Despite all the treatments, operations, and medication at our disposal, there is still a significant number of people whose sight we cannot fully restore.

What happens to these patients once they leave our care? Without the necessary support, advice, and low vision devices, their remaining vision will not be very good; this can make life a struggle.

Support may be difficult to find, as low vision services are often inadequate or inaccessible in many low- and middle-income countries. Professionals, such as rehabilitation workers, ophthalmologists, mid-level eye care workers, optometrists/refractionists, and special education teachers, may not know what to do about people with low vision, leaving them with no-one else to turn to.

Individuals who can only see light or movement of large objects will need rehabilitation that focuses on non-visual strategies for learning and daily tasks. However, there are many people who have slightly better vision, but are still classified as blind, who have the potential to use their sight for the planning and/or execution of tasks.

The World Health Organization defines a person who needs to be assessed for low vision interventions once all other treatments the person needs (surgical, medical and/or optical) have been given. The definition also emphasises the importance of vision for day-to-day functioning.

People who may be able to benefit from low vision care will want to do a range of different things. In many low- and middle-income countries, for example, many people with low vision are aged over 50 years and cannot read or write. They will have different needs, and require different services, compared to children or adults in employment.

Low vision has a significant impact on people’s lives. People with low vision may struggle to look after themselves without help. Having low vision affects their status in the eyes of others and can make social situations difficult. It reduces the ability of people to pursue an education, to look after their children, and to earn an income. People with low vision are also at greater risk of falls and death.

With our support, people with low vision can make better use of their sight to do the things they want and need to do. We hope this issue will show you how.
Understanding low vision

Who is likely to have low vision?

As a rule of thumb, the following people are likely to need low vision services and must be referred wherever possible:

- All children who have undergone bilateral cataract operations, both those with pseudophakia and those with aphakia
- People with diabetic macular oedema whose vision remains poor despite laser treatment
- People with age-related macular degeneration
- Children with cicatricial albinism
- People with optic atrophy, whatever the cause
- Any person who still has difficulty performing their daily activities because of their vision, even after treatment and refraction.

What does low vision look like?

People with low vision are affected in different ways. They may suffer from some or all of the following:

- Severely reduced visual acuity
- Blurred vision
- Visual field loss: central or peripheral
- Loss of contrast sensitivity
- Increased light sensitivity

Many people with low vision suffer from blurred vision (Figure 1), for example if they have scarring on their corneas.

People with optic atrophy or age-related macular degeneration will have loss of central visual acuity (Figure 2), which means that tasks requiring good central vision will be difficult. For example, reading, writing, threading a needle and seeing, putting on makeup, recognizing people, seeing where their food is on the plate and whether they have finished eating, seeing if their clothes are clean, finding their own pair of shoes, or finding their own seat if they have a full field of peripheral vision then mobility will be a less of a problem.

People with glaucoma or retinal pigmenta will have constricted visual fields, i.e. loss of peripheral vision (Figure 3). This makes it difficult to move around without bumping into objects on the floor. People may have difficulty finding things they have dropped. Reading may still be possible, but difficult.

Loss of contrast sensitivity (Figure 4) can have a very big impact on someone’s visual function, making it difficult to recognise faces or find buttons on a plate of similar colour.

Increased light sensitivity makes it very difficult for people to see detail or make sense of what they see if they are in bright light, or glare (Figure 5).

Figure 1. Blurred vision. People with blurred vision (right) have difficulty seeing details, both at distance and near; they often have problems with glare. Printed materials and colours might seem faded.

Figure 2. Loss of central vision. ‘Is the man sitting down my husband, and is there a seat for me?’

Figure 3. Loss of peripheral vision. ‘How many other people are there in the room?’

Figure 4. Loss of contrast sensitivity. ‘With normal contrast sensitivity (left) this becomes more difficult.’

Figure 5. Increased light sensitivity. ‘This is how a street scene in bright sunlight would look to someone who has increased light sensitivity.’

Low vision assessment in SSA camp

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India has an estimated 280,000 blind children, which is one of the highest in the world. According to different studies, the prevalence of childhood blindness in India varies from 0.62% to 1.06 per 1000 children in 0 – 15 age group as also the causes of blindness. Earlier studies in India attributed corneal scars as the leading cause of blindness in the country (8). However, subsequent studies found reduction in corneal blindness and globe abnormalities emerging as the major cause. In a study done in the north eastern states of India, congenital globe abnormalities was found to be the commonest cause (36%) of blindness among children (2). And according to Andhra Pradesh Eye Diseases Study (APEDS), treatable refractive error caused 33.3% of the blindness, followed by congenital eye anomalies (16.7 %) (3).

It is unfortunate that such a large number of children are suffering from visual impairment and blindness but the mechanism of finding them and organizing service for them is a challenge. Different approaches have been tried to find such children: examining children in special schools, ICDs (Integrated Child Development Services), school screenings are the usual ones in India.

This article depicts the experience of working with the special educator workforce and scaling up the same in a large population.

Sarva Shiksha Abhiyan ( SSA) (Education for All Movement) is a programme by the Government of India aimed at universalisation of elementary education as mandated in the 86th amendment of the Constitution of India making free education for children aged 6 – 14 a Fundamental Right. SSA is being implemented in partnership with state governments throughout the country. This is an inclusive method of education for all differently able children and visually challenged children constitute a major bulk. Earlier, special classes used to be imparted to these children through schools for the blind. But now inclusive education has evolved as the most practical way of educating visually impaired children. In fact, the concept of inclusive education developed because institutional education had some serious drawbacks:

- Number of institutions was inadequate for the total number of persons who needed them.
- Establishment and maintenance of institutions was expensive.
- Individuals studying were detached from their families and society.
- Social and vocational adjustment became difficult when the individual returned to the community after training.
- Institutional education in many occasions failed to involve the communities where people with disabilities come from.

According to 2011 census, the state of West Bengal has a population of 91,347,736 contributing to 7.55% of India’s population. The State has 19 districts with a population density of 1029 per sq. km. Population in 0 to 6 age group is 11.07%, decadal growth rate is 13.93% per sq. km. Per sq. km. Population is 77% (74% male, 71% female).

During these two years – 2009 – 11, 10,909 children (6,734 (57%) boys and 4,175 (43%) girls) were examined in ten districts by our team. Out of them, 3,814 children were prescribed low vision devices and 3669 received the required aids. Nine hundred and ninety three students were selected for cataract and other surgeries and from among these, surgeries were performed for 605 children.

For a better understanding of the epidemiological issues related to childhood blindness, we are showcasing our experience in one remote district of West Bengal that borders Bangladesh and Assam. This study depicts our experience in Gooch Behar, an economically underdeveloped district with a population of about 2.5 million with a decadal growth rate of 13.86% and literacy rate of 75%. (7)
Still a good response was received from all the stakeholders. Thirty eight special educators were successful in bringing 453 children for examination overcoming all the hurdles of communication. Children screened by teachers had high false positives but needy children were not missed out. This project has helped many children access to normal print. Previously they were either reading via Braille system or only listening to their teachers. Early introduction of low vision devices will make them slowly impaired children more confident, and they will be able to compete with their peers. A majority of these children has successfully included several children in the mainstream education. Still many more are left out but there is no information available about their visual status.

Most significant aspect of this project was the successful advocacy with the government and receiving encouraging support from them. In a positive move they decided inclusion of this project. Another success was developing continuous relationship with the teachers and special educators who were more sensitised about the need of visually challenged children because of their trained background. Their activities are also focused towards the welfare of their students. This was evident in their involvement in the whole process. Based on their feedback from previous years, training curriculum was effectively modified.

