TECHNOLOGY GUIDELINES FOR A DISTRICT EYE CARE PROGRAMME

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PREFACE

The Technology Working Group of VISION 2020 is responsible for compiling this document. VISION 2020 - The Right to Sight is a Global Initiative for the Elimination of Avoidable Blindness by the year 2020. VISION 2020 is collaboration between the International Agency for the Prevention of Blindness and the World Health Organization.

The document aims to provide guidance on the personnel, equipment, and supplies needed for setting up a district eye care programme. It is based on material originally produced for use by graduates of the Diploma in Ophthalmology Course of the West African College of Surgeons. However, any eye care practitioner can make use of it as reference material in teaching, planning and implementing eye care programmes.

On completion of training, the practitioner is expected to commence work and be able to function independently at the district hospital delivering services to a population of at least 500,000. Tasks include outpatient consultations, surgery, teaching and supervision of personnel delivering eye care services, conducting outreach clinics and surgery, and managing the programme for the population he/she covers. To make maximum use of the training given, he/she needs to be well equipped. Since the process of acquiring equipment and consumables can be lengthy, it should be started while the practitioner is still in training and should be in place on completion.

The practitioner will function at the base (district hospital) unit and on outreach. This includes supervision of, and support to, satellite eye units, which may be staffed by ophthalmic nurses, and ancillary staff who will be responsible for referring ophthalmic patients for surgery or medical interventions. The practitioner should also have leadership, communication and teaching skills.

The concept of a district health service for a population of 500,000 has been used in this booklet with a description based on the type of personnel and service needed.

Section I deals with the base/district unit and its satellites where there are fully qualified ophthalmic personnel. It aims to provide guidance on the equipment and consumables required for service delivery.

Section II addresses the equipment and consumables required by general medical personnel, who have had some training in eye care and are responsible for delivering services.

Section III addresses the needs in personnel, activities, equipment and supplies at primary (community) level.

Section IV contains a budget estimation. Where prices are indicated, they are in US dollars and should be taken as a guide for ordering only.

Section V provides information on the ordering and stock management processes involved in maintaining the supplies required.

The lists are not exhaustive. The aim is to identify a range of items that are durable and value for money, and the minimum needed for delivering eye care services at the base, satellite, and community levels. The quantities suggested are for one year on the basis of an initial 500 operations and approximately 100 low vision patients. Ophthalmic equipment is cross-referenced to the appropriate section. The guidelines assume that basic non-ophthalmic items have been, or will be, provided.

All ophthalmic items are drawn from the 'Standard List for a VISION 2020 Eye Care Service Unit' that is available on the websites www.v2020.org and www.iceh.org.uk.

This document and the Standard List are also available, in print form and free of charge for developing countries, from

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TERMINOLOGY

Ambu bag – *page 20.* Manual respiratory resuscitation equipment.

Base or district hospital eye unit – *page 5.* A hospital or eye unit serving a population of about 500,000 persons from where the ophthalmologist and programme manager direct eye care service delivery for the district. The ophthalmologist performs surgery on routine cases and those referred from the satellite units. Specialist refraction and low vision services are provided. There is an emphasis on teaching eye health care workers.

From the base unit, outreach visits can be conducted to the satellite units (outreach points) for surgery, supervision and training.

CCTV – *page 16.* Closed circuit television: a television system which is for individual or private use. An image is conveyed from a camera to a monitor (television). The camera can be connected to an operating microscope or slit lamp, or can be used in conjunction with the television to enlarge an original image. The larger image is now seen on the screen and enables a visually impaired person to read.

Community health worker – *page 3.* Serving a population of about 5,000 to 10,000 persons, the community health worker is often the patient's first communication with a person who can give them advice on a health problem. The community health worker will have received training on how to take a visual acuity, simple eye management, and how to refer the patient needing specialist care for an eye problem.

Community member – *page 3.* A community member is often a volunteer who assists the health worker in community health care related activities. Ideally, there would be one community member for every 250 persons.

Consumables – *page 2.* An item that is used for providing health care to a patient e.g. a syringe, intraocular lens, or gauze. Once used, it cannot be used again.

Integrated eye care *- page 2.* Unit serving a population of 10,000 persons and staffed by trained integrated health care workers. Integrated eye care units may not be found in all health care systems.

Integrated eye care worker – *page 32.* Health care workers (e.g. general practitioners, other specialist doctors, midwives, general nurses) who in the course of their normal health care duties, will have received training enabling them to identify, prescribe and treat common eye conditions, referring more complicated cases to the fully trained eye care worker.

Mid-level personnel – *page 2.* A trained eye health worker (e.g. ophthalmic nurse, ophthalmic clinical officer) who is working at the district and community level, and involved in the screening, treating and prescribing of medication to eye patients. Some mid-level workers will be trained to conduct surgery at

their stations or when on outreach, and will also be involved in the daily management of the unit. A major role that the mid-level eye worker plays is in training of others and, through doing this, ensures that the provision of eye care is extended and becomes accessible even to remote communities.

Practitioner – *page 5.* People who are directly involved in some aspects of patient care, e.g., an ophthalmologist, ophthalmic nurse, community eye care worker, village health worker.

Primary eye care providers – *page 27.* Based at the village health unit there should be one primary eye care worker for every 5,000 to 10,000 persons. They have been trained to screen, prescribe and treat common eye conditions. A primary eye care worker is a link between primary and satellite eye units. Emphasis is on developing and engaging with the community to promote improved eye care service delivery.

Primary level – *page 34.* Primary health care is based in the village and may serve a cluster of villages. Each primary health care unit may serve a population of around 5,000 to 30,000 persons. The health care unit emphasis is on promotion, prevention and curative health care.

Programme manager – *page 11.* Someone who has received training in management and administration with specific emphasis on developing and increasing eye care services in the district.

Satellite or outreach unit – *page 2.* An eye unit serving a population of about 100,000 persons and staffed by mid-level personnel, e.g., a cataract surgeon and/or an ophthalmic nurse who can conduct routine surgery, screen, diagnose, prescribe and treat common eye conditions. Emphasis is placed on developing community eye care through the training of health care workers. The centre should receive intermittent but regular outreach visits from the ophthalmologist for service delivery (surgery and medical), supervision and training.

School eye health teacher – *page 36*. Teachers who will have received training in eye health to provide screening, health education and primary eye care.

SICS – *page 13.* Small Incision Cataract Surgery

Tally sheet – *page 30.* A method of recording e.g., using ‘bars’ in groups of 5, i.e. ~~IIII~~, III would be equivalent to 8 patients (the number of patients that may have been seen in a day in a clinic).

Technology Working Group – *page 5.* Established through VISION 2020 to improve the flow of information concerning appropriate, high quality and affordable equipment, consumables, and resource materials essential for the delivery of eye care services.

VISION 2020 The Right to Sight– *page 5.* A global initiative developed by the partnership in blindness prevention - the International Agency for the Prevention of Blindness and the World Health Organization, working with other interested organizations to eliminate avoidable blindness by the year 2020.

SECTION I: BASE AND SATELLITE UNITS STAFFED BY OPHTHALMIC PERSONNEL

1.1. BASE UNIT

1.1.1. Physical facilities and team

In addition to being well equipped, the district eye unit should have adequate physical facilities and support staff. Below is a list of the optimum facilities and staffing.

Physical facilities

Outpatients department:

- Waiting area
- Triage room
- Consulting Room – minimum dimensions 6 metres long and 3 metres wide

Minor Procedures Room.

Optical Rooms: i.e. refraction area which can also be used for low vision assessment, display room/shop, optical workshop.

Counselling Area.

Ward: Bed complement of 25 beds or more in at least two wards (Male and Female), plus a separate ward or room for patients with infections.

Operating Theatre: A theatre with ophthalmic sterilisation facilities and access to general anaesthetic and central sterilization services. It should include a store for consumable items.

Shared ancillary areas: pharmacy, laboratory, registration, etc.

Teaching/seminar room: An important component of the unit is teaching. There should be access to a seminar room.

