PAEDIATRIC UROLOGY WORKSHOP

Urolink Mission Report — Kamuzu Central Hospital, Lilongwe, Malawi

31 May – 5 June 2026 | Prof. Ramnath Subramaniam, Consultant Paediatric Urologist

Key Messages

1

Surgical Capacity — A Measurable Milestone

Over four successive Urolink workshops, the KCH team has achieved independent surgical proficiency in both distal and proximal primary hypospadias repair — a level of competency that represents a concrete, lasting improvement in paediatric urological care for the population of Malawi.

2

Complex Disease, Fragile Systems

Eleven children over 5 days in this visit— harbouring pathology ranging from severe proximal hypospadias to traumatic penile avulsion — presented to a theatre operating under chronic resource constraints: absent nursing staff, acute linen shortages, and institutional disruption caused by industrial action. That all eleven cases were managed successfully is a testament to adaptive clinical leadership under adversity.

3

Subspecialty Development — A Pipeline is Forming

Sustained mentorship has demonstrably shifted the ambition of junior trainees. At least one resident has expressed serious intent to pursue paediatric urology as a career, signalling that the Urolink programme may be catalysing subspecialty development where none previously existed.

I. Executive Summary

This report documents the fourth Urolink paediatric urology workshop conducted at Kamuzu Central Hospital (KCH), Lilongwe, Malawi, between 31 May and 5 June 2026. The workshop was led by Professor Ramnath Subramaniam (RS), Consultant Paediatric Urologist, and hosted by Dr. Charles Mabedi and Dr. Linda Kayange of the KCH Urology Department, with paediatric surgical participation from Dr. Amaryllis Mapurisa and Dr. Bip Nandi.

Over five operative days, eleven paediatric patients underwent surgery spanning a broad and complex clinical spectrum: primary and revision hypospadias repair, orchidopexy, urethral reconstruction following balanitis xerotica obliterans (BXO), cystoscopy for anatomical delineation, and — most notably — reconstructive intervention following traumatic penile avulsion secondary to an animal bite. Each case was simultaneously a clinical intervention and a structured pedagogical exercise, deliberately selected to extend the technical repertoire of the local surgical team.

The workshop unfolded within a healthcare environment that remains profoundly under-resourced. Theatre delays attributable to nursing shortfalls, consumable scarcity, and hospital-wide administrative disruption caused by pending industrial action were recurrent. These systemic pressures, characteristic of sub-Saharan African tertiary referral centres operating under conditions of chronic underfunding, did not compromise patient outcomes — but they underscore the imperative for sustained, long-term external partnership.

The surgical and educational achievements documented herein represent the product of a coherent, multi-year capacity-building strategy. They also illuminate what remains to be accomplished.

II. Clinical Overview

KCH functions as the principal tertiary referral centre for paediatric urology across Malawi, a landlocked nation of approximately 21 million people, where access to subspecialty surgical care is among the most limited on the continent. The country has fewer than ten urologists, none of whom was paediatric trained prior to the initiation of this Urolink programme. Children with congenital urological anomalies historically faced either long delays to corrective surgery or no intervention at all, with predictable consequences for urinary function, sexual development, and psychosocial wellbeing.

The eleven cases presented during this workshop reflect the breadth of unmet surgical need that KCH encounters in daily practice.

Pre-operative Case Review (31 May 2026)

Prior to the commencement of operative activity, Professor Subramaniam conducted a comprehensive review of all eleven planned cases at KCH. Cases spanned the full spectrum of hypospadias severity, from distal glanular variants to severe proximal hypospadias with associated chordee and dysplastic urethral plate, as well as a traumatic urethral injury and a complex disorder of sex development requiring staged workup. Operative lists were prioritised by clinical urgency and pedagogical value, ensuring that resident exposure was maximised across the week.

