

Patient safety in low-income countries



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The concept of 'first do no harm' is taught to every medical and nursing student. This phrase means that, as professionals, our first duty is to make sure that patients are not harmed as a result of their care.

Unfortunately, we know that many patients are harmed when receiving medical care. The World Health Organization (WHO) estimates that up to 10% of patients in high-income countries are harmed in such 'adverse events' or 'critical incidents' – events or incidents that caused harm to patients and could have been avoided.¹

There are many costs associated with harm – costs to the patient in pain, discomfort or distress, financial costs to the patient (e.g. through increased visits to the hospital) and financial costs to the health care system, with patients staying in hospital longer and/or requiring more – and different – treatments. There is also the emergence of legal costs as increasing numbers of patients are suing the hospital or clinician following a critical incident.

The large numbers of patients harmed and the resultant costs make a focus on patient safety incredibly important.

ABOUT THIS ISSUE

This issue of the *Community Eye Health Journal* is about patient safety. Ironically, when the focus of our day-to-day work is on improving the eye health of patients, it can be easy to overlook the central importance of safety. It is everyone in the eye team's responsibility to ensure that the day-to-day care we provide is safe and also patient-centred, so that patients will not just **be** safe, but also **feel** safe. Mistakes will happen – we are human, and humans make mistakes – but our task is to create systems and practices that reduce the risk of such 'critical incidents' taking place, and help us to learn from them if they do. This can only happen if everyone feels safe enough to report problems as they arise. We hope that this issue will help you to take time out from your daily routine to reflect on safety in all its aspects.



Lance Beilers/ICEH

The safety of our patients should be our first priority.
ETHIOPIA

There are two ways of approaching patient safety:

- 1 Preventing critical incidents.
- 2 Learning from critical incidents that have occurred and changing practice so that it does not happen again.

1 Preventing critical incidents

This is a focus on preventing harm. It involves the introduction of processes and procedures that reduce the risk of harm to patients. For example; everyone who conducts surgery changes clothes and

washes their hands before they start which is a way of preventing harm. By washing hands ('scrubbing') and changing clothes before surgery the risk of passing infection to the patient is reduced. Other examples of prevention activities include the WHO safe surgical checklist (which aims to ensure that the correct surgery is being performed on the correct patient using the correct methods and provides a formal method to check this), staff double-checking doses of drugs, making sure that all equipment is regularly maintained, sterilising instruments, plus many others.

Two of the key factors about these procedures are that they are routine (i.e. everybody does them every time the event occurs) and that they can be documented (e.g. the WHO Safe Surgical Checklist is completed and kept with the patient notes) so that it can be shown that the procedure was followed. If the procedures and protocols are only followed by some of the people, some of the time, then they are less effective. A good example of this is hand hygiene practice amongst staff:

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this has been shown to be variable in many hospitals, exposing patients and staff to the transmission of infection.

2 Learning from critical incidents

Even in the best clinics and hospitals, patients are sometimes harmed. It is important that medical personnel learn from any critical incidents and put things in place to stop the same incident from occurring again (and therefore preventing further patients from being harmed).

One of the key principles when learning from harm is 'no blame'. Our usual reaction when something goes wrong is to try and find someone to blame. However in many cases there are wider issues that have led to the mistake or incident.

Understanding the reasons behind mistakes helps the hospital to put procedures and protocols in place to try and prevent them from happening again. In the example (see panel) it might have been necessary to ensure that a specific number of staff members were on the ward on days when surgery was taking place; or that the IOL power was double-checked by the surgeon and theatre staff before being inserted into the eye.

Effective leadership is needed so that the staff members can learn from mistakes and make the hospital safer. There must be a system for investigating adverse events and finding out why they happened (page 26). Investigation should be done with the co-operation of the whole eye team because the solutions that make critical incidents less likely in the future usually require people to

Example

The wrong intraocular lens is inserted in a patient's eye, leaving him with very poor vision despite successful surgery.

Whose fault is it? The surgeon? The nurse? The person who recorded the biometry?

Finding out the reason for the mistake might identify staff members who may have been at fault but it is equally important to understand why they made an error. Were there too many patients and too few staff members? Was the patient elderly, making it difficult to conduct biometry? Were the theatre staff rushing because the surgeon arrived late for a busy operating list?

behave differently. If staff members see the reason for the change then they are more likely to adopt it. Blaming them, instead of exploring the issues that led to the incident, is likely to lead to a culture of fear where people try to hide problems and do not report critical incidents.

The articles in this issue explore different aspects of patient safety and provide ideas about how harm to patients can be prevented, including harm from endophthalmitis. There is also a focus on keeping yourself safe and healthy – without this, safe patient care is not possible.

Further reading

- 1 http://www.who.int/features/factfiles/patient_safety/en/ Accessed 29/06/2015
- 2 Seven steps to patient safety. NHS National Patient Safety Agency, 2004. www.nrls.npsa.nhs.uk/resources/collections/seven-steps-to-patient-safety/?entryid45=59787



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Keeping patients safe: a practical guide



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Patient safety is the prevention of avoidable errors and the harm they cause to patients; it is the foundation of good patient care. Achieving safety in patient care is part of achieving quality patient care.

When we think about patient safety, we normally think about the physical safety of the patient in terms things like prevention of cross-infection and safe site surgery and, indeed, we will consider those here. We also need to think about the non-physical aspects of patient safety – which are sometimes more difficult to deal with – so that we can achieve care that is **patient centred**. This means providing care that is respectful of and responsive to patient needs, beliefs and preferences; in other words, working **with** patients rather than doing things **to** them. This article will therefore also consider informed consent to treatment and some of the principles underlying working with patients in a patient-centred way.

Preventing harm and infection control

Preventing infection and cross-infection is important to protect both patients and

health care professionals. It is very easy to transfer infection-causing organisms (e.g. viruses and bacteria) from one place to another and therefore from one person to another. It is important in day-to-day life, but even more important in the hospital setting where patients may have reduced immunity or wounds, making them vulnerable to infection.

Hand washing

Hand washing is one of the most important actions we can take to prevent the spread of infections and therefore prevent loss of health, or even death. Hand washing will also protect health workers from infection and save money by reducing the need for expensive treatments once infection has occurred. When practiced routinely, it also provides a good example to patients, relatives and others in the eye team.

Before you hand wash

Remember that organisms can sit under your watch, your rings and your nail polish. This can make any hand washing ineffective. You should remove your watch, any rings with stones in (because of the dirt that can sit around the stone) and you really should not wear nail polish! Bacteria and dirt can sit under the end of a long nail so it is important to have short

nails when you work in health care, and especially in ophthalmology where we often have our fingers very close to the eye.

Scratches and wounds on your hand can harbour infection and can also become infected. They should be covered.

Once you have no jewellery, no watch, no nail polish, no false nails, no long nails, no cracked skin or open wounds (including cuts or cracked skin), **you are ready to wash your hands.**

Before you start to wash, work out why you need to wash your hands. Are you handwashing:

- at home, in between tasks?
- at work, while caring for patients?
- in surgery?

Everyday hand washing

You should do this before touching food, after using the toilet, after gardening or playing with pets, or doing anything that is dirty. It can be a 30–40-second wash with soap and clean water, with your hands dried on a clean towel.

Hand washing in a care setting

This should take place before and after caring for a patient, after using the toilet, before and after food, and after dealing with any dirty or contaminated material. It should be a 30–40-second wash, as at home: cleaning the whole hand and wrist. This can be carried out with hospital approved liquid soap and water (solid soap can harbour organisms) or with antimicrobial gel or foam (hand sanitiser). You should dry your hands with a clean disposable paper towel and make sure that they are dry before you do your next task. The type of soap used at home is generally not adequate for use in the hospital but if you have nothing else, it is certainly better than nothing.

If you are using hand sanitiser, rub it into all the surfaces of your hands and wrists, as you would when washing with water, until it has dried.

Surgical scrub

This is a systematic and much longer hand wash and scrub using an antiseptic washing solution before surgery.

In the hospital or care setting, the soap or solution to be used should be placed next to where you should use it, but do check if you are not sure. Dispensers and taps usually have long handles which can be operated by the elbow, so that scrubbed hands remain absolutely clean.

Continues overleaf ➤

Figure 1. Six steps to handwashing



Hand hygiene

The World Health Organization's (WHO) **5 Stages for Hand Hygiene**¹ is applicable everywhere and states that you should wash your hands:

- 1 Before touching a patient.
- 2 Before clean/aseptic procedures.
- 3 After body fluid exposure/risk.
- 4 After touching a patient.
- 5 After touching patient surroundings.

Concerning hand washing, all health workers have the responsibility to:

- Practice safe hand washing techniques.
- Be pro-active: lead by example and encourage others to do the same.
- Educate patients and colleagues.

Clean patients

Before surgery, the patient needs to be clean. There is little point in the nurses and health care workers making sure that they, the theatre and the instruments are clean if the patient is bringing contaminants into the theatre. It is risky for them and it is risky for other patients in the

area. Depending on local circumstances, the patient may wash at home or in the hospital but they will need information before their operation so that they know about this. When the patient is in hospital, it is good practice to provide a culturally appropriate environment where they are able to wash daily, and to encourage hand washing before food and after toileting. It helps to maintain good hygiene standards at the health facility and sets a good example which they can then take home with them.

World Health Organization's Safe Site Surgery

It is important that the right patient gets the right operation to the right part of their body with the right methods at the right time.

It can be a very damaging for all concerned if this does not happen. In order to help this process, the World Health Organization's (WHO) Safe Site Surgery Guidelines² was developed.

The guidelines suggest that checks are done at three points in time: before anaesthesia (sign in), before incision (time out), and before the patient leaves

the operating room (sign out). These are the points in time when everybody involved stops what they are doing to focus on the safety of the patient.

The checklist should be completed by all members of the medical team, including the surgeon and anaesthetist. These checklists have now been incorporated into hospitals around the world.

