

**SOCIAL  
INNOVATION  
IN HEALTH  
INITIATIVE**



# SOLE HOPE—ENSURING ZERO JIGGERS

**CONTINENT**

Africa

**COUNTRY**

Uganda

**HEALTH FOCUS**

Neglected Tropical Tungiasis/Jiggers

**AREAS OF INTEREST**

Treatment And Addressing the Underlying Factors of Neglected Skin Tungiasis

**HEALTH SYSTEM FOCUS**

Prevention and Treatment of Neglected Skin Tungiasis

# SOLE HOPE—ENSURING ZERO JIGGERS

Sole Hope was started in 2010 to address jiggers and foot-related diseases in the regions of Busoga, Buganda, and Bugisu in Uganda, by providing education, healthcare, and specially crafted shoes to the vulnerable and jigger-prone populations. The organisation's intervention is delivered through a five-strand approach, including, community/school outreach clinics, the government hospital-based partner clinics, residential care and treatment at the Sole Hope Center (patient pick-up, patient admission, medical, caretaking, psychosocial support, education, and resettlement); shoe production at Sole Hope workshop, and economic empowerment through the self-help groups approach.

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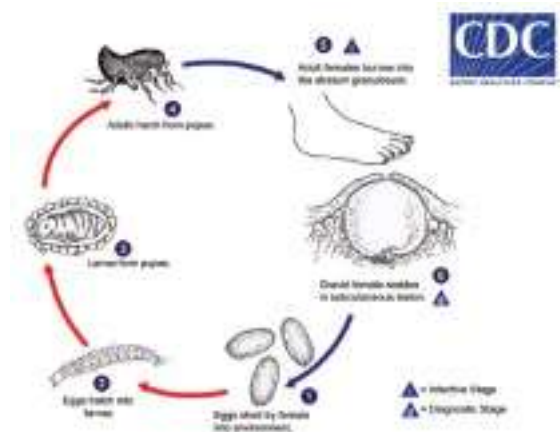
# ABBREVIATIONS

<b>BBE</b>	Benzyl Benzoate Emulsion
<b>CPC</b>	Child Protection Clubs
<b>GBV</b>	Gender-Based Violence
<b>MoH</b>	Ministry of Health, Uganda
<b>NTD</b>	Neglected Tropical Diseases
<b>RCT</b>	Residential Treatment Center
<b>SDG</b>	Sustainable Development Goals
<b>SHGs</b>	Self-Help Groups
<b>SIHI</b>	Social Innovation in Health Initiative
<b>WHO</b>	World Health Organization

# CASE INTRODUCTION

*“Most of our patients are vulnerable individuals, small children including even babies, the elderly and people with mental health issues. When I started the initiative, the first case I received was Joy (not her true name). She had jiggers almost everywhere. When we took her to the health facility for management, the health worker told us that, ‘We don’t have health workers to treat her jiggers’. We had to find a feasible and cost-effective way to treat Joy, and we extracted over two hundred jiggers.”* (Staff Member)

The above quotation points to how vulnerable individuals are devastated by jiggers with limited or no options for improving their health. This is how Sole Hope was triggered to develop an innovative, feasible, and cost-friendly solution for jigger-infected and -prone individuals in highly endemic areas of Uganda, Kenya, and Rwanda to prevent and treat the jiggers. Jiggers are a vector-borne cutaneous infestation caused by the sand flea. The adult female sand fleas burrow into the skin mostly of the feet. It can be associated with abscesses caused by secondary bacterial infections.



**Figure 1.** Lifecycle of jiggers.

It is important to note that the people/animals infested by the jiggers are key in sustaining the transmission if not detected and treated. This is visualised in the complete cycle as presented by several sources, such as CDC, showing how the cycle is completed between the infested persons/animals and the environment (CDC, 2017).

The innovation uses a mobile clinic to visit communities and schools, triage people and manage foot conditions, including jiggers and wounds. Patients are screened and those with mild infestation are treated on-site by manual extraction. Trained staff use a jigger kit (a kit has a safety pin, cotton balls, and a razor blade), and patients’ feet are treated and dressed. Patients that are severely infected are transferred to the hostel owned by the organisation to be able to conduct intensive jigger extraction, close monitoring, and close follow-up. The prevention component provides health education, “jigger kits”, and shoes to the sick persons. The shoes are made by the organisation by recycling used materials, including old jean clothes and car tyres. Since low socio-economic status is a precursor to jigger infestation, the organisation mobilises members into Self-Help Economic Empowerment groups. Jiggers significantly threaten the health of vulnerable individuals yet they are neglected.

