

Addressing childhood blindness in sub-Saharan Africa

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In this article, the authors explore paediatric ophthalmology subspecialist fellowship training in African nations south of the Sahara.

Until recently, most African ophthalmologists who wished to pursue a subspecialty ophthalmology training fellowship had to go abroad. There is a huge need for subspecialist training centres to provide this training within Africa.

The College of Ophthalmology of Eastern, Central and Southern Africa (COECSA) is in the process of accrediting subspecialist fellowship training programmes at training institutions in the region. This is bringing a much-needed boost to the capacity for ophthalmologists to become subspecialists without needing to leave Africa for training.

Mbeya Zonal Referral Hospital and its LINK with WHSCT, Altnagelvin, Northern Ireland

The VISION 2020 LINK between Mbeya Zonal Referral Hospital and Western Health & Social Care Trust (WHSCT) Altnagelvin started in 2013, with a focus on strengthening paediatric ophthalmology services [1]. There were multiple training visits between the teams in both directions and a strong commitment on both sides of the LINK partnership.

Some of the areas strengthened through the VISION 2020 LINK included embedding the use of the World Health Organization (WHO) checklist in theatre, accurate visual acuity measurements in children with cycloplegic refractions and amblyopia treatment, strabismus assessments and surgeries.

The results were clear. When the eye department was new, before the LINK began, there used to be about 20 patients per week; within a few years this grew to more than 60 per day. With the growing number of patients, the hospital allocated

more space to the eye department and increased its staff to two ophthalmologists, four nurses and four optometrists. The lack of complaints, lack of bribery, high throughput of patients and the good surgical outcomes all contributed to the flourishing eye department.

But still there were key paediatric procedures that Dr Barnabas Mshangila, Consultant Ophthalmologist at Mbeya, was unable to perform. This article follows his progress as he undertook a Paediatric Ophthalmology and Strabismus Fellowship at Kilimanjaro Christian Medical Center (KCMC) in Tanzania in 2023.

Before the fellowship, Barnabas wrote: "For a decade I have been working as an ophthalmologist at Mbeya Zonal Referral Hospital, a tertiary health facility that serves

a population of about 10 million people in Tanzania's southern highlands.

"During this time, I have been witnessing the heartbreaking reality of children with preventable or treatable blindness not receiving timely and appropriate care. The lack of comprehensive paediatric eye services in the region makes it difficult for these children to receive the necessary treatment.

"I was able to check children's acuity, assess strabismus, perform strabismus surgery and manage post-op paediatric cataracts. However, I was not able to perform much-needed surgery on babies and children with retinoblastoma or those with cataract. As a result, many children were losing their sight and their lives unnecessarily in this part of Tanzania. They are referred to the national hospital in Dar



Figure 1: Barnabas Mshangila (centre), flanked by Rosie Brennan (left) and colleagues at Mbeya.

es Salaam but very often their families could not afford to travel for five hours to Dar or to stay there while their child is treated. Some save up so that they can afford it, but by the time they get to Dar their child's retinoblastoma has reached the point where it cannot be cured, and the child dies.

"The fellowship will teach me the surgical techniques I need so we can offer children living in the catchment area of Mbeya the surgical treatment they need when they have cataract or retinoblastoma, and on time."

Fellowship training in paediatric ophthalmology and strabismus at KCMC in Tanzania

The KCMC Eye Department is the primary provider of tertiary eyecare for northern Tanzania, serving a population of about 13 million people. It has the second largest ophthalmology residency training programme in Africa, after Kenyatta in Nairobi, Kenya. The KCMC is a training facility for paediatric ophthalmology with, on average, 50 residents and up to three paediatric ophthalmology fellows every year.

Fellowship training is offered by Dr Furahini Godfrey Mndeme, a Paediatric Ophthalmologist and Strabismus Surgeon at KCMC and senior lecturer in the Department of Ophthalmology at Kilimanjaro Christian Medical University College (KCMUCo). He has a PhD in childhood blindness from the International Centre for Eye Health, London School of Health & Tropical Medicine (LSHTM) and has led several studies in child eye health [2,3].

The one-year programme at KCMC is designed to provide knowledge and clinical skills that will enable fellows to prevent and manage paediatric eye conditions and childhood eye diseases in an effective and integrated manner. Training includes clinical demonstrations and weekly tutorials on specific paediatric ophthalmology and strabismus topics. Assessment is via a logbook, accounting for 80% of assessment throughout the programme.