Transport: Services have to be delivered outside the hospital through outreach visits and community focused activities. The eye care programme will need transport (preferably a 4WD robust vehicle).

Office: The practitioner is responsible for delivery of eye care to a population of around 500,000 and will need an office from which to conduct administrative and management tasks, prepare teaching materials, and organize VISION 2020 activities.

Team composition and skill mix:
The VISION 2020 district implementation team should consist of staff capable of providing medical and technical services as well as management skills.

Ophthalmologist and/or cataract surgeon offering:

- Clinical skills for comprehensive eye care
- Surgical skills in cataract and glaucoma (if ophthalmologist)
- Training in surgery - cataract (including small incision cataract surgery), glaucoma (if ophthalmologist)
- Teaching and supportive supervision of personnel delivering eye care services
- Ability to conduct outreach clinics and surgery
- Management and evaluation skills to supervise and motivate the VISION 2020 team
- Computer literacy including email and internet use

VISION 2020 programme manager able to support the practitioner. The programme manager should have the following skills:

- Organisational skills necessary to manage all aspects of the VISION 2020 programme
- Stock control (ordering, receiving, managing, monitoring)
- Basic knowledge of accountancy for managing the financial aspects of programme activities
- Computer literacy (including email and internet)
- Supervisory and human resource management skills to address staffing issues
- Ability to identify potential donors and engage with service groups within the VISION 2020 programme
- Ability to identify gaps in service delivery
- Ability to network with other stakeholders

Ophthalmic trained nursing staff * able to:

- Screen, diagnose and treat basic eye conditions
- Provide effective management and assistance in the operating theatre
- Manage clinical areas and nursing staff
- Perform refraction on adult patients
- Display competence and teach specific primary eye care procedures
- Teach, demonstrate, and monitor extra-ocular surgery procedures
- Assess patients with low vision in conjunction with the refractionist/optometrist
- Assist the practitioner in identifying appropriate consumables and equipment required for the clinical areas
- Develop computer literacy skills

The ophthalmic nurses will be allocated to the ward, theatre, and outpatient areas. Staff may be required to cover evening, night and weekend shifts.
*There should be a minimum of 4 nursing support staff for each surgeon.

Refractionist or optometrist able to:

- Provide refraction services for adults, (and with special training) for children, those with low vision or with squint
- Teach health workers and school teachers how to test visual acuity
- Competently manage stock levels

Optical technician able to:

- Fit spectacles and provide low vision devices
- Competently manage stock levels

Counsellor: (could be part of the role of the ophthalmic nurse) able to:

- Provide high quality counselling to parents of children with low vision or congenital cataract
- Counselling to patients with cataract, glaucoma, and other conditions which require surgery or who have irreversible visual loss
- Educate community health workers in patient care

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Equipment technician (could be a member of the theatre staff or an optical technician) able to:

- Establish a programme of regular preventative maintenance in the hospital and visit outreach stations for basic instrument and equipment repair
- Identify spare parts needed and report requirements to the programme manager.
- Train end-users in care of instruments and equipment

Cashier able to**:**

- Be responsible for the daily takings of the eye unit

Storekeeper able to:

- Maintain the stock of all items in the eye unit

Records clerk able to:

- Maintain the medical records

Secretary able to:

- Provide administrative support to the eye unit

Driver able to:

- Responsibly maintain the upkeep of the vehicles

Orderlies/cleaners able to:

- Responsibly maintain the hygiene of the eye unit

1.1.2. Equipment

The detailed list of equipment and instruments will have to be drawn up by the team. It is advised that sets be standardised and the sharp and delicate tipped instruments should be of the highest quality. For each cataract set, 2-3 sets of sharps and fine tipped forceps, e.g., capsulotomy scissors, suture-tying and corneal forceps, should be ordered and kept as spares. If the surgeon is trained in small incision cataract surgery (SICS), additional knives will be needed. Refer to Appendix 2 of the Standard List. These delicate instruments frequently need to be replaced, rather than the whole set.

A good supply of spare parts for any equipment should be ordered at the time of purchasing. Items should be standardized, and the person in charge of procurement needs to work in close consultation with an end-user. In this document, quantities are given for the spare parts needed for one year. To ensure prolonged use of electrical equipment, to protect delicate bulbs and computerised circuitry, it is advisable to use voltage protectors/regulators.

A steel and glass cupboard, which can be locked, and with ventilation holes, should be purchased for storage of instruments.

The equipment list which follows contains some of the most expensive items needed for the programme. To help the practitioner decide on what it is essential to purchase when funds are limited and what can wait until additional funds become available - see columns:

- **Essential (E)**
- **If Funds Available (IFA)**

OUTPATIENT DEPARTMENT EQUIPMENT

Examination and Diagnostic. This includes refraction services. Extras required for post-operative congenital cataract patients are not included. Non-ophthalmic items not included in the Standard List are marked N/A
Remember to order spare bulbs.

Description	Standard list section	Essential (E) or If Funds Available (IFA)	Quantity required
Slit lamp, applanation tonometer, manual stand, and monocular observation tube	5	E	1
Video monitor to slit lamp/video port	N/A	IFA	1
Diagnostic pen torches plus spare bulbs – locally available	N/A	E	3
Keratometer (manual or automatic)	5	E	1
A Scan	5	E	1
Spare paper for A Scan	5	E	10 rolls
Large 3-mirror gonioscopy lens	5	E	1
Indirect ophthalmoscope with teaching mirror	5	E	1
Lens 20D	5	E	1
Direct ophthalmoscopes	5	E	3
Lens 78D	5	E	1
Lens 90D	5	E	1
Visual acuity charts - combined E and Snellen	5	E	4 of each
Near reading chart	5	E	1
Occluders / pinhole	5	E	2
Dressing trolley	3	E	2
Autorefractor	5	IFA	1
Lensometer	5	E	1
Visual field analyzer	5	IFA	1
Ishihara colour test plate	5	E	1
Streak retinoscope SR 2.8V	5	E	1
Cross cylinder 0.5 and 1.00	5	E	1 of each
Trial frame Skeoch - adult	5	E	1
Trial frame Skeoch – paediatric	5	E	1
Surgeon's stools with castors	3	E	4
Table mounted light	N/A	E	1

Filing cabinet	N/A	E	1

Low vision If a low vision service is being established, the equipment and devices listed here are all essential.

Description	**Standard List section**	**Quantity required**
LogMAR Test Chart in Landolt C (Distant)	8	1
LogMAR Test Chart in Illiterate E (Distant)	8	1
LogMAR Test Chart in Letters (Distant)	8	1
LogMAR Test Chart in Numbers (Distant)	8	1
LogMAR Test Chart in Landolt C (near)	8	1
LogMAR Test Chart in Illiterate E (near)	8	1
LogMAR Test Chart in Letters (near)	8	1
LogMAR Test Chart in Numbers (near)	8	1
Flip Cards in Landolt C (Distance)	8	1
Flip Cards in Illiterate E (Distance)	8	1
Flip Cards in Letters (Distance)	8	1
Flip Cards in Numbers (Distance)	8	1
LEA Low Contrast Sensitivity Test – symbols	8	1
LEA Contrast Sensitivity Test – numbers	8	1
LEA Crowded Symbol Book	8	1

Spectacle magnifiers (local purchase)		
6 Dioptre	N/A	6 (2 Right, 2 Left, 2 for trial set)
8 Dioptre	N/A	6 (2 Right, 2 Left, 2 for trial set)
10 Dioptre	N/A	6 (2 Right, 2 Left, 2 for trial set)
12 Dioptre	N/A	6 (as above)
16 Dioptre	N/A	6 (as above)
20 Dioptre	N/A	6 (as above)
Telescopes		
Extra-short focus, 3 X, 20mm : Cat 3912	8	10
Extra-short focus, 4 X, 12mm : Cat 3914	8	10
Extra-short focus, 6 X, 16mm : Cat 3916	8	10
Extra-short focus, 8 X, 21mm : Cat 3918	8	10
Extra-short focus, 10 X, 25mm : Cat 3920	8	10
Near clip-on monocular 2.5x : Cat 6018	8	10
Dome + Bar		
2 X, 65mm : Cat 6912	8	5
1.5 X, 160 x 25mm : Cat 1625	8	5
Stand magnifiers		
12 Dioptre, 3 X, 50mm : Cat 7554	8	10
28 Dioptre, 7 X, 35mm : Cat 6756	8	10
36 Dioptre, 9 X, 35mm : Cat 6757	8	5
44 Dioptre, 11 X, 30mm : Cat 6758	8	5
50 Dioptre, 12.5 X, 30mm : Cat 6759	8	3

