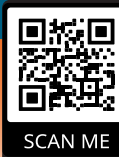


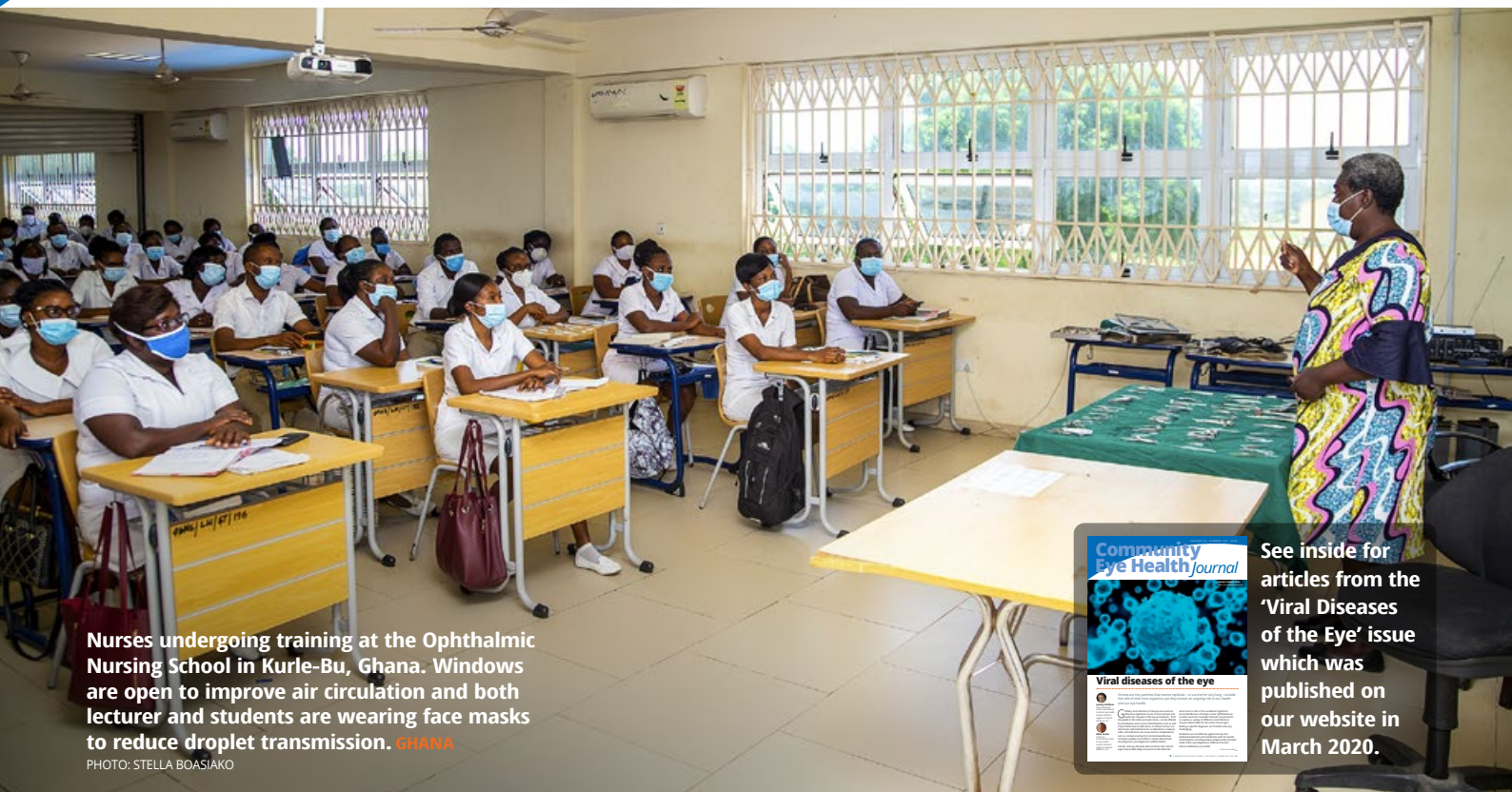
Community Eye Health Journal

VOLUME 33 • NUMBER 110 • 2020

Don't miss out
Download the free
Community Eye Health
Journal app today!
bit.ly/CEHJ-app



SCAN ME



Nurses undergoing training at the Ophthalmic Nursing School in Kurle-Bu, Ghana. Windows are open to improve air circulation and both lecturer and students are wearing face masks to reduce droplet transmission. **GHANA**

PHOTO: STELLA BOASIAKO



See inside for articles from the 'Viral Diseases of the Eye' issue which was published on our website in March 2020.

Recognising the role of ophthalmic nurses and allied ophthalmic personnel in eye care



Elmien Wolvaardt
Editor: *Community Eye Health Journal*,
International Centre for Eye Health, London School of Hygiene & Tropical Medicine, London, UK.

Ophthalmic nurses, ophthalmic clinical officers and other allied ophthalmic personnel are at the forefront of the eye health workforce, particularly in low-resource settings where there is a shortage of ophthalmologists.

COVID-19 has overtaken our lives in so many ways over the last year. Eye care providers worldwide are having to find new ways to deliver eye care in the midst of the global COVID-19 pandemic. While news of vaccines bring hope for the future, the pandemic is far from over, with many services still closed or struggling.

In such uncertain times, it is more important than ever that eye teams work together. Regular meetings and agreed protocols and processes are important components of teamwork, but just as vital is that we understand who our team members are, know what they do, and take time to listen to them and value their contributions to the smooth functioning of eye services.



Michelle Hennelly
MSc Programme Director in Clinical Optometry: Division of Optometry and Visual Science, City, University of London, UK.

In recognition of the World Health Organization's Year of the Nurse and Midwife in 2020, we have dedicated the first section of this issue to reflecting on the vital contributions of ophthalmic nurses and allied health personnel in delivering integrated, people-centred eye care. In the second part of the issue, we also take a detailed look at different viral infections of the eye and how to detect, diagnose and manage them, with a detailed review of antiviral treatment for common eye conditions.

We hope you enjoy the issue. Remember that you can now have *Community Eye Health Journal* articles delivered directly to your phone as soon as they become available – download our app from Google Play (bit.ly/CEHJ-Android) or the App Store (bit.ly/CEHJ-ios).



About this issue

Ophthalmic nurses, ophthalmic clinical officers and other allied ophthalmic personnel are at the forefront of the eye health workforce, particularly in low-resource settings where there is a shortage of ophthalmologists. This issue celebrates the vital contributions of ophthalmic nurses and ophthalmic clinical officers in delivering integrated, people-centred eye care, in line with the recommendations of the World Health Organization's World Report on Vision.

Contents

- 41 Recognising the role of ophthalmic nurses and allied health personnel in eye care**
Elmien Wolvaardt and Michelle Hennelly
- 42 Ophthalmic nurses: vital team members in the push for better eye health**
Stella Antwi-Boasiako and Heather Machin
- 44 The importance of the perioperative nurse**
Ciku Mathenge
- 46 The many roles of an ophthalmic nurse in a tertiary eye institution**
Timothy Adeyemo, Aminatu AbdulRahman and Fatima Kyari
- 48 Eye care where there are no ophthalmologists: the Uganda experience**
Joseph Magyezi and Simon Arunga
- 51 Running a mobile diabetes screening service in Dominica**
Nanda Matthew
- 52 Postoperative eye care in Botswana: the role of ophthalmic nurses**
Chatawana Molao and Tatowela Mmoloki
- 54 Eye nurse training in the Pacific for sustainable eye care**
Pawan Baral
- 55 The importance of ophthalmic nurses: an ophthalmologist's view**
Hillary Rono and Michelle Hennelly
- 56 Ophthalmic nurses: meeting the need for human resources to end trachoma**
Amir Bedri Kello and Caleb Mpyet
- 57 Herpes simplex infection of the eye: an introduction**
Bhupesh Bagga, Anahita Kate, Joveeta Joseph and Vivek Pravin Dave
- 60 How to manage herpes zoster ophthalmicus**
Stephen Tuft
- 62 HIV and the eye**
Stephen Gichuhi and Simon Arunga
- 65 Cytomegalovirus: clinical features and management**
Jonel Steffen and James Rice
- 66 Adenovirus: ocular manifestations**
Jeremy Hoffman
- 69 Overview of antiviral medications used in ophthalmology**
Jeremy Hoffman
- 73 Why disability inclusion is essential for trachoma elimination**
KH Martin Kollmann, Sofia Abrahamsson and Tim Jesudason
- 74 Questions and answers on viral diseases of the eye**
- 75 Picture quiz**
- 75 Announcements and resources**
- 76 KEY MESSAGES**

OPHTHALMIC NURSING

Ophthalmic nurses: vital team members in the push for better eye health

Ophthalmic nurses improve local and global eye health and contribute to people-centred eye care.



