

## Teamwork for eye care



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Human resource development (HRD) – the development of the people who deliver health care – has been identified as one of the key pillars of eye health delivery. HRD is one of the essential building blocks of the World Health Organization (WHO) Global Action Plan: 'Towards universal eye health'. The importance of HRD is also recognised beyond eye care, as can be seen in the WHO Health Systems approach.

Historically, eye care delivery was mainly the responsibility of ophthalmologists. It soon became clear, however, that in order to effectively reduce avoidable blindness, other types of health care workers would need to be developed, trained and deployed to work with and support ophthalmologists. A team approach would therefore be essential.

In recent years, eye care team development has become an important part of the advocacy and action plans of most global eye health agencies and regional bodies. The International Agency for the Prevention of Blindness (IAPB) and the International Council of Ophthalmology (ICO) both have interna-



Hilary Romo

**A ophthalmic clinical officer observes a community health worker examining a patient's eyes so that he can offer helpful feedback and support, if needed**

tional committees on HRD, and IAPB has also formed regional HRD committees. One of their key tasks has been to identify gaps and plan HRD for individual groups of eye health providers – including ophthalmic nurses, ophthalmic clinical officers, and optometrists/refractionists –

in a way that supports the development of the eye care team as a whole.

The composition of an eye care team varies from region to region and country to country, and it will also differ depending on whether the team is working in a

*Continues overleaf >*

### ABOUT THIS ISSUE



**Elmien Wolvaardt Ellison**

Editor: *Community Eye Health Journal*.

This issue is about teamwork for eye care, and about how eye teams can function more effectively to address blindness and improve eye health in the communities where the need is greatest.

Our authors look at the various people involved: ophthalmic nurses, ophthalmic clinical officers, ophthalmologists, optometrists, the surgical team, and managers. But there are many more people whose enthusiastic and skilled participation is essential for both good clinical outcomes and a good patient

experience: low vision and rehabilitation workers, teachers, community health workers, equipment technicians, receptionists, cleaners, drivers, and outreach workers – to name but a few.

A good indicator of a team that is functioning well is that people are enjoying working together. What can be better than doing worthwhile work with people you respect and appreciate, and who each bring unique skills, perspectives and energy to the team?

But great teamwork does not always come naturally. This issue therefore looks at the importance of establishing a culture of teamwork right at the start,

when people are undergoing training. We focus on good leadership, which is needed to keep team members focused on what is important, on the goals the team wants to achieve, and on good planning and management, all of which helps to support and facilitate teamwork. There is advice on how to function within a team and improve the effectiveness of the team. Other articles look at various groups of eye health workers, the challenges they face, and how these are being addressed to improve teamwork.

We hope you will enjoy this issue and that you will be inspired to make positive changes where you work.

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national eye care programme or in a rural eye clinic. The goal is the same, however: to provide high quality eye care to the satisfaction of the patient.

### Leadership: a crucial component of teamwork

Teams need leaders who are knowledgeable, skilled, highly motivated, and who aim to offer high quality, sustainable eye care services. A good leader will consult with the team, take their opinions on board, and create a vision and goals that are genuinely shared by everyone; this means that the team members will feel personally motivated to achieve these shared goals. Good leaders are able to champion the team's vision and goals with energy and enthusiasm, inspiring their team members to keep going during difficult times. She or he will share credit and be able to manage the negative fall-out if things go wrong.

The team leader sets the tone for the team and is responsible for maintaining the team's values and the 'team culture', i.e. what behaviour is acceptable and what is not. The team leader can and should model the correct attitudes and behaviour for the rest of the team. For example:

- showing professional respect for the skills and limitations of each member of the eye team
- demonstrating professional diligence

- being willing to listen to others
- making decisions based on a collective and evidence-based approach (rather than for personal gain)
- treating people fairly, whatever their cultural background, gender, sexual orientation or health/disability.

By being fair, available, and communicative, the team leader can ensure that there is good communication among the rest of the team and that working relationships are positive.

Leaders also have a facilitative role: ensuring that the team has everything they need to achieve their goals, such as appropriate (and functioning) equipment, a reliable supply of medicines and consumables, good systems and protocols, and a clean and safe environment in which to work. Managers (see page 30) can support the team leader in this role.

A good leader also keeps the professional growth of the team in mind by proactively seeking career development for the team and ensuring that everyone has a clear job description, detailing their roles and responsibilities. Team members should understand where their job fits into the health system and what their opportunities for career progression are.

### Being a good team member

The team needs to be able to support the leader in achieving high performance and quality of service, delivered to the satis-



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faction of the patients they serve. Team members must be professionally competent in their field of work, diligent and committed, and should view their leaders as mentors and facilitators.

It makes sense to develop the attitudes and skills needed for successful teamwork from the outset, during training (see page 28). A curriculum geared towards teamwork will encourage and train eye care workers to:

- identify themselves as team members
- communicate clearly and respectfully
- develop critical thinking and problem solving skills
- make decisions and respect the decisions of others
- support and complement the work of others
- trust other members of the team
- give clear and prompt feedback
- motivate themselves and others
- keep learning.

These ideas and skills should be included in the curriculum and taught both explicitly (during course work) and implicitly (through

the example set by leaders during practical training). Changing the curriculum is always a challenge, but this can be overcome through advocacy and sharing successful examples of a curriculum focused on the team.

### Task shifting

To enhance the quantity and quality of an eye service, task shifting has been used with a lot of success. Task shifting means delegation of tasks within the team to complement one another. This can take place informally (at the level of the institution) or formally (i.e. at ministry of health level, with the creation of a new role such as that of cataract surgeon).

One of the best examples of task shifting has been the use of mid-level personnel, optometrists and nurses to undertake many of the tasks which the ophthalmologist used to do in the past, thereby giving the ophthalmologist more time for specialised tasks or surgery that only she or he is qualified to perform. Mid-level eye care workers are also task shifting their previous activities to

community health staff and teachers who now are being actively involved in primary eye care, screening and referral of eye patients, and must be included in the definition of the eye care team.

### Focusing on our patients

The concept of teamwork has been perfected by successful manufacturing companies, where people with different skills come together to make a car or other product which is then marketed, sold, and supported with after-sales service. Teams in health care may face many additional challenges, including funding and wider health systems issues. We deal with human beings and their sight; therefore we should do our best to provide not just great service, but also to offer a positive experience to our patients. For many of them, there is no second chance, so we must ensure that a high quality service is delivered the first time. Teamwork can help by enhancing the efficiency and quality of our work, both of which are essential to improve the vision and quality of life of our patients.

## Commonwealth Eye Health Consortium



COMMONWEALTH EYE HEALTH CONSORTIUM

The Commonwealth Eye Health Consortium [CEHC] is a group of eye health organisations working together to strengthen eye health services and the quality of eye health care across the Commonwealth. Brought together through funding from

[The Queen Elizabeth Diamond Jubilee Trust](#) and coordinated by the [International Centre for Eye Health](#), the consortium is delivering an exciting, integrated, five-year programme of fellowships, research and technology aimed at eye health workers based in low- and middle-income Commonwealth countries.

**Masters scholarships** in Public Health for Eye Care are offered for study at the University of Cape Town or the London School of Hygiene & Tropical Medicine in order to equip ophthalmologists and eye care managers to implement effective, sustainable strategies to prevent and treat blindness. Application information can be obtained from: <http://cehc.lshtm.ac.uk/msc-scholars/>

**Clinical fellowships** will support both long and short-term sub-specialty training for ophthalmologists to gain the knowledge and skills to more effectively relieve the burden of blindness in their own countries. Application information can be obtained from: <http://cehc.lshtm.ac.uk/clinical-fellows/>



PEEK

**Research fellowships** are offered at PhD and post-doctoral levels to strengthen eye research capacity and address questions of ophthalmic public health importance. Fellows will develop, conduct and analyse research. Application information is available from:

<http://cehc.lshtm.ac.uk/research-fellows/>

**Open educational resources** will provide freely available online learning materials that cover: (i) epidemiology of blinding eye diseases, (ii) principles of research in eye care and (iii) health development and eye care programmes.

**The Diabetic Retinopathy Team Training Network**, based on VISION 2020 LINKS in Africa and the Caribbean, will work together to build a South-South network and help plan and develop national diabetic retinopathy services.

**OpenEyes** is an open source electronic patient record system that is particularly suited to low and middle-income country settings. Support is available to implement the system in multiple locations. Application information is available from: <http://cehc.lshtm.ac.uk/openeyes/>

**Peek** is a multifunctional smartphone system that empowers eye health workers to diagnose eye diseases using a low-cost device in remote settings.

Please refer to the CEHC website <http://cehc.lshtm.ac.uk> for full details.



THE QUEEN ELIZABETH  
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# Don't drop the patient: teamwork for cataract surgery



**Daksha Patel**

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The purpose of a team is to work together towards a common goal. On an athletics track, relay race teams run with a baton that is passed from one team member to another, without breaking the pace. If the baton is dropped, the team is disqualified.

The journey of the baton is a good analogy for the journey of someone who is visually impaired from cataract. Everyone has to work together within the health system to ensure that the patient is not 'dropped'. In other words, the eye team must ensure that an informed patient, who is relaxed and mentally prepared for the next level of treatment, gets to a surgical centre and back home again.

The patient's journey begins when cataract is detected and the patient is informed about the possibility of treatment. This is done at the community level by health workers – such as primary health care workers and community health workers – who then refer the patient to an ophthalmic clinician for assessment and/or surgery. This stage of the journey has to be managed with sensitivity and reassurance for blind or vision-impaired patients, as they are likely to be afraid of surgery.

There is also a return journey: a cataract patient must come back to the community for follow-up and post-

## Low vision and rehabilitation

Some patients may not achieve good vision after cataract surgery. This may be due to surgical problems, post-operative complications, or underlying eye diseases such as glaucoma. These patients may benefit from rehabilitation or low vision services, which range from learning to use assistive devices (e.g. magnifiers) to being taught new skills to improve employment opportunities. These services can maximise quality of life for people with vision impairments, and it is therefore important to include low vision or rehabilitation experts within your eye care team and to refer patients to them if needed.



Adriane Ohanessian/Sightsavers

**Everyone within the health system has to work together to ensure that a patient with cataract will receive the best possible care from start to finish**

operative care, including detection of complications and referral back to the surgical centre if needed. This 'return loop' is important, both for the post-operative management of the patient and for the process of assessing outcomes (for quality control and auditing, and feedback to the surgical team).

The patient's journey is completed only when the patient has been followed up and is satisfied with the services and the outcome. If not, then any issues must be addressed or resolved and constructive and helpful feedback should be given to the appropriate team members.

