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Stakeholder Engagement to Facilitate an Effective Uptake of Gastroschisis Care Bundle in Tanzania

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ABSTRACT

Background: Care for babies born with gastroschisis varies across Sub-Saharan Africa, with mortality rates of up to 100% in some centres. Tanzania has implemented a gastroschisis care bundle, but its implementation faces challenges.
Objective: We conducted a stakeholder engagement exercise, guided by implementation science frameworks, to understand barriers and design strategies to increase fidelity in uptake of the gastroschisis care bundle in Tanzania.
Methods: A qualitative, participatory approach was applied through a structured 2-day stakeholder engagement workshop. Participants comprised a multidisciplinary team of healthcare providers involved in a national gastroschisis care initiative alongside key societal stakeholders, including patient advocates (parents of gastroschisis survivors), community representatives, and media personnel. We used the Hyper Island approach to facilitate discussions. CFIR and ERIC frameworks were used to identify key barriers to practice and to map them to targeted implementation strategies.
Results: Forty people (healthcare providers, policymakers, academicians, researchers, media and family/community) from 10 regions participated. We noted implementation gaps across sites, especially on nutrition care and infection prevention and control (IPC). Breastfeeding remained the most commonly used approach, as parenteral nutrition was unavailable. Through stakeholder input, the nutrition and IPC were revised. Participants highlighted the need for scheduled capacity building, advocacy and resource mobilisation, and similar engagement with policymakers and practitioners were key strategies identified for sustainability.
Conclusion: Stakeholder engagement is effective, feasible and highly needed in global surgery to ensure fidelity and sustainability of scaled evidence-based interventions. Integrating clinical expertise, lived experience and community views has the potential of ensuring sustainable national health-system strategy.

BACKGROUND

Sub-Saharan Africa (SSA) countries continue to bear the highest neonatal mortality burden globally, with an estimated 27 deaths per 1,000 live births as of 2024.[1] While prematurity, birth complications and infections remain leading drivers, congenital anomalies have emerged as a critical barrier to further mortality reduction. Addressing these requires a strategic focus on early detection, timely interventions, and equitable access to specialised care.

Achieving Sustainable Development Goal (SDG) 3.2, targets of fewer than 12 per 1,000 live births by 2030, remains a priority. Currently, mortality from common paediatric surgical conditions is significantly higher in SSA than in high-income countries (HICs). This disparity is most pronounced among patients with gastroschisis, where the mortality rate is up to 100% in SSA settings.[2–6] Care of these babies varies from within and between countries due to differential access to the necessary resources.[7–10] As a bellwether condition, gastroschisis outcomes serve as a sensitive proxy for the healthcare system's capacity to provide neonatal surgical care.[11] In 2019, Tanzania, through the Muhimbili National Hospital (MNH), participated in an international multicentre study to develop and implement the Gastroschisis Care bundle.[10] This intervention centred on pre- and in-hospital non-surgical interventions using Pre-Formed Silobags (PFS) resulted into a significan improvement in patient survival. However, as seen in many global surgery programmes, the sustainability and scalability of such effective interventions remain a persistent challenge. Despite an existing evidence-based intervention, mortality remained high, especially among referred infants. The TINY Tanzania collaboration was formed in 2021 to decentralise care and sustain outcomes for neonates with gastroschisis across Tanzania.[12] By November 2024, the project had been active for 32 months, successfully expanding access to 10 regional referral hospitals. During this period, the initiative trained over 700

multidisciplinary healthcare providers, developed a nationwide database, and saved the lives of 180 infants with gastroschisis, achieving survival rates of up to 60%. Additionally, advocacy campaigns reached both the community and policymakers. While the primary goal of decentralisation was to bring care closer to patients and reduce long referrals, informal observation during implementation revealed inconsistencies in protocol adherence. Consequently, although overall mortality decreased, significant variability persisted between centres. Nutritional care remained a challenge due to the lack of in-country Total Parenteral Nutrition. Existing protocols failed to address infection, a major driver of mortality.