Stella Antwi-Boasiako
Principal:
Ophthalmic Nursing
School, Korle-Bu,
Ghana.



Heather Machin
Consultant: Fred
Hollows Foundation NZ
and Project Officer:
Centre for Eye Research
Australia, University of
Melbourne, Australia.

Ophthalmic nurses are qualified nurses who have received additional training in eye care. They can provide advice during eye health emergencies and provide vision screening, refraction, and optical dispensing. Ophthalmic nurses also play a central role in the planning and delivery of people-centred eye care services, including the delivery of comprehensive eye care programmes, systems and policy development, and integration with other health specialties. This supports the collective goal of ensuring universal health coverage – including eye health – for all. The World Health Organization (WHO) defines universal health coverage as: "... ensuring that all people have access to the promotive, preventive, curative and rehabilitative health services they need, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services."

Landmark year for nursing

2020 was the World Health Organization (WHO) Year of the Nurse and Midwife; it was also the 200th anniversary of the birth of Florence Nightingale, who is widely revered as the founder of modern nursing.

Community Eye Health Journal

VOLUME 33 • NUMBER 110 • 2020



Editor
Elmien Wolvaardt
editor@cehjournal.org

Medical editor
Victor Hu

Consulting editor for Issue 110
Michelle Hennelly

Editorial administrator
Anita Shah admin@cehjournal.org

Editorial committee
Simon Arunga (Uganda)
João M Furtado (Brazil)
Clare Gilbert (UK)
Esmael Habtamu (Ethiopia)
Fatima Kyari (Nigeria)
Ciku Mathenge (Rwanda)
Nyawira Mwange (Kenya)
GVS Murthy (India)
Heiko Philippin (Germany)
Thulsiraj Ravilla (India)
Serge Resnikoff (Geneva)
Jude Stern (Australia)

Sumrana Yasmin (Pakistan)
David Yorston (UK)

Editorial advisors
Nick Astbury (Partnerships)
John Buchan (Ophthalmology)
Jenny Evans (Systematic reviews)
Michelle Hennelly (Ophthalmic nursing)
Islay Mactaggart (Disability)
Priya Marjoria (Optometry)
Daksha Patel (Education)

Regional consultants
Hannah Faal (AFR)
Kovin Naidoo (AFR)
Van Lansingh (AMR)
Andrea Zin (AMR)
Ian Murdoch (EUR)
Janos Nemeth (EUR)
GVS Murthy (SEAR)
R Thulsiraj (SEAR)
Babar Qureshi (EMR)
Mansur Rabi (EMR)
Leshan Tan (WPR)
Hugh Taylor (WPR)

Design
Lance Bellers

Printing
Newman Thomson

Download our app
Download the free *Community Eye Health Journal* app today: bit.ly/CEHJ-app

Visit us online www.cehjournal.org

Subscribe
Visit: www.cehjournal.org/subscribe
Email: web@cehjournal.org

Readers in low- and middle-income countries receive print copies free of charge. To subscribe, send your name, occupation, and postal address to:

Anita Shah, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

Email: admin@cehjournal.org

Nurses work across different communities and settings, both urban and rural, and can therefore offer patient-centred care close to where people live. We therefore call on eye care leaders worldwide to recognise the vital role of ophthalmic nurses and other allied health personnel in supporting the push for universal health coverage.

There are many areas in which nurses can contribute to people-centred eye care and improve local and global eye health. We propose that policy makers, programme managers, hospital managers, nurses, other allied health personnel, and the rest of the eye team work together to implement the following suggestions.

Leadership and advocacy

- Promote people-centred care. Work with policy makers and decision makers to ensure that patients can move across the whole patient pathway: from the community, to secondary and tertiary services, to low vision and rehabilitation services (where nurses are also involved). Integrate eye health into other health areas and improve referral between services.
- Recognise ophthalmic nursing in the human resources framework, set their payscale to match that of other nursing specialties, and include nurses in leadership teams.

Prevention and health promotion

- Participate in the development and implementation of education and community awareness campaigns.
- Educate the public, e.g., on radio and television talk shows or at local community centres (provided this is allowed by current social distancing guidelines to protect against COVID-19).
- Participate in national and global awareness campaigns.
- Ensure equity in access to eye health by training community health nurses and volunteers to identify and manage simple eye conditions in the community. The WHO Africa *Primary Eye Care Training Manual* is a useful resource (www.afro.who.int/publications/primary-eye-care-training-manual).
- Organise eye screening in schools, markets, organisations, and churches, even at various organisations' annual general meetings, if COVID-19 guidelines permit this.
- Develop educational materials and tools to raise awareness about eye health.

Direct patient care

- Put patients at the centre of the care nurses provide – consider their needs and experiences, e.g., by developing and implementing patient focus groups and providing opportunities for patient feedback (see 'Putting patients at the centre of eye care', bit.ly/CEHJ78). Good communication with patients and their family members or carers is vital.
- Focus on safety and risk prevention. For example, implement the safe site surgical checklist (WHO, 2009).²
- Explore skills exchange (also known as task sharing/ task shifting). This may include learning new skills that may be traditionally considered another professional's job. For example, ophthalmic nurses and other allied health personnel can support ophthalmologists in screening, preoperative and postoperative care of cataract, and surgical assisting; this ultimately

Continues overleaf ►

From the editor

The roles and responsibilities of eye care personnel, and the terminology used to describe them, vary significantly from one country to another. The responsibilities described in this article, and in this issue of the *Community Eye Health Journal* may also fit the role descriptions of clinical officers, ophthalmic clinical officers, ophthalmic assistants, or other roles included in the term 'allied ophthalmic personnel.'

WHO key facts on nurses and midwives¹

- 1 Globally, nurses are the largest group of health care providers, representing almost 50% of the health workforce at all levels.¹
- 2 There is a global shortage of health workers. Nurses and midwives are the group with the greatest shortages – together they represent more than half of the global shortage in health workers. The problem is greatest in South East Asia and Africa.
- 3 For all countries to reach the United Nations Sustainable Development Goal 3 on health and wellbeing, WHO estimates that the world will need an additional 9 million nurses and midwives by the year 2030.
- 4 Nurses play a critical role in health promotion, disease prevention and the delivery of primary and community care. They provide care in emergency settings and will be key to the achievement of Universal Health Coverage.
- 5 Achieving health for all will depend on there being sufficient numbers of well-trained and educated, regulated, and well-supported nurses and midwives, who receive pay and recognition commensurate with the services and quality of care that they provide.
- 6 Investing in nurses and midwives is good value for money. The report of the UN High Level Commission on Health Employment and Economic Growth concluded that investment in education and job creation in the health and social sectors result in a triple return of improved health outcomes, global health security, and inclusive economic growth.
- 7 Globally, 70% of the health and social workforce are women, compared to 41% in all employment sectors. Nursing and midwifery occupations represent a significant share of the female workforce.

Support our work

We rely on subscriptions and donations from charities and generous individuals to carry out our work.

To support us, visit:

www.cehjournal.org/donate

or contact Anita Shah:

admin@cehjournal.org

Published by the International Centre for Eye Health, London School of Hygiene & Tropical Medicine.

Unless otherwise stated, authors share copyright for articles with the *Community Eye Health Journal*. Illustrators and photographers retain copyright for images published in the journal.

Please note that some articles are published online first and may have been shortened to fit the available space in this printed edition.

Unless otherwise stated, journal content is licensed under a Creative Commons Attribution-NonCommercial (CC BY-NC) license which permits unrestricted use,

distribution, and reproduction in any medium for non-commercial purposes, provided that the copyright holders are acknowledged.

ISSN 0953-6833.

Disclaimer

Signed articles are the responsibility of the named authors alone and do not necessarily reflect the views of the London School of Hygiene & Tropical Medicine (the School). Although every effort is made to ensure accuracy, the School does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the School in preference to others of a similar nature that are not mentioned. The School does not endorse or recommend products or services for which you may view advertisements in this Journal.

The *Community Eye Health Journal* is supported by:



contributes to improved output, productivity, and outcomes. The International Council of Ophthalmology has launched an initiative² to examine skills exchange through a formal, planned framework and training programme. Non-nurses can also be taught to carry out tasks that may traditionally be considered nursing tasks.

