

# How the development of Glaucoma Guidelines, Glaucoma Toolkit and GLASS training and the Glaucoma nurse training can effect change in Nigeria

**BY WINNIE NOLAN, FATIMA KYARI, OTERI OKOLO, KARINYA LEWIS, ELIZABETH OJEYINKA, CHIMEZIE OBI-MGBAM, FAROUK GARBA, MARCIA ZONDERVAN**

In July 2024, a combined training, led by Fatima Kyari, was run in Abuja, Nigeria to facilitate a multifaceted upskilling in glaucoma management. The first week comprised of inviting 36 doctors practising glaucoma from around Nigeria's 36 states, including the Federal Capital of Abuja, to unpack and practise using the tools from the Nigeria Glaucoma Guideline and Toolkit adapted from the glaucoma toolkit for sub-Saharan Africa. This toolkit is aimed at improving clinical management of glaucoma in an African setting.

Twelve of the 36 doctors were selected to stay on for a further three days to undertake surgical simulation training to broaden their surgical skills and improve confidence and outcomes when performing trabeculectomy. During the second week, four eye nurses from around the country came to Abuja to be trained in performing investigative tests for glaucoma with the aim of improving flow and throughput in the eye clinic, which also prepared them to relieve junior doctors (who currently do these roles) so that they can spend more time with their consultants learning how to manage and operate on glaucoma patients. These trainings were

made possible by the generous funding support from the Worshipful Company of Spectacle Makers and from Global Health Partnerships (formerly THET).

### Toolkit training

In order to unify and standardise management and evaluation of glaucoma in sub-Saharan Africa, experts from the target regions came together and developed the Toolkit for Glaucoma. The toolkit has also been translated into French and Portuguese for better acceptance in all parts of sub-Saharan Africa. In Nigeria, the toolkit was incorporated into the Nigeria Glaucoma Guideline in October 2023, which utilises the new patient and the return patient evaluation form. The toolkit was launched by the Honourable Minister for State for Health Dr Tunji Alausa on October 12, 2023, at a high-level World Sight Day event held at the Presidential Villa.

The National Eye Health Programme, Federal Ministry of Health and Social Welfare of Nigeria, supported by THET, and the International Centre for Eye Health (ICEH) launched a roll out and training

workshop for the combined Nigeria Glaucoma Guideline and Toolkit for use in the country. This was immediately followed up by a two-day training and workshop for ophthalmologists from all 36 states of the federation and the federal capital territory in centres where they offer glaucoma services. The training is to ensure effective implementation of the guideline, high-quality care and improved outcomes for glaucoma patients managed surgically or medically in Nigeria by equipping participants with the latest best practices, tools and resources.

In the first day of the exercise, participants were trained on diagnostics, staging and risk assessment of glaucoma with reference to checklist proformas 1, 2 and 3. These forms are detailed and comprehensive, meant for both newly diagnosed and returning patients. The decision algorithms for different types of glaucoma were also discussed including management of glaucoma with co-existing common eye diseases like cataract. The second day was kick-started with a recap of the first day's events and was followed by other exciting topics, like:



Glaucoma Toolkit launch in Nigeria.



Glaucoma Toolkit and Guidelines Workshop with Ministry of Health and Glaucoma-NET lead, Fatima Kyari.



Prof Fatima Kyari at the opening of the Glaucoma Toolkit Rollout through the 36 States of Nigeria.



Federal Ministry of Health document; The Nigeria Glaucoma Guideline & Toolkit used for this training in July 2024.

- Practical procedures and current opinions
- Setting up an integrated glaucoma programme – levels of glaucoma care
- Models of service delivery and financing of glaucoma care
- Improving access and usage of eyecare systems
- Equipment list for a glaucoma service
- Advocacy, raising awareness, counselling
- Monitoring, evaluation and learning
- Research development, and innovation (RDI) for glaucoma services.