In 2023, the organisation extracted 70,000 jiggers from 7,000 infested patients and critical treatment was provided. Treatment was supplemented with prevention by providing 18,000 pairs of protective shoes, and sensitising 26,000 people about jigger prevention strategies such as ensuring hygiene. Since the people infested with jiggers are mainly vulnerable individuals with other underlying conditions, the organisation’s innovation proved that a comprehensive approach, tailored to the unique challenges of the affected population can be effective.

The innovation complements and adds value to One Health Joint Plan of Action-OH JPA (2022–2026) and other existing global and regional One Health and coordination initiatives aimed at strengthening capacity to address complex multidimensional health risks with more resilient health systems. The 2022–2026 OH JPA is a collaboration by the Quadripartite Organizations – the Food and Agriculture Organization of the United Nations (FAO), the United Nations

Environment Programme (UNEP), the World Organisation for Animal Health (WOAH, founded as OIE), and the World Health Organization (WHO) – developed to drive the change and transformation required to mitigate the impact of current and future health challenges at the human-animal-plant-environment interface at global, regional, and country level (FAO, UNEP, WHO, 2022).

## 1. INNOVATION PROFILE AT A GLANCE

### Organisation details

Organisation name	Sole Hope
Founding year	2010
Founder name	Asher Collie and Drü Collie
Founder nationality	American
Current head of organisation	Josephine Karumira
Organisational structure	NGO
Main value proposition	Safe and affordable approach for effective jigger treatment (use of safety pins in communities/hostel), prevention (provision of shoes and health education) and improving general well-being (self-help groups) among the marginalised jigger-prone communities.
Organisational stage	Scale-up
Size	41 staff members
Main income streams	Some jigger-directed donations from Young Living Foundation and participation in jean shoe house cutting parties from individuals
Annual expenditure	USD 281,081 as of 15 October 2024

### Operational Details

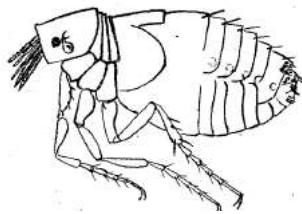
Country or countries of operation	Uganda, Kenya, and Rwanda
Local scope	Busoga, Bugisu, and Buganda regions in Uganda
International scope	Rwanda (Rwanda-Uganda border areas), and Kenya
Type of beneficiaries	The vulnerable groups including, children (boys and girls), youths, women, men from jigger-infested households, and people with disability in Buganda, Busoga, and Bugisu sub-regions in Uganda
Number of beneficiaries (annually)	6,156 persons were treated in 2024
Cost per client	Jigger kit costs 0.1 USD Jean (shoes fabricated from recycled car tyres and denim) 5 USD, as of 15 October 2024

Local engagement	<ul style="list-style-type: none"> <li>• Community members are employed in shoe-making activities</li> <li>• Self-help groups empower community members to save, borrow, and invest for their well-being.</li> <li>• Collaborating with government health facilities</li> <li>• Integrating the innovation into existing health infrastructure wins the government support and resources.</li> </ul>
<b>Scale and Transferability</b>	
Innovative Elements	<ul style="list-style-type: none"> <li>• Using safety pins by trained personnel helped in fostering community involvement and managing jiggers more safely.</li> <li>• Supplementing safety pins with the dimeticone chemical leverages both physical and chemical means.</li> <li>• School and Community Outreach Clinics empower individuals through education and preventive measures.</li> <li>• Hospital-Based Partner Clinics addressed immediate health needs and fostered a culture of proactive health.</li> <li>• Shoe production provided a multifaceted solution in environmental, health, economic, and social dimensions.</li> <li>• Residential Treatment Centre (RTC) has provided integrated care, resources, support, and fostered recovery and resilience</li> <li>• Self-Help Groups (SHG) innovated traditional healthcare and economic models, creating sustainable pathways.</li> </ul>
Scaling considerations	<ul style="list-style-type: none"> <li>• Partner Community Outreach Mobile Clinics can be replicated in other regions by leveraging local resources, like health workers</li> <li>• Establishing centres similar to Residential Treatment Centre in other regions/countries will require resources like land and houses among others</li> <li>• Shoes can be scaled by setting up a shelter and providing skills to the local artisans, equipment, and materials.</li> <li>• The government-based partner clinics can be scaled by establishing a memorandum of understanding and providing utilities.</li> </ul>
Sustainability considerations	<ul style="list-style-type: none"> <li>• Community members are involved, hence promoting ownership, participation and sustainability.</li> <li>• A holistic approach to well-being through self-help groups strengthens individual members and the entire community.</li> <li>• Training local health workers and collaborating with the government health facilities through the partner clinics integrates the services into existing structures.</li> </ul>
Health system lessons	<ul style="list-style-type: none"> <li>• Prevention programs should embed components for deconstructing misconceptions/myths about jiggers.</li> <li>• Efforts targeting the eradication of jiggers should be intensified .</li> <li>• Adopting and supporting the roll-out of simple and cost-effective treatment and prevention methods like the safety pins is effective.</li> </ul>