Foldable Magnifiers		
12 Dioptre, 3 X, 38mm : Cat 7523	8	10
Hand Held Magnifiers		
8 Dioptre, 3 X, 60mm : Cat 6744	8	10
12 Dioptre, 4 X, 50mm : Cat 6745	8	10
12 Dioptre, 5 X, 44mm : Cat 7544	8	10
28 Dioptre 7 x hand-held magnifier	8	10
Other		
Special exercise books for VI children – locally made	N/A	
Clip-on filter sunglasses	N/A	100
Low magnification devices – locally made	N/A	25
Plus lenses up to + 16	N/A	100 assorted dioptres
White canes with wooden wheels	N/A	20

Other materials like felt tip pens, reading stands, typo-scopes, writing guides, etc., can be made or obtained locally and should be available for training and demonstration.

As the programme develops and funds become available computers, printers, and a 20 inch television available for CCTV demonstration can be considered.

Minor procedures room

Description	Standard List section	E or IFA	Quantity required
Punctal dilator	4	E	1
Cannula flat-tipped	4	E	4
Eye lid speculum – adult	4	E	2
Eye lid speculum – child	4	E	2
Retractors Desmarres – medium	4	E	2 pcs
Retractors Desmarres – small	4	E	2 pcs
Forceps fine non-toothed	4	E	2
Toothed forceps	4	E	2
Bard Parker blade handle No. 3	4	E	2
Blades No. 15	4	E	2
Blades No. 11	4	E	2
Scissors Westcott, conjunctival	4	E	1
Binocular headband loupe, 2.5x magnification	5	E	1
Instrument sterilizing box with lid	4	E	1
Tonometer Schiotz or Perkins hand held	5	E	1
Visual Acuity charts E and snellen combined	5	E	1
Sterilizing drum	3	E	2
Glucometer	5	E	1
Dextrostix for glucometer	5	E	4 packs
Intravenous infusion stand with castors	N/A	E	1
Scissors (heavy duty)	4	E	1
Assorted gallipots	N/A	E	6
Instrument tray with lid	4	E	3
Table mounted light	N/A	E	1
Sphygmomanometer aneroid	N/A	E	1
Stethoscope	N/A	E	1
Artificial eyes assorted sizes	5	E	1 box

Ward

Description	Standard List section	E or IFA	Quantity required
Scissors, Westcott, conjunctival	4	E	1
Retractors Desmarres – medium	4	E	2pcs
Retractors Desmarres – small	4	E	2pcs
Ophthalmoscope plus 2 spare bulbs	5	E	1
Binocular headband loupe, 2.5x magnification	5	E	1
Eye lid speculum – adult	4	E	2
Eye lid speculum – child	4	E	2
Slit lamp and applanation tonometer, manual table	5	E	1
Indirect ophthalmoscope	5	E	1
Lens 20D	5	E	1
Dressing trolley	3	E	2
Jeweller's forceps fine (suture removal)	4	E	1
Dressing scissors	N/A	E	1
Scissors for lash cutting	N/A	E	1
Assorted gallipots	N/A	E	6
Instrument tray with lid	3	E	2
Surgeons stools with castors	3	E	2
Intravenous infusion stand	N/A	E	1
Weighing scales	N/A	E	1

Operating theatre

Ideally, base hospital theatre equipment should be kept separate from outreach equipment. This list supposes that two surgeons are available and need to be equipped to provide surgery at the base unit with one of them on rotation to the satellite units. Essential equipment for outreach is found in section 1.1.6.

Description	Standard List section	E or IFA	Quantity required
Autoclave, vacuum-type, bench top. For sterilizing instruments only.	3	E	1
(Spare). Autoclave, vacuum-type, bench top. For sterilizing instruments only	3	IFA	1
Autoclave large electric, vertical top (for sterilizing linen and gauzes with 3 drums)	3	E	1
Operating microscope	3	E	2
(Spare) Portable operating microscope	3	IFA	1
Assistant binocular teaching scope for operating microscope.	3	E	1
Spare bulbs for operating microscope	3	E	10
Pneumatic vitrectomy unit – portable, with initial stock of consumables	3	E	1
Disposable sterile vitrector pneumatic cutters for the above	3	E	2 sets
Bipolar cautery with cable, probe and forceps	3	IFA	1
Spirit lamp and spare wick	N/A	E	1
Hydraulic operating table	Local purchase or 3	E	2
Operating headrest (extension to operating table)	3	IFA	1 for each table
Reuben pillow	4	E	1 for each table
Eye pressure reducer	4	E	2
Cheatle's forceps and container	4	E	2 of each
Surgeons' stools on castors	3	E	4
Portable surgical light	3	E	2

Dressing trolley	4	E	5
Intravenous infusion stands on castors – local purchase	N/A	E	2
Tonometer hand-held, Schiotz or Perkins	5	E	1
Linen trolley – local	N/A	E	1
Bowl stands, single stainless steel with stainless steel bowl	N/A	E	2 pieces
Standby generator (also useful for outreach)	N/A	E	1

Support equipment for local anaesthetic. Complications may occur during local anaesthetic procedures. It is essential that the following items are available to support patients undergoing local anaesthetic.

Description	Standard List section	E or IFA	Quantity required
Suction pump, portable	3	E	1
Suction catheters	N/A	E	Assorted sizes
Oxygen cylinder	N/A	E	1
Resuscitator AMBU Adult	3	E	1
Adult face mask – Size 4	3	E	1
Adult face mask - Size 5	3	E	1
Airways Geudal - Size 3	3	E	1
Airways Geudal - Size 2	3	E	1
Pulse oximeter	3	E	1

Instrument sets: Specific surgical sets are maintained. Intraocular and extraocular instruments are not interchangeable.

Description	Standard List section	E or IFA	Quantity required
Cataract surgery sets – ECCE/PCIOL or SICS as appropriate	3 and Appendices 1 and 2	E	Minimum of 5
Lid surgery/trichiasis sets	4	E	2
Minor operations set	4	E	2
Instrument sterilizing boxes with lids	4	E	4
Instrument trays with lid	4	E	3
Large tubing for scissors	4	E	3
Small tubing for micro instruments	4	E	3

1.1.3. Consumables

The lists below are based on an initial stock for 500 operations.

Consumables: For small incision surgery, special knives maybe required, either supplied as a fragment to be mounted onto a handle **or** as a complete knife and handle unit. These are marked with an *.

Description	Standard List section	E or IFA	Quantity required
9/0 Nylon spatulated double armed sutures (12 pcs per box)	3	E	14 boxes
4/0 Black braided silk on a reel	3	E	4 reels
10/0 Nylon spatulated for corneal lacerations (12 pcs per box)	3	E	4 boxes
Cutting eyed needles for lid surgery (12 per pkt)	3	E	12 packets
Absorbent swabs triangular (500 per packet)	3	E	6 packets
Razor blades (box of 100)	N/A	E	2 boxes
Zinc strapping	3	E	20 rolls
Gauze roll	3	E	5 rolls
Knives and blade fragments			
*Crescent knife, fragment angled bevel up 2.5 mm	4	E	500
*Slit knife / keratome, fragment 3.2 mm angled	4	E	500
*Implant blunt tipped knife, fragment 5.2 mm	4	E	500
*MVR 19 gauge, fragment	4	E	500
*15 Degree Stab Knife, fragment	4	E	500
*Handle for knife fragments	4	E	3
Knives, for single use			
*Crescent knife angled bevel up 2.5 mm (plastic)	4	E	125
*Slit knife / keratome 3.2 mm angled (plastic)	4	E	125
*Implant blunt tipped knife 5.2 mm (plastic)	4	E	125
*15 degree stab knife (plastic)	4	E	125
*MVR 19 gauge (plastic)	4	E	125

Intraocular lenses

Posterior Chamber - 500 lenses, with or without dialing holes. Below is a rough guide using 22D as standard intraocular lens

Dioptre	E or IFA	Quantity
18	E	25
19	E	25
20	E	25
21	E	50
22	E	305 (standard IOL)
23	E	35
24	E	35

Anterior Chamber – 50 intraocular lenses.
Standard lens – 19 Dioptre three or four point fixation.