The two-day sessions were anchored by Fatima Kyari, Professor Omoti and facilitators from the National Eye Health Programme of Nigeria. At the end of training, 95% of participants rated the training as “Excellent” or “Very Good” and the training met their expectations in 90% of participants.

Reflecting on going back into their workplace after the training, 95% of participants reported feeling “Very Confident” or “Confident” in applying the knowledge and skills gained from the training and 75% reported that the training will “Significantly” or “Moderately” impact their practice. Additional comments included, “The training was comprehensive and well-structured, covering all aspects of glaucoma management” and “The toolkit provided is a valuable resource for our daily practice, it will be kept in consulting rooms in my centre.”

Additional feedback included increasing the use of case studies and group discussions to embed the application of the toolkit. An ongoing mentoring programme or follow-up training was suggested as beneficial to reinforce learning and address challenges in implementation as well as looking to cascade training to other eyecare health professionals and extend within the states. Additional upskilling on interpretation of investigations such as visual fields and optical coherence

tomography (OCT) was also suggested to complement the toolkit use and application.

This positive feedback cited above highlights the success of the training session and the enthusiasm generated, with participants praising the comprehensive coverage of glaucoma management and the usefulness of the toolkit. The recommendations for future trainings provide valuable insights for organising similar events in the future and the need for ongoing support in applying the principles of the toolkit to improve the glaucoma care provided across Nigeria. The project has focused on widespread coverage across Nigeria. This has been a key request from the National Eye Care Programme to ensure that more deprived states are included in the training and have the opportunity to improve their glaucoma services.

Within this partnership project itself, the team ensured that the ratio of women to men was equitable. Next steps are to follow-up with the identified glaucoma leads in each state who can cascade the training and to include it in resident training.

### GLASS Training – Glaucoma Surgical Simulation

The GLASS training is an intense surgical simulation course, pioneered by Will Dean, to improve surgical trabeculectomy skills, improving not just competence but confidence and improving outcomes for patients. In a randomised trial, it has been shown to move a novice performer to competent during the course (using the tested OSCAR scoring system) and this competency is maintained at a year, when compared to those who only do the traditional apprentice style of surgical training. Furthermore, doctors who have done the GLASS course at the start of their training, increase by 10-fold the number of glaucoma operations they perform in training and have fewer complications.

The training involves breaking down each of the steps of trabeculectomy and repeated

intentional practice on an artificial eye in the dry lab using table-top STEMI microscopes. The lab in Abuja is able to have four students at a time so the participants had a rotating programme of dry lab, clinical assessment in outpatients assessing pre- and post-surgical patients, and live theatre where experienced glaucoma surgeons would perform surgery watched by participants.

The 12 consultants represented a variety of departments across Nigeria. Two were male and had been qualified as consultants between one and 15 years. When asked how many trabeculectomies they had performed, it ranged from 0–30 and on average only two trabeculectomies had been performed in their last six months.

The candidates were assessed on knowledge, competency and confidence in performing trabeculectomy before starting training and reassessed after surgery.

- Average knowledge scores improved from 45 to 75%.
- Average OSCAR surgical scores improved from 45 to 70%.
- Likert confidence (out of 10) started at average of 4 and improved to an average of 7.

What is hard to capture is the full impact of the training, but feedback comments were very encouraging and showed a renewed determination to persist with simulated practice as well as live glaucoma surgeries on return to their workplaces. They also valued the different approach to teaching others by breaking down operations into steps and repeating those steps until perfected rather than expecting trainees to perform whole surgeries.

It is intended to have a six-month feedback session, where candidates will update the trainers on how many surgeries they have performed and self-score themselves on a live case to fully assess impact and maintenance of competency.

The GLASS training was delivered by Abdullahi Sadiq, Deji Akinyemi Adeboye



Participants of the Glaucoma Toolkit and Guidelines Workshop.

(Nigeria), Kate Claridge (UK online) and Karinya Lewis (UK).

