

## Final narrative report for The Global Surgery Foundation

### 1. Project title

Project name: Building bridges for broken bones

Executing entity: Shirati Foundation

Reporting period: January – December 2024

GSF project reference number: GSFA.2023.GO.001.SF

### 2. Project status summary

Project activity	Planned dates start, end	Status not started / in progress / not completed / completed	Comments
Establish financial partnership agreement between GSF and Shirati Foundation	Jan 2023	Completed	
Focus group discussions with TBSs and fracture patients	Jan-Feb	Completed	41 bonesetters seen, 39 audio records
Key informant interview questions with local government officials and hospital staff	Jan-Feb	Completed	Interview with 2 doctors and 2 government officials done
Develop partnership agreements with TBSs for the pilot collaboration	Jan-March	Completed	3 partner bonesetters selected
Ethical clearance via the National Institute for Medical Research (NIMR) of Tanzania	Jan-March	Completed	Household survey: ethical clearance + certificate received Bonesetter pilot: ethical clearance + certificate received
Finalize study methodology of household survey	Jan 2023	Completed	

Training survey team	June 2023	Completed	Survey team trained for 1 week
Conduct household survey	Oct-Nov 2023	Completed	Pilot study completed All data collection completed
Data analysis	June 2024	Completed	Pending submission of systematic review & needs assessment papers
Preparation of survey outputs	July 2024	In progress	The manuscript is currently being drafted
Co-design triage & treatment protocol	March-April	Completed	Collaborative treatment protocol discussed and accepted as is. Continued education will be given
Initiate treatment protocol	May	Completed	Partner bonesetters instructed
Inclusion period	Aug 21 <sup>st</sup> 2023 – Apr 21 <sup>st</sup> 2024	Completed	31 control patients, 21 intervention patients thus far
Follow-up period	Apr 21 <sup>st</sup> 2024 – Oct 21 <sup>st</sup> 2024	Completed	No loss to follow-up
Preparation of pilot outputs	Nov-Dec	In analysis	Data analysis currently ongoing

2.1. **Have project activities and outputs listed in the project work plan for the reporting period been completed according to the work plan?**

Yes  No

**If no, please explain why:** Data analysis is currently underway, but is slower due to other obligations of the co-author who is handling it, Annelise Gill-Wiehl. Due to the

complexity of the analysis (cluster-randomization in a stepped wedge design, with one cluster including only two patients), there are few alternative routes to take.

**2.2. Have project activities and outputs listed in the work plan for the reporting period have been altered?**

Yes  No

**If yes, please explain why:**

Within the budget of the GSF, no project activities and outputs have been altered. Besides this budget, we have also started conducting an online survey in collaboration with AO Alliance on TBS regulation across the continent.

**2.3. Has the project been fully completed on time?**

Yes  No

**If no, please explain why:** See 2.1. We are close, though, and expect to have a first draft of the manuscript in March.

### **3. Project delivery**

**3.1. Background and summary of achievements in reporting period.**

Progress as listed per project:

**1. Systematic Review:**

We have done a systematic review of the available literature on stakeholder perspectives towards intersectoral collaboration, as well as previous initiatives towards this end, screening 3821 articles and including 16 studies. We found that 62% of all reported stakeholders supported intersectoral collaboration, versus 14% opposed. Four previous initiatives have been launched, all concerning provision of training to traditional bonesetters (TBSs). After 5 rejections of the manuscript, the manuscript is currently under second review after minor revision at *World Journal of Surgery*, through the GSF-WJS affiliation. We have high hopes of speedy publication.

**2. Qualitative Study: Interviews/Focus Groups with Stakeholders**

We conducted a qualitative study in and around Shirati, doing 2 focus groups and 22 semi-structured interview with fracture patients, hospital staff, government officials and TBSs. There was unanimous support for intersectoral collaboration. The manuscript is currently under second review at *Inquiry* after minor revisions. We anticipate acceptance of the article and publication.