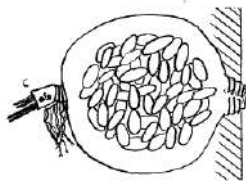
- Effective prevention strategies require addressing underlying factors, including mental illness, poverty, hygiene, and human trafficking.
- Efforts for managing jiggers should integrate robust plans for managing patients with severe infections and other underlying vulnerabilities.

## 2. CHALLENGES

Jiggers/Tungiasis is a vector-borne cutaneous infestation caused by the sand flea (Scott, 2023). It is caused by adult female sand fleas, which burrow into the skin mostly of the feet. It can be associated with abscesses caused by secondary bacterial infections (Eisele, et al., 2003) (Figure 2).



Female *Tunga penetrans*, before entering the skin (Gordon, 1941)



Female *Tunga penetrans*, distended with eggs, embedded in the skin (Gordon, 1941)

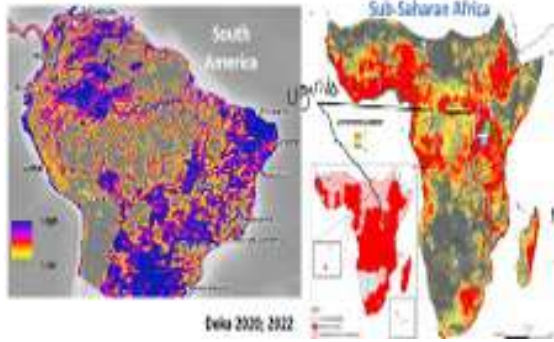


Foot severely infected with *Tunga penetrans* (Sole Hope, 2025)

(WHO, 2023). Despite the existence of global guidelines - 2021-2030 WHO road map for NTDs (WHO, 2023) and SDGs (UN, 2015), there is no global up-to-date data on the prevalence of tungiasis. Environmental suitability for jiggers has been established in Latin America, Africa, and Asia. Evidence suggests that, globally, tungiasis is affecting 88 resource-poor countries in Latin America and sub-Saharan Africa (Deka & Heukelbach, 2022; Deka, 2020). Brazil (Feldmeier, et al., 2003), Kenya (Elson, et al., 2023), and Mayuge, Uganda (Wafula, et al., 2016) have higher prevalence (see Figure 3), especially among populations with lower socioeconomic status. In Mayuge, Eastern Uganda, and North-Eastern Uganda, jiggers were considered a zoonotic issue. Rearing cattle was associated with tungiasis infections in Eastern Uganda (Wafula, et al., 2016). The Napak study captured a wide range of animals, and established that tungiasis was more prevalent in pigs (80%), compared with dogs (24%), goats (16.3%), cats (8.1%), and sheep (4.9%) (Mutebi, et al., 2023). The Napak and Mayuge studies point to the significance of the 2022-2026 OH JPA and other existing global and regional One Health and coordination initiatives aimed at strengthening capacity to address complex multidimensional health risks with more resilient health systems (FAO, UNEP, WHO, 2022).