## Good working relationships – whose responsibility?

In order for health workers at the community level to successfully refer patients, there has to be a good working relationship – involving regular and pro-active communication, information sharing and feedback – between them and the team at the surgical centre.

We would like to suggest that much of the responsibility for good teamwork rests with the team at the surgical centre or eye unit, who rely on the health workers in the community to identify and refer patients for surgery and to care for them once they return to the community. The staff in the eye unit must consider and think about the staff delivering eye care in the community much, much more, and bring them into a

bigger 'eye team'. As an example, high-volume cataract surgical centres, such as those based in India, work closely with their referral networks to ensure uptake of surgery is not hindered due to delays in the pathways or at the point of treatment.

## Improving teamwork

There is much the team working at the eye unit can do to improve teamwork with their colleagues in the community.

### Strengthen communication

In order to successfully refer patients for surgery, there has to be good communication and information sharing between the workers at community level and the team at the surgical centre. Staff at the community/primary level should be confident that the information they are giving patients is correct and up to date.

New communication technologies, such as SMS (text messages), instant messaging (e.g. WhatsApp or BBM) and email have made it possible to be in immediate contact with colleagues out in the community. It may require some effort to gather everyone's contact details and set up the communications system. But once set up, such a system can be used to keep in regular contact with health workers in the community, provide them with feedback on successful (and unsuccessful) referrals, and inform them about any changes, for example if there is a change in the clinic dates or times. Both community and surgical

centre workers should be trained in the communications system and motivated to use it. All of the above will help to ensure that workers in the community are not isolated or unsupported.

### Establish referral protocols

It is important to acknowledge the challenges patients face when they are referred for cataract surgery. The indirect costs of cataract surgery can be high and include transport costs and the lost wages of the patient and the accompanying person. It is therefore crucial that referrals are done carefully. If a patient arrives on a day when the clinic is closed or surgery is cancelled, they may not have the resources to come a second time.

A process for referral, using a protocol, would provide clear and consistent steps to follow. For example:

- 1 Explain to the patient what has been found and that their sight can be restored.
- 2 Tell the patient what to expect: what the treatment involves, its safety, possible outcomes and the benefits of treatment.
- 3 Ask about, and address, any fears or concerns the patient may have.
- 4 Inform the patient about where to go next, in enough detail (e.g. date, time, cost) to ensure that the patient can make the journey successfully and receive the care she or he needs.

Communication should be consistent and repeated as often as needed. Establishing a rapport with the patient – and understanding their concerns – will help with the acceptance of treatment. People working at community level who refer patients should have visited the surgical unit at least once, so they can tell the cataract patient exactly what to expect. There must also be a referral protocol back to the community so that people can be followed up and any complications managed after surgery.

Informing patients about post-operative complications – what to look out for and what they should do (including where they should go) – should be built into the post-operative protocol or referral pathway. One example is thickening of the posterior capsule, which is a common complication of cataract surgery. It involves gradual deterioration of vision and can be easily remedied. For patients, the visual improvement after surgery is always a remarkable experience. If vision deteriorates due to this complication, and patients don't know why, they could lose faith in the eye care system and not return for help, which is one way of 'dropping' the patient.

Heiko Philippin



### Regular communication and careful planning supports the patient's journey

#### Offer support, supervision, and feedback

The important role played by health workers at community level is strengthened if they are provided with regular feedback about their performance by the district or secondary level team. Workers need to know who to ask for help with complicated and unusual cases, and must be given acknowledgement when they are doing well. Pre- and post-operative counselling of patients is essential and health workers should be supported with clear, consistent practice guidelines and information.

#### Ensure reliable services

Surgical centres must establish a regular work plan or schedule that is shared with everyone at community level and updated regularly. Colleagues at community level must be informed of any changes or unexpected gaps in services (e.g. staff shortages) as quickly as possible (for

example by SMS or via instant messaging) so that they can inform patients. Any staff shortages or service issues, such as broken down equipment or a shortage of consumables, should be urgently addressed.

### Practice good teamwork within the surgical eye unit

At the surgical centre, the manager must establish good information flow between team members within the eye unit and between them and the health workers in the community. Recognising the various roles within the team (including finance, administration, reception, stores, equipment maintenance, cleaning and pharmacy) will also help to ensure the smooth functioning of the unit. The result – regular procurement of medicines and instruments, good patient flow into theatre and aseptic functioning in operating theaters – will boost both the number of operations and their quality.

Good working relationships between the team at the eye unit and the health workers in the community can lead to more effective service delivery, as steps can be taken to ensure neither group is overburdened or under-used. Regular communication (ideally between named individuals) and clear, well-understood protocols will provide a framework for daily interactions.

Teamwork can be further strengthened by training, mentoring and active support for workers in the community. All of the above will ensure that the patient receives timely and high-quality service in an efficient and user-friendly style.

## Time to reflect

Do you have the following in place?

- 1 A registration system that links different services (e.g. refractive services or the diabetes clinic) to the eye department and keeps patient records together.
- 2 Agreed referral protocols, including referral to low vision and rehabilitation services.
- 3 An arrangement for workers at community level to observe cataract surgery so they can inform patients about the procedure and about the hospital.
- 4 Pre-operative counselling at community level to address the fears of people who are older, blind or vision impaired.
- 5 Post-operative follow-up and reassurance for the patient, and information about the possibility of complications (including what to look out for, what to do, and where to go).
- 6 Communication pathways, both within the eye unit and out to health workers in the community. This includes having the names and contact details of key people within the hospital, and arranging regular opportunities for the team at the surgical centre to meet the health workers who form part of their referral network in the community.
- 7 Good inventory management and procurement protocols.
- 8 Human resource mechanisms to ensure that posts are filled and that people are in place to do the work of those who are on leave.
- 9 A system for recording patient satisfaction, taking any needed action, and giving feedback to staff.



# Building the eye care team



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Eye care services are people intensive. They require the right people (competence), in the right numbers (capacity), in the right mix (team) with the right resources and processes (enabling conditions) to ensure effective and sustainable delivery of patient care.

To be effective, the team should have the right mix of ophthalmologists, ophthalmic assistants, administrative staff and support staff. It is important for each team member to be clear about what is expected of them and how their tasks relate to the overall purpose of the organisation that employs them. Building an effective workforce is a continuous journey. Inadequate staff numbers, lack of competency, and low motivation and productivity are common challenges. In our experience, however, systematically addressing all of the following areas contributes to success.

**Recruitment and selection.** In some settings, particularly in government programmes, there may be little choice in the selection of staff. However, where the eye care service has the flexibility to manage its own recruitment, there are two distinct steps. First, in order to get a pool of suitable candidates, each post should have a clear job description and be advertised appropriately with enough time for the candidates to respond. The selection process should probe not just the candidate's competency but also his or her motivation. The reality is that technical skills can be developed and improved over time, but it is much more challenging to change fundamental beliefs, attitudes and behaviour. Thus the recruitment and selection process should ensure both competency and the right fit for the organisation's values, but with a greater emphasis on the values (which are reflected in the organisation's mission and vision).

**Orientation (induction).** On joining the hospital, the new employee should



Aravind Eye Care System

Operating theatre nurses are given an orientation session in the use of IOL injectors

undergo a well-designed orientation (induction) to help her or him to become familiar with the new surroundings. This should be led by the newcomer's designated line manager. The orientation should aim to deepen the new employee's understanding of the organisation and cover its aims, history, key members, operating model and values. It should also clarify the person's roles and responsibilities and how these relate to the organisation's mission and vision. The orientation lays the foundation for working together as a team.

**Enabling environment.** The hospital has to create an enabling environment for its employees by ensuring that they have the required resources (patients, equipment, supplies and support staff) and also the under-

standing and authority they need to take decisions and accomplish their tasks. For instance, the nurse in charge of the operating rooms should have the authority to requisition supplies as required, and the person in charge of transportation should have the authority to hire vehicles as needed. Such operational decisions should not require the approval of the medical director. Responsibilities can be made clear through sharing all job descriptions with members of the team, and be reinforced through regular team meetings – ideally once a week. Trends in eye care technology, changing patient expectations, as well as

constraints relating to the availability of trained eye care professionals and supplies, should also be taken into account.

**Employee empowerment.** Team meetings should have a clear agenda and foster an open and democratic environment that encourages members to jointly address any difficulties, such as a temporary shortage of a particular consumable. Employees should also be encouraged to initiate new projects and share their ideas about how to improve patient care. Having a say in operational level decisions enhances people's engagement in their work and creates a culture of ownership among employees.

**Performance assessment and feedback (appraisal).** There should be a formal system for each employee and her or his line manager regularly to discuss the employee's performance (at least once a year). This discussion should be held in an open and non-threatening way, and should be recorded on a standard form. It should provide constructive feedback on performance and on any concerns. Together, the employee and line manager must draw up an action plan to upgrade skills and/or improve behaviour. The plan should include how best the organisation can support this process.

If an employee has serious problems of competence or behaviour, mentoring may be considered. An experienced staff member could be assigned to help the employee resolve problems relating to work life, or to provide support when there are problems in her or his personal life.

**'The recruitment process should ensure the right fit for the organisation's values'**

## Career development and training.

When employees show motivation and ability, they should be given additional responsibilities (with appropriate training) if possible. This could be an opportunity to lead a new activity and improve their leadership skills. The organisation should endeavour to have a well-defined career path for all types of employees, as this builds people's aspirations towards the next level in their career. When an employee shows ability and a desire to move to a new position within the organisation, it is good to be supportive to the extent it is practical. This could both help the employee (self-development) and retain her/his skills. The organisation should periodically conduct training needs assessments for all employees and design training programmes based on the needs identified.

**Pay and benefits.** This is one of the most sensitive aspect of employment. To an employee, the salary is the indicator of how they are valued in the organisation. More often than not, dissatisfaction with pay is the reason people leave an organisation. Where possible, try to ensure that salaries are competitive (compared to those offered by similar organisations) and represent fair market rate. Internally, employees' pay and benefits should be comparable to that of others within the organisation doing similar jobs. If pay rates are set externally, however, whether by the government or other bodies (e.g churches), it may not be possible to do very much.

**Retention and welfare.** Employee retention should be a major concern for any organisation. Individuals, once well trained and effective, may opt to move for better prospects. In that case, the line manager or leadership team may try to convince the employee to stay by offering a new challenge, such as additional responsibilities which carry extra benefits. If the employee is determined to leave, a formal exit interview is useful to inform management about her or his experiences within the organisation and what might be improved.