Quality improvement

- Foster a continuous quality improvement approach to service provision; for example, by welcoming, conducting, and acting on internal or external audits and patient feedback surveys, as well as your own professional development.
- Keep up to date with your own professional development, and new developments in the field, by:
 - Updating your qualifications
 - Taking part in professional development activities
 - Keeping abreast of what is happening in the care sector, and/or an area of specialty that is directly related to your work, by participating in local continuing professional development opportunities
 - Reading journals and articles (such as in the *Community Eye Health Journal*)
 - Taking part in webinars (see www.iapb.org), or by taking an online course. There are many free or low-cost courses available online, including from the International Centre for Eye Health (icsh.ac.uk/oer/), Cybersight (cybersight.org/online-learning/), WHO (openwho.org/courses) and JCAHPO (eyecarece.jcahpo.org).
- Take responsibility for the conditions in your workplace; for example, by reporting malfunctions and hazards.
- Take responsibility for the resources in your workplace. Put the safe storage and use of equipment, instruments, and consumables at the forefront of your daily practice.
- Contribute to the Global Green and Healthy Hospitals scheme (www.greenhospitals.net); for example, by considering how your hospital can reduce the amount of waste it produces or by proposing an action plan to reduce your carbon emissions.

Building the eye care team

- Join, or build, a national or regional ophthalmic nursing special interest group/association.
- Welcome and encourage people into nursing, and then into the eye care subspecialty. Many countries need more ophthalmic nurses, so every nurse has a duty to promote the profession and welcome newcomers.
- Advocate for ophthalmic nurses to be included in the human resources framework and pay scales.
- Train nurses in departments such as endocrinology/diabetes care, or in geriatric care (care for older people).
- Foster collaborative, open and proactive relationships among all members of the eye care and/or hospital team. Team members may include ophthalmologists, optometrists, orthoptists, technicians, pathologists, and so on. The more we communicate, and the more we break down outdated and unhelpful barriers, the greater the likelihood that we will achieve the goal of universal health care for all.
- Help to grow the body of evidence needed to assist in the prevention and treatment of vision impairment and blindness by conducting research and by presenting and sharing your knowledge.

The importance of the perioperative nurse

Qualified nurses play an important role in the operation room before, during and after surgery.



Ciku Mathenge
Professor of Ophthalmology: University of Rwanda and Director of Training and Research: Rwanda International Institute of Ophthalmology, Rwanda.

The perioperative nurse is an essential member of the team when operating on patients with eye-related conditions. Indeed, whenever I'm required to operate in remote locations, my core request – apart from a microscope and surgical instruments – is that I travel with a dedicated perioperative nurse.

Surgeons are the most visible members of the cluster of gowned figures gathered around operating tables all around the world. However, the surgeon is always a part of a surgical team and is supported by a number of other highly trained professionals, each with a clearly defined role and serving a vital function. In many parts of the world, qualified nurses play multiple roles in the operating room.

As an eye surgeon, I consider the nurse to be one of the most important people in the perioperative space – before, during, and after surgery. These nurses are known by various names in different places: scrub nurses, operating room (OR) nurses, circulating nurses, surgical technicians, theatre nurses/assistants, or operating room technicians. I will use the term perioperative nurse to encompass all these roles.

References

- 1 WHO. Nursing and midwifery fact sheet. February 2018. bit.ly/3neJSdB
- 2 International Council of Ophthalmology. ICO Position on Training Teams to Meet Public Needs. June 2018. bit.ly/2JQK8kA Accessed 24 October 2019.
- 3 World Health Organization. Surgical Safety Checklist. Revision 1, 2009. bit.ly/2JV0KY8 Accessed 24 October 2019.

Further Resources

- International Agency for the Prevention of Blindness: Environmental Sustainability Working Group home page. bit.ly/3qSajrq Accessed 24 October 2019.
- Machin H (ed). Ophthalmic Operating Theatre Practice: A manual for lower-resource settings, edition 2. *Community Eye Health Journal*, 2016. bit.ly/3niXDIE Accessed 24 October 2019.
- World Health Organization. World Report on Vision. October 2019. bit.ly/383de88 Accessed 24 October 2019.



The perioperative nurse helps an ophthalmologists to don his gloves. RWANDA

The key responsibility for the perioperative nurse is to maintain a sterile environment for the patient and surgical team before, during, and after surgery. Consequently, the nurse often has multiple responsibilities, especially where there are shortages of skilled health workers.

Before surgery

Before surgery, the perioperative nurse may be responsible for supervising the transport of patients to and from the theatre and wards. The nurse will also prepare the patient for the surgical procedure, i.e.:

- Checking the patient's records
- Checking vital signs
- Washing, shaving, and disinfecting surgical sites
- Ensuring that the correct eye is labelled.

Perioperative nurses arrive before the procedure to set up the room and check its condition in order to ensure a clean, safe and efficient environment for patients and surgeons. They ensure that adequate supplies are available and check for correct positioning: making sure the patient is well positioned on the table, that the surgeon's stool is adjusted to the correct height, and that the microscope and all of its viewing stems are working well. They need to be familiar with the correct operation of all equipment in the operating room, including phacoemulsification machines, vitrectomy machines, and lasers, if relevant. Perioperative nurses are also responsible for collecting, checking, and returning the equipment needed for each procedure. For example, before a retinal detachment operation starts, they must make sure that the cryotherapy cylinder contains enough liquid nitrogen, even though the surgeon may not use it. Similarly, during a cataract operation, they must check that all the correct lenses and viscoelastic options are available, just in case they are needed. Often, the perioperative nurse has to not only anticipate numerous complications that could be encountered during the procedure, but also the needs of multiple surgeons with different individual preferences and levels of skill.

During surgery

In the scrub role, a perioperative nurse will ensure all the gloves needed are available in the correct sizes. She or he will be the first to scrub in for a procedure and assist the remaining team members with gowning and gloving. During the operation, the perioperative nurse will hand the surgeon any necessary instruments, sponges, and other items, and provide retraction, suction, or irrigation of the eye as directed. In this role, the perioperative nurse requires a deep enough knowledge of the procedure to anticipate the surgeon's needs and have the correct items ready to hand over. This skill allows the surgeon to not break concentration and manage any complications optimally. For example, as soon as vitreous presents during a cataract procedure, the perioperative nurse prepares for vitrectomy, even before the surgeon asks. Often, experienced nurses will offer invaluable advice to novice surgeons such as, "Perhaps you should increase the incision size?" Such advice is always appreciated and emphasises the key role of the perioperative nurse within the operating theatre.

Within the operating room, the perioperative nurse may also work outside the sterile field (sometimes called the



CIKU MATHENGE

circulating nurse). Circulating nurses provide additional supplies and sterile instruments as needed during the operation and assist the other team members in monitoring the status of the patient or helping with the repositioning of the patient during the procedure.

The perioperative nurse assists during eye surgery. RWANDA

After surgery

After the operation, the surgeon often writes her or his notes and leaves the room. The perioperative nurse may then be responsible for monitoring the patient's condition and remaining alert for any indicators revealing a good or bad outcome. The nurse will often be responsible for giving the correct postoperative instructions to patients before they go home – something that can greatly impact outcomes.

In cases where general anaesthesia was used, such as in paediatric ophthalmology, nurses will continually evaluate the patients until they wake up and help them understand where they are and what is going on as they awaken from the anaesthesia. Other nursing interventions will include monitoring vital signs, airway patency, and neurologic status; managing pain; assessing the surgical site; assessing and maintaining fluid and electrolyte balance; and providing a thorough report of the patient's status to the surgeon and the patient's family.

Other duties

Many of the nurses who work in the operating room tend to be senior, very experienced nurses. As a result, they might also spend part of their time on training, supervisory or administrative duties.

As surgeons, we are sometimes unaware of all that goes on in order to make the surgical experience smooth for the patient and surgeon. Much of this rests in the hands of the perioperative nurse – individuals who not only work with precision but also have the ability to think on their feet, act on core scientific principles, adapt to ever-changing circumstances and take the initiative to do what is necessary and right in each surgical situation.

“The nurse will often be responsible for giving the correct postoperative instructions to patients before they go home – something that can greatly impact outcomes.”



Timothy Adeyemo
Ophthalmic Nurse and Ocular Ultrasonographer: Vitreoretinal Department, National Eye Centre, Kaduna, Nigeria.



Aminatu AbdulRahman
Ophthalmologist: National Eye Centre, Kaduna, Nigeria.



Fatima Kyari
Associate Professor: International Centre for Eye Health, London School of Hygiene & Tropical Medicine, UK. Consultant Ophthalmologist: College of Health Sciences, University of Abuja, Nigeria.

The many roles of an ophthalmic nurse in a tertiary eye institution

Ophthalmic nurses have to juggle different tasks each day in order to meet the expectations and needs of their patients and colleagues – especially when working in a busy teaching hospital.