Figure 1 gives the generic WHO surgical safety checklist which can be adapted to suit the hospital or procedure. For example, the United Kingdom has its

own cataract surgery safety checklist, which is available online.³

Before starting the operation, all members of the team within a particular clinical area must check that the patient's details in the chart correspond with the patient in front of them and that they have all the equipment, stock, medications and instruments required (the medication and stock must be in-date) and that any issues for each department have been raised, discussed and followed up as needed.

Figure 2. Surgical safety checklist

Before induction of anaesthesia	Before skin incision	Before patient leaves operating room
Sign in <ul style="list-style-type: none"> <input type="checkbox"/> Patient has confirmed <ul style="list-style-type: none"> • Identity • Site • Procedure • Consent <input type="checkbox"/> Site marked/not applicable <input type="checkbox"/> Anaesthesia safety check completed <input type="checkbox"/> Pulse oximeter on patient and functioning Does patient have a: Known allergy? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes Difficult airway/aspiration risk? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and equipment/assistance available Risk of >500ml blood loss (7ml/kg in children)? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and adequate intravenous access and fluids planned 	Time out <ul style="list-style-type: none"> <input type="checkbox"/> Confirm all team members have introduced themselves by name and role <input type="checkbox"/> Surgeon, anaesthesia professional and nurse verbally confirm: <ul style="list-style-type: none"> • Patient • Site • Procedure Anticipated critical events <input type="checkbox"/> Surgeon reviews: what are the critical or unexpected steps, operative duration, anticipated blood loss? <input type="checkbox"/> Anaesthesia team reviews: are there any patient-specific concerns? <input type="checkbox"/> Nursing team reviews: has sterility (including indicator results) been confirmed? Are there equipment issues or any concerns? Has antibiotic prophylaxis been given within the last 60 minutes? <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable Is essential imaging displayed? <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable 	Sign out <ul style="list-style-type: none"> Nurse verbally confirms with the team: <input type="checkbox"/> That the name of the procedure has been recorded <input type="checkbox"/> That instrument, sponge and needle counts are correct (or not applicable) <input type="checkbox"/> That the specimen is labelled (including the patient's name) <input type="checkbox"/> Whether there are any equipment problems to be addressed <input type="checkbox"/> Surgeon, anaesthesia professional and nurse review the key concerns for recovery and management of this patient

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged. Based on the WHO Surgical Safety Checklist.

Waste management

Make sure a policy on waste management is familiar to all staff. This includes ensuring that contaminated waste is disposed of correctly. Gloves must be worn when handling waste and hand washing is a must after touching contaminated waste or waste and fluids generated during surgery. Colour coding of different types of waste is used widely and it is important not to mix up waste that is dealt with in different ways. Waste or leftover fluids should not be put down the drain (which could result in splashes to the nurse), but should be handled as contaminated waste, in the prescribed manner. Waste bins and lids should be cleaned regularly.

Cleaning

Remember to wash equipment between patients and again at the end of the day. You need to find out what the standards are for cleaning equipment and you must make sure that you and your colleagues

clean everything at the beginning of a clinic, in between patients and at the end of the session.

Special items, such as curtains, still need to be cleaned, but not every day. Check your policy to see when special items need to be cleaned (i.e. monthly, quarterly, or bi-annually).

It is always worth asking yourself: 'Would I want to be examined with this equipment? Am I confident I won't 'catch' anything from it?' If the answer is no, then you really do need to make sure that you do something about it!

Patient identification

Many countries place a waterproof wrist band onto a patient's arm containing the same identification information as in the patient notes. One can be checked against the other to ensure you are dealing with the correct patient. Colour coding can be used to indicate allergies and other conditions such as diabetes.

A more affordable alternative is to write patient details on heavy-duty surgical tape applied to the surgical gown.

Marking the surgical site

Marking the surgical site is also recommended to ensure surgery is conducted on the correct side of the body and to the correct body part. The surgeon may be responsible for marking the site, and in eye surgery, the mark is placed above the eye. Nursing staff must not rely on the fact that marking is always correct, because mistakes do happen. Nurses should check the chart and ask the patient too. Patients undergoing bilateral surgery should have a mark over both eyes.

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- 1 Five moments for hand hygiene. http://who.int/gpsc/tools/Five_moments/en/
- 2 WHO surgical safety checklist. WHO, 2008. www.who.int/patientsafety/safesurgery/ss_checklist/en/
- 3 WHO surgical safety checklist for cataract surgery (NHS) <http://tinyurl.com/p42n39f>

Patient rights, dignity and respect

Eye care professionals are responsible for working as a team to ensure that patients are safe, and that they also feel safe. Patients will **feel** safe and well cared for when their rights are respected and when they are treated with dignity.

At all stages of their care, patients must understand what is happening or is about to happen to them. If you realise that a patient does not understand what she or he has been told, you have a duty of care to inform and involve the appropriate professional, or to give the correct information and check that the patient really does understand. It is also very important that patients are given consistent information about their condition and care. While it is the doctor's role to provide information on diagnosis and treatment to patients and their families, the nurse must know what information has been provided. This is because patients often talk to the nurse and ask questions they would not ask the doctor, perhaps because they may feel awkward or embarrassed, or simply because there is not enough time to talk to the doctor.

Consent

Consent for treatment is taken in writing, usually when the patient signs a consent form. Another person (e.g. a member of the eye care team, or a family member) must witness the form by signing and dating it and a copy must be given to the patient. Before patients sign the consent form, check that they understand the following.

- The risks and benefits of the proposed treatment.
- Any alternatives to the proposed treatment.
- The results of not having treatment.

Patients must have an opportunity to ask questions and have all their questions answered so that they can make a free and independent decision. The patient has the right to refuse or to question the treatment offered to them and their refusal is absolutely final, even if we think it is in their best interests to have the treatment. So we have a duty to **inform** our patients, but not to **make** them do something they do not want to do.

Patients should be told who will be part of the team looking after them (such as students). If photos are taken, patients must give consent for these to be used.

Religious beliefs

Be aware of spiritual and religious beliefs and, where possible, reassure patients or provide information that can enable them to reconcile the proposed treatment with their religious or spiritual beliefs. For example, women wearing religious head wear must know at the outset that their head wear must be removed before surgery, but that this will be done sensitively and with respect, and that this is allowable within their religious practice.

Religious or spiritual leaders can often help the team to deal with special religious

needs such as dietary requirements or fasting and can also reassure patients about their spiritual life.

Privacy and security

As health professionals, nurses have a responsibility to ensure the patient's privacy and security at all times. The patient has a right to expect that their information is kept confidential.

Do not:

- disclose the patient's details to anyone other than the patient, their guardian/carer if they have one, or a family member who the **patient** has identified
- allow the patient's details to be known by others, which means keeping charts and notes in a secure place at all times
- discuss patients outside the clinical environment.

Ensure that:

- the patient is safe, comfortable and not in danger at any time. Danger includes things like trips, falling out of bed, eating when they are not supposed to, or contracting an infection in the hospital
- patients are being given their medications as prescribed, and are shown how to safely instil eye drops, if required
- medications and chemicals are stored safely so they cannot be used on purpose or by accident by patients, visitors or anyone who should not have access to them.



The importance of critical incident reporting – and how to do it



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If you asked a group of people whether you were more likely to die from an accident when you were in hospital or when you were travelling, either by air or by car, most people would probably say that it was safer to be in hospital. In fact, this couldn't be further from the truth. If you are a patient, you are a hundred times more likely to die from a critical incident or error in hospital than you are in a transport accident.¹ Hospitals are dangerous places. Modern treatments are powerful and complex and health care workers face many pressures in terms of workload and funding. In the UK National Health Service (NHS) it is believed that a serious adverse event or critical incident occurs in up to 10% of all hospital admissions. That amounts to about 850,000 adverse events per year² and costs the NHS billions of pounds every year in increased hospital costs, treatments and litigation. The World Health Organization (WHO) estimate that, worldwide, 20–40% of all health care spending is wasted due to poor quality care.

Unfortunately, the health care sector worldwide has been both slow and unimaginative in tackling this huge problem.

Human error, and unsafe procedures and equipment, underlie many of the disasters which occur. Everyone makes mistakes. It is part of being human. Good doctors and good nurses make mistakes, but critical incidents are rarely caused by one person alone.³ And yet, traditionally, the response has been to blame those involved and to fail to put systems in place which help to guard against similar problems and errors occurring in the future. All too often, therefore, the same errors have been made repeatedly. This all means that health care staff tend not to report mistakes or 'near misses' (errors or disasters that have been narrowly avoided), fearing that if they do so they will be blamed and punished. And this in turn means that senior medical, nursing and management personnel do not get the information they need in order to make the service safer. When the same mistakes occur repeatedly, this is a tragedy, and a gross failure of the care we should

“To err is human, to cover up is unforgivable, and to fail to learn is inexcusable.”

Prof Liam Donaldson – WHO Envoy for Patient Safety



Rachel Palmer/Sightsavers

Safety is the responsibility of all staff, no matter how junior or senior they are. MALAWI

deliver for our patients.

The aerospace industry has adopted a fundamentally different approach. For many years, all staff have been encouraged to report problems, failures and mistakes. Safety is the responsibility

of all staff, however junior or senior they are, and the culture fosters safety as everyone's first priority. No-one is criticised for reporting a problem – indeed *failure* to report a problem is treated very seriously, and staff have a degree of immunity from any disciplinary action if issues are reported promptly. As a result of

this, flying in a commercial airliner is the safest way of travelling, far safer than travelling by car.

Although it is impossible to prevent errors, it is possible to put in place procedures which act as barriers to making mistakes. For example, just as airline pilots use a simple checklist when preparing for a flight, an operating theatre checklist can help to ensure that the right patient has the right operation on the right part of the body (page 24). However, if no-one knows what kind of problems are occurring, and how often, it is impossible to design systems which will make health care safer. For example, if there are no reports of drug errors, no-one will know that prescription sheets are confusingly set out. It follows, therefore, that the first, vital, step in

improving patient safety is to put in place a completely open system of reporting of all adverse incidents and near misses.

How to set up an effective reporting system

- 1 Set up a clinical governance group of senior personnel who are sufficiently experienced to analyse the information and have the authority to make changes in the hospital. The group should have representatives from all relevant departments, and include a senior doctor, a senior nurse, a pharmacist and the hospital manager.

