

Exploring growth and sustainability in a longitudinal academic global surgery partnership

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Abstract

Purpose: Academic global surgery partnerships have aimed to build more sustainable and equitable collaborations. The AMPATH (Academic Model Providing Access To Healthcare) global health consortium houses one such partnership. Our 35-year-old surgical collaboration within AMPATH offers a unique opportunity to reflect on the evolution of our collaboration over time, observing the key drivers of progress and the meaning of sustainability.

Methods: This study utilized a qualitative approach to explore the perspectives of both US and Kenyan leaders in the AMPATH surgery partnership over the last 35 years. We defined different decades of leaders including “initiating leaders” (1990-2002), “current leaders” (2002-2012) and “future leaders” (2013-present). We performed thematic analysis initially taking an open-ended approach. However, we noted alignment with the ‘Partnership Spectrum’ framework we later applied to map the progression of our surgery partnership over time. We abided by the Standards for Reporting Qualitative Research (SRQR) checklist for qualitative research.

Results: We completed 17 interviews in total with 11 Kenyan leaders (65%) and 6 US leaders (35%). The main themes which emerged include: (1) Exposures to new perspectives stimulated future growth; (2) Local leaders desire mentoring over teaching relationships; and (3) True sustainability requires dynamic growth centered on core values. Initiating leaders participated in a Type 1 (leverage/exchange) partnership model, investing in the infrastructure required to host clinical care and education, creating avenues for valued collaborations like trainee exchange, which further offered exposure to new systems and ideas. As local expertise developed, growth towards a Type 2 partnership (shared collaboration) resulted in an increasing desire for a mentoring relationship whereby mentees had greater agency, mitigating the natural power dynamics which accompany a teaching relationship. As partners look towards the future Type 3 partnership (system transformation), clear core values supported by collaborative institutional memory become increasingly important.

Conclusions: Reflection on our 35-year surgical partnership showed significant growth and progress which remained centered in our core value of education and training future surgeons. The dynamic nature of our collaboration as it progressed through partnership stages reflects positively on long-term sustainability and its ability to remain relevant and beneficial over time.

Introduction

Global surgery partnerships (GSPs) between high-resource and low-resource settings can be leveraged to address the unmet burden of surgical need which is disproportionately present in low- and middle-income countries. GSPs with a focus on education have increased dramatically in the last decade, a response to the critiques of unsustainability and power imbalance leveraged towards the short-term mission model of global surgery [1]. However, education-centered academic partnerships across differently resourced settings face the continued challenge of ensuring mutually beneficial and sustainable collaborations over time. Many groups have identified critical attributes within collaborations

which help to foster sustainable and equitable relationships, ranging from community, advocacy, multisource funding, reciprocity and more [2–6]. Our own academic surgical collaboration is housed within AMPATH (Academic Model Providing Access To Healthcare), a global health consortium founded between a Kenyan and an American medical school in 1990 which has now expanded to include academic centers around the world. The 35 years of our surgical collaboration offers a unique opportunity to reflect on the relationships and progression of this partnership. In this qualitative study, we interviewed generations of our leaders to reflect on the evolution of our collaboration over time with the hope of exploring key drivers of progress and the meaning of sustainability within our partnership.

Methods

This explorative qualitative study investigates the perspectives of both US and Kenyan leaders in the AMPATH surgery partnership over the last 35 years. We approached data in an open-ended fashion, allowing themes and phenomena to emerge without a pre-determined framework to guide analysis. However, as analysis progressed, we noted alignment of our findings with the ‘Partnership Spectrum’ framework, a paradigm created by The Partnering Initiative, a public-private partnership between the University of Cambridge and the International Business Leaders Forum.

This framework illustrates three types of partnerships [7]: Type 1 partnerships are characterized by leverage/exchange, whereby an organization may exchange resources with another to create gains within itself. Type 2 partnerships are described as combine/innovate, where partners combine assets and resources to collectively deliver more than what one individual would be able to achieve. Type 3 partnerships are associated with system transformation, combining partnership efforts to collaborate on complex issues, generating systems-level change.