A clinical lecture and demonstration with other colleagues in the vitreoretinal clinic. NIGERIA

Who is the ophthalmic nurse?

Ophthalmic nurses play an important role in global eye health delivery, including eye health promotion; disease prevention, diagnosis and treatment; and low vision and rehabilitation services. In countries where there is a shortage of ophthalmologists, ophthalmic nurses often diagnose and treat patients, referring them where necessary and possible. In this article, we consider the roles of ophthalmic nurses in busy tertiary settings, where they are important members of the eye care team.

A new era in ophthalmic nursing

Modern ophthalmic nursing is dynamic and constantly evolving to meet the growing demands of patients and the ophthalmic profession. In a tertiary setting, the ophthalmic nurse is often faced with expectations to see more patients, more quickly, embrace new technology and treatments, and use their specialist ophthalmic skills to maintain and enhance the eye health and wellbeing of patients. These additional responsibilities have enabled ophthalmic nurses to broaden their skills and expand their practice in various settings where they are expected to play multiple key roles within the various domains of ophthalmic care.

Multiple roles

Undertaking multiple roles is influenced by one's skill and experience, and often requires critical thinking skills. Generally, nursing is considered a high-risk, high pressure profession, given the fast-paced working environment and constant need to handle emergencies, especially for those working in low-resource settings where there are high patient-to-nurse ratios. In a tertiary eye hospital, an ophthalmic nurse's role often involves both clinical and administrative duties, carried out in a way that is patient-centered and efficient.

Due to time pressures in a typical eye hospital, and the desire to be accessible to patients,¹ the ophthalmic nurse with multiple roles is also often under pressure to perform two or more tasks simultaneously. However, such multitasking can increase mistakes and impair one's ability to retain information in working memory.² Therefore, it's important that ophthalmic nurses are permitted and supported to manage their own time and priorities so they can concentrate on, and complete, one task at a time.



Measuring a patient's visual acuity using the tumbling E chart. NIGERIA



From the field

Timothy Adeyemo is an ophthalmic nurse with multiple roles in the vitreoretinal clinic at National Eye Centre, Kaduna.

My responsibilities include:

- **Routine examination.** Measuring visual acuity (VA), intraocular pressure (IOP), and vital signs
- **Special clinical investigations.** Carrying out ocular ultrasonography, fundus photography, biometry, ocular coherence tomography (OCT) and OCT A, and fluorescein/indocyanine green angiography
- **Patient counselling.** Counselling and health education
- **Training student nurses.** Organising periodic training or lectures for student nurses and other allied ophthalmic assistants
- **Other.** Providing emergency resuscitation, administration of prescribed medication, assisting the ophthalmologist as necessary, and other administrative duties.

At the vitreoretinal clinic, we attend to an average of 55 patients daily, excluding patients referred for diagnostic investigations. Clinic starts at 7:00am. As patients arrive, the medical health records officer confirms their appointment status. Once at the clinic, we check patients' vital signs, measure their visual acuity and intraocular pressure, and work out their body-mass index (BMI). We document the results in their respective files on the electronic medical record system (EMR) and place patients in a queue so the ophthalmologist can attend to them. The patients are often seen on a first-come, first-served basis, unless they need to be seen urgently, e.g., if the doctor requests that priority be given to older patients or children. The nurses and the community health officers (who work as ophthalmic assistants) work together to ensure a seamless workflow.

After the consultation with the ophthalmologist, the patients who require more detailed explanation or counselling are directed to me. Despite the fast pace of work and workload,

In conclusion, we hope this article will contribute to colleagues' and managers' understanding of the complexities of ophthalmic nursing, and that it will help them to recognise the daily achievements of ophthalmic nurses.

Ophthalmic nurses should consider how they can switch between their various roles more efficiently,



Ophthalmic nurse Timothy Adeyemo performs OCT angiography on a patient in the vitreoretinal clinic. NIGERIA

“I always ensure our patients understand their condition and the management plan.”

I always ensure our patients understand the nature of their medical condition and the outlined management plan. I use eye models, illustrated charts, and articles from the *Community Eye Health Journal* to help them understand their condition and management plan. Most of the patients require slow and gentle explanation to ensure they understand. Often, these discussions are continued beyond clinic hours.

At several intervals during the day, I attend to patients referred for different investigations and scans. My ability to switch between roles within a short period of time, while paying attention to every detail, reduces patient waiting time and makes me a valuable member of the team. This is appreciated by the ophthalmologists, who are able to attend to many patients within a short time frame.

My various duties are often interrupted by patients requesting further explanation or clarification of their diagnosis and treatment options. While I consider these interruptions necessary for positive patient outcomes and satisfaction, occasionally they prevent me from completing my tasks within designated timelines, unless I skip my lunch breaks.



Ocular ultrasonography (B-Scan). NIGERIA

without becoming distressed or causing harm to patients. For example, they can work on mastering individual tasks and carefully anticipating what may be needed of them next. Ophthalmic nurses can also consider ways of minimising or managing interruptions, especially when performing tasks with a high risk of patient harm if something goes wrong, e.g., when dispensing medication.

References

- 1 Sørensen EE, Brahe L. Interruptions in clinical nursing practice. *J Clin Nurs.* 2014 May;23(9-10):1274-82. doi: 10.1111/jocn.12329. Epub 2013 Sep 5. PMID: 24003899.
- 2 Skerrett PJ. Multitasking – a medical and mental hazard. *Harvard Health Blog.* 2012. bit.ly/CEHJmultitask



Joseph Magyezi
Ophthalmic Clinical Officer: Ruharo Eye Centre, Ruharo Mission Hospital, Mbarara, Uganda.



Simon Arunga
Consultant Ophthalmologist: Mbarara University of Science and Technology, Mbarara, Uganda.

Eye care where there are no ophthalmologists: the Uganda experience

Ophthalmic clinical officers (OCOs) in Uganda undergo a year of intensive training; this qualifies them to provide high quality eye care in a country affected by a shortage of ophthalmologists.



An ophthalmic clinical officer, supported by an ophthalmic assistant, measures intraocular pressure using a Schiotz tonometer. Both patient and eye health workers are wearing masks to reduce the risk of COVID-19 transmission. UGANDA

A shortage in human resources for eye health is a huge problem in many parts of sub-Saharan Africa, with most countries failing to achieve the ratio of 4 ophthalmologists per million population recommended by the World Health Organization in 2006.^{1,2} Uganda's population of 40 million is served by just 40 ophthalmologists (1 per million population), and half of them work in the capital city, Kampala. This means that the majority of eye care services in the country are provided by non-ophthalmologists.

In Uganda, we have allied eye health personnel known as ophthalmic clinical officers (OCOs). To become an OCO, a nurse (with a diploma in nursing from a registered institution) or medical clinical officer (with a diploma in clinical medicine) must complete a diploma in clinical ophthalmology, a one-year full-time course offered by the Ophthalmic Clinical Officers Training School Uganda. The training school was established in 1989 and is based in Jinja.

Upon completion of the training, OCOs work at the existing primary health centres in each catchment area. Here, they are responsible for establishing and planning eye care services for the local population. OCOs manage common eye diseases and conditions, organise eye camps to visit rural areas, refer patients who need surgery, and manage eye care equipment and consumables. OCOs also run the eye health management information system (HMIS). They make daily entries in their eye clinic registers and, once a month, enter a summary of this information into the HMIS system. These data are then aggregated with other health unit data, submitted to the district information office, and reported to the Uganda Ministry of Health.

In this article, we draw from our Ugandan experience to provide guidance on how OCOs, or similarly qualified allied eye health personnel, can effectively provide eye care services at primary health centres in communities where there are no ophthalmologists.

Setting up an eye clinic: practical considerations

OCOs must be able to test visual acuity, carry out basic evaluations, and perform simple procedures.

The space

The clinic should have a well-lit room suitable for testing visual acuity (VA). Ideally, the room would be 6 metres in length. However, most primary health centres do not have a designated eye unit and may not have such a room. A 3-metre room can be adapted by placing the VA chart above the patient and a mirror on the opposite side of the room. The patient is then asked to read the letters through the mirror, thereby doubling the visual distance to 6 metres. Whilst not ideal, as there is no control of luminance, a VA chart can be placed on a wall outside the clinic room, and patients can stand 6 metres away in the compound to read.

Note: Where possible, ensure that patients are standing in the shade when looking at the chart; bright sunlight can cause glare and may affect the test results.