Services at a glance

| Services | Total (N) |
|----------|-----------|
| Visual Improvement | 153 |
| Aids | 215 |

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Conclusion and recommendation: This project is a good example of a comprehensive approach of reaching children in large scale and providing them service with equity and also helping in designing Individual Education Plan (IEP) for the class VI students. This is the first such type of project conducted in India. Other state governments have shown interest towards this project. Our recommendation is to incorporate this project in the National Programme for Control of Blindness in India.

References:
1. Clare Gilbert, Jagroop Rath, magnitude and causes of visual impairment and blindness in India: The Epidemiology of Eye Diseases, 3rd edition, 2012, Imperial College press
2. Bhattacharjee H. et al, Causes of Childhood Blindness in Eastern India, Indian Journal of Ophthalmology, 2008,56:495-9
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4. Davande L., Williams JD, Williams BC, et al, Population based assessment of childhood blindness in Southern India, Arch Ophthalmol 110:440–4, 1996
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REACHING THE UNREACHED: EXPERIENCE FROM PUNE REGION

PENMA’s H.V.DEASI HOSPITAL, PUNE is a tertiary eye care institution with all the subspecialty departments. It received support from CBM in establishing a well equipped low vision care unit. Subsequently, CBM also helped the hospital in training optometrists and ophthalmologists in providing low vision care. It also supplies low vision devices to the patients.

The department adopted various strategies to reach all those who need low vision care. PUNE hospital a protocol is adopted that no person will go without visiting low vision department if that person is in the low vision category. This is communicated to all the ophthalmologists and they are made aware about the available services and its impact on individual’s life.

In order to reach the children who are not able to access services in the hospital, the hospital sends its team of experts to outreach camps held under Sarva Shiksha Abhiyan for distribution of disability certificate to the screened children. Various studies conducted in schools for the blind across India have shown that many children can be benefited by provision of low vision aids so the hospital conducted regular assessment of these children for low vision and provided them with appropriate devices.

In order to increase the acceptance of services by more ophthalmologists so that they refer their patients to the hospital low vision experts need to create awareness amongst them by providing them with data so the hospital conducted research in impact assessment of providing low vision care in pediatric and adult population and disseminates the results by presentations and publications in appropriate journals. These initiatives have led to screening more than 1000 adults and 700 paediatric patents in last three years.

Services at a glance

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8. WHO/IBP/Q17.17, Report of a WHO/IBP Scientific meeting on Preventing Blindness in children, 2009
Low vision: the patient’s perspective

For this issue on low vision, the Community Eye Health Journal contacted low vision practitioners in India, Tanzania, Nepal, and Peru to help gather the views of eighteen people attending their low vision clinics. The people varied in age from 14 to 81, and suffered from a range of vision problems including nystagmus, retinitis pigmentosa, diabetic retinopathy, and bilateral aphakia.

The interviewees (or their parents) described how their low vision had affected them before treatment, how their life changed after they received low vision care, and what they felt they still needed.

We hope that these experiences of people with low vision will highlight what is important in a low vision service.

Before

Before they received low vision care, the adults said they had been unable to do their desired activities, such as driving or reading. They were worried about their vision and had negative feelings, including stress, depression, anger, and frustration. They had also felt dependent on their family, and that they were a burden to the family. The adults had also struggled to accept their condition as being irreversible.

School-age children and young adults said that they had been unable to attend school, had to drop out, or had faced great difficulties in their schooling, such as being unable to take examinations. Some of them had been treated as blind and taught to use Braille.

Some of them had been treated as blind and taught to use Braille.

Impact

- Adults described how low vision services had resulted in the following:
  - Greater independence, confidence, courage, hope, and dignity
  - A better understanding of the reality of the visual loss

Children talked about how the low vision service had helped them with the following:
- Starting school
- Doing desired activities, such as reading print, even small print
- Increased independence, for example being able to read the blackboard and learning to write
- Improving the attitudes of peers and teachers... who now see I can do many things.
- Better social interaction, for example... recognising the faces of my friends.

What more is needed?

- Some people still lacked the confidence to use their optical devices in public
- Most people also wanted to be informed if there were new technological developments, and hoped for lower prices for software and electronic low vision devices
- Some children did not know enough about their condition and wanted someone to explain it to them in terms they could understand.

In our experience, it is helpful to keep in touch with people who have been helped by low vision services. They can be excellent advocates for the development of better services and may help to convince others with low vision to seek help.

Children who successfully use a low vision device can also inspire other children who are still struggling.

The interviews were arranged, transcribed, and translated by:
- Rosario Espinoza, Peru
- Hari Thapa, Nepal
- Elizabeth Kishiki, Tanzania
- Joseph Eye Hospital LV team, India.

The article was written by Karin van Dijk.

When someone has low vision

Clare Gilbert

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As clinicians, being faced with a patient whose vision we cannot improve any further can make us feel like a failure. However, there are many ways to help such a person with low vision.

Figure 1 shows the difficulties someone is likely to have, based on their distance visual acuity, and what support they may be able to benefit from. These include optical devices, non-optical devices, advice on environmental modifications, and referral to rehabilitation and (special) educational services.

In this article, we will show how to assess a person with low vision and find out what it is they really want to be able to do. We will then outline the interventions that are possible, and give some guidelines.

Before you start

When you are faced with a person with poor vision, it is important to check that everything possible has been done to improve their vision, and that they really do need low vision services. Here is a checklist:

1. Has the person’s diagnosis been confirmed by an ophthalmologist or other eye care worker?

Once you have established that the person does need low vision services, you can begin the low vision assessment. The following are the steps that normally form part of a low vision assessment:

- Taking a history
- Explaining the eye condition
- Determining the patient’s needs
- Performing an accurate refraction
- Assessing visual functions
- Magnification needed
- Designing a management plan
- Referral for further training and support and contacting educational or rehabilitation services if needed.

Selecting low vision devices and training the person in their use

Suggesting non-optical interventions and environmental modifications.

Figure 1. How the type of assistance provided is influenced by distance visual acuity

| Spectrum of distance visual acuity (ideally, with the person wearing the correct prescription) |
|-----------------------------------------------------------------------------------------------|
| Can see 6/18 | < 6/18; can see 6/60 | < 6/60; can see 6/30 | < 3/60; can see 0.1 | < 0.1/60 |
| Difficulties with activities of daily living: dressing, eating, walking around, recognising faces |
| +/+ | +/+ | ++ | +++ | +++++ |
| Potential to benefit from optical devices such as magnifiers |
| ++ | ++ | ++ | +++ | Highly unlikely |
| Potential to benefit from making changes to the environment (see page 12) |
| ++ | ++ | ++ | ++ | |
| Need for rehabilitation and special educational services |
| ++ | ++ | ++ | +++ | +++++ |

Spectrum of distance visual acuity

Difficulties with activities of daily living: dressing, eating, walking around, recognising faces

Potential to benefit from optical devices such as magnifiers

Potential to benefit from making changes to the environment

Need for rehabilitation and special educational services

Grutto 21, 7423CZ Deventer, The Netherlands; for Community Ophthalmology.

Karin van Dijk

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Teaching the use of an illuminated hand magnifier, PHILIPPINES
Taking a history

This is an important part of the low vision assessment and provides an opportunity for you and the patient to get to know each other. Encourage the patient to talk about their experiences. Asking open-ended questions will help: these are questions starting with words such as ‘when’, ‘what’, ‘why’, ‘how’, ‘where’ – questions which don’t have ‘yes’ or ‘no’ as an answer.

