



LOW VISION CARE In Indonesia

Practical Approaches to Establishing Comprehensive Service

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ABBREVIATIONS

CBID	Community Based Inclusive Development
DPO	Disabled Persons' Organisations
YAYASAN LAYAK	Yayasan Layanan Anak dan Keluarga
LogMAR	Logarithm of the Minimum Angle of Resolution
LV	Low Vision
M unit	Size of a letter/number/symbol on a distance or near acuity chart, e.g. 60M, 2M
NGO	Non-Governmental Organisation
RS UNHAS	Hasanuddin University Hospital
VA	Visual Acuity

FOREWORD

The 'Roadmap of Visual Impairment Control in Indonesia 2017-2030' aims to have 'effective and affordable rehabilitative services available for at least 50% of people with permanent visual impairment'. Often people think of mainly of blindness when reading these statements. Low vision, whether in children or adults, has received much less attention, however there is a growing interest in addressing this difficult and complex problem.

While the global estimates of the prevalence of vision loss in children and the prevalence of low vision remain unclear, for planning of services 1.5 in 1000 children are estimated to have low vision.

However, there are many more children with disabilities who may need specialised eye health/low vision services, although they technically may not be low vision. Evidence shows that for example, people with learning difficulties are 10 x more likely to have a problem with their sight. Comprehensive low vision services benefit these people as they have and use a variety of assessment techniques, are accessible and have low vision friendly working area. Staff is more likely to have time, a positive time and appropriate communication methods.

This manual has been developed with the providers and planners in mind; it is an attempt to provide those individuals at hospitals, training schools, educational programs and other settings with the knowledge and understanding of including low vision care within their different services. It also aims to demonstrate that close cooperation and networking between client, caregivers, organisations of people with disabilities, community, educational and rehabilitation services is vital to provide quality, comprehensive low vision care to the client. While the focus is primarily on (school-age) children, this manual can also assist programmes to manage the low vision needs of young children and adults. In this manual we are not trying to create an advocacy tool but some of the messages in the planning section can be adapted for this purpose.

The writing of the manual was a joint effort of Yayasan LAYAK Jakarta, Yayasan Bhakti Luhur, Hasanuddin University and Dr. Karin van Dijk.

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FOREWORD

We are happy to welcome the publication of the Guidelines of developing comprehensive Low Vision services. This guideline is a documentation from the CBM's experience and its Partners in developing quality and comprehensive Low Vision Services in Indonesia

Children with low vision face many challenges in developing their potential. This challenge can come from within their-self, family, society, and also the system that become a barrier for their development. They also have difficulty accessing education, health and rehabilitation services. Low vision can be defined functionally as an irreversible loss of vision that (severely) impedes an individual's ability to learn or perform some or all of their usual and age-appropriate tasks but still allows some functional use of vision for daily activities.

In general, this guideline tries to provides knowledge and understanding for people who are working in various services such as hospitals, schools, and other services, on how to integrate low vision services into existing services. In addition to this, this guideline also try shows that close collaboration and networking between institutions; health, education providers and rehabilitation services is essential to provide comprehensive and quality low vision services.

Within this guideline also tells about various case studies and stories of changes that have occurred. We hope that stories of change and lessons from this guideline provides a new perspective for all stakeholders, including the government and wider communities, that improving low vision services will encourage a more inclusive society for people with disabilities.

We hope this guideline will become one of the main references for various parties to start developing comprehensive low vision services, in the end; more children with low vision will receive high quality services. CBM as an international development organisation is fully committed to overseeing and supporting the development of low vision services in Indonesia.

We also thank all parties; authors, partners and CBM staff who have contributed and committed to always provide the best for the better change for the lives of people with low vision and other people with disabilities.

Thank you,

Marisa Kristianah

CBM Indonesia Country Director

INTRODUCTION

Comprehensive low vision services consist of a coordinated and integrated approach to the provision of both clinical low vision services and education or rehabilitation related vision services. Development of low vision services at primary, secondary and tertiary levels as part of national eye health plans is critical to ensure that these services are sustainable. Low vision care is long-term by nature as people's vision and needs change over time. A low vision 'team' is usually made up of a variety of professionals with a key role for the client and their family. It might include an ophthalmologist, a refractionist, a low vision rehabilitation worker, an occupational therapist, a teacher, an Orientation and Mobility specialist, and a social worker or counsellor. Multi-disciplinary and multi-agency working is thus essential to provide client-centered, cost-effective and comprehensive services.

Low vision can be defined functionally as an irreversible loss of vision that (severely) impedes an individual's ability to learn or perform some or all of their usual and age-appropriate tasks but still allows some functional use of vision for daily activities.

The World Health Organization (WHO) formulated a working definition of low vision in 1992 to identify persons who would benefit from low vision services: 'A person with low vision is someone who, after medical, surgical and/or optical intervention, has a corrected visual acuity in the better eye of $< 6/18$ down to and including light perception or a central visual field of < 10 degrees from the point of fixation, but who uses or has the potential to use vision for the planning and/or execution of a task.'

The use of these two definitions ensures that visual acuity is not the only criterion determining access to low vision care but that a person's vision-related problems and needs are taken into account. In this way people with disabilities and vision problems are included in service provision.

Important messages are that low vision cannot be corrected to normal vision levels and covers a range from mild to severe visual loss but excludes people who have no light perception and those who have no functional use of vision.

This manual uses both the functional definition of low vision and the WHO working definition. We do, however, include refractive correction in planning for low vision care for a simple reason: in most settings where a low vision service is being planned and/or implemented, personnel involved in planning for or providing these services also have to ensure that refractive correction is provided.

We aim to provide a practical guide on how to implement low vision services, using the experiences gained from the starting and developing of low vision service delivery in Jakarta (by Yayasan LAYAK) and in Makassar (by RS UNHAS). This manual covers clinical low vision services, linking clinical services with early childhood educational and rehabilitation services, and monitoring low vision services. Information included in this manual should be viewed as current preferred practices; as more knowledge and experience is obtained, this manual can be improved.

There are likely to be incorrect beliefs about the use of limited vision, the benefits of low vision care and the services that children with low vision or those with disabilities need; these often delay appropriate treatment, hinder educational advancement, and limit the daily activities of these children. It will require a concerted effort by all to address many of these myths. Children with low vision deserve our support and assistance to achieve the best possible quality of life.

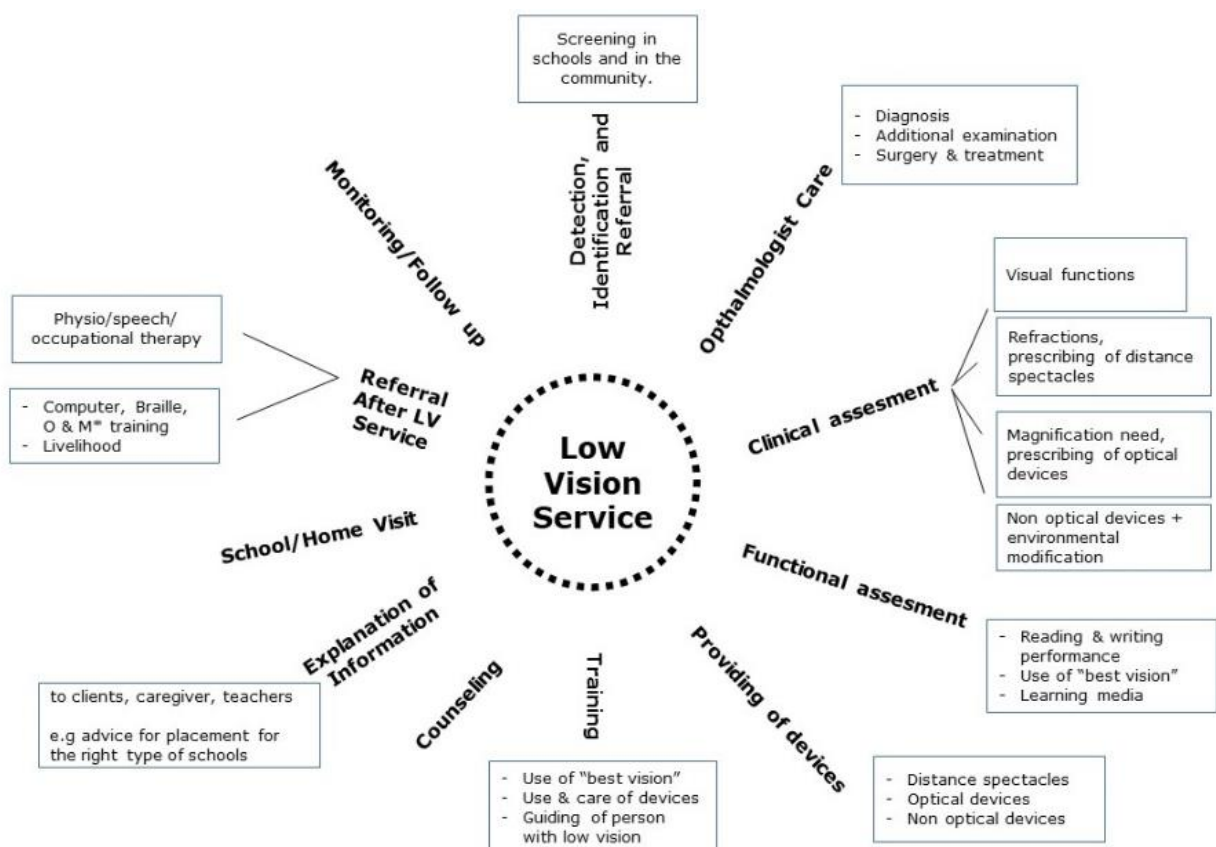


Girl with low vision uses spectacles and magnifier, with reading stand, to read printed text after receiving eye health and low vision care. She used Braille before.

COMPONENTS OF LOW VISION SERVICES

The provision of low vision services requires networking, coordination, and involvement of many different people: clients, their family or principal carers, organisations of people with disabilities, teachers, education officers, health and eye care staff, local and regional level government officials, community volunteers, and other professionals involved in working with children with special needs.

In order to ensure that people with low vision access and benefit from low vision care, they need to be identified as having a vision problem or needing low vision services (**Box 1**), referred to eye care personnel with the appropriate skills, obtain all eye care interventions needed (surgery, spectacles, optical and non-optical devices), receive advice and training in how to use their (improved) vision in the best possible way at home, at school and at work, and need to be followed up regularly (**Box 2, 3**).



*O & M: Orientation & Mobility

A good service is inclusive to everyone. That is why not only persons who fall under the functional definition of low vision need low vision services, but also people with disabilities who are likely to have some vision problem. They may need a good refraction and sufficient time to be assessed, and then may not be low vision. People with certain syndromes like Down syndrome, Rubella, Usher, etc. who may have visual loss and additional disabilities are also extremely important target groups. This needs efforts on accessibility and good attitudes from the staff. Tips for accessibility of services and information for people with disability are described in a later chapter of this manual.

Box 1**Who Needs a Low Vision Service?**

- 1** Anyone, who after refraction and other medical intervention, still has a poor distance or near visual acuity: for example, a person who still cannot read small print, recognise a friend across the street or read the blackboard. This includes people of all ages with a severely reduced ability to do daily activities due to irreversible vision loss: for example, adults with poor vision (even after treatment and surgery) because of diabetic retinopathy, glaucoma or macular degeneration, people with albinism, ocular toxoplasmosis and many other eye problems.
- 2** People with other disabilities, such as intellectual impairment, hearing impairment, or cerebral palsy who are likely to have refractive errors, squint or other vision problems.
- 3** Children operated for cataract, especially those operated at a young age. All children who had cataract surgery may need to be helped to see better at near distance and always benefit from a thorough refraction.
- 4** People with Cortical Visual Impairment (CVI); people with visual processing disorders.

The stages listed in **Box 2**, using education of children with low vision as an example, will be described in detail in the next sections.

Box 2

Education of Children With Low Vision

Stages	Who is responsible?
Detection + identification referral to eye health and LV services	Education, Key Informants, DPOs and (Eye) health care, caregivers
Eye health/ clinical low vision assessment, its interventions and first training	Eye health services, NGO LV services
Getting the interventions needed referral to early childhood, education, livelihood, CBID services	Caregiver, Eye health, Education, LV services, DPOs
Assistance in use of 'best' vision in school + training in use of devices	Education, CBID, care givers, LV services
Monitoring/follow-up	Education, caregivers, eye care, DPOs

('Best' vision = Vision after eye care interventions: with spectacles, low vision devices, if prescribed, and with non-optical interventions such as good lighting and optimal placement in the classroom)



Detection and referral: this girl needs a low vision assessment to see if her near vision, especially her working distance, can be improved

In Indonesia there are two different service models for providing good quality low vision services. One model is an NGO-based service with a team of refractionists and rehabilitation workers, that liaises with external ophthalmologists. It provides in-house and outreach services and places emphasis on early detection, assessment and training of children with low vision and children with disabilities and vision problems, as well as mentoring and training of caregivers and professionals. The second model is a hospital-based low vision service with direct access to ophthalmologists, has refractionists and, ideally, a rehabilitation worker. It is well placed to provide detailed clinical assessments of, especially, young children and other medical interventions in the hospital and relies mainly on health networks for referral of children to the hospital. Annex 1 provides summary data comparing 4 years of low vision services of Yayasan LAYAK, an NGO-based service, and RS UNHAS, a hospital-based service (**Annex 11** has contact details). Experience in different programs in Indonesia has yielded key ingredients of a good practice model for low vision service delivery (**Box 12**).

Looking at the different stages needed to provide comprehensive low vision care, it is clear that good coordination between different stakeholders is very important. Involvement of the clients, their representatives and organisations advocating for their inclusion in all services is vital at all stages. It needs to be clear for all involved who is responsible for the activities carried out at different stages in a child's life.

Ongoing training of clients, their caregivers and the different professionals involved in the provision of low vision care needs to be organised to ensure that quality services address the needs of the clients.