Clinical governance group

- Senior doctor
- Senior nurse
- Hospital manager
- Pharmacist

Information required on an incident reporting form

- Patient name and hospital number/ date of birth
- Date and time of incident
- Location of incident
- Brief, factual description of incident
- Name and contact details of any witnesses
- Harm caused, if any
- Action taken at the time
- Name and contact details of the person reporting the incident

- 2 Design a simple incident reporting form. If the form is long and complicated, people will be reluctant to fill it in.
- 3 Make sure that the forms are available in each clinical area.
- 4 Make sure that the completed forms can be sent to the clinical governance group confidentially, so staff members can be confident that the information they provide is kept private.
- 5 Encourage reporting. This is the difficult part. Because of the culture of blame which has existed for years, staff members may feel they will be victimised if they report incidents. The vital issue is trust. Without trust there is no team, and no teamwork. For the system to work, staff members who report incidents must trust the senior staff and management to treat them justly and not blame them unfairly or make them a scapegoat. Senior staff and management must trust the team to exercise due vigilance, attend training, and to report problems when they occur. Some ways of encouraging reporting are listed in Table 1.

Patient safety is everyone's business. Medical accidents cause suffering to our patients and their relatives, waste huge amounts of money, and are a cause of stress, anxiety and burnout in clinical staff. Improving safety is not a question of 'trying harder', but of learning from our mistakes. To do that we need to identify where we go wrong.

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- 3 NHS Department of Health Report. An Organisation with a Memory. 2000. P49
- 4 NHS Department of Health Report. An Organisation with a Memory. 2000.

Table 1. Ways of encouraging reporting of adverse incidents

Lower the threshold of reporting	Staff should report even minor incidents and 'near misses', which are just as important as major events in identifying and analysing problems with safety.
Make it clear that the analysis will be looking at all the factors involved, not the actions of one individual	Training can help to reinforce the concept that incidents rarely have one cause but are almost always multifactorial. All institutional issues should be included in the analysis. It is paramount that everyone understands that patient safety is the business of the whole team. ⁴
Analyse the results logically and formulate an action plan	Identify the cause of the incident. Focus on the story, and all the contributory issues, not on the individual. Look for all the underlying causes, not just the 'final error' which led to the incident. Include the possibility of understaffing, poor design of systems, poor performance, inadequate skill levels, etc. Come up with an action plan which addresses these – perhaps increasing staffing, improving training, improving systems, or using checklists and other protocols to provide barriers to errors. Look for a long-term result, not a short-term fix.
Feed back the results of the process	Those who report incidents should be informed of the results of the investigation and the action taken. Key action points should be shared with all clinical staff members. Regular training meetings for all staff members – a team-based approach – should give an outline of some incidents, the problems which lead up to them, and the action taken. Failure to communicate the outcomes to the whole team is cited as a major cause of failure of hospital reporting systems.
Take action to prevent future incidents	It will take time for staff members to accept that reporting incidents will not land them in trouble. When they see visible changes, and are made aware that their commitment to safety is valued, most health care workers embrace the reporting system.
Foster a Team approach	Make it clear that everyone has a vital role to play. Junior doctors and nurses in particular should be encouraged to contribute, because they may see events and near-misses which more senior staff do not. Senior medical and nursing staff can set an example by completing reports themselves. Ensure that hard-working staff feel valued, and support those who experience stress as a result of being involved in a clinical incident.

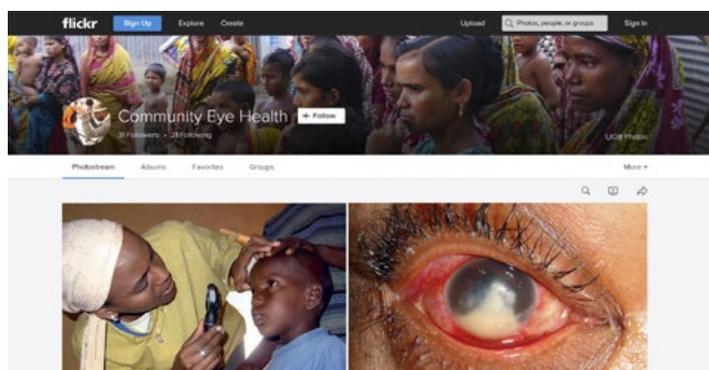
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Protecting yourself at work



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You need to look after your body when you are at work. This not only prevents you from being injured but it also prevents you from living the remainder of your life with a long-term injury. If you do get injured at work, it may reduce your ability to continue to do that job – which means you might not be able to bring the same amount of money home to support your family. Therefore, anything you can do to protect yourself from injury is important and you must prioritise your health and safety at all times while at work.

Every person has a responsibility to keep themselves and others as safe as possible. Do not take short cuts on safety. Here are some tips on how you can protect yourself, your colleagues, and your patients.

Know the relevant policies and guidelines

Read your hospital's Workplace (Occupational) Health and Safety policy. This policy outlines the hospital's approach to health and safety in the workplace. Workplace Health and Safety (WHS) is a major component of the risk that hospitals actively manage on a day-to-day basis. This policy is generally supported by other country/regional guidelines or legislation, and accompanied by the hospital's incident reporting system. Additionally, various risk registers and checklists usually accompany the WHS policy.

Identify potential hazards

It is good practice to develop a risk register where members of the team can write down any potential issues or hazards (e.g. loose cables, or a problem with medication) as they become aware of them.

The next step is to prioritise each issue or hazard so you can deal with the most important ones first. Assess each issue or hazard in terms of:

- 1 the consequence if this issue or hazard causes harm
- 2 the likelihood that the issue or hazard will cause harm

Table 1 can help you to prioritise each potential issue or hazard. Look up the consequence (the rows) and the likelihood that it will happen (the columns); where these intersect you can read off how

Table 1. Assessing the importance (extreme, high, medium or low) of potential hazards

Consequence of issue or hazard causing harm	Likelihood of potential hazard causing harm				
	Very likely	Likely	Possible	Unlikely	Highly unlikely
Fatality	Extreme	Extreme	Extreme	High	Medium
Major injury	Extreme	Extreme	High	Medium	Medium
Minor injury	High	High	High	Medium	Medium
First Aid	High	Medium	Medium	Low	Low
Negligible	Medium	Medium	Low	Low	Low

important this particular hazard or issue is and how it should be prioritised.

- **Extreme and high risk.** It is extremely important to do something about this hazard immediately
- **Medium and low risk.** This hazard may not need your immediate attention, but it should be rectified as soon as it is practical to do so.

Deal with potential and actual hazards

Once you have prioritised each hazard or issue, work out how to prevent them from causing harm to patients. For example, you can redesign a task to remove an unsafe work practice (e.g. replacing noisy equipment, choosing a less toxic chemical, or providing a trolley for moving heavy files). Here is a list of steps.

- Gather as much information as possible about the potential hazard (do a risk assessment)



Rachel Palmer/Sightsavers

Use correct manual handling techniques to protect your back at work. MALAWI

- Develop and implement a solution to the hazard.
- Look back at the hazard to see if it has been solved or has created another problem (do a review).
- Follow-up after the event – i.e. complete an incident report, talk with your team about what happened, and help to find a way to prevent it in the future. Use the event as an opportunity to educate others.

If something goes wrong:

- Keep yourself safe.
- Rectify the situation if safe to do so within your scope of practice
- Get help if you need it.
- Report it.

IMPORTANT: Never place yourself or others in harm's way!

Look after your work areas

- **Communal areas – i.e. kitchen, meeting rooms, patient waiting areas.** These areas, especially the kitchen, can be dangerous. Staff members must be diligent to prevent and report possible issues. Be careful in this area because both water and electricity are commonly found in the same space – their mix can be dangerous.
- **Maintenance areas – i.e. gas cylinder areas, cleaner's cupboard, biomedical workshops and boiler rooms.** Be extremely careful in these areas. Only enter with permission from the maintenance team. Heat, chemicals, electricity and water may all be hazards in these areas. A strict 'approved-authorisation-only' policy should be enforced.
- **In the office.** Look after computer electrical cables and make sure that



You must prioritise your own health and safety at all times when you are at work.
SIERRA LEONE

computers and other electrical equipment cannot overheat. Be careful of tripping over items on the floor too. Have chairs and desks at the correct height to prevent back injury.

- **In the clinic.** Clear the pathways for patients. Make sure equipment and stock cannot be tampered with. Have hand wash and gloves available in each room. Clean equipment between each patient, and clean the whole room at the end of the day. Follow Laser Safety policies when using lasers.
- **In the operating theatre.** As in the clinic, ensure that the area is clean and tidy. Extra care needs to be taken in this area because there are often more machines (meaning more electrical cables), which pose a tripping hazard. Also make sure staff members are trained in correct manual handling to prevent injury when transferring patients and moving beds.

Wear personal protective equipment (PPE)

Personal protective equipment (PPE) is really important. It protects you and your patient. This includes wearing of masks, aprons, gloves, suitable shoes (which cover your toes and provide heel support) and other items such as lead aprons if you are working in the radiology department. Other important key items are laser safety goggles for when you are using a laser.

Be aware that, when you wear gloves, you still need to wash your hands before and after. Buy non-latex gloves whenever possible. Whereas latex was very popular many years ago, several countries have now stopped using them because staff (and patients) can become intolerant to latex after long exposure.

Remove slip and trip hazards from the floor

If there are any pools or puddles of fluid on the floor then please mop it up immediately. This is to prevent someone from slipping and falling. If it is something acidic or a dangerous chemical please make sure you wear PPE and follow your local hazardous materials recommendations for clearing it up – this will prevent both injury to yourself (i.e. prevent a skin chemical burn) and damage to the flooring.

Many hospitals have ‘wet floor’ signs that you can place on the wet floor area until it is cleaned up or it dries. This will help to prevent people from slipping in that area.

If you see any electrical cords or anything else on the floor, immediately secure it or tidy it away. This is to prevent someone from getting their feet caught and tripping over. The rule is: **If you see it – clear it.** Don’t wait for someone else to do it. **You** do it.