Ask questions about:

• Their own eye health – how their vision is affected, what makes it worse or better and how it has changed over time.
• Their general medical history, their mobility, and their medications for their eye health.
• Their family’s eye health.
• Their occupation and hobbies.
• Any previous low vision assessments.

Here are examples of questions you can ask about their eye health and vision:

• When did you first notice a problem with your vision?
• What kinds of problems have you noticed?
• What problems do you have at night?
• What changes, if any, have you noticed in your vision?
• What makes your vision worse?
• What makes your vision better?

Explaining the eye condition

Some people with low vision will not have had their eye condition explained to them, or they may not have understood the explanation at the time. It is always worthwhile taking time to explain the eye condition again, in terms the person with low vision understands. Even if patients with low vision have heard it all before, they will probably find it reassuring to have it explained to them again, confirming what they have heard from others.

Be positive. Emphasise that they have a residual vision by using it – they will make the most of that vision. Reassure them that they cannot harm their remaining vision by using it. Ask questions about what they have heard from others. They will probably find it reassuring to have the eye condition explained to them, in terms they can understand.

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A 60-year-old retired profession

This case study, and those that follow, are of actual people and demonstrate practical low vision assessments and interventions. They show how the diagnosis and history can guide us in setting priorities for assessing and knowing which interventions, especially non-optical, might benefit the person.

A 60-year-old retired professor with age-related macular degeneration complained that he could no longer read small text, which had been an important part of his life. He also taught college students and worked extensively on the computer at home. On further questioning, it became clear that he also had difficulties in communicating with others. From the history, interview, and diagnosis, we knew that the man had central field loss and reduced contrast sensitivity, which would require improved lighting and contrast.

The low vision team assessed his best corrected distance and near visual acuity, contrast sensitivity, reading and writing ability, and the extent of his field loss.

His visual acuity, tested on a LogMAR chart, was 6/36 (0.8 logMAR) in the better eye, and with a −2.00D add his near vision was 1.6/18 at 15 cm. His near acuity improved to 0.63 at 25 cm with an add of +3.00, a reading lamp, and a reading slit, and to use a reading stand. A signature guide helped him to sign documents.

The professor was advised to wear his bifocals when reading text, to read with a table lamp and reading slit, and to use a reading stand. A signature guide helped him to sign documents.

He was taught how to use eccentric viewing (see page 8), which helped him to recognise people more easily. This helped him socially.

The professor was advised about the importance of explaining to his friends and family why he was not able to make direct eye contact.

He was also directed to the local government office to obtain a disability certificate and other paperwork.

When doing refraction, the chart should be at the distance where the patient can see at least the top line of letters. Full aperture trial lenses should be used to allow the patient to move their head or eyes in order to fixate eccentrically (see page 15).

Assess the near addition (less) needed and measure the working distance with which the person is comfortable. Record their best corrected near and distance visual acuity.

If you work in a setting with limited resources, the improvement of distance and near visual acuity can be emphasised: the other visual functions can be tested functionally, as suggested here.

When at work as a low vision home care worker or at work as a low vision home care worker, the chart should be at a distance of at least 0.30m (300mm) from the chart. This distance is important as it is the distance at which many people read, and it is the distance at which many people read.

Near visual acuity

It is very important to test everyone’s near vision, not just those who can read and write. Near vision is needed for a very wide range of other activities. We must also know the near visual acuity so that we can prescribe low vision magnifiers for near tasks, if needed.

Near visual acuity can be tested using LogMAR charts (Figure 2) similar to those used in distance visual acuity. It is important that comparable tests for both are used. The choice of test depends on age, development level, and literacy of the client, e.g., tumbling Es or Randot discs.

It is useful to assess near vision at a distance of 25 cm (see article on page 9). Note that people with presbyopia may need an appropriate addition in order to read at this distance. In addition to near vision, reading and writing performance should be assessed amongst those who are literate. This is because reading requires other functions that are not assessed in acuity testing, for example, locating the next line of text or finding the next keyword.

The best way to assess reading is to use printed text from a newspaper or book, a short walk with the client. His distance visual acuity was 6/24 (0.60 logMAR) with his myopic glasses of −4.00D. He could read 1.6/18 (0.80 logMAR) with his glasses at 20 cm. A 6D hand-held magnifier was prescribed to make reading the newspaper and small print on the machine more comfortable, and he was advised to wear a cap with a visor to reduce glare when in bright sunlight.

After consultation with his employer, he was allowed to work with driving and working in the evenings, and driving in poor lighting. He was also directed to the local government office to obtain a disability certificate and other paperwork.

The low vision team assessed his best corrected visual acuity using standard Snellen charts at only two distances: six metres (20 feet) or three metres. However, when testing someone with low vision, we should preferably use LogMAR charts as they give better measures of acuity. If the person cannot see the letters at six metres, we must also test at other test distances, such as two metres, one metre, etc.

The professor was advised about the importance of explaining to his friends and family why he was not able to make direct eye contact.

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Contrast sensitivity

Contrast sensitivity is the measure of the eye’s ability to detect differences in greyness and background, or small changes in brightness. Most of our world is in moderate to poor contrast. Visual acuity charts are one of the few things in high contrast.

Reduced contrast sensitivity can be assessed functionally by asking questions such as:

- Do you find it more difficult to walk around in very bright sunlight, or at dawn and dusk?
- Can you see the white light switch on the light-colored wall in your house?
- Can you read your bills (which are often on gray paper, with poor contrast)?

There are several ways of testing contrast sensitivity clinically, such as the Pelli Robson chart, but these charts are expensive and require that the person be literate. A less expensive alternative is the Lea low-contrast flip chart (see page 13 for ordering details), which is suitable for those who are not literate, including children. Low contrast may explain why a person with a visual acuity of 6/36 can manage tasks well, but struggles in poor light.

Contrast: tips for daily activities

It is not easy to translate these findings to impact on daily activities. In general, moderate to severe contrast sensitivity might have an impact on reading, whereas very poor contrast sensitivity might indicate the need for visual rehabilitation and mobility training.

You can help people with low contrast sensitivity by advising them how to increase contrast in their environment. There are two main ways:

1. **Use better lighting.** For example, sit by the window to read or sew, or use a lamp. Be aware that some older lighting, including direct sunlight, can reduce contrast.

2. **Make adaptations in the environment.** For example, use paint or coloured tape to create contrasting stripes on steps or around light switches.

Light sensitivity

Both too little light, and too much light (glare), can affect a person with low vision to be able to see.

People with increased light sensitivity struggle to see in the presence of bright light (for example, light reflected by a shiny blackboard or table top). This is a common problem for people with low vision.

In the presence of such bright light, or glare, contrast is reduced and recognising objects or people can become very difficult.

People with reduced light sensitivity also struggle to see, and will often also have reduced contrast sensitivity.

**Light: tips for daily activities**

Getting the amount of light right is the key intervention in this situation. Ask what the person is struggling with, such as seeing distant objects (red delight light sensitivity) or seeing outside in bright sunlight or when the light reflected off the blackboard (increased light sensitivity).

For people with reduced light sensitivity, recommend that they sit near a window or try different lamps.

You can determine the best lighting conditions for particular tasks, such as reading or sewing, by letting the person try out different types of lamps in the clinic.

People with increased light sensitivity could wear sunglasses, a cap outdoors to help with glare.

Filters (Figure 3) can help people with both contrast and/or light sensitivity by minimising glare and increasing contrast.