Box 3

Low Vision Needs of Children as They Start School

- Timely access to eye services (before they start school)
- Access to good quality eye surgery
- Access to quality refraction and affordable spectacles, to low vision assessment and low vision devices
- Appropriate enrolment: in the local school (with regular specialist support if needed) or in a resource centre/special school where a specialist teacher is permanently based
- Being part of inclusive learning and teaching practices in the classroom and at school
- Educational assistance at school to promote use of 'best' vision for learning as much as possible, including facilitating access to their own print schoolbook, large print or Braille as needed
- Accessible examinations formats: for example, an exam in large print instead of on a mobile phone (as this cannot be enlarged or spoken)
- Regular (annual) follow-up by eye care services

DETECTION, IDENTIFICATION & REFERRAL TO EYE HEALTH AND LOW VISION CARE

Unless poor vision clearly limits daily activities or eyes look distinctly abnormal, parents might not realize their infant is developing life skills more slowly or not at all because of visual problems. Older people may just think having poor vision is part of ageing and nothing can be done about it.

Children in school and adults at work may seek help more readily when they face vision-related problems such as the inability to read small print or the text messages on their mobile phone. Infants and preschool children are often referred late as no one realizes the child cannot see well. Early detection is vital, as we learn more than 80% of life skills through use of vision.

There are different ways to identify people who may have vision problems or need low vision care and refer them to eye health facilities. All examples strengthen existing strategies to identify people with eye problems and are not separate, new services (**Box 4**). Training community volunteers or key informants in Jakarta especially helped girls with vision problems to be identified and referred.



An infant with Down Syndrome needs to be checked for possible vision problems

Box 4**Strategies for Identifying Children Who May Need Low Vision Services**

Proactive methods, sometimes initiated by low vision services, to identify children include the following:

- Sharing of information on the need for vision screening of persons with disabilities and who can help with this to the organisations of people with disabilities and parent organisations. Make clear that people with disabilities are much more likely to have vision (and hearing) problems than those without disabilities.
- Screening of children at special schools and inclusive schools. Many children with low vision are attending blind schools. Conduct vision screening of all children; include those labelled blind by the teachers as they might need cataract surgery or actually have some useful vision that could be improved through refraction or other measures. Plan further assessment for those with poor vision. Children with other disabilities, attending other types of special schools, are also likely to have vision problems. Collaboration with the Ministry of Education and caregivers in conducting screening, assessment, and examinations is vital.
- Teaching local teachers or community volunteers the use of the checklist (**Annex 2**) in so they can refer children who seem to have problems with vision to the eye care unit.
- Informing district education authorities about the low vision service and the use of the checklist, giving them the checklist in **Annex 1**, and ask them to inform all schools with inclusive, itinerant or special education programs.
- Providing information to staff who are in the district and regional (eye) hospitals to identify and refer clients who still have severe vision problems, even after refraction and medical treatments (**Box 1**). Provide feedback on selected clients they referred in the form of success stories: For example, on children with low vision who can now read the print in their school textbooks for the first time.
- Conduct advocacy to the department of health to provide information to eye care staffs (doctors, nurses, refractionists) about identifying clients are experiencing low vision.
- Training community volunteers or key informants to identify children (or people of all ages) with vision problems in their area, using the checklist in **Annex 1**, and organize examinations in the local area. Advocacy to local government to support these community cadres in identifying persons with vision problems, so that they can refer them to eye health facilities.

District eye care services should refer those whose vision does not improve sufficiently: Anyone, who after refraction and other medical intervention, still has a poor distance or near visual acuity, for example a person who still cannot read small print, recognise a friend across the street or read the blackboard. If the eye service conducts outreach, ask them to adapt the message used to announce their outreach services: In addition to advertising for people with cataract to attend, announce that children who seem to have poor vision and those with a disability are also welcome for a check-up.



Screening for vision problems at a special school

A LOW VISION SERVICE, WITH EMPHASIS ON THE ROLE OF EYE CARE

In the introduction comprehensive low vision services were described, from proper identification, to assessment, referral, training and support services. These elements of low vision care need to be provided by different professionals working in eye health, education and rehabilitation sectors. In this section we focus on the role of eye health services.

Often eye care programs use the name 'clinical low vision service', which seems to imply that all other eye care assessments and interventions, such as surgery or refraction, already have been done. However, this might not be the case. A child with low vision might not have had a thorough eye examination yet, and this needs to be organised first, before any clinical low vision assessments are done. In some cases, the diagnosis may have been made but refraction was not done or done too quickly. This may have happened because little improvement was expected by the refractionist or optometrist. It is good to realize that any improvement in vision is important for someone with poor vision. A thorough eye examination and provision of any needed medical, surgical and optical treatment should be done before the low vision assessment.

The 2012 low vision issue of the Community Eye Health Journal (issue 77) describes a number of elements of a clinical low vision assessment (Annex 12 shows all references). The following elements can all be part of a low vision assessment by eye care staff, and can be adapted according to what has been done already and according to the clients' needs.



This girl with Cerebral Palsy has
a clear eye problem



Eye Health Examination, Diagnosis and Prognosis for Vision

This might have been done previously, but unless there is a copy of a report by an ophthalmologist, it is better to repeat it.

An explanation of the results, including the cause of low vision, or the actual visual problems and its practical

implications, needs to be given in understandable language to the client and family. **Annex 5** and **6** show examples of 2 forms: one to summarise all results for a child with low vision; one for those who only have a refractive error and can see well again with spectacles.

History Taking and The Client's Vision-Related Needs

Questions regarding the client's visual and medical status, including dates and locations of any previous eye care and low vision evaluations, can be asked of caregivers and the client.

This information might also be found in (eye) medical records, either at the eye health service or at the school, if available.

Background information on optimal use of vision relating to educational tasks, mobility, work and activities of daily living are essential to form a picture of what the current situation is and what might be needed from the low vision service. Your questions also need to help clients to think of expanding their activities as they have stopped some tasks.

Here are two examples:

1. A child is attending a special school and in grade 5, but cannot read a print text book. Parents report their child can use vision to play cards and are worried. Good questions may reveal that the child is reading Braille (using vision) at school and has no support to learn print despite having an adequate level of near vision to do so.
2. A girl of 15 years old has dropped out of school and cannot read well. You might conclude that she does not need improvement of near visual acuity (VA) for reading as this is not an activity she now does. You might not assess her need for magnification. However, if you ensure she has a near VA that allows her to read print school books, her parents may enroll her again in the local school.

Your questions need to be realistic. For example, consider a school child who can easily read print school books and write notes but who cannot read the blackboard, not even from the front row with newly prescribed distance spectacles. You need to ask about light in the classroom (it can be quite dark), the condition of the blackboard (it might be grey and have poor contrast) and the methods the child currently uses to learn what is written on the blackboard. From these questions a decision can be made if you need to assess the benefit of a telescope (if available and affordable) or if this should not be attempted at this stage. If you do not have telescopes in stock yet, the assessment should not be done till you have these are available as you will give false hope to the child and parents.

Assessment of Vision



Assessment of visual functions includes distance visual acuity (VA) and near VA, contrast sensitivity, visual fields, light sensitivity and colour vision: the latter 4 can be informally tested with practical activities if formal tests are not available.

Accurate Refraction



Low vision assessment ideally involves objective and subjective refraction. Distance visual acuity (VA) can often be improved considerably (**Box 5**). Sometimes children who were considered to have poor vision are NOT actually low vision, but just have a refractive error and need distance spectacles to have normal vision.

A quality refraction improves visual acuity and the ability to see better makes the client happy!

Box 5

Distance VA Before and After The Prescription of Spectacles of 544 Children with Low Vision or with Another Disability

Mean difference in logMAR: -0.23 (95% Confidence Interval - 0.25; -0.21). This means an improvement of more than 2 lines on the distance acuity chart.

	Presenting % (N)	Best corrected % (N)
LP - < 3/60	12% (N=67)	9% (N=51)
3/60 - < 6/60	19% (N=101)	13% (N=68)
6/60 - < 6/18	41% (N=221)	28% (N=155)
6/18 and better	28% (N=155)	50% (N=270)

Children assessed by the Yayasan LAYAK Jakarta low vision service or RS UNHAS Makassar low vision service over 4 years (2016-2019). In this setting, only 27% of the children were already using distance spectacles. In total 71% of the children were prescribed new distance spectacles. *LP: Light Perception

Spectacles prescribed to improve distance VA often improve near VA too; most children with a refractive error also need to wear their distance spectacles to be able to use a magnifier (**Box 6**).

Studies have shown that people with other disabilities are likely to have refractive error higher than those without disabilities. A 2014 review article (**Annex 12**) on common visual problems in children with disability shows for example that 55% of school-age children with Down syndrome have a refractive error compared to 4.5% in the general population.

Box 6

Case Study - School Child with Hyperopia

A boy of 12 years old attended grade 5 and was prescribed a pair of +6D distance spectacles and a stand magnifier of 28D a year ago.

His teacher reported he could not read the text in his schoolbook, although he tried with his stand magnifier. When asked if he was also prescribed distance spectacles, he replied that he left them at home. His teacher reported she had never seen him wearing spectacles.

What can we learn from this?

1. Give information with results of eye care/ low vision assessments to the child, the (special) teacher, and the parents so they can encourage a child to use spectacles
2. Always ask why spectacles are not used. In this case the boy did not feel there was much improvement in distance vision, but he had not been told that he could only successfully use his magnifier if he also wore his spectacles!
3. Implement a system to ensure that any child prescribed distance spectacles actually obtains them! Many low vision programs provide magnifying devices for a low cost but have no system to help with distance spectacles.

Assessment for Magnification

After refraction has been done and new spectacles may have been prescribed, assessment for magnification needs to be conducted to decide if performing near activities such as reading text, mobile phone use and writing, can be improved, and—if applicable—distance tasks such as reading the blackboard. This should take into account what the eye care program can currently provide at an affordable cost to the client. **Annex 3** shows a minimum

list of tests and devices needed to start basic services at tertiary level in Indonesia. References in **Annex 12** give links to International Agency for Prevention of Blindness (IAPB) standard list for low vision for different levels of service delivery. If you only have non-illuminated magnifiers available then only use those for assessment, and try out the use of a reading lamp to provide illumination if required.



Assessment of magnification after refraction

Once the best magnifying device with the optimal power has been decided for an individual child, it is vital to do one last reality check: for example, ask a school child to use the magnifying device (with distance correction if required) to read from her school book. **Box 7** illustrates that thorough refraction and magnification assessment can substantially improve near vision, and give many clients the ability to read printed texts.

Box 7

Near Vision Improvement of 418 Children with Low Vision

Results of Yayasan LAYAK 's and RS UNHAS low vision services over 2016-2019 for children with low vision only, who were prescribed distance spectacles, a near magnifying device or both.

Level of near VA (M sizes at 40 cm)	Presenting % (N)	Best corrected % (N)
Size of newspaper text (4M or better)	32% (N=132)	59% (N=247)
Large print/subtitle size	29% (N=120)	22% (N=94)
Very large size (> 8M)	39% (N=162)	19% (N=78)

The group presenting with a very poor near vision reduces from 39% to 19%, and the group with good near vision almost doubles in size due to vision improvements by spectacles, a magnifier or both.

Need for Non-Optical Interventions and Environmental Modifications

Non-optical interventions include use of increased (or sometimes decreased) illumination, better contrast, larger sizes, bright colours, a closer distance and control of glare. Environmental modifications include for example creating good contrast on steps, or ensuring good overall lighting at home. **Box 8** shows some examples.

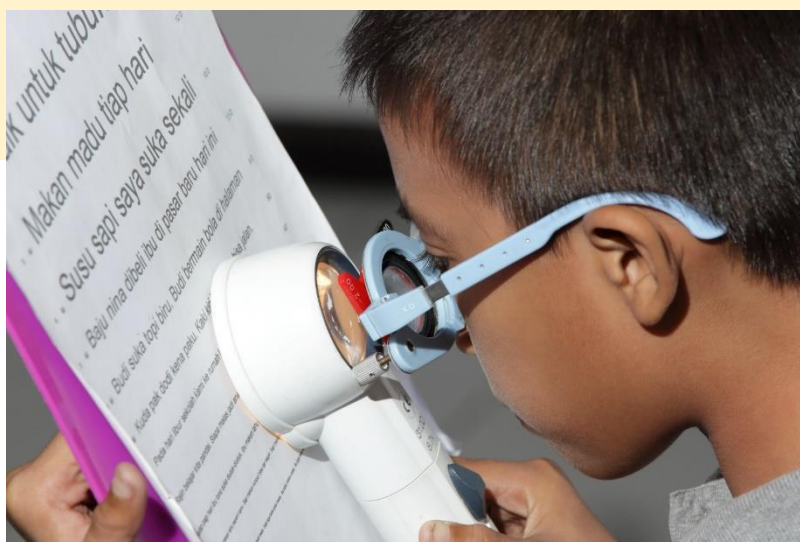
The need for and benefit of non-optical interventions can be assessed best in the real situation (in the classroom for example), but the eye care staff needs to give guidance and recommendations, and can try to simulate classroom conditions during assessment.

Box 8

Examples of Non-Optical Interventions

- Illumination: is more light needed? Sitting near a window might help.
- Is the client bothered by glare when walking outside? A cap might be beneficial. Or does the child experience glare when looking at the blackboard: a change of position may help.
- Improvement of contrast: does the child write more comfortably with a black pen or very dark pencil, compared to the standard pencil? Does (window)light improve contrast of the text in the schoolbook?
- Using larger size: does writing larger make it easier to read back school notes? Is a large print book useful, especially if the use of a magnifier is not possible.
- Adapting distance: does sitting in the front row make it possible to read the blackboard? Does writing larger make the working distance better, thus increasing comfort?

Use of reading board during magnification assessment to improve reading position and allow more light on the text



Demonstration of and Training in Use of Spectacles and Devices

Often children or their parents/ guardians do not like the look of spectacles and devices that have been prescribed. It is important to demonstrate the improvements made in visual acuity by using real tasks such as the ability to read what is written on a poster in the eye clinic with the new distance prescription or the ability to read smaller size text in the schoolbook with the magnifier just prescribed. This is especially vital when working with children with intellectual impairment who also may need more time to get used to their spectacles. Improvement on the acuity chart has little meaning to clients or their relatives.

There will, most likely, be a need to explain to the sighted classmates of the child with low vision why spectacles and devices are needed. There is often social pressure, especially, in higher grades, to look and act the same as sighted peers and this may lead to non-use of spectacles and devices.

Taking time to give training in the correct use of the magnifying device prescribed is vital, as only then will the client be able to experience the benefit of magnification. It is important to give guidelines for their use on paper to the client and carer (and an extra copy for the teacher).