Equipment

- **Visual acuity testing charts.** The Snellen E chart or the tumbling E chart is used most often. These are very useful, especially in a rural population where the majority of people are unable to read.
- **Source of light (torch).** A torch is a useful tool for basic eye examination, pupil assessment, and

“The majority of eye care services in Uganda are provided by non-ophthalmologists.”

From the editor
Read more about OCOs in Uganda in a previous issue of this journal: bit.ly/ugandaOCO

COVID-19 precautions

In light of the COVID-19 pandemic, it is now recommended to take precautions when carrying out procedures that may bring you in close contact with patients. We recommend making and using simple face shields or visors (see bit.ly/CEHJvisor) and wearing surgical masks, if available, to avoid droplet transmission. Keep windows open to improve ventilation. The eye care practitioner and patient should avoid speaking while the eye examination is carried out.

identification of many ocular pathologies. We have recently advocated for torches which have a blue light option to aid in the diagnosis of corneal abrasions and microbial keratitis.³

- **Magnifying loupes.** These aid in visualising finer details on the eye; for example, when identifying or removing foreign bodies. If you do not have loupes, you can use simple reading spectacles to magnify the ocular structures.
- **Direct ophthalmoscope.** This is a useful tool for examining the deeper structures of the eye, such as the retina, optic nerve, and macula. It can also be used to identify cataract, especially a posterior subcapsular cataract which is not easily identifiable on torch examination. There are now cheaper options like the Arclight (see bit.ly/CEHJarc), which has many additional benefits such as magnification, blue light and solar charging.
- **Tonometer.** This is useful for measuring intraocular pressure (IOP). Although the Goldman tonometer, mounted on a slit lamp, is the 'gold standard' for IOP testing, and newer technology such as the icare tonometer is well tolerated across many age groups, they are both expensive and not readily available in many parts of Uganda. Cheaper tonometers, such as the Shiotz tonometer, are a useful and reliable alternative.
- **Pharmaceuticals.** These are important for diagnosis and simple treatment procedures. They include local anesthetic, mydriatics, and fluorescein strips. Fluorescein strips can be made using locally sourced ingredients. Further information on how to prepare fluorescein strips has recently been published in this journal (bit.ly/CEHJfluor).⁴
- **A trial lens set and frame.** This enables simple subjective refraction. A modest number of OCOs in Uganda (30%) have received additional training in refraction and can perform refraction assessment for simple uncorrected refractive errors and presbyopia.

How to manage the day-to-day running of the clinic

It is important to think about efficiency, good use of resources, space, and the quality of patient care.

Clinic days

In most primary health centres, the eye unit space is shared with other disciplines such as ear, nose and throat (ENT) clinics, orthopaedic clinics, and others. It is important to ensure consistency of service, e.g., having the clinic on the same day and at the same time



SIMON ARUNGA

every week (or fortnight) and never missing one, as this helps to drive demand and uptake. Depending on the volume of patients, some OCOs run weekly, bi-weekly or daily clinics.

Task shifting or task sharing

Ideally, the eye unit in a primary health centre will be run by one OCO supported by a nurse working as an ophthalmic assistant (see panel below); however, our recent evaluation of the health system in Uganda noted general staffing levels of about 50% in most primary health centres.³ Because of this, many eye units are often run by an OCO on her or his own.

It is therefore important to plan task allocation carefully to maximise productivity and efficiency. This enables the OCO to focus on key eye examination tasks that cannot be shifted to, or shared with, other staff members.

Many OCOs rely on staff members from other units to provide additional support. For example, registration of patients can be done centrally by the clinic's records assistants, visual acuity testing can be done by volunteer nurses (we have trained our driver to test visual acuity during outreach activities), and pharmacy assistants can dispense eye medication. If a primary health centre has weekly eye clinics, rather than daily eye clinics, the OCO may spend the other days helping out in other clinics, such as HIV.

Continues overleaf ►

The COVID-19 pandemic has highlighted the importance of regular hand washing and hand sanitising between patients.
UGANDA

"It is important to plan task allocation carefully to maximise productivity and efficiency."

Allied ophthalmic personnel

Allied ophthalmic personnel known as ophthalmic assistants (OAs) help OCOs to run eye clinics, and ophthalmic operating theatre nurses (OTNs) provide support in the operating theatre. OAs and OTNs are usually nurses with a certificate from a registered institution who undergo full-time 'on-the-job' training in an accredited tertiary eye hospital setting over a period of three months. These staff members are not officially recognised in the general health system structure of Uganda and are not permitted to work independently.

Comprehensive assessment

It is important to realise that the primary health centre is usually the first point of contact with the health system. Assessment should be tailored to be as comprehensive as possible in order to identify conditions without obvious symptoms – such as glaucoma, diabetic retinopathy and uncorrected refractive errors – in line with local needs. In our area, for example, we routinely assess people over 35 years of age for glaucoma. In a recent meeting with OCOs in southwestern Uganda, however, only 10% reported that they were routinely assessing people for glaucoma, indicating potential room for improvement.

Staying in touch

Good communication with the nearest referral centre or ophthalmologist is important for several reasons:

- **It facilitates referral.** In Africa, the referral system is not straightforward, and many patients do not eventually go when referred. Reasons could include transportation costs, the distance they have to travel, the need for someone to accompany them and fear of the unknown. Generally, it is good for OCOs to be aware of where the nearest ophthalmologist is and which eye conditions they are able to manage. For example, although the secondary hospital may be in the next town, and the retinal surgeon further away, you may want to send a patient directly to the retinal surgeon if that will save time and cost. Further information on referral, with particular reference to microbial keratitis, can be found in a previous article in this journal.⁵
- **It makes teleconsultation possible.** In many parts of Uganda, there is good mobile phone coverage. Where there is a good relationship between an OCO and an ophthalmologist, the OCO can take a photograph and send it directly to the ophthalmologist if a second opinion is needed, which is a great resource. However, some of the finer details of the eye may not be easily captured with a smartphone camera. For this reason, we are piloting the use of macro lens phone adaptors to better capture corneal images for teleconsultation.
- **It allows counter-referral (from the hospital back to primary level).** One of the main challenges with eye health care in Africa is loss to follow-up. For example, only 30% of patients who receive cataract and glaucoma surgery in our hospital return at six weeks. If these patients are referred back to the primary health centre for follow-up instead (known as counter-referral), a greater proportion of patients will be able to attend as the primary health centre is closer to their homes. The referral and counter-referral mechanism used in Uganda also supports OCOs in their continuous professional development (CPD). This is because the Ministry of Health referral forms include space for the ophthalmologist to provide feedback to the referring OCO, indicating the findings, diagnosis and management plan. Many OCOs find this useful as a way of learning, and it helps communication to flow both ways.
- **It provides opportunities for offering outreach services.** Proactive OCOs can organise outreach services in their facilities. For example, a mobile



SIMON ARUNGA

team from the secondary facility can come directly to the primary health centre to provide cataract surgery. This helps to build trust in the primary health centre and creates demand for eye services in the community, all of which helps to increase the number of patients who come to the centre.

An ophthalmic clinical officer measures visual acuity. UGANDA

Clinical considerations

The services provided at the primary health centre are predominantly screening, treatment and referral; most centres offer the first level of care for the majority of patients. Our recent work found that patients present quite early to these primary health centres,⁶ which provides an opportunity to provide early treatment, referral and health promotion messages.

At the primary health centre, it is important to ask two important questions to guide the decision-making process, particularly with regards to referral:

- 1 Is this condition urgent, or not?
- 2 Is this condition manageable at this level, or not?

For further information regarding the management of eye conditions, including eye emergencies, please see previous issues of this journal, such as cehjournal.org/managing-and-preparing-for-eye-emergencies.

Guidance and second opinions

Many primary health centres in Uganda have a copy of the National Treatment Guidelines for eye care provided by the Uganda Ministry of Health (available from www.health.go.ug/cause/ministry-of-health-guidelines-for-eye-care). This document helps to inform the timing of referrals and the most appropriate treatment modalities. In addition, mobile teleconsultation with an ophthalmologist at the secondary level is widely practiced (as described above) whenever there is a query regarding diagnosis or appropriate treatment regimes.

Keeping up to date

Many parts of Uganda have decent internet coverage and most eye care professionals can access free online resources, such as this journal. The Ophthalmology Society of Uganda also organises seminars periodically.