Filters look like safety glasses and are available at low cost (see page 13 for ordering details). Many different colours and shades are available, such as yellow, brown, grey, red, etc.

People may need two different shades of a particular filter: one for indoor use (light) and one for outdoor use (dark).

**CASE STUDY 3**

Isabel retinopathy made a 75-year-old woman unsure of her bearings at home, even though she had undergone cataract surgery with intraocular lens implantation. She was unable to identify different utensils and other items, such as spices, in the kitchen. She also could not see the knobs on the gas cooker. She was seen to do her own cooking, gardening, reading, and shopping.

Pseudoskina is accompanied by loss of accommodation, while diabetic retinopathy can result in sensitivity to light, patchy field loss, with reduced contrast sensitivity and color discrimination.

These visual functions were all assessed. Her best corrected distance visual acuity was 6/60 (1.0 LogMAR) with astigmatic correction. With a near add of +4.00D, she could read 1.6M at 20 cm.

The interventions recommended focusing on improving her near visual acuity and included an 8 diopter illuminated stand magnifier, which enabled her to read 1M print, using a reading stand to which amount she was advised to use the magnifier to identify money.

She was trained in the use of eccentric viewing to assist in daily activities and was shown how to fold paper for banking, and extra illumination for near work.

Visual fields: tips for daily activities

For people with central visual field loss:

1. Provide high contrast magnification
2. Show them how to use eccentric viewing (see panel below).

For peripheral visual field loss, the best advice is to keep pathways clear and to avoid moving furniture in the house. A cane for walking around outside may be very useful.

**Colour vision**

It is rare for a person to be completely colour-blind, but reduced colour vision occurs more often in people with low vision. This can be assessed by asking questions such as: do you have difficulty when trying to find clothes of matching or similar colours? Have you noticed any problems when discriminating shades of color?

There are formal methods for colour vision testing, such as the Ishihara plates and they might make a simple screening test (D-15), which involves colour arrangement. In practice, it is usually sufficient to see whether the person can see or match the results.

**Eccentric viewing**

It is likely that people with loss of central vision (often associated with macular degeneration) will need to develop an eccentric viewing technique, in which they use their peripheral vision instead of their central vision. Patients may find it easier to see things if they do not look directly at them, but rather to one side or the other.

Eccentric viewing can be difficult to teach, and to learn. However, you could start by encouraging the person to try finding the best area for viewing for themselves, starting with real objects, then faces, and later on with larger letters or words. The person will eventually learn to control their eye movements.

If you have access to an electronic magnification device, you can visit http://www.mdsupport.org/ extravision.html for a guided introduction in how to use eccentric viewing.

**Magnification needed**

Many people with low vision can benefit from magnification: using lenses to make objects appear bigger. However, magnification has its limitations. It is important to understand these limitations and explain them to the people you are helping so they have realistic expectations about what is possible.

- **Stronger magnifiers have smaller lenses.** You cannot have a strong magnifier that has a big lens! Many magnifiers have more distortion around the edge of the lens, which means you can see clearly through the centre of the lens only.

If possible, follow up with the referral service to check whether the person has taken up the referral. If not, why not?

Low magnification

Primary colours, e.g. red, green, and blue. This can be tested using pencils or pieces of coloured fabric, for example, and asking the person to tell you what they see.

However, clinical colour vision testing can be valuable to make the correct diagnosis concerning the cause of a person’s decreased vision.

Colour tips for daily activities

People with a colour vision deficiency or with blurred vision may find it difficult to distinguish between two colours that are similar. Suggest the following:

- Arrange the food cupboard so tins or foods of contrasting colours are next to each other.
- Ask someone to help label clothes or to put matching outfits together ahead of time (on hangers in the wardrobe).
- Use other senses (touch and smell) to find out which fruit are ripe.

**Magnification needed**

Many people with low vision can benefit from magnification: using lenses to make objects appear bigger. However, magnification has its limitations. It is important to understand these limitations and explain them to the people you are helping so they have realistic expectations about what is possible.

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If possible, follow up with the referral service to check whether the person has taken up the referral. If not, why not?
How to predict the near magnification needed

It is possible to use a simple formula to predict the amount of near magnification a person might need.

The actual amount of magnification needed will vary according to the person’s visual needs, environment, and the low vision device chosen. However, this is a useful starting point when selecting low vision devices to try out.

In this article, we use the testing distance of 25 cm, rather than the usual 40 cm, for two reasons:

1. Bringing objects closer makes them easier to see and improves contrast, important for people with low vision.
2. If we know the magnification needed at 25 cm, it is easy to calculate the dioptres needed to provide this.

Finding the magnification needed for reading

The formula we use is given below. It lets us predict the amount of magnification needed at 25 cm.

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\[ \text{magnification} = \frac{\text{near acuity achieved at 25 cm}}{\text{near vision using an E chart and record the required near acuity at 25 cm, in the same notation.}} \]

### Step 2. Find the required near acuity at 25 cm

**Ask what they want to be able to read**

- Determine the text size and record the required near acuity at 25 cm, in the same notation.

**Note:** M sizes differ depending on the testing distance used. Table 1 shows the M sizes of different types of text at both 25 cm and 40 cm. The latter is more familiar to most people. For our purposes, it doesn’t matter which you use, provided you use the same notation throughout.

### Step 3. Use the formula to calculate the magnification needed

**Divide the near acuity achieved at 25 cm by the required near acuity at 25 cm.**

This gives the amount of magnification required.

**For example:** Near acuity achieved at 25 cm is 0.25, and required near acuity at 25 cm is 0.1. To find the required magnification, divide these two numbers. So 0.25 divided by 0.1 equals 2.5.

This is the magnification needed to achieve this.

**Now that we know the magnification needed, we can calculate which dioptres lenses can provide this level of magnification at 25 cm.**

### How to train people to use low vision devices

### Practical Advice

**How to predict the near magnification needed**

- Use a reading chart with sentences. Ask the person to hold the chart at 25 cm.
- If needed, particularly in older people, add positive lenses (from +1.0 to +4.0) to both eyes, to enable them to accommodate at 25 cm.
- Ask the person to read aloud.
- The smallest size the person can read with comfort and good speed gives their near acuity at 25 cm (Note: this is not the smallest size they can see!)
- Write down the near acuity achieved at 25 cm, whether in M or N notation.

**Note:** Make sure the person is wearing their glasses and contact lenses to ensure the accuracy of the testing.

**Table 1. Text sizes in M notation (at both 25 and 40 cm) and in N notation**

| Size (M) | Text Size          | Near Vision |
|---------|--------------------|-------------|
| 0.1     | 12                |
| 0.2     | 16                |
| 0.25    | 20                |
| 0.3     | 24                |
| 0.4     | 32                |
| 0.5     | 40                |
| 0.6     | 52                |
| 0.7     | 64                |
| 0.8     | 80                |
| 0.9     | 100               |

**Step 1. Find the near acuity achieved at 25 cm**

- Make sure the person is wearing their distance prescription, if any

- Use a reading chart with sentences. Ask the person to hold the chart at 25 cm.
- If you do not know the dioptries, check if the box of the device gives the ‘x’ (e.g., 2x) magnification. This is often given for a reference distance of 25 cm, which is the same distance used in this section.

**Step 2. Find the required near acuity at 25 cm**

- Ask what they want to be able to read.
- Determine the text size and record the required near acuity at 25 cm, in the same notation.

**Note:** Don’t aim to record the smallest size a person can see. Recording the size the person can read with comfort and speed gives their near acuity at 25 cm (Note: this is not the smallest size they can see!)