It is recommended to have a table and chair in a quiet corner near the examination room, where a child can practice reading with the new magnifier for 20-30 minutes, while the eye care staff examines other clients. A quick check by the eye care staff after that practice will show if there are any problems in using the magnifier and if any adaptations are needed. This process will help to convince the child and parent of the benefit of the prescribed magnifying device and ensure the correct use. It will also help the child and carers to explain to sighted peers why the device is needed



Teaching classmates the need for and benefit of spectacles and magnifier helps acceptance and use of these interventions

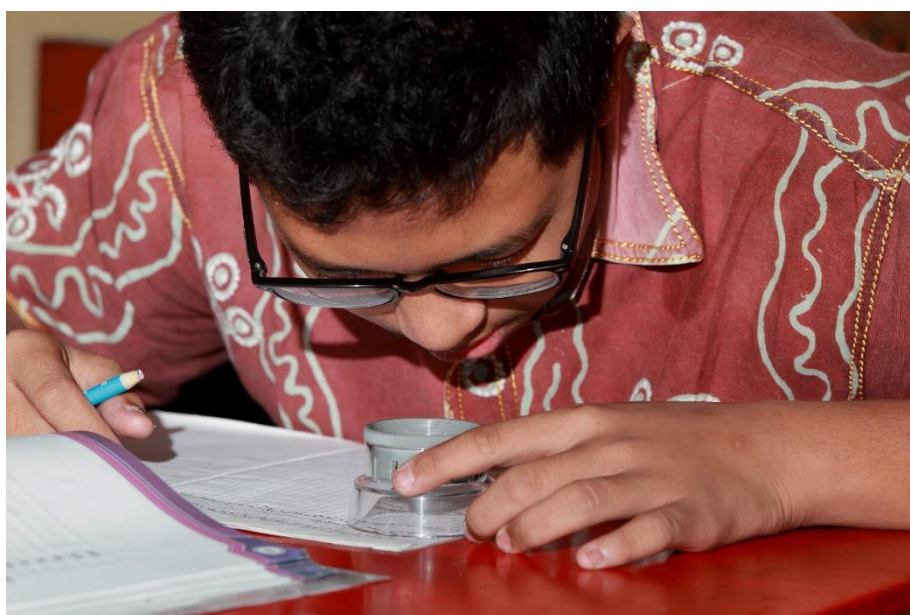
Final Prescriptions and Summary Advice

Annex 4 gives an example of a basic clinical low vision assessment form.

Clients, carers and teachers often do not remember what the eye care staff actually advised because they might be nervous about the results of the assessment, do not understand the technical terms used or were themselves not present at the assessment at the eye care service. It is therefore essential to provide all assessment results— the final prescriptions and summary advice —orally as well as on paper. Details on referrals after low vision services, for example to an Organisation of People with Disabilities for learning mobility skills or to a rehabilitation department in a hospital, can also be written on the advice form.

Annex 5 gives an example of an advice form that can be filled in by eye care and given to the client or the accompanying person after explaining the results of the assessment. Ideally eye care staff should send a copy of the form to the child's school or give an extra copy to the client to give to the teacher. Annex 6 gives an example of a form to be filled by eye care staff for children, who do not have low vision after being prescribed spectacles. This form is often used after refracting children with intellectual or hearing impairment.

If teachers have received training in low vision, they can assist in deciding on the best non-optical interventions by trying out the benefit of different interventions in the classroom.



Assessment in classroom: would this child benefit from a reading stand?

Obtaining and Using Spectacles and Magnifying Devices _____

Obtaining distance spectacles and magnifying devices is often one of the most difficult parts of the whole low vision care process and there are different approaches you may try (**Box 9**). If children or adults do not obtain the spectacles and magnifying devices, their vision is not improved and, in many cases, children remain illiterate (even if they attend school), can only read very slowly, need their peers to read to them or even have to use Braille.

Monitoring the obtaining and use of spectacles and devices can be done through a questionnaire (see **Annex 7**): Interview clients, caregivers and/or teachers by phone 3-4 months after the spectacles or devices have been obtained.

Details on buying magnifying devices in Indonesia and globally are listed in **Annex 11**.

Box 9

Obtaining and Use of Spectacles and Low Vision Devices

A system to ensure children receive and use:

1. Distance spectacles and hard cases
2. Non optical devices such a reading/writing stand or cap
3. Magnifying devices

Consider the following:

- Who is coordinating and responsible for checking that children obtain what they need?
- Who makes follow-up visits or phone calls to check all is being used?
- Who pays for what (transport, eye checks, spectacles, devices)? What is covered under the national or private health insurance?
- Who helps a child to get used to the new spectacles and encourages her to wear them all the time?
- Who trains the child in the use of magnifying devices?

Look at the role and responsibility of the following groups to answer these questions:

- Parents/caregivers
- Eye care or low vision service
- School/teachers
- District/provincial education authorities
- District/provincial eye care
- National Ministry of Education: admission policy (**Annex 8**)
- National Ministry of Heal

Examples to organise payment for services, spectacles and low vision devices:

- After convincing clients and their family of the benefit of the spectacles and devices, discuss the price and judge if they are willing to pay the full costs or at least can give a (substantial) contribution.
- Check what the (public) health insurance contributes
- Set up a subsidy system for poor clients with the help of local companies and philanthropists. You can make it known which local companies support persons with low vision.
- Set up a fair pricing system where you can build up a small reserve which is then used to subsidise devices for poor clients.
- Ask wealthy parents who are happy with the low vision service their child receives to donate the cost of a pair of spectacles or a magnifier to a child who cannot afford it.
- Approach district education authorities and find out if they
 - have a budget for assistive devices for children with special needs.
- Demonstrate to district education authorities that many children with visual impairment do not need Braille any more if they receive regular eye care and low vision assessment and support. The cost of Braille books and equipment is high, and some of this budget may be used to provide low vision care and devices.
- Set up a loan system for more expensive devices especially if clients live or go to school near the low vision service: the client pays a fraction of the total cost to get for example a video magnifier on loan. A signed agreement between user and low vision services is used to describe what happens in case of breakage or loss.



Learning how to use a handheld video magnifier

Monitoring: Annual (or Biannual) Clinical Low Vision Assessment, Further Training and Support

Periodic follow-up is needed to check

- ✓ The current level of visual functioning (especially near and distance VA, contrast and light)
- ✓ The use of vision for common daily activities and for progress in reading and writing or other daily routine activities; for example, one can ask if the reading tasks in the classroom can be finished faster compared to one year ago or in the same time as sighted peers
- ✓ The activities for which spectacles, magnifying devices and non-optical interventions are used; correctness and frequency of use.
- ✓ Any reasons for non-use of spectacles and low vision devices, for example peer pressure
- ✓ If spectacles and low vision devices need changing
- ✓ Inclusion of all children in the classroom activities
- ✓ If a client who was referred for further training, such as O & M , Braille or speech therapy, actually received it

Eye care staff can monitor progress by learning from teachers and caregivers what further training and support may be needed for a child by asking about the child's vision-related performance at home and school. Education staff can use a progress record form (**Annex 9**) to report on, for example, reading and writing progress made, obtaining and use of interventions prescribed, access to information on the blackboard, and interaction with peers.

In principle, all children with low vision need to be reassessed at least once a year by eye care personnel with low vision expertise. Sometimes programs think that only those who were prescribed spectacles and devices need a follow-up, but this is not correct. Children's vision, refractive errors and the vision-related tasks they need to perform change over time. For example: Schoolbooks in the lower grades generally have large size text and many children may not need magnification. However, print becomes smaller in higher grades, meaning a child may need magnification for the first time, needs higher magnification or other strategies to access the school text. Strategies to ensure children come for follow-up are discussed in the section on links between eye care and education.

This child with Down Syndrome receives a clinical low vision reassessment every year and always comes with his mother.



Low Vision Training for Eye Care Staff

Most eye health professionals do not have much practical knowledge about or skills in providing low vision care or in performing vision assessment of children with disabilities.

Specific low vision skills needed by different cadres of eye care are listed in **Box 10**. This may vary according to their actual role. In general an ophthalmologist should first determine that everything medical or surgical has been done for a child, including optimal refraction; then, anyone of several eye care workers who can refract children (optometrists, refractionists or ophthalmic nurses) can learn to provide or assist in providing a full low vision assessment (see CHEJ 2012 low vision issue, **Annex 12**) such as a contrast sensitivity check, a near VA and magnification assessment and training in use of devices. Ideally staff involved in low vision care they should already be able to perform retinoscopy and subjective refraction.

An important part of capacity building is making all staff (not only eye health staff) in a hospital aware of who may need to be referred to the low vision service (see **Box 1**), either in the hospital itself or at NGO-run low vision centre.

Formal training in low vision for all different levels of direct service provision, for increasing awareness, identification and referrals, and for setting up services is available through Yayasan LAYAK, Yayasan Bhakti Luhur, and RS UNHAS in Makassar (**Annex 11**). These services have well trained, experienced, facilitators who can provide tailor-made training from basic low vision care to working with people with multiple disabilities for diverse target groups, such as ophthalmologists, refractionists, teachers, care givers, rehabilitation staff and others. A placement at one of these 3 services with a good quality low vision service can also be arranged.



Box 10**Specific Low Vision Skills Needed by Eye Care Staff**

Ophthalmologists will need to learn:

- What are the benefits of low vision care to patients of all ages, including those with disabilities, and to the eye care system
- What must be added to include low vision care into the existing eye care services:
 - Accessibility of the clinic and of information;
 - Material and financial resources needed (including stock of devices)
 - Stages of a comprehensive service and the need for networking
 - New skills needed by the eye care staff
 - Time needed to provide a good low vision service
- Ways to increase the number of people receiving low vision care, including referrals from within the eye care service
- How to supervise a clinical low vision service, including monitoring of progress

Optometrists, refractionists, and/or ophthalmic nurses/assistants (that is, the person with good refraction skills) will need to learn:

- What is “low vision” and who are their clients; for example, who should be referred from the Outpatient Patient Department or other departments for low vision care
- What kind of low vision care do children and adults need in relation to the different causes of low vision
- Clinical low vision assessment with emphasis on a thorough refraction and assessment, and prescription of magnification, as well as assessment of other visual functions (e.g. contrast) as needed
- How to train clients in the use of optical and non-optical devices,
- Networking with district education personnel, schools, community disability programs, DPOs (Disabled People’s Organisations) and other programs to ensure that:
 - All clients needing low vision care are referred
 - All children obtain all interventions needed
 - All children use the spectacles and devices as advised
 - Regular follow-up is done
 - All children can learn in an inclusive environment
- How to keep good records and to provide basic reports on achievements, disaggregated by age, sex and disability
- How to provide clients, parents, teachers and other professionals with the results of the low vision assessment in accessible formats



Teaching a client the use of a monocular telescope is part of training eye health staff in providing low vision care

Mentoring of Eye Health Staff After Training

Providing training, by itself, rarely leads to change. Accordingly, plans need to include mentoring of the people trained to ensure that the skills acquired are used (see also **Box 16**). Mentoring can be done in many different ways but always needs to take the following into account:

A visit within 2-3 months of training is extremely useful in building confidence and strengthening skills. This can be best done by assessing, training and advising a few clients together, as well as by discussing some records of patients assessed previously.

Trainees often encounter challenges that they had not expected at the time of their training. They might feel for example they do not have sufficient time to work with a client with low vision. Mentorship should focus on problem solving activities with the trainee.

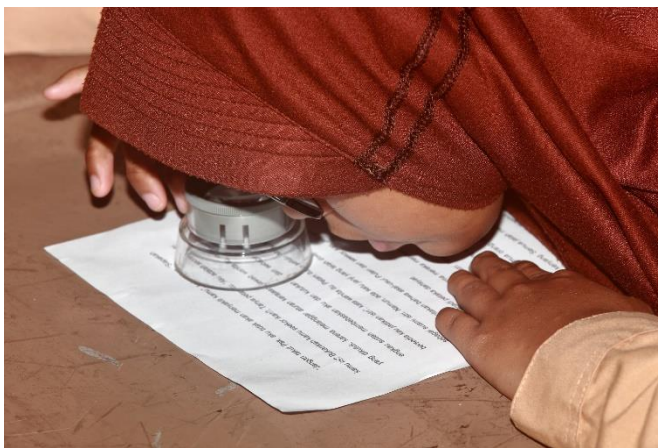
Trainees need advocates. A visiting mentor can meet with the relevant hospital/clinic authorities and staff and impress upon them the importance of the low vision work and the need for their support of the work of the trainee.

Low Vision Care at Different Levels of Eye Health Service Delivery

It is sometimes believed that low vision care can only be provided at a special low vision clinic at a tertiary level hospital or by an NGO run low vision service. However, low vision services can also be provided at the provincial eye units. Programs at different levels of service delivery provide different aspects of low vision care (**Box 11**).

For example, a secondary, provincial, level eye unit can ensure a thorough refraction is done for a school-age child with pseudophakia and can assess and provide basic magnification for reading textbooks at school. The eye care staff can then explain the results to the child and the family and help them to get spectacles and magnifying devices for near vision. They can send a letter to the district education authority, which can, in turn, encourage the local school to enroll the child and support transport for annual follow-up to the eye care centre. In some areas vision centres have a similar function.

The family and the classroom teacher can help by ensuring the child uses spectacles and devices at home and in the classroom, sits near the blackboard, window and teacher as needed, and learns together with the classroom peers.



It is important to check if a child is using all interventions

A basic low vision service at provincial or district level does need to refer clients needing more complex interventions to a higher level low vision service, and should link with primary health care to promote identification and referral of people who (may) have low vision to the low vision service at the district level.

A district-level service can be effective in facilitating these referrals and in ensuring regular follow-ups as needed.



Staff at secondary level hospital checks if new spectacles are needed and if the hand magnifier the client uses is sufficient for her reading needs.

Ideally, people working in eye care, education, and community services at district level should be trained to give basic low vision services and vision services to people with disabilities, appropriate to their skills and experience. But at the very least, they should be aware of the needs of people with disabilities, including low vision. They can then refer these clients to the services that do exist and provide information to people with low vision and with disabilities and their families. **Annex 10** gives ideas of the kind of services eye health programs need to connect with.