References

- 1 Palmer JJ, Chinanayi F, Gilbert A, et al. Mapping human resources for eye health in 21 countries of sub-Saharan Africa: current progress towards VISION 2020. *Hum Resour Health*. 2014;12(1):44.
- 2 Palmer JJ, Chinanayi F, Gilbert A, et al. Trends and implications for achieving VISION 2020 human resources for eye health targets in 16 countries of sub-Saharan Africa by the year 2020. *Human resources for health*. 2014;12(1):45.
- 3 Arunga S, Kyomugasho N, Kwaga T, et al. The management of microbial keratitis within Uganda's primary health system: a situational analysis. *Wellcome open research*. 2019;4(141):141.
- 4 Arinda G, Arunga S. How to make fluorescein strips. *Comm Eye Health J*. 2018;31(103):67.
- 5 Arunga S, Burton M. Emergency management: microbial keratitis. *Comm Eye Health J*. 2018;31(103):66.
- 6 Arunga S, Kintoki GM, Gichuhi S, et al. Delay Along the Care Seeking Journey of Patients with Microbial Keratitis in Uganda. *Ophthalmic Epidemiol*. 2019:1-10.



Nanda Matthew
Ophthalmic
technologist and
screener/grader
for diabetic
retinopathy: Ministry
of Health, Roseau,
Commonwealth of
Dominica.

Running a mobile diabetes screening service in Dominica

An ophthalmic technologist and a nurse run an integrated diabetic retinopathy fundus photography screening service in the mountainous island of Dominica.

Dominica is a very mountainous island located in the Caribbean, with a population of about 72,000. Just over 10% of the population (7,500) are estimated to have diabetes mellitus and are at risk of developing diabetic retinopathy (DR), a condition that can lead to blindness if not detected and treated in time.

The geography makes it difficult for people with diabetes to travel to a central location for yearly fundus photography appointments that screen for DR. To address this need, a mobile DR screening clinic was added to the existing static screening clinic in the capital, Roseau, in 2005. The mobile clinic was expanded in 2016 thanks to funding from the Queen Elizabeth Diamond Jubilee Trust. The DR screening service in Dominica now has the capacity to screen around 6,500 people with diabetes per year and refer those showing signs of DR to an ophthalmologist as early as possible. Patients identified with other eye problems, especially cataract, large optic disc cups (where intraocular pressure (IOP) cannot be measured), or who need spectacles, are also referred to an ophthalmologist.

Dominica (population 72,000) is divided into 7 primary health districts with 52 health centres, each of which is managed by a family nurse practitioner and senior community health nurses.

The country's DR screening service is run by two internationally certified screeners/graders: nurse assistant Carlene Luke Winston, responsible for the static clinic based at the China Friendship Hospital in Roseau, and Nanda Matthew, an ophthalmic technologist who runs the mobile clinic. Diabetes patients in Roseau Primary Health District (with 15 health centres serving around half of the population of Dominica) are screened at the static clinic. The mobile screening clinic serves the rest of the population by carrying out scheduled visits to 37 health centres in the remaining six districts; these are planned in collaboration with the team at each centre.

The mobile screening clinic

The mobile screening clinics run from Monday to Thursday every week, and the screeners/graders prepare the schedule of visits to the health centres.



The author examines a patient during a mobile DR fundus photography screening clinic in the north of Dominica. **DOMINICA**

“The geography makes it difficult for people with diabetes to travel to a central location for yearly diabetic retinopathy screening appointments.”

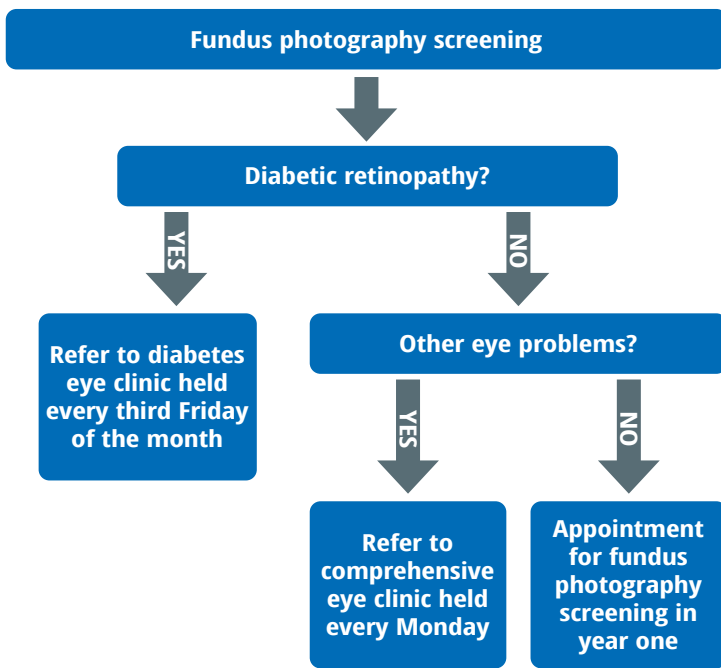
The senior community health nurses at each centre are responsible for making appointments for the patients on their diabetes register, whether by word of mouth, telephone, church announcements or via the district medical officer's clinic. Patients are reminded to take their health books, sunglasses, a cap or an umbrella with them to their scheduled appointment in case there is a delay, and they are required to wait outside in the sun.

The health centres provide a well-lit room containing a table for the portable non-mydratic fundus camera, a chair, and a Snellen visual acuity chart. Hand sanitiser must be available for use between patients.

At the start of each session, the screener/grader introduces herself to the patients and explains the screening procedure. The screener/grader then sees each patient individually to take a brief medical history, obtain consent, record functional distance visual acuity and instil dilating eye drops (phenylephrine 2.5%, tropicamide 1%). Patients return to the waiting area for about 20 minutes while their pupils dilate. When it's their turn to be screened, the screener/grader will warn them about the bright flash before capturing each image.

Continues overleaf ➤

Figure 1 Referral protocols after diabetic retinopathy screening



Retinal fields are captured using a hand-held fundus camera, exported to the laptop, and graded immediately, as per protocol. The screener/grader then shows the image to each patient and explains the outcome.

Referral

Patients with diabetic retinopathy are referred to a diabetes eye clinic. If a patient does not have diabetic retinopathy, or any other eye problems, an appointment is made for them to come back for screening in one year. Patients who do have other eye problems are referred to a comprehensive eye clinic, which is held once a week (Figure 1).

Challenges

There are some challenges to overcome:

- Difficulty in communicating the clinic schedule to patients
- Scheduled clinics sometimes don't run due to staff absence, transportation issues and weather conditions (some health centres were damaged by Hurricane Maria and are no longer in use)
- Lack of a hydraulic table, which causes back strain when using the portable camera
- Lack of a tonometer to check patient's intraocular pressures
- A shortage of dilating eyedrops, which makes it difficult to capture good quality retinal images.

Public education needs to be ongoing to keep patients informed about the importance of screening. In addition, health care worker education is needed regularly to keep them motivated to refer people with diabetes for screening. This is particularly true for doctors in the private sector, who are not integrated into the country's health service. At least two more screener/graders and mobile cameras are needed to increase the number of new or follow-up patients seen in the clinics. Increasing capacity will, in turn, reduce the levels of blindness related to diabetic retinopathy and improve the quality of life for thousands of people living in Dominica.

Postoperative eye care in Botswana: the role of ophthalmic nurses

Ophthalmic nurses in Botswana play a critical role in the postoperative care of eye patients at tertiary level and in the community.



Chatawana Molao
Head of Ophthalmic Nursing Programme, Institute of Health Sciences Molepolole, Botswana.



Tatowela Mmoloki
Ophthalmic Nurse: Tutume Primary Hospital, Botswana.

Ophthalmic nurses make up more than 80% of all the ophthalmic personnel in Botswana. They are usually the first eye care professional a patient will see.

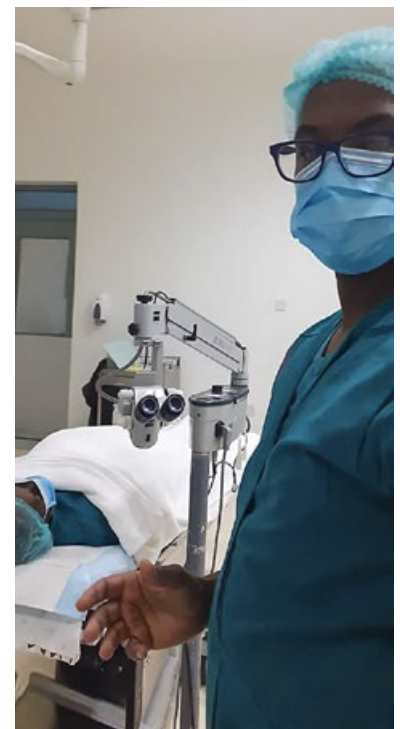
Ophthalmic nurses provide special ophthalmic support to community health clinics within each district (primary care). In district hospitals (secondary level), they independently run eye clinics that provide specialist eye services.