Operative Case Studies

Case 1 | Day 2 (01 June) *Proximal Hypospadias — Stage 1 Urethroplasty with Preputial Graft*

A young boy presented with severe proximal hypospadias, marked ventral chordee approaching 90 degrees, and a dysplastic urethral plate. This represents one of the most technically demanding reconstructive challenges in paediatric urology. Professor Subramaniam demonstrated complete chordee correction via isolation of the dorsal neurovascular bundle with bilateral Nesbit corporoplasty, followed by harvest and ventral placement of a preputial skin graft over a dartos flap bed. Intraoperatively, passage of the urethral catheter was impeded by an undiagnosed prostatic utricle — a Müllerian remnant encountered with greater frequency in this population than contemporary Western series would predict. The obstruction was navigated safely using a guidewire-assisted technique. This case generated substantive teaching discussion, particularly regarding the anatomical implications of Müllerian remnants in the 46XY patient.

Case 2 | Day 2 (01 June) *Proximal Hypospadias with Micropenis and Undescended Testis — Endoscopic Evaluation and Orchidopexy*

This infant presented with a constellation of findings — micropenis, proximal hypospadias, and a palpable right testis at the inguinal position — in the context of a confirmed 46XY karyotype. Diagnostic cystoscopy identified a substantial Müllerian remnant, establishing the anatomical context for future staged reconstruction. Testosterone priming was recommended prior to urethroplasty to optimise corporal dimensions. Dr. Linda Kayange performed the orchidopexy with direct mentorship from Professor Subramaniam — her first exposure to this procedure, executed with technical precision. The case also served as a rich teaching session for residents approaching their COSECSA fellowship examination.

Case 3 | Day 3 (02 June) *Distal Hypospadias — Tubularised Incised Plate (TIP) Urethroplasty*

A nine-year-old boy with sub-coronal hypospadias and adequate urethral plate quality underwent TIP urethroplasty, performed by Dr. Mapurisa under direct supervision. The procedure — neomeatus fashioned over a 10F catheter with 6/0 PDS sutures and reinforced by a well-vascularised dartos fascial flap — was executed with increasing independence, confirming the durability of skills acquired in prior workshops. The use of traction and counter-traction to facilitate precise dartos flap elevation was emphasised as a critical determinant of waterproofing quality and long-term fistula prevention.

Case 4 | Day 3 (02 June) *Balanitis Xerotica Obliterans with Severe Meatal Stenosis*

An eight-year-old presented having endured eight months with a suprapubic catheter following emergency drainage for urinary retention — a consequence of untreated BXO producing pin-point meatal stenosis with secondary urethral infection. In a context where dermatological and urological follow-up is inaccessible to most families, this degree of diagnostic delay is not exceptional; it is the norm. Meatal dilatation under anaesthesia was performed with flexible dilators, a 12F urethral catheter was successfully placed, and a circumcision was completed. A steroid-based topical regimen was instituted for glans treatment. This case illustrates how benign-appearing

dermatological pathology — manageable with early diagnosis and topical therapy — progresses to a surgical emergency when health systems fail to detect it.

Case 5 | Day 3 (02 June) ***Coronal Hypospadias with Moderate Chordee — TIP Urethroplasty***

Dr. Mapurisa performed TIP urethroplasty over an 8F catheter with Professor Subramaniam in an assisting and supervising capacity. The case reinforced the principle of procedure selection based on urethral plate quality and chordee severity, with real-time adaptation of technique demonstrated and explained. The trainee's growing operative fluency was evident.

Case 6 | Day 4 (03 June) ***Post-Traumatic Penile Reconstruction Following Dog-Bite Avulsion***

Among the eleven cases, this presentation was singular in its aetiology and reconstructive complexity. A young boy had suffered avulsion of the distal two-thirds of the glans secondary to an animal bite — an injury pattern seen predominantly in resource-limited rural settings, where animals and young children share domestic space and access to emergency services is severely limited. He presented with complete absence of the urethral meatus, in urinary retention managed by suprapubic catheterisation. Careful exploration of the distal penile shaft by Professor Subramaniam identified the urethra within the scar field; a neomeatus was fashioned at the most anatomically appropriate position. The functional and cosmetic outcome was satisfying given the severity of the initial injury. This case speaks to the range of trauma-related urological pathology that presents to KCH in the absence of an established trauma-urology referral network.