Box 11

Low Vision Care at Different Levels of Health Services

Service level	Who can be helped at this level	What can be provided	Who can provide services
Primary health/eye care	People with any eye or vision problems	<p>Identification and referral of people with visual problems (who may have low vision or a disability)</p> <p>Referral for diagnosis, surgery, prognosis, good refraction</p>	Key informants, primary health staff, teachers

Service level	Who can be helped at this level	What can be provided	Who can provide services
Secondary/ district	Adults and school-age children with low vision (only)	<p>VA assessment; Good refraction; Essential low-medium magnification devices for near with training in their use. Advice on non-optical interventions and environmental modification. Links to education and rehabilitation services.</p> <p>Follow-up after low vision care:</p> <ul style="list-style-type: none"> ▪ Reminders to attend tertiary level if needed ▪ Assistance to replace broken spectacles, devices ▪ Assessment for new spectacles, devices based on information from tertiary level 	Ophthalmologists, optometrists, refractionists or other mid-level eye care workers who have received additional training
	Babies, young children with low vision and/or disabilities and those with complex needs	Referral to tertiary level	Ophthalmologists, optometrists, refractionists or other mid-level eye care workers

Service level	Who can be helped at this level	What can be provided	Who can provide services
Tertiary	<p>All clients listed under previous level</p> <p>Adults with low vision with complex needs;</p> <p>Babies and young children with low vision, with other disabilities who could not be helped at secondary level</p>	<p>Comprehensive assessment of all visual functions;</p> <p>Refraction of complex cases;</p> <p>Wide range of devices, including electronic devices;</p> <p>Training in low vision devices;</p> <p>Good links to education and rehabilitation services</p>	<p>Dedicated staff with high level of training in low vision</p>

Box 12 lists key ingredients of a good practice model for low vision service delivery, based on the experiences from 4 years of services provided by Yayasan LAYAK and RS UNHAS.

Box 12

Key Ingredients of a Good Practice Model for Low Vision Service Delivery

- Timely information, referral, interventions
- Benefits of vision rehabilitation explained
- Accessible (location, results) and safe
- Uses client's preferred method of communication
- Flexibility: adaption to clients' (and caregivers) needs and abilities
- Professional, well trained staff with specialist skills
- Supportive management
- Quality assessment (includes screening)
- Referral to professionals outside vision rehabilitation service
- Access to emotional support, counselling
- Access to a range of affordable interventions
- Related to client's daily environment and tasks
- Health insurance for affordable services
- Clarity on roles of all involved
- Regular follow-up



Key ingredients for good services: well trained staff that take time to perform a quality refraction and magnification assessment

Eye Care Related Care Related Resources: Tests, Devices And Equipment

Some people believe one cannot start low vision services without a large variety of tests, devices, professionals and skills. However basic low vision care can be started without too many new resources and funds. A minimum list of resources, tests and devices is suggested in **Annex 3**. A greater diversity of tests and devices can be added later, once the demand for the low vision services grows.



A logMAR distance VA number chart is used to assess visual acuity

One consideration for starting district level low vision care should be the ability of the eye care service to stock the limited range of devices they would like to prescribe and the ability and willingness of clients to pay for the devices. It is better to start a service where clients can obtain what they have been prescribed on the spot, rather than to only provide a written prescription for a device that is not affordable, not easily available, and/or needs intensive training in its use. Bulk orders of the devices that will be regularly prescribed and sold, are more cost-effective.

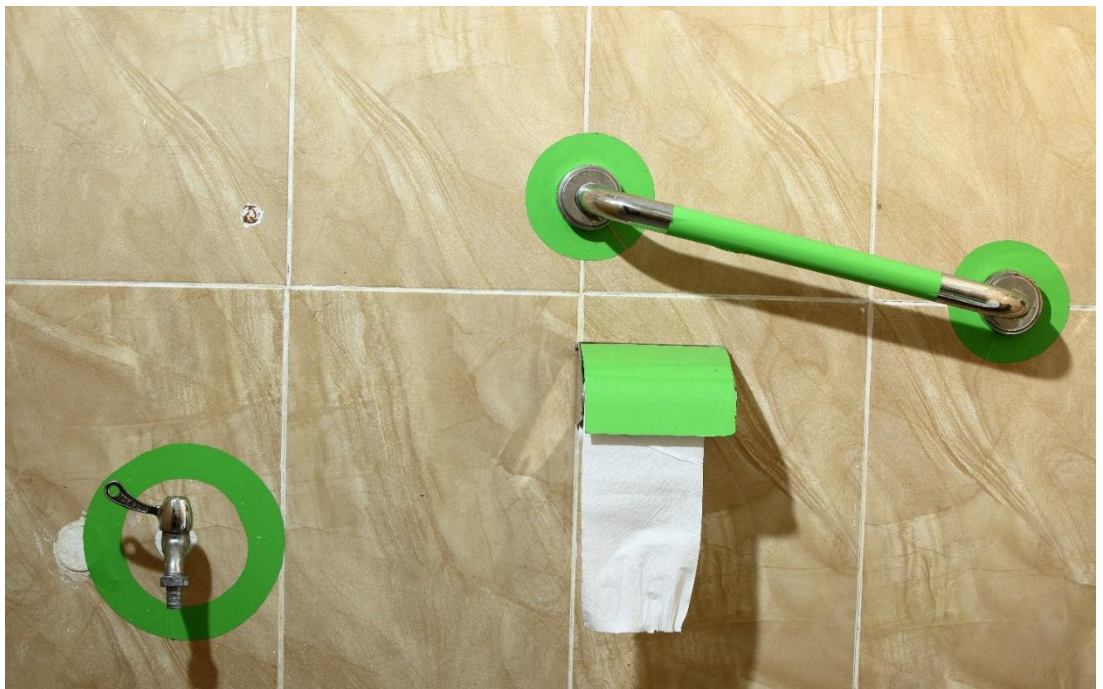
For example, some hospital-based low vision services started with non-illuminated hand and stand magnifiers, locally made high plus spectacles, and only one illuminated high power hand or stand magnifier (**Annex 3**). After one year, there was evidence of need for higher powers and more variety of devices for a growing number of clients accessing the low vision services in the area.

A reason not to include telescopes in basic services is that the improvement of near vision for reading, sewing, signing bills, using a mobile phone and the like is seen as a first priority, and training in the use of telescopes is time-consuming. When more resources are available, and there is capacity in eye care, education and/or community programmes to train people in several sessions in the use of telescopes, these devices should be added.

If the eye care service has the resources, trained staff, time and access to a sufficient number of clients with low vision/with disability, a greater variety of tests, equipment and devices will benefit the client and most of his or her needs can then be met. In many settings, however, these requirements (time, staff, enough clients, resources) are not easily met.

ACCESSIBILITY OF SERVICES AND INFORMATION

Children and adults with low vision and persons with a disability should be able to access all information that concerns them and be able to easily access the examinations rooms; the clinic should be low vision friendly. Making an eye clinic or vision assessment room more accessible for people with low vision and disabilities, one basically needs to consider both technical issues and skills and attitudes of staff. **Annex 12** lists references for learning more about all of the following points.



Toilet facilities needs to be accessible and provide good contrast

Some technical improvements:

- **Size of letters on signs.** Notices and signs should be at eye level, and the use of a simple font and large are recommended.
- **Contrast and colour of signs,** contrasting strips on steps and on glass doors, contrast between door and walls, contrasting lines, for example on the floor, to guide clients to the right examination room or department.



- **Illumination** (enough light to move around easily) and glare (shiny white tiles make seeing very difficult)
- **Position** of furniture and obstacles so people who do not see well do not fall over them or bump into them
- **Buildings and facilities** have to be accessible for people with disabilities. For example, a person in a wheelchair would find it easier to move around in a building that provides ramps and hand rails, with good contrast, to access different levels or floors, sliding doors to access rooms with handles with contrasting colour and toilets that are big enough to fit a wheelchair in. Use of landmarks in good contrast and, for example, tactile, contrasting lines on a floor that can help navigation as well as create fun for children using the lines. Low vision friendly environments benefit everyone!
- **Communication:** the fact someone cannot see well and/or has a disability does not mean you cannot talk to them! Often staff talks to caregivers instead of to the client directly. How do you introduce yourself to someone with sight loss? How do you support someone with sight loss in getting around within buildings and outside? Each person's experience is different and unique. Let them tell you what kind of help they need. **Annex 12** lists references, also for learning communication skills for example with people with hearing impairment



Good communication with the client, who has a visual and hearing impairment, and her mother needs to be clear and respectful

- **Helping clients move around safely**

Clients may need to be guided to an examination chair or another room if they cannot see well. It is important to make people feel safe and listen to what they need.

The same principles can be used to improve accessibility and communication at school grounds, classrooms, at home and to make a leaflet to advertise the low vision service. One example of accessibility of information is the advice form with results and advice in **Annex 5** is printed in a simple font (Verdana) and should ideally be printed in a size the client can read. The results should be discussed and read out to the client. The same principles apply to the written 'Guidelines to teach the use of a magnifying device'. Ideally provide these in size 20.



Making client feel comfortable and adapting your examination: refractionist also wears trial frame

A LOW VISION SERVICE WITH EMPHASIS ON THE ROLE OF EDUCATION

There are children with low vision in Indonesia who receive a good education and excel in their local, public, school where they are wholeheartedly accepted by the school management, peers and teachers.

However, many children with low vision in Indonesia still face challenges in learning with their peers either in public schools or in special schools. For example, children with low vision may be educated and treated as if they were blind. They may also face difficulties to access appropriate education. Some are told to go to a special school or an inclusive school, even if they are not near their home. Others are not easily accepted at their neighbourhood school and may drop out early.

Sustainable Development Goals (SDG) 3 and 4 cover health for all and quality, inclusive, education for all. Indonesia is a signatory to the SDGs and promotes inclusive education. Children with disabilities, including children with low vision, have the same rights as other children in determining what is the best possible education for them.

Types of Education and Learning Media

Inclusive Education

Inclusive education is where children with low vision attend their local school together with other children in the neighbourhood and where every child receives support as needed.

Inclusive education can help to:

- Give children with low vision, and those with other special needs, the opportunity to attend school in their own home environment
- Promote use of print as much as possible as print schoolbooks will be the main learning medium used in the school
- Make the local school accessible for all children
- Ensure some specialist support is available when needed for example to train a child in use of devices and improvement of print reading skills
- Ensure access for all children to special materials, such as Braille or large print books, reading stands, magnifying devices
- Teach each child that their peers might have different abilities and needs

Eye care personnel providing low vision services for children should investigate if there are inclusive education initiatives, liaise with the district education officer to assess children's vision and use any financial or other forms of support available.

Special Schools and Resource Centres

In special schools and resource centres for children with visual impairment or other special needs, it is still not uncommon to see children using Braille, regardless of the level of their remaining vision. The positive side is that children who do need Braille because of their very poor vision (or because they are blind) have access to this learning medium and to teachers with Braille skills.

Unnecessary use of Braille by children with low vision can occur if children do not receive a thorough eye examination and low vision before starting school, and when special teachers are only taught about blindness and Braille during their teacher training. Fortunately, this situation is changing as more and more eye care and education programs are learning about low vision.



The girl with low vision does not need Braille anymore, after obtaining spectacles from the low vision service

Challenges Relating to Print Use

Children with low vision who do use print still face challenges and often do need extra support.

In some remote areas, there are not enough schoolbooks for each child, which means children have to share books. This is not possible for a child with low vision who often needs to read at a closer distance, might need more time to read a paragraph than sighted peers, or might need to use magnification to read.

Some children with low vision require large print schoolbooks, either because the devices do not make the text large enough to read comfortably and with reasonable speed, or because devices do not improve the child's near vision at all.

Most children with low vision read more slowly than their classmates. They may need extra support to develop good reading and writing strategies. For tests and exams, they might need additional time and tests in a larger print size or accessible format, like on a computer.

Some parents might be afraid their children will lose their vision (which is not true!) if they use their vision for print reading all the time and may not encourage them to read.

All these situations require timely cooperation between the national (special) education department, district education and eye care services, school, and parents. This cooperation can ensure a child with low vision gets his or her own schoolbooks, in large print size if required, is allowed more time for exams, receives extra support if needed, and is encouraged by parents to use their vision as much as possible for literacy-related tasks.

Need for Admission Policy

Every child with special needs should have a comprehensive eye care and, if needed, low vision assessment before starting any type of school (mainstream or special school) so that a child obtains the best possible vision for learning (Annex 8). Only if children have early access to quality eye and low vision care, can a good decision be made if a child should learn print, Braille, or even both

Parents, Caregivers

Parents need to be aware that the educational needs of children with low vision and those with normal vision are generally the same. Children with low vision have a right to be provided with the same opportunities for acquiring knowledge and skills as any other children. Implementing low vision care requires a long term commitment by teachers and parents. Eye care services need to plan for regular and long term engagement with all people involved in the daily care of the child with low vision to provide information on any (new) interventions and ensure that they understand their role in assisting their children.

All family members understand and appreciate the results of the low vision examination



Parents need to be able to interpret the results of the eye care and low vision examinations practically (using the advice form in **Annex 5**) and need to assist their children at home in the use of spectacles or a magnifier (**Box 13**). Especially use of a magnifying device needs training and practice, else a child may assume that the given device doesn't work or is too cumbersome to use. Written guidelines for use of magnifying devices can help both parents and child: the low vision service needs to provide these in a large size.

Box 13

How Parents Can Help Their Child Use Vision

- ✓ Accept and understand the difficulties their child with low vision may encounter, but never over-protect or under-estimate the child
- ✓ Encourage their child to know and accept himself/herself, build up confidence and express his/her feelings and needs so that optimal support can be given
- ✓ Make sure he or she receives regular eye care services; arrange with teachers annual visits to eye clinics for low vision assessment to ensure new spectacles and devices are prescribed when needed
- ✓ Make sure the child obtains the prescribed spectacles and devices
- ✓ Encourage the use of the remaining vision
- ✓ Help the child to use spectacles and magnifying devices for the appropriate tasks and teach to take good care of all devices
- ✓ Assist the child to complete school assignments in good time, for example by organizing joint exercises with their siblings, to increase reading speed and comprehension

This manual focuses on school age children, but most lessons also apply to younger children, adults and elderly persons with low vision or with a disability and a vision problem. **Box 14** gives examples and highlights what caregivers, teachers and others may mistakenly believe.