In the sections below, we aim to explore emerging themes from our interviews and apply them to the ‘Partnership Spectrum’ framework to help map the progression of our surgery partnership over time. We applied the Standards for Reporting Qualitative Research (SRQR) checklist to account for all aspects of qualitative research (Online resource 1).

Study setting

This study is centered around the 35-year AMPATH surgery partnership which involves Moi University School of Medicine (MUSM) and Indiana University School of Medicine (IUSM). MUSM is Kenya’s second public university whose medical school was founded in 1990 in partnership with IUSM, and today hosts over 30,000 students [8]. IUSM is a public university and health system which serves Indiana through 16 different hospitals [9]. The MUSM/IUSM/AMPATH partnership works collaboratively with Moi Teaching and Referral Hospital (MTRH), a public tertiary referral hospital in Kenya that serves a catchment area covering western Kenya, eastern Uganda, and southern South Sudan [10].

This study was approved by the MTRH/MUSM Institutional Research Ethics Committee (MTRH/MU IREC) (IREC/648/2023, approval number 0004598) and was deemed exempt by the IUSM Human

Subjects & Institutional Review Board (IRB Protocol No. 20904). This study involved verbal and/or written consent from all participants.

Researcher reflexivity

Study team members who were involved in study design and development included both American and Kenyan surgical practitioners and trainees who had direct experience working with the AMPATH surgery partnership in clinical, education and research endeavors. The principal investigators (JHS, PM) over 10 years of involvement with the AMPATH surgery partnership and provided background and guidance in navigating the existing leadership structure in place. Both American and Kenyan surgical trainees (HL, IA, JK, MB, AA) all had over 5 years of experience working with the partnership, including at least one year in-person at the Kenya site (HL, MB, AA) and two months in-person at the US site (IA).

Interview Guide

The semi-structured interview guide was designed to broadly explore leaders' experiences in the collaboration including their roles and responsibilities, rewards and challenges experienced, perceived impacts from being in the leadership role, and future hopes for the partnership. We also queried leaders' understanding of global surgery following their involvement in this international partnership. The guide was piloted with one US and one Kenyan leader and adjusted as needed for clarity and flow. All interview data, including pilot interviews, were included in the final analysis.

Interview Process

The study team started interviews by identifying past designated leaders who engaged in AMPATH surgery partnership activities. HIC (high-income country) leaders included Surgery Team Leaders (TLs), or representative surgeons of the US center who reside full-time in Kenya, participating in clinical care management, education and research endeavors alongside LMIC leaders. LMIC (low- and middle-income country) leaders included department chairs and leaders who collaborated closely with the TLs in education or research initiatives. Additional interviewees were identified through snowball sampling following interviews with this initial cohort.

Interviewed leaders spanned diverse specialty backgrounds including general surgery, cardiothoracic surgery, pediatric surgery, urology, trauma surgery, orthopedic surgery, surgical oncology and anesthesiology. All leaders were previously or currently involved in clinical care and trainee education. We defined three generations of leaders according to the decade they held their positions during the last 35 years. "Initiating leaders" held their positions between 1990–2021, which also included the period of the first US/Kenyan collaborators until the arrival of the first officially assigned US TL. "Current leaders" (2002–2012) and "future leaders" (2013-present) held their positions as subsequent leaders/TLs in the 2nd and 3rd decades of the partnership, respectively.

Study team members (HL, IA) reached out to interviewees via phone call or email to schedule an in-person or virtual interview. All interviews took place between October 2023 – May 2024 and were

conducted in English. Interviews were recorded, transcribed verbatim, and reviewed by the coding team to ensure clarity prior to analysis. Field notes were written during the interview and the team debriefed following each interview.