- Write down the near acuity achieved at 25 cm, in M or N notation.

**Note:** Make sure the person is wearing their glasses and contact lenses to ensure the accuracy of the testing.

**Step 3. Use the formula to calculate the magnification needed**

- Divide the near acuity achieved at 25 cm by the required near acuity at 25 cm. This gives the amount of magnification required.

**For example:** Near acuity achieved at 25 cm is 0.25, and required near acuity at 25 cm is 0.1. To find the required magnification, divide these two numbers. So 0.25 divided by 0.1 equals 2.5.

This is the magnification needed to achieve this.

**Now that we know the magnification needed, we can calculate which dioptres lenses can provide this level of magnification at 25 cm.**

**Step 4. Select the low vision device**

**Start by thinking about the following:**

- The person’s visual abilities: can both eyes be used? Think about refractive error, ability to accommodate, and age.
- The task the person wants to do: can one or both hands be free?
- The time for the task: short (such as checking a medicine label) or long (reading a story)?
- A short task, a hand-held magnifier is fine, but for long periods of reading, dome, stand, or spectacle magnifiers would be better.
- The physical condition of the person, if the person’s hands tremble, a hand-held magnifier is not useful and a spectacle magnifier would be better.

**Other considerations include:**

- The availability of the device
- How acceptable it is
- How much it costs
- How much the person has to learn to use the device. Will the person come back if the device is difficult to use?
- At the first appointment, try to focus on providing just one low vision device.
- Choose the easiest problem to solve, or the one that is most urgent for the patient.
- It takes time to learn how to use a new

**Managing Low Vision**

**PRACTICAL ADVICE**

**How to predict the near magnification needed**

- Use a reading chart with sentences. Ask the person to hold the chart at 25 cm.
- If needed, particularly in older people, add positive lenses (from +1.0 to +4.0) to both eyes, to enable them to accommodate at 25 cm.
- Ask the person to read aloud.
- The smallest size the person can read with comfort and good speed gives their near acuity at 25 cm (Note: this is not the smallest size they can see!)
- Write down the near acuity achieved at 25 cm, whether in M or N notation.

**Use the actual activity they want to perform to try out the different magnifying devices, so keep needles, or seeds for sorting, etc., in the one that is most urgent for the patient.**

- It takes time to learn how to use a new low vision device; learning one device successfully builds the person’s confidence and they will more likely to come back for further support.

- Depending on the task the person wants to do, demonstrate one or more low vision devices that will provide the patient the vision they need. Allow them time to try the devices for themselves to see which work best.

- Where possible, let them do something similar to what they would like to do at home, work, or school.

- Encourage them and praise them when they have done well. Try to build their confidence and listen to their challenges. Sometimes it is better to listen than to talk.

- Help them to solve their challenges one at a time. Sometimes meeting someone else with low vision can show patients that it is possible to overcome their problems.

- Whenever my patients come back with a problem, providing support and encouragement is always the best way we can help them.

**With thanks to Tanujita Britto (ophthalmologist) and Anitha Jeyan (rehabilitation professional), Joseph Eye Hospital, Tiruchirapalli, India**
Making life easier for people with low vision

Clare Gilbert
Co-director, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT; UK; Clinical Advice, Sight savers.

There are many things you can suggest that will help people with low vision make the most of their vision, whether they are able to benefit from magnification devices or not. If you are working at the community or at primary level, remember that these environmental modifications should never be a substitute for devices: always refer someone with low vision for an eye exami-
nation, refraction and low vision services wherever possible to you or if you are working at district/secondary or tertiary level, refer your patient for vision rehabilitation.

The suggestions given here are a good starting point, but some people may require further support and training in order to make the most of their vision. A way of remembering environmental modifications is to think about:

• Making things bigger and bolder
• Using contrast
• Improving lighting, using lines, and
• trying to lift what you want to look at.

Bigger and bolder
Bringing things closer to our eyes makes things easier to see. For example, a black pen on white paper is easier to read than pencil. White writing on a black background gives the greatest contrast and is easier to read, but this can usually only be generated on a computer screen (Figure 3).

Lighting, lines, and lift
Lighting is perhaps the best way to improve contrast, so if someone wants to read make sure the page is well lit. Ideally, the light should shine directly onto the page, but without producing glare. It should not shine in their eyes. Good lighting in darker areas of the home is important, particularly where the person may be nervous, e.g., going up and down stairs or going to an outside latrine.

With normal vision, the rice is visible against all backgrounds. With low vision (right), the rice is much easier to see on the green banana leaf and red plate.

At meal times, people with low vision can sit near the window or doorway so they can see what they are eating and when they have finished. Lines. Many people with low vision find it hard to follow a row of text: they may not be able to scan the words easily, they may find it hard to know when they have got to the end of a row of text, or they may struggle to find the beginning of the next line. Partly blanking out the lines above and below the line being read, for example, using a reading slit (see page 10), makes the visible line of print easier to read. A reading slit can be made of black card with a rectangle cut out of it.

Lift. Lines can help with mobility and safety. For example, paint the edge of stairs in a contrasting colour, or put white paint on the top of stones which mark the path to a neighbour’s home.

Useful resources for low vision

Low vision devices
Hung Kong Society for the Blind
For visual assessment charts, refraction equipment, training materials, and low vision devices. Visit www.blsh.org.hk

ICEE Global Resource Centre
For low-cost spectacle frames, lenses, and low vision devices. Prices for low vision aids start from US $2.50. Contact Vivian Piley at vivasan@iceecentre.co.za or +27 312023811.

Internet browsing support

LowBrowse™ is a free addition to the Mozilla Firefox web browser, which is also free. It lets users read all text in web pages in a special reading frame at the top of the screen. The frame presents text in a single line and users can change the size, font colour, contrast and letter spacing without having to zoom in and out. It has a speech option which reads the text.

Motorola: How to prescribe spectacles for presbyopia. Community Eye Health J 2006;19(57):12-13.

Online resources for low vision

http://bit.ly/L2YSV5 - article on assistive technology by someone with low vision. POF (1.6MB)

 Available in English, Chinese, and French. www.lighthouse.org.uk/practitioner/practice-management - a collection of articles, mainly aimed at optometrists. www.mfedfoundation.com.au - practical guides (PDF format) for patients and their carers, with a focus on macular degenera-
tion. Look in ‘Tact Sheets & Publications’. www.ffa.org - advice on living with vision loss.

For information, contact Genes Mng’anya, KCCO, Good Samaritan Foundation, PO Box 2254 Mosh, Tanzania. Tel: +255 27 275 3547. Email: genes@kcco.net.

Staff assisting someone with low vision

• Be patient: people with low vision may have visited many eye units or professionals already, and have told their stories many times before.
• Be kind: people may initially be angry when they are told they have untreatable visual loss. Listen and be supportive, but do not give false hope.
In fact, the services of all of these people comfortably within the job descriptions of low vision turn to for help? Most people have low vision services are not able to access them. This is the case, who can those with low vision turn to for help? People with low vision do not do they can:

- They are not blind, so rehabilitation workers may not feel able to help them
- Clinicians (ophthalmologists, optometrists, nurses, and other mid-level personnel) feel there is nothing more they can do
- Optometrists and refractionists can improve their vision, but cannot help them to see "normally"

Special education teachers are usually trained just to work with children who are blind, and may not have the additional training needed to help children use low vision devices and advise them about where and the importance of using their vision. In fact, the services of all of these people are vital to ensure that the person with low vision can live a full life. An older child's colour vision is tested during an outreach clinic. NIGERIA

One of the most important things we can do, whatever our own role, is to be aware of what other services may be the person with low vision and refer them. And we must communicate with the person, the family, and our colleagues in these other services about the care the person needs, in clear and simple language. Importance of referral

People with low vision may need clinical care, referral, and rehabilitation support, and children and others in full-time education will also require educational support. We may be the first point of contact for the person with low vision, or their last hope for help. Whatever the case, it is our responsibility to find out whether the people who come to us have received clinical and refractive error care. If they have not, it is essential that we refer them. If they have, we must find out what other support they might need and refer them.