Implementation of evidence-based interventions is often hindered by context-specific factors. In implementation science, stakeholder engagement is a critical component for translating knowledge into practice and generating evidence for context-relevant policy decision-making.[13–15] However, stakeholder engagement remains underutilised and rarely formally incorporated in surgical programmes.[16–20] Futhermore, there is limited literature on effective engagement strategies within global surgery in LMICs. We aimed to share our approach to planning and conducting stakeholder engagement to understand implementation barriers and design strategies that facilitate uptake of the gastroschsis care bundle for sustainable improvement of newborn outcomes in Tanzania.

METHODOLOGY

Study Design, Site, and Duration

We employed a qualitative, cross-sectional stakeholder engagement design, utilising a participatory approach to support consensus building. Stakeholder engagement was facilitated using the Hyper Island approach, while the structure and implementation processes were guided by the Consolidated Framework for Implementation Research (CFIR) and Expert Recommendations for Implementing Change (ERIC).

The stakeholder engagement workshop was conducted in Dar es Salaam, convening participants from multiple implementation sites across the country involved in the Gastroschisis Care Bundle. The workshop spanned two days, from November 16 to 17, 2024, with a total duration of 13 hours (8 hours on the first day and 5 hours on the second day). The format enabled structured engagement and collective reflection on the project. A social session held on the evening of the first day created space for informal interaction, fostering trust, open dialogue, and collaborative relationships among participants.

Study Participants and Selection Criteria

Participants were purposively selected to capture clinical, service user, and policy perspectives on gastroschisis care in Tanzania. The study included multidisciplinary healthcare providers (surgeons, paediatric surgeons, neonatologists, and nurses) involved in the management of gastroschisis, as well as site leads from ten regional referral hospitals participating in the National Gastroschisis Project, representing all geographical zones.

Parents or caregivers of children treated for gastroschisis during the project period were included to provide patient perspectives. Policy and system-level input was obtained from representatives of the Ministry of Health and stakeholders from supporting sectors, including research, media, communication, and private pharmacies. The project implementation team coordinated the recruitment of participants for the study.

Sample Size

A total of 45 stakeholders participated in the workshop. The sample size was based on feasibility and logistical considerations for the stakeholder engagement workshop. This sample provided adequate diversity across stakeholder groups while enabling in-depth discussion. Participants represented ten regional referral hospitals and all geographical zones of Tanzania. Consistent with qualitative research principles, emphasis was placed on the depth and relevance of perspectives rather than numerical representation.

Workshop Design and Implementation

The workshop was designed and facilitated using an adapted version of the Project Midway Evaluation Method from the Hyper Island Toolbox..[21] This participatory framework supports structured yet flexible collaboration and is designed to foster innovation within multidisciplinary teams. It enabled participants to systematically identify implementation barriers and co-create actionable strategies for sustainable health system improvement. The design was guided by the Inspire, Define, Observe, Analyse, Refine, Test (IDOART) model, which structured the process of reflection, analysis, iteration, and consensus-building.[22] This model was selected because of its effectiveness in tackling real-world challenges and driving tangible results.

Pre-workshop Preparations

Prior to the workshop, we developed a concept that i) Defined the workshop's intention and desired outcomes; ii) Set the agenda and timelines in a detailed timetable focusing on key issues to structure the discussion; iii) Defined roles and ground rules: Clear roles were assigned to moderators, and ground rules were set to ensure productive conversations. Two moderators, a clinician and an implementation scientist, were assigned to facilitate the sessions. Their roles included guiding discussions, managing group dynamics, and documenting key insights throughout the process. This dual-facilitation approach supported both content expertise and methodological rigour.

Workshop Implementation

Participants were organised into six small subgroups, each comprising a maximum of seven individuals. The groups were deliberately composed to ensure a mix of expertise and representation across different implementation settings. Each subgroup was provided with flipcharts and sticky notes to support structured brainstorming and idea organisation. The session began with site leads or representatives from participating hospitals presenting updates on their progress, implementation challenges related to the care bundle, and future plans. Discussions were structured around five key subtopics: (i) nutrition care practices for babies with gastroschisis, (ii) infection prevention and control (IPC), (iii) patient, parent, and

community engagement, (iv) research and dissemination, and (v) strengthening partnerships and collaborations.