Analysis

All interviews were completed in English with audiovisual recording and transcribed verbatim into transcripts for analysis. The coding team (HL, MM, WM) coded and analyzed all interviews using Dedoose (Version 9.0.107), a qualitative data analysis software [11]. The team approached coding through open, line-by-line coding with no pre-existing frameworks or themes. We utilized Braun and Clarke's six-step model of thematic analysis to help guide the coding process [12]. Two independent reviewers coded each transcript with initial codes aligning with the structure of the interview guide and used negotiated agreement to define and refine codes. A third reviewer was available to resolve disagreements. Interviews continued until thematic saturation was reached as determined by the lack of new emerging codes for three continuous scripts. The final codebook consisted of 86 child codes structured under 12 parent codes (Online resource 2). Upon coding completion, the coding team generated summary memos of each code, identifying emerging themes and relationships between codes to generate the final themes and sub-themes as reported. Verbatim quotations representing themes and subthemes were identified during the coding process and compiled throughout coding (Online resource 3).

Results

Participant Characteristics

We completed 17 interviews in total with 11 Kenyan leaders (65%) and 6 US leaders (35%). Leader demographics and the average length of leaders' involvement in the partnership are illustrated in Table 1. The specialty background of participants ranged from general surgery (n = 7, 5 Kenyan, 2 US), urology (n = 1, Kenyan), cardiothoracic surgery (n = 1, Kenyan), pediatric surgery (n = 2, Kenyan), orthopedic surgery (n = 1, Kenyan), surgical oncology (n = 1, US), trauma/critical care (n = 2, US), and anesthesiology (n = 2, 1 Kenyan, 1 US). The average duration of interviews was 59 minutes.

Table 1
Participant demographics

Country of origin:	Initiating (1990–2001)	Current (2002–2012)	Future (2013–2024)
Kenya, % (n)	45 (5)	36 (4)	18 (2)
US, % (n)	67 (2)	17 (1)	50 (3)
Average length of involvement (years)	29	18	8

The main themes which emerged include and are defined as the following:

1. *Exposures to new perspectives stimulated future growth*: Creating opportunities for exposure to new perspectives and expertise produces valuable growth
2. *Local leaders desire mentoring over teaching relationships*: Fostering mentorship relationships, or learning relationships characterized by increased agency and ownership, builds more equitable collaborations
3. *True sustainability requires dynamic growth centered on core values*: True sustainability involves both recognition of core values, and a willingness to change to meet new challenges in personal or professional aspects of collaboration

Direct quotes supporting these themes are noted below with the interviewee's home setting, leadership generation, and assigned standard participant (SP) number.

Theme: Exposures to new perspectives stimulated future growth

Our collaboration's strong foundation in education stemmed from AMPATH's original mission of building a medical school. Initiating leaders made key contributions to the educational mission through infrastructural development. Building operating theatres or specialty care units created space for formal education, increased the capabilities to manage complex clinical cases, and created avenues for greater collaborations.

"When we started as the pioneers, students, we hardly had anything that could be used to train doctors... training doctors requires a lot of facilities in terms of physical facilities, in terms of personnel, and all that. And this partnership has made surgery grow... from small collaboration to now quite a complex thing."
(Kenyan, Current, SP8)

Subsequent generations of leaders expanded the scope of collaboration to include advanced skills within a global context. New forms of partnership, like trainee exchange opportunities, increased exposure to new partners, perspectives and approaches to healthcare which was particularly valuable.

"There's a lot of benefits [to exchange], especially on our side... even if you don't touch patients, you will learn how the systems work... you will see what has been put in what system... and then we can carry that over to this side." (Kenya, Current, SP15)

"I would see from the Kenyan side, it's just expanding their pool of knowledge and being able to bring in folks from other parts of the world and other perspectives, so different expertise or knowledge, can then be shared." (US, Future, SP6)

However, during this initial period of growth, the directional flow of skill expertise was predominantly from US to Kenya. This imbalanced current created large administrative burdens on local hosts. Kenyan leaders felt the need to prioritize relationships with collaborators, even sometimes at the expense of their own individual responsibilities.