Cataract kits (Appendices 1 and 2 of the Standard List)
50 kits are required for outreach. The kits include all the consumables required for 5 operations for PC or AC IOL surgery or SICS.

Pharmaceuticals: Below are estimated quantities. After 4 months an inventory of all consumables should be undertaken and stock re-ordered

Description	Standard List section	E or IFA	Quantity
Antibiotics			
Chloramphenicol 1% eye ointment	1	E	500 tubes
Ciprofloxacin 0.3% eye drops	1	E	250 bottles
Co-trimaxole tablets 400 mg & 80 mg	1	E	500 tablets
Gentamicin 0.3% eye drops	1	E	600 bottles
Gentamicin injection 40 mg/ml - 2 ml	1	E	300 ampoules
Povidone Iodine 10% - 200 mls	1	E	50 bottles
Tetracycline 1% eye ointment	1	E	1000 tubes
Steroid/anti-inflammatory			
Dexamethasone 0.1% eye drops	1	E	200 bottles
Dexamethasone injection	1	E	300 ampoules

sodium phosphate 4 mg/ml -1 ml			
Prednisolone 5 mg tablets	2	E	100 tablets
Antibiotic steroid/inflammatory combination			
Betamethasone & Neomycin ointment	1	E	600 bottles
Gentamycin 0.3% & Dexamethasone 0.1% eye drops	1	E	1000 bottles
Mydriatics/dilating drops			
Adrenaline 1 mg/ml -1 ml injection	1	E	100 ampoules
Atropine 1% eye ointment	1	E	100 tubes
Atropine sulphate 1% eye drops	1	E	100 bottles
Cyclopentolate 1% eye drops	1	E	50 bottles
Cylcopentolate 0.5% & Phenylepherine 2.5% eye drops	1	E	50 bottles
Tropicamide 1% eye drops	1	E	50 bottles

Miotics/Glaucoma preparations			
Pilocarpine 4% eye drops	1	E	300 bottles
Pilocarpine nitrate 0.5% injection	1	E	50 ampoules
Timolol 0.5% eye drops	1	E	150 bottles
5-Fluorouracil injection 250 mg/5 ml	1	E	20 ampoules
Miochol 1% injection	1	E	5 ampoules
Anti-Virals			
Acyclovir 3% eye ointment	1	E	300 tubes
Acyclovir 200mg tablets	1	E	500 tablets
Anti-Fungal			
Natamycin 5% suspension or Natamycin 1% eye ointment	1	E	100pcs
Anaesthetic agents and drops			
Amethocaine 0.5% eye drops	1	E	50 bottles
Lignocaine 2% & Adrenaline 1:100,000 injection - 50ml	1	E	100 bottles

Others			
Acetazolamide 250 mg tablets	1	E	2000 tablets
Fluorescein strips	1	E	10 packets
Hyalurondiase 1,500 IU/ml injection	1	E	8 pkts
Ketamine 50 mg/ml injection	1	E	4 bottles
Methylcellulose (HPMC) 2ml syringe	3	E	250 2ml syringes
Multi-vitamin tablets	1	E	1000 tablets
Perasafe sterilizing solution	1	E	48 sachets
Sodium Chromoglycate 2% eye drops	1	E	50 bottles
Zinc Sulphate 0.25% eye drops	1	E	500 bottles
Vitamin A capsules 200,000 IU	1	E	1000 capsules
Ethanol for retrobulbar injection	1	E	10 ml
Glycerol	1	E	50 ml
Ringers Lactate 500ml	3	E	300 bottles
Glucometer testing kits	5	E	6 x 50 strips

Local purchase

Description	**Section**	**Quantity**
Mannitol 20% infusion	N/A	250 ml
Paracetamol 500mg tablets	N/A	1000 tablets
Sodium Chloride 0.9% infusion	N/A	50 bottles
Depo-medro 40mg/ml	N/A	5 ampoules

1.1.4. Teaching / Training. Most of these items are general and not in the Standard List unless marked.

1 Slide projector +75 – 120, 200m Lens + cable for remote control
1 Tripod screen for slide and overhead projectors
2 spare carousel slide trays
1 Overhead projector lightweight (portable) with copier transparencies and felt tip pens
ICEH/WHO Slide Sets (various subjects) and other publications – refer to Standard List section 7
1 White or black board

As the programme develops consideration could be given to purchasing an LCD projector.

1.1.5. Administrative. These items are not in the Standard List.
Computer
Monitor

Keyboard
Mouse
UPS (Uninterrupted Power Supply)
Printer
Photocopier
Laptop computer
Filing cabinets, fixtures and furniture
Stabiliser
Telephone access/mobile phone
Internet access desirable
Scanner – when funding allows

1.1.6. Outreach - Clinic and surgery

Outreach items should be kept separately from those used in the Base Hospital.
Options * have been given for electric or non-electric sterilizers with portable generator.

DESCRIPTION	**Standard List section**	**QTY**	**TOTAL PRICE $**
Hand-held slit lamp *(not currently featured on SL, but models now available)*	N/A	1	1000
Operating microscope portable	3	1	7,200
Near reading chart	5	1	5
Visual acuity chart combined E and Snellen	5	1	3
Hand-held tonometer Schiotz or Perkins	5	1	530
Ophthalmoscope	5	1	284
Spare bulbs for ophthalmoscope	5	6 pcs	98
Retinoscope plus 6 spare bulbs	5	1	398
Spare bulbs for retinoscope	5	1	95
Trial lens set	5	1	124
Trial frame Skeoch - adult	5	1	31
Trial frame Skeoch - child	5	1	31
Retractors Desmarres - medium (2pcs)	4	1 set	10
Eyelid speculum - adult	4	1	4
Forceps, Jeweller's fine	4	1	8
Scissors, Westcott - conjunctival	4	1	31
Binocular head band loupe x 2.5 magnification	5	1	28
*Autoclave, non-electric, portable	3	1	468
*Autoclave, electric, portable	3	1	783
ECCE/PCIOL Sets and instrument sterilizing box with lid	4/App 1	3	2,238
Evisceration, Chalazion, Tarsorrhaphy set instrument sterilizing box with lid	4	1	323
Entropion set and instrument sterilizing box with lid	4	1	435
ECCE Cataract kit (consumable) – suitable for 5 IOL operations	3/App 1	1	50

Sterilizing drum	3	3	257
Other			
*Portable stand-by generator *(not featured on SL)* e.g. 3kva	N/A	1	1,050

Prices shown are estimated and taken from the lowest options on the Standard List.

Total cost approximately $15,000 (with option of the non-electric sterilizer)

1.1.7. Transport

The ideal vehicle needs to be robust - 4 wheel drive, long base, 2 spare tyres and reinforced suspension. A two-year stock of spare parts should be ordered. The vehicle should be of a make and model that can be easily serviced locally. There should be room enough for the outreach equipment and for patients, if necessary. It should not be of too high a specification or too attractive to be commandeered for "other purposes"!.

Examples:

- Land Rover Defender and Spares
- Toyota Land Cruiser Hardtop and Spares

A luggage rack is a useful accessory.

1.2 SATELLITE UNIT

In order to be fully functional, the services at the Base Hospital level which are staffed by an ophthalmologist and team, will need a network of referral services, staffed by mid-level personnel. Situations may be different for each country and each stage of development of an eye care programme.

Suggestions are also made for staff/population ratios and team compositions, as the technology required will depend on the facilities as well as the number of personnel.