Following the presentations, each subgroup engaged in focused 5 to 10-minute discussions, during which participants identified barriers and enablers for each subtopic using sticky notes on flipcharts. This was followed by a structured brainstorming process to develop consensus-based, group-level action points. Finally, each subgroup selected a representative to present their key findings and agreed-upon recommendations to the wider group. The overall aim was to generate feedback on project implementation, identify challenges and solutions, and promote cross-site learning to support the sustainability of care.

Data collection and Analysis

Data were collected through a triangulated approach to ensure a comprehensive record of stakeholder discourse. Primary data were from detailed rapporteur notes and transcribed plenary discussions from presentations, supplemented by participant-generated artifacts such as sticky notes and flipchart summaries produced during the breakout sessions. Moderators guided the group through a process of refinement, where participants confirmed their barriers and challenges as well as proposed action steps to address them. This collaborative process ensured that the solutions were practical and aligned with the needs of the project and Tanzanian context. We used a thematic analysis following the domains of the CFIR framework (characteristics of care bundle, external environment and context, internal context and setting of the practice, characteristics of care implementers, and implementation process within the practice).[23–25] Emerging subthemes were consolidated and presented to the entire group for further discussion, refinement and validation of their ideas and come up with an overall list of consensus on key challenges and potential solutions. The ERIC framework was used to map potential strategies to respond to barriers identified in a CFIR framework.[26]

Ethics Approval and Consent to Participate

This project received ethical clearance from the National Institute for Medical Research (NIMR) IRB No. NIMR/HQ/R.8c/Vol.I/2611. All participating hospitals provided a permission letter for their participation, while parents consented on behalf of their babies to be included in the study.

RESULTS

Participant Characteristics and Geographic Representation

A total of 40 participants attended the workshop, comprising 20 males and 20 females. The median age was 36 years (range: 24–67 years). Participants had a median of 24 months of experience (range: 0–240 months) caring for infants with gastroschisis. They were affiliated with the Ministry of Health, professional associations, training institutions, and media organisations. Parents and family members of patients, as well as representatives from international institutions, were also invited (Table 1). Healthcare professionals represented a broad range of specialities, including 6 paediatric surgeons, 5 surgical trainees, 4 general surgeons, 4 general practitioners, 3 neonatologists, 1 neonatology fellow, 1 implementation scientist, 9 nurses, and 2 paediatricians. In addition, five non-medical participants included parents or family members of patients and members of the media. Participants were drawn from 10 regions (Figure 2), representing 10 regional referral hospitals across nine zones in Tanzania where the project was being implemented. These sites also serve as potential centres for inclusion in the next phase of the project as part of the decentralisation strategy (Figure 1).

FIGURE 1: Stakeholder Groups and their Proximity to TINY Tanzania's Core Business