**3. Household Survey**

We conducted a household survey, interviewing 1448 respondents, to establish the burden of disease of extremity fractures and associated healthcare-seeking behaviour, using X-ray imaging to verify suspected fractures. We found a 0.76% incidence rate for extremity fractures. A stunning 95% of all reported fracture patients attended the TBS, versus only 32% hospital attendance, meaning some utilized both treatment options. We are currently revising the manuscript, after receiving feedback from the *World Journal of Surgery*. We hope to resubmit this article next week, with subsequent acceptance and publication.

#### **4. Collaborative Bonesetter Training**

In October 2023 and November 2024, we conducted a total of 4 basic trauma courses, involving both medical staff and traditional bonesetters. In total, we trained 60 people, 18 of whom received a refresher course. We found good knowledge retention after 1 year and enthusiasm about the combined participant format.

The final version of the manuscript is currently waiting for approval of the co-authors and will be submitted next week to *BMC Medical Education*.

#### **5. Bonesetter Pilot**

After selection of 3 partner bonesetters, we did a pilot RCT, including 52 extremity fracture patients over the course of 6 months: 31 control patients, receiving TBS care, and 21 intervention patients, receiving 'collaborative fracture care'.

Patients were followed up after 1, 3 and 6 months. Data collection has finished and data analysis is currently underway. We aim for submission in April.

#### **6. Implementation study**

After initially looking to start a full-scale RCT, we are currently looking more towards conducting an implementation study, evaluating ways to integrate the project in the local health system and minds of relevant stakeholders. We are planning to do this by closer cooperation with the local government, and active involvement of community health workers, as well as village leaders.

To this end, we will be doing interviews with 3 candidates, to find a new research coordinator to lead this project.

### **3.2. Summary of project results and overall performance.**

All in all, with some delays, we are on track to deliver on all objectives set at the start of the collaboration. As a research group, we feel we thoroughly understand the local context and what is necessary to further improve intersectoral collaboration in rural areas.

#### **3.2.1. Implementation of planned activities (summary of activities)**

See 3.1 for implementation per project.

#### **3.2.2. Achievement of project objectives and their impact**

Much information was gained on the topic of traditional bonesetting and the potential for intersectoral collaboration. 60 people were trained in trauma care, while simultaneously building networks between the different facilities. 52 fracture patients were included and treated within the bonesetter pilot, laying the foundation for upscaling.

#### **3.2.3. Sustainability of project**

Currently, the project is being run by Jovine Okoth and Nkaina Walter Harun, so staff-wise the project is doing well. Financially as well for the foreseeable future. However, government investment to replace costs incurred by Stichting Shirati would secure its future.

### 3.3. Summary of problems encountered during implementation.

The most significant barriers to collaboration achieving optimal care for fracture patients we identified, are two-fold:

1. Limited financial capacity among complex fracture patients to pay for surgical care. Even if patients were motivated for surgical treatment, they could often not afford it.
2. Misconceptions / Lack of trust regarding surgical care. Many patients hold incorrect beliefs regarding surgical care, fearing amputation or cancer/chronic pain/delayed treatment due to metal implants.

### 3.4. Actions taken to solve problems encountered.

In the implementation study we are setting up, we aim to solve these problems as follows:

1. Discussions with the hospital administration to reduce surgical costs, establishment of a basket fund through the local government, improve health insurance coverage in the area
2. Involvement of community health workers and village leaders, to organize health information days and guide individual patients in their health choices.

## 4. Attached documentation

*Please list in and provide all relevant documents confirming that activities have been undertaken.*

- 4.1. List of participants of training activities.
- 4.2. Meeting reports.
- 4.3. Printed materials.
- 4.4. Interim reports.
- 4.5. Photos
- 4.6. Etc.

This is to certify that the above statements are correct.

Date: 30-1-2025

Name: Joost Binnerts

Title: Project coordinator