For a population of about 500,000 there should be a network of 4 satellite units strategically located at a ratio of about 1:100,000 population, a travel distance of not more than 60 km, or travel time or of not more than 1 hour.

1.2.1. Mid-level personnel, e.g. ophthalmic nurse, Ophthalmic Medical Assistants (OMA), Ophthalmic Clinical Officers (OCO), cataract surgeons, as available, with computer skills.

Community senior ophthalmic nurse or equivalent, with skills in:

- Teaching specific primary eye care competencies (focus on teaching general health care personnel, including primary health workers, cataract identifiers)
- Extraocular surgery (trichiasis surgery)
- Screening, diagnostic and treatment of common eye conditions
- Basic adult refraction
- Management of an efficient satellite unit
- Teaching of health education and promotion for the community.

State enrolled nurse/community health nurse with some training in eye care to support the senior ophthalmic nurse.

Refractionist with some training in low vision (LV) and support of patients.

Dispensing optician to support the refractionist.

Low vision therapist, skilled in:

- Provision of basic LV and rehabilitation services for adults and children
- Coordination of LV services in the field, in conjunction with the ophthalmic nurse
- Managing and re-ordering stock of LV devices and equipment.

Access to an equipment maintenance technician is beneficial

Support Network:

- **Community/PHC nurses/cataract identifiers, rehabilitation officers** familiar with orientation and mobility skills
- **Teachers** who have been sensitised to working with children with low vision
- **Primary eye care providers, maternal and child health care workers** who can recognise and appropriately refer children with “white pupil” or vision loss
- **Community-based rehabilitation workers** who can provide follow up (as “case managers”) for children needing low vision or refractive services
- **Village health workers, health centre and dispensary staff** who have skills to detect vision loss and know where to refer patients.

1.2.2. Services offered are:

Eye care

- Vision testing and screening; adults and children, including basic eye examination including lid eversion and fluorescein staining

- First aid for injuries including: removal of superficial foreign bodies, irrigation of the eye and epilation of eyelashes
- Tonometry
- Fundoscopy
- Basic refraction

Minor surgery (after training in minor surgical procedures)
- Trichiasis surgery
- Incision and curettage of chalazia

Community ophthalmology
- Health education/awareness in clinics, dispensaries, and educational institutions
- Training and supervision of integrated eye workers, community level workers

Outreach recipient activities
- Identification and screening of patients: cataract and trichiasis
- Preparation of patients for outreach surgery
- Follow-up of outreach patients

Refractive error and low vision services
- Basic refraction and dispensing
- Minor repair of spectacles
- Low vision services for patients who have been assessed and provided with low vision devices

1.2.3. Equipment

All items listed below are essential

Description	Standard List section	Quantity
Ophthalmoscope and spare bulbs	5	1
Retinoscope and spare bulbs	5	1
Trial frame (universal) or adult and child	N/A or 3	1
Vision acuity charts; near, child and adult	5	2
Vision acuity charts combined E and Snellen	5	2
Binocular headband loupe 2.5x magnification	5	2
Tonometer Schiotz	5	1
Retractors, Desmarres - medium	4	2
Retractors, Desmarres - small	4	2
Eyelid speculum - adult	4	1
Eyelid speculum - child	4	1
Glucometer	5	1
Dextrostix	5	4 pkts
Minor surgery set and instrument sterilizing box with lid	4	1 set
Trichiasis surgery set and instrument sterilizing box with lid	4	1 set

Portable surgical light	3	1
Cheatle's forceps and container	4	1
Vacuum type autoclave for instruments	3	1

Local purchase

Description	Standard List section	Quantity
Rucksack for use on outreach	N/A	1
Torchlight and batteries	N/A	2
Sphygmomanometer	N/A	1
Stethoscope	N/A	1
Calculator	N/A	1
Assorted gallipots and kidney dishes	N/A	2 of each
Urine test strips	N/A	5 bottles

1.2.4. Drugs, dressings and consumables to cover the needs of 100,000 population. Below are estimated quantities. After 4 months an inventory should be undertaken. Extra items are needed for outreach and should be brought from the base hospital.

Drugs

Description	Section	Quantity
Tetracycline 1% ointment	1	1000
Chloramphenicol 1% ointment	1	1000
Gentamicin 0.3% eye drops	1	1000
Amethocaine 0.5% eye drops	1	25
Acyclovir 3% eye ointment	1	10
Cyclopentolate 1% eye drops	1	10
Vitamin A capsules 200,000 IU	1	1000 of each
Fluorescein strips	1	10 pkts
Acetazolomide 250 mg tablets	1	500
Gentamicin 40 mg/ml - 2 ml injection	1	20 amps
Povidone iodine 10% aqueous solution	1	20

Consumables

Description	Section	Quantity
Cotton wool – local purchase	3	2 rolls
Cotton tips	3	500 pcs
Gauze rolls	3	1
Zinc strapping	3	2
Spectacles – ready made	6	500
Spectacles – reading	6	150
Low vision devices	8	To be decided as programme progresses
Syringes (2, 5 and 10 ml) and needles (21, 23 and 25 gauge)	3	100 of each size

1.2.5. Records

Daily tally sheets or registers
Summary sheets
Reporting forms for health centre
Reporting forms for sending to administration
Display on clinic notice board:

- Graphs to show monthly and annual trend.
- Map of area of coverage to show facilities and outreach points
- Profile of area of coverage, population ages, number of communities, number of schools
- List of communities
- Annual work plan, monthly work plan; proposed and achieved

1.2.6. Training equipment

Slide projector (access to)
Overhead projector (access to)

1.2.7. Education materials – see publications section of Standard List

Posters and charts

- Prevention of blindness through primary eye care (WHO)
- How your eyes work (RNIB)
- Trachoma grading cards (WHO)
- Vitamin A protects your child's vision (Sight and Life)
- Assisting the blind and visually impaired (ICEH)

Other locally produced posters or charts

Other education materials

Description	Section	Quantity
Preventing Trachoma: Environmental Sanitation and Improved	7	2

Hygiene (WHO).		
Achieving Community Support for Trachoma (WHO).	7	2
The Eye in Primary Eye Health Care (slide series).	7	1
Eye Diseases in Hot Climates, J. Sanford-Smith 4th Edition.	7	2
Hanyane - A Village Struggles for Eye Health, E. Sutter *et al (French or English)*	7	1
Collaboration with African Traditional Healers, P. Courtright *et al*	7	1
Helping Health Workers Learn, D. Werner *et al*	7	1
Teaching Health Care Workers, F. Abbatt, R. McMahon.	7	1
Healthy Eyes Activity Book for Primary Schools, V. Francis, B. Wiafe.	7	1
Technology for VISION 2020 – Booklet (ICEH)	7	1

1.2.8. Physical facilities

Outpatient/Consulting room with standard equipment and furniture
Examination couch
Seminar room

1.2.9. Transport

- Motorcycle 125cc or 110cc on/off-road
- Provision for maintenance and fuel according to outreach itinerary.

SECTION II: GENERAL MEDICAL (NON-OPHTHALMIC)

2.1. INTEGRATED EYE CARE

These are health workers who see patients with eye problems during their routine services, e.g., general practitioners, other specialists, midwives and nurses provide this level of eye care.

2.1.1. Personnel

All trained integrated eye care workers.