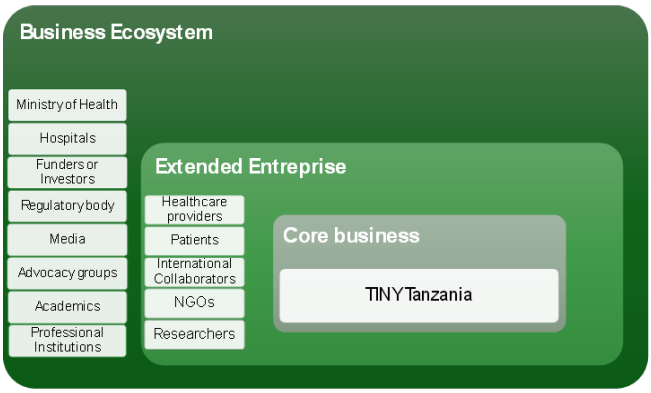


FIGURE 2: Map of Workshop Participant Origins and Venue Location



The workshop was successfully facilitated and guided us in understanding the challenges and potential solutions for improving access to gastroschisis care. Key challenges were the inconsistent use of existing protocols due to perceived ineffectiveness and contextual challenges, the cost of interventions in the care bundle, the lack of a local source of silobags beyond those from the project, inadequate engagement of key stakeholders and advocacy, poor pre-hospital care and incentives to team members (Table 2). Upon consensus, the team updated the nutritional protocol and developed an IPC protocol to meet the local needs (Figures 3a and 3b). These captured pre-hospital care, in-hospital care, feeding in the absence of TPN, fluids management, and sepsis prevention. They advised the project Research Ethics Data Capture (REDCap) database revisions to capture other data deemed important, including follow-up post-discharge and to capture outcomes after implementation of these changes.

Implementation strategies recommended to sustain the TINY Tanzania project and care and outcomes of babies with gastroschisis were organised into three key categories: i) capacity building and protocol adaptation, ii) stakeholder engagement and partnerships and iii) advocacy and resource mobilisation (Figure 4). Specific strategies include educational workshops, a collaborative learning environment among the project teams, strong engagement of parents/families of survivors and communities, fundraising for the project, incentivising team members, and utilising data to monitor quality, provide feedback and inform decisions. They also suggested the provision of local technical assistance and consultations, infrastructure improvements to have specific wards or a space in the ward for babies with gastroschisis, and engagement of leaders/policymakers' leadership.

TABLE 1: Participants Institutional Affiliations

Participants	Institutional Affiliation
Hospitals	Benjamin Mkapa Hospital – Dodoma Bugando Medical Centre (BMC) – Mwanza Iringa Regional Referral Hospital – Iringa Kilimanjaro Christian Medical Centre (KCMC) – Kilimanjaro Maweni Regional Referral Hospital – Kigoma Mbeya Zonal Referral Hospital – Mbeya Mount Meru Regional Referral Hospital – Arusha Muhimbili National Hospital – Dar Es Salaam Nkinga Referral Hospital – Tabora St Benedict Ndanda Regional Referral Hospital – Mtwara
Ministry of Health	Coordinator for Newborn and Child Health
Professional Associations	Tanzania Surgical Association Pediatric Surgery Association of Tanzania Pediatric Association of Tanzania
Training Institutions	Muhimbili University of Health and Allied Sciences The College of Surgeons of East Central and Southern Africa University of Rostock – German University Hospital Schleswig- Holstein – German Altona Children Hospital Hamburg – German
Patient and Advocacy Groups	Parents/families of Survivors of Gastroschisis Survivors of Gastroschisis Media personnel

TABLE 2: Thematic Synthesis and Barriers to Implementation as per CFIR

Thematic Area (CFIR Domain)	Key emerging themes	Selected illustrative quotes
Characteristics of Care Bundle	• Inconsistent nutrition protocols use. • Supply Scarcity of pediatric/neonatal TPN. • High Cost of essential resources (silobags, TPN Tegaderm) • Absence of IPC protocols leading to high infection burden • High cost of antibiotics often paid out-of-pocket by families.	*"There is no localized protocol that resonate with the available resources; current guidelines are often viewed as unrealistic for our setting."* *"Families are often forced to choose between essential antibiotics and basic sustenance due to high our-of-pocket costs for care"* TINY Tanzania Team
External Environment & Context	• Lack of national policy prioritization: Gastroschisis is not prioritized in national health policies due to a "perceived low burden." • Inadequate community involvement in the care process • Advocacy campaigns and engagements with key stakeholders are minimally hindering resource allocation • Majority (over 90%) of patients are referred from other hospitals leading to delays in receiving timely treatment	*"Gastroschisis remains in the shadows of national health policy; without being recognized as a high-burden priority, institutional funding remains stagnant."* TINY Tanzania Team
Internal context & setting of the practice	• Social Stigma: Mothers face significant stigma, leading to poor adherence to care plans. These stigmas are not well documented • Long hospital stay of patients • Lack of specific wards or spaces designated for babies with gastroschisis, complicating the delivery of their care • Lack of in-hospital Gastroschisis Care Monitoring Checklist to ensure consistent care	*"Mothers often face community stigma with a myth that the condition is a curse. They end up requesting for discharge against medical advice"* Parent of patient survivor
Characteristics of Implementors	• Motivation is tied to poor survival rates. Emotional toll on staff as they felt discouraged when babies' deaths aren't analyzed or understood. • High staff turnover leads to constant knowledge attrition. • Lack of confidence in IPC and nutrition practices in gastroschisis care • Limited capacity in research and quality improvement	*"It is quiet discouraging to lose patients without a formal debrief to understand why we failed"* *"Some individuals believed that survival in their respective centers was poor, impacting their motivation to adopt new practices."* Implementation Staff
Implementation process within the practice	• Supply Chain Gaps: Lack of local suppliers for essential materials. • Insufficient expertise for early in-utero detection (USS* or AFP**) • Challenges in obtaining timely cultures and investigations. • Inadequate community and patient engagement in the care process • Absence of structured feedback systems for monitoring progress, quality improvement, or team debriefings • Long-term outcomes beyond discharge are not well understood	*"Absence of structured feedback systems for monitoring progress, quality improvement, or team debriefings."* Implementation Staff