### Glaucoma nurse training

The aim of this training was to upskill ophthalmic nurses working in hospital-based glaucoma clinics in Nigeria. Glaucoma patients require several tests for diagnosis and monitoring at their clinic visit. At present, most of these tests are done by doctors in training. This is not the best use of resources as clinicians' time is more appropriately used for assessing patients, implementing treatment plans and communicating with the patient. In the UK, diagnostic testing in glaucoma clinics is done by trained nurses or technicians thereby contributing to a more efficient patient journey through clinic.

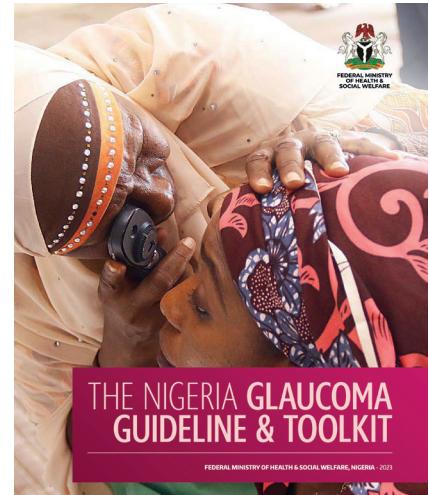
Two online teaching sessions were held in the months before the training which covered the topics of visual field testing, intraocular pressure measurement and OCT imaging of the posterior segment (with focus on optic nerve / retinal nerve fibre layer imaging). This teaching was delivered by Elizabeth Ojeyinka, an Ophthalmic Technician in the glaucoma service at Moorfields Eye Hospital.

Five ophthalmic nurses from University Hospital teaching hospitals in Nigeria attended the training in Abuja in the ophthalmology clinic. This was delivered by Elizabeth Ojeyinka and overseen by Winifred Nolan. The training took place over three days. A series of presentations explaining the theory and practice of history taking and diagnostic testing for the glaucoma patient were given followed by hands-on training, which was the focus of the course. The training covered the following:

- History taking and communication skills
- Visual field testing using Humphrey visual field machines
- Corneal pachymetry
- I-care measurement of intraocular pressure
- OCT imaging of the posterior segment with particular focus on retinal nerve fibre layer thickness.

An established competency framework for glaucoma specialist ophthalmic technicians was used to measure the competence and skill level of each nurse at the end of the course. A follow-up visit is planned where the trainer will follow up with the nurses in one of the centres in Nigeria and reassess their skills. In the meantime, they will practise their skills in the clinic of their hospital with support from the local glaucoma consultants. Feedback from the nurses who attended the course was very positive, though it was felt that they would have benefited from a longer course with more time to focus on the practical aspects of visual field testing. A follow-up online meeting is planned to see how they are getting on with an opportunity for further feedback, and discussion around any obstacles they are facing when trying to put their newly obtained skills into practice.

In summary, the delivery of these three distinct glaucoma trainings was powerful in raising the profile of glaucoma care in Nigeria. The focus on practical skills within all of the trainings seemed to resonate with participants who felt empowered to change practice on their return to the workplace. Their positive feedback and enthusiasm were reflected in their improved competence and confidence scores. The planned follow-up in three and six months intends to encourage but also support



The Nigeria Glaucoma Guideline and Toolkit.

ongoing application of practical skills in clinic and theatre as well as re-assessing the impact the training has truly had. In an ideal world, ongoing support to extend and cascade training would deliver transformational glaucoma care in Nigeria. The partnership between the University of Abuja and the ICEH / LINKS Partnerships & Networks on the international level, have allowed for the development of the Glaucoma Toolkit and setting up the Glaucoma-NET. Additionally, the partnership between University of Abuja and the National Eye Programme at MoH resulted in a successful launch for the project which aligns strategically with national-level policies in Nigeria. Watch this space for the strengthening of the Glaucoma-NET and the reach it has in Nigeria to bring positive change to glaucoma patients.

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