Box 14

Myths and Facts and Need for Low Vision Care

- Parents sometimes think that their child should not wear glasses when they are very young. They postpone the wearing of glasses until school-age when it becomes clear the child cannot see the blackboard or read the schoolbook. Many children have then developed amblyopia ('lazy eyes'). Glasses will still improve their vision but often not any more to a normal, good, level of vision. Children must

wear glasses as soon as prescribed by eye health/low vision services. Children learn about the world mostly through vision: improving vision, as early as possible, is vital.

- Many children with a disability, such as intellectual impairment, need distance glasses to improve their vision. Teachers and caregivers often do not refer these children to eye health or low vision services, because they only “see” the main disability, for example cerebral palsy or Down syndrome. They do not realize better vision gives the child the opportunity to learn better. Children with any disability should always get eye examinations and refraction at regular intervals, from an early age, because they are 3-6 times more likely to have visual problems compared to children without a disability (Annex 12).
- Some people may believe that wearing spectacles, especially with a high power, will make the school child vision worse. This is a myth: spectacles improve vision.



Glasses improve vision, also for children with a disability such as Down Syndrome

- Another myth is that reading at a close distance damages the eyes of a child and vision will slowly decrease. This is not true: many children with low vision need to read at a close distance.
- Many elderly persons with low vision and their family think that not seeing well is part of becoming older and there is nothing that can be done about it. This is a myth! First eye health examinations and possibly surgery are needed, followed by a thorough low vision assessment and advice on how to improve the use of their remaining vision, for example with the use of devices. This will help them to do the daily activities again they like to do (e.g. reading a newspaper, finding spices in the kitchen, independently dealing with their medicine). This can restore their confidence, independence and quality of their life. It helps family members too as they need a lot less time to support their parent.

Adults and elderly persons often benefit from counselling because they have experienced sudden visual loss caused by certain diseases (macular degeneration, diabetic retinopathy and glaucoma) which causes deep frustration: many activities, such as reading, computer use and travelling to see friends now seem impossible. They need extra attention, tips and training convince them to use magnifying, non-optical and environmental adaptations to their home or workplace new interventions to carry out their daily activities.

Training of Teachers

Teachers will need specific expertise to support children with low vision and other children with vision problems. Experience in many settings suggests that teachers of special and inclusive schools need to be upgraded, as well as teachers in local schools with a child with low vision in the classroom. This is particularly true for special teachers of the blind if their formal training to become a teacher was conducted long ago, when most schools for the blind only taught and used Braille.

General Classroom Teachers

Children with low vision who attend local, mainstream schools might not receive optimal support if the general classroom teachers are not aware of what low vision is, how important it is to refer children to eye care services and what educational support children with low vision may need. For example, teachers need to learn that it is good and not harmful to use any remaining vision for learning. They will benefit from learning some basic teaching strategies to assist children to develop vision-related skills optimally, after children have been assessed by the eye care and their low vision service. Topics that should be included in the training of classroom teachers are listed in **Box 15**.



Assessment of use of 'best' vision in the classroom

The advice form in **Annex 5** is a good tool to assist the teacher in helping an individual child. The eye care staff who provided low vision assessments should help both the teacher and the parents understand practically how much vision has improved, how spectacles and devices help, and what activities the child can now do more easily using vision. If the eye care staff was only able to communicate with either teacher or parent, the one who was present at the eye care assessment needs to share the advice form, as well as the guidelines for use and care of spectacles and magnifying devices, with the other party.

The simplest way to train teachers is a one-day awareness training within a school setting so that the teachers can be trained while working with their own

children with low vision. This training should only take place shortly after the children obtained distance spectacles and devices as prescribed by eye care.

Ideally a maximum of fifteen teachers per school or centre can be involved in the training at one time. Thereafter, the trained teachers need to share the new knowledge with the rest of the teachers at their centres, as well as with the community at large.

One-day training alone is not enough for the teachers to bring the desired change, and trainers (together with eye care staff trained in low vision) need to make regular follow-up visits to help teachers develop good teaching strategies (**Box 16**). Parents should be invited to come to the school during these mentoring visits.

Box 15

Basic Low Vision Training and Roles Of Classroom Teachers

The training should involve both general and specialist teachers and should at least include the following.

- Myths and facts about use of vision (**Box 14**)
- The importance of early referral to eye care to find out if a child needs treatment, surgery or spectacles and if the child has normal or low vision
- The differences between blindness, low vision and normal levels of vision
- The need for annual clinical assessment of children with low vision to determine if the remaining vision might be improved with spectacles and low vision devices, or to assess if any of these need changing
- The importance of obtaining and using the prescribed distance spectacles, optical and non-optical devices listed by the eye care providers, as well as how to take care of these devices
- The help and advice children with low vision need to use their 'best' vision in the best possible way in and outside the classroom, including for example making environmental modifications

- The learning media, print, Braille or both, a child needs for learning. The teaching of print reading and writing skills needs special emphasis
- Creating an inclusive learning environment for all children, using examples relating to children with vision problems

Roles of The Teacher

- Encourage the use of spectacles for distance and/or near vision
- Encourage the use of a reading/writing stand, a reading slit, a cap, and other non-optical devices
- Demonstrate (together with the child with low vision) to classmates why spectacles and devices need to be used in the classroom and in the school ground.
- Assist with the (correct) use of magnifying devices for reading and other near tasks
- Encourage children to ask for what they need and promote systematic cooperation between all children (the child with low vision, with a disability and all other classmates)
- Organise seating nearer or further from window light and/or near the blackboard
- Take time to teach print for reading and writing
- Encourage children with albinism to properly cover their skin (wear a cap, long sleeves, skirt and trousers)
- Remind parents and child that regular follow-up to eye care is needed and assist in making it happen

Special Teachers

Children with low vision may be deprived of the right to use their sight if special teachers do not have appropriate skills to work with these children. In some educational settings children with low vision are still being treated as if they are blind and are not encouraged to use their residual vision. They might be taught to use Braille unnecessarily.

Teachers in special schools or in resource centres need to gain the same skills and knowledge as general classroom teachers but can acquire more in-depth knowledge and skills since they work especially with children with visual impairment.

Assessment of use of 'best' vision for classroom activities, such as writing (**Annex 9**)



They may learn to assess the use of 'best' vision of a child in and outside the classroom in more detail, add and adapt non-optical interventions listed on the advice form and monitor the progress in use of vision. Annex 9 shows an example of an educational monitoring form, and includes areas such as learning media used, spectacles and devices, reading and writing speed and interaction with sighted peers. Most importantly they can learn to explain the vision-related needs of the child to general classroom teachers and parents, and provide detailed advice on support needed. Ongoing mentoring by the trainer (**Box 16**) is needed to strengthen all new skills.

Box 16

Mentoring and Teaching Strategies

Ideally teachers need to be visited at their schools and be observed while teaching the children with low vision in their classes. This can be combined with follow up visits to the schools whereby the person who trained the teachers in low vision, spends some time with individual teachers sharing knowledge and skills, discuss challenges they face, and what could be done to address these challenges. It is advisable to visit teachers at least 2 times a year. The first visit after training should ideally take place within 3 months of the training. Any queries that come up between follow-up visits can be discussed by email or phone.

The following activity can be done jointly during the first visit:

- Assessment in the classroom of the ways in which a child with low vision can use her 'best vision' (vision with distance spectacles, a magnifying device and a non-optical low vision device if prescribed/advised) in the best possible way. For example, should he or she:
 - Always sit near a window and not be part of a seat rotation system?
 - Have her own print school book since sharing with others is not possible due to a closer reading distance?

- Discussion of recommendation on the advice form, for example:
 - Orientation and Mobility training for a child with very poor vision who cannot move around independently
 - Training in print reading and writing of a child who was using Braille, but who now has enough vision to learn to use print (in addition to or instead of Braille); sighted peers could help teach print if teachers do not have time

In addition to reviewing the information on advice forms and ways to motivate a child to use spectacles and low vision devices, teaching strategies should be emphasized during mentoring, for example:

- Say what you are writing on the blackboard while you are writing it
- Write large size letters on the blackboard
- Encourage cooperation between the child with low vision and sighted peers, for example by letting a sighted peer tell the child with low vision what is written on the blackboard, by sharing lesson notes, by asking the child with low vision to assist a sighted child with arithmetic, by asking a sighted child to read a long piece of text to the child with low vision
- Use dustless chalk
- Allow a child to write larger, for example across 2 lines in the notebook
- Allow more time for reading and writing tasks
- Allow extra time to do tests and exams

Community and Hospital-Based Rehabilitation Staff

If existing rehabilitation personnel or community staff working with people with special needs are not currently linked into the (paediatric) eye health and low vision services, it will be necessary to provide them with some training to provide regular support at home or school. Annex 11 lists available short trainings. Especially infants and preschool children with low vision can benefit after eye health and low vision assessments and interventions, for example by learning to strengthen their use of visual skills in their daily activities (Box 17). In a future, technical, low vision manual strategies and tips to support infants with low vision will be described.



Box 17

Young Children with Low Vision Need Play and Intervention to Help Develop and Use of Visual Skills

Encourage children who have low vision to use their vision by controlling environmental conditions such as lighting and glare, colour, contrast, size, etc.

Allow the child to hold materials at whatever angle or distance that is best for them and encourage them to move close to you at story time or circle time.

Choose toys that have lights, bright colours with contrast.

If using pictures or books, select pictures that have colourful and simple pictures rather than pictures that are visually cluttered. Also, if using photographs, use matted finishes instead of glossy finishes to reduce glare.

LINKAGES AND COORDINATION BETWEEN EYE CARE AND EDUCATION/COMMUNITY PROGRAMS

When informing all stakeholders of the benefits of a low vision service, it is essential to inform the wider community of the availability of the service. In **Box 11** we already listed the role of different levels of health Services in low vision care. Other settings and groups to include are: Organisations of people with disabilities (DPO), eye clinics, paediatric clinics, educational authorities, schools, local health authorities and centres, and rehabilitation programs (including Community Based Rehabilitation). **Annex 10** provides a more detailed list. It may be helpful to also provide information through the local media.

Community Level

Children up to 6 or 7 years of age with vision problems and those with disabilities may be best identified and referred by people in the community where the children live: community volunteers or key informants (**Annex 12**). Networking with key people in the community and their network, grassroots organisations and primary health services is the first step to systematically detect children (and especially girls) in need of vision checks. Follow-up on use of spectacles and low vision related interventions can also be done at community level with the help of caregivers and community volunteers.

Follow-up on usefulness and use of spectacles at community level



District Education

A link between eye care and district education needs to be established to ensure each school age child firstly obtains their best possible vision and secondly is enrolled into the nearest appropriate school. Engaging the local government can start with advocacy in a meetings or and (informal) training for government staff who are involved in the education system.

For example, the education office in Jakarta has created and implemented training programs for public school teachers on how to refer and manage children with low vision and other disabilities in the classroom. This has proven to be essential, especially in receiving cataract surgery, assessment by eye care professionals, long-term follow-up after surgery, and low vision care (**Box 18**).

Box 18

Linking Eye Care and Education

1. Stakeholders meeting

In 2018 the Ministry of Health through the blindness coverage program held a meeting between stakeholders, involving the Ministry of Education, Ministry of Health, Ministry of Social Affairs, NGOs & DPOs, which resulted in the establishment of coordination between agencies in an effort to promote early detection and referral of children with vision problems in schools. Many children never had an eye examination when they first enrolled in school.

2. Case study: Yayasan LAYAK 's low vision service and the district education authority in Jakarta

Yayasan LAYAK coordinated training for inclusive teachers in Daerah Khusus Ibukota Jakarta (area (North Jakarta, West Jakarta & South Jakarta) and trained 245 teachers in "Identification of vision problems & assisting children with low vision and with disabilities and a vision problem in the classroom".

Teachers can help children and parents by referral for an examination by ophthalmologists, for a check for spectacles, for a low vision assessment; and they can improve the use of ' best' vision of children with low vision after clinical interventions.

From 7 inclusive schools in West Jakarta:

- 2 children received cataract surgery
- 10 children have had visual assessments & needed spectacles
- 2 children received low vision devices (telescopes & hand magnifiers)

The training taught how teachers can support their child following the advice form from eye health and low vision services with the following activities:

- Assistance in correct use of low vision devices and spectacles in school
- Facilitating inclusion: all classmates learn to support each other, for example to ensure all learn what is written on the blackboard
- Adapting the classroom and using appropriate teaching strategies which supports learning for every child in the class:

Coordination and facilitation of all these services by a coordinator (often based at eye care programs) or by low vision services might be necessary. For example, both parents and teachers need to understand that post-operative care of children after surgery is very important and that surgery alone is insufficient. Adherence to follow-up visits after surgery to eye care and low vision services is vital to ensure a child has and can use the best possible vision throughout the school years. Parents and teachers need to be aware of the print size the child needs to be able to read the schoolbooks and what spectacles and/or devices need to be used to facilitate this. Proactive approaches like utilizing a tracking system, mobile phones, and

counselling promote consistent follow-up (**Box 19**).

Eye care personnel and staff at low vision services need to take the lead in establishing the link with education services by giving the teachers follow-up schedules for all children. With this schedule, the schools can budget for transport and devices and ask for transport from their district officials. Furthermore, it is the low vision personnel's job to help the teachers and the children understand what interventions help the child see better (see Advice form in **Annex 5**). Teachers and/or parents should ideally be present during the low vision assessment for better understanding.



A parent practices the use of a hand magnifier with her daughter with low vision and hearing loss

Box 19

Ways to Promote Regular Follow Up

▪ **Tracking Systems**

For proper follow-up to eye care and low vision services, a tracking form should be created for each child as the primary tool to assist all involved in clinical and educational management of the child. It includes expected dates of follow-up visits, contact information, particularly a (cell) phone number. A tracking system facilitates follow-up at the eye care services for refraction, re-assessment of magnification, and optimal use of residual vision.

▪ **Counselling of Parents**

Counselling at the time of discharge after surgery, and during follow-up visits is essential for ensuring that parents and/or guardians have a clear understanding of their role in organising necessary follow-up services for their child. Without proper counselling parents may think for example that surgery is the final component of services and that a school for the blind is the only option for their child. Implementing low vision care requires a long term commitment by teachers and parents. Low vision services need to plan for regular and long term engagement with all people involved in the daily care of the child with low vision to provide information on any (new) interventions and ensure that they understand their role in assisting their children.

▪ **Mobile Phones and Email**

- Mobile phones are an effective means for reminding parents, caregiver and teachers of follow-up visits, for example through text messages or Whatsapp.
- Mobiles can also be used for regular communication between coordinators, low vision specialists, and teachers to discuss any queries and to plan visits to schools and resource rooms as necessary. The same can apply to the use of email.
- And can be used to ask a teacher to share a filled in progress form with the low vision service by sending a picture of the form

Referral After Low Vision Services

Children may need further support after the low vision services. Here are some examples:

- A child (or adult) still has very poor vision and cannot only use print. He or she needs to learn Braille as well. Referral for learning Braille and obtaining access to Braille materials is needed: For example referral to the Indonesian Blind Union or to Mitra Netra in Jakarta.
- A child attends a special school for the Blind. After eye health and low vision assessment and using its interventions, the child can comfortably read printed text in the school books. Referral to the local (inclusive) school is highly recommended. Advocacy with the local school and counselling of parents to encourage the move may be needed.
- A child with Down syndrome is examined and needs spectacles to improve vision. The low vision staff observes the child does not walk very well and refers to a physiotherapist as well as to the Association of parents of children with Down Syndrome
- A child with a specific eye problem, Retinitis Pigmentosa, is routinely referred for an audiology check as hearing may also be or become a problem.
- An infant with low vision and other disabilities may need regular help from a speech therapist, physiotherapist, and the low vision rehabilitation worker. They all need to coordinate their work with the child. Referral to parents groups, if available, is essential and sharing information on online sources.
- An elderly person with low vision can now cook and garden again, with some low vision related devices and training, but needs mobility training to learn to move around safely at night. Referral to a community based service that helps people who are (nearly) blind with practical skills and with counselling is needed.



Not only does she need spectacles, but also referral for physio and speech therapy

Building and Maintaining Partnerships

Successful low vision programs involve strong partnerships. Partnerships are needed to:

- Financially support program activities
- Provide referral pathways for clinical services
- Provide appropriate educational placement of children with low vision
- Improve the technical and management capacity of the low vision personnel
- Coordinate the trainings of all different professionals
- Organise timely access to affordable spectacles and low vision devices

Because comprehensive low vision programs can be complex in nature, multiple partnerships are needed. It is a rare situation in which only one partnership (e.g., one DPO or one NGO supporter) is engaged. Developing and sustaining partnerships requires time and energy and should be viewed as a wise investment (**Box 20**).

Box 20

Building and Maintaining Partnerships

Partnerships can be promoted by the following:

- Provide partners with frequent reports
- Compile and share case studies (children who benefited from a low vision service) with photographs

These first 2 activities can be easily done by using data from the routine clinical record form (**Annex 4**)

- Admit it when activities do not work out as planned and discuss with partners what you have done to rectify the situation
- Initiate frequent communication with all partners
- Ensure that all partners understand what activities they are supporting and what activities other partners are supporting. Do not hide this information from your partners.

Monitoring Success of The Linkages

Monitoring can focus on the processes (activities) undertaken and on the specific vision and educational goals of an individual child.

For monitoring activities planned and implemented it would be helpful to identify what is the indicator that would most effectively reflect the activity. For example, if one of your activities is to train 12 ophthalmologists and refractionists working

at tertiary hospitals your monitoring plan could include checking that the 12 trainees have gained the skills. Pre-test and post-test at the time of training, and follow-up monitoring visits by the trainer can help measure this; be sure to spell out exactly what skills they will be expected to demonstrate. **Box 16** shows examples of expected skills of teachers after training. Education inspectors can also be taught how to monitor if teachers trained in low vision have gained the skills listed, by using the progress record form in **Annex 9**.

For the overall results of the low vision service your targets would probably include, for example, number of children receiving spectacles, or the number of children now using low vision devices. All data and results need to be disaggregated by age, sex and disability.

Establishing a patient or client management system is covered in low vision training including what data to keep; however, it is often necessary to review the management system with the key eye clinic staff to ensure that everyone understands the roles and responsibilities. Data collected on the clinical low vision assessment form (example in **Annex 4**) can be entered in a simple spreadsheet and be used as a client management system. Depending on the targets set, the low vision program might, for example, monitor the following:

- Ages of clients (ideally by sex and disability) presenting for low vision care, to learn if an expected percentage of children as compared to adults has presented for low vision services
- Percentage of children from local schools compared to those from special schools
- Percentage of children assessed by the low vision service who are prescribed distance spectacles and magnifying devices and percentage that obtained them
- Actual use of devices cannot be monitored by eye care personnel but can be monitored by teachers at school (or caregivers at home). One example for use by (special) teachers is given in **Annex 9**: this form helps to monitor vision-related progress and should be filled in at least twice in a school year.

The fact teachers report on the performance of the child, by using and sharing the progress form with the low vision service, shows that the networking is effective. It also helps to determine the need for follow-up.



Obtaining Spectacles, and Devices & Establishing A Supply System

Obtaining the necessary spectacles, hard cases for storage of spectacles, optical low vision devices, reading stands and the like, needs to be planned for. See **Annex 11** for the major procurement centres. Sufficient time needs to be set aside for ordering, shipping, and clearance. Tests and devices should be available just before training of staff starts. Separately, it will be important to establish a system for managing the supplies.

Yayasan LAYAK is setting up a stock of devices for sale to cooperating eye health and low vision services.

An important question is how you will manage clients unable to pay? How will funds collected be recorded and reported and new devices ordered? These are many important questions and it will require time with hospital and eye clinic directors to sort these out.

In some cases local companies or charities may be convinced to provide subsidies for clients from poor families. Other examples are city or provincial education departments who subsidise interventions as they need less budget for the provision of Braille or for supporting special teachers in special schools (**Box 21**).

(Financial) Cooperation Between Eye Hospital/Low Vision Service And Education: A Case Study

In a district there are 2 resource centres/special schools with around 25 children with low vision. The refractionist of the nearby eye hospital, trained in low vision, visits both schools once a year to make follow-up assessments and screen new children that want to be admitted. The eyes and vision of new children are then thoroughly assessed at the eye hospital and a low vision assessment is done. The district education organises their transport and visit. On the basis of the results of the eye care and in discussion with parents and schools, a decision is made about the education the child - whether to attend the local school or board at the special school. Parents, teacher and the district education officer receive a written advice form (example in **Annex 5**) from the low vision service at the hospital that lists the vision levels, learning media and interventions needed.

Every year the District Education Office in cooperation with the 2 schools makes a budget. On average each child with low vision will be sponsored for one eye care visit, one pair of distance spectacles and one magnifier once a year. They also include children with disabilities and children with low vision that attend other local schools. They can do this because:

An admittance policy (**Annex 8**) has been endorsed at the provincial level

Itinerant special education officers in each district/region have been trained to support (inclusive) education of children with special needs.

Parents contribute according to their ability to pay, with a minimum of 5% of the cost. The district education office organises the contribution from the parents.

The teacher who has a child with low vision in the classroom and the parents receive an explanation of what the child needs and an advice form, so they can ensure the child uses the spectacles and devices as needed, uses print if possible, and has a good seating position in the classroom, adequate lighting and can access information on the blackboard.

The low vision team contacts the schools once every 3-6 months by phone and asks questions about the use of spectacles and devices (and reason for non-use), about the reading of print (size, distance, ease, speed) and if there are any vision-related questions or new problems.

COMPREHENSIVE LOW VISION CARE

This manual emphasises practical approaches to including low vision care in existing eye care services, into mainstream and special education, and in community and rehabilitation programs, highlighting the need for close networking and practical approaches to establishing comprehensive services

Persons with low vision and those with disabilities and a vision problem deserve our support and assistance to achieve the best possible quality of life.

Including low vision care into eye care services, in and in mainstream and special education and CBID and medical rehabilitation services gives children and adults their best possible vision and the opportunity to use this vision in the best possible way.

Simple interventions, such as early referral to eye health/low vision care, and affordable access to spectacles and a magnifier as well as optimal seating in the classroom may help many children with low vision and children with a disability (who may need spectacles to see better) to attend their local school and to follow the school lessons more easily, providing they

receive the relevant support from parents, peers and teachers. This support, the interventions and the close cooperation between eye care, education, the child/client and family may also facilitate the use of print by the majority of school age children with low vision, regardless of the type of school they are attending.

Most importantly a child with low vision or with a disability who has succeeded in accessing eye care, low vision related interventions and a good education in the local school or nearby resource centre is a good role model for other children, and possibly also for those with other special needs.

Last but not least, this successful child can be one of the most convincing advocates for inclusion of low vision care in eye health services.



Girl with low vision being educated in an inclusive classroom

ANNEX 1: FOUR YEARS OF LOW VISION SERVICES: Comparison of socio-demographic characteristics of clients assessed at a NGO (Yayasan LAYAK) and at a hospital-based (RS UNHAS) low vision service over 2016- 2019

This data relates to 1588 clients who were presenting for the first time. Paediatric clients (0-18 years) formed 76% of the total client group at Yayasan LAYAK and 65% at RS UNHAS.

Except for sex, the data of the 2 services differ significantly.

Variable	Description/ value	NGO	Hospital
		N= 905	N = 683
Sex	female	44%	42%
Age at first assessment	0-6 years	18%	36%
	7-18 yrs	58%	29%
	19 and older	24%	35%
Disability*	low vision only	51%	79%
	low vision with other disabilities	15%	15%
	disability only (II, HI-not low vision)	34%	6%
Number of visits per client	only 1 visit	73%	82%
	1 or more follow-up visits	27%	18%
Source of referral	medical	27%	89%
	education/CBID	38%	2%
	community/self	22%	2%
	active screening by LV service	13%	7%
		N=839	N=520
Travel time (N=1359) ** if < 6 hours	mean hours	1.64 (SD 0.67)	2.26 (SD 1.46)

SD= Standard deviation

* Majority of those with disability only, had an intellectual impairment, in both services

** Travel time: those who could possibly have a service on the same day. Defined as travel time of < 6 hours) were included.

ANNEX 2: OBSERVATION LIST – DETECTING EYE PROBLEMS IN CHILDREN

- **Refer if eyes do not look normal**
 - Red eyes
 - Cornea (clear covering over centre part of eye) not clear/hazy
 - Pupil not black (lens white)
 - Eyes painful and watering

- **Refer if you notice the following**
 - The eyes look in different directions (squint)
 - Eyes flicker/ make fast movements constantly
 - One eye is regularly shut or covered
 - Eyeballs are pushed with fingers and knuckles

- **Refer if you observe/hear about the following behaviour**
 - Clumsiness and trouble walking in a new environment/ Stumbling over objects
 - Complaining of not seeing clearly at night
 - Screwing up face/eyes and frowning when trying to see something
 - Holding one's head in an awkward position/tilting to one side
 - Holding book very close to face; colouring/writing with face close to the page
 - Not recognising people's faces
 - Reading blackboard / watching TV only possible from a close distance
 - Not able at all to read the blackboard or watch TV
 - Not able to read the most of the text in the schoolbook because of its size

- **Refer if child**
 - Had surgery in one or both eyes
 - Was using spectacles before but has stopped using them
 - Complains eyes are painful and watering all the time
 - Seems to be blind
 - Has problems hearing
 - Has another disability, like Down syndrome

ANNEX 3: MINIMUM LIST OF TESTS AND DEVICES FOR STARTING LOW VISION SERVICES AT AN EYE HOSPITAL - LESSONS FROM PRACTICE

Ophthalmic Equipment	Notes
Streak retinoscope	✓
Direct ophthalmoscope	✓
Trial lens set (full aperture)	Preferably, but can start with ordinary
Universal trial frames	✓
Paediatric trial frames (2 pairs of different	Minimum 1 pair to start with
Vision Assessment Equipment	Notes
Distance LogMAR test charts (letter,	Tumbling Es essential
Near vision tests (same as distant but	Tumbling Es essential
Reading acuity test (continuous text in	Can be 'home made' on computer
Lower contrast reading acuity test or	Can be 'home made'
Optical Low Vision Devices	Notes
Spectacle magnifiers (High + spectacles)	Locally made; from 4 Dioptres (D) to
Foldable and hand-held magnifiers without	Ranging from 6 to 24D
Non illuminated stand magnifiers; Dome	Ranging from 12D to 44D; Dome of
Illuminated hand and/or stand magnifiers	at least 28D and 44D
Filters	Variety of locally available sunglasses
Non-optical devices	Notes
Good example of a reading lamp	LED (lamp stays cool)
Reading/writing stand	Locally made
Reading slit; signature guide; writing guide	Locally made

ANNEX 4: LOW VISION CLINICAL ASSESSMENT FORM**Pengetes:** _____ **Tanggal:** _____ **No.RM:** _____**Nama:** _____ **L / P** ☐ **Baru** ☐ **Follow up****Tahun lahir:** _____ **Tipe disabilitas:** _____**Kota/Kabupaten:** _____ **Telp.:** _____**Rujukan dari:** ☐ Health ☐ Education ☐ DPO/Rehab/CBID/KI/PSG☐ Active Screening ☐ Own Initiative**ANAK** ☐ Tidak/Putus Sekolah ☐ _____ **Kelas:** _____**Contact person:** _____ **Telp.:** _____**DEWASA** ☐ Pekerjaan: _____**DIAGNOSA:****KEBUTUHAN :****MEDIA BELAJAR** ☐ Print ☐ Braille ☐ Print and Braille ☐ Not literate**TAJAM PENGLIHATAN JAUH****Tanpa Koreksi** OD: _____ OS: _____ ODS: _____**Koreksi kacamata yang digunakan sekarang**

OD: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____

OS: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____ VA ODS: _____

Hasil retinoscopy

OD: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____

OS: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____ VA ODS: _____

Koreksi subyektif baru yang diresepkan

IPD : _____ mm

OD: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____

OS: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____ VA ODS: _____

TELESKOP: _____ x OD: _____ OS: _____

BINOKULARITY:

KEPEKAAN KONTRAS ODS No.identifikasi: _____; _____%

PENGLIHATAN WARNA:

LUAS PENGLIHATAN:

TAJAM PENGLIHATAN DEKAT

Test menggunakan: _____

Tanpa Koreksi

OD: ____M ____cm OS: ____M ____cm ODS: ____M ____cm

Dgn koreksi jauh yang digunakan

OD: ____M ____cm OS: ____M ____cm ODS: ____M ____cm

Dengan Koreksi jauh baru

OD: ____M ____cm OS: ____M ____cm ODS: ____M ____cm

Dengan alat pembesaran yang sudah ada/dipakai,

jenis: _____ Ukuran: ____ ODS: ____M ____cm

Pembesaran yang dicobakan _____

Pembesaran yang diresepkan

1. Jenis: _____ Ukuran: _____ D OD: ____M ____cm OS: ____M ____cm ODS: ____M ____cm

2. Jenis: _____ Ukuran: _____ D OD: ____M ____cm OS: ____M ____cm ODS: ____M ____cm

ALAT NON OPTIK

☐ Cahaya jendela ☐ Lampu ☐ kacamata filter ☐ Kacamata Sunglasses

☐ Penyangga buku ☐ Typoscope ☐ Lain-lain : _____

Mendapat alat bantu?**Kacamata Jauh** ☐ Ya ☐ Tidak ☐ Tidak tahu**Teleskop** ☐ Ya ☐ Tidak ☐ Tidak tahu**Alat Bantu Dekat 1** ☐ Ya ☐ Tidak ☐ Tidak tahu**Alat Bantu Dekat 2** ☐ Ya ☐ Tidak ☐ Tidak tahu**Dirujuk ke:** _____**JADWAL BERIKUTNYA** Bulan/Tahun: _____ Kegiatan: _____

Pengetes: _____ Tanggal follow up: _____

TAJAM PENGLIHATAN JAUH**Presenting** ☐ dengan kacamata ☐ tanpa kacamata : OS: ODS:**Koreksi subyektif baru yang diresepkan** IPD : _____ mm

OD: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____

OS: Sph _____ Cyl _____ Axis _____ VA _____ ADD _____ VA ODS: _____

TAJAM PENGLIHATAN DEKAT**Tes menggunakan**

"Best" presenting OD: M cm OS: M cm ODS: M cm

Alat yang digunakan**Dengan koreksi jauh baru** OD: M cm OS: M cm ODS: M cm**Dengan pembesaran baru** OD: M cm OS: M cm ODS: M cm**Jenis dan power:** _____ **Komentar:** _____Ada perubahan alat bantu non-optical yang diresepkan ☐ Ya: _____

ANNEX 5: ADVICE FORM – CHILDREN WITH LOW VISION

Tanggal :	No. ID :	
Nama klien :	L / P	
Umur :	Sekolah/pekerjaan:	Kelas :

Penyebab Low vision

Penglihatan Jauh ☐ beri tanda cek jawaban yang benar

Penglihatan jauh tanpa kacamata -VA kedua mata:

Kacamata meningkatkan penglihatan: ☐ Ya ☐ Tidak

Perlu menggunakan kacamata:

☐ Tiap waktu (di dalam dan di luar ruangan/ untuk semua kegiatan)

☐ Hampir tiap waktu tapi tidak untuk membaca

☐ Lanjut menggunakan kacamata yang dimiliki

☐ Perlu kacamata baru:

Resep kacamata:

Kanan: S ____ Cyl ____ X ____ VA: Add PD:

Kiri : S ____ Cyl ____ X ____ VA: Add VA Kedua mata:

Teleskop yang diresepkan : ☐ Ya ☐ Tidak Jika ya,X VA:

Penglihatan Dekat Mohon mengisi semua informasi yang relevan

Penglihatan dekat tanpa kacamata jauh: _____ M pada jarak _____ cm

Penglihatan dekat dengan kacamata jauh: _____ M pada jarak _____ cm

Penglihatan dekat dengan pembesaran/kacamata baca _____ M pada jarak _____ cm

Perlu menggunakan kacamata jauh ketika menggunakan pembesaran: ☐ Ya ☐ Tidak

<p>Pembesaran yang diresepkan (jenis): _____ Power _____ D</p> <p>Ukuran terbaik: * <input type="checkbox"/> Normal <input type="checkbox"/> Besar <input type="checkbox"/> Besar Sekali</p> <p>(s.d 1.5M) (>1.5-2.5M) (>3M)</p> <p>Ukuran: M Jarak cm</p> <p>Membaca: <input type="checkbox"/> tanpa kacamata jauh ATAU <input type="checkbox"/> dengan kacamata jauh ATAU</p> <p style="padding-left: 40px;"><input type="checkbox"/> dengan pembesaran <input type="checkbox"/> dengan kacamata jauh DAN pembesaran</p> <p>Menulis: <input type="checkbox"/> tanpa kacamata jauh ATAU <input type="checkbox"/> dengan kacamata jauh ATAU</p> <p style="padding-left: 40px;"><input type="checkbox"/> alat bantu yang lain: _____</p>
<p>Media belajar yang direkomendasikan: <input type="checkbox"/> Huruf cetak <input type="checkbox"/> Braille <input type="checkbox"/> Keduanya</p>
<p>Intervensi non optik dan saran</p> <p><input type="checkbox"/> Duduk dekat jendela <input type="checkbox"/> Perlu lampu baca <input type="checkbox"/> Duduk dekat papan tulis</p> <p>Posisi duduk terbaik di kelas: _____</p> <p><input type="checkbox"/> Meminta teman untuk membacakan dari papan tulis</p> <p><input type="checkbox"/> Meminta teman untuk membacakan teks panjang</p> <p><input type="checkbox"/> Merekam teks panjang</p> <p><input type="checkbox"/> Menggunakan penyangga buku</p> <p><input type="checkbox"/> Menggunakan typoscope</p> <p><input type="checkbox"/> Menggunakan buku bergaris tebal untuk menulis</p> <p><input type="checkbox"/> Menggunakan pensil/ pena/ spidol hitam</p> <p><input type="checkbox"/> Menggunakan kacamata hitam</p> <p><input type="checkbox"/> Menggunakan topi</p> <p><input type="checkbox"/> Menggunakan baju lengan panjang/celana panjang/rok panjang</p> <p>Lain-lain: _____</p>

Rekomendasi Prioritas: (perlu operasi/pengobatan mata)
<p>Rekomendasi untuk di rumah, sekolah dan aktivitas:</p> <p>(pemakaian kacamata / alat bantu / tidak perlu - untuk tugas-tugas yang berbeda, seperti membaca dan menulis; aktivitas latihan penglihatan; penggunaan alat bantu jarak jauh jika diresepkan)</p>
<p>Rujukan kepada spesialis lain</p> <p>Nama rumah sakit / dokter/organisasi:</p> <p>Alasan merujuk:</p>

ANNEX 6: ADVICE FORM – REFRACTIVE ERROR (ONLY)

FORMULIR			
Anak dengan kelainan refraksi: penglihatan normal setelah menggunakan kacamata			
Tanggal:		No. ID:	
Nama klien:		L / P	Umur:
Sekolah:		Kelas:	
Kelainan Refraksi			
Penglihatan Jauh			
Penglihatan jauh tanpa kacamata:		VA kedua mata:	
Resep kacamata:			
Kanan:S..... Cyl..... X.....		VA:	Add PD:
Kiri :S..... Cyl..... X.....		VA:	AddVA Kedua mata:
Perlu menggunakan kacamata tiap waktu (di dalam dan di luar ruangan/untuk semua kegiatan)			
Tanggal tindak lanjut berikutnya:			
Bulan:		Tahun:	
Kontak person:			
Tel/SMS/WA:			

ANNEX 7: TELEPHONE QUESTIONNAIRE: FOLLOW-UP ON USE OF SPECTACLES AND LOW VISION DEVICES

KUESIONER FOLLOW UP PER TELPON ID Klien:

Tanggal Telp. :

Nama Penelpon :

Nama Klien :

Orang yang diwawancara: ☐ Klien ☐ Orangtua ☐ Guru ☐ Lain-lain

KACAMATA JAUH

1a. Apakah anda menggunakan kacamata anda minggu ini ?

☐ Ya ☐ Tidak

1b. Dimana anda mendapatkan kacamata?

☐ LVC ☐ Optik ☐ Lain-lain ☐ Belum

Jika tidak menggunakan kacamata yang diresepkan

1c. Kenapa tidak menggunakan kacamata?

☐ Tidak tersedia

☐ Tidak mampu beli

☐ Rusak

☐ Hilang

☐ Tidak ada manfaatnya

- Tidak nyaman / tidak suka
- Orang lain mengatakan saya tidak perlu
- Penglihatan tidak membaik

Catatan:

TELESKOP

2a. Apakah Anda menggunakan teleskop 2 minggu terakhir ?

- ☐ Ya ☐ Tidak

2b. Jika Tidak, mengapa tidak digunakan?

- ☐ Tidak tersedia
☐ Tidak mampu beli
☐ Rusak
☐ Hilang
☐ Tidak tahu cara menggunakannya dengan benar

Catatan:

ALAT BANTU PEMBESARAN

3a. apakah anda menggunakan alat bantu pembersana dalam 2 minggu terakhir?

- ☐ Ya ☐ Tidak

3b. Dimanakah anda mendapat alat bantu pembesaran?

- ☐ LVC ☐ Lain-lain ☐ Belum

Jika tidak menggunakan alat bantu pembesaran yang diresepkan

3c. Kenapa tidak menggunakan alat bantu pembesaran?

- ☐ Tidak tersedia
☐ Tidak mampu beli
☐ Rusak
☐ Hilang
☐ Tidak ada manfaatnya
- Tidak nyaman / tidak suka
 - Orang lain mengatakan saya tidak perlu
 - Penglihatan tidak membaik

Catatan:

ANNEX 8: SUGGESTED ADMISSION GUIDELINES

The need for early access to a comprehensive eye health assessment, including low vision care: Guidelines for admittance of children with low vision and children with other disabilities and possible vision problems to an appropriate educational facility

Developed by Dr Karin van Dijk, revised February 2020

The following children need to have a comprehensive eye health assessment, including low vision care as needed, before starting school.

Children with Low Vision

If a child falls under one of the two definitions (or both) they should be considered as having low vision:

- a. A child with a best corrected visual acuity of less than 6/18 in the better eye up to light perception, and/or an extremely small field of vision, less than 20 degrees (less than 10 degrees from the point of fixation). In simple terms: The field of vision causes considerable problems in reading and/or mobility
- b. A child with permanent (that is: after eye health assessment and interventions have been implemented) vision loss severe enough to impede that child's person's ability to perform usual tasks of daily life (for example reading) but with still some useful functional vision.

If a person has any useful vision, they are low vision, NOT blind

Children with Any Impairment and Possible Vision Problems

Any child with an impairment, such as for example an intellectual impairment/learning disability, hearing impairment and cerebral palsy is likely to have a vision problem, such as a refractive error, squint or other eye health complaints.

Before Admittance to Any School

Any child suspected of being low vision or with any impairment needs before admittance to any school:

- Examination and diagnosis by an ophthalmologist, preferably at a hospital with a low vision service
- Implementation of surgery and/or treatment if advised
- Eye health assessment, including refraction, (see detailed notes at the bottom of this document) and if needed, clinical low vision care.

Only then a decision can be made if the child needs the care of a specialist teacher, and if this child needs to receive this support at a special school or can be supported at the local school near their home.

Notes: If surgery is needed to improve vision (e.g. cataract surgery) this needs to be organised with priority before all other interventions

Admittance After Eye Health and Low Vision Interventions

If as the result of the eye care interventions, a child achieves a best corrected VA of 6/18 or more in the better eye and can read normal size print (1 – 1.25M or better) comfortably, the child does not need any special assistance and should be enrolled in their local school, unless there are other learning problems not related to level of vision.

This also applies to all children who have one eye with normal vision and one eye with low vision or blindness: these children have normal vision and do not require any special educational assistance.

If a child still has a best corrected VA < 6/18 in the better eye after the eye care interventions, this child with low vision should have access to support by a special teacher and will fall under scenario 1 or 2.

1. A child has severe or profound low vision (best corrected VA < 6/60 AND/OR best near vision > 3M) and needs help from a specialist teacher at a resource centre or special school, either for a short time (see a.) or for longer (see b.)
 - a. For most children who can use print: After one year of working with a specialist teacher to learn to read, write and learn in an appropriate way, the child be transferred back to a school at home. Advice to the classroom teachers needs to be given and occasional (yearly / quarterly / monthly) follow-up visits are needed.
 - b. For children requiring Braille, continued education at the special school / resource might be required if regular support by a special teacher/access to Braille materials cannot be organised at the local school.
2. A child is low vision (all levels of distance vision and a best near vision of 3M or better) and can be educated from the start at the local school, occasionally supported by a visiting, special, teacher

Guidelines Necessary for School Examinations for Children with Low Vision

1. All children with low vision using print need to be allowed the same extra time as children with low vision and blindness using Braille, since their reading and writing speed is often considerably lower than that of children with normal vision.
2. For those children benefiting from large print exams, the Ministry of Education needs to provide enlarged copies in the required size

Guidelines for Children with Albinism and Others Sensitive to Light

Children with albinism and children with low vision who are sensitive to light, should be allowed to wear at school any or all of the following at all times, both inside and outside if needed:

- long sleeves, long trousers
- a cap
- sunglasses

Notes

Clinical assessment should minimally consist of 2 steps:

1. For all children with visual complaints
 - Diagnosis of the cause of the vision problem
 - Near and distance visual acuity
 - Retinoscopy + subjective refraction
 - Facilitating access to affordable glasses (Cooperation between local education authorities and eye care services need to ensure all children obtain the glasses needed)
2. For children with low vision
 - Assessment of need for low vision related (magnification and non-optical) interventions at a hospital with a low vision service
 - Facilitating access to magnifying and non-optical devices

A system to make spectacles and low vision devices available and affordable needs to be added. Otherwise children will have examinations but these may not result in improved (use of) vision. Both spectacles and low vision devices need to be labelled 'assistive devices': many children need both interventions and a majority can only use a magnifying device when wearing their distance spectacles.