Ophthalmic nurses are also involved in providing tertiary level eye care at Botswana's two centres of excellence for eye health: one in Molepolole village and

one in Serowe village and catchment area. The two centres are staffed by ophthalmologists, ophthalmic nurses and optometrists. Their services include, but are not limited to, surgical services for cataract, glaucoma, eye injuries, paediatric and optometry services, and other special clinics such as diabetic retinopathy and glaucoma. The ophthalmologists perform most of the major operations carried out at the centres. On discharge, the subsequent postoperative care is carried out by ophthalmic nurses at secondary level and in primary care settings.

Postoperative management

Ophthalmic nurses play a critical role in managing all eye patients postoperatively. This management follows the nursing process, which entails assessment, planning,



Ophthalmic nurses start discussing the planned operation and postoperative care with patients on the day of admission. **BOTSWANA**

TATOWELA MMOLOKI

implementation, evaluation of the patient's condition at admission until they are discharged, and follow-up care to monitor the progress of the patient's condition.

It is essential to plan postoperative care in advance and discuss it with the patient and significant others before surgery.

Immediate postoperative ophthalmic care in the ward

After major ophthalmic surgery, ophthalmologists make an initial assessment and decide whether the patient can be discharged or not, depending on the outcome of surgery. Ophthalmic patients who require more observation in the ward are cared for by ophthalmic nurses. The nursing care they provide includes educating patients about their condition, assessing the eyes for signs of complications, and administering medications according to the instructions of the ophthalmologist. This continues until the patient is discharged from the hospital.

Discharge planning

Discharge planning begins on the day of admission. The ophthalmic nurses plan a meeting with the patients and their family members or companions to discuss the planned operation, possible outcomes, immediate postoperative care while in hospital, and their postoperative care while at home.

Postoperative patient education

Special postoperative education depends on the type of surgery. The emphasis is placed on the care of eyes at home, administration and care of eye medications, prevention and recognition of early or late complications, and follow-up schedules. Ophthalmic nurses educate patients on possible key symptoms such as pain, loss of vision and abnormal eye discharge so that they know when to seek help. Patients and their family members/significant others are given health education prior to discharge and are also given an instruction sheet (Figure 1) explaining how to look after their operated eye(s) after surgery. This is attached to the outpatient cards so they can be shared with others at home.

Where appropriate, patients are told to visit the ophthalmic nurses at their local or district hospital for follow-up appointments.

Postoperative ophthalmic care after discharge

Ophthalmic nurses continue to monitor the patients' condition after surgery at secondary care settings. Patients are usually reviewed at the eye clinic after two weeks to monitor the outcome of surgery; however, patients can be reviewed earlier than two weeks if they experience problems. This ensures prompt referral to the ophthalmologist for further management so that the consequences of the complications are reduced or mitigated.

Eye patients are invited to share their mobile phone numbers and that of their significant others so that they can receive reminders about planned review



CHATAWANA MOLAO

Ophthalmic nurses make an important contribution to the eye health system in Botswana.
BOTSWANA

Further reading

- Adeghera E. Routine postoperative nursing management. *Comm Eye Health J.* 2016;29(94):24.
- Machin H. (ed) (2016) *Ophthalmic Operation Theatre Practice: A manual for lower resource settings*
- Odhiambo G.S. Care after cataract surgery in Nairobi. *Comm Eye Health J.* 2016; 29(94):26.

appointments. This has enhanced trust between the patient and the eye care system and has improved patients' level of compliance with management regimens, including taking prescribed eye medications and coming back for follow-up or review appointments as specified.

Figure 1 Patients take a copy of these instructions home after surgery.

Instructions after cataract surgery

NB: follow these instructions after cataract surgery for 6 weeks

- Do not sleep on the operated site
- Avoid sweeping
- Do not bend below the knees
- Avoid dust and smoke
- Do not use soap on the face and head
- Do not cover the operated eye
- Do not touch or rub the operated eye
- Avoid heavy activities, such as chopping firewood
- Avoid food that causes constipation
- Use your medication as prescribed
- Seek medical attention immediately when the eye starts to have severe pain, becomes redder and has discharge
- Attend checkup or follow-up appointments as instructed
- Avoid injury to the operated eye



Pawan Baral
Research Officer:
Himalaya Eye
Hospital, Pokhara,
Nepal.

Eye nurse training in the Pacific islands

A training programme in Fiji and Papua New Guinea is rapidly increasing the number of ophthalmic nurses able to support eye care delivery in the challenging Pacific Island Countries region.

Papua New Guinea and Fiji are two of the 25 nations and territories that make up the Pacific Island Countries.

Until 2006, there were almost no ophthalmic nurses, and very few ophthalmologists and optometrists, in the region. To respond to this challenge, the Fred Hollows Foundation New Zealand (FHFNZ) established the Pacific Eye Institute in Fiji in 2006 and a similar training programme in Papua New Guinea in 2007, and began enrolling 10–15 nurses per year in the Postgraduate Diploma in Eye Care. This one-year, 120-credit programme is offered in Fiji by the Fiji National University and in Papua New Guinea by the Divine Word University. It is accredited by the International Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO).

In Fiji, the entry requirements include a nursing qualification, a minimum of one year of work experience (post-internship, in a health-related field), and observation in an eye clinic for a minimum of one month to ensure the candidate has the interest and motivation to pursue a career in eye care. Graduates are registered by the Fiji Nursing Council as eye nurse specialists.



An ophthalmic nurse learns to examine eyes through a slit lamp during their ophthalmic nurse diploma course. **PAPUA NEW GUINEA**

THE FRED HOLLOWES FOUNDATION NEW ZEALAND (FHFNZ)

In Papua New Guinea, candidates must have a Bachelor's degree in a health sciences field such as nursing, health extension, or medicine. However, applicants with a three-year diploma in a health science may apply for recognition of prior learning if they can demonstrate that they have workplace experience equivalent to the final year of a Bachelor's degree in a health sciences programme. The course is accredited by the Department of Higher Education, Research Science and Technology, and graduates are registered by the Papua New Guinea medical board as 'ophthalmic clinicians.' This grants them the right to prescribe Category C topical ophthalmic drugs for eye disease treatment.

Candidates undergo training in the diagnosis and management of common eye conditions, refraction and spectacle prescription, ophthalmic operating theatre procedures, community eye care, eye health promotion, and diabetic retinopathy screening using indirect biomicroscopy and fundus photography. Depending on the scope of practice in different countries, the level of eye care provided by the ophthalmic nurses may vary from diagnosis and referral to diagnosis and treatment.

More than 200 ophthalmic nurses have been trained to date. The original target of 241 ophthalmic nurses (which meets the World Health Organization's target ratio for the region, of 1 ophthalmic nurse per 50,000 population), was increased to 300 to compensate for future attrition, population growth, and the geographical spread of the population.

The Postgraduate Diploma in Eye Care offers graduates ongoing training and further education as well as support in their new place of work,¹ which helps to retain them in the workforce and ensure they are able to do what they were trained to do.

In just over a decade, eye care in the Pacific Island Countries has grown from a handful of eye practitioners and eye care services to a significant number of eye practitioners providing eye care services through local ministries of health. Graduates are also now leading the training in both Fiji and Papua New Guinea.

Reference

- 1 Brûlé J, Tousignant B, Nicholls G, Pearce MG. An in-country model of workforce support for trained mid-level eye care workers in Papua New Guinea and Pacific Islands. *N. Z. Med. J* 2017;130: 83-86.

The role of professional associations

The ophthalmic clinicians in Papua New Guinea established a professional association named the Ophthalmic Clinicians Association within the National Department of Health. All ophthalmic clinicians in Papua New Guinea can, by default, be a member of the Ophthalmic Clinicians Association. The other Pacific Island Countries have a larger forum named the Pacific Eye Care Society (PacEYES). PacEYES is part of the International Council of Ophthalmology and includes other eye health professionals. By paying an annual membership fee, all eye care practitioners in Papua New Guinea and the Pacific islands can be members of PacEYES.



Through these associations, the eye nurses in the region organise national and regional conferences, advocate, and plan eye care activities. This has enabled ophthalmic nurses in the region to share best practice and forge collaborative clinical and research partnerships and networks, both regionally and internationally. PacEYES has the potential to develop as a college for upskilling all levels of eye care practitioners in the region.

For information on how to join PacEYES, visit www.paceyes.org/home



From the field

The importance of ophthalmic nurses: an ophthalmologist's view



Michelle Hennelly
MSc Programme
Director in
Clinical
Optometry:
Division of
Optometry and
Visual Science,
City, University of
London, UK.