Case 7 | Day 4 (03 June) ***Midshaft Hypospadias with Dysplastic Urethral Plate — Long TIP Modification***

This case provided the teaching team with an opportunity to introduce the long TIP modification for midshaft hypospadias with minimal chordee — a procedure distinct from the classical approach applied in proximal cases with marked deformity. Dr. Mapurisa executed the procedure with Professor Subramaniam's guidance, gaining direct insight into the decision-making algorithm that governs technique selection. Operative photographs documented pre- and post-repair status.

Case 8 | Day 5 (04 June) ***Sub-coronal Hypospadias with Chordee — TIP Urethroplasty***

In the context of absent senior nursing support and theatre delays described below, Professor Subramaniam performed this procedure with a urology resident as sole assistant. The case doubled as a detailed operative tutorial for the resident, who engaged actively with each technical step and articulated a strong interest in pursuing further training in paediatric urology.

Case 9 | Day 5 (04 June) ***Glanular Hypospadias — MAGPI Procedure Demonstration***

This case was selected specifically to broaden the procedural knowledge base of the local team. The Meatal Advancement and Glanuloplasty (MAGPI) technique was demonstrated, and its narrow but important indications were explained in detail. Patient selection and outcome

predictability were discussed at length, emphasising that knowledge of an additional procedure is valuable only when its limitations are equally well understood.

Case 10 | Day 6 (05 June) ***Distal Hypospadias — Mathieu Perimeatal-Based Flap***

Intraoperative assessment during planned TIP urethroplasty revealed a urethral plate configuration more amenable to a Mathieu perimeatal-based flap. Professor Subramaniam described the technique in real time; Dr. Mapurisa performed it with confidence, achieving a satisfactory outcome. This case exemplified a core principle of the programme: that local surgeons must acquire not a single procedure, but the clinical judgement to select the most appropriate operation for each individual patient.

Case 11 | Day 6 (05 June) ***Distal Shaft Hypospadias with 90° Chordee — TIP with Synechiae Division***

The final case of the workshop was used to demonstrate urethral plate assessment and the technique of synechiae division prior to tubularisation — a refinement applicable to cases where a wide, non-incised plate can be achieved by releasing transverse adhesions rather than the classical midline incision. The supervising resident responded with notable intellectual curiosity, raising the prospect that KCH may in time produce a surgeon with subspecialty dedication to paediatric urology.

III. Challenges & Resilience

To document the clinical achievements of this workshop without equally documenting the structural obstacles that attended every operative day would be to present an incomplete — and ultimately misleading — picture of healthcare delivery in this context. The challenges encountered were not incidental; they are systemic, predictable, and representative of conditions that pervade sub-Saharan African tertiary centres.

Systemic Challenge	Clinical Team Response & Impact
Nursing Staff Shortages	On Day 4, the operating team negotiated persistently over an extended period before securing sufficient nursing support to open theatre. A further delay was incurred by the absence of anaesthetic staff. The first operative case did not commence until 11:00. This represents a systemic staffing crisis, not an isolated event.
Consumable Scarcity (Linen & Drapes)	On Day 5, critical surgical linen — drapes and theatre coverings — was unavailable at the start of the day, further delaying the first incision. Shortages of basic disposables reflect supply chain fragility and underfunding that visiting surgical teams cannot address unilaterally.
Institutional Disruption — Pending Industrial Action	Hospital senior leadership convened an emergency meeting to address impending strike action by junior doctors over unresolved

	overtime pay. The resulting administrative disruption reduced available senior medical staff on Day 5 to a critical minimum.
Complex Anatomical Variants	Undiagnosed Müllerian remnants (Cases 1 & 2) posed intraoperative challenges not anticipated on pre-operative imaging. Improvised wire-assisted catheterisation avoided bladder injury and managed the complication safely.
Delayed Presentation of Benign Disease	The BXO case (Case 4) — eight months of suprapubic catheterisation for an initially treatable dermatological condition — illustrates how the absence of primary care capacity converts manageable outpatient disease into complex surgical emergencies.