2.1.2. Procedures

- Vision acuity testing, Snellen and E charts, pinhole
- Visual acuity matching cards for patients under the age of 4 years
- Basic eye examination including lid eversion and fluorescein staining
- Removal of conjunctival and sub-tarsal foreign bodies (corneal foreign bodies should be referred)
- Irrigation of the eye
- Epilation of eyelashes
- Care of spectacles
- General eye health education
- Fundoscopy, if performed regularly by integrated eye workers and trained to do so

2.1.3. Equipment - One package per consulting room

Description	Section	Quantity
Tray with lid	4	**2**
Retractors Desmarres - medium	4	1 set
Retractors Desmarres - small	4	1 set
Eyelid speculum – adult	4	1
Eyelid speculum – child	4	1
Eye shield disposable	3	200 pcs
Ophthalmoscope and spare bulbs	5	2
Spare bulbs for ophthalmoscope	5	4 pcs
Torchlight and spare bulbs	Local	3 of each
Visual acuity charts combined E and Snellen	5	2
Visual acuity chart near	5	2
Barraquer cilia forceps (epilation)	4	2

2.1.4. Drugs, dressings and consumables to cover the needs of 10,000 population

Description	Section	Quantity
Tetracycline 1% eye ointment	1	200
Chloramphenicol 1% eye ointment	1	100
Vitamin A capsules 200,000 IU	1	1000
Gentamicin 0.3% eye drops	1	100
Fluorescein strips	1	12
Chloramphenicol 0.5% eye drops	1	200
Amethocaine 0.5% eye drops	1	10
Tropicamide 1% eye drops	1	5 bottles

Consumables

Description	Section	Quantity
Cotton wool	3	3
Cotton tips	3	200
Gauze rolls	3	4
Zinc strapping	3	20
Batteries for torchlight and ophthalmoscope	Local	10

2.1.5. Records

Clinic daily register should include ophthalmic diagnosis.
Summary table to show eye patients by age, sex, eye infections, other conditions as agreed in National Health Management Information System.

2.1.6. Education materials – see publications section of Standard List

Posters and charts

- Prevention of blindness through primary eye care (WHO)
- How your eyes work (RNIB)
- Trachoma grading cards (WHO)
- Vitamin A protects your child's vision (Sight and Life)
- Assisting the blind and visually impaired (ICEH)

2.1.7. Physical facilities

Outpatient consulting/examination room with standard equipment and furniture.

SECTION lll: PRIMARY LEVEL

3.1. HEALTH WORKERS WHO HAVE RECEIVED SOME TRAINING IN EYE CARE

This level of care mainly provides basic diagnosis and treatment by general health workers. They are based at a village health post and are multi-skilled at the ratio of 1: 5,000 – 10,000 population.

3.1.1. Personnel

Community-based health nurses. In some countries, community health nurses receive more comprehensive training in eye care and could be responsible for a population of about 30,000, acting as a bridge between the communities and the surgical centre (whether the Base or Satellite Unit)

3.1.2. Activities performed

- Recruitment of patients (cataract/other blinding conditions and low vision)
- Registration of eye patients
- Vision acuity testing
- Basic eye examination including lid eversion and fluorescein staining
- Removal of sub-tarsal foreign bodies
- Irrigation of the eye
- Epilation of eyelashes
- Referrals as per agreed national criteria
- Trichiasis surgery, if trained, or act as a base for visiting trichiasis surgeon
- Counselling – cataract and low vision patients, help in use of devices, advising on lighting, environmental modifications
- Care of spectacles and dispensing of spectacles to patients with presbyopia
- Community diagnosis
- Screening for trachoma & low vision
- Register of certified irreversible low vision and blind patients
- Links with community-based rehabilitation and integrated education workers
- Training and supervision of community based workers, school teachers, traditional birth attendants, village health workers, vision guardians, community rehabilitation workers, etc.
- Eye health promotion, health education & awareness

3.1.3. Equipment

Description	Section	Quantity
Instrument tray with lid	4	2
Gallipots	N/A	2
Kidney dishes	N/A	2
Torch & batteries	Local	2
Retractors Desmarres - small	4	1 set
Barraquer cilia forceps (epilation)	4	2
Visual acuity charts combined E and Snellen	5	2
Visual acuity charts, near	5	2
Forceps fine non-toothed (to remove foreign bodies)	4	1

3.1.4. Drugs, dressings and consumables for 5,000-10,000 population

Description	Section	Quantity
Tetracycline 1% eye ointment	1	200
Vitamin A capsules 200,000 IU	1	1000
Fluorescein strips	1	1 pkt
Amethocaine 0.5% eye drops	1	3

Consumables

Description	Section	Quantity
Cotton wool	3	2
Gauze rolls	3	2
Cotton tips	N/A	100pcs
Zinc strapping	3	10
Spectacles for presbyopia	6	100

3.1.5. Records

Clinic daily register should include ophthalmic diagnosis.
Summary table to show eye patients by age, eye infections, other conditions as agreed in National Health Management Information System.
Display board to show

- List of communities
- List of schools
- Population profile
- Map to show area of coverage and visit points
- Monthly work plan

3.1.6. Education materials – see publications section of Standard List
Posters and charts

- Prevention of blindness through primary eye care (WHO)
- How your eyes work (RNIB)
- Trachoma grading cards (WHO)
- Vitamin A protects your child's vision – Sight and Life
- Assisting the blind and visually impaired – ICEH

Other locally produced posters or charts

Other education materials

Description	Section	Quantity
Preventing Trachoma: Environmental Sanitation and Improved Hygiene (WHO).	7	2
Achieving Community Support for Trachoma (WHO).	7	2
The Eye in Primary Eye Health Care (slide series).	7	1
Eye Diseases in Hot Climates, J. Sanford-Smith 4th Edition.	7	2
Hanyane - A Village Struggles for Eye Health, E. Sutter *et al (French or English)*	7	1
Collaboration with African Traditional Healers, P. Courtright *et al*	7	1
Helping Health Workers Learn, D. Werner *et al*	7	1
Teaching Health Care Workers, F. Abbatt, R. McMahon.	7	1
Healthy Eyes Activity Book for Primary Schools, V. Francis, B. Wiafe.	7	1
Technology for VISION 2020 – Booklet (ICEH)	7	1

3.1.7. Physical facilities

Health care unit facilities

3.2. SCHOOL EYE HEALTH

Screening and identification of children with eye problems

3.2.1. Personnel

First Aid Teachers - at least 2 per school - or School Health Nurse

3.2.2. Activities performed

Screening

- Vision acuity testing including children
- Trachoma screening
- How to recognise a child with vision problems
- Managing children using spectacles and low vision devices
- Basic eye examination including lid eversion for trachoma screening
- First aid including irrigation of the eye for superficial foreign bodies and chemical injuries

Health Education

- Teaching children how to care for spectacles
- General health education, eye care and prevention of eye problems
- Recruitment and referral of siblings and parents with refractive errors and teachers with presbyopia
- Encouraging children to attend for refraction follow-up
- Counselling
- Caring for a blind or visually impaired child

3.2.3. Equipment

Description	Section	Quantity
Instrument tray with lid	4	2
Torchlight with batteries	N/A	2
Visual acuity chart combined E and Snellen	3	2
Visual acuity chart near	3	2
Vitamin A capsules 200,000 (if in national programme)	1	2000

3.2.4. Drugs, dressings and consumables

Description	Section	Quantity
Tetracycline 1% eye ointment	1	100
Cotton wool	3	2
Gauze rolls	3	2
Zinc strapping	3	10

3.2.5. Records

School register to show children screened, date screened, recommended action/treatment given, referral details, (where to and action taken) and date of next follow-up and action required.

3.2.6. Education materials – see publications section of Standard List

Posters and charts

- Prevention of blindness through primary eye care (WHO)
- How your eyes work (RNIB)
- Trachoma grading cards (WHO)
- Vitamin A protects your child's vision (Sight and Life)
- Assisting the blind and visually impaired (ICEH)

Other locally produced posters or charts

Other education materials

Description	Section	Quantity
Preventing Trachoma: Environmental Sanitation and Improved Hygiene (WHO).	7	2
Achieving Community Support for Trachoma (WHO).	7	2
The Eye in Primary Eye Health Care (slide series).	7	1
Eye Diseases in Hot Climates, J. Sanford-Smith 4th Edition.	7	2
Hanyane - A Village Struggles for Eye Health, E. Sutter *et al (French or English)*	7	1
Collaboration with African Traditional Healers, P. Courtright *et al*	7	1
Helping Health Workers Learn, D. Werner *et al*	7	1
Teaching Health Care Workers, F. Abbatt, R. McMahon.	7	1

Healthy Eyes Activity Book for Primary School, V. Francis, B. Wiafe.	7	1
Technology for VISION 2020 – Booklet (ICEH)	7	1

3.2.7. Physical facilities

Vision testing area

3.3. GENERAL COMMUNITY HEALTH WORKERS

This level is provided by health workers of any category, orthodox PHC workers (first level of the health service) and traditional, who provide the front line health service for members of their community.