Clinical exposure

Most of the teaching in paediatric ophthalmology and strabismus is carried out at the bedside. During his fellowship, Dr Mshangila clerked patients and discussed them with Dr Furahini. For example, at the paediatric ophthalmology ward round, Dr Mshangila would clerk, present and prepare case write-ups, based on cases that were good examples of a particular condition. In each write up, he gave a full history, physical examination findings, investigations, results, treatment, follow-up and a brief commentary. The cases were then discussed in tutorials.

Surgical exposure

During the fellowship, Dr Mshangila became competent to perform paediatric cataract, glaucoma, squint surgeries and oculoplastic procedures. He independently performed over 50 childhood cataract procedures at the end of the programme. He also performed several glaucoma and squint procedures. In addition, Dr Mshangila was exposed to the management of children with ocular tumours (including retinoblastoma) and various oculoplastic procedures, including lacrimal and ptosis operations.

Reflections from trainer and trainee

Dr Mshangila paid tribute to his training supervisor, Dr Furahini, and the programme at KCMC: "I had long wanted to pursue a paediatric ophthalmology fellowship to serve children in the Mbeya region. In 2023 I did the programme at KCMC under the guidance of Dr Furahini. The experience I gained at KCMC exceeded my expectations. I received comprehensive training that equipped me with the skills and knowledge required to diagnose and treat common and important paediatric eye diseases.

"I treasure Dr Furahini's words of encouragement upon completion of my fellowship – 'I'm thrilled that you're now capable of serving children in the southern highlands and alleviate our patient backlog.' I'm excited to be back in Mbeya and using my new skills and knowledge to serve these children.

"I am confident that I can have a significant impact on reducing the number of children who suffer from preventable or treatable blindness. By providing them with the care they need and deserve, I can improve their quality of life. I am passionate about my mission to help these vulnerable children and reduce their suffering."

Dr Furahini likewise paid tribute to his fellow Dr Mshangila: "After working for 14 years in Tanzania, I've learnt that it takes a rare individual willing to take on the problem of childhood blindness. Dr Mshangila is one of these special individuals. He was proactive, meticulous and very engaging. He showed excellent comprehension and motivation to continuously improve his knowledge and skill set. He showcased exemplary clinical, surgical and teaching skills, while working well with his colleagues."

Reflections from the Ministry of Health on the developments in Mbeya

Dr Bernadetha Robert Shilio, the National Eye Care Program Manager at the Ministry of Health, recognises the impact of the

training: "With a population of about 60 million, Tanzania should have at least six child eye health tertiary centres. Four centres have been established, serving the population of three zones – Eastern, North-Eastern and the Lake Zone. With these milestones achieved, the population of the Western and Southern zones were left without easily accessible child eye health services.

"Within the Southern Highland zone, there are estimated to be 4.4 million children aged 14 and under. Children from this zone with eye diseases requiring comprehensive eye services had to travel for 12 hours or more to Dar Es Salaam or KCMC in Kilimanjaro to access services. Our aim was to improve the uptake of quality paediatric eye health services and follow-up care within the Southern Highland zone.

"The recent training of a paediatric ophthalmologist is a great step forward and is to be followed by further training of the team in Mbeya, including nurses, paediatric refractionists and low vision therapists.

"Strengthening the tertiary centre alone will not be sufficient as there needs to be capacity-strengthening of key healthcare personnel from community, primary and secondary level who will raise awareness within the community, identify patients early and refer them to the tertiary facility for management. Their other rôle will be enhancing follow-up for children.

"This development in Mbeya will contribute to the national objectives of reducing blindness and visual impairment in children as set out in the Eye Health Strategic Plan (2023–2026). The government looks forward to collaborating with its partners to ensure that child eye health services in the Southern Highland zone continue to grow in quantity and quality."

Mshangila's reflections six months following the completion of fellowship training

"I have worked as a paediatric ophthalmologist in Mbeya, Tanzania for six months. During this time, I have utilised knowledge and skills acquired from my extensive training to manage various eye conditions in children, such as paediatric cataracts, ptosis, nasolacrimal duct obstruction, amblyopia, refractive errors, ocular trauma and strabismus.

"Among the patients I operated on, I was very touched by one family where a mother and her two school-age children had congenital cataracts. They were all dependent and the children never attended school because of blindness. Their quality of life improved significantly after surgery; both children started school and they are

getting on very well, while the mother is engaged in income-earning activities.

“Although I have successfully managed a significant number of cases and reduced the number of referrals, the lack of specialised equipment remains a significant obstacle to delivering comprehensive care. Needing specialised equipment for conservative treatment of retinoblastoma has necessitated the referral of affected children to centres in Dar es Salaam or Kilimanjaro for treatment.”

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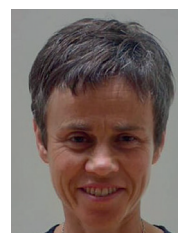
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