*USS – Ultrasound Scan, **AFP – Alpha-fetoprotein

FIGURE 3a: Recommended Nutritional Protocol

1. **Pre-Referral Care**
   a. Educate the mother about the condition and treatment plan after delivery.
   b. Advise trophic breastfeeding (maximum 5 minutes per feed, every 3 hours).
   c. Place a large nasogastric tube (NGT) for free drainage.
   d. Administer IV fluids:
      i. Initial bolus: 10–20 ml/kg of Normal Saline (NS) to prevent hypovolemia
      ii. Maintenance fluid: 5% Dextrose/NS during referral to a facility with appropriate care capabilities.
   e. Timely referral to a center capable of providing definitive care.
2. **In-Hospital Care – *While Silobag Is in Place***
   a. Record the baby's weight upon arrival.
   b. Insert a sterile pre-formed silobag per standard care.
   c. In centers with not TPN, start feeding with 1-5 ml of expressed breastmilk (EBM) every 3 hours via syringe. Adjust feeding volume based on weight and gestational age and Gradually increase EBM as tolerated:
      i. Term baby: 30 ml/kg/day, distributed across 8 feeds.
      ii. Preterm baby: 20 ml/kg/day, distributed across 8 feeds.
   d. Monitor gastric aspirates:
      i. Aim to close the NGT for 1 hour post-feed.
      ii. Measure aspirates during free drainage and replace ml per ml with N/Saline if necessary.
      iii. Only actively aspirate if the volume exceeds 10 ml/kg.
   e. Fluid Management:
      i. Maintain fluid balance by considering breastmilk volume in addition to maintenance fluid.
      ii. Follow the neonatal protocol for calculating fluid needs.
      iii. Monitor the baby's weight daily.
      iv. Monitor urine output for possible pre-renal Acute Kidney Injury (AKI)
      v. Maintenance fluid: 1/5 DNS in which mix 4 parts 10% dextrose with 1 part N/Saline (consider adding maintenance potassium chloride).
3. **In-Hospital Care– *After Silobag Removal and Abdominal Wall Closure***
   a. Resume feeding every 3 hours after abdominal wall closure. Aim for 120-150 ml/kg/day total intake, gradually increasing oral feeds as tolerated:
      i. Term baby: 30 ml/kg/day distributed across 8 feeds.
      ii. Preterm baby: 20 ml/kg/day distributed across 8 feeds.
4. **Follow-Up Care After Discharge** – Advise hospital follow-up and monitor weight gain.