The organisation has to be concerned about employees' physical, mental, social and spiritual wellbeing. Health insurance, scholarships for career development or child care are some of the welfare measures that can motivate people to stay. Social events and competitions to demonstrate talent can also encourage creativity and foster team spirit.

The performance of a hospital is a reflection of the quality of the people who work there. It is therefore essential to recruit and retain employees with the right attitude, competence and potential.



## FROM THE FIELD

# Retaining the eye team: top tips from Kenya

## 1 Kitale District Hospital Eye Unit

### Hillary Rono: Ophthalmologist

- At our hospital, eye care workers undergo regular refresher training in surgical and clinical skills, instrument care and good 'customer' relations. This is done through attachments at high-volume hospitals, an annual workshop on instrument care and a programme in which they are mentored by an ophthalmologist. In the mentorship programme, existing talents and skills are identified and developed and staff are encouraged to acquire new skills. This ensures that high quality service is maintained.
- Personnel are given on-the-job training in other tasks. Support workers (with no clinical background, e.g. people who provide clerical, cleaning, equipment maintenance and financial services) are trained to test visual acuity, dilate eyes and to assist in theatre. Skilled eye care workers (ophthalmologists, clinical officers and ophthalmic nurses) are familiarised with operations management and bookkeeping.

- Performance targets are set at the beginning of every year by the whole eye care team. These targets form the basis of performance assessment and feedback (appraisals).
- Keeping staff motivated over a long period of time is a challenge, as the needs of individuals change over time. Within the eye unit, we offer supportive supervision (a respectful and non-authoritarian approach that involves joint problem solving<sup>1</sup>) and appraise staff every quarter (i.e. we assess their performance and provide feedback). We also offer opportunities to participate in outreach programmes and in quality improvement programmes (based on feedback from cataract surgical outcome monitoring). We encourage and support staff to attend relevant continuous professional development workshops and training, and to collaborate on research projects with other institutions. The annual appraisal of the eye unit performance within the hospital also helps to motivate staff.

### Further reading

1. World Health Organization. Supportive supervision (training module). Visit [www.who.int/immunization/documents/MLM\\_module4.pdf](http://www.who.int/immunization/documents/MLM_module4.pdf)



## 2 Kwale District Eye Centre

### Helen Roberts: Medical Director

- At our hospital, staff are encouraged to take the leave they are entitled to.
- There is a sensible sickness policy and staff are well looked after if sick.
- Punctuality is respected, both on arrival to work and completing the day. Our staff register is kept in an open plan office, so staff sign in and out in my presence. This is a good opportunity to meet and greet each staff member and to discuss the day ahead, or the day past, or to simply acknowledge them.
- Staff have a nice uniform and clearly written name badges. Once a name badge is in place, everyone knows who they are and what their job is. Any visitor can pinpoint a staff member as having served them, so it

encourages a sense of responsibility.

- Staff have regular tea breaks. We have found that it is more difficult for tired, thirsty staff to give good customer care.
- We acknowledge and talk about teamwork and emphasise its importance at meetings and in general.
- Although meetings take time, they are important for communication and motivation. It helps to know that we are aware of each other's challenges and share responsibility for addressing them. As medical director, I check the minutes of each department's regular meetings to ensure they are taking place.
- Moving people around departments isn't always comfortable, but it helps our team members to understand how the other departments work. If it is not appropriate for someone to work in a department, we make sure they visit (e.g. the administrators visiting outreach activities).
- We have an informal social event for the team at least once a year.



# Training, certification and accreditation for eye teams



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Recent data suggests there may never be enough ophthalmologists to meet the needs of global eye care.<sup>1</sup> One way to lessen the impact of the shortage is to increase the efficiency and effectiveness of each ophthalmologist by putting together a team of well trained personnel to support them. This increases both the availability and quality of eye care.

The ophthalmologist-led eye care team can include optometrists, nurses, mid-level ophthalmic personnel (ophthalmic assistants/technicians/medical technologists), refractionists, orthoptists, contact lens fitters, opticians, ophthalmic photographers, community health workers, low vision and rehabilitation specialists, and may include other community workers (e.g. teachers) who screen and refer potential eye patients.

Eye care teams may be large or small, depending on their goals and needs. In a teaching hospital, there will be teams of

## Strategies for team training

**Cross training.** For example, residents can be asked to teach the nursing staff and mid-level ophthalmic personnel about diseases and new treatments. Nurses can be asked to show residents how to maximise the skills of a nurse or an ophthalmic surgical assistant in the operating theater. Ophthalmic assistants or technicians can capably and effectively train residents in the fundamentals of refraction and help them to refine their refraction skills.

**Grand rounds.** 'Grand rounds' sessions are case-based discussions and include all members of the team. They are designed to illustrate individual roles and responsibilities in providing efficient, effective patient care. A regular, internal training system using a 'grand rounds' method can effectively address the key knowledge and skills (or 'core competencies') needed by the eye care team. This can positively impact patient outcomes on an ongoing basis.



Arawind Eye Care System

**Eye care training programmes can be accredited to ensure they meet quality standards**

doctors, residents, nursing staff, allied health providers and the patient's primary care team, all of whom need to coordinate with each other. In an outpatient setting, the team may consist only of a doctor and mid-level ophthalmic personnel. Whatever the setting, team members should be performing their agreed-upon roles, allowing each team member to complete their assigned tasks, prevent duplication of effort, and maximise each team member's skills. This results in the ophthalmologist being able to care for the maximum number of patients by focusing her or his expertise on diagnosis and treatment.

Teamwork is a complex process but there are best practice principles for forming and using a team approach to improve access and quality of patient care. The team approach should be more than simply assembling the various team members required. It is crucial to define roles, responsibilities, job descriptions and sub-teams, and to promote team member cooperation.<sup>2</sup> Good team communication is essential and should result in mutually agreed upon roles. Exact descriptions of these roles should be known and understood by all team members. The team should work together to make decisions and formulate goals. This approach will foster a sense of common purpose, create shared responsibility for team actions, and increase teamwork to achieve team goals. Cross-training (see panel) will improve the adaptability and flexibility of team members and ultimately improve team effectiveness. Finally, a well-functioning team will provide mechanisms for interactive conflict resolution.

The ability of each team member to perform her or his required function is essential to the team's success. Professional development, through individual certification and programme accreditation, aims to ensure that team members are competent in their roles.

**Certification** usually includes a standardised test of an individual's competence. Some countries already have certification processes for most eye care team members but many do not. The International Council of Ophthalmology (ICO) has international examinations to certify ophthalmology residents. The Joint Commission on Allied Health Care in Ophthalmology (JCAHPO) currently certifies several levels of allied health care in 29 countries. National and/or international certification should be developed for all eye care team members in so that their competence can be assured.

**Accreditation** is a process designed to ensure that training programmes meet quality standards. The accreditation process assesses the training programme based on standardised guidelines. Typically, the programme completes a self-assessment document that is then evaluated by the accrediting organisation. This is followed by a site visit in which an outside observer verifies compliance with accreditation guidelines. Some countries, but not all, have mechanisms in place to accredit eye care training programmes. Recently, international guidelines for ophthalmic allied health training programmes have been established by the International Joint Commission on Allied Health Care in Ophthalmology (JCAHPO).<sup>3</sup> India, Pakistan and Singapore have JCAHPO-accredited programmes.

In summary, the high-performing eye care team is widely recognised as a fundamental tool for constructing a more patient-centred, coordinated, effective and high quality eye care delivery system. Having health care teams with well-defined roles and proof of competence is essential to meet global eye care needs. A well functioning ophthalmologist-led eye care team should increase efficiency and availability of care in a cost-effective manner and improve the health systems in a country.

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# A team approach to providing refractive error services



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Worldwide, there are over 640 million people who are vision impaired, simply because they do not have access to a simple eye examination and a pair of spectacles.<sup>1</sup> With 43% of vision impairment being due to uncorrected refractive error,<sup>1</sup> it is no wonder that there have been increased efforts to improve service delivery in this area. However, a recipe for successfully and predictably ‘scaling up’ (expanding) programmes to provide eye examinations and spectacles to everyone in need has thus far remained elusive.

There have been different configurations used when expanding refractive error services, some of which have seen optometrists and refractionists integrated as core members of the eye care team, and others in which they have worked outside this team. Regardless of the configuration, we believe that a team approach to refractive error care will create a collaborative and enabling environment which will ultimately benefit patients.

In a team approach (Figure 1), personnel at the community level – such as community health workers – can conduct health promotion and screening activities to encourage individuals to seek eye examinations for refractive error. It will also detect those who need to be referred. At the primary level (eye clinic), personnel such as nurses can screen and separate refractive from non-refractive patients (the pinhole is particularly useful in this respect), and provide presbyopic correction for those whose vision impairment is not caused by distance



Heiko Philippin

**Pinhole testing can be carried out by nurses or other primary health care workers to detect patients who need refractive error care**

refractive error or ocular disease. At the secondary level, comprehensive refractive examinations should be provided by optometrists, ophthalmic clinical officers and other mid-level personnel trained for this purpose. Ophthalmologists should be deployed at this level in cases where they are the primary refractive personnel in the country. At the tertiary level, pre- and post-operative refraction of patients, management of conditions such as keratoconus, and other medical-related contact lens fitting can be provided by optometrists in a co-management agreement with ophthalmologists. These personnel will also work closely with specialised clinics such as advanced low vision services or rehabilitation services.

A team approach to refractive error care ensures that eye health workers all identify themselves as part of a team. Each team member’s role must be clearly defined by the needs of the health system within which they work, while maintaining their primary professional role. Consideration must be given to the complementary nature of the job of each member and their inter-dependency in the team.<sup>1</sup>

Adopting a team approach to eye care helps to optimise staff experience,

knowledge and skills. For example, as optometry is increasingly being integrated at regional and district hospitals, there is an opportunity to shift tasks like refraction, low vision, ocular disease screening, pre-operative assessment and post-operative follow-up examinations to optometrists (or to ophthalmic technicians or ophthalmic nurses, where they are available). This will free ophthalmologists to focus on surgery and the management of disease.

Some aspects of refractive services may be ‘task shifted’ to others, e.g. nurses screening for myopia, hyperopia and presbyopia. Prescribing presbyopia spectacles for individuals who have good distance vision and no obvious pathology could take place at this level, and appropriate referral protocols should be defined.

A team approach and task shifting requires the eye care system to provide the appropriate training required by different health workers so that a good quality service can be provided at all levels, and more patients can be seen.