Use your body carefully

Always look after your body when you are at work. This means you must be careful when you are lifting or moving an object (including a patient) and/or doing repetitive movements. Here are some good tips you can apply:

- Always ask someone to help you move or lift an object that is heavy or difficult.
- Never twist your spine. Try and keep it straight.
- Push rather than pull.
- Try and keep heavier items at good body height level. i.e. not on a high shelf or low shelf.

- Use your stomach (core) and legs to lift and push up – avoid using your back.
- Get close to an object so it will make it easier to move something.
- Wear body braces (if available) such as lifting belts.

Avoid repetition injury

This happens when you keep doing the same thing, in the same position, for extended periods of time; for example, people in an office sitting at a desk and typing. The key is to prevent these movements leading to strains, aches and, in some instances, severe pain. Here are some suggestions on how to prevent repetition injury:

- Move around between jobs.
- Alter your tasks or the way you do them.
- Change your environment.

Prevent needle stick injury

Health care workers, and especially nurses, can sustain a needle stick injury if they do not practice safe needle-handling practices.

If you get a needle stick injury you need to immediately notify your manager and follow your hospital policy. If there is a risk of infection you may need prophylactic treatment – ask a doctor for advice. The best thing to do is to prevent it from happening in the first place.

Here are some recommendations.

- Never re-cap a needle.
- Never take a used needle from the hand of another person. Instead, ask the person to place the sharp item into a needle-container where it can be seen clearly.
- If you are the scrub nurse, never pass a needle or sharp blade to a surgeon when they are distracted, as it might harm them. Make sure you inform them that you are handing them the item so they can be alert and can safely take the item from you.
- Blades are to be handled with a special forceps that is strong enough to grasp the blade for placement onto and off the handle’s shaft. Never use fingers.
- Only fill a sharps container to the fill line.
- Never grab or stick your hand inside any bowl or container without looking first. Sharp items (i.e. suture-needles) may have been accidentally left inside.

With thanks to the Fred Hollows Foundation New Zealand.

Further reading

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Looking after YOU



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It sounds silly, but we often spend so much time caring for our patients and each other that we forget to care for ourselves. If we don't look after ourselves it could put us at risk and could lead to a short-term or permanent inability to do our job. We need to do whatever we can as health care professionals to demonstrate to our patients, through our own example, what it means to live a healthy and enjoyable life – there is no better health promotion tool than that!

Here is a list of some of the things you can do to take good care of YOU.

Have your eyes checked. It is important to have them checked regularly. Your eyesight is important because you need to perform several specialised tasks – be it reading labels on a drug bottle or seeing a suture clearly enough to be able to load it onto a needle-holder. You work in eye care so you have no excuse – get your eyes checked.

Sleep. Make sure you get a good night's sleep every night. This includes about 6–8 hours of solid sleep. This is particularly important if you also do night duty because your sleep patterns may not be routine.

A good night's sleep will help to ensure that you have energy to perform your daily tasks. It also increases your brain's ability to focus on difficult and complex tasks and issues.

Body care. Make sure you comply with your hospital's policy on lifting and moving objects correctly. If you hurt a part of your body while at work

you are at risk of having a permanent injury, which could be painful and reduce your job options. There is lots of online information about this subject. You can search on the internet for 'ergonomics', which is the study of the body's movement or try 'workplace or occupation health and safety' or 'manual handling'.

Practise mindfulness. Try to have some alone time, by yourself, from time to time, so you can recharge your energy levels and take back your enjoyment and love for life. Search on the internet for 'mindfulness' – there are many websites which offer practical guidance to this approach, which has been shown to improve mental wellbeing.

Hygiene. Make sure you wash regularly, as you work in a hospital and it is

Suzanne Porter/Sightsavers



It is important to have regular breaks during a busy day in the clinic. TANZANIA

important that you are not carrying harmful organisms to and from your workplace and home.

Keep fit. The human body is designed to move, so make sure you are moving your body regularly. This could include a walk to and from work.

Spend time with your family and friends. Work is very important and helps bring money into the home. While it remains important, don't forget to spend time with your family and friends whenever you can. Jobs will come and go but family and friends remain. They need you as much as you need them. Prioritise them!

Eat well. Health care workers are notorious for grabbing quick snacks, missing lunch and going without a drink for hours. This is not good. Drink plenty of

water and try and have lunch or some snacks every day.

Stay safe. If you are travelling to and from work after dark you need to take care of your own

safety and make sure you are not in danger. Hospitals are easy targets for crime so never place yourself in danger.

Travel responsibly. If you travel a lot for work, be mindful of safety, regular food, exercise and rest.

Look after your professional registration.

Find out what your professional association (i.e. medical or nursing council) requires of you to maintain your professional license and make sure you comply with those requirements.

Join an association. Networking with others in your profession is very helpful. It allows you to share your stories and learn from others' experiences. It is a good way to stay aware of changes and new opportunities in your area of work.

Quality of small



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Cataract is the most common cause of blindness. Cataract extraction with intra-ocular lens implantation is one of the most frequently performed and most effective surgical procedures in the field of medicine, worldwide.

Small-incision cataract surgery (SICS) is also called manual small-incision cataract surgery (MSICS) or sutureless extra-capsular cataract extraction (SECCE). It is a safe, cost-effective procedure with very good outcomes. The technique is well described in the literature, as is the management of its complications.

The quality of SICS, and most importantly the outcome for the patient, can be excellent. The World Health Organization (WHO) advises aiming for post-operative outcomes of at least 80% good presenting vision or at least 90% with best-corrected vision, and this is attainable with SICS. But with such a good procedure at your fingertips, how do you aim for and achieve quality? And how do you plan for, maintain, and monitor the best possible outcomes for your patients?

Training and learning

It is important to learn, to want to learn, and to maintain a good technique. There are many good resources available.

- MSICS classroom: <http://classroom.globalsight.org>
- Eye Surgery in Hot Climates 4th Edition (JP Publishers, 2015).
- Standard Operating Procedure Manual for Modern Small Incision Cataract Surgery (Tilganga Eye Centre): available via the Global Sight Alliance website: www.globalsight.org
- Aravind Eye Hospitals' book Manual Small Incision Cataract Surgery: available as a free iBook download from iTunes: <http://tinyurl.com/pu757w7>
- Sutureless ECCE (2nd Edition) video: www.youtube.com/watch?v=LszyZqqR5v4

Time spent reading and watching videos again and again is time well spent. However, a good teacher is critical. It is important to be able to practise and get feedback. There is a big role for simulation in training and practice – either 'wet-lab' as in the use of animal eyes to learn and practise; or 'dry-lab' as in the use of artificial eyes and simulators (HelpMeSee.org and simulatedocularsurgery.com).

incision cataract surgery

Evaluation and selection for surgery

As a surgeon, you may not see all of your cataract patients before surgery. If this is the case, it is imperative that the nurses working with you are diligent in their pre-operative assessment. All patients should have the following assessments: visual acuity, intra-ocular pressure (IOP), pupils (looking for a relative afferent pupillary defect, or RAPD), and past ophthalmic history. Selection for surgery is very important. Listing a patient for routine cataract surgery who has an RAPD, high IOP, or a history of severe retinal disease may lead to a poor outcome. The patient should be fully assessed, and appropriate consent taken before a 'guarded prognosis' is made. In addition, for good vision outcomes, it is essential to have accurate biometry and to have a large range of intraocular lenses available.

Surgical technique

The procedure itself is wonderful when all goes well; however, every eye is different, every operation is different, and each and every step of the procedure is as important as the one before.

A good draping is necessary to capture the eyelashes, especially those of the upper lid.

The superior rectus suture is important: it immobilises the eye and assists with scleral tunnel 'opening' when extracting the nucleus. Going too deep with the needle may penetrate the eye, and going too shallow will engage the conjunctiva only.

Firm scleral fixation (throughout the tunnel construction) should be maintained by using good forceps (Figure 1).

The scleral tunnel is very important. A very curved and 'frown-shaped' incision should be made initially. If the incision is too flat, this will induce a significant against-the-rule astigmatism. Use adequately sharp blades.

When forming the tunnel with the crescent blade, aim to see just enough of the metal of the blade. If you cannot see any of it, you are too deep and will likely prematurely enter the anterior chamber. If you see too much, a buttonhole will form. Dealing with complications in tunnel construction may be necessary: a button hole may lead to leakage and should be undermined in a different plane or a new entry site fashioned. Premature entry into the anterior chamber will often require a suture.

The capsulotomy can be linear or continuous-curvilinear. Lots of small puncture marks are necessary for a linear capsulotomy. Aim for just above the halfway line. This will leave a good inferior portion to protect the corneal endothelium

when extracting the nucleus, but also enough of a superior portion to support a sulcus-placed IOL if the posterior capsule is ruptured and cannot support an IOL.

Thorough hydro-dissection helps mobilise the nucleus. Always check that the cannula is on tightly before entering the eye. Lift the capsule slightly when injecting underneath it.

The most difficult part of the procedure is the mobilisation of the nucleus. Once you are happy that the nucleus is free in the bag, inject visco-elastic into the anterior chamber to protect the endothelium. Use the cannula, while slowly injecting visco-elastic, to dislodge the upper equator of the lens nucleus. The important point is to press backwards and slightly down within the scleral wound **beyond** the upper equator, such that the upper part of the nucleus actually starts to move **forward** rather than backwards.

Inject a good amount of visco-elastic behind the nucleus to push back the posterior capsule before inserting the vectis or fishhook needle to extract the nucleus.

Once the nucleus is removed, take great care when removing the soft cortical lens matter. Increase the magnification on the microscope for this stage, as well as for the capsulorhexis.

An injection of antibiotic into the anterior chamber (intra-cameral) should be performed at the end of the procedure (with either cefuroxime (1 mg in 0.1 ml) or moxifloxacin, but **only** if you can guarantee that the concentration will be correct every time. This may help to prevent post-operative endophthalmitis, but can severely damage the corneal endothelium if an incorrect dosage is injected.