Facilitating transport to the nearest eye care service and if required nearest clinical low vision service, might be needed for children from poor families or those boarding at special schools (not living with their families)

ANNEX 9: FORMULIR PERKEMBANGAN**Pendidikan anak dengan low vision - guru sekolah** Tanggal: _____

Nama guru yang mengisi laporan ini: _____ Sekolah: _____

Nama murid: _____ Umur: _____ Kelas: _____

Datang ke sekolah secara teratur ☐ Ya ☐ TidakGuru punya formulir saran ☐ Ya ☐ Tidak Tanggal form saran: _____**1. Kacamata jauh jika diresepkan**Menggunakan kacamatanya ☐ Ya ☐ Kadang-kadang ☐ Tidak

Jika kadang-kadang/tidak, alasannya: _____

2. Alat bantu non optik jika diresepkan

Anak menggunakan:

☐ Penyangga buku ☐ Tiposkop ☐ Pena/pensil hitam ☐ Cahaya jendela☐ Topi ☐ Kacamata hitam ☐ Lengan/celana/rok panjang ☐ Lainnya: _____**3. Penglihatan jarak dekat: pembesaran jika diresepkan**Menggunakan alat bantu di kelas ☐ Ya ☐ Kadang-kadang ☐ Tidak

Jika kadang-kadang/tidak, alasannya: _____

4. Membaca☐ Anak tidak bisa membaca/hanya mengeja Alasannya:.....Ukuran Tulisan: ☐ Semua teks dalam buku sekolah☐ Hanya teks judul dalam buku sekolahKecepatan baca: ☐ Sama dengan teman yang berpenglihatan baik☐ Sedikit lambat ☐ Sangat lambat

5. Menulis

Menulis dengan: ☐ Pensil biasa ☐ Pensil hitam ☐ Pena

Dapatkah tulisan anak dibaca dengan mudah? ☐ Ya ☐ Tidak

Kecepatan menulis: ☐ Sama dengan teman yang berpenglihatan baik
☐ Sedikit lambat ☐ Sangat lambat

6. Membaca tulisan di papan tulis : (tandai semua yang digunakan)

- ☐ Anak dengan low vision dapat membaca tulisan di papan tulis sendiri
- ☐ Guru berbicara ketika menuliskan teks di papan tulis
- ☐ Teman yang berpenglihatan baik membacakan tulisan di papan tulis
- ☐ Anak menggunakan teleskop

7. Posisi duduk di kelas

Anak duduk di posisi duduk terbaik setiap hari ☐ Ya ☐ Tidak

Jika tidak, mengapa: _____

8. Observasi lainnya

Ujian yang diberikan dalam huruf berukuran besar ☐ Ya ☐ Tidak

Teman sekelas dan anak dengan low vision bermain bersama:

☐ Setiap hari ☐ Sese kali ☐ Hampir tidak pernah

Rekomendasi:

ANNEX 10: MAPPING OF EDUCATIONAL AND COMMUNITY BASED SERVICES FOR PERSONS WITH LOW VISION/DISABILITIES

Mapping of existing services of children and adults with low vision and those with disabilities should include finding out what services there and what kind of activities do they undertake. Here are some examples.

Schools for the blind, other special schools, resource centres

Investigate the following:

1. How are children admitted to the schools (Are all children assessed by an ophthalmologist in advance? Can children be admitted on the recommendation of a teacher or parent?)
2. How many and what kind of children are enrolled in these schools (age groups, sex, disabilities, where they come from, previous eye examinations and the like)? A baseline survey of children in these schools can be a very useful tool for understanding the current needs.

Inclusive educational programs

Investigate the following:

1. How are children admitted to the schools (Are all children assessed by an ophthalmologist in advance? Can children be admitted on the recommendation of a teacher or parent or are they admitted through, for example, the District education office)
2. How many and what kind of children are enrolled in these schools
3. (age groups, sex, disability)?

Organisations and programs of people with disabilities

Examples:

- PERTUNI (Persatuan Tuna Netra Indonesia)
- PerDIK (Pergerakan Difabel Indonesia untuk Kesetaraan)
- Group of people with low vision: Komunitas Low Vision New Generation

Organisations and services for people with disabilities including parent groups

- Medical rehabilitation departments at hospitals
- CBID programs
- (Government) rehabilitation centres for children and adults with disabilities, for example with emphasis on street children, or for children with multiple disabilities, such as Yayasan Sayap Ibu
- NGOs providing rehabilitation for the Blind, e.g. Mitra Netra
- Parent group: of (mainly) children with low vision
- Parent group formed around a specific disability or eye condition, for example Down Syndrome (POTADS /Persatuan Orang Tua Anak dengan Down Syndrome), Retinopathy of Prematurity group, Cerebral Palsy

ANNEX 11: CONTACT DETAILS FOR INDONESIAN LOW VISION SERVICES AND FORMAL TRAINING, AND FOR PURCHASING LOW VISION DEVICES

A. NGO and Government Low Vision Services

The first 3 services listed provide formal low vision training for different target groups (see section B.)

Pelayanan Rehabilitasi Low Vision Yayasan LAYAK

Jl Nangka I no 1 Tanjung Barat
Jakarta Selatan 12530
Telp/Fax : (+62) 021- 22783489
Mobile: +6282211610049
lowvisionlayak@yahoo.com
www.layak.or.id

Unit Low Vision Yayasan Bhakti Luhur

Jl. Terusan Dieng No. 40 Malang Jawa Timur
Mobile: +6285105602892
lowvision_bl@yahoo.co.id
<http://www.bhaktiluhur.or.id/>

Pelayanan Low Vision RS Universitas Hasanuddin

Poli Mata Anak (Paediatric Center);
Gedung A lantai. 2
Jl. Perintis Kemerdekaan km 11 Makassar
Sulawesi Selatan
Mobile: +6285342805252
lowvision.rsunhas@yahoo.com

Pelayanan Low Vision RS Cipto Mangunkusomo

RSCM Kirana (UPK Mata)
Jl. Kimia No.8-10 7 1 7, RW.1, Pegangsaan,
Kec. Menteng, Kota Jakarta Pusat, Daerah
Khusus Ibukota Jakarta 10320
Telp: +62 (021) – 31902885

Pelayanan Low Vision RS dr. Soetomo

Jl. Mayjen Prof. Dr. Moestopo No.6-8, Airlangga,
Kec. Gubeng, Kota Surabaya, Jawa Timur 60286
Telp: +62 (031) – 5501078

Pelayanan Low Vision RS Saiful Anwar (RSSA)

Jl. Jaksa Agung Suprpto No. 2, Kota Malang,
65112, Jawa Timur.
Telp: +62 (0341) - 362101,

Pelayanan Low Vision RS Mata Masyarakat (RSMM)

Jl. Gayung Kebonsari Timur No.49,
Ketintang, Kec. Gayungan, Kota Surabaya,
Jawa Timur 60232
Telp: +62 (031) - 82010000

Pelayanan Low Vision RS Mata Cicendo Bandung

Jl. Cicendo no 4 Babakan Ciamis kec. Sumur
Bandung kota Bandung Jawa Barat
Telp: +62 (022) – 4231280
Website:<https://www.cicendoeyehospital.org>

B. Low Vision Training in Indonesia

Yayasan LAYAK can be contacted to organise the following formal training using standardised curricula. Experienced staff of the low vision services of LAYAK, Bhakti Luhur and UNHAS will be the facilitators.

1. Basic Clinical Low Vision training for ophthalmologists and refractionists
2. Advanced Clinical Low Vision training for ophthalmologists and refractionists
3. Low Vision and Multiple Disability training for ophthalmologists and refractionists
4. Low Vision Training for teachers in general and inclusive schools
5. Low Vision Training for teachers in blind schools
6. Low Vision Training for teachers in special schools type B and C
7. Identification and Referral Training for Community Volunteers
8. Identification and Referral Training For Hospital Type B and C
9. Low Vision Training for Caregivers
10. Low Vision Training for staff at medical rehabilitation units
11. Low Vision Training for CBID services, such as CBR (Community Based Rehabilitation)

C. Obtaining of Low Vision Devices in Indonesia or Hong Kong

PT LAYAK MAJU BERSAMA

Jl Nangka I no 1 Tanjung Barat Jakarta Selatan 12530

Telp/Fax : +62 (021)- 22783489

Mobile : +6282211610049

Email : lowvisionlayak@yahoo.com

Website : www.layak.or.id

PT. Visi Inklusi

Kios Taman pondok Labu, Jl. RS.Fatmawati 72 Lt.1, Blok B No.21, Pondok Labu, Cilandak, Jakarta Selatan 12450

Telp/Fax : +62 (021) - 75916224

Mobile : +6281281185393

Email : marketing@visiinklusi.com

Website : www.visiinklusi.com

Order from the Hong Kong Society for the Blind:

<https://www.hksb.org.hk/en/product/61518/Vision2020LowVisionResourceCentre/>

ANNEX 12: REFERENCES

1. Low Vision Care in Africa: Practical Approaches to Clinical Services, Educational Engagement and Planning

- The Indonesian manual uses relevant parts, edited as needed, of this manual, with permission of the authors.
- Available in 4 languages – English, French, Spanish and Portuguese –
- Authors: Karin van Dijk, Elizabeth Kishiki, Paul Courtright
- Publisher: Kilimanjaro Centre for Community Ophthalmology (KCCO)
- Can be downloaded free:
- Published: 2014 (English): <https://www.iapb.org/resources/low-vision-care-in-africa/>, 2016 French, Spanish, Portuguese): <http://www.kcco.net/manuals--reports.html>

2. Eye Health and Low Vision Care

- https://www.cbm.org/fileadmin/user_upload/Publications/Inclusion_in_Eye_Health_Guide.pdf
- The 2012 low vision issue of the Community Eye Health Journal (CEHJ), issue 77. Major procurement centres for devices are listed in this issue. www.cejjournal.org/low-vision-we-can-all-do-more/
- CEHJ issue 72 (pages 4-6) gives ideas on assessing the vision level of a baby or young child : www.cejjournal.org/article/managing-eye-health-in-young-children/
- Key informants : www.kcco.net/childhood-cataract.html
- References and websites in CEHJ issue 77 : www.cejjournal.org/news/useful-resources-for-low-vision/
- Useful resources: equipment for eye care : www.cejjournal.org/news/useful-resources-equipment-for-eye-care/
- Comm Eye Health Vol. 26 No. 81 2013: Disability and diversity: how to approach or interact with people with disabilities <https://www.cejjournal.org/disability-and-diversity/>
- Comm Eye Health Vol. 25 No. 77 2012 pp 13 <https://www.cejjournal.org/article/how-to-make-an-eye-clinic-more-accessible-for-people-with-low-vision/>
- Tips for Communicating with Deaf and Hard-of-Hearing People
- <https://disabilitynavigator.org/article/12329/tips-communicating-deaf-and-hard-hearing-people%20%20>

- <https://www.cejjournal.org/article/improving-communication-with-patients-with-a-hearing-impairment/>
- IAPB standard list: <https://iapb.standardlist.org/essential-lists/essential-list-low-vision/>
- Guiding a person with vision loss:
<https://www.rnib.org.uk/advice/guiding-blind-or-partially-sighted-person>
<https://www.visionaustralia.org/information/family-friends-carers/guiding>
- Common visual problems in children with disability. Alison Salt, Jenefer Sargent, 2014.:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4251159/pdf/archdischild-2013-305267.pdf>

3. Caregivers' and Educational Support

- <http://svrc.vic.edu.au/wp-content/resources>
- <https://www.ulster.ac.uk/research/topic/biomedical-sciences/research/optometry-and-vision-science-research-group/vision-resources/resources-for-parents>
- <http://www.familyconnect.org/info/browse-by-age/grade-schoolers/education-grade-schoolers/how-students-with-low-vision-read-and-write/1235>
- <http://www.pathstoliteracy.org/instructional-strategies-students-low-vision>
- <http://www.afb.org/info/teachers/educational-interventions-for-students-with-low-vision-2646/35>
- <https://www.tsbvi.edu/program-and-administrative-resources/3277-considerations-for-low-vision-students-in-a-classroom>
- Merangkul Perbedaan: Perangkat untuk Mengembangkan Lingkungan Inklusif, Ramah terhadap Pembelajaran (Embracing diversity: toolkit for creating inclusive, learning-friendly environments)
- UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific: https://unesdoc.unesco.org/ark:/48223/pf0000137522_ind

List of Services That Can Help Young Children and Adults with Low Vision (and Other Disabilities)

Parent Groups and DPOs

- Parent group of children with Down syndrome: www.potads.or.id
- Parent group of children with RoP, Retinoblastoma, Anophthalmia & CVI (Komunitas Orang Tua dengan Anak Gangguan Penglihatan) <https://www.facebook.com/groups/259698471341540/>
- PERTUNI: www.pertuni.or.id
- Komunitas Low Vision New Generation: <https://www.instagram.com/komloving>
- PERDIK (Pergerakan Disabilitas Indonesia untuk Kesetaraan): <https://ekspedisidifabel.worldpress.com>

Organisations/Departments Working for Persons with Disabilities

- Yayasan Sayap Ibu Bintaro Tangerang Selatan: <http://yayasansayapibu.or.id>
- Yayasan Paramitra Jawa Timur facebook: Yayasan Paramitra Jatim
- Yayasan Wahan Inklusi Depok: <http://wahanainklusif.org>
- Yayasan Rawinala Jakarta: <http://www.rawinala.org/>
- Yayasan Heesu Cileungsi Bogor: <http://www.yudanyfoundation.org>
- Yayasan Mitra Netra Jakarta: <https://www.mitranetra.or.id>
- Yayasan Lembaga Daya Dharma (LDD) Jakarta: <http://lddkaj.or.id>
- Yayasan Elsafan: <http://facebook:Yayasan Elsafan>
- Yayasan LAYAK: <http://www.layak.or.id>
- Yayasan YPAC (Yayasan Pembinaan Anak Cacat) Jakarta: <https://www.ypacjakarta.org>
- Yayasan Bhakti Luhur, Malang: <http://www.bhaktiluhur.or.id/>
- Yayasan Syamsi Dhuha, Bandung: http://syamsidhuhafoundation.org/id_ID/
- PSBN (Panti Dinas Sosial Bina Netra) Cahya Bathin Jakarta: BRSPDSN TAN MIYAT Bekasi: <https://tanmiyat.kemsos.go.id/>
- UPT RSN (Rehabilitas Sosial Bina Netra) Malang: BRSPDSN Wyataguna Bandung: <https://wyataguna.kemsos.go.id>