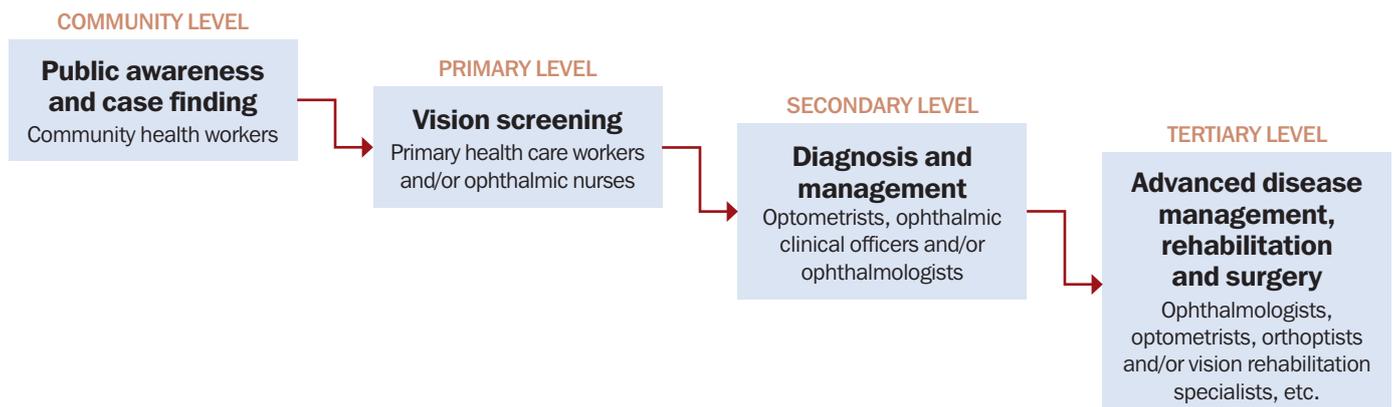
One example of a flexible training approach is provided by the Regional School of Optometry in Malawi, set up by a partnership comprising the Brien Holden Vision Institute, SightSavers and Optometry Giving Sight. It consists of two programmes:

- a conventional four-year BSc optometry degree that trains individuals for public and private sector deployment.
- an optometric training diploma which is delivered over 3 years and allows graduates to provide refractive services and eye care in the public sector, where the need is greatest.

Graduates of the diploma programme have the opportunity to upskill and progress to the four-year degree, thereby

*Continues overleaf* ➤

**Figure 1. One example of how members of a refractive error team could work together**



meeting both the professional needs of the person and the needs of society.

Although each setting is different, a team approach rooted in the local human resources for eye health strategy and health policies will help to make services more sustainable. Ideally, decisions should be informed by evidence-based, context-specific research to determine feasibility and impact. One example is the 'Giving Sight to KZN' project supported by Standard Chartered Bank. This involved the integration of refractive error services into the district health system in KwaZulu-Natal, South Africa.<sup>2</sup>

Whatever the situation, we should not compromise on a team approach and should instead actively seek integration with other components of the health system. The very success of our efforts depends on this.

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## Professional competition

The public health challenges in low- and middle-income countries, where the eye care needs are greatest, demand of us a collaborative and partnership approach.

Professional competition within refractive error service delivery may be positive. Appropriately trained cadres who are supported with continuing professional development are able to increase the professional standard of the services they provide. Over time, better and more professional services increase community expectation, driving a need for increasing professional competency among practitioners in a given geographic area. We cannot, however, allow the professional battles that sometimes occur in high-income countries to intrude upon our work in low- and middle-income countries, or allow the narrow interests of professionals to dominate the service delivery landscape.

The roles of different eye service providers (ophthalmologists, optometrists, ophthalmic nurses, ophthalmic clinical officers, and other allied personnel) should be defined by a collective evaluation of the needs of a particular eye health system, the distribution and availability of the different types of provider and the potential to task shift at all levels.

There are enough poor people to reach in our world; it is unnecessary for us to trip over each other to serve them.



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# Non-clinical managers:

The importance of management in an eye care programme should not be underestimated. It is hard to imagine how a busy ophthalmologist could attend to her or his patients, as well as doing all of the tasks needed to manage a successful eye department, eye hospital or hospital-based VISION 2020 eye programme. Some of these tasks are set out below.

- Planning and organising clinic-based and outreach activities.
- Receiving and issuing supplies, including for operating theatre, the outpatient department, and refractive error services.
- Making regular inventory reports and reordering when necessary to ensure that supplies are in stock.
- Keeping track of accounting for the hospital or overall eye care programme and producing reports, including a cost recovery report.
- Preparing and submitting reports to donors and partner organisations.
- Ensuring that the programme vehicle is maintained properly.
- Identifying and liaising with potential donors/sponsors who can support the hospital and/or VISION 2020 activities in the region
- Managing human resource issues, including recruitment, annual leave/vacations and deployment.

It makes sense to employ a programme manager to carry out the above tasks. If there is a good manager in the team, the ophthalmologist can meet regularly with her or him to review reports and agree budgets. The ophthalmologist can dedicate the rest of her or his time to examining and treating patients.

## Finding a good manager

There is no specific academic background needed, but it is preferable to recruit someone with some management and administrative training. It is not recommended to train and recruit clinical staff to this post. This is a full time job and there is a very limited number of trained clinical staff in low- and middle-income countries; they should not be taken away from their clinical duties. It is easier and more economical to train a non-clinical staff member as a programme manager.

It is ideal if programme managers are recruited and employed by the central hospital, rather than independently (by the eye department alone). This will help

managers to be accountable and will make it easier for them to work with other hospital staff members, e.g. accountants, store keepers, the hospital administrator and the matron, all of whom play an important role in the success of the eye programme or eye department.

## Training and capacity building

After recruitment, it is important that the new manager learns as much as possible about eye care, which can be done at the eye department. The new manager needs to understand how the departmental systems work internally as well as within the wider health system.

It may be helpful to assign one clinical staff member to assist the new manager in the learning process. There are easy-to-understand reading materials available on eye health, leading causes of blindness and their management. The *Community Eye Health Journal* is recommended!

The manager must also learn about international and World Health Organization (WHO)-led actions such as VISION 2020 and the Global Action Plan for Universal Eye Health 2014–19. Eye care service delivery planning, leadership skills, team building, partnership building, the basics of financial and human resources management, and bridging strategies to connect hospitals and communities are all essential for the task of management. Some training is available: courses covering these subjects are run by KCCO International, LAICO/Aravind, the University of Cape Town, the London School of Hygiene and Tropical Medicine, and others (see page 40).

It should be noted that the learning and capacity building process must be ongoing. The manager needs to learn every day, even after being fully employed. It will take some time before the new manager will understand all the aspects of her or his job.

## Mentoring

This involves someone with experience in eye care management keeping in contact with a new manager to assist and advise her or him. Mentoring is a training and capacity building process, and new managers are lucky if they can take advantage of this. Mentoring is ongoing, with more frequent contacts and communications at the beginning and fewer being needed as the manager gains the confidence and skills to work independently.

A manager can make a big difference in an eye care programme, especially one that reaches proactively into the community to provide services to those who would not come to hospital on their own. The

# the key to a successful eye programme



Aravind Eye Care System

manager is very dedicated, hard working and, above all, honest. Having very good interpersonal skills is also important.

## How do you divide your responsibilities?

He does the narrative and financial reporting, supervises support staff, and communicates with our partners. I look after the clinical side of things and come up with new ideas which he will implement after discussing them with the rest of the team.

## How do you ensure a good working relationship?

Frequent and good communication, at least three times per day. There is a strong sense of teamwork and shared responsibility. When one of us is unable to do a task, the other takes it up. We regularly review our activities and know who is responsible for what.

## What were the biggest challenges for you both?

There is no government recognition for managers in eye care, so there is no career path. Finding money is therefore challenging and at the moment our manager's salary is partly dependent on NGO funding.

## What are the benefits of having a manager? Would you recommend it to others?

First of all, it is impossible to do all the necessary administrative work and remain a clinician. Clinicians can be leaders but not managers. Managers are crucial for any programme to run successfully!

**When an eye programme has a non-clinical manager, organising outreach activities will become one of his or her main responsibilities.**

enjoyment of the clinical staff when they are free to do what they do best, with lots of patients, in an efficiently run system, is also a large bonus for an eye programme!

## View from an ophthalmologist



**Asiwome Seneadza** is head of Kitwe Central Hospital's eye department in Zambia. The hospital is run by the

government and is a tertiary referral centre for the northern part of Zambia, with its population of 4.7 million. Currently, it is the only centre in Zambia offering paediatric and retinal services.

## Why did you employ a manager?

I realised early on that my performance would be affected if I had to take on both the clinical and administrative responsibilities involved in managing the eye department. Although I still have administrative responsibilities, my key focus is the clinical excellence of our department.

## What were you hoping the manager would do for the eye department?

First and foremost, I wanted the manager to have a sense of ownership! Fortunately, he acquired this early, partly because we set targets together – at that time it was targets for cataract surgery. He looked into how we could improve our finances, conduct outreach, place orders, and write reports.

## How did you find a good manager? What did you look for?

Initially, the key focus for me was improving our financial accounting. As we didn't have funding at the time, I selected a very good accountant from the central hospital to help us part time. Fortunately he picked up most of the eye work very fast! He also attended a 6-week management course at Aravind in India, and has recently attended a refresher course. I think the ideal

## View from a manager



*Organising outreach activities is one of the most important responsibilities of*

**Winston Mbao**, the

non-clinical manager at Kitwe Central Hospital. Here he explains how its outreach programme has helped to increase the cataract surgical output at the hospital.

Before I was appointed in 2003, the hospital performed around 500 cataract operations per year. The current output is 2,500 per year, mainly due to outreach.

Zambia is sparsely populated and people often cannot afford transport to an eye health facility. We visit a different community every week to screen people and then bring those who need surgery to our hospital. We also provide return transport.

Eight times a year one of our surgical teams will also go and 'camp' at another district hospital. They screen people at different local health centres, transport those who need surgery to the hospital, and take them back afterwards. This involves a lot of planning! As a manager, one of my most important responsibilities is to organise these outreach activities, so services reach where the need is greatest.

For more information, please contact **Winston Mbao** at Kitwe Central Hospital. Email: [cespkch@yahoo.com](mailto:cespkch@yahoo.com)

## Case study: Madagascar

The Antsinanana VISION 2020 programme was established in June 2010 and is a joint effort between the Madagascar Ministry of Health, Kilimanjaro Centre for Community Ophthalmology (KCCO), Swiss Lions and Lions Sight First Madagascar.