Complications and their management

Dealing with vitreous loss is important. It is most important that no vitreous remains in the anterior chamber going up to a wound or paracentesis. This is certain to invite future infection, chronic macular oedema, or even a retinal detachment. It should almost always be possible to place either a posterior chamber or sulcus IOL. Avoid an anterior chamber IOL if at all possible.

If there is any doubt about the wound, or if the initial incision is too flat, then place a 10-0 nylon suture in the main incision.

Post-operative treatment and evaluation

Patients must be given a combination of antibiotic and steroid drops for a few weeks after surgery. It is important to

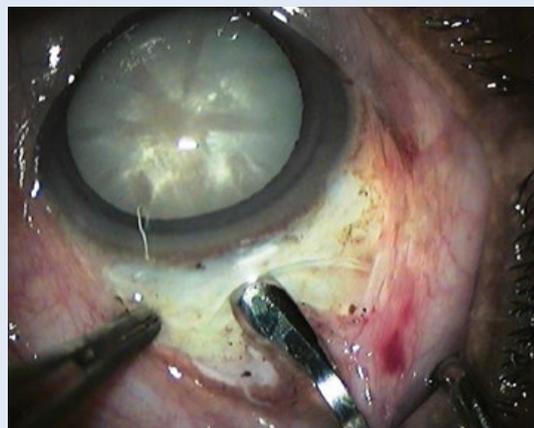


Figure 1. Stabilising the sclera with toothed forceps while making a frown-shaped incision

ensure that patients understand the importance of using the drops, and also how to use them.

Post-operative evaluation is critical. Examine patients on the first post-operative day to diagnose and treat surgical complications. Vision assessment and ideally refraction should take place at 4–6 weeks after surgery and are essential for assessing surgical outcomes. Patients and/or carers must be educated about possible complications. They must be told what to do and where to go if they have untoward symptoms. This will help to ensure early diagnosis and treatment of complications such as intraocular infection.

Audit

The value of being interested in, recording, monitoring and then reflecting on all your surgical outcomes cannot be over-emphasised. On a very personal level, as a surgeon, this will improve your selection, technique and management; ultimately, it will make you a better surgeon and improve outcomes for the patients that you treat. Audit of outcomes should be absolutely mandatory everywhere. It may seem like an intrusion or extra effort, but it definitely makes you a better surgeon.

Conclusions

Ultimately, the best surgical safety, technique, and outcomes for your patient are not up to a textbook, DVD, website or trainer. They are in your, the surgeon's, hands. Only **you** can strive for the best surgical outcome, and the eye team can help you to achieve this.

Further reading

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Postoperative endophthalmitis



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Endophthalmitis may have devastating consequences for a patient's vision and therefore should be treated as an emergency. The time from diagnosis to treatment is critical for favourable outcomes. In order to achieve a rapid response, it is important to have an accessible protocol and an endophthalmitis kit at hand for all eye surgeons who see postoperative patients. We have produced a simple protocol of recommended practice collated from a range of sources (see opposite page).

All intraocular procedures carry a risk of endophthalmitis, but – globally – they are most commonly reported following cataract surgery and intravitreal injections; this is due to the sheer numbers of both of these procedures carried out throughout the world. The prophylactic steps in the protocol have particular reference to cataract surgery, but similar practice should be adopted for any intraocular procedure. The clinical diagnosis and treatment is similar for all cases of endophthalmitis.

Careful preparation of the patient prior to performing an intraocular procedure is vitally important to reduce the risk of endophthalmitis.¹ The patient should have 5% povidone iodine instilled into the conjunctival sac and the eye should be carefully draped to isolate the surgical field from the eyelids and the lashes.¹⁻⁵ The eyelashes need **not** be cut as cutting the lashes does not reduce periocular bacterial flora and does not reduce the risk of endophthalmitis.⁵ The surgeon should wash his or her hands effectively and wear sterile gown and gloves.¹ At the conclusion of cataract surgery, intracameral cefuroxime, if available, should be given to reduce the risk of endophthalmitis.⁶

The development of a red eye, pain and blurred vision in the days or weeks following an intraocular procedure should be considered as a case of endophthalmitis until proven otherwise. If intraocular inflammation is discovered, particularly if there is a hypopyon, treatment for endophthalmitis should be initiated without delay.

NOTE: Do not try to treat with a course of corticosteroids first – this will delay treatment and may result in losing the eye.

An endophthalmitis kit should be accessible in every practice where postoperative

patients are seen and is invaluable to allow prompt diagnosis and treatment (see panel below). A vitreous biopsy/tap through the pars plana should be performed immediately for gram stain and culture. If the patient has perception of light only, a vitrectomy has been shown to be more beneficial than a vitreous tap.⁷ However, if a delay is likely before a vitrectomy can be performed, it is advisable to perform a vitreous tap and inject intravitreal antibiotics for more rapid treatment.

Intravitreal antibiotics (vancomycin and ceftazidime or amikacin and ceftazidime) should be given immediately, using separate syringes and needles for each drug (see panel for instructions to make up the required concentrations of each antibiotic). The use of intravitreal dexamethasone (a steroid) is controversial.

Consider adjunctive systemic therapy – with the same antibiotics as those used intravitreally – for 48 hours to maintain higher levels within the posterior segment of the eye. If systemic antibiotics are not available, topical antibiotics are better than nothing. Careful monitoring of the patient is important. The response to treatment and the results of gram stain and culture should determine whether further intravitreal antibiotic therapy is required.

Contents of the Endophthalmitis Kit or Pack

Equipment for preparation of patient

- Tetracaine (anaesthetic) drops
- Povidone iodine
- Drape
- Speculum
- Equipment for sub-Tenon's anaesthetic injection
 - 10 ml 2% lidocaine
 - 10 ml syringe
 - Sub-Tenon's cannula
 - Westcott scissors

Equipment for vitreous biopsy/tap

- 23 G or 25 G needle
- 5 ml syringe
- Calipers

Equipment for preparation of antibiotic injections

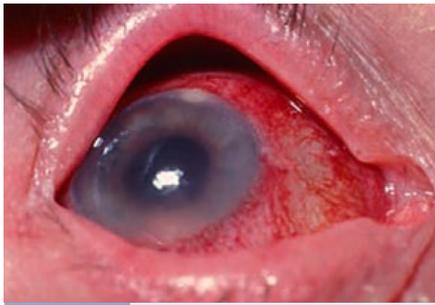
- 1 vial of 500 mg vancomycin or 1 vial of 500 mg (250 mg/ml) amikacin
- 1 vial of 500 mg ceftazidime
- 3 x 10 ml sodium chloride 0.9% injection (saline)

- 4 x 10 ml syringe
- 2 x 5 ml ^ syringe
- 2 x 1 ml syringe
- 1 x sterile galley pot (for amikacin)
- 6 x 21 G needles for preparation of antibiotics
- 2 x 30 G needles for intravitreal injection

Written instructions for preparation of antibiotic injections (to be prepared prior to vitreous tap and biopsy)

- Vancomycin 1 mg/0.1 ml
 - Reconstitute 500 mg vial with 10 ml saline
 - Withdraw all 10 ml into 10 ml syringe
 - Inject 2 ml of this solution back into vial
 - Add 8 ml saline into vial to make up to 10 ml (10 mg/ml)
 - Use 1 ml syringe to draw 0.1 ml of this solution (1 mg/0.1 ml)

- Amikacin 400 µg/0.1 ml
 - Use 10 ml syringe to withdraw 1.6 ml of amikacin (250 mg/ml)
 - Make up to 10 ml in the syringe with saline
 - Discard 9 ml from syringe and make the remaining 1 ml up to 10 ml (in the syringe) with more saline
 - Transfer the solution into a sterile galley pot and use 1 ml syringe to draw 0.1 ml of this solution (400 µg/0.1 ml)
- Ceftazidime 2 mg/0.1 ml
 - Reconstitute 500 mg vial with 10 ml saline
 - Withdraw all 10 ml into 10 ml syringe
 - Inject 2 ml of this solution back into vial
 - Add 3 ml saline into vial to make up to 5 ml (20 mg/ml)
 - Use 1 ml syringe to draw 0.1 ml of this solution (2 mg/0.1 ml)



Acute endophthalmitis: prophylaxis, clinical diagnosis and treatment

How to PREVENT endophthalmitis

Risk factors

- Avoid surgery on patients with any known eye infections, e.g. blepharitis or conjunctivitis, or who have a lacrimal duct obstruction.
- Note that patients with an ocular prosthesis in the fellow orbit, or who wear contact lenses, are at risk of infection.

Prophylaxis

- Povidone iodine 5%: cornea and conjunctival sac.
- Povidone iodine 10%: periorbital area; wait a minimum of 3 minutes before incision.

- Surgeon scrubs, puts on sterile gown and gloves.
- Drape eye, tape eyelids and lashes (do not cut lashes).

In particular reference to cataract surgery:

- Perform safe surgery (watertight incisions, manage complications effectively).
- Avoid silicone intra-ocular lenses (IOLs).
- Give intracameral injection of 1 mg cefuroxime in 0.1 ml saline (0.9%) at end of surgery.

How to RECOGNISE endophthalmitis

- 1 Suspect endophthalmitis if **any** of the following symptoms or clinical signs are present, particularly if there is a previous history of surgery, intravitreal injection or penetrating trauma.

- Blurred vision
- Pain
- Red eye
- Hypopyon

- Vitreous opacities
- Swollen eyelids
- Poor red reflex

- 2 Perform B-scan ultrasonography (if available) to check for vitritis or retinal detachment.
- 3 Do **not** delay diagnosis by first giving a trial of corticosteroid drops!

DO NOT DELAY! TREAT AS A MEDICAL EMERGENCY

How to RESPOND to endophthalmitis

Within 1 hour

Perform an intravitreal tap/vitrectomy through the pars plana. Collect samples of vitreous for Gram stain and culture. A vitrectomy may be indicated if the patient has perception of light only.⁶

TECHNIQUE

How to do an intravitreal tap

- Use aseptic technique with drape
- Instil topical antibiotics and povidone iodine 5%.
- Administer subconjunctival or sub-Tenon's anaesthetic.
- Insert the needle (23 or 25 G) 4 mm (phakic eyes) or 3.5 mm (pseudophakic/aphakic eyes) behind the limbus into the middle of the vitreous cavity, pointing at the optic disc (approx 7–8 mm deep) and aim to aspirate 0.3–0.5 ml of vitreous fluid.

