Going the Distance:

A Cross Sectional Study of Embedded Surgical Training Experiences in Low-to-Middle Income Countries

Marco Swanson MD, Eugene Park MD, Johanna Riesel MD,
Alex Campbell MD, Jordan Swanson MD MSc
Background

- Recent recognition of surgical disease burden\textsuperscript{1,2}
- Increased interest in global surgical training by programs and trainees alike\textsuperscript{3,4}
- Most experiences short-term (≤ 4 wks; often 1 week)\textsuperscript{3,5}
The Medical Mission and Modern Core Competency Training: A 10-Year Follow-Up of Resident Experiences in Global Plastic Surgery

Background: The emphasis on cultural competency for physicians and surgeons is increasingly important, as communication with both patients and other providers significantly affects individual and system-wide outcomes.

![Diagram of percentages for various competencies]

**Fig. 1.** Impact of Reagan/Stryker Fellowship on Accreditation Council for Graduate Medical Education core competencies and surgical leadership. See Table 2 for definition of each category.
Background

• Few focus on long-term involvement, fostering local impact, long-term training, or research directed at LMIC needs\(^3,5\)

• Little is known about longer-term, more “embedded” experiences (≥4 weeks)
AIMS

1. Describe common features of embedded surgical experiences in a Low-to-Middle Income country (LMIC)

2. Impact on trainees’ learning

3. Degree to which they have fostered local impact, partnerships, scholarly achievement, and competency development.
METHODS

• Cross-sectional sample of trainees and recent graduates who spent ≥2 weeks in a LMIC
• Survey with 23 closed and open ended questions
• Topics addressed were:
  • Experience characteristics
  • Self-perceived value
  • Local Impact
  • Professional and scholarly value
• ACGME Competency Advancement (Likert 1-5)
MS4 to Nicaragua (1 year)

Studied outcomes of cleft surgery

Field manager in remote town for pilot program to increase access to basic surgical care

Currently R2 in Plastic Surgery
R4 to Uganda (1.5 years)

• Improved surgical management of Typhoid intestinal perforations

• Surgical coding system/EMR

• Lancet Commission on Global Surgery collaborator

Currently Craniofacial Surgery Fellow
R4 to India (1 year)

• Patient outreach and evaluation

• Cleft outcome studies: transition from mission-delivered to center-based care

Currently Chief Resident in Plastic Surgery
RESULTS  

\[ n = 12 \]

**WHEN DID THE EMBEDDED EXPERIENCE OCCUR?**

![Line graph showing the number of surgeons/trainees in each year of training/practice. The years are MS3, MS4, R1, R2, R3, R4, R5, R6, R7, Practice 1, and Practice 2. The graph peaks at 5 in R4 and R5, and at 3 in Practice 1.]

**RESIDENCY**

- **General Surgery**: 33%
- **Plastic Surgery**: 50%
- **OB/GYN**: 17%
Length of Embedded Experience:

- > 2 years
- 1 year - 2 years
- 6 months - 1 year
- 3 months - 6 months
- 1 month - 3 months
- 2 weeks - 1 month

Respondents
Primary Setting:

- Both: 50%
  - Hospital Only: 42%
  - Clinic Only: 8%
- Both: 36%
  - Rural: 9%
  - Urban: 55%
**Funding Source:**

**Grant(s):**
Thrasher Foundation, Tsao Fellowship, MGH Susan Briggs Fund, MGH Global Medicine Grant, Boston Children’s Grant, University Grant

**Employer:**
Operation Smile, MGH/Boston Children’s, Shriners

**NGO:**
Operation Smile
Top Reasons Why Experience was Pursued

- Improving surgical care in LMICs
- Passionate about global surgery
- Offer a unique skill set where needed
- Help an underserved population
- Career Goals
- Traveling Opportunity
- Gain surgical training
- Gain research experience
“Did your experience involve any research?”

- Yes: 92%
- No: 8%

“What was your research focus?”

- Quality Improvement: 8
- Metrics and indicators: 8
- Outcomes: 6
- Safe surgery protocols: 6
- Epidemiology: 2
- Education: 1

[Graphs showing the distribution of research focus areas]
Research Focus:

**Surgical Outcomes**
(eg. records, systems, metrics, surveillance, patient satisfaction)

**Surgical Safety**
(eg. protocols, equipment, provider training)

**Surgical Access**
(eg. outreach campaigns/brigades, awareness/education)
“Did any presentations arise from your experience?”

<table>
<thead>
<tr>
<th>Yes</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>22.3</td>
</tr>
</tbody>
</table>

“Did any published manuscripts arise from your experience?”

<table>
<thead>
<tr>
<th>Yes</th>
<th>64%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>12.2</td>
</tr>
</tbody>
</table>
“How did your experience help the local health system and partners?”

- International partnerships (NGOs, global surgery organizations)
- Establishing outcomes/quality surveillance processes
- Establishing personal long-lasting connections/relationships
- Helping locals in professional development
- Exposing locals to global standards
- Surgical disease knowledge/literacy
- Serving as additional manpower
- Providing specialized surgical training to local providers
- Establishing safe surgical care protocols
- Providing access to resources (donations, equipment, supplies)
- Establishing self-sufficient and sustainable resources
- Teaching locals importance of research
- Medical brigades to capture surgical candidates
- Helping with patient transportation
ACGME Competency Growth

Systems-Based Practice
Professionalism
Interpersonal and Communication Skills
Practice-Based Learning
Medical Knowledge
Patient Care

3 = average residency year
ACGME Competency Growth

- Systems-Based Practice
- Professionalism
- Interpersonal and Communication Skills
- Practice-Based Learning
- Medical Knowledge
- Patient Care

3 = average residency year
Embedded surgical training experiences in LMICs appear to foster:

- trainee growth
  - (ACGME competencies)
- local health system impact
- enrichment of partnerships
- scholarly output
  - (underserved patients)
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Please take our survey if you have had an embedded experience:

https://redcap.link/embeddedsurgicaltraining

Questions: Marco Swanson, MD
mas426@case.edu
REFERENCES


Backup
“What did you enjoy the MOST?”

<table>
<thead>
<tr>
<th>Experience</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local partnership/collaborations</td>
<td>6</td>
</tr>
<tr>
<td>Helping an underserved population</td>
<td>5</td>
</tr>
<tr>
<td>General professional growth</td>
<td>4</td>
</tr>
<tr>
<td>Learning from local surgeons</td>
<td>4</td>
</tr>
<tr>
<td>Working with an NGO</td>
<td>4</td>
</tr>
<tr>
<td>Leadership opportunities</td>
<td>3</td>
</tr>
<tr>
<td>Foreign culture/language</td>
<td>3</td>
</tr>
<tr>
<td>Clinical learning</td>
<td>3</td>
</tr>
<tr>
<td>Finding mentors</td>
<td>2</td>
</tr>
<tr>
<td>Finding mentors</td>
<td>2</td>
</tr>
<tr>
<td>Research learning</td>
<td>1</td>
</tr>
<tr>
<td>Clinical volume</td>
<td>1</td>
</tr>
</tbody>
</table>
“What did you enjoy the LEAST?”

- Bureaucracy involved in decision-making
- Skepticism by others on work
- Foreign IRB delays
- Home IRB delays
- Foreign permits / rules
- Food
- GI Issues
- Friction with and amongst locals
- Feeling unwelcome
- Lack of clinical / surgical opportunities
“How did you find this opportunity?”

- Home institution connection
- Personal Connection
- Organization (eg. NGO, society)