Improving surgical quality in low and middle income countries: Why do some health facilities perform better than others? A longitudinal, mixed methods study in Tanzania's Lake Zone region

Background: Evidence on uptake of surgical quality improvement interventions in LMICs is limited. We studied the experiences of higher and lower performing facilities with the Safe Surgery 2020 program to identify potential factors distinguishing higher performers.

Methods: We used quantitative methods to identify higher and lower performing sites based on improvements in surgical safety and surgical system indicators. Contextual and qualitative data collection (interviews and observations at 12 facilities) informed the design of the mixed-methods study (September 2017 to November 2018). The study utilized the Framework of Theory of Change to develop themes to compare factors differentiating higher and lower performing facilities.

Results: The intervention progressed, all facilities evolved along two intersecting pathways: organizational culture and organizational learning. Several key themes distinguished the organizational culture and learning pathways for higher performers including collaborative teams, engaged leadership, and stronger learning structures. Higher performers capitalized on Safe Surgery 2020 to improve their surgical ecosystem holistically while lower performers prioritized overhauling safety practices.

Conclusion: Effective interventions in LMICs must be cognizant of context, and tailored to the unique needs of facilities along the pathways of organizational culture and learning.

Introduction

• Improving access and quality of care in NCDs is a critical healthcare gap in the SDG era.
• Surgical care epitomizes this unmet need: 5 billion more surgeries needed globally; 143 million in LMICs. Central and western sub-Saharan Africa have among the highest unmet surgical needs.
• Poor evidence on surgical quality from LMICs (single-center studies, the reporting of basic parameters).
• Almost all existing surgical quality metrics are designed for HICs and are not used in LMICs.

Data collection and analysis

• Qualitative and quantitative data were collected pre- and post-intervention.
• Data collection: Longitudinal, mixed methods study in Tanzania's Lake Zone region.

Framework of Theory of Change

- Changing culture (leadership training)
- Building capacity (e.g. training)
- Implementing changes, reflection and collective learning.

The roles of senior management in quality improvement efforts: What are the key components? / Practitioner application

Safe Surgery 2020 provided facilities with an opportunity to not only improve their surgical practice but their surgical culture as well. Higher performers in the duration of the intervention demonstrated key qualities that differentiated them from lower performers: strong teamwork and commitment, collective learning, highly engaged leadership, and a willingness to improve surgical culture overall. In implementing changes, reflection and collective learning, one size does not fit all for an intervention and there is a need to phase interventions tailored mentorship.

Figure 1. Emergent Themes

Discussion

• No difference between higher and lower performing facilities based on their physical resources or patient characteristics – except one important factor: higher performing facilities were smaller.
• Differentiation in starting conditions and evolution along two pathways – organizational culture and organizational learning, and the interaction between the two pathways.
• Surgical system strengthening efforts should focus not just on clinical interventions but on the prerequisites for organizational change.
• Supports literature about the importance of supportive leadership as an important factor of higher performing facilities was smaller.
• Crucial to meet facilities where they are by starting with an assessment of organizational and cultural readiness for implementation, one size does not fit all for an intervention and there is a need to phase interventions tailored mentorship.
• Facilities should build a receptive implementation climate by building a system-level support, engaging all stakeholders, following a multi-step implementation process, etc.
• Change takes time and resources and must allow time for implementing changes, reflection and collective learning.

Table 1. Improvement in a) Safety Practices b) Teamwork and Communication

<table>
<thead>
<tr>
<th>Safety indicators post-intervention</th>
<th>Safety indicators pre-intervention</th>
<th>% Point Improvement in Safety Indicators</th>
<th>Teamwork/communication indicators post-intervention</th>
<th>Teamwork/communication indicators pre-intervention</th>
<th>% Point Improvement in Teamwork/communication indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher performers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility 1</td>
<td>33%</td>
<td>100%</td>
<td>67%</td>
<td>21%</td>
<td>93%</td>
</tr>
<tr>
<td>Facility 2</td>
<td>45%</td>
<td>95%</td>
<td>50%</td>
<td>25%</td>
<td>98%</td>
</tr>
<tr>
<td>Facility 3</td>
<td>12%</td>
<td>86%</td>
<td>74%</td>
<td>15%</td>
<td>75%</td>
</tr>
<tr>
<td>Lower performers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility 4</td>
<td>18%</td>
<td>63%</td>
<td>45%</td>
<td>0%</td>
<td>23%</td>
</tr>
<tr>
<td>Facility 5</td>
<td>50%</td>
<td>50%</td>
<td>40%</td>
<td>10%</td>
<td>50%</td>
</tr>
<tr>
<td>Facility 6</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>50%</td>
</tr>
<tr>
<td>Facility 7</td>
<td>45%</td>
<td>59%</td>
<td>13%</td>
<td>0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Table 1. Improvement in a) Safety Practices b) Teamwork and Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

Safe Surgery 2020 provided facilities with the opportunity to not only improve their surgical practice but their surgical culture as well. Higher performers in the duration of the intervention demonstrated key qualities that differentiated them from lower performers: strong teamwork and commitment, collective learning, highly engaged leadership, and a willingness to improve surgical culture overall. In implementing changes, reflection and collective learning, it is important to hold cultural assessments and tailor interventions to facility needs.

References