The region has two facilities providing secondary eye care services: the Antsinanana Regional Hospital in Toamasina and the Vatomandry District Hospital.



Edison Mwaipopo

A planning meeting

Initially, there were no managers – either for the regional eye care programme or the two hospitals. The ophthalmic staff had to perform all clinical and non-clinical duties. Although both hospitals had basic equipment to enable them to perform surgery, the two centres performed only 481 cataract operations per year (in 2010). Services were limited to those patients who could pay for their own transport to the two facilities.

The subsequent employment of a full-time non-clinical manager gave the clinical staff more time to do clinical work. Staff members enjoyed this change and were able to double the number of cataract operations to 1,068 in 2011, while in 2013 they performed a total of 1,728 cataract operations.

Due to strong advocacy by the manager there is now also more Ministry of Health involvement. Reports are prepared and submitted on time and the role of each staff member has been carefully spelled out.



# Ophthalmic nursing services in Botswana



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Ophthalmic nurses make up 90% of all eye workers in Botswana's public sector, and they are the only eye professionals being trained inside the country.

In 2010, there were 88 ophthalmic nurses working in the public sector. The majority (74) were in primary and secondary care settings where they functioned independently under the supervision of general (non-ophthalmic) facility and department managers. Some received remote supervision and support from ophthalmologists based at tertiary hospitals, but this was minimal. Fourteen nurses worked in tertiary hospitals under the direct supervision of an ophthalmologist; they also scrubbed for minor and major ophthalmic surgical procedures.

Overall, most ophthalmic nurses (81%) worked in the urban or semi-urban areas inhabited by 61% of Botswana's approximately 2 million people. The 39% of people who live in the remote and isolated rural parts of the country were served by only 16 ophthalmic nurses (18%). Eye services remain a challenge in rural areas due to difficult terrain and limited financial and material resources. However, in many cases, ophthalmic nurses have built strong teams and share resources, such as transport, to extend services to all catchment areas within the district.

## Supervision and support

In all primary and district hospitals, the eye unit forms part of the outpatient department. The ophthalmic nurses are mostly managed and supervised by the head of the outpatient department or facility. In some units, this setup has caused conflict because non-ophthalmic managers are not aware of the importance of eye care services or have not fully understood the role and job description of the ophthalmic nurses.

Integration of ophthalmic services within mainstream health services is minimal, and efforts have begun to train general nurses and community-based health care assistants in primary eye care in order to strengthen collaborations and increase the availability of eye services.

## Referral pathways

Ophthalmic nurses form a central referral link for optometry services in both urban and rural settings, as they are the main public sector eye care providers. They are

also the main contacts to whom primary health care workers refer patients. However, Botswana does not have a well-structured referral pathway for all health teams, particularly between the private and public sector. The absence of strong referral pathways from primary or district level to tertiary level means that eye patients who are referred for specialist eye care locally and externally cannot be easily traced in order to track their progress and monitor their condition closely. As a result of poor contact and communication, patients who are referred to centralised tertiary facilities do not take up these referrals. In some cases, patients who do take up referrals do not get to see the ophthalmologist they have been referred to. This is due to irregular opening times which are not communicated to patients. Another issue is the large proportion of ophthalmologists who resign or move on, due to the fact that they are usually employed on a contract basis.

This breakdown – or lack – of connection weakens the contact between the ophthalmic nurses, the ophthalmologists and the community.

## Challenges

A recent study<sup>1</sup> identified several challenges.

- Working without the direct supervision of a specialist.
- The absence of a well documented scope of practice, professional registration and job description for ophthalmic nurses, which results in their being assigned to do general nursing.



**Ophthalmic nurses are involved in school health screening in Botswana**

- The fact that inexperienced ophthalmic nurses (most of whom are newly qualified) are sent to work in primary care settings where they are isolated and lack supervision.
- A lack of incentives to attract nurses and retain them in remote settings.
- Limited career pathways and professional development options.
- A lack of prevention of blindness policy guidelines, which means there is no governance or coordination of work done in the varied ophthalmic care settings.
- A lack of well defined or harmonised deployment and distribution of ophthalmic nurses in the public sector.

## Addressing the challenges

The Botswana Ministry of Health's prevention of blindness unit has established two tertiary centres of excellence and a VISION 2020 LINKS partnership with a UK institution (Addenbrookes Abroad, Cambridge) in an effort to improve eye care services in Botswana. Capacity building workshops have been organised through the partnership in order to enhance continuing professional development for ophthalmic nurses. Since 2013, about 17 ophthalmic nurses have been trained in basic refraction, 15 in diabetic retinopathy screening and 13 in children's vision screening. The training has strengthened networking among the ophthalmic nurses. They communicate quite often using communications technologies such as WhatsApp (an instant messaging application used on cell phones) and Facebook (a social networking platform) to share work experiences and support one another.

The ophthalmic nursing training programme at the Institute of Health Sciences (IHS) in Molepolole is currently reviewing its curriculum in an effort to upgrade the advanced diploma programme to an honours degree, and to increase enrolment from 12 to 15 candidates (every 2 years). It is also anticipated that the curriculum will include training in planning and managing eye care services.

Plans and advocacy to develop policy guidelines on the deployment and scope of practice of ophthalmic nurses are ongoing, and draft job descriptions have been developed to spell out their roles. This will mean that ophthalmic nurses will be better recognised and supported in their role within the broader health system.

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# Case study: Encouraging nurses to develop skills and confidence in Indonesia



**Widya Prasetyanti** tells the story of Henny Nurjanah, a general nurse who has been working with Helen Keller International at Balai Kesehatan Mata Masyarakat, a community eye health centre in East Java, Indonesia, since 2010.

As part of Henny's training in her new job, she was invited to take part in a training module on the early detection of eye disorders among children. Initially, she lacked confidence as she had never sat together with doctors and eye health experts before. She also felt she did not have experience outside of her daily duties as a nurse. However, she later attended a meeting of the module organisers where she gave input about how the module could be improved and her ideas were accepted, which pleased her.

Following an internship on a paediatric ward, she was invited to help develop a module on how to train others to screen children's eyes. The development team consisted of ophthalmologists, refractionists, opticians/optometrists, nurses and trainers from the provincial, city and regency departments of health, and was supported by child eye health specialists.

After several meetings, the team of 'master trainers' had to present the modules that they had developed. She had never expected to take the role of a master trainer. However, with encouragement from other members of the team, Henny presented a session to the others, who gave her feedback on how to improve her presentation skills.

Although she only had five people attending her first training session for other trainers, she felt very nervous. Over time, however, her confidence has grown. She has found that her experience – as an eye nurse who deals with children every day – strengthens her teaching, as it provides her with many practical examples of eye disorders she can share.

When she was asked if there were major changes in herself after becoming a trainer of trainers, Henny said: "The first time I delivered a training session, I prayed that none of the participants would ask questions. But now, it is me who prompts, 'Is there anything you want to ask?'" Her dealings with patients have also changed. "Now, my delivery and tone of voice are a bit different. I am more patient and more detailed when explaining something", she said.

Henny has gained a lot by working at the eye health clinic for children. In addition to increasing her knowledge and



**Henny Nurjanah uses Lea symbols to assess a child's vision**

making friends, she also gained the trust of her supervisor and colleagues in dealing with patients, particularly children. "If the intention is good, everything will go well, the main point is that I am happy working with children and collaborating with HKI", she says.

## Commentary

This case study highlights some important issues around involving nurses in the eye team, particularly when it comes to their professional development.

- 1 Nurses do not or automatically put themselves forward – they often lack confidence, perhaps because they are

not traditionally included in planning or team meetings. As a result, nurses can remain under-valued and their considerable skills and experiences can remain under-utilised.

- 2 Building a team requires clear planning and direction – or key players could be omitted, as they will not put themselves forward.
- 3 With correct training and support, nurses are more confident and are valuable staff members who can deliver key work.
- 4 Involving all staff in training materials development not only improves the quality of the materials (because everyone brings additional experience and expertise), it can also help to improve self-confidence, create ownership and develop teams.
- 5 Individual confidence is built up over several events or training sessions – do not expect staff to gain confidence after one initial training event.
- 6 Given opportunities, most staff members will develop and grow. However, nurses in particular may need to be encouraged by their managers and colleagues until their own confidence develops sufficiently.

*Written by Sally Crook*



## FROM THE FIELD

### Surgical nurses: key members of the operating theatre team

**Heather Machin** is an ophthalmic and ambulatory surgery registered nurse who has worked in international development since 2007, and is a consultant with the Fred Hollows Foundation in New Zealand.

By working together as members of a functional and mutually supportive eye care team, we can provide high quality, patient-focused eye care. Nowhere is this more important than in the operating theatre, where the patient's life is in the hands of the health care providers.

Nurses are trained to focus on the needs and wellbeing of the patient. If they are valued and respected by the other members of the surgical team, they will be able to speak out when they notice something that will put the patient's health or safety at risk. Not only will patient safety improve, but so too will the outcomes and patient satisfaction.

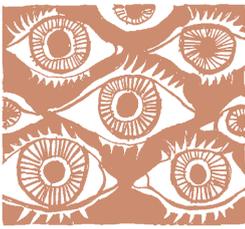
As an advocate for patient care, I am acutely aware that my role is to protect the patient from harm and to ensure a safe environment for the patient and colleagues.

Throughout my career, I have had to speak out, sometimes in disagreement with others, to ensure policy and patient safety are adhered to at all times.

When I have a concern about equipment, procedures, timetabling, competence or the needs of the patient, I have a professional duty to speak out and inform others in the health care team.

This is also an essential component of the World Health Organization's Safe Site Surgery processes where individuals in the team are checking their environment, equipment, themselves and each other to ensure that patient care proceeds safely and as planned.

Nurses also have a personal responsibility to ensure they are reviewing their own work area, that they take part in any improvements, that they are participating in their own continual professional development and that they are maintaining knowledge of current policy at their workplace.



# Ophthalmic clinical officers: developments in Uganda

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## Background

The population of Uganda is estimated to be over 33 million, with a prevalence of blindness of about 1%.

The following eye team members deliver eye care services at different levels.

- **Tertiary level:** ophthalmologists (there are about 40 in the country) and ophthalmic nurses (there are two), working at national and regional referral hospitals.
- **Secondary/district level:** ophthalmic clinical officers (OCOs). There are over 200 in the country.
- **Primary level:** nurses, midwives and other health workers who are trained in eye care and who work at health centres; they are known as primary eye care workers.
- **Community level:** community health workers (trained volunteers) who work in village health teams to provide health services at household level.

There is an existing referral system, with a good degree of teamwork, across all the levels.