Immediately following the intravitreal tap, inject antibiotics into the vitreous.

1st choice:

- vancomycin 1 mg in 0.1 ml **and**
- ceftazidime 2 mg in 0.1 ml

OR 2nd choice:

- amikacin 400 µg in 0.1 ml **and**
- ceftazidime 2 mg in 0.1 ml

Note: Use a new syringe and a new 30 G needle for each drug. Do not mix drugs together in the same syringe.

Following the injections of intravitreal antibiotics, inject dexamethasone (preservative free) 400 µg in 0.1 ml into the vitreous using a different syringe and 30 G needle. (The use of steroids remains controversial but is recommended by the European Society of Cataract and Refractive Surgeons.)

Consider adjunctive systemic therapy with the same antibiotics as those used intravitreally for 48 hours to maintain higher levels within the posterior segment of the eye.

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Open educational resources



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What is open education?

Historically, 'open education' has involved making education more accessible, whether by lowering cost or by enabling delivery at a distance.¹

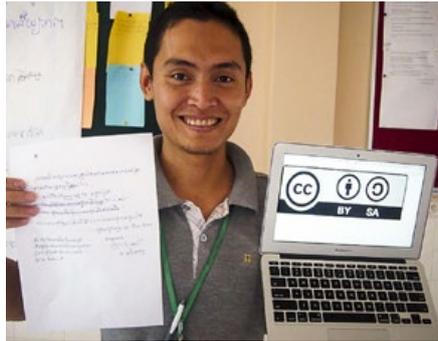
In our technological age, open education has become a global sharing of knowledge and ideas through the Internet.

What are open educational resources (OERs)?

OERs are learning materials such as textbooks, presentations and quizzes shared under an **open copyright license**, such as Creative Commons, or placed into the **public domain**. This means that both educators and users (learners/students) can have access for free, and educators can directly reuse, adapt and republish content without having to seek permission from the original author.

The benefits of open education and OERs

- **Promotion and re-use of existing high quality content and practice.** This means not having to re-invent the wheel.
- **Breaking down barriers** (age, culture and cost). OERs on the internet reach greater number of people which increases impact.²



Cobbi CC-BY-SA 3.0

Creative Commons licenses are used around the world, such as pictured here in Cambodia.

- **Continuous quality assurance.** By sharing materials as OER, educators can work collaboratively to improve their material and set quality benchmarks.³
- **Career development.** By inviting comment and collaboration, educators gain access to new ideas for practice and career enhancement.¹
- **Equalising access.** OERs support educational facilities with limited faculty and infrastructure.

What is ICEH doing in open education?

Using an open education approach and with support from Seeing is Believing, the International Centre for Eye Health (ICEH) adapted content from its existing training programmes and from the *Community Eye Health Journal* to create an OER called 'Global Blindness: Planning and Managing Eye Care Services'. The purpose of this OER is to equip and support eye health providers to plan and implement local

strategies to eliminate avoidable blindness and visual impairment, particularly from cataract and refractive error.

The OER was pilot tested with success in Kenya, Ghana and Botswana, and then launched on Future Learn as an Open University partnership. It ran as a six-week interactive course with over 3,500 participants in more than 80 countries and comprised videos, articles and quizzes.

Using the Global Blindness OER in your setting

To get access to the OER content, email us on eyeplan@lshtm.ac.uk.

- Do the course as a team project in your hospital/clinic to improve services.
- Introduce and adapt the OER into your medical and post-graduate curriculum.
- Provide us with feedback to improve the content.

The fact that the course is an OER means that you do not need to worry about plagiarism or copyright issues and learning can be shared. ICEH has plans to develop and deliver further OERs funded by the Queen Elizabeth Diamond Jubilee Trust.

References

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- 4 Peter, S., & Deimann, M. (2013). On the role of openness in education: A historical reconstruction. *Open Praxis*, 5(1), 7-14. doi:10.5944/openpraxis.5.1.23 <http://openpraxis.org/index.php/OpenPraxis/article/view/23/8>

OBITUARY

Eye care 'giant' dies

Professor Brien Holden, CEO of Brien Holden Vision Institute and Professor at the School of Optometry and Vision Science at UNSW Australia, passed away on 27 July aged 73.

One of Professor Holden's most significant scientific achievements was co-developing the silicone hydrogel contact lens, which now makes up more than half of all contact lenses used worldwide. Income from such research and innovation is used by the Institute to fund humanitarian work, in particular in blindness prevention.

Interim CEO, Professor Kovin Naidoo, spoke on behalf of the organisation: 'Brien was a man of extraordinary vision who devoted himself to the service of mankind. He demanded that research be indivisible from service to society. He was truly an intellectual giant in eye health

and vision, a powerhouse driving change by mobilising teams that are globally united in science and service to the disadvantaged of our world.'

Brien Holden was dedicated to refractive error education. He was a regular contributor to the *Community Eye Health Journal* and the Brien Holden Vision Institute has kindly sponsored the Refractive Error series in the *Community Eye Health Journal* for the past year – part of the organisation's commitment to global refractive error and optometric education.

Clare Gilbert, Co-director of the International Centre for Eye Health (ICEH), which publishes the *Community Eye Health Journal*, said: 'Brien was a giant of a man in many ways: in vision, heart and stature. He helped put correction of refractive errors firmly on the



global agenda, insisting on high quality services, establishing the Brien Holden Vision Institute and raising funds to support the cause. He will be sorely missed, but his legacy will live on.'

We extend our condolences to Brien's family, friends and colleagues.

Myopia: a growing global problem with sight-threatening complications

Brien A Holden, David A Wilson, Monica Jong, Padmaja Sankaridurg, Timothy R Fricke, Earl L Smith III, Serge Resnikoff

Globally, myopia is the leading cause of distance refractive error, affecting 1.45 billion or 27% of the world's population in 2010 (myopia being defined as more than or equal to 0.50 D of myopia).¹ The number of people with myopia is expected to continue to rise both in absolute numbers and as a percentage of the population.² In certain age groups in several Asian countries, the prevalence of myopia is over 80%. Among late teenagers and young adults in Korea, Taiwan and China the prevalence is now between 84% and 97%.³⁻⁵

In addition to the increase in prevalence, there is evidence of a rise in the severity of myopia.³ A study by Vitale *et al.*⁶ in the United States found that the prevalence of moderate myopia, defined as between -2.00 D and -7.9 D, nearly doubled (from 11.4% in 1971-1972 to 22.4% in 1999-2004), and that the prevalence of high myopia, which was defined as more than 8.00 D of myopia for this study, had increased eightfold during the same period (from 0.2% to 1.6%). The global prevalence of high myopia (commonly defined as greater than or equal to 5.00 D of myopia) was 2.9% (224 million people) in 2010.⁷

Risks

High myopia is associated with an increased risk of developing sight-threatening conditions such as myopic macular degeneration (defined as atrophic changes or choroidal neovascularisation in the macular region in high myopia), retinoschisis, posterior staphyloma, glaucoma retinal detachment, and cataract.^{8,9} A literature review found that the prevalence of vision impairment due to pathologic myopia (high myopia with one or more typical fundus lesions) is between 0.1% and 0.5% in European studies and between 0.2% and 1.4% in Asian studies.⁹ In a Japanese study, 12.2% of vision impairment was caused by pathologic myopia.¹⁰ Myopic macular degeneration has been reported to be the major cause of monocular blindness in Tajimi, Japan,¹¹ and the leading cause of new cases of blindness in Shanghai, China.¹² Without



A child with myopia.
PAKISTAN

interventions to slow the progress of myopia, the prevalence of pathologic myopia can be expected to increase.

Causes and cures

Myopia development and progression is considered to be multifactorial, with genetic and environmental factors contributing, although the contribution of genetics is considered small. Genes have been identified for myopia^{13,14} but genes are thought to determine one's susceptibility to environmental factors.¹⁵ Several environmental factors have been identified,¹⁵⁻¹⁸ including too much time spent on near work;¹⁸ insufficient time spent outdoors;¹⁹ low levels of vitamin D;²⁰ inadequate light exposure;²¹ and poor diet.²² There is evidence emerging that increased time spent outdoors can reduce the risk of developing myopia and – in those with myopia – it can reduce the rate of progression.^{23,24} Reduced rates of progression in summer compared to winter²⁵ also supports the hypothesis of the light theory. It has also been shown in experimental animal models that a defocused retinal image can lead to axial elongation of the eye, and hence myopia. While it seems unlikely that there will be a treatment that can completely prevent myopia development and progression, there are some promising treatments on the horizon. These include providing a focussed image at all retinal locations to remove the stimulus to axial eye elongation. Executive bifocal spectacles,²⁶ peripheral plus contact lenses,²⁷ extended depth of focus contact lenses²⁸ and orthokeratology²⁹ are some of the optical intervention methods that show some efficacy in reducing the rate of progression of myopia (some by up to 51%).

Pharmacological agents such as 0.01%

atropine are being prescribed in Asia, and show a reduction of up to 50% in the rate of progression of myopia, although there is no reduction in the rate of axial elongation.³⁰ Oral tablets containing 7-methylxanthine (7-MX) have been approved for use in children in Denmark for myopia control and shows some efficacy, but long-term studies are needed.³¹ While these approaches have been tried in isolation, they may have a greater impact if different approaches are combined.

Discussion

Uncorrected distance refractive error is already a major global health problem. It is the main cause of vision impairment and the second highest cause of blindness.³² It has also been estimated to cost about US \$202 billion³³ in global lost productivity. However, whereas uncorrected refractive error is the second major cause of blindness, this does not include blindness from pathologic myopia; nor does the estimate of the financial burden of uncorrected refractive error take into account blindness due to pathologic myopia.

Myopia can no longer be considered a benign refractive error, easily corrected with a pair of spectacles or contact lenses. It has an insidious side which, even if adequately corrected, can sometimes progress and may lead to sight-threatening complications. Current forms of correction for myopia (spectacles, contact lenses and refractive surgery), do not cure the underlying myopia but provide an optical solution for clear vision and thus do not offer any protection from the consequences of high myopia.

Given that myopia is already one of the major causes of vision impairment and blindness, and is projected to affect almost half of the world's population within 40 years,² urgent action is demanded from governments, non-government organisations and researchers. Policy makers must recognise the risk of increasing myopia and ensure that appropriate detection and treatment is available. Myopia control is possible but clinicians must adopt myopia control strategies as soon as a child becomes myopic. Parents should also be encouraged to monitor the time their children spend on near devices and encourage time spent outdoors.

Visit www.cehjournal.org to view all the references associated with this article. **Further reading:** www.mivision.com.au/high-myopia-prevalence/

How to do a person-centred eye health consultation



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The care we give should focus on our patients – their needs, beliefs, and preferences – and not just on their disease. This is known as **patient-centred** care. We can take this idea further and talk about **person-centred** care, which reminds us that we should be concerned with the whole person – and their life – when they are outside of the clinic too, not just when they are in front of us.

Improving access

Before person-centred eye care can start, eye health services must be made accessible to all. This can be done by finding out about community needs, encouraging people to come for eye services, and making the service child friendly and accessible to older people and those with low vision, other disabilities, and mobility impairments. Previous issues of the *Community Eye Health Journal* have discussed all of the above in detail.

Engaging people in their own health care

Person-centred care does not mean that people are left to independently make medical decisions. What it does mean, is that people are active partners in these decisions.

We are all different, and person-centred care enables people to actively contribute to their own personalised care, treatment or support over time, both during the consultation and afterwards, in a way that is appropriate to their needs and circumstances. Having a person-centred focus can improve care and result in better outcomes. For example, people with chronic eye diseases such as glaucoma must be involved in their eye health in a very active way, by returning to the clinic for regular follow-up examinations and either coming for laser or surgery, or instilling eyedrops every day.

Here are some tips for providing a patient-centred eye consultation.

1 Consider the patient as a whole

From when you first see the person, note their physical and behavioural characteristics. Are there signs that indicate the person has eye pain? Observe how the person uses their vision when they come into the room. Take these into account throughout the consultation and assist people with visual or other disabilities as required.



Adriane Ohanesian/Sightsavers

A person-centred focus can improve care. SOUTH SUDAN

2 Establish a good relationship and use respectful communication to promote trust

Greet the person well and have a respectful, empathetic and compassionate manner. Get to know the person as an individual. Take time to listen. Be considerate of people with impairments, whether hearing, visual, or intellectual (e.g. a learning disability).

3 Take a history – find out what the person understands is their problem and what they expect

Ask the person to tell you the reason for the visit. This will guide the history taking and help you to get the information you need.

Find out what the person's concerns are. These could include pain and/or ability to function. The concerns could also be non-medical, such as cost, time spent waiting, or an inability to come for a repeat visit.

Ask about the person's expectations of treatment and outcome; this will help you to understand her or his point of view and needs.

4 Do an eye examination and assess vision

Undertake a full eye examination, as appropriate for the history.

Based on this information, explain to the person what further tests are necessary, how long these will take, and what these will cost. If a referral to another health centre or hospital is needed, ensure that they have all the information they need to be able to successfully take up the referral.

5 Decide on a treatment plan in discussion with the patient/family

Discuss tests, diagnosis, treatment and prognosis in an open and non-judgemental way to ensure that the patient and her/his family understand what they have been told about the condition.

- Ask the person if there is anything they do not understand.

Before performing any eye procedure

- Wash your hands (and afterwards too).
- Use gloves if indicated e.g. for invasive procedures or if an eye appears infectious.
- Wipe / disinfect equipment.
- Ensure that lighting is appropriate
- Clearly explain to the person what you are going to do.
- Position the person comfortably.

- Answer any questions they have.
- Allow enough time for the person to feel comfortable with the decision they are making.

This is an ethical approach to clinical decision making which recognises and respects patient autonomy and supports shared decision making. When patients are fully involved in decisions about their treatment, they are more likely to follow through with it. For example, shared decision making can help to avoid a situation which is quite common: that people fail to take prescribed medication, use it incorrectly, or simply stop using it.

6 Support self-management

All people make decisions, take actions and manage factors that contribute to their health on a day-to-day basis. We can support them by sending reminders (i.e., by SMS) about future appointments, reminders to monitor their vision or eye health, and messages that prompt them to prevent eye problems and maintain their eye health. This can enable people to develop their knowledge to make informed decisions and effectively manage their own health.

In conclusion, people who are engaged in their own health care are more likely to:

- have a good experience of health care
- have information about their own health and have realistic expectations
- reach shared decisions about diagnoses and treatment that are right for them
- manage their care, adhere to treatment and have better health outcomes.

Further reading

Person-centred care resource centre
<http://personcentredcare.health.org.uk/>

NICE pathway. <http://pathways.nice.org.uk/pathways/patient-experience-in-adult-nhs-services>

BMJ Learning: Working in effective partnership with patients (free registration). <http://learning.bmj.com/learning/module-intro/html?moduleid=10050243>

Prioritising person-centred care: the evidence
www.nationalvoices.org.uk/evidence

Electrical safety in the clinical environment – good habits to maintain



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There are many habits that clinical personnel can practise to help ensure an electrically safe environment. Here are twenty of these habits.

Cords and plugs

- 1 Only use electrical devices with 3-conductor power cords and 3-prong plugs (Figure 1 shows a plug with a broken ground prong – do not use).
- 2 Do not use cheater plugs (3-prong to 2-prong adapters, Figure 2). They eliminate the ground connection and increase the possibility of serious shock hazards.
- 3 Always unplug equipment by grasping the plug, not the cord.
- 4 Routinely check equipment power cords for frayed, cracked, or exposed wiring (Figure 3 shows a plug with the ground wire pulled out, which is very dangerous).
- 5 Do not rest cords over hot or sharp objects.
- 6 Do not run cords where they may

cause a tripping hazard (Figure 4).

- 7 Avoid rolling equipment over equipment cords.

Wall receptacles

- 8 Do not plug equipment into defective receptacles.
- 9 Plug equipment into wall receptacles with power switches in the OFF position.
- 10 Avoid using extension cords and power bars.
- 11 Do **not** overload electrical outlets by plugging in devices exceeding the current limit for the circuit (Figure 5).

Fuses

- 12 Replace fuses only with the same exact type (voltage, amperes, slow-blow vs. fast blow, physical size). If the fuse of the correct rating is not readily available, and if the instrument has to be used in an emergency situation, a fuse of a lower rating can be used while waiting for the fuse of the correct rating. For instance, if a 250 mA fuse is required and is not available, the instrument will work with a 200 mA fuse if it is available. Fuses are usually

over-rated for additional safety.

- 13 Do not continue to replace fuses if they keep burning out. Whatever is causing this must be found and corrected.

General

- 14 Make sure your hospital engineering department performs regular safety and performance inspections on all equipment and electrical outlets.
- 15 Do not attempt to perform repairs yourself. A little knowledge can be a dangerous thing. Call your qualified biomedical equipment technician, the manufacturer or someone with technical troubleshooting and repair skills.
- 16 Make contingency plans for power failures.
- 17 If you suspect a fault, report it immediately to your engineering department. Never assume that someone else will take care of it.
- 18 Report any electrical tingling sensations promptly.
- 19 Keep equipment dry unless it is purposely designed to be wet.
- 20 Wear appropriately insulated shoes in wet areas.

Figure 1



Ismael Cordero

Figure 2



Ismael Cordero

Figure 3



Ismael Cordero

Figure 4



Ismael Cordero

Figure 5



Ismael Cordero

Clearing the trichiasis backlog: experiences in Amhara, Ethiopia



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Globally, there were estimated to be around 7.3 million people in 2009 with trichomatous trichiasis (TT).¹ The World Health Organization (WHO) recommends surgery to reduce the risk of sight loss.² In the last decade, only about 50% of the annual global surgical targets have been achieved.³ At the current rate, it has been estimated that the trichiasis backlog would not be adequately addressed until 2032, twelve years after the Global Elimination of Trachoma (GET) 2020 target date to eliminate blinding trachoma.⁴

Deploying community-based screening and counselling using dedicated mobile surgical teams in high-burden districts, integrating with other eye care services and leveraging political support at all administrative levels are among potential solutions to improve trichiasis surgical uptake.

Challenges of surgical uptake

In the Amhara Region of Ethiopia it was recognised that many trichiasis patients were not accepting offers of surgery through local, freely provided outreach services. This was explored in focus group discussions, which identified a variety of concerns. First, most trichiasis patients mistakenly believed that the surgical wound needs up to 2 months to heal, during which time they should avoid sunlight exposure, involvement in productive activities and getting near to fire or smoke, or else TT would recur. Patients also believed that the operation was very painful and were unaware that it is conducted under local anaesthesia. They were very concerned about the quality of surgery. Consequently, patients either tended to decline surgery (even after presenting to local surgical sites) or chose surgical services provided by external surgical teams over the locally available surgical services. Despite these concerns, and apparently incomplete patient knowledge, surgical programmes tended to focus their 'patient mobilisation' efforts (efforts to improve the uptake of services) on simply creating awareness of



Figure 1. Eye ambassadors being trained and screening patients

surgical services; they did not engage sufficiently with communities to address their concerns.

A discussion-based approach

It is essential to address the concerns of trichiasis patients and their relatives through discussion and counselling. In Amhara, community-based screeners (eye ambassadors) have been trained to identify, counsel and refer patients. They visit all households in their target villages and examine everyone aged 15 years and older using a torch. If people are identified as having TT, eye ambassadors talk with them and their relatives to address their concerns and correct misunderstandings. The patient is then referred to the nearest health facility for examination and further counselling (by trichiasis surgeons).

