzanian physician data collectors at baseline (Feb 1, 2018 – April 31, 2018) 626 in intervention sites and 611 in control sites
- Data collection tool: Surgical Safety Checklist Observation Tool (based on Singer SSC Coaching Tool)
- Baseline data on clinical processes and outcomes were collected over a 3-month period
- Baseline patient, procedure, and hospital level characteristics were assessed and SSI and sepsis rates were assessed and communicated indicators and SSI and sepsis rates were assessed and statistical significance tested using the Student’s t-test
- Endline data will be collected post SS2020 intervention in March-May 2019

**Baseline Findings**

**Fig 1: Adherence to items in the SS2020 SSC**

**Fig 2: 3-part adherence to items in the SS2020 SSC**

**Fig 3: Completion Rates**

<table>
<thead>
<tr>
<th>Item</th>
<th>Intervention</th>
<th>Control</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kagera</td>
<td>3.3%</td>
<td>3.2%</td>
<td>0.99</td>
</tr>
<tr>
<td>Mara</td>
<td>4.2%</td>
<td>4.1%</td>
<td>1.00</td>
</tr>
<tr>
<td>Tinsevi</td>
<td>3.0%</td>
<td>3.1%</td>
<td>0.98</td>
</tr>
<tr>
<td>Shinyanga/Simiyu</td>
<td>3.0%</td>
<td>3.1%</td>
<td>0.98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Indicator Items</th>
<th>Pre-op antibiotic within one hour</th>
<th>Appropriate vaginal cleansing (C/S)</th>
<th>Pulse oximeter on and functioning</th>
<th>Verbal confirmation of operating site Completion of sponge count</th>
<th>Post-op sepsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>34.4%</td>
<td>31.2%</td>
<td>28.3%</td>
<td>32.0%</td>
<td>27.0%</td>
</tr>
<tr>
<td>Control</td>
<td>35.2%</td>
<td>33.1%</td>
<td>31.1%</td>
<td>32.8%</td>
<td>28.0%</td>
</tr>
</tbody>
</table>

**Table 1:**

<table>
<thead>
<tr>
<th>Baseline Outcomes</th>
<th>n</th>
<th>%</th>
<th>Post-op sepsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSI</td>
<td>1257</td>
<td>23%</td>
<td>5%</td>
</tr>
<tr>
<td>Post-op sepsis</td>
<td>92</td>
<td>74.7%</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

**Limitations**

- Potential for Hawthorne effect & observer bias
- SS2020 is a suite of interventions; establishing causality between SSC implementation and surgical outcomes is difficult

**Additional exploration**

- Using pre post data, we can explore associations between adherence rates and SSI/sepsis rates
- Using qualitative interview data, explore barriers and facilitators related to SSC implementation in resource-limited hospitals in Tanzania

**Baseline conclusions**

- Potential to increase adherence to critical perioperative steps, with significant area for improvement in teamwork & communication

**Acknowledgements**

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- Dalberg Advisors, Dar Es Salaam, Tanzania
- Jhpiego, Assist International, Ripon, CA, US

References


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