Ophthalmologist **Hillary Rono** spoke with our consulting editor for this issue, Michelle Hennelly, about the importance of ophthalmic nurses in bringing eye care to the community.

After completing his Master of Medicine Degree in Ophthalmology, Hillary Rono chose to be posted to an area in the North Rift region in Kenya, where he coordinates outreach programmes to remote areas.

How have ophthalmic nurses helped you as an ophthalmologist?

In my role as a clinician, ophthalmic nurses help me to triage patients (filter the urgent from the non-urgent), administer eye drops, and – during outreach – identify patients that need to be treated in hospital. They are also very good managers of eye care programmes and link very well with other parts of the hospital, such as maternal and child health service.

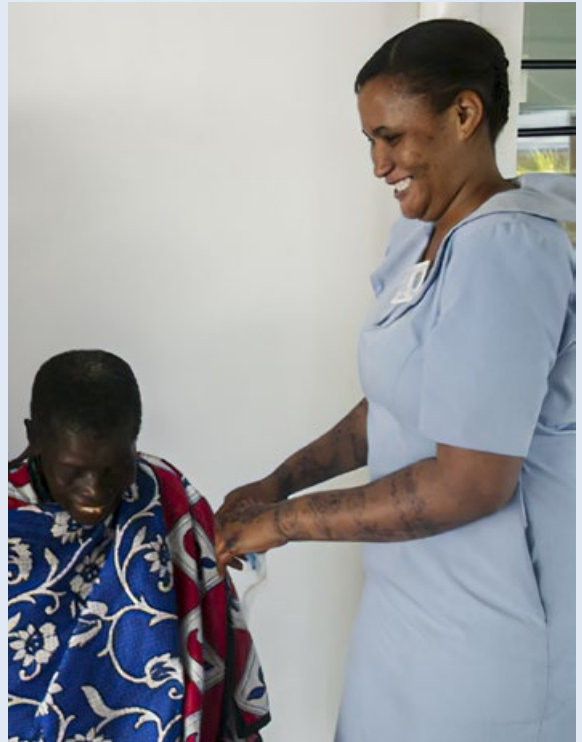
How can ophthalmic nurses contribute to research in Kenya?

Ophthalmic nurses are key people in terms of supporting eye care research. Already, they have the skills to identify symptoms and understand the complexities of eye care. They assist in theatre and are critical in infection control measures. They are able to educate patients and teach other eye care workers too, thereby passing eye care skills to other health care workers.

Training of nurses and support staff is essential. What has worked so far, and how can training in the region be enhanced?

After I arrived in 2006, we set up a short 3-month skills upgrade course (the 'Ophthalmic Assistant' course) that taught general nurses in the area how to manage simple eye diseases and how to identify cataract and eye emergencies. The course introduced more nurses to eye health as a potential specialty and made it possible for us to identify and encourage those with a strong interest in eye health to complete a one-year postgraduate diploma in ophthalmic nursing. This programme helped us to cover the shortfall in the area, and it was later adopted nationally.

Looking ahead, improving the eye care skills of general nurses would be very useful, especially in areas where there are no optometrists. Unfortunately, ophthalmology is given the least priority in basic general training. For example, the general nursing diploma course, which takes three years, includes only 4–5 hours of ophthalmology; this does not give nurses enough exposure.



HELEN ROBERTS

Ophthalmic nurses are vital members of the eye team in Kenya.

What are some of the unique ways in which ophthalmic nurses contribute to eye care?

Ophthalmic nurses don't often use the clinical jargon that many ophthalmologists use, so they are more successful in getting important messages across with regards to patients' management of their own eye care.

There is something unique about the relationship between ophthalmic nurses and patients, which could be due to their nursing training; however, this could also be because they spend more time with patients compared to ophthalmologists. Ophthalmic nurses can also speak up on behalf of the patient, which builds trust. This makes ophthalmic nurses excellent at obtaining good clinical histories.

Patients can be very nervous at the start of treatment or a procedure, but after speaking to an ophthalmic nurse they trust they can feel reassured and secure in the care that they are going to receive.

What are the challenges involved in retaining ophthalmic nurses?

Ophthalmic nurses are general nurses first, so they can often be called upon to help in areas where they worked previously, such as labour wards or in child health, when these are short-staffed. It is very important that eye unit managers lobby the hospital management to explain the specialist role and skills of these nurses so that their importance can be recognised and they can be retained in their posts.



Amir Bedri Kello
MD, MSc, Medical Officer, Trachoma, WHO/AFRO ESPEN, Brazzaville, Republic of Congo.



Caleb Mpyet
Professor of Ophthalmology, University of Jos, Jos, Nigeria.

Ophthalmic nurses: meeting the need for human resources to end trachoma

Remote communities have fewer doctors but a greater need for trachoma services; ophthalmic nurses can fill the gap.

Significant global scale-up and increased access to medical and environmental interventions in recent years have resulted in a 91% reduction in the number of people at risk of trachoma, the world's leading infectious cause of blindness: from 1.5 billion in 2002 to 142.2 million in 2019.¹ Despite this, 2.5 million people still require urgent surgery to treat trachomatous trichiasis (TT), the late blinding stage of the disease.

Acceleration towards the elimination of trachoma as a public health problem and the achievement of universal eye health coverage is hindered because there are not enough people who are qualified to deliver comprehensive and integrated eye health interventions, including those for trachoma. The 2019 World Health Organization (WHO) World Report on Vision (bit.ly/world-report-on-vision) reports an inequitable distribution, and a significant shortfall, in the current and projected number of ophthalmologists, particularly in low- and middle-income countries.² This also extends to an inequitable distribution between urban and rural areas.

In many sub-Saharan African countries, the shortage of ophthalmologists available to serve rural settings is being overcome by involving ophthalmic nurses, as they are trained in eye care and can provide primary eye services. In national trachoma programmes, ophthalmic nurses support disease prevalence surveys and mass drug administration campaigns, and perform eyelid surgery on people who have developed TT.

In most sub-Saharan African countries, ophthalmic nurses are trained to carry out minor eyelid operations. Trachoma and TT mainly affect people living in remote underserved communities, where there is lack of ophthalmologists. It has been shown that trained ophthalmic nurses can perform TT surgery at the community level, close to where patients live, in a safe and effective manner.³

Ensuring high-quality training and supervision for health workers performing TT surgery is critical for maintaining high-quality surgical outcomes. Training



Ophthalmic nurses can be trained to carry out trachomatous trichiasis surgery. CAMEROON

© WILLIAM NSAI / HKI

includes instruction on life-like surgical mannequins, such as HEAD-START (bit.ly/CEHJheadstart) and operating on patients under close supervision. Health ministries are supported by several resources for training and maintaining training standards, including the World Health Organization guidelines for trichiasis surgery and final assessment of TT surgeons, titled: 'Trichiasis surgery for trachoma' (bit.ly/TTsurgery). This is accompanied by the International Coalition for Trachoma Control's preferred practices manuals, including 'Training trichiasis surgeons for trachoma elimination programs' (bit.ly/TTtrain) and 'Supportive supervision for trachomatous trichiasis programmes' (bit.ly/superTT). New tools, such as the TT tracker (bit.ly/trackTT) enable health ministries to track the performance of health workers, including the quality of the operations performed.

“In many Sub-Saharan African countries, the shortage of ophthalmologists available to serve rural settings is being overcome by employing ophthalmic nurses.”

The World Health Organization's World Report on Vision, and their Road Map for NTDs 2021–2030 (bit.ly/NTDroadmap), both emphasise the critical value of integrated cross-sectoral approaches and health systems pillars to achieve universal eye health and universal health coverage for all. In a world of limited resources, ophthalmic

nurses will play a crucial role in achieving progress for eye health, including neglected tropical diseases such as trachoma. To do so effectively will require ongoing training, supervision and support. The trachoma community provides several lessons and resources that can be applied to training ophthalmic nurses in low- or middle-income countries, thereby accelerating progress towards achieving eye health for all and ensuring no one is left behind.

References

- 1 World Health Organization. Weekly Epidemiological Record 2019;29(94): 317-328.
- 2 The Estimated Number of Ophthalmologists Worldwide (International Council of Ophthalmology Update): Will We Meet the Needs? Resnikoff S, Lansingh VC, Washburn L, et al. Br J Ophthalmol 2020;104:588–592. Published Online First: 02 July 2019. bit.ly/CEHJbjo
- 3 Bog H, Yorston D, Foster A. Results of community-based eyelid surgery for trichiasis due to trachoma. Br J Ophthalmol 1993;77: 81-83.