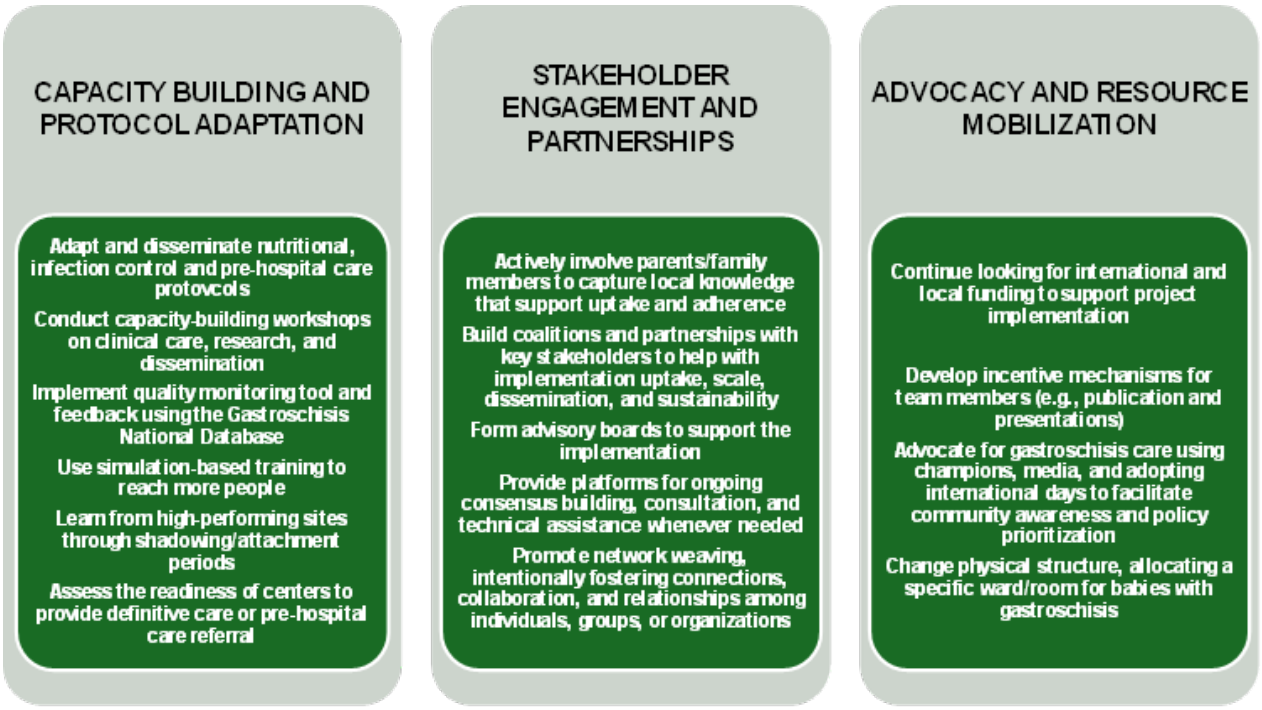
IMPORTANT NOTES

   a. Bile-stained aspirates or abdominal distension are not reasons to stop feeding.
   b. If the baby vomits:
   c. Single vomit: Continue feeding as planned.
   d. Multiple vomits: Revert to the previous day's feeding regimen.
   e. Position the neonate with their head and chest slightly elevated in an inclined incubator/cot.
   f. Regularly monitor the baby's temperature. If fever spikes or the baby appears unwell, seek immediate medical evaluation for possible sepsis.
   g. While establishing breastfeeding may vary individually, the goal is to initiate breastfeeding as soon as possible to optimize survival chances.
   h. Daily weight checks are mandatory.
   i. Ensure the baby opens their bowels regularly. Rectal irrigation may be used to encourage defecation if needed.