**Figure 2.** Morphology and impact of jiggers.

Tungiasis is recognised by the World Health Organization as one of the Neglected Tropical Skin Diseases - NTSDs



**Figure 3.** Prevalence and environmental suitability for jiggers.

Despite the presence of several international policy frameworks for tungiasis prevention and heightened potential risk in Uganda (Deka & Heukelbach, 2022), the country lacks a clear policy about the treatment of jiggers. Aspects related to tungiasis prevention and treatment, including case identification and case management, are lacking, leaving the sick persons severely infected, disabled, disfigured, or debilitated, resulting in social exclusion, stigmatisation, and discrimination (Mutebi, et al., 2023; Reuter, 2011). In Uganda, existing health facility data-capture files don't have sections for recording and reporting about tungiasis; and no nationwide survey has been done. Studies conducted have shown a tungiasis prevalence rate of 22.5% in Mayuge District (Wafula, et al., 2016) and 63% in Napak District (Mutebi, et al., 2023). The management and prevention of tungiasis is not prioritised as compared to other competing health issues of similar magnitude, partly because of its seldom translation into mortality (Scott, 2023). As a result, NTSDs cost the vulnerable population each year in terms of direct health costs, loss of productivity and reduced socioeconomic and educational attainment (Elson, et al., 2023). In 2011, a wave of tungiasis occurred, spread rapidly, infecting 20,000 and consequently killing 20 people in a period of just two months (Reuters, 2011). Existing studies are inconclusive about the insights of community-driven innovations for jigger control to inform

advocacy and related interventions. The case report presents insights of Sole Hope's safe and affordable approach for effective jigger treatment (use of safety pins in communities/hostel), prevention (provision of shoes and health education), and improving general well-being (self-help groups) among the marginalised jigger-prone communities in Uganda to inform similar and advocacy interventions.

### 3. INNOVATION IN INTERVENTION

To address tungiasis, the intervention revolves around four pillars: Support, Treat, Empower, and Prevent (STEP). The program includes: Community Outreach Mobile Clinics in public spaces, Partner Clinics in the government health facilities, the Hope Centre, a specialised Residential Treatment Centre, and a shoe workshop that makes and distributes the shoes as a preventive measure.



**Figure 4.** Flow chart of the jigger management process of the innovation.

The above-stated implementation strategy constitutes an innovation in several ways.

**The use of safety pins has proven to be a cost-effective and acceptable method for jiggers' control.** The safety pin is used by trained staff, and provided to the inducted patients to manage any re-infestation at home. The combination of trained personnel using a simple tool effectively while integrating it into a broader framework of community health support and education has helped in managing jigger infestations more safely and effectively while fostering community involvement.



**Figure 5.** A jigger tool with cotton balls, surgical spirit, sheet for registering extracted jiggers, and plaster.

*"Sometimes new medical personnel are somehow hesitant to use the safety pins to extract the jiggers. This is because it is not a conventional method. It's not typically something that you would see in a hospital setting. However, all of our medical personnel have confirmed that as long as you know how to use it, it's being used properly, and it's sterilised. There's no difference with conventional stainless steel medical apparatus. Our medical personnel have adapted to the safety pins very well."* (Innovator).

*"Another method of treatment is dimeticone. It's a spray in the form of a solution containing basically 2 oils which act by suffocating the*

*jiggers inside the skin. It has been included in the 2023 essential drug list. The drug list was amended recently to include this ointment. They also use 5% Potassium Permanganate, whereby they soak the feet of the patients into a solution. After soaking, they apply Vaseline gel. So we found out that all these methods, some were corrosive while others were expensive. But all in all, the razor blade and safety pin were the best. Some members are already using safety pins. However, others use thorns or grease."* (Staff member)

Supplementing safety pins with dimeticone-chemical as opposed to using one of them leverages both physical and chemical means to create a practical, safe, accessible, and effective solution for managing jigger infestations. At the beginning, just like other entities, the organisation was not using dimeticone. Now the government put it on the essential drug list. The organisation usually applies dimeticone to patients under special circumstances such as patients who may be mentally unstable and children who try to fight when using sharps. This helps to minimise the risk of infections among workers due to accidents.

### School and Community Outreach Clinics

The approach not only addresses immediate health concerns related to jiggers but also empowers individuals through education and preventive measures by partnering with local leaders and medical professionals to provide essential services, such as health education, jigger removal, and shoes. The approach is a testament to how local collaboration can lead to impactful healthcare solutions. Depending on the area, the school and outreach clinics are held weekly or monthly to ensure that vulnerable children and families can access the necessary care. The organisation uses this avenue to provide essential health services to vulnerable children and families, empower the

communities to prevent the spread of jiggers and other foot-related diseases, build trust and foster the relationships between the implementing agency and community members.