But it is not enough to just refer – it is also our responsibility to make contact with our colleagues in local community rehabilitation and educational support services. Refer people as appropriate, and share information with these colleagues about any changes in the needs and vision-related abilities of the person with low vision.

Different levels of low vision care

Primary/community level

Nurses, optometrist nurses, community-based workers, and other mid-level personnel can do the following:

- Be alert and identify people who might have low vision
- Refer them for diagnosis, prognosis, and good refraction
- Refer older children and adults who have useful vision to low vision services at secondary or district level
- Refer children and adults with complex needs for low vision services at secondary or district level
- After diagnosis, refraction, and referral for low vision care, advise on non-optical interventions and environmental modifications (pages 7, 8, and 12) and refer for educational support and community-based rehabilitation if needed.

Secondary or district level

At secondary or district level, services are aimed mainly at adults and older children who want to access print or perform tasks that require good near vision. The panel on page 14 lists the minimum equipment you will need to start a low vision service at secondary or district level.

At this level, optometrists and mid-level eye care workers can be trained to give basic low vision services appropriate to their skills and experience. They should have good communication skills and be able to do the following:

- Test distance and near visual acuity (ideally also in younger children)
- Perform objective and subjective refraction
- Perform minimum essential low vision assessments (pages 4 onwards)
- Prescribe essential low to medium magnification devices for near and distance, with training in their use (pages 9 – 10)
- Advise patients on non-optical interventions and environmental modifications (pages 12)
- Refer people to the most appropriate person or organisation for further training, financial help, and education
- Refer young children and those with complex needs to the tertiary level

Ensure regular follow-up of adults and children who were seen at tertiary level.

Tertiary level or teaching hospital

Well-trained, dedicated low vision staff can provide the following:

- Complex assessment tests
- Refraction of people with complex problems
- Provision of a wide range of devices, including electronic devices
- Good links to education and rehabilitation services
- Training in the use of low vision devices.

Beyond the clinic

There will be many more people with low vision in the community who need our services. Think about how you can reach out to tell them about what you offer. Plan outreach clinics, or link with others working in the community. Visit schools for the blind – perhaps there are children who will be able to use their remaining vision if they receive low vision support. Low vision work may be challenging, but it is immensely rewarding!

Improving access to low vision services

Our recent survey1 found that low vision services were often inaccessible to large numbers of people in low- and middle-income countries. Based on the findings of this research, we suggest three areas for action: human resources, sustainability of services, and advocacy. However, it is important to keep in mind that these strategies must be adapted to suit your situation.

Sustainability

Strengthen community-based rehabilitation and outreach services. During outreach, you could explain or show how the home environment can be adapted and make timely referrals to distance magnification devices. Though outreach, people can be followed up to ensure they are still able to use their low vision devices, and you can give refresher courses to those who need it. In addition, children with poor vision can be detected and supported early.

Outreach services should be carried out on a regular basis, although the frequency may vary, depending on need.

Integrate low vision services into existing ophthalmic and optometric curricula and include it in the practical training of education and rehabilitation workers.

Offer informal low vision workshops and courses for eye care workers who have not received formal training.

Delegate tasks to less specialised health workers, who may have the skills and experience.

Develop referral systems to ensure that referrals are made to the most appropriate person or organisation. Make sure referral systems are in place and that referral pathways are clear and simple.

Integrate low vision services into existing education, rehabilitation, and eye care systems.

Peggy Pao-Chia Chiang

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Jill E Keeffe

Director, World Health Organization Collaborating Centre for Prevention of Blindness at CERA.

Further reading

1 Chiang P, Xie J, Keeffe JE. Identifying the Critical Success Factors in the Development of Low Vision Services Using the Classification Analysis and Regression Tree Methodology. Invest Ophthalmol Vis Sci 2011;52(5):2790-2795.

2 Hasen Motii. Establishing low vision services at a higher level.

3 Chiang PPC, O'Connor, P., Le Mesurier, R.T., Keeffe, J.E. Low vision work may be challenging, but it is immensely rewarding!

Providing a basic low vision service at district level: what is the minimum we need?

The Low Vision Working Group of VISION 2020 has endorsed a Standard List for low vision services. However, it may not always be possible to purchase all the items on the Standard List.

We have put together a list of the minimum equipment and devices you would need to offer a basic low vision service at district level. This list is based on our experience in the field, and we hope it will help you to start providing low vision support where no other service is available.

Please keep accurate records of who you see and how much time you have been helped. Collect quotes from patients saying how they have benefited, and use these and your records to ask for further training, increased funding, and increased support for your low vision clinic. Always refer people with complex needs for services at a higher level.
Community Eye Health Journal – promoting improvement in eye health for over 20 years

Elmien Wolfaardt Ellison
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The Community Eye Health Journal was established in 1988 and is published by the International Centre for Eye Health, based at the London School of Hygiene and Tropical Medicine. It has editions in French, Chinese, and Spanish, and there is a special edition for India. Paper copies of the journal, in all four languages, are sent to over 35,000 people in 183 countries (see map).

We would like to thank everyone who completed our recent reader survey. Here is a brief summary of the results.

Where our readers are

• A total of 1,418 responses were received (5.3% response rate). 59% were from Africa and 32% from Southeast Asia: the remaining 9% were spread across the other regions.
• Half of respondents worked in small towns, villages or rural areas; the other half worked in larger towns or capital cities.
• Two thirds of respondents worked for government, a quarter in the private sector, and the remainder worked for non-governmental organisations.
• Nearly 40% of respondents worked at primary level; 34% at secondary level, and the remainder at tertiary level.

What our readers do

• The biggest professional group representing ophthalmic nurses (33%), followed by ophthalmologists (26%) and optometrists (12%); double the number in 2005).
• Non-eye care specialists made up 29% of the respondents, including nurses, doctors, administrators, pharmacists, researchers, and technicians.
• More than half of respondents had a wider range of responsibilities than those described by their profession. Around 60% reported that community development/outreach, health promotion, and patient counseling were part of their work responsibilities; 40% reported being responsible for programme planning and management, 22% for hospital administration and management, and 14% were also policy makers.

Access

• A total of 57% of respondents had internet access whenever needed, but around half cited slow speeds, high costs, and lack of know how as reasons for preferring not to read the journal online. In another part of the survey, respondents described using the paper copy as a teaching aid when educating patients or training students.
• Nearly two thirds of respondents had access to a computer, and 79% had found the Community Eye Health Update CD ‘useful’ or ‘very useful’.

Impact

• 91% of respondents said they used the journal to teach or educate others, including patients and the community.
• 90% of respondents agreed that the journal had improved and/or supported their work.
• 80% said that something they read in the journal had led them to change their clinical practice or management of patients.
• The vast majority of respondents (89%) worked directly with patients; they had contact with an average of 60–79 patients per week.
• 80% agreed that the journal had motivated them to reach out to the community, 75% that it had changed the way they conducted health education, and 70% that it had changed the way they talked to patients, stimulated them to talk to non-eye care colleagues, and motivated them to stay in eye care.
• Respondents passed on the journal to an average of ten other readers each.