"When the visitors come, you have to abandon your program and make sure the visitors are taken care of. If they are going to theatre, then you have to go with them... you have to have extra time to communicate... wait for them at the airport - it takes your time... but it's not really a burden because at the end of it, it is beneficial to you, to the region, and to the department." (Kenyan, Initiator, SP9)

Theme: Local leaders desire mentoring over teaching relationship

As the torch was passed to the generation of current Kenyan leaders, many sought specialty training abroad, returning with clinical expertise and decreasing reliance on external collaborators for practice and training.

"When I came back after my Orthopedic Surgery [training], I realized... it was not going to be sustainable, me just being [the only] Orthopedic Surgeon there... so, with the vision that I had with these colleagues of mine, we just use our own funds, called the meetings, had our curriculum meeting, and developed the curriculum [for an Orthopedic training program]." (Kenya, Initiator, SP9)

With a progressive balancing of local and external expertise, there emerged a growing distinction in engagement styles between partners – namely, a mentorship relationship versus a teaching relationship. A teaching relationship involved an external trainer providing targeted guidance on a specific skillset to a local trainee.

"We have had [US surgeon] who is a reconstructive Urologist. And this has been very useful because the difficult cases we keep for him when he comes... we learn as we operate together." (Kenya, Current, SP4)

While this was important at initial phases of skills transfer, this relationship was often accompanied by an innate power dynamic.

"With the surgery collaborations, a lot of them are trainee, trainer. So, it's not going to be quite balanced, just because the teacher's coming, so you're going to defer to your teacher who's training you how to do a

procedure that you don't. So, I think there's mutual respect and everything, but the balance is never going to be the same.” (US, Future, SP13)

In contrast, a mentorship relationship involved mentees being able to engage with mentors as resources, whether in networking or expertise, in times of need as determined by the mentee.

“We've not flooded our departments with partners... the local people have been led to run the show. But our partners have come in once in a while – short periods – and assisted us in areas where new knowledge and new ways of doing things have kept coming... it just allowed that natural growth of the local experts, but with the assistance of partners here and there.” (Kenya, Initiator, SP17)

Many leaders expressed a shared concern of how LMIC dependence on HIC may inhibit true progress. Therefore, a mentorship relationship provides mentees with agency and ownership within the learning space, better protecting against the propagation of an imbalanced collaboration.

“The best treatment is that which is initiated out of the conviction of a patient... over-reliance on external forces or partners out there might become a hindrance to our own progression... the people are scrambling for whatever others can bring, and we are not looking at how we can bake the cake. We just want to go be at the table so that we can share the cake. So, the foreigners... have a role, but it should be limited to supporting those that have somewhere they are going.” (Kenya, Initiator, SP1)

While persistent external systemic inequalities continue to favor or even require HIC involvement and leadership (i.e. funding mechanisms), our partners committed to equitable consideration of intellectual contributions and recognition of leadership of all partners as a vital component of our collaboration.

“We are empowered because when we talk, we talk at more or less the same level. Our small imbalances, if I may put it that way, may be just due to the way we do things... because sometimes when you are too busy... the other person has more time and gives it in. That's what creates imbalances. But I don't think it has anything to do with the power relations and such, because when we discuss, when we sit down... both sides contribute.” (Kenya, Current, SP8)

Theme: True sustainability requires dynamic growth built on core values

Our leaders reflected that true sustainability in a collaboration cannot simply involve stagnant perpetuation of the status quo for long periods but must instead involve a dynamic evolution to meet changing needs. As the collaboration grew in scope and complexity, there was a shift from building initiatives based on available partners, to seeking out partners whose initiatives are aligned with overarching collaboration goals. Many leaders believed in a deliberate strategy for managing growth in a sustainable and cohesive direction.

"I think it's an important partnership, I think it's a valuable partnership. I think probably in the past, some things have been left to evolve by chance. I think going forward, we probably need to be more deliberate. Maybe, we should even create... a strategic plan... I think we'll achieve more, and faster that way." (Kenya, Future, SP10)

Education, the core value on which this partnership was founded, remained the North Star which guided future generations. Each subsequent generation of leader continued to express that investment in future leaders or younger generations remains the most sustainable path towards growth. However, there also emerged a growing commitment to elevate the multi-disciplinary collective over the individual, an important consideration for surgery to help strengthen surgical systems beyond the surgeon alone.