FIGURE 3b: Recommended Infection Prevention and Control Protocol

1) **Pre-Referral Care**
   a) Ensure hand hygiene by washing their hands using soap or alcohol-based sanitizers as they care for the baby. Educate the mother on hygiene as well.
   b) Ensure aseptic techniques by wearing sterile gloves when doing any procedure. Clean gloves can be used in absence of sterile gloves
   c) Cover the baby with a sterile and transparent Plastic Wrap to allow monitoring of the bowel to prevent dehydration of the intestines, ischemia and hypothermia.
   d) Insert a large nasogastric tube (NGT) for bowel decompression and minimize infection risks.
   e) Administer intravenous (IV) fluids:
      i) Initial bolus: 10-20 ml/kg of Normal Saline (NS).
      ii) Maintenance: 5% Dextrose/NS solution to run as the baby is being referred
   f) Provide antibiotics, preferably 2nd line such as Ceftriaxone, Cefotaxime, Vancomycin, Meropenem, Clindamycin, and Amikacin.
   g) Timely refer the patient to a center capable of managing the condition.
2) **In-Hospital Care**
   a) Ensure all procedures (silobag insertion, inserting nasogastric tube, handling the baby) are done using sterile technique.
   b) Assess for the signs of sepsis, including:
      i) Temperature, Tachycardia, Blood Pressure, Abnormal skin color (e.g., pallor, mottling), Poor feeding or lethargy and Respiratory distress
      ii) Correct for hypovolemia and monitor the urine output
   c) Perform the following Investigations:
      i) Blood Cultures on admission and after 72 hours post admission
      ii) C-reactive Protein (CRP), CBC with Differential
      iii) Electrolytes and Renal Function Tests (RFTs) if deranged and need corrections or if need adjustment of medication
      iv) Random Blood Glucose (RBG)to check for hypoglycemia or hyperglycemia
   d) Isolate the baby diagnosed to have an infection
   e) Antibiotics: If the neonate requires surgery, Empirical antibiotics may be administered at the time of surgery or if there are signs of infection:
   f) Tailored Antibiotics: Based on blood or other culture results, antibiotics should be adjusted to targeting specific pathogens.
   g) Antifungals: In cases of suspected fungal infections, antifungal medications (e.g., fluconazole) may be necessary, particularly in preterm infants or those with prolonged IV access.
   h) If the baby requires surgical closure, antibiotics should be administered within 60 minutes before incision.
   i) NGT Care and Gastric Aspirates: After feeding, close the NGT for one hour. Measure gastric aspirates regularly and replace ml per ml with Normal Saline (NS) if necessary, especially if there is active aspirate (e.g., >10 ml/kg). Ensure the NGT is cleaned regularly to prevent infection.
   j) Perform Rectal Irrigation if the baby does not pass stool regularly, to stimulate defecation and help prevent bowel obstruction or infection.
   k) Monitor body temperature regularly to detect infection early. Any signs of fever or hypothermia require immediate evaluation.

FIGURE 4: Recommended Strategies to Improve Care for Babies Born with Gastroschisis, Guided by the ERIC Framework



DISCUSSION

We successfully engaged multidisciplinary teams of 40 healthcare providers, policymakers, academicians, researchers, media and family/community members. Our findings noted key barriers to implementation, such as inconsistent nutrition and IPC protocols use, high costs of treatment and treatment resources, inadequate advocacy and engagement of key stakeholders, poor pre-hospital care and lack of incentives. Stigma and limited social support during care-seeking and treatment was reported to negatively impact adherence to recommended care. These reasons have been reported by prior studies on perioperative protocols and guidelines such as surgical site infections and Enhanced Recovery After Surgery.[27–29] Through consensus, the team proposed several strategies, including capacity building programs, resource mobilization, exploration of local sources for essential supplies, and strengthened engagement with policymakers. In addition, the nutrition and IPC protocols for managing babies with gastroschisis were successfully revised and adapted to the local context.

Recent advancements in global surgery have empahasised community integration to ensure long-term impacts. Our previous work showed significant success of our approach to decentralise care of these babies.[12] While the project has been successful, ongoing identification and understanding of key barriers are essential to ensure sustained impact. Stakeholder engagement is critical for ensuring acceptability and adoption of evidence.[30] It leads to improved adherence to treatments and practices recommended, as well as their relevance, transparency, and usefulness to end users.[31] Strengthening stakeholder engagement could facilitate dialogue to develop and advocate for nationally applicable policies and support their integration into existing national health strategic plans.[36] It has been used in the development of national surgical, obstetrics and anesthesia plans (NSOAPs).[32–35] However, in most existing work, the active engagement of patients/parents and community as partners in the co-creation of programmes and interventions, rather than as passive subjects, remains lacking.[37] Challenges to ensuring community participation include limited prior experience among community members, low awareness of the benefits of research, the required time and resources for meaningful engagement, limited applicability to certain types of studies, and the risk of tokenistic, rather than genuine involvement.[37] Our project alludes to how this process can effectively be done, engaging parents and patients in a meeting format and a potential approach when resources are limited. In addition to participation in consensus-building platforms, engagement can take multiple forms, including ambassador programme, shared collaborative strategies, training patient coinvestigators, and the active collection of patient reported outcomes via patient portals.[38] Global surgery challenges involve complex implementation barriers that require context-specific, locally informed approaches to achieve

sustainable change.