It is noteworthy that despite the cumulative effect of these obstacles, all eleven planned surgical cases were completed within the workshop week, and no adverse clinical events were recorded. This outcome reflects the organisational leadership of Dr. Mabedi and the resilience of the theatre team, as much as it does the clinical competence of the visiting faculty.

IV. Future Recommendations

The following recommendations emerge directly from clinical experience during this workshop and are offered in the spirit of strategic partnership rather than external prescription.

4.1 Surgical Curriculum Consolidation

- A structured paediatric urology operative logbook should be introduced at KCH, enabling systematic documentation of case complexity, procedural technique, and supervised versus independent performance. This would support COSECSA competency validation and provide outcome data for future academic publication.
- A decision-making algorithm for hypospadias — encompassing plate quality assessment, chordee grading, and technique selection — should be formalised as a written protocol for local use between workshops.

4.2 Subspecialty Development

- At least one trainee identified during this workshop demonstrates the aptitude, motivation, and intellectual curiosity required for subspecialty paediatric urology training. Urolink and BAUS are encouraged to explore fellowship pathways — potentially at a partner UK centre — to support this individual's development.
- The cultivation of a single dedicated paediatric urologist within Malawi's national surgical workforce would represent a transformative, self-sustaining legacy of this programme.

4.3 Infrastructure and Systems Advocacy

- The recurrent impact of nursing shortages and consumable deficits on operative throughput warrants formal communication to hospital management and — where appropriate — to donor and NGO partners active in health systems strengthening at KCH.
- Urolink should consider advocating, through BAUS channels, for a dedicated paediatric urology theatre slot during future workshop visits, protected from the competing pressures of general surgical emergency lists.

4.4 Complex Case Management Protocols

- Given the frequency with which Müllerian remnants and disorders of sex development are encountered in this patient population, a local multidisciplinary pathway — incorporating endocrinology, clinical genetics, and paediatric surgery — should be developed to guide investigation and staged management.
- A clinical protocol for the management of traumatic penile and urethral injuries should be drafted in collaboration with other specialities within the KCH

4.5 Academic Dissemination

- The clinical series accumulated across four Urolink workshops at KCH now constitutes a meaningful dataset. Professor Subramaniam and the KCH team are encouraged to collaborate on a peer-reviewed report of outcomes, submitted to a relevant international journal. Documentation of a capacity-building programme of this scope and rigour merits the attention of the global surgical community.
- Teaching session presentations — on Prune Belly Syndrome, Megaureter, and Meningomyelocele delivered by KCH residents during this workshop — should be collated and considered for submission to a regional COSECSA academic platform.

Acknowledgements

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Urolink and BAUS are thanked for their sustained institutional support, without which this partnership would not be possible.

Appendix: Mission Data at a Glance

Parameter	Value
Mission dates	31 May – 5 June 2026
Host institution	Kamuzu Central Hospital, Lilongwe, Malawi
Visiting faculty	Prof. Ramnath Subramaniam (Urolink / BAUS)
Local hosts	Dr. Charles Mabedi; Dr. Linda Kayange
Paediatric surgery team	Dr. Amaryllis Mapurisa; Dr. Bip Nandi
Total cases completed	11
Operative days	5 (01–05 June 2026)
Procedures performed	Hypospadias repair (TIP, Long TIP, MAGPI, Mathieu, preputial graft); Orchidopexy; Circumcision; Urethral dilatation; Cystoscopy; Penile reconstruction
Teaching sessions (resident presentations)	3 (Prune Belly Syndrome; Megaureter; Meningomyelocele)
Adverse events	None
Workshop number (cumulative)	4th Urolink Paediatric Urology Workshop at KCH

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