"Because these people from Indiana also will age out. They grow old, and you get people who are less interested in traveling. What happens to the program? It will die off... if we have to sustain what we're doing... the interest must be to grow this young population into positions of leadership directing these programs." (Kenya, Current, SP15)

The vision was to establish a transplant program... the team from [US] would come in [and] train both the surgeons and the other support staff, including the nursing staff... even the biomedical technicians were trained, and later on they even had a trip to Indiana... skills transfer [happened] so that the program could continue running." (Kenya, Current, SP4)

The strong institutional memory in our collaboration was built from bilateral, longitudinal investment and provides protection against conflict. While this trust is a basis for sustainability, open and effective communication will be critical to allow partners to remain aligned as the collaboration continues to evolve.

"You think about the partnership, it's not a two-day old partnership, and there is a lot of institutional history and institutional memory that has developed over those years. So that would be the greatest loss if this partnership ended... you will be starting to literally reinvent the wheel... it would need another 25 years to sit down and say, we finally filled that gap that was left behind." (Kenyan, Future, SP11)

"And for [US TL], I think her biggest objective was to start something that could be sustainable [in] research and maybe get skills transferred... she took time to create those collaborative relationships [on the ground], which then allowed me to have more interactions with the consultants... we'll talk about things, we would make decisions together." (Kenya, Future, SP14)

All generations of leaders consistently expressed that the partnership has continued to get better with time for all participants involved.

"I keep likening it to a baby who is delivered and has to learn how to grow, learn how to stand – but we are running. The stages of crawling and standing and taking a few steps was compressed to a very short period, to the point that now [Kenya partner] is running, and when it is assessed alongside the other

facilities within the country, it wins accolades. So, I would say it has been an achievement of leaps and bounds in this program.” (Kenya, Initiator, SP17)

Discussion

In this project, we were able to reflect on the growth of our 35-year-old global surgery collaboration and unearthed an exploration of the meaning of sustainability. However, there does not exist a clear definition of sustainability in GSPs. Jedrzejko, et al, propose six pillars as indicators of sustainability, while other teams propose the complete transfer of responsibilities to self-sufficiency as sustainability [5]. Though our collaboration has been based around strong, stable principles of education and partnership, we concluded that sustainability is not maintaining a stagnant state – rather, dynamic growth and evolution around core principles are required to meet new challenges and needs. We overlaid the emerging themes from our study onto the map of partnership progression through the lens of the Partnership Spectrum as follows:

Type 1 Phase

The initial flow of resources and expertise within our collaboration predominantly flowed from HIC to LMIC with the focus of building up local Kenyan capacity, generating a Type 1 partnership (leverage/exchange). This form of partnership is based in what Amisi, et al, has termed a ‘deficits’ approach, whereby partners from a perceived higher resourced setting see themselves as filling the needs of another partner [13]. In contrast, partners can also adopt an “assets approach” which leverages financial and intellectual resources to build on shared strengths (e.g. education) and shape future growth. Our initiating leaders directed HIC resources towards building physical infrastructure, namely operating theatres, intensive care units and supply chains for medical consumables. By investing in spaces for education and clinical care, initiating leaders established guiding foundational principles for the future and generated the capacity to support core partnerships which exposed partners to new perspectives and directions for growth.