3.3.1. Personnel

- Village health worker
- Traditional birth attendant
- Traditional practitioners
- Other community health workers

3.3.2. Activities performed

- Vision testing to identify vision < 6/18, deteriorating vision, patients with presbyopia and normal distance vision
- First aid including irrigation of the eye for superficial foreign bodies and chemical injuries
- Basic eye examination (including lid eversion) to identify:
- Cataract
- Vitamin A deficiency
- Red eye
- Trauma
- Epilation of eyelashes
- Care of spectacles
- Eye health promotion

3.3.3. Equipment

Tray with lid, gallipots, receiver for eye cleaning
Torch and batteries
Visual acuity charts, combined E and Snellen

3.3.4. Drugs, dressing and consumables

Description	Section	Quantity
Tetracycline 1% eye ointment	1	200
Vitamin A capsules 200,000	1	1000
Chloramphenicol 0.5%	1	200

eye drops		
Cotton wool	3	2
Gauze rolls	3	2
Cotton tips	3	200
Reading spectacles	6	200

Any other mass distribution drug e.g. Mectizan® (ivermectin), Zithromax® (azithromycin)

3.3.5. Records

Clinic daily register should include ophthalmic diagnosis.
Summary table to show eye patients by age, eye infections, other conditions as agreed in National Health Management Information System.

3.3.6. Education materials – see publications section of Standard List

Posters and charts

- Prevention of blindness through primary eye care (WHO)
- How your eyes work (RNIB)
- Trachoma grading cards (WHO)
- Vitamin A protects your child's vision (Sight and Life)
- Assisting the blind and visually impaired (ICEH)

Other locally produced posters or charts

Other education materials

Description	**Section**	**Quantity**
Preventing Trachoma: Environmental Sanitation and Improved Hygiene (WHO).	7	2
Achieving Community Support for Trachoma (WHO).	7	2
The Eye in Primary Eye Health Care (slide series).	7	1
Eye Diseases in Hot Climates, J. Sanford-Smith 4th Edition.	7	2
Hanyane - A Village Struggles for Eye Health, E. Sutter *et al (French or English)*	7	1
Collaboration with African Traditional	7	1

Healers, P. Courtright *et al*		
Helping Health Workers Learn, D. Werner *et al*	7	1
Teaching Health Care Workers, F. Abbatt, R. McMahon.	7	1
Healthy Eyes Activity Book for Primary Schools, V. Francis, B. Wiafe.	7	1
Technology for VISION 2020 – Booklet (ICEH)	7	1

3.3.7. Physical facilities
Nothing specific

3.4. COMMUNITY MEMBERS
'Friends of Vision', 'Vision Guardians', community directed workers are community members who have no previous health care training or experience. This group of people – usually 1-2 per 250 population – may be trained to promote eye health in the community.

3.4.1. Personnel
Community members are:
- Selected by community
- Illiterate or literate
- Teachers, pensioners, elderly women
- Checked to ensure they have adequate vision for their tasks
- Usually volunteers so their population coverage must be quite small
- Involved in other community programmes such as ivermectin (Mectizan®) distribution, Vitamin A distribution

3.4.2. Activities performed
- Home visits
- Eye check - only 6/18 and 6/6 line and near vision
- Health promotion
- Dealing with frequently asked questions
- Providing information on the whereabouts of available eye services, cost, etc
- Identification of persons who need help to access eye care
- Counselling and referral
- Maintaining a community register
- Reporting to community health council on eye health profile of community and poor patients
- Integration of eye health activities within the community health/development agenda

3.4.3. Equipment

Locally produced vision charts which have only the 6/18, 6/6 line and near vision

3.4.4. Records

Community register which shows cases recruited, referred and those who took up of services.

3.4.5. Physical facilities

Nothing specific

4.0 ESTIMATED BUDGET FOR REQUIREMENTS FOR DISTRICT EYE CARE PROGRAMME

Budget estimations are completed at the planning and implementation stages of eye care programmes. The end-user appreciates the value of the technology and consumables if they are aware of their costs. The end-user and the programme manager can use the VISION 2020 Standard List and these guidelines for constructing a budget according to the funds available.

OUT-PATIENT DEPARTMENT	**US $**
Slit lamp	5,887
Other equipment (essential only)	13,432
Minor procedures	1,107
WARD	7,870
OPERATING THEATRE	
Operating microscope	6,700
Instrument sets	1,500
Other instruments	1,000
Education	3,600
Administration	5,500
Outreach clinic & surgery	5,900
Transport	19,000
CONSUMABLES	
Sutures / Intraocular lenses and artificial eyes	6,300
Drugs – basic stock	1,500
TOTAL	**$ 79,296**

A good supply of spare parts for any equipment should be ordered at the time of purchasing, items should be standardised, and the person in charge of procurement needs to work in close consultation with an end-user.
In this document, quantities are given for the spare parts needed for one year. To ensure prolonged use of electrical equipment, to protect delicate bulbs and computerised circuitry, it is advisable to use voltage protectors/regulators.

SECTION V: ORDERING AND STOCK MANAGEMENT IN AN EYE UNIT

Hospitals have ordering and stock management systems in place. However, information on specifications, suppliers, etc., is often not available. The eye care programme manager will need to initiate and implement the ordering process, and information for this purpose is available from the VISION 2020 Standard List, see www.v2020.org

The eye care programme managers will familiarise themselves with the equipment that is currently available and any additional items needed, and draw up comprehensive lists to assist in equipping or upgrading the unit. Apart from the list he/she should also obtain catalogues and price lists from various suppliers for budgeting purposes. Programme managers, the ophthalmologists, and cataract surgeons / ophthalmic nurses need to familiarise themselves with accessing information from the internet, where internet connection is available.

Sample forms for ordering and stock management are at Appendices 2 and 3.

5.1. THE ORDERING PROCESS

This is an example of an ordering process.

a) Start and maintain a filing system and develop a requirements list.

- Copies of all orders
- Catalogues from suppliers
- File on each piece of equipment, with full documentation and service manuals

b) Prioritise thus

- Essentials
- Useful to have
- Nice to have
- Can do without

c) Check current stock

Stock keeping is vital for efficient stock management and thus the provision of an effective service. Identification of shortfalls, broken or irreparable equipment and instruments, quality of particular models, and stock levels are all important.

d) All items in the eye department should be noted during the inventory and entered into the fixed assets register.

The fixed assets register should state:

- Where the piece of equipment can be located in the department
- Quantity
- When it arrived in the department
- Supplier and contact address for spare parts
- Model/make/serial number

Choose models, considering the following:

- heavy use and durability
- locally available models and expertise for manufacture, repair and maintenance
- cost of equipment and spares, its regular maintenance and repairs
- availability of spare parts in country
- associated requirements – electrical consumption, wiring required, water supply, environment, room temperature. What electric voltage does the item require– is this compatible in country?
- available training in the use of the equipment
- installation – will the supplier, if it is a very large piece of equipment, come and install it and carry out a simple maintenance workshop at the same time?

Seek advice from others before you make a decision. Are other eye units using the same or similar pieces of equipment – have they had good results, or problems with the maintenance of the equipment?

e) Prepare order. See example of **Purchase Order** form in Appendix 2. As much information as possible should be provided to ensure that the item required is received.

Details required:

- Catalogue number
- Make
- Model
- Detailed description of item
- Quantity
- Unit cost
- Total cost

Any accessories and spare parts should be listed separately. A catalogue or supplier's website and a previous supplier's invoice is always useful to ensure that the description and specifications are correct, e.g., an ophthalmoscope on the requirements list should translate to:

Heine Beta Ophthalmoscope Set C / W 2.5 V
Aperture Wheel 1 Head / Large Handle

When placing an order, ask the supplier what spare parts may be needed in the first year, e.g., light bulbs, fuses, spare paper for A Scan, anti-fungal tablets, and ensure that these are ordered as well.