We are encouraged by the positive response to the journal and appreciate the many helpful suggestions for future editions. We would like to thank everyone who contributed to the journal.

With thanks to Prof Allen Foster, Prof Carel Gertler, Arvind Shat, Sally Panczyk, and George Yi Ti Ellison, DCI.

FURTHER READING

Putting patients at the centre of eye care

Understanding what patients think (page 22)

• Visit www.institute.nhs.uk and type ‘patient perspectives’ in the search box.
• Read more about KAP surveys in on www.uniteforsight.org/global-health/survey-methodology.
• Family planning clinics in Latin America successfully used exit interviews to improve quality of care and patient satisfaction. From www.unfpa.org/pubs/journals/2060300.html.
• Using KAPs to plan DR services: a report from LACIO. http://laico.org/v2020resource/files/KAPStudyMethodology.pdf (PDF, 410kb).

Improving patient flow (page 31)

• Community Eye Health J, Vol. 23 No. 73. Equipment for eye care
• Community Eye Health J, Vol. 23 No. 74. Ten years to VISION 2020: why information matters
• Community Eye Health J, Vol. 24 No. 76. Instruments and consumables

• Visit www.institute.nhs.uk and search for each of the following (by typing the term into the search box), in turn: ‘patient flow’, ‘bottlenecks’, ‘process mapping’, and ‘value stream mapping’.
• Read case studies on patient flow from the UK, including ones in eye care. www.care2vision.org/files/no_delays_achieve_case_studies.pdf (PDF, 1.1MB).
• How Arravind Eye Care Systems in India improves patient flow. www.accessh.org/publication/Article/14

ORGANISING EYE SERVICES

Improving patient flow through an eye clinic

• Registration
• Retrieval of medical records
• Slit lamp examination
• Consultation
• Treatment
• Fee collection

If we want to consider how a patient is referred to our clinic, particularly if our clinic is part of a VISION 2020 district programme or a government district health care system, we can include steps such as ‘outreach’, ‘primary health care referral’ and so on in the list above.

Understanding existing patient flow

Many patients will travel through our eye clinics and it is our responsibility to see that patient flow is well managed. Before making any improvements, start by assessing (or auditing) the existing patient flow in the eye clinic. This can be done by one person, but it is often better to invite representatives from both clinical and support staff to help. Everyone’s input is valuable. Reviewing patient flow will allow us to identify problems and make helpful changes. The suggestions that follow are just a starting point to help you to start thinking about patient flow and identify areas for improvement.

The focus should be on what patients value: does the way the clinic function help us to give patients the best service we can?

• List the different ‘stations’ on a typical patient’s journey through the eye clinic.
• How long do they have to wait before

Table 1. How improving patient flow can benefit patients and the eye programme: a few examples

| What patients want | What the eye unit wants | How improving patient flow could meet the needs of patients and the eye hospital |
|--------------------|--------------------------|------------------------------------------------------------------------------|
| Less waiting time  | Efficient use of staff time | If some staff are waiting for patients, find areas where patients are waiting for staff and move the staff to that part of the process. |
| Lower prices for eye care | Reduced waste | Eliminate any unnecessary procedures or diagnostic tests, provided they do not affect the quality of clinical care. |
| Good quality care | Sharing of scarce resources, e.g. slit lamps or theatre time | Prepare patients for examination or theatre in a separate area so that the time spent at the slit lamp or in theatre is kept to a minimum. |
| Lower travel costs, less time away from home | Reduce patients who do not attend for operations or who do not come for pre-operative examinations | Where possible, do pre-operative examinations on the same day as the operation. |
| Respect and care | Co-operative patients, enough time to provide proper care, a good reputation | Provide information at the start of the patient’s journey about what is likely to happen, how long it might take, and how much it is likely to cost. This puts the patient at ease, so staff can focus on what is important. |

Ten years to VISION 2020: why information matters

Everyone’s input is valuable. Reviewing patient flow will allow us to identify problems and make helpful changes. The suggestions that follow are just a starting point to help you to start thinking about patient flow and identify areas for improvement.

The focus should be on what patients value: does the way the clinic function help us to give patients the best service we can?

• List the different ‘stations’ on a typical patient’s journey through the eye clinic.
• How long do they have to wait before

Table 1. How improving patient flow can benefit patients and the eye programme: a few examples

| What patients want | What the eye unit wants | How improving patient flow could meet the needs of patients and the eye hospital |
|--------------------|--------------------------|------------------------------------------------------------------------------|
| Less waiting time  | Efficient use of staff time | If some staff are waiting for patients, find areas where patients are waiting for staff and move the staff to that part of the process. |
| Lower prices for eye care | Reduced waste | Eliminate any unnecessary procedures or diagnostic tests, provided they do not affect the quality of clinical care. |
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| Respect and care | Co-operative patients, enough time to provide proper care, a good reputation | Provide information at the start of the patient’s journey about what is likely to happen, how long it might take, and how much it is likely to cost. This puts the patient at ease, so staff can focus on what is important. |
• moving through each station? You could assign a staff member or volunteer to visit waiting areas and monitor the waiting times. What do patients think? You could conduct exit interviews with patients or consider mapping a staff member or volunteer to do patient shadowing (see page 23).

• Look at the patient’s physical journey through the clinic. On a detailed plan of the clinic, trace the paths they have to walk between each of the stations. Are there any unnecessary back-and-forth movements? Do patients know where to go? Do staff often have to stop what they are doing and help direct patients?

• Trace the paths different staff members have to take as they carry out their various daily tasks. Include both support staff, as well, such as administrators, porters, stock room staff, etc. Ask staff: is there anything that could be changed to make their work easier?

• Look at the use of equipment. Is there enough equipment taking up valuable space in the passageways or consulting rooms? What are the times and days of the week, month, or year when the clinic is busiest?

• Look at the procedures for stores and purchasing, and at how you keep records and identify patients (see ‘Further reading on page 35’). Are patients required to provide the same information more than once?

Knowing what to change

There are various approaches to analysing patient flow, with names like ‘process mapping’ and ‘value stream mapping’ (see ‘Further reading on page 35’). Finding and eliminating bottlenecks is another approach and is relatively straightforward. The aim is to reduce waiting times and make better use of equipment and the time of clinicians. Bottlenecks are usually easy to identify:

• They are the areas with the longest queues! For example, one often sees long queues in front of the visual acuity testing station, whereas, in another part of the clinic, the screening station is waiting for patients. In this instance, the visual acuity testing station is the bottleneck – it is the part of the clinic where patients are getting stuck. Using an additional person at the visual acuity testing stage would speed up the flow of patients through this area and provide a steady stream of patients at the screening station. Patients will therefore have a quicker journey, and eye care workers’ time will be used more efficiently.

Finding and eliminating bottlenecks

Once we better understand patient flow in our eye clinic, and where the delays and inefficiencies are, the next step is to talk to clinical and support staff about how improvements can be made. It is important to create an atmosphere of teamwork and collaboration, and to encourage everyone to contribute their ideas. Janitors or stock clerks, for example, may offer valuable insights into everyday processes that can be streamlined.

Good record keeping reduces delays and improves patient flow. SWAZILAND

Better systems

• Standardise procedures in the clinic. This will allow more patients to be seen in a day and make it easier to keep quality records.

• Use tags or stickers on charts to make them easy to identify.

• Make sure there is enough technology where appropriate. For example, use computers for indexing records or use devices that send up intraocular pressure readings.

