SURGICAL EYE CAMP REPORT
And Orientation Manual

24th – 28th AUGUST 2017
PHNOM PENH, CAMBODIA
**Eye Care in Cambodia**

Current Situation

- Over 180,000 Cambodian are blind. 10,000 Cambodians suffer avoidable blindness each year.
- 90% of blindness is avoidable. 79% is curable and 11% is preventable.
- Three-quarters of blindness is due to cataracts, and the rest is due to uncorrected vision, glaucoma, corneal scarring and pterygium.
- Only 38 ophthalmologists service a population of over 15,000,000 – one of the lowest number of ophthalmologists per capita in the world.

In Cambodia, 10 percent of the population lives below the poverty line; over 40 percent earns only $2 per day. Most of the poor live in rural areas where there is either no or limited access to eye care. Women are more than twice as likely as men to suffer from cataract blindness. Cataract backlog is over 300,000.

**Objective of the Eye Camp:**

- To screen patients for cataract
- To provide surgical eye service for cataract and other conditions
- To share our expertise with local resident doctors
Introduction to Khmer – Soviet Friendship Hospital

Khmer-Soviet Friendship Hospital is a 500 bed public hospital in Phnom Penh. The hospital is managed by the Ministry of Health.

Introduction to Khmer Sight Foundation

Khmer Sight founded by Sean Ngu and the late Dr Kim Frumar from Sydney in 2015 to unify ophthalmology and eye care in Cambodia. Our aim is to build local capacity through training local doctors and health workers, building new facilities, and introducing the latest technology and equipment. We are helping create a self-sustaining local centre of excellence for eye care training and service delivery in Cambodia’s capital Phnom Penh. This will enable us to create a one-stop centre for eye screening and operations. We help train ophthalmologists so there will be a generation of local specialists ready to take on the challenge of eradicating avoidable blindness. Our volunteer health workers provide a vital link between patients and eye health services. They visit remote rural communities to conduct eye screenings and provide basic instructions on eye hygiene. In 2017 KSF has selected at least one Cambodian doctor to complete an international fellowship in sub-specialties lacking in Cambodia. Developments are also underway for patients with corneal and retinal issues to be treated in the future, as well as paediatric issues. By developing surgical and diagnostic skills and providing scholarships abroad to train in sub-specialities, the local eye specialists can help their own country become self-reliant.
Volunteers (need to put pics of each member)

Medical team

Dr Rupesh Agrawal (Rotarian), Singapore
Dr Rekha Khandelwal (Rotarian), India
Dr Shivani Sule (Rotarian), India
Dr Cijin Jose, India
Dr Roy Tan, Singapore
Dr Janika Shah, Singapore
Dr Zeenathisa, Singapore

Rotary team – Rotary Club of Singapore

Rtn Tapan Rao,
Rtn Deepti Lalchandani
Rtn Jimmy Ooi
Overview

Khmer Soviet Friendship Hospital on the Yothapoul Khemarak Phoumin Boulevard, Phnom Penh is a public hospital managed by the Ministry of Health, Government of Cambodia. Prof Ngy Meng serves as the Director of the hospital, in addition to being the Director of the National Program for Eye Health. Dr NY Tharath, who is a Glaucoma fellow, serves as the Head of Department for Ophthalmology. Besides him, Dr Saly Thearith, a Retina fellow, is another consultant. Apart from the consultants, there are 3 fellows undergoing their subspecialty training. The Khmer Soviet has 11 residents, 1 in the third year, 4 in the second year and 6 in the first year of residency. The residents play a vital role, both in the OPDs and in the OT. Therefore, get introduced to the residents at the start of the mission so you know who they are from the outset.

Screening takes place by medical student volunteers of the Khmer Sight in the villages, often the weekend before the forthcoming mission. During screening, people come to a nominated facility in the village and are “processed”. They have a BP done and are seen by a GP. They are then assessed to see if they have cataract or pterygium and a VA is done. Ideally, only those with visually threatening pterygium or a VA less than or equal to 6/36 in the WORSE eye are encouraged to get on the bus which transports the patient to the hospital, but please appreciate that family members with no significant visual problems may accompany the patient. Please do appreciate that not all patients will fulfill the criteria for surgery even though they have been screened.

If you have a chance to attend a screening clinic, please teach the medical student volunteers how to assess for visually threatening pterygium and cataract and check they are measuring vision correctly; if they are not please correct them. Moreover, do make them pay attention to Afferent Pupillary defects and Nasolacrimal Duct obstructions. Since resources such as slit lamps and Ophthalmoscopes are not available at screening centres, carrying a hand-held slit lamp or an indirect ophthalmoscope (and a few vials of Tropicamide) would be extremely beneficial.

Each person who is deemed for further treatment is given an A5 piece of paper with their BP and VA written on it. This is their ticket to get on the bus but it is also evidence that they are from a poor peripheral village and not someone who can afford private treatment who has walked in off the streets of Phnom Penh.