Ask for the suppliers bank details and the preferred method of payment – this may be Telegraphic Transfer of Funds to the suppliers bank account or a Bank Draft made out and posted to the supplier.

Placement of order may be done by post, Fax or E-Mail. If you have access to the internet, you can obtain more information on the piece of equipment or consumable from the supplier's website.

On receipt of a Proforma Invoice check this against the original order in detail and check the cost against the budget available. You may need to select a particular supplier, delete an item, or reduce quantities.

Submit to the Procurement Officer to handle the order. Ensure that the cost of packing and shipping is included as this cost will have to be covered and included in the budget.

Follow-up to ensure correct placement of the order and timely payment.

f) Receipt of imported goods. Prompt clearance at the airport reduces demurrage costs. In some instances, the eye care programme manager may need to do this, in which case s/he should familiarise him/herself with:

- Clearance procedures
- Customs
- Duty waiver procedures

Checking of goods. These should be checked on arrival for:

- Correctness of items against the order
- Quantity
- Quality - this is particularly important for surgical and other instruments.

Delay in checking incoming goods may result in the guarantee running out before faults are discovered.

g) Setting up of equipment. It is ideal to have a medical equipment engineer but the eye care programme manager should also participate. In most regional hospitals there is no medical equipment engineer. In such instances, it is important that the equipment is carefully unpacked and the manual thoroughly studied before assembly. It is always a great temptation to assemble equipment without studying the manual and following the steps for assembly. This can create more problems and should be resisted.

Testing the equipment. This should also be done carefully particularly in the case of electrical equipment. Check the connections and the voltage. Stabilizers should be installed in areas where electrical voltage is unreliable especially for all equipment with a bulb, such as microscopes and slit lamps. The stabilizer will prolong the life of the bulb. Computers and printers must also be connected to stabilizers.

h) The manuals and all relevant documentation should be filed away, as well as other documentation in readiness for the next order. The equipment should be entered in the assets list with all relevant details:

- Date of Purchase
- Model
- Serial Number
- Cost

5.2. STOCK MANAGEMENT

The eye unit must maintain enough stock at all times to ensure a good service to patients. Any item purchased should first be delivered to the stores department. The stores may be part of the eye department or part of the general hospital stores.

Once the goods arrive a **Goods Received Note** (GRN Appendix 3) is raised by the stores department and sent to the Accounts Department. The GRN is matched against the order form or Purchase Order ensuring that what was requested is, on receipt of the invoice from the supplier, in fact what has been received. With the GRN, invoice and purchase order, the Accounts Department can now proceed with payment. No payment should be made from the Accounts Department without the GRN and purchase order – the use of the GRN is a means of ensuring that the items have been entered into the store.

All items coming into the eye department via stores should first be entered onto a **Stock Card** (Appendix 3). Stock cards should be kept for all equipment and consumable items, e.g., sutures, IOLs, visco-elastics, cleaning items, stationery - in fact, everything that is ordered should go through the above stores procedure.

The stock card shows:

- Name of item, supplier, expiry date and unit cost
- Quantity received/date
- Quantity in stock/date
- Quantity issued/date/destination
- Balance/date

When items are issued within the department, or new items are received from external suppliers, the store keeper checks in the order and signs that the order has been entered and the quantity received or released. See **Stock Issue Voucher** (Appendix 3). A copy of the voucher should be kept in the stores and a copy dispatched with the item/s.

At the end of each quarter, using the above system, it should be evident how much has been used within the department and how much needs to be ordered for the next quarter. This is a very useful tool for budgeting purposes.

Well-maintained stores and supplies are essential for an efficient eye department. Here are some ideas for effective management:

- Keep a minimum of two months spare stock in case of emergencies or if overseas suppliers are delayed in supplying
- Ensure that items with the most immediate expiry dates are used first
- Keep the shelves in the store clean and dry at all times
- Try to limit the handling of sterile items - excessive handling can compromise sterility
- Allow designated persons only into the stores
- The store keeper should inform the project manager each month of the stock levels of consumable items so that decisions regarding ordering and budgeting can be made

Surgical Instrument Stock
The same principles given apply to the storage of spare surgical instruments. Ideally a surgical nurse should be responsible for this specialised stock.

All instruments should be entered into stock cards irrespective of whether they are in storage or being used each day in instrument sets. The project manager needs to know the whereabouts of the instruments and which types need to be replaced. Stock cards will assist with this. Each card will show the name of the instrument, its whereabouts, whether it is in good working order or needs to go for sharpening or replacement.

APPENDIX 1: SUGGESTIONS FOR THE TOOL BOX FOR SIMPLE PREVENTATIVE MAINTENANCE OF OPHTHALMIC EQUIPMENT & INSTRUMENTS.

Based on current use at Kikuyu Eye Unit, Kenya and also ideas from Nigeria.

Description	**Quantity**	**Supplier**
Soldering iron with stand	1	Local
Soldering rod/wire, fine	1	Local
Simple digital multi-meter	1	Local
Multi-tester	1	Local
Wire stripper	1	Local
Set of spanners	set	Local
Set of Allen keys	set	Local
Combination plier 6"	1	Local
Nose plier 6"	1	Local
Junior hacksaw frame	1	Local
Blades for the above	10	Local
Micro screwdrivers	set	Local
Insulated screwdrivers, flat, assorted sizes	3	Local
Insulated screwdrivers, cross, assorted sizes	3	Local
Metal ruler 12"	1	Local
Super glue	1	Local
Emery paper, fine, 2,500	2	Local
Emery paper, fine, 1,500	2	Local
Small file	1	Local
Flat nose plier, small	1	Local
Torchlight and batteries	1	Local
Stanley knife	1	Local
Insulation tape	1	Local
Nylon hammer	1	Local
Measuring tape	1	Local
Brass handpiece with slots	1	Local
Sharpening stones	5 pieces	Aravind or Dixey
Degussit stones	2 pieces	Aravind or Dixey
Anglepoise type lamp with illuminated magnifier	1	Local
Ultrasonic cleaner	1	N/A

Note:
Basic training in instrument repair is advised.

APPENDIX 2: SAMPLE FORM FOR ORDERING

DISTRICT EYE CARE PROGRAMME

PURCHASE ORDER
To be completed in triplicate (top copy for the supplier, one for records, one for accounts).

Order No: **Date of order:**

Supplier name and address:

Contact – phone /email:

Item	Description of model/equipment/ serial number	Catalogue number	Quantity	Unit cost (currency)	Total cost	Budget code
1						
2						
3						
4						
5						
6						

Prepared by: stores clerk/procurement officer

…… …… ……

Name Signature Date

Approved by: Accountant

…… …… ……

Name Signature Date

Authorised by: Medical Director/Administrator/Ophthalmologist etc.

…… …… ……..

Name Signature Date

APPENDIX 3: SAMPLE FORMS FOR STOCK MANAGEMENT

DISTRICT EYE CARE PROGRAMME

GOODS RECEIVED NOTE
Number:

Date received	Item Description	Quantity	Unit cost	Total cost	Purpose/destination

Received and checked by : (two independent persons)

Signed and dated by both:

……	**……**	**……..**
Name	**Signature**	**Date**
……	**……**	**……..**
Name	**Signature**	**Date**

DISTRICT EYE CARE PROGRAMME

STOCK CARD (for each item)

Date	Item (Description not required if each item has its own stock card)	Supplier	Expiry date (consumables)	Unit cost	Quantity received Date	Quantity In stock Date	Quantity Issued Date Destination	Quantity remaining (balance) Date

DISTRICT EYE CARE PROGRAMME

Date……..

STOCK ISSUE VOUCHER

Item description	Quantity requested	Destination	Quantity dispensed	Issued by

Submitted by

……
Name:

……
Signature:

Checked by

……
Name:

……
Signature:

Approved by

……..
Name:

……
Signature:

Issued by

……
Name:

……
Signature: