



STANDARD  
LIST

# IAPB ESSENTIAL LIST for Low Vision Services

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## INTRODUCTION

IAPB considers appropriate information as a vital resource in improving eye health in developing countries. In resource-constrained settings especially, procurement decisions can play an important role in ensuring that a maximum number of people have equitable access to quality services, the investment makes a satisfactory social return and significantly enhances the quality of life of the beneficiaries.

The IAPB consults a panel of experts with considerable experience in resource-constrained settings, to identify good practice and assist with the compilation of Essential Equipment Lists. Armed with IAPB's essential lists, NGOs, Ministries of Health, District health services, eye clinics and hospitals in developing countries can plan and purchase inventory which will support the delivery of high-quality care and enhance health outcomes.

### Why is this list important?

Despite major advances in eye care, an estimated 124 million people worldwide cannot have their sight fully restored with standard corrective measures. These people are regarded as having low vision. The majority of them, about 80 million people, however, have some residual vision that can be enhanced with special intervention: rehabilitation strategies, optical and non-optical devices, all of which can be utilized to assist them to carry out tasks that require vision.

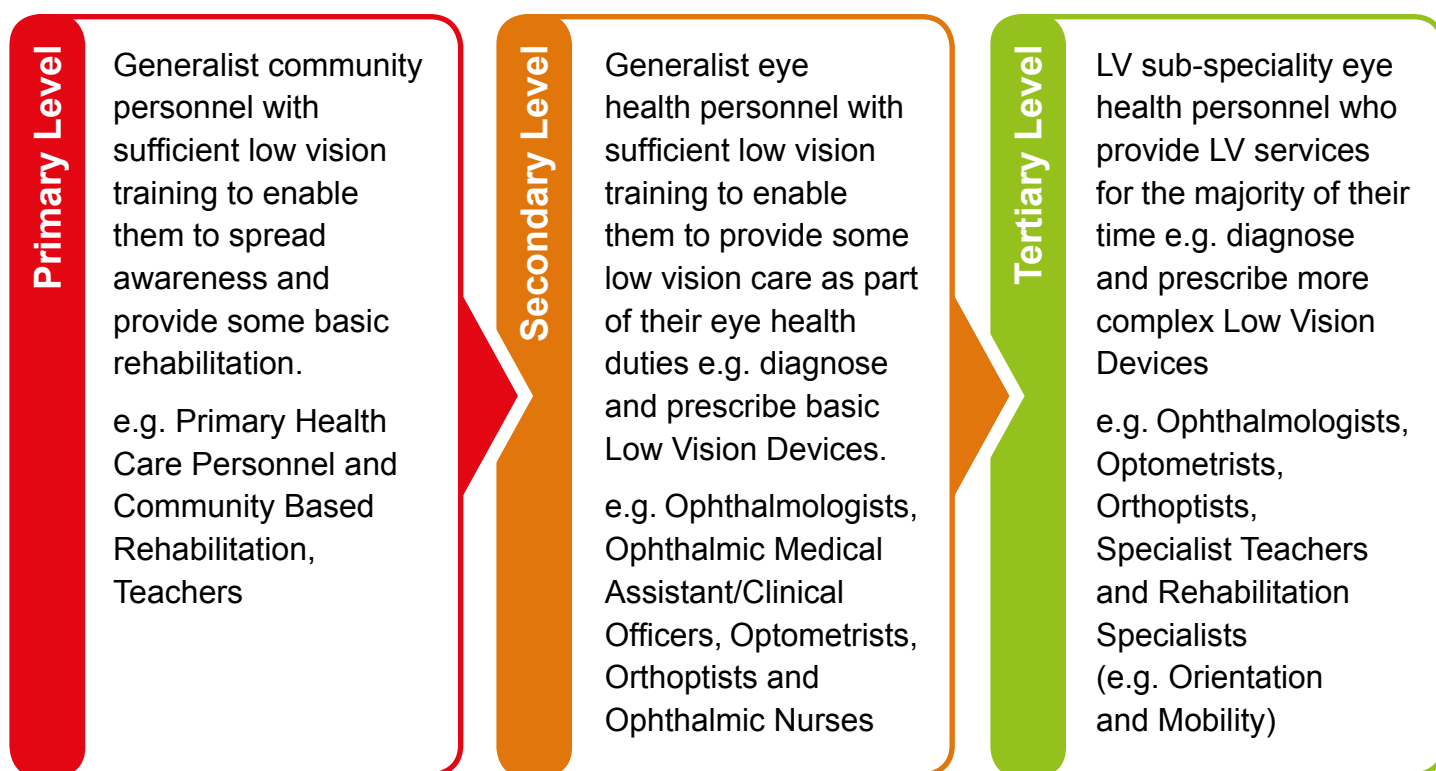




## What does this list contain?

This list provides recommendations for Instrumentation, Equipment and Low Vision Optical Devices and Assistive Devices for people with low vision.

These are classified as desirable (D) or essential (E) across all three levels of service: primary (PRIM), secondary (SEC) and Tertiary (TER). See Figure 1.



**Figure 1:** This list is based on a three-tier model of care: Personnel at primary, secondary and tertiary level, able to refer appropriately for that level, both vertically for eye care services and horizontally to other service providers.

- All D or E items at a PRIM will be E at all SEC or TER
- All D items at a SEC will be E at TER

## How can quantities be calculated?

Suggested quantities are calculated for:

- Equipment and instrumentation used for assessment of visual acuity and vision function<sup>1</sup>
- Optical and assistive low vision devices used for assessment of vision/functionality. These are also issued or dispensed to patients.

The bracketed code after each number<sup>2</sup> indicates that for any given clinic the device is likely to be issued to Many – 20 or more (M), Some – 10 or more (S) or a Few – 5 or more (F) patients, relative to overall patient throughput.<sup>3</sup>

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1 Unless specified to the contrary, the number of items required is per consulting room/assessment area.

With expensive specialist equipment, such as automated threshold visual field analysers or OCT imaging systems, it is assumed that only one is needed e.g. centres delivering only tertiary low vision and rehabilitation care might only need 1 OCT per site. But in large SEC or TER centres, equipment can be increased according to the patient population and the services provided e.g. centres providing intravitreal treatments might need multiple OCTs.

2 E.g. Low Powered Hand magnifiers for a PRIM, the figure 1(M) means:

- For assessment: one of each a 6 and 10 DS hand magnifier.
- For issue: many (M), relative to the patient throughput, should be available.

3 Quantifying 'M, S, F' will depend on a number of factors including, the size and nature of the clinic, the patient throughput, the stock storage and replacement policy and the supply network system and timescale. The numbers above are indicative to get the right quantities of inventory while the clinic is being established, and working on the assumption that the inventory will be updated annually. Once the clinic is up and running the orders can be adjusted according to the frequency of dispensing and the available stock.



Description	Standard List Category or Locally Purchased (L)	Essential (E) or Desirable (D)	Quantity Required (Per Test Room unless otherwise specified)
<b>EQUIPMENT FOR ASSESSMENT OF VISUAL ACUITY AND VISION FUNCTION PRIMARY SERVICE LEVEL</b>			
<b>VISUAL ACUITY ASSESSMENT EQUIPMENT</b>			
Vision Screener test with Tumbling Es (To screen visual acuity)	S	E	1
Multiple Pinholes/Occluder (To determine best possible visual acuity)	S/L	E	1
<b>EYE HEALTH ASSESSMENT EQUIPMENT</b>			
Pen Torch (To assess pupil reflexes and the health of ocular adnexa)	S/L	E	1
Amsler Chart (To assess central visual fields and metamorphopsia)	S	D	1
<b>VISUAL FIELDS ASSESSMENT EQUIPMENT</b>			
Confrontation test targets appropriate for use across the full range of acuities (To assess peripheral fields in profound sight loss)	S	E	1 Set
<b>EQUIPMENT FOR ASSESSMENT OF VISUAL ACUITY AND VISION FUNCTION SECONDARY SERVICE LEVEL (All D and E equipment at PRIM will be E at SEC)</b>			
<b>VISUAL ACUITY ASSESSMENT EQUIPMENT – Distance</b>			
Measuring Tape (> 3m) – (To measure working distances for distance, intermediate and near visual tasks)	S/L	E	1
LogMAR design Visual Acuity (VA) Chart – culturally appropriate optotypes (Letters, E's, C's, numbers and symbols)	S	E	1
LogMAR designed VA Chart, Optotypes suitable for children (E's, C's, picture, symbols and numbers)	S	E	At least 1 per centre
Duplicate LogMAR VA Charts (To determine Visual Acuity with charts with different optotypes sequences)	S	D	At least 1 per centre
Flip VA Charts with logarithmic progression of size, with sets of crowded optotypes (letters, numbers, pictures and symbols) – (To determine crowded distance Visual Acuity)	S	D	At least 1 per centre
LogMAR designed Flip VA Chart, Single isolated symbols (letters, numbers, pictures and symbols) – (To determine distance Visual Acuity)	S	D	At least 1 per centre

<b>VISUAL ACUITY ASSESSMENT EQUIPMENT – Near</b>			
Adjustable position Reading Lamp (To enable variation of illumination for the assessment of near vision functions)	S/L	D	1
LogMAR designed Near VA Optotype Charts (letters, numbers, E's, C's and symbols) – (To assess near acuity using charts equivalent to the Distance Acuity Charts, calibrated appropriate working distances( i.e. 40cm)	S	D	At least 1 per centre
LogMAR designed Near VA Word and Text Charts (Letter Sequences) – (To assess word and text acuity and reading performance in a culturally and language sensitive manner at appropriate working distances( i.e. 40cm)	S	D	1
<b>CONTRAST TESTS</b>			
Low Contrast Visual Acuity Tests (To assess Visual Acuity at reduced contrast)	S	D	1
Contrast Threshold Tests with large targets (To assess peak contrast sensitivity)	S	E	1
<b>REFRACTIVE EQUIPMENT – Objective</b>			
Autorefractor (To determine refractive error and corneal astigmatism)	L	D	Optional
Retinoscope (To determine refractive error objectively)	S/L	E	1
Retinoscopy lens rack (For determination of refractive error)	S/L	D	1
Prism Set (To assess binocular status)	S/L	D	1
Lensmeter (To measure spectacle lens power)	S/L	E	1
<b>REFRACTIVE EQUIPMENT – Subjective</b>			
PD Ruler (To facilitate correct fitting of trial frame)	S/L	E	1
Trial Lens Set (For the assessment of refractive error by both objective and subjective methods)	S/L	E	1
Full Aperture Trial Lens Set (An alternative for the assessment of objective refraction)	S/L	D	1
Universal Trial Frame (To hold trial lenses in spectacle plane)	S/L	E	1
Paediatric Trial Frame (To hold trial lenses in spectacle plane)	S/L	D	At least 1 per centre
Trial Lens Clips (To hold trial lenses in front of the patient's spectacles)	S/L	E	At least 1 per centre
Jackson Cross Cylinder (For measurement of astigmatism)	S/L	E	1

<b>EYE HEALTH ASSESSMENT</b>			
Direct Ophthalmoscope ( <i>To assess central retinal integrity in the context of the degree and characteristics of visual functions</i> )	S/L	E	1
Indirect Ophthalmoscope ( <i>To assess peripheral retinal integrity binocularly in the context of the degree and characteristics of visual functions</i> )	S/L	D	At least 1 per centre
Slit Lamp Biomicroscope and Volk Lens ( <i>To assess central retinal integrity, and anterior segment integrity, in the context of the degree and characteristics of visual functions</i> )	S/L	E	1
Tonometer ( <i>To determine intraocular pressure</i> )	S/L	E	1
Fundus Camera and/or OCT if available ( <i>To document the appearance of retinal pathology</i> )	S/L	D	1 per centre (Unless an Ophthalmology treatment centre)
<b>VISUAL FIELDS ASSESSMENT EQUIPMENT</b>			
Tangent Screen with range of Targets ( <i>To assess and quantify peripheral visual field size</i> )	S	D	1
Visual Fields Analyser ( <i>To quantify the extent of visual field loss</i> )	L	D	At least 1 per centre
Arc or Bowl Perimeter suitable for Kinetic/ Dynamic assessment ( <i>To assess and quantify full peripheral visual field size</i> )	L	D	At least 1 per centre
<b>COLOUR VISION ASSESSMENT EQUIPMENT</b>			
Standard Illuminance C lighting (Northern Daylight Equivalent) – ( <i>To ensure optimal lighting conditions for colour vision testing</i> )	S	D	1
Large Target D15 Test ( <i>To assess colour vision status in vision impaired patients</i> )	S	D	At least 1 per centre
<b>EQUIPMENT FOR ASSESSMENT OF VISUAL ACUITY AND VISION FUNCTION TERTIARY SERVICE LEVEL (All D and E equipment at PRIM and SEC will be E at TER)</b>			
<b>VISUAL ACUITY ASSESSMENT EQUIPMENT</b>			
Rudimentary Vision Test ( <i>To accurately quantify very poor levels of Acuity</i> )	S	E	1 per centre
Preferential Looking Test/Grating Acuity Test ( <i>To assess Acuity in infants who cannot respond to optotype testing</i> )	S	D	1 per centre
Vanishing Optotype Charts (i.e Cardiff Charts) – ( <i>To assess Acuity in children who cannot respond to standard optotype testing</i> )	S	D	1 per centre
VA Charts with a variable luminance control	S	D	1 per centre
Light Meter ( <i>A luxmeter to measure illumination at working plane, or a luminance meter</i> )	S/L	D	1 per centre

<b>REFRACTIVE EQUIPMENT – Subjective</b>			
Binocular Trial Lens Holder ( <i>For testing or modifying refractive error corrections</i> )	S	D	1
<b>EYE HEALTH ASSESSMENT EQUIPMENT</b>			
Optical Coherence Tomographer (OCT) ( <i>To image and record signs of retinal pathology</i> )	L	D <i>Optional, unless Ophthalmology Treatment Centre</i>	1 per centre
Corneal Topographer ( <i>To measure corneal surface curvature and to record and quantify surface irregularity</i> )	L	D <i>Optional, unless Corneal or Refractive Centre</i>	1 per centre
<b>LOW VISION OPTICAL DEVICES</b> (For demonstration/testing and stock for dispensing Have a variety of designs, with a range of ergonomic characteristics across the magnification range, with and without built-in light source – Restrict range to non-illuminated magnifiers where the availability of suitable batteries or power sources are limited)			
<b>MAGNIFIERS – Hand</b>			
Low Powered (4, 5, 6, 8, 10DS) – <i>Available with large field of view. Affordable, easy to use, some have illumination</i>	S/L	E PRIM (6,10DS) SEC (wide range) TER (extensive range)	1 (M) 1 (M/S) 1(S)
Medium Powered (12, 16, 20DS) – <i>Available in lens designs to optimize optical quality and field size. Some have illumination</i>	S	E PRIM (16DS) SEC & TER (full range)	1(S) 1(M/S)
High Powered (24, 32, 40D, 48DS) – <i>Restricted field of view. Mainly for spot reading</i>	S	D SEC E TER	1 (F)  1(S)
<b>MAGNIFIERS – Stand</b>			
Dome/solid Hemisphere Magnifiers <i>All hemispheres give 1.5x enlargement. Different sizes available</i>	S	E PRIM (1) SEC (2) TER (2 or more)	1 (M) Particularly for Paediatric Services
Bar/Ruler Magnifiers – <i>With option of line guide/ruler scale</i>	S	E TER	1 (S) Particularly for Paediatric Services
Non Illuminated Stand Magnifiers (6 to 25DS) – <i>With enlargement ratios over the range 2x, 2.5x, 3.2x, 4.0x, 5.0x, 6x, 8x, 10x, 12x, 16x and 20x</i>	S	E PRI SEC (3x, 5x) TER (extensive range)	1 (S)  1(S)
Illuminated Stand Magnifiers – <i>In a range to compliment the non illuminated magnifiers With enlargement ratios over the range 2x, 2.5x, 3.2x, 4.0x, 5.0x, 6x, 8x, 10x, 12x, 16x and 20x</i>	S	E SEC (4x, 8x or more) TER (extensive range)	1(M)  1(M) Particularly for clinics with large elderly cohort of patients in the developed world



<b>MAGNIFIERS – Spectacle</b>			
Half Eye or full aperture Readers (Plus powers: 4, 5, 6, 8, 10, 12 and 16D)	S/L	E PRIM (sample pair +4D or +6D) SEC (restricted range) TER (full range)	1(F) 1(S) 1(S)
Full Aperture high power (Plus powers: 20, 24, 32 and 48D)	L	E SEC (24, 48DS) TER (full range)	1(S/F) 1(S)
Binocular Prismatic Half Eye Readers (Plus powers: 4, 6 and 8D) – <i>May provide binocularity</i>	S/L	E TER	1(S)
Binocular Prismatic Half Eyes (10D) <i>May allow binocularity, especially in hyperopia</i>	S/L	D TER	1(F)
<b>TELESCOPES – Hand held</b>			
Monoculars (2x, 2.5x, 3.2x, 4.0x, 5.0x, 6.3x, 8.0x, 10x and 12x) – <i>Variable Focus. Some should allow close focusing distances.</i>	S/L	E PRIM(4x) SEC (2.5x,4x,6x) TER (full range)	1(F) 1(S/F) 1(S)
Binoculars (2.5x,4x, 6x and 8x) – <i>To encourage binocularity</i>	S/L	E SEC (one demonstration pair) TER (full range)	(S) 1(S) <i>Particularly for Paediatric and Mobility related Services</i>
<b>TELESCOPES – Spectacle mounted</b>			
Monocular or Binocular Spec Mounted Telescopes, or telescope fitting kits – <i>Custom made or incorporating Rx</i>	S/L	E TER	(F)
Near Vision Supplementary Caps	S/L	E TER	(F)
Bioptic Telescope fitting kits	S/L	D TER	(F)
<b>FILTERS</b>			
<i>Variety of locally available sunglasses in different shades</i>		E PRIM, SEC, TER	1 (S)
Anti-Glare Filters – <i>With Transmission values of approx 5%, 15%, 30% and 60% in neutral tints and in brown/amber/yellow tints to reduce blue. Blue light cut off levels of 465nm, 505nm, 533nm, and 550nm</i>	S	D SEC (moderate range) E TER (extensive range)	1(S)
Supplementary Range of filters of other colors. <i>Include red and magenta filters for Achromotopsia and Cone Dystrophy.</i>	S	D SEC E TER	(F)

<b>LOW VISION ASSISTIVE DEVICES</b> <b>(Accessories to increase flexibility and independence – For demonstration/testing and stock for dispensing)</b>			
<b>DAILY LIVING – Personal</b>			
Watch and clock with jumbo displays and high contrast <i>(Increase the convenience of time telling)</i>	S/L	SEC – D TER – E	1 (F) 1(S)
Talking watch and clock <i>(Increase the convenience of time telling)</i>	S	SEC – D TER – E	1 (F) 1(S)
Identifier starter kit with tapes and labels for low vision, bump dots and tactile markers <i>(Increase effectiveness in categorizing and finding daily use items)</i>	S	SEC – D TER – E	1 (F) 1(S)
Large key holder <i>(Improve convenience in daily living and self care)</i>	S/L	SEC – D TER – E	1 (F) 1(S)
Nail cutter with magnifier <i>(Improve convenience in daily living and self care)</i>	S	SEC – D TER – E	1 (F) 1(S)
Needle threader <i>(Improve convenience in daily living and self care)</i>	S	SEC – D TER – E	1 (F) 1(S)
<b>DAILY LIVING – Mobility</b>			
Super bright flash light torch <i>(For safer mobility in poorly a lit environment)</i>	S/L	PRI – D SEC – D TER – E	1(S/F) 1 (S) 1 (M/S)
Canes for the visually impaired Long canes, folding canes <i>(To aid the mobility of LV persons with constricted visual field)</i>	S/L	PRI – D SEC – D TER – E	1 (S/F) 1 (S) 1 (M/S)
<b>DAILY LIVING – Health</b>			
Medicine organizer pill box and pill cutter <i>(To improve the convenience and safety in self administration of medication)</i>	S	SEC – D TER – E	1 (F) 1 (S)
Talking thermometer <i>(To enable the low vision person to monitor health status with ease)</i>	S	SEC – D TER – E	1 (F) 1 (S)
Talking blood pressure monitor <i>(To enable the low vision person to monitor health status with ease)</i>	S	SEC – D TER – E	1 (F) 1(S)
Talking personal scale <i>(To enable the low vision person to monitor health status with ease)</i>	S	SEC – D TER – E	1 (F) 1(S)
Safety grab bar for toilet and bathroom <i>(To improve the safety of self care)</i>	S	SEC – D TER – E	1 (F) 1(S)
<b>DAILY LIVING – Food preparation and dining</b>			
High contrast or tactile markers for knobs and switches on control panels of cooking stove, oven, microwave oven etc.	S	SEC – D TER – E	1 (F) 1(S)
Colored food cutting boards for low vision To enhance contrast	S	SEC – D TER – E	1 (F) 1(S)
Slicing knife with adjustable guide	S	SEC – D TER – E	1 (F) 1(S)
Smart peeler	L	SEC – D TER – E	1 (F) 1(S)

Jumbo timer for low vision with alarm	S/L	SEC – D TER – E	1 (F) 1(S)
Measuring cups with large print	S	SEC – D TER – E	1 (F) 1(S)
Talking kitchen scale	S	SEC – D TER – E	1 (F) 1(S)
Colored bowls, plates and table mats for contrast enhancement of food and eating utensils	S/L	SEC – D TER – E	1 (S/F) 1 (S)
<b>EDUCATIONAL &amp; VOCATIONAL</b>			
Calculator with large display and talking calculator	S/L	SEC – E TER – E	1 (F) 1(S)
Reading and writing stands with adjustable tilt and height	S/L	SEC – E TER – E	1 (F) 1(S)
Writing and signature guides	S/L	PRI – E SEC – E TER – E	1 (F) 1(S) 1 (M/S)
Writing paper with pre-printed bold lines	S/L	PRI – D SEC – E TER – E	1 (F) 1(S) 1 (M/S)
Bold felt tip and marker pens	S/L	PRI – E SEC – E TER – E	1 (S/F) 1 (S) 1 (M/S)
Floor/desk lamps with adjustable height and variable direction of light projection	L	SEC – E TER – E	1 (S) 1 (M/S)
<b>DIGITAL DEVICES – Digital devices and software to enhance information accessibility and exchange</b>			
Screen magnification systems. Some are freeware, such as magnifier for Windows 7 and Zoom for Mac OS. Others are Desktop Zoom3.5, Virtual Magnifying Glass.	L	TER – E	1
Screen reader programs. Some are freeware, such as NVDA, Thunder	L	TER – E	1
Mobile phone apps with accessibility features for VI	L	TER – E	1
Desktop CCTV reading and writing aids and portable video magnifiers	S	TER – E	1 (S)
Samples of Large and High Contrast Print To demonstrate the significance of magnification and good contrast	L	PRI – D SEC – E TER – E	1 1 1
<b>RECREATIONAL – Can participate in more interactive activities to strengthen social networking and skills</b>			
Auditory foam ball, basket ball, soccer ball	S	SEC – D TER – E	1 (F) 1 (S/F)
Jumbo playing cards	S	SEC – D TER – E	1 (F) 1 (S/F)
Jumbo chess set and other board games such as 'Connect 4'	S	SEC – D TER – E	1 (F) 1 (S/F)
Large dice	S	SEC – D TER – E	1 (F) 1 (S/F)
Jumbo and tactile dominoes	S	SEC – D TER – E	1 (F) 1 (S/F)

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# WORKING TOGETHER TO ELIMINATE AVOIDABLE BLINDNESS

IAPB's ESSENTIAL LISTS identify equipment and consumables considered essential, minimum requirements to perform high quality eye health interventions. IAPB produces these lists in collaboration with leading experts from around the world and updates them from time to time.



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