Patients arrive busload by busload. They go to the ground floor in the New OPD for Ophthalmology and ENT in the Khmer Soviet Friendship Hospital.

Medical student volunteers act as translators for you. Ask them to register all patients and measure the vision in both eyes first. At registration ask them to staple the “bus ticket “ form to the registration form.
It is advisable to put senior ophthalmologists in the waiting room to validate the need for surgery: only those with **sight threatening pterygium** and only those with **VA less to or equal to 6/36 in the worse eye**. Skin marks rub off in the heat – so stick a piece of tape in their fronts marked with:

A) **Pterygium**

B) **Cataract**

**Assess:**

These are patients that need further examination at a slit lamp if they clearly have something else that needs attention

All patients with tape on their fronts wait in the queue for a slit lamp examination (on the Ground floor in the Khmer Soviet Friendship Hospital). Since the screening process has not yet become smooth at the Khmer Soviet, MANY of the patients get cleared for surgery WITHOUT IOP measurement, Fundus evaluation and Pupillary Light Reflex evaluation. Make sure every patient getting clearance for cataract or pterygium surgery has completed the following mandatory checks:

1) Visual acuity, with pin hole in both eyes
2) Presence or absence of an Afferent Pupillary Defect. **Do not operate if there is an APD.**
3) Slit Lamp examination
4) Measurement of the IntraOcular Pressure (Residents generally do the Non- Contact method)
5) Fundus evaluation

Then:

Send all patients that need cataract surgery for biometry. They go to the **Small Surgery room in the Ground floor** of the Khmer Soviet Hospital with their notes for biometry and calculation of the IOL powers.

Send all patients with pterygium needing surgery to the Small Surgery room in the Ground floor of the Khmer Soviet Hospital with their notes.

Send patients without tape, home.

On the first day, prioritise those with cataract and pterygium first and then see the “assess” patients so theatre can get going.

On the second and subsequent days, there is less rush as patients will be ready for theatre processed from the day before.
Hospital- Location, Layout and Facilities
The New OPD Ground Floor. The following procedures take place here:

- Preoperative vision assessment
- Preoperative examination (Slit lamp, IOP and Fundus)
- Biometry (in the Small Surgery room, detailed below)
- Registration for surgery
- Postoperative examination
- Postoperative refraction and prescription of glasses

The **Small Surgery** room has:

1. Biometry (IOL Master)
2. A scan Ultrasound
3. B scan Ultrasound
4. Auto Refraction

The 3rd Floor of the New OPD Block has:

1. Laser room (PI, SLT, Laser for Diabetic Retinopathy)
2. Perimetry
3. OCT scan
4. Fundus camera (dilated)

**Operation Theatre, 3rd Floor, Old Block, Khmer Soviet Friendship Hospital**
Surgery

Keep your notes making sure they are as good as in your home country.

1. Fill in the theatre book with patient name, operation and side and * if it is complicated.
2. Make sure you write an operating note and write your name clearly detailing any complications.
3. If surgery is complicated, make sure there are clear plans for follow up and communicate this to a medical student and to the patient.

As the Khmer Soviet has a shortage of surgical scrubs, bringing your own scrub will put less strain on the limited resources.

Your scrub nurse will be a medical student volunteer who may not speak much English. Therefore, it is better to arrange multiple surgical trays before starting procedures for the day. As every instrument you are familiar with may not be available, it is prudent to bring your own set of instruments. Bringing the following will make your surgery easier:

- Lims forceps
- Capsulorhexis forceps
- Chopper
- Sinskey hook(s)
- Wire vectis
- Lens hook

If you choose to operate under Local Anaesthesia, please note that injecting the Peribulbar block will have to be done on the operating table itself due to the unavailability of beds where patients can be blocked preoperatively.

Know how to set up and prime a phaco machine and know your settings.

**Note:** At present, the Khmer Soviet Operation Theatre has 2 tables, 2 operating microscopes (Zeiss) and 1 Phaco machine (Nidek CV 7000).

Know how to set up a vitrectomy and know your settings.

You must pre-empt more than you do in your home country.

Adrenaline needs adding to the Ringers Lactate solution. Nominate someone to do this or add it yourself and mark the bag.

Choose your lens and get it.

Set up a Complication trolley at the beginning of the day with:

Miochol; Intracameral phenylephrine; Capsule tension ring; Iris hooks; Vision blue; Suture material: 10/0 vicryl and 10/0 nylon; Tying forceps.
And ensure items are replaced if they are used

Keep an eye on your Ringers Lactate solution so it does not run out

Gowns are used one per session and gloves are changed for each case

The knives are re-used. Ask for another if yours is blunt

The keratomes are wider than we are used to. Only go in half the width; then the wound will not leak when using the simco I/A

The wound needs to be enlarged when using a non-foldable IOL and then sutures are needed. We found it helpful to use a 6-7mm scleral tunnel and put a 6mm PMMA lens in the sulcus. This wound will re-seal without the need for sutures.