### Five Hospital-Based Partner Clinics

The implementing agency collaborates with local hospitals and medical professionals to provide comprehensive care, including jigger removal, treatment for other medical conditions, and follow-up care. These clinics are strategically located in areas with high rates of jigger infestations. The implementers have been able to provide comprehensive medical care to those in need, strengthened the capacity of local hospitals and medical professionals to respond to jigger infestations, and improved access to health services for vulnerable communities in remote areas. This approach not only addresses immediate health needs related to jiggers but also fosters a culture of proactive health management, ultimately leading to improved health outcomes for the community.

### Shoe Production

The program produces durable, closed-toe shoes to protect vulnerable children and families from jigger infestation, and distributes the shoes at no cost to patients and vulnerable community members. The shoe workshop supports local artisans and recycles car tyres and old jean clothes. This component makes the innovation a multifaceted solution by going beyond just creating footwear. It addresses environmental, health, economic, and social dimensions, significantly impacting the lives of those affected by the jigger infestations.



**Figure 6.** Shoe making workshop and some of the shoes made in the workshop.

*“At first, the challenge was how do we get shoes for the vulnerable people, that are durable, sustainable, and not just shipping something from China to Uganda? Something that actually gives work to Ugandans who want to learn a new skill or who already know the skill of shoemaking. Giving them a job so that this can be a business in Uganda. We tried to think outside the box in order to come up with specifications of the shoes that are cost-effective and well aligned with the purpose. I don't know if you have ever seen it. Our shoes are 96% recycled, the denim upper and tyres are recycled/recovered from waste material. Not only that, but they are also durable, and the internal texan that is applied helps to ensure that these are not just plastic shoes that are going to fall apart easily. They are also closed-toed shoes, which is important for protecting against jiggers and they have very durable soles for walking miles and miles. So innovating, something that had not been done, was very difficult in the beginning.”* (Innovator).

### Sole Hope Residential Treatment Centre

The centre provides specialised care and treatment to those with severe jigger infestations. Patients receive various services, including medical treatment,

nutrition, psychosocial support, and education. This integrated care, and support, not only treats the condition, but also fosters recovery and resilience among affected individuals.



**Figure 7.** Hostel where patients with severe infestations are admitted and treated.

### Self-Help Groups (SHG)

The Economic Empowerment Program provides training and support to help vulnerable individuals save money, access credit, and start small businesses. This program is designed to be self-sustaining, with members contributing to savings weekly and accessing credit as needed. This component integrates traditional healthcare and economic models, creating sustainable pathways for individuals and communities to address both the health challenges posed by jiggers and the economic barriers they face.

## 4. IMPLEMENTATION

### 4.1 INNOVATION IN IMPLEMENTATION

The innovation involves several activities as depicted in Figure 8.

The jiggers are extracted manually by use of affordable sterilised safety pins and razor blades to extract the jiggers from infested parts by professionally trained medical staff. After extraction using sterilised equipment, an antibiotic cream is applied to hasten wound healing.



**Figure 8.** Activities undertaken to treat jiggers, place, date.

Additionally, community members are sensitised and provided with jigger kits. Some of the instructions given include how to use and sterilise the kits (by burning the safety pin). The jigger kit is deemed a better option because it is considered to be a locally available resource that is easily affordable, accessible, and adoptable for community sustainability. This approach is considered appropriate because other effective methods, such as chemicals like benzyl benzoate emulsion (BBE), petroleum jelly, and potassium permanganate kill the jiggers by blocking their respiratory spiracles, but are corrosive to the skin which may lead to rotting and sepsis. The local jiggers kit improves the efficacy and safety of jiggers removal and enhances the overall public health response to the jigger infestation. It represents a significant step forward in the innovation of treatment methodology, emphasising community engagement, accessibility, and cost-effectiveness in healthcare solutions.

Through school and community clinics, several communities are reached and empowered with health education on good behavioral practices. By combining education with accessible health services, the initiative addresses the immediate issue of jigger infestations and promotes sustainable health practices that contribute to the overall well-being of

communities. The strategy harnesses the power of education and community involvement to create lasting impact on public health. Free shoes (made out of denim uppers and old car tyres as soles) are given to the patients and those at risk of jigger infestation. The aspect of repurposing denim and old car tyres into shoes provides a multifaceted approach to combating jigger infestations. It enhances health, promotes sustainability, fosters community involvement, and empowers vulnerable populations, making it a holistic solution rather than just a temporary fix.

A Residential Treatment Centre/in-patient clinic is operated to manage severely infested patients. This completes the comprehensive jigger management program by treating the infestation effectively while addressing the broader social determinants of health impacting the sick persons. This holistic approach has led to sustained improvements in health outcomes and community well-being.

#### 4.2 ORGANISATION AND PEOPLE

Sole Hope was founded by a female American who initially practiced video photography and marketing. She became passionate about solving the jigger problem after learning of an outbreak in Uganda, particularly in the Busoga region. She literally sold everything that she owned in the United States of America and used her personal funds to establish Sole Hope. She made self-sacrifice when she moved into Uganda with a three-month-old baby, a four-year-old, and a five-year-old. She had to give up everything she was familiar with, including living near her family in order to start the organisation. Sole Hope employs about 41 individuals, including community outreach workers, administrative personnel, social workers, doctors, nurses, clinical psychologists, directors, and monitoring and evaluation officers. The shoe-making workshop does not only

provide shoes for protection against jiggers, but also creates jobs for those who work in the workshop.

The community members like the local leaders are engaged in the mobilisation of the community members during outreach drills. The local communities have been empowered and trained through health education to support in identifying and mobilising other infested members using the extension staff, village health teams, and the Local Councils who are ambassadors in communities. As a result, the community members have supported the jiggers control efforts.

*“The community was so much interested in the fight against jiggers because they believed that they had the problem, the problem existed, and they believed that they needed support. So the community was very receptive.”* (Staff member)

#### 4.3 BUSINESS MODEL

The innovation is majorly funded by grants and donations from various sources, including international NGOs, private foundations, and individual donors. These funds are used for the initial installation and maintenance of the community outreach mobile clinics, the in-patient facility, and shoe workshop. Regular fundraising campaigns and partnerships with philanthropic organisations are conducted to ensure a steady flow of financial resources.

In addition to external funding in the form of donations, Sole Hope has a sustainable revenue stream through the sale of the shoes fabricated from recycled car tyres and denim, and other artisan crafts like jean handbags, and door mats. These products are produced in the organisation’s workshops by its own staff. These products have a local market as well as an international market, usually sold to visitors who wish to support and donate. This income is reinvested into the outreach and treatment initiatives, creating a self-sustaining cycle.

## 5. OUTPUTS AND OUTCOMES

### 5.1 IMPACT ON HEALTH DELIVERY

#### School and Community Outreach Clinics

The organisation successfully partnered with local leaders, and medical professionals to provide essential services, including health education, jigger removal, and shoes fabricated from recycled car tyres and denim. The weekly and monthly clinics have been effective in extending the necessary care to vulnerable children and families. Several communities were empowered in terms of preventing the spread of jiggers, and other foot-related diseases. Through the same avenue, the organisation has successfully built trust and fostered the relationships between the implementing agency and community members. Considering the 2010–2024 period, the organisation provided health education to 219,004 people across its area of operation. The beneficiaries were followed-up after initial treatment, and only 20% got re-infested, suggesting that 80% were completely jigger-free, partly attributed to positive hygiene practices.

#### Establishing Hospital-Based Partner Clinics

These clinics are strategically located in areas with high rates of jigger infestations. Through these partnerships, the organisation has provided comprehensive care, including jigger removal, treatment for other medical conditions, and follow-up care. The organisation has also strengthened the capacity of local hospitals and medical professionals to respond to jigger infestations, and improved access to health services for vulnerable communities in the respective remote areas.

#### Production of Durable and Closed-Toe Shoes (fabricated from recycled car tyres and denim)

From its inception in 2010 till September 2024, the organisation has produced

237,170 shoes and distributed 163,954 shoes. These shoes provided protection to the vulnerable children and families from jigger infestations and are distributed at no cost. The shoe workshop also supports local artisans, recycles waste materials (car tyres and old jean clothes), boosts the economy, and encourages the adoption of protective footwear in communities affected by jiggers.

#### Establishment of a Residential Treatment Centre (RTC)

This facility provides specialised care and treatment to those with severe jigger infestation. Various in-patient services are dispensed including medical treatment, nutrition, psychosocial support, and education. Between 2010 to September 2024, Sole Hope treated 94,767 patients and removed 1,444,793 jiggers. In 2023 alone, the organisation provided critical treatment to approximately 7,000 jigger-infested patients. This has helped patients to regain their health and mobility, and enhanced the capacity of local health workers to provide care for patients with severe jigger infestations.

The organisation has also mobilised individuals vulnerable to jiggers into self-help groups (SHGs) to serve as formal platforms for economic empowerment. Some of the support provided includes training and guidance on saving, accessing credit, and starting small businesses. Since its inception in 2010 till September 2024, the innovation has piloted a SHG of 15 women who were formerly infested by jiggers in Namisindwa District. The findings revealed that these women gained financial literacy and saving skills. The group saved about 3 million UGX within just two years, and 95% reported an increase in their incomes, with the ability to access basic needs like soap, start small scale ventures, and were borrowing from their group. This programme is on the route to achieving not only a jigger-free population, but also economically empowered individuals. The SHGs are sustained by ensuring membership contributions/savings which create a pool

(revolving fund) for providing credit to the members. This component has partially enabled the vulnerable individuals to improve their livelihoods through social networks. It also creates opportunities for vulnerable individuals to start small businesses which help to enhance/diversify their incomes.

The solution has already been implemented in multiple settings, including Busoga and Bugisu regions of Uganda, as well as cross-border initiatives in parts of Kenya and Rwanda.

## 5.2 COMMUNITY AND PATIENT EXPERIENCES

The patients, especially those with severe infestation, acknowledged the cordial treatment they received. They reported instant relief from the disturbing experiences of jigger infestations.

*“Yesterday when I came, I was badly off. I was shivering, there was a lot of itching and pain. However, when I woke up this morning, I was able to get some breakfast, and then the treatment, and I am now feeling better. I feel this is a very good place that has helped me so much.”* (A 35-year-old female patient/respondent of the FGD identified from Bugisu Sub-region [150 km from the treatment center], transported, and admitted at the treatment center in Jinja)

The use of the safety pin has become popular and acceptable to the patients, caretakers, and the community. This is because the project staff uses the safety pins to extract the jiggers. Additionally, they provide the safety pins to the people and instruct them on how to use and sterilise them, which makes the practice easily embraced by the people.

*“People have no problem with the safety pin. They are actually very thankful, very willing to, whether it is children, or adults, they're very willing to let you remove the jiggers with the safety pin. In fact, sometimes when you pull out*

*a razor blade, and get it close to their foot, the children especially will become more scared than with the safety pin. It is less intimidating. So, we have had a very good reception from the patients and in the villages.”* (Staff)

At an individual level, the recipients of the innovation demonstrated willingness to use the services because they believed that they were beneficial in eliminating/addressing the problem. At the community level, community members carry patients to treatment centres. The community members also provide the necessary support to the mentally impaired to get the treatment.

*“The community was very receptive by that time. Over these days, because the numbers are reducing, and so they don't see the problem anymore. That's why we are stretching to other areas. We started off with Bugisu, and we are working with 5 districts in Bugisu region as of now, and we hope to stretch it further to other areas.”* (Nurse)

## 6. SUSTAINABILITY

Sole Hope's ability to sustain its solution lies in the multidimensional approach that leverages grants, donations, and internal revenue-generating activities. In addition to external funding like grants and donations from various sources, including international NGOs, private foundations, and individual donors, the organisation has developed a sustainable revenue stream through the sale of locally made protective shoes and other artisan crafts like jean handbags and door mats. These materials are produced in the workshops by the staff and sold to local clients as well as the international community of the visitors who wish to support and donate.

The use of affordable sterilised safety pins and razor blades to extract the jiggers from infested parts by trained medical staff is also sustainable. Additionally, the community members are sensitised, and given a jigger kit. The jigger kit is deemed

a better option because it is considered to be a locally available resource that is easily affordable, accessible, and adaptable for community use.

The local communities have been empowered to identify and mobilise other infested members through the extension staff, village health teams, and the local councils who are ambassadors in communities. This has promoted community buy-in/acceptability, ownership, participation, and harmonious co-existence.

The SHGs, Child Protection Clubs (CPCs), and employment opportunities empower community members to take an active role in promoting desirable health practices and advocate for health rights. These groups benefit from the innovation, boost local content, economic empowerment, and serve as ambassadors by sensitising their peers. This fosters continuity/sustainability of the innovation, hence creating a stable, and supportive community environment.

Collaboration with the government health facilities through the Partner Clinics model ensures that the services are accessible even in remote areas. By training local health workers, and integrating the innovation into mainstream health structure, sustainability of the project is realised. This partnership also helps in securing government support and resources, which are vital for long-term sustainability.

## 7. SCALABILITY

The innovation has already been implemented in multiple settings, including Busoga and Bugisu regions of Uganda, as well as cross-border initiatives in parts of Kenya and Rwanda. Existing scaling has demonstrated that the innovation is adaptable to different cultural and socioeconomic contexts. The success of the innovation in the varied environments points to the robustness

and flexibility of the innovation. This suggests that the innovation could be replicated in various regions and countries facing similar challenges, including children's rights issues. Other regions in Uganda that may benefit from the scaling of the innovation may include northern and central Uganda, where similar health and social issues prevail. At a regional level, the innovation can be replicated to Sub-Saharan African countries like Tanzania, Ethiopia, and South Sudan. These areas can benefit from the innovation because they have similar climate and socioeconomic conditions conducive to jigger infestations. Globally, areas in Southeast Asia and Latin America, such as Brazil, facing parasitic infestations, and children's health issues can also adopt the model.



**Figure 9.** A map of Uganda showing the current geographical scope of innovation.

Several considerations can be emphasised to scale the innovation:

- Community Outreach Mobile Clinics are less resource-intensive. They can be easily replicated in other regions by leveraging the local resources like training local health workers and equipping them with the necessary tools and supplies. The mobile nature of these clinics allows for flexibility and reach to the underprivileged areas.

- Establishing Residential Treatment Centres in other regions or countries can provide specialised care for severe cases, and serve as hubs for training and resource distribution. So far, the organisation has one Residential Treatment Centre. Scaling of the centre will require more resources to buy land and build utilities and equipment like the beds.
- Production and distribution of protective shoes can be scaled by setting up additional workshops and training local artisans. This not only prevents jigger infestations but also creates employment opportunities. Scaling shoe production requires a shelter, providing skills to the local artisans, equipment, and materials.
- The government-based Partner Clinics can help in addressing the jigger challenge if scaled. This requires establishing a memorandum of understanding with the government facilities and providing utilities to render services closer to distant and vulnerable groups. The government partner clinics have been established in Busoga and are being scaled to Bugisu region. With the availability of the above elements, the partner clinics can be scaled to other parts/regions.
- Empowerment programs like the Self-Help Groups (SHG), and Child Protection Clubs (CPCs) are key components that can be replicated in schools and communities elsewhere. This component requires mobilising the people into groups. So far, the efficacy of these groups has been tested in the Bugisu region. The program has empowered individuals, and fostered a culture of saving, health, and efficacy to advocate for the health rights.

## 8. KEY LESSONS

The innovation provides insights into cost-effective and feasible interventions for management of jiggers which complements and adds value to One Health Joint Plan of Action- OH JPA (2022-2026) and other existing global and regional One Health and coordination initiatives aimed at strengthening capacity to address complex multidimensional health risks with more resilient health systems.

First, during the implementation of the intervention, it was established that people had misconceptions, associating jigger infection with witchcraft, which affected prevention efforts. This finding points to the need for prevention programs to embed components that deconstruct misconceptions and myths about jiggers.

Jiggers infestation was widespread. This calls for upscaling efforts in Uganda targeting eradication of jiggers since it poses a serious morbidity burden among the vulnerable groups.

From its inception in 2010 until September 2024, the organisation treated 94,767 patients and removed 1,444,793 jiggers. This attests to the fact that adopting and supporting the rollout of simple, cost-effective treatment and prevention methods like the use of safety pins is an effective way to relieve patients suffering from jiggers.

Effective control and prevention strategies require addressing underlying factors such as mental illness, poverty, and hygiene. During implementation, it was established that patients severely infected with jiggers often had other underlying health issues, including mental illness, substance or alcohol dependence, epilepsy, and more.

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