Clinical officers or Uganda Registered Nurses (URN) can undergo a one-year diploma in ophthalmology (offered at the Jinja School for OCOs since 1989) in order to qualify as an OCO. The qualified OCO practices with the supervision of an ophthalmologist attached to the nearest regional referral hospital.

The majority of OCOs work in rural settings, where there is no ophthalmologist. According to the VISION 2020 targets, there should be ten OCOs or ophthalmic nurses per million population. This is not being achieved, however, as there are currently only 6.3 OCOs per million population.<sup>1</sup> By 2020, Uganda will be even further away from meeting this target, as the population growth is exceeding the growth in the number of OCOs and mid-level personnel.<sup>1</sup>

## Core activities of ophthalmic clinical officers

In the rural areas, OCOs refer patients with complicated clinical problems to ophthalmologists and those requiring



Godfrey Kagwa

**An OCO refractionist (right) with a patient**

complicated refractions are referred to optometrists. They review patients after operations, perform extra-ocular surgery, assist surgeons in theatre, and conduct eye care outreach to schools, rural parts of the community and remote health facilities.

At district level, OCOs coordinate eye care services (including planning and budgeting) and also train and supervise other eye care personnel.

## Challenges

An OCO can become a senior and then a principal OCO. This is, however, only available to OCOs working at regional level. OCOs working at district level can be promoted within general medicine;

however, they can then be sent to any health facility (sometimes to lead such a facility), where they will have very little time to practice ophthalmology.

OCOs can specialise as cataract surgeons, refractionists or low vision workers; however, these

skills are not formally recognised within the existing government public service structure. Specialist OCOs therefore miss out on promotion and any accompanying salary increments.

Other challenges include:

- lack of funding for outreach activities and supervision (particularly for OCOs working in remote areas)
- ageing equipment
- lack of funding and opportunities for continued professional development.

## New developments

OCOs in Uganda are organised in a registered association called the National Association of Ophthalmic Clinical Officer and Cataract Surgeons (NAOCOCS). The association addresses coordination, governance and the social concerns of OCOs. The association organises annual

continuing professional development workshops which most eye care workers attend. OCOs are represented at the National Prevention of Blindness Committee and its technical arm at the Ministry of Health.

NAOCOCS has identified the following priorities for action:

- creation and establishment of posts for senior and principal OCOs at district level
- promotion or better remuneration for OCOs who have qualified as cataract surgeons, refractionists or low vision therapists
- a review of the OCO training curriculum to ensure it meets international and regional standards and is relevant to each country's current eye care needs
- improving community involvement in eye care services
- improving eye care data collection, reporting, analysis and utilisation at all levels.

## Reference

- 1 Palmer J, Chinanayi F, Gilbert A, et al. Mapping human resources for eye health in 21 countries of sub-Saharan Africa: current progress towards VISION 2020. 2014, Human Resources for Health, In review.

## OCOs in Africa

### Ingrid Mason

CBM Regional Director Central Africa

Ophthalmic clinical officers (OCOs) were introduced into East and Central African health worker government schemes in the mid-1980s. Given the desperate shortage of ophthalmologists, their main purpose was to identify and treat patients with common eye conditions. A similar cadre, the Technologiste Superior d'Ophthalmologie (TSO) was later introduced in several Francophone countries in West Africa for much the same reason.

OCOs and TSOs remain the backbone of the eye health workforce in many countries in East, Central and West Africa. They are primarily deployed in secondary health care units. They see patients referred from the community and refer patients with complicated problems to the tertiary setting.

In the district or secondary health care setting, OCOs and TSOs work alongside the other eye health workers such as ophthalmic nurses, optometrists, refractionists and low vision therapists as a comprehensive eye health team. In many countries, the OCO and TSO remains a valuable team member who is able to independently manage many eye conditions.



International Examinations

The International Council of Ophthalmology

Examinations for Ophthalmologists

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Questions are a statement, a scenario, many with a picture, diagram or video.

When the assessment is completed, candidates will be issued instant results A\*, A, B, C, D or F, a detailed analysis with feed-back and a downloadable certificate.

## Subjects

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Community Medicine and Public Health  
International Medical Ethics and Good Practice  
Epidemiology and Statistics  
Genetics

**B** Ophthalmic pathology and intraocular tumours  
Intraocular inflammation and uveitis  
Retina and vitreous

**C** Trauma, external disease and cornea  
Glaucoma  
Lens and cataract

**D** Anatomy of the Eye, the Orbit and related structures  
Embryology and Development  
Neuro-Anatomy  
Principles of General Physiology  
Vision, Ocular Physiology, Biochemistry, Cell Biology  
Pathology and Micro-biology

**E** Pharmacology  
Optics and Refraction  
Basic design, construction and use of instruments  
Commonly used tests in ophthalmology

**F** Neuro-ophthalmology  
Paediatric ophthalmology and Strabismus  
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Please contact the examinations office:

Email [assess@icoph.org](mailto:assess@icoph.org) or visit the ICO website for further details

[www.icoexams.org](http://www.icoexams.org)

# How to test for the red reflex in a child

Examination of pupil reflections, also known as the red reflex test, can reveal problems in the cornea, lens and sometimes the vitreous, and is particularly useful in young children. These photographs show what can occur in the case of certain major eye conditions, the

most serious of which is retinoblastoma.

It is essential to test the red reflex after birth, at the age of six weeks and also during routine consultations or when parents are concerned about the child's vision or the appearance of her or his eyes.

The test can alert us to large lesions in

the retina. It cannot be used, however, to identify causes of poor vision related to retinal or optic nerve damage, such as retinal dystrophy or optic atrophy. For this, appropriate referral is needed.

**Note:** A dim red reflex may reveal an unequal or high refractive error.



## Procedure

- The red reflex is much easier to see in a darkened room, so switch off the lights, draw the curtains or ask the parents and child to accompany you into a room which does not have a window.
- Use a direct ophthalmoscope with the lens power set at '0'. Make sure the batteries are charged.
- Sit about half a metre (50 cm) away. Hold the ophthalmoscope close to your eyes.
- Encourage the child to look at the light source and direct the light at the child's eyes individually and together. You should see an equal and bright red reflex from each pupil.
- Pay attention to the colour and brightness of the red reflex. It should be identical in both eyes (Figure 1). Any difference between the eyes, an absence of the red reflex or an abnormal colour (Figures 2–4) may indicate a serious illness.

**NOTE:** The precise colour of the red reflex will depend on the degree of pigmentation in the eye. To determine whether the red reflex is normal, comparison with the red reflex of a parent of the child may be helpful. If you are not sure whether the reflex is normal, dilate the pupil for a complete examination.

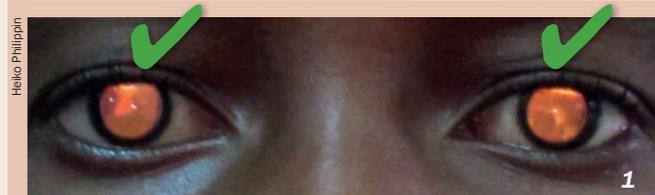


Figure 1. The normal red reflex



Figure 2. Right eye: the normal red reflex. Left eye: the absence of a red reflex is abnormal and could indicate a serious condition. Refer the child to a specialist

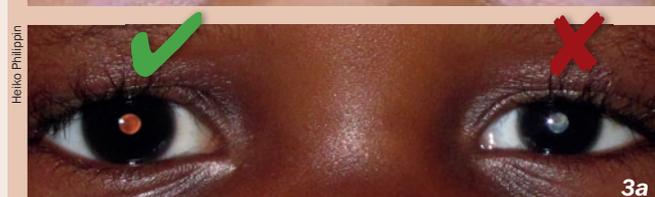
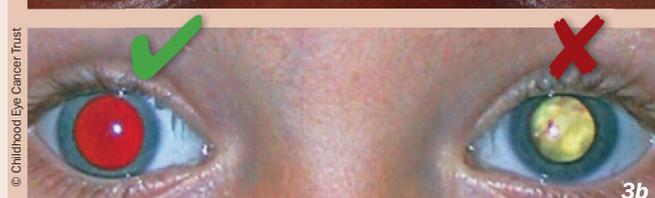


Figure 3. The wrong colour in a red reflex is abnormal and could indicate a serious condition

3a. The child in this image has a cataract in the left eye. Refer the child to a specialist



3b. The child in this image may have retinoblastoma in the left eye. Refer the child to a specialist



Figure 4. The red reflex is less bright in the left eye and the corneal reflection is not centred. This is a squint, which may be the result of a serious underlying condition. Even if there is no underlying condition, squint may lead to amblyopia (loss of function in the visual cortex), which is irreversible if not treated urgently. Refer the child to a specialist



Adapted from the poster: 'See RED' produced by JR Ainsworth, UK National Retinoblastoma Service, Birmingham, UK and the Childhood Eye Cancer Trust. [www.chect.org.uk](http://www.chect.org.uk)  
First published in the *Community Eye Health Journal* French edition, Issue 8, 2011.

# Understanding your operating microscope's assistant scope and beamsplitter



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In a previous issue (*Community Eye Health Journal* Vol 27 Issue 85) we reviewed ophthalmic operating microscopes. We learnt that they often include a second set of binoculars, part of what is commonly called an assistant or teaching scope, which allows another person to view the operation at the same time as the surgeon in charge.

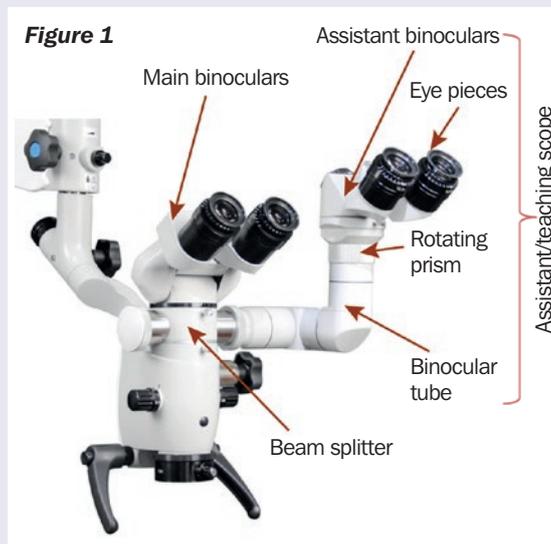
This is made possible by the beam splitter, which connects the assistant scope to the main visual path of the operating microscope. The optical components of the assistant scope (Figure 1) are almost identical to the main scope and consist of either fixed or inclinable binoculars. These have adjustable eyepieces for users with refractive error and a stereo observation tube that makes it possible to adjust the binoculars to a position comfortable for the assistant surgeon or trainee.

In modern microscopes, the magnification and focus of the assistant scope match those of the main scope and are controlled by the surgeon in charge, using the foot pedal.

The assistant scope has a rotating prism that allows the observer to orient the field of view. For **observation or teaching**, the field of view of the assistant scope coincides with that of the main scope, used by the surgeon. For example, if the surgeon says 'See the spot at 3 o'clock', the observer must also see it at 3 o'clock. For **an assistant surgeon**, the field of view of the assistant scope must be oriented to match the assistant's own position. The position of 3 o'clock as seen by the main surgeon would thus be at the 6 o'clock or 12 o'clock position for the assistant, depending on whether she/he is located to the right or left of the main surgeon.

The beam splitter splits the light path to allow a video camera, digital camera, or an assistant scope to be attached to the microscope. Beam splitters can have one port, or adapter (Figure 2a), or two ports (Figure 2b).

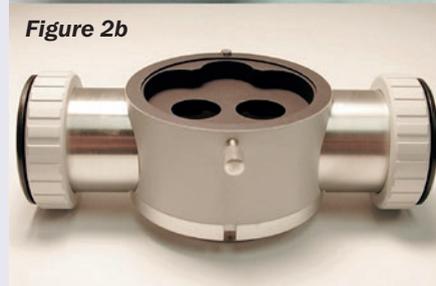
Each beam splitter has a specific split ratio such as 50:50 or 70:30. The split ratio is marked on the body of the beam splitter.



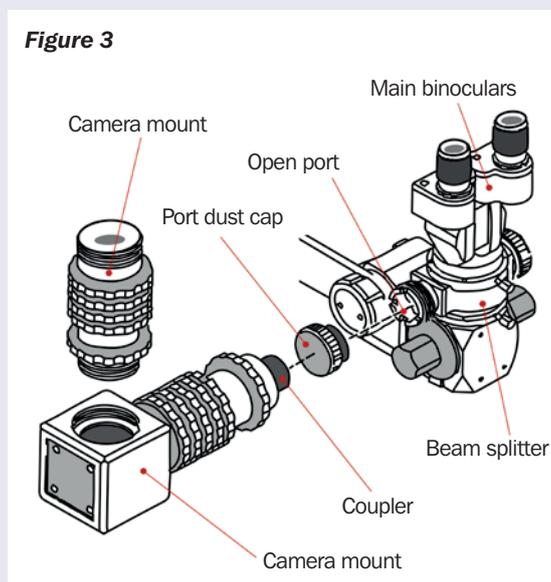
**Figure 1**



**Figure 2a**



**Figure 2b**



**Figure 3**

In the case of a 50:50 beam splitter, the amount of light is split equally between the main binoculars and the attachment(s), which is what is needed when an assistant scope is used.

A 70:30 beam splitter is used for photography and video. In this case, 70% of the light is directed to the main binoculars while the other 30% is directed to the attachment where the camera is connected.

The assistant scope, camera and other attachments connect to the beam splitter by means of a coupler that is made to fit the port of a particular model of beam splitter (Figure 3).

## Useful tips

- It is important to note that beam splitters, assistant scopes and other attachments are made for specific models of operating microscopes. For instance, if you have a Zeiss model microscope you will need a compatible Zeiss model beam splitter and assistant scope. Many beam splitters and other attachments made by one manufacturer will not work on other brands of microscopes.
- You may need to adjust the balance and tension settings of the microscope suspension arm following the addition of beam splitters, assistant scopes, cameras and other accessories. Also, the surgeons may need to get used to the weight and balance of the additional equipment. There is a limited amount of weight a suspension arm can effectively hold. This weight is normally labeled on the suspension arm and, if not, this information can be found in the microscope's user manual.
- If you are considering obtaining an operating microscope for microsurgical training, it is an absolute necessity to have an assistant or teaching scope. Without it, microsurgical training cannot be effective.
- You can find refurbished assistant scopes and beam splitters that cost much less than new units.
- If you are not planning to use an assistant scope or camera, or to video record the operation, it is always good to remove the beam splitter and assistant microscope, camera or other attachment so that the image brightness is better.

# The SAFE strategy for trachoma control: poised for rapid scale-up



**Paul Emerson**

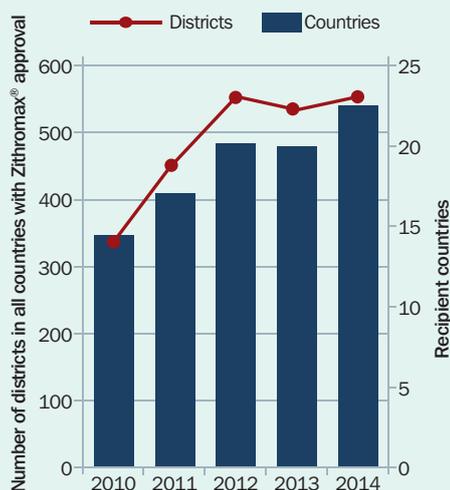
Director: International Trachoma Initiative, Decatur, USA.

[Pemerson@trachoma.org](mailto:Pemerson@trachoma.org)

In 1998, all member states of the United Nations signed up for the Global Alliance for the Elimination of Blinding Trachoma by 2020 (GET 2020) through World Health Assembly resolution 51.1. This called on member states to complete the mapping of blinding trachoma in the remaining endemic areas and implement the SAFE strategy for trachoma control. Compiled data held by the International Trachoma Initiative (ITI) and the World Health Organization (WHO) indicated that, by 2010, as many as 1,090 districts in 36 of the estimated 57 trachoma endemic countries had been mapped. Moreover, the full SAFE strategy, including mass drug administration with oral azithromycin (Zithromax®) donated by Pfizer, was underway in 347 districts.

Global progress in trachoma mapping and implementation of the integrated SAFE strategy (see panel) was reviewed by the International Task Force for Disease Eradication (ITFDE) in 2010.<sup>1</sup> The ITFDE concluded that the elimination of blinding trachoma was achievable and that significant progress had been made. However, it also noted that the pace and scale of interventions needed to be accelerated in order to reach these goals. Progress in the scale of implementation of the 'A' component of the SAFE strategy from 2010 to 2014 is shown in Figure 1. In 2014, 25 trachoma endemic countries have planned – and are adequately

**Figure 1. Expansion in countries and districts receiving Zithromax® for trachoma elimination 2010–2014**



resourced – to implement the SAFE strategy in 541 districts, a 55% increase since 2010.

In 2012 the International Coalition for Trachoma Control (ICTC) produced a strategic plan that laid out actions to take, and milestones to meet, in order to achieve global elimination of blinding trachoma by 2020.<sup>2</sup> This included a list of confirmed trachoma endemic countries, and another 1,293 districts suspected to be trachoma endemic, which needed to be mapped.

Sightsavers, in collaboration with ICTC partners, secured funding from the British government for the Global Trachoma Mapping Project (GTMP).<sup>3</sup> Since the start of this project, 1,061 districts representing a population of 124 million people in 20 countries have been mapped<sup>4</sup> and the GTMP has plans to survey an additional 862 districts (including districts in 11 additional countries).

The purpose of the GTMP is to provide the data required to chart the progress of the WHO-led GET 2020 Alliance, and to indicate which countries and districts require the greatest investment. Impact assessment data reported to ITI by the national programmes demonstrate that where trachoma is entrenched (baseline prevalence of TF in children aged 1–9 years is 30% and above), even 5 years of intervention with SAFE is insufficient to achieve the elimination goals of reducing TF to less than 5%, and of reducing the prevalence of TT in the whole population to less than 0.1%. These districts need to be immediately prioritised for urgent action and intensive intervention as we are working against the clock to reach elimination of blinding trachoma by 2020.

The ICTC membership have worked tirelessly with funding organisations, and, with generous support from the Queen Elizabeth Diamond Jubilee Trust, USAID, DFID, Lions Clubs International Foundation, the Conrad N Hilton Foundation and others, anticipate being able to bring in US \$180 million in new funding for trachoma implementation over the next 5 years. Pfizer, which donates the antibiotic used in mass drug administration, is also preparing to donate over 100 million doses a year starting in 2015.

Rapid scale-up for maximum impact is ongoing, or planned, in Ethiopia, Kenya, Uganda, Senegal, Tanzania, Chad, Central African Republic, South Sudan,

Nigeria, Malawi, Mozambique, Solomon Islands, Guinea, Yemen, and Zambia. Several other countries, such as Nepal, Sudan, Burkina Faso, Mali, Niger, Cameroon and Guinea-Bissau, are already implementing at or near national scale (where internal security allows it). With the confluence of data, financial resources, donated drugs, and – most importantly – political will to get the job done by the endemic countries, the GET 2020 Alliance is poised for the required scale-up, making the prospects for achieving the target of freeing the world of blinding trachoma that much more real.

## References

- 1 Available at: [www.cartercenter.org/resources/pdfs/news/health\\_publications/itfde/ITFDE-summary-101210.pdf](http://www.cartercenter.org/resources/pdfs/news/health_publications/itfde/ITFDE-summary-101210.pdf)
- 2 Available at: [www.trachomacoalition.org/node/713](http://www.trachomacoalition.org/node/713)
- 3 Solomon A, Kurylo E. The Global Trachoma Mapping Project. *Community Eye Health Journal*. 2014;27(85): 18.
- 4 Read more at: [www.trachomaatlas.org](http://www.trachomaatlas.org)

## The SAFE strategy for trachoma control

**Surgery:** For patients with severe blinding trachoma, eyelid surgery is needed to reposition turned-in eyelashes (trichiasis) so they do not scrape against the cornea.

**Antibiotics:** an annual dose of oral azithromycin or topical tetracycline is used to treat infection and decrease transmission in endemic districts.

**Facial cleanliness:** face washing helps to reduce transmission of trachoma by discouraging eye-seeking flies and washing away the bacteria they leave behind.

**Environmental improvements,** such as access to water and basic sanitation, reduce exposure and infection.

## What is 'scale-up'?

'Scale-up' means making a special effort to do something in a bigger way in order to improve some aspect of a population's health. Approaches to scaling up the SAFE strategy include improving the infrastructure for distribution of azithromycin, increasing the number of qualified surgeons who can provide trichiasis surgery, and enhancing the promotion of facial cleanliness, hygiene and environmental change in order to interrupt transmission.