One area of growth was the flow from LMIC to HIC, particularly through the avenue of exchange opportunities. These opportunities were greatly valued and emphasized by LMIC leaders, despite being less common compared to exchange opportunities for LMIC trainees. Leaders cited the benefit of exposure to different systems and practices which they then would then be able to apply to their own settings to generate change and growth. International scholarships which support faculty exchanges have shown the benefits of faculty exchange, specifically involving acquisition and dissemination of new knowledge of skills [14–16]. However, a study by Carrillo, et al, noted that faculty often faced barriers towards implementing change upon return to their home settings including excessive workload, lack of sustainable funding, limited infrastructure or staff, or cultural resistance towards accepting new practices [17]. Arguably, faculty exchange offers the potential for short-term, larger-scale impact but remains limited by administrative barriers and funding scarcity, while trainee exchange offers greater

oversight and flexibility of movement under institutions but remains limited in immediate impact. However, regardless of personnel position, it remains without question that HIC trainees continue to have more access, support and mobility to experience new exposures compared to their LMIC counterparts [18]. In the setting of limited funding opportunities, careful consideration of fund allocation to important exchange opportunities should be agreed upon by all partners to maximize desired impact.

Type 2 Phase

Increasing local LMIC expertise led to a shift in collaboration style away from a teaching relationship. Though surgical skill transfer involves an unavoidable power dynamic between the teacher and student, as local LMIC expertise grew, the desire for a mentorship relationship, consisting of greater agency and ownership, overshadowed that for a teaching one. Interestingly, we observed that shifting from the teaching relationship could be challenging, related to the deep respect established from skills transfer collaborations during early formative years combined with the unavoidable challenge of resource imbalance. However, all leaders recognized the danger of continued dependence on external supports while never learning to “bake the cake” themselves. Our leaders committed to elevating the intellectual contributions of all partners and using this as a guide to channel shared material resources towards a core mission. This collaborative combination is illustrative of a Type 2 partnership.

Type 3 Phase

A key characteristic of a Type 3 partnership is the aim to deliver system transformation. As Schriger, et al, notes, “when a partnership is transactional, the primary focus is on organizational benefits and the partner with the most power usually accrues the most benefits. When a partnership is collaborative, the focus is still not only on organizational benefits but also on the greater societal good” [19]. As we consider the desired impact of our partnership to the larger surgical landscape, we reflect that the education-centered core of our partnership has persisted through our stages of growth to this day and must continue to anchor our future progress. We see key examples of Type 3 partnerships in COSECSA (College of Surgeons of East, Central and Southern Africa) and WACS (West African College of Surgeons). These key hubs for global surgery collaboration are able to track key issues of the African surgical community like surgical workforce density and growth [20, 21], and offer insight into the standardization of global surgical education across the continent [22, 23]. The impact of Type 3 partnerships can unite the larger global surgery community and generate opportunities for collaboration with larger entities like governmental agencies to work towards globally shared missions as adopted in the Sustainable Development Goals or the Lancet Commission on Global Surgery [24]. However, progressing to a Type 3 partnership will likely require the further dismantling of mentoring relationships as challenges on the global scale exceed the expertise of any single partner. Rather, effective collaborations to shape future surgical systems will depend on institutional sponsorship and investment from all partners to ensure the representation of all key stakeholders, HIC and LMIC, at the global table.

Limitations

This study is but a small snapshot of all the innumerable stakeholders who have shaped this collaboration. We sought to mitigate the main risk of selection bias through performing snowball sampling with each interviewee, utilizing consensus to guide approach to other key stakeholders. Due to the long duration of our partnership and its international nature, we were not able to reach some identified leaders. We also recognize the risk for the Hawthorne effect associated with an HIC interviewer asking probing questions related to a long-standing and valued relationship. We attempted to mitigate this by matching the originating background of the main interviewer with the interviewee when possible. Further, the emerging themes drawn from this study were echoed across numerous interviewees of diverse backgrounds, suggesting the presence of shared underlying beliefs.

Conclusion

Our 35-year surgical partnership has been marked by significant growth and progress while remaining centered in our core value of education and training future surgeons. We posit that beyond any static measures of sustainability at one point in time, it is the dynamic progression of our partnership, shifting from a Type 1 to a Type 2 model, that illustrates sustainability and the possibility for continued growth. Our strong institutional memory built on many years of communication and trust protects against conflict but must not become an unintentional barrier to progress. Continued structured self-reflection on the partnership will be increasingly important to ensure that the collaboration remains relevant and beneficial, particularly as we increase our engagement into the global community.

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