While the Sustainable Development Goals (SDGs) commit to strengthening health systems and improving global wellbeing, a high proportion of effective interventions remain sidelined in LMICs due to a lack of implementation clarity.[39–41] Global surgery is an essential component of global health, and achieving SDGs requires a comprehensive understanding of its associated challenges. The use of implementation science frameworks and the Hyper Island Toolbox proved feasible for identifying barriers and developing potentially sustainable strategies. Our approach has the potential of accelerating and sustaining real-world impact in global surgery programmes, empowering stakeholders, encouraging interdisciplinary and intersectional collaboration, and ensuring solutions are clinically sound and contextually relevant. This aligns with the recommendations of the Lancet Commission on Global Surgery and World Health Assembly resolutions, which advocate for local leadership and multistakeholder involvement in global surgery to ensure Universal Health Coverage.[42–44] As gastroschisis is a bellwether procedure, this experience serves as a proxy for strengthening the entire neonatal surgical system.[11,45] Engagement can serve as an effective approach not only during the design phase but also throughout implementation and supporting continuous adaptation. The 2024 revisions of the Declaration of Helsinki emphasise a patient-centred perspective, underscoring the essential role of engaging patients as partners in research as an effective and ethical imperative.[46]

Limitations

Our engagement project has a number of limitations: First, participants were mainly coming from major referral centres and urban settings. Perspectives of the frontline providers at the primary health care facilities and community members from rural settings would add to the understanding of socio-cultural and resource barriers. Most infants with gastroschisis are not delivered at centres capable of providing definitive care but are instead referred from such settings. Second, due to financial constraints, the duration of stakeholder engagement was limited; therefore, repeated or serial engagements could increase its effectiveness. Despite the short time and small number of participants, the IDOART model provided a structured facilitation that effectively addressed the study objectives. Thirdly, effective stakeholder engagement may be hindered by inherent power asymmetries among participants, existing hierarchical structures within hospital settings, their differing priorities and perceived importance.[13,18] To address this, we incorporated a social evening at the end of day one into the formal approach adopted during the day to allow informal discussions and fostered a culture of openness, trust and collaboration. Fourthly, there is value in engaging people of similar interests and expertise, especially in more detailed topics that need expert opinions and learning. This was not possible during this meeting. Additionally, despite their engagement, we did not hear much about the families' perspectives, especially on their needed counselling about the problem, the rationale for the non-surgical approach and potential outcomes. Future work may focus on incorporating qualitative methods like focus group discussions, which have the potential to complement the ERIC and CFIR frameworks of implementation science.

CONCLUSION

We have shown how to conduct an effective, feasible and cost-effective stakeholder engagement to sustainably address challenges in LMICs using implementation science frameworks. Like many other global health challenges, global surgery is complex and faces multiple implementation challenges. This approach can be used to address similar global surgery/health challenges and scaling up of evidence-based interventions in similar settings. Such an engagement will provide an opportunity to gain needed local knowledge and expertise and develop context-relevant strategies for sustainable change in a limited timeline. It is useful as a monitoring tool to help implement the necessary adjustments that may hinder effective implementation and to continue contextualising implementation strategies. Our results have the potential of improving care for other neonatal surgical conditions, gastroschisis being a bellwether procedure. Stakeholder engagement is not only an effective thing to do, but it will also ensure ethical practice in programme implementation. As countries continue to implement and evaluate the implementation of their NSOAPs, the voices of professionals, public and private health partners, the community and patients are crucial.

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