You can use a hand held diathermy to cauterise scleral vessels but it gets very hot. Or you can heat an instrument in a Bunsen burner to cauterise the scleral vessels

Bring your own specific instruments for more specialist surgery eg paed glaucoma/ paed cataract

Please note the surgical environment is not the same as at home!

Be clear about who should be listed for surgery. Only operate on those with a vision of 6/36 or worse in the better eye, because the result post op needs to be better than preop! Do not operate if there is an APD

Instruments which are very useful and which are not readily available:

  90D lens
  28/30 D lens
  Hand held slit-lamp
  Icare tonometer
  Battery charged indirect ophthalmoscope (and correct plug)
  Good halogen light for checking pupils
  Non-permanent marker pens
  White sticky tape
  Theatre greens
  Retinoscope
  A box of trial lenses: really helpful if you are expecting to see paed cases
Patient Screening
Surgery
Post op:
Teaching Local Resident doctors:
Last day of the camp:
Report of the Eye camp:

Surgeries performed Phaco-4, SICS 12 (one extended to ECCE), 1ECCE, 8 pterygiums, 3 SICS to trainee, 2 pterygiums to trainee. Complications – Nil

Challenges faced

- Technical factors –
  - Lack of coordination between the local team & Volunteering team with regards to roles & responsibilities during the camp leading loss valuable time at start of each day of the camp
  - Unfamiliarity to environment & instruments
  - Lack of adequate instruments & medicine (eg. Mannitol)
- Team Factors:
  - Language barrier with scrub team
- Anesthetics Factors
  - Majority of the peri-bulbar blocks were not effective

Insights from the camp:

Following are some key insights from the camp and area of focus for future camps.

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<thead>
<tr>
<th>Phase</th>
<th>Current scenario/ Lacunae</th>
<th>Possible solution</th>
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<tbody>
<tr>
<td>1 Pre-operative</td>
<td>• Pre-operative work-up, starting antibiotic drops and NSAIDS not a common practice</td>
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<td>• Use of Povidone Iodine not commonly followed</td>
<td>• Role of pre-op antibiotics and povidone may be stressed by next batch of doctors</td>
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<td></td>
<td>• Presence of Meibomitis</td>
<td>• Very important to screen it and start medicines before surgery</td>
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<td></td>
<td>• Many patients had Pseudoexfoliation (PXS)</td>
<td>• Importance of pre-op Slit lamp examination and planning surgery accordingly to avoid intra-op complications should be taught.</td>
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<td></td>
<td></td>
<td>• Role of IOP check and asymmetric PXS with PXG in same eye are few of the topics which should be discussed with residents</td>
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<td>2 Operative</td>
<td><strong>Superior Limbal Scarring:</strong></td>
<td>• Residents should be taught about astigmatism free zone and frown incision</td>
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<td></td>
<td>• Almost all cases had superior limbal scarring and also some were vascularized, because of which making tunnel was difficult with the available crescent blades.</td>
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<td>• This scaring may be from their young age at the time when trachoma (?) was prevalent in Cambodia</td>
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<td>• Residents performed SICS by taking 7-8 mm straight tunnel which may induce lot of</td>
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<td>• With high number of patients with superior scarred limbus, a research study to evaluate astigmatism pre-operative and post-operative with different section types and managing intra-operatively should be considered.</td>
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<td>astigmatism</td>
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**Dense Arcus:**
- Almost all the patient had dense arcus.
- Presence of dense arcus may lead to visibility issues if clear cornea phaco is performed

**Presence of dense arcus may lead to visibility issues if clear cornea phaco is performed**

**Pterygium:**
- Many young patients had big pterygiums
- This possibly may be due to location of Cambodia being nearer to equator

**Residents should be made aware that combining large pterygium with cataract is not a good option as it may lead to astigmatism and visibility issues and however, if such need arise, residents should be taught how to proceed for such cases.**

**Based on studies from Taiwan, research studies evaluating association of high risk of skin cancers in patients with pterygium and role of impression cytology in excised area to see for recurrence may be considered.**

**Type of Cataracts:**
- More patients presented with nuclear cataract compared to cortical cataract.
- This may be possibly due to high UV radiation, lower socioeconomic status

**In such scenario of more pts presenting with nuclear cataract, it’s very important for residents to learn a good ECCE for large and dense nuclear cataract and also use vectis technique to prevent intra-operative complications. This may be next batch can focus more on this.**

**Performing a good ECCE with pre-placed sutures and endocapsular technique, one can prevent intra-op complications is thin PC, zonular weakness among others.**

**Phaco should only be done in selected cases as patients from rural/ periphery town may not afford foldable lens and increasing phaco incision size for non-foldable lens will defeat the purpose.**

**Focusing on these topics (ECCE and safe practices in cataract surgeries) can be one of objective of the next camp.**

**Mannitol was not available**

**Its availability should be made mandatory**

**Its use intraoperatively, pre-operatively is very important for residents to know.**

**Lateral canthotomy**

**Lateral canthotomy indications on table and how to do it should be taught to residents**