There is some evidence that this discussion-based approach is working. In a cluster of six large villages where 43 eye ambassadors identified and counselled patients, 240 operations were performed within the following two weeks. In an adjacent cluster of villages, five outreach visits were organised at the same time using the usual mobilisation methods (sending messages as public announcements in the market and through health extension workers); this resulted in just one patient undergoing an operation. In a third cluster, an outreach visit organised using just public announcements in the market led to no patients coming for surgery. However, when the eye ambassador approach was used in the same cluster a short while later, 114 patients underwent surgery in less than a week.

Service delivery models

Different service delivery models can be adapted based on local needs and the availability of resources. In many trachoma endemic countries, there are insufficient trichiasis surgeons to clear the current

trichiasis backlog using traditional static and outreach models. To achieve GET 2020, particularly in high-burden areas, more productive approaches are needed. One approach is to deploy a dedicated mobile team of trichiasis surgeons and ancillary staff to travel to districts of high trichiasis burden. With good coordination and communication with communities in need, hundreds of operations can be conducted by a single team within a few weeks. In Amhara, our

mobile team performed more than 1,378 trichiasis operations within three months. In addition, the quality of surgery is likely to be higher due to the high volume and the increased opportunities for supportive supervision. Community-based trichiasis screeners and counsellors can help to provide pre- and post-operative support and services.

Political will

Gaining political support at all administrative levels is needed. At the GET 2020 meeting held in Addis Ababa in 2014, the Ethiopian Health Minister made it a personal mission to clear Ethiopia's trichiasis backlog within 18 months. He announced a fast-track initiative and provided additional funding for surgeons.⁵ This has provided political impetus and set a good example for the global trachoma community. At the district level, the identification and counselling of trichiasis patients and the establishment of mobile surgical teams require similar support from local political leaders.

One of the biggest challenges in clearing the trichiasis backlog is convincing trichiasis patients to accept surgery. Investing in developing surgical teams without ensuring patient uptake of surgery would be wasteful. Training and deploying community-based screeners appears to be a very effective method.

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- Federal Democratic Republic of Ethiopia Ministry of Health. Fast Tracking Elimination of Blinding Trachoma: The Ethiopian Initiative to Clear the TT Backlog. 2014.



Test your knowledge and understanding

This page is designed to help you test your own understanding of the concepts covered in this issue, and to reflect on what you have learnt. We hope that you will also discuss the questions with your colleagues and other members of the eye care team, perhaps in a journal club. To complete the activities online – and get instant feedback – please visit www.cehjournal.org

1. The hospital manager is keen to implement a cataract surgical safety checklist to ensure that patient safety is managed well. The checklist:		Select one
a	Should be done before the patient arrives in theatre so as not to delay the operation	<input type="checkbox"/>
b	Should be done at three points in time: before the patient receives anaesthesia, before incision and before the patient leaves the operating room	<input type="checkbox"/>
c	Must be managed by the same person to ensure consistency	<input type="checkbox"/>
d	May be generic, i.e. from any health service	<input type="checkbox"/>
2. When obtaining consent from a patient it is <u>NOT</u> necessary to:		Select one
a	Check that the patient fully understands the proposed treatment and alternatives	<input type="checkbox"/>
b	Inform the patient of the possible consequences with and without the operation	<input type="checkbox"/>
d	Inform patients of their right to refuse the treatment options provided	<input type="checkbox"/>
e	Discuss the patient's details and medical history with the patient and family	<input type="checkbox"/>
3. An incident reporting system:		Select one
a	Requires that there be a clinical governance group in place	<input type="checkbox"/>
b	Could demotivate staff	<input type="checkbox"/>
c	Focuses on assigning responsibility to individuals	<input type="checkbox"/>
d	Is time-consuming	<input type="checkbox"/>
4. A patient with suspected acute endophthalmitis following surgery should be:		Select one
a	Managed with povidone iodine 5% applied to the cornea and conjunctival sac	<input type="checkbox"/>
b	Started on corticosteroid drops without delay	<input type="checkbox"/>
c	Checked using B scan and urgently given a pars plana intravitreal tap to test the vitreous using gram stain and culture, and then given intravitreal antibiotics	<input type="checkbox"/>
d	Observed until there are clear signs of hypopyon and vitreous opacities	<input type="checkbox"/>
5. High myopia is associated with an increased risk of developing sight-threatening conditions, including:		Select one
a	Retinal detachment	<input type="checkbox"/>
b	Sjogren's disease	<input type="checkbox"/>
c	Stevens-Johnson's syndrome	<input type="checkbox"/>
d	Strabismus	<input type="checkbox"/>

Produced in collaboration with JCAHPO: the Joint Commission on Allied Health Personnel in Ophthalmology (www.jcahpo.org)

ANSWERS

1. b. It is essential that the checklist in done by the team members at the three distinct stages described in the surgical safety checklist. It would also need to be tailored specifically for the local setting.
2. d. At the consent stage it is important that patient details are not disclosed to family members. Patients' rights and dignity must be respected at all stages.
3. a. A clinical governance group, made up of representatives from all departments, is ideally placed to analyse the incident reports and formulate communication and training to encourage team members to improve patient safety.
4. c. A suspected case of endophthalmitis should be treated as a medical emergency and a clear protocol of diagnosis and management must be followed as soon as possible.
5. a, A. High myopia is associated with an increased risk of developing sight-threatening conditions such as myopic macular degeneration (defined as atrophic changes or choroidal neovascularisation in the macular region in high myopia), retinoschisis, posterior staphylocoma, glaucoma, retinal detachment, and cataract.

REFLECTIVE LEARNING

Visit www.cehjournal.org to complete the online 'Time to reflect' section.

Picture quiz



Allen Foster

This is a picture of a 12 year old girl in East Africa.

Q1. What abnormality can you see on examination?

- a. Orbital cellulitis
- b. Ptosis left eye
- c. Lagophthalmos left eye
- d. Proptosis left eye
- e. Enophthalmos right eye

Q2. Which of these examinations / investigations would be appropriate and why?

- a. Ocular movements
- b. Examination of the cornea for exposure
- c. Examination of the pupils
- d. Orbital X-ray
- e. Thyroid function tests
- f. Biopsy of a palpable lymph node

Q3. What do you think is the differential diagnosis?

ANSWERS

1. Answer (d) The left eye is protruding (proptosis). There is no sign of inflammation (orbital cellulitis). The lid is not drooping over the cornea (ptosis). To test for lagophthalmos one would ask the patient to close the eyes, one eye would close and the other remain partially open showing lagophthalmos – this is not evident in this picture – both eyes are open. Enophthalmos is when the eye is sunken back into the orbit. There is no evidence of this in the right eye, rather the left eye is pushed out.
2. Answer – all of the above tests are appropriate. Ocular movements may be limited by a lesion in the orbit. Protrusion of the eye may lead to corneal exposure, corneal ulceration and loss of vision. An orbital tumour may compress the optic nerve leading to an afferent pupil defect and loss of vision. An X-ray may show orbital bone or sinus abnormalities. Thyroid function tests may be abnormal in dysthyroid eye disease, although this is uncommon in children. If there are palpable lymph nodes then a biopsy may help to make a definitive diagnosis.
3. Answer: There are various benign or malignant space-occupying lesions of the orbit and neighbouring sinuses which can cause proptosis. The rate of development of the proptosis can be a guide as to whether the tumour is benign or malignant. Also, causes vary according to geographical distribution and age of presentation. For example, proptosis in a European adult may be due to dysthyroid eye disease, but this is uncommon in children, and dysthyroid eye disease is generally uncommon in Africa. This child had unilateral proptosis due to Burkitt's lymphoma which is one of the more frequent causes of proptosis in East Africa in children aged 5–15 years. It is usually rapidly progressive and may be associated with abdominal tumours. She responded to treatment with intravenous cyclophosphamide.

Resources

OphEd: Pitt Ophthalmology Education Site

The University of Pittsburgh (Pitt) Ophthalmology Department residents and faculty have collected useful resources at OphEd: <http://ophed.com/links>. The website includes videos, links to outside online resources, and discussion forums. 'There is a wealth of information contained within this site from ocular pathology to pharmacology. However, not all sites are accessible without a login and the quality of the content can vary,' writes Nick Astbury.

HIV resource

HIV this month (HTM) contains a careful selection of high quality abstracts or summaries of articles and reviews from scientific journals. To subscribe to this monthly digest, send an email to scienow@unaids.org with subject: 'subscribe English HTM' OR 'subscribe French HTM'. Follow us on Twitter @UNAIDScienow. Visit scienow.unaids.org for more information.

Online courses

Free International Centre for Eye Health course re-launches

The hugely successful online short course on **Global Blindness: Planning and Managing Eye Care Services** will re-launch in November 2015. Register your interest now by emailing eyeplan@lshtm.ac.uk. This 6-week course introduces the magnitude and causes of visual impairment at a global level, highlights key global initiatives to manage

avoidable blindness, and provides practical approaches to strengthen and plan local eye health services, with an emphasis on low- and middle-income country settings. **Time commitment:** 4 hours per week. It is suitable for all levels of eye health providers and across a wide range of health systems.

EyecareCE

Free and low-cost online courses for the entire eye care team: nurses, ophthalmic assistants, orthoptists, ophthalmic photographers and clinical officers. Over 280 courses in 20 content areas. Provided by the Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO). Visit: www.eyecarece.org

Aurosiksha

Free short online courses for eye care professionals to help them maintain skills and continue their professional development from Lions Aravind Institute of Community Ophthalmology (LAICO), India. Visit www.aurosiksha.org

ORBIS Cybersight

Free courses on strabismus, cataract, paediatric ophthalmology, neuro-ophthalmology and the cornea are currently available. Registration is free. Visit www.cybersight.org.

Other courses

German Jordanian University, Amman, Jordan

Professional diploma and MSc in Vision Rehabilitation. For more information, visit <http://tinyurl.com/rehabcourse> Email: vtc@gnu.edu.jo

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

Short courses, postgraduate diploma, and MPH Community Eye Health. Scholarships are available for the MPH. For more information, visit www.health.uct.ac.za or email chervon.vanderross@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 or contact Genes Mng'anga at genes@kcco.net and/or genestz@yahoo.com

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The theme of the next issue of the *Community Eye Health Journal* is **Eye injuries**