• Some days are busier than others (e.g., staff days are usually busier because of weekend emergencies). Part of a solution to an overcrowded clinic may involve moving clinic activities to different days to allow a better spread of patients throughout the week.

• To reduce unnecessary back and forth movements, consider assigning a staff member or volunteer to direct patients to different stops so that a patient can make a quick visit to one room before moving to the next.

Better use of staff

• Make good use of mid-level ophthalmic personnel, nurses, and nursing assistants. They are usually highly trained and can perform many tasks that will free up the time of ophthalmologists so they can focus on more important procedures.

• Make staff available during busy times, and stagger lunch breaks so that workflow is continuous. This will reduce time spent queuing and will allow a patient a steady visit.

• Encourage a culture of teamwork to help improve patients’ experience at the clinic. Training staff jointly and with respect will reduce the likelihood of interpersonal problems.

CASE STUDY: KILIMANJARO CHRISTIAN MEDICAL CENTRE (KCMC), TANZANIA

Doing a baseline assessment

The team responsible for leading the changes at KCMC used a baseline assessment form produced by Lions Aravind Institute for Community Ophthalmology to help them understand the eye department’s resources and problems. Problem areas included:

• Inconvenience for patients: the system required two visits for outpatients or admission that were lengthy and complicated.

• Personnel used inefficiently: many nurses spent more time on clinical duties than on nursing, and doctors were often responsible for mundane management tasks.

• Inefficient procedures: there were no standard clinical protocols for common problems like cataract.

• Monitoring: basic annual patient service statistics were collected, but these were not discussed with staff.

• Stores and purchasing: there was no system for making stores reports and none were made; there was no system for efficient purchasing.

Improvements in eye ward and in theatre

Once the new community outreach programme started bringing in large numbers of patients, especially late in the day, the need to make ward and theatre procedures more efficient became critical. The team decided that it would be more efficient if the counsellor (a trained nurse) working in the outreach programme recorded vital signs, collected eye data, and educated the patients right there in the field. As a result, the ward nurses had less to do at the time of admission. New forms, designed by an external nurse consultant working with the eye department, were delivered in a very short time. In the operating theatre (OT), improving efficiency was partly a matter of clearing unnecessary equipment and supplies from the OT so that an extra operating table could be installed. It also required many discussions with the doctors as to how the OT should be run and the importance of starting on time.

Under the leadership of the nursing co-ordinator, who was motivated by positive feedback and praise from the head of the ophthalmology department, more responsibility was expected to take pride in their accomplishments; this was a modest but important step forward in achieving better attitudes and motivation.
Media’s role in eliminating avoidable blindness

Educational role of the newspapers should be better tapped. Making the information interesting is the key word.
Mr N Ram, Editor, The Hindu.

“There is a need to go to the ground level to understand the situation and then write out the key messages. Scribes in the air-conditioned offices will not help us write effective messages.”
Mr SK Kulkarni, Advisor, Kesari newspaper.

“Be accurate, consistent and don’t compromise ever on facts but at the same time there is nothing wrong make your story more presentable.”
Mr Arun Ram, Senior Editor, Times of India, Chennai.

"Target the vernacular press to reach out to the masses”, Ms Aarti Dhar, Senior Assistant Editor, The Hindu, Delhi.

These were some of the key messages made by journalists and eye care professionals who participated in the one-day national workshop on ‘Media and its role in eliminating avoidable blindness’ organised by VISION-2020: The Right to Sight - India held at Sankara Nethralaya, Chennai, India on December 10, 2012.

The aim of the workshop was to sensitise the media on issues of eye care and also invite inputs from them on VISION 2020: The Right to Sight – India and its media role in eliminating avoidable blindness.

Mr Kulkarni who both have the experience of heading newspapers had some suggestions to encourage media coverage. Mr Ram took the example of MS Swaminathan Research Foundation who have held regular workshops on genetics to sensitise the media. The result may not be immediate but in the long run this strategy does help.

Mr Kulkarni suggested a fellowship where journalist can be assigned to study a particular problem in a particular area. This will take care of creating awareness in remote areas like the north east and most important that writing well is the key.

On damage control reporting and about negative reporting, Mr Ram said that in event of accident/infection, the organisation should reach the media with their story first before the news is distorted and published. He also urged that such workshops be held different regions.

The way forward for VISION 2020: The Right to Sight – India is now to analyse the inputs from the media, prepare a guideline on how in approach and how effectively to utilise them to reach to our target audience.

Participants at the workshop. INDIA
Vision 2020 India Newsletter

Past Events

World Sight Day (WSD) an international day of awareness, held annually on the second Thursday of October to focus attention on the global issue of avoidable blindness and visual impairment is observed by a majority of eye care organisations across the globe. In India, VISION 2020: The Right to Sight – India and its member organisations observed the World Sight Day with a number of events ranging from walkathon, painting exhibition by school children, a cultural programme by the visually challenged children, exhibition, a huge visually acuity chart and many more innovative events nationwide based on this year’s theme ‘Eye Testing for All’. All towards draw attention towards the need for a regular eye check up.

VISION 2020: The Right to Sight – India held programmes over two days – October 10 & 11, 2012: a technical session - ‘Glaucoma: an emerging eye care challenge in India’ at Sankara Eye Hospital, Anand, Gujarat on October 10, 2012 emphasised on various aspects of glaucoma with a special emphasis on problems in Gujarat state, the venue of the session. Eminent ophthalmologist from across the country and from Gujarat through their presentations discussed what needs to be done to manage this emerging eye problem, which is the third leading cause of blindness in India. There was good participation from the government both from the Central and the State government departments of health and offered a platform to VISION 2020: The Right to Sight – India for advocacy. Banners and flags with messages on the need for a regular eye check up carried by enthusiastic children marching to the tune of popular songs played by a band marked the opening of events on October 11, 2012; the World Sight Day. The event was organised by Care Group, member of VISION 2020: The Right to Sight – India in Gujarat. The walkathon was flagged off by Ms Sujaya Krishnan, Joint Secretary, Ministry of Health and Family Welfare, Government of India and Mr Ashwini Kumar – I.A.S, Municipal Commissioner, Vadodara, Gujarat and saw participation from school children, ophthalmologists from the city who weaved their way through the busy road of Vadodara, Gujarat. Dr N K Agarwal, Dy Director General (Ophthal), National Programme for Control of Blindness, Government of India and Col (retd) Dr Deshpande, President, VISION 2020: The Right to Sight – India in Gujarat, released multicoloured balloons to mark the occasion.

School children marching at the walkathon. INDIA

School children holding an exhibition creatively depicting various problems of eye care. The best six paintings from this exhibition will form part of the calendar for 2013. In a unique effort, Ms Elizabeth Kurian, Secretary, VISION 2020: The Right to Sight – India requested a couple of school children and the dignitaries for the event to blindfold themselves for a minute to experience how the visually challenged’s world would feel. After a minute when the children removed the blindfold and were asked to share their experience, prompt came the reply “we cannot see the beauty of the nature.” Ms Sujaya Krishnan, Joint Secretary, Ministry of Health and Family Welfare, Government of India addressed the children advising them to participate in the school screening programme. She also gave them tips on nutritive food to eat for healthy eyes.

Dr NK Dr N K Agarwal, Deputy Director General (Ophthal), National Programme for Control of Blindness, Government of India, released multicoloured balloons to mark the occasion.

Visually impaired school children gave hearth warming performance of popular songs from films and dance.

Paintings by school children on WSD.

INDIA