## Useful resources: teamwork for eye care

### Training

A World Health Organization (WHO) module on **supportive supervision** is available for free download from:

[www.who.int/immunization/documents/MLM\\_module4.pdf](http://www.who.int/immunization/documents/MLM_module4.pdf)

MSc and short courses in **human resources for health** are available at Queen Margaret University, Edinburgh, Scotland, UK. Visit [www.qmu.ac.uk](http://www.qmu.ac.uk)

Courses in **management** are available at Aravind Eye Care System in India. Visit [www.aravind.org/aurovikas/WebTrainingCalendar.aspx](http://www.aravind.org/aurovikas/WebTrainingCalendar.aspx)

### Further reading

**Garg P, Reddy S, Nelluri C. training the eye care team: principles and practice.** Middle East African Journal of Ophthalmology, 2014; 21(2).

**Araujo E, Maeda A. 2013. How to recruit and retain health workers in rural and remote areas in developing countries.** Available from: <http://documents.worldbank.org/curated/en/2013/06/17872903/recruit-retain-health-workers-rural-remote-areas-developing-countries>

### Courses

**London School of Hygiene and Tropical Medicine, London, UK**  
MSc Public Health for Eye Care, starting September 2014. To apply, visit [www.lshtm.ac.uk/study/masters/mscphec.html](http://www.lshtm.ac.uk/study/masters/mscphec.html)

**German Jordanian University, Amman, Jordan**  
Professional diploma and MSc in Vision Rehabilitation. For more information, visit <http://tinyurl.com/rehabcourse>. Email: [vtc@lju.edu.jo](mailto:vtc@lju.edu.jo)

### Community Eye Health Institute, University of Cape Town, South Africa.

Short courses and MSc. Contact Zanele Magwa, Community Eye Health Institute, University of Cape Town, Private Bag 3, Rondebosch 7700, South Africa. Tel: +27 21 404 7735. Email: [ntombizanele.magwa@uct.ac.za](mailto:ntombizanele.magwa@uct.ac.za)

### Lions Medical Training Centre, Nairobi, Kenya

Small Incision Cataract Surgery (SICS). Write to: The Training Coordinator, Lions Medical Training Centre, Lions SightFirst Eye Hospital, PO Box 66576-00800, Nairobi, Kenya. Tel: +254 20 418 32 39

### Kilimanjaro Centre for Community Ophthalmology International

Visit [www.kcco.net](http://www.kcco.net) or contact Genes Mng'anga at [genes@kcco.net](mailto:genes@kcco.net) and/or [genestz@yahoo.com](mailto:genestz@yahoo.com)

### Paediatric cataract DVD

This paediatric cataract surgery DVD, by Albrecht Hennig, is for ophthalmologists undertaking cataract surgery on children on a regular basis. To receive a free copy, send your address details and a brief description of the service you provide to: Anita Shah, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK. [admin@cehjournal.org](mailto:admin@cehjournal.org)

### ICO fellowships

One-year and 3-month fellowships are available to ophthalmologists working in low- and middle-income countries. Visit [www.icoph.org/refocusing\\_education/fellowships.html](http://www.icoph.org/refocusing_education/fellowships.html)

### Subscriptions



Send your name, occupation, email and home address to: Anita Shah, ICEH, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK. [admin@cehjournal.org](mailto:admin@cehjournal.org)

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## CEHJ online article

This issue contains one article which is available online only: 'Near visual acuity in an inner city Hispanic community: understanding the barriers and benefits of correction'. Visit [www.cehjournal.org](http://www.cehjournal.org) to read it or download the PDF. Available on the next Community Eye Health Update CD.



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- Research mentorship awards – up to £15,000.

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Please visit [www.bcpb.org](http://www.bcpb.org) or contact Diana Bramson, Administrator, BCPB, 4 Bloomsbury Square, London WC1A 2RP. Tel: 44 (0) 20 7404 7114 or email: [info@bcpb.org](mailto:info@bcpb.org)

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# Community Eye Health

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## Next issue

The next issue of the *Community Eye Health Journal* is called **Diseases at the back of the eye**

Clare Gilbert



# Near visual acuity in an inner city Hispanic community: understanding the barriers and benefits of correction

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**Christopher Guerrero**

Physician: Department of Family Medicine, University of Illinois at Chicago, Chicago, USA.

**Wanda Jettka Korcz**

Clinical instructor: College of Nursing, University of Illinois at Chicago, Chicago, USA.

**David J Ramsey**

Vitreoretinal fellow: Massachusetts Eye and Ear Infirmary, Harvard Medical School, Boston, USA.

Presbyopia is age-related loss of accommodation that gradually impairs near vision. Few studies have examined the burden of presbyopia in the United States of America (USA)<sup>1,2</sup> and none have examined it in economically disadvantaged or minority populations, in which there are increased rates of visual impairment and decreased use of eye care services.<sup>3,4</sup>

In our study, individuals  $\geq 35$  years of age who attended an employment fair sponsored by the Illinois Department of Employment Services (IDES) in the Pilsen neighborhood of Chicago were invited to undergo testing of their near vision and to be fitted with reading spectacles, if needed. Individuals with bilateral visual impairment or blindness, as determined by both a history and a screening examination with a penlight (to exclude gross abnormalities) were given information and instructed to seek an eye examination. In the remaining individuals, near acuity was measured at 40 cm, and 133 people were

## **‘Employment status correlated with the frequency with which patients accessed an eye care professional’**

identified as having functional presbyopia (i.e., near acuity could be improved by at least one line by placing a plus lens in front of either eye).<sup>5</sup> After this intervention, the 133 individuals with presbyopia were invited to complete a questionnaire based on the National Eye Institute’s Visual Function Questionnaire. They were asked about the benefits to them of correcting near vision and about



Pilsen neighborhood, Chicago, IL

what they considered to be the barriers to having their near vision corrected. All 133 completed the questionnaires.

The 133 respondents ranged in age from 36–85 years old. Their average age was 55 years and 57% were female (74 out of 133). Over 70% (n=96, 50 male participants and 46 female participants) were unemployed. The average uncorrected near acuity was

20/50 (6/15). After receiving reading spectacles, 80% achieved a near acuity of  $\geq 20/25$  (6/7.5). Uncorrected near acuity  $< 20/50$  (6/15) was associated with greater difficulty reading print ( $p < 0.02$ ) and perceived worse eyesight

( $p < 0.0001$ ) compared to those with uncorrected near visual acuity of  $\geq 20/50$ .

More than 98 per cent of respondents stated they could read. An improved ability to read was cited as the most important benefit of reading spectacles, with minimal impact perceived on other daily tasks (Table 1). Those who stated that reading spectacles would impact the task of reading print only to some degree



or not at all were younger ( $50 \pm 6$  years versus  $56 \pm 9$  years;  $p < 0.01$ ) and had better uncorrected near visual acuity ( $> 6/12$  versus  $< 6/15$ ;  $p < 0.05$ ). Similar associations were observed between uncorrected near vision and the perceived impact of reading spectacles on other tasks such as preparing meals, using hand tools or sewing, as well as grooming, shaving, or applying makeup. Neither employment status nor gender had a statistically significant impact on the perceived benefits of reading spectacles.

With regards to barriers to obtaining near vision correction, 49 per cent (n=64) of the respondents said that the cost of spectacles was a disincentive and 48 per cent (n=63) said that the lack of availability of an eye care professional greatly impeded them from obtaining spectacles (Table 1). Considering that a store selling reading spectacles for US \$1 was located next to the IDES office, this distribution of responses most likely reflects a lack of knowledge about the condition and its readily accessible treatment. Many people who require near vision correction can benefit from ready-made or ‘over-the-counter’ reading spectacles. These individuals should, however, undergo a full eye examination

**Table 1. Perceived barriers and benefits to correcting near vision**

	Percentage reporting perceived degree of impact (%)			
	Greatly	Moderately	Some	Not at all
<b>Barrier<sup>a</sup></b>				
Cost of reading spectacles (n=130*)	49.0	8.0	11.5	31.5
Employed (n=37)	46.0	2.7	18.9	32.4
Unemployed (n=93)	50.5	9.7	8.6	31.2
Availability of an eye doctor (n=131*)	48.0	6.0	9.0	37.0
Employed (n=37)	37.8	10.8	16.2	35.1
Unemployed (n=94)	52.1	4.3	6.4	37.2
<b>Benefit<sup>b</sup></b>				
Reading print (n=133)	82.7	10.5	5.3	1.5
Employed (n=37)	86.5	5.4	5.4	2.7
Unemployed (n=96)	81.3	12.5	5.2	1.0
Preparing meals, using hand tools, or sewing	47.4	15.0	12.0	25.6
Employed (n=37)	64.9	13.5	5.4	16.2
Unemployed (n=96)	40.6	15.6	14.6	29.2
Grooming, shaving or applying makeup (n=133)	30.8	10.5	10.6	48.1
Employed (n=37)	45.9	10.8	5.4	37.8
Unemployed (n=96)	25.0	10.4	12.5	52.1

<sup>a</sup> Degree to which each barrier was perceived to prevent correction of near vision. <sup>b</sup> Degree of impact of reading spectacles on selected tasks.

\* Three individuals from the overall study population did not provide answers to the cost barrier question and two individuals did not provide an answer to the question of availability of an eye doctor as a barrier

Note: due to rounding, some rows may not add up to 100%.

to check for other pathology or the effects of systemic conditions such as diabetes or high blood pressure.

Over two-thirds of the respondents (68 per cent) had been examined by an eye care professional at some point in their lives, but only 30 per cent (n=40) had been examined in the previous year. Our population was predominantly Hispanic and African American. Considering that the rates of blindness and visual impairment in these groups is significantly greater than that of non-Hispanic whites,<sup>3</sup> this amounts to suboptimal use of eye care services relative to the recommended guidelines for high-risk groups from the American Academy of Ophthalmology.

Employment status correlated with the frequency with which patients accessed an eye care professional. Whereas almost 80 per cent of respondents who were employed had seen an eye doctor, less

than 64 per cent of respondents who were unemployed had similarly accessed care (p<0.05).

In a country where services are readily available and spectacles are affordable, nearly half of the participants were not aware that this was case. All of the participants would have benefited from a pair of reading spectacles.

Our study is the first to examine how presbyopia affects a resource-poor population in the USA. The survey highlights the need for continued efforts to ensure that economically disadvantaged and minority populations gain access to eye care services and utilise them. Practical solutions include outreach activities and education of health care providers in low-resource communities about the ease with which their patients may remedy their prebyopic needs with inexpensive, over-the-counter, ready-made reading

spectacles. Health care providers should also be educated about the increased rates of blindness and visual impairment in the African American and Hispanic populations so that they can encourage and refer individuals in these population groups for regularly scheduled eye examinations.

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