

*DEVELOPING LOW VISION SERVICES*

*IN SOUTH ASIA*

*Dr Nazma Kabir*

*Regional Director*

*South Asia and Caribbean region*

*Sightsavers International*

*27-29 February 2008*

## Introduction

Persons with **Low Vision** have diminished ability to carry out important life activities including acquiring an education, living, travelling independently, gaining and retaining employment, enjoying and perceiving visual images due to un-correctable visual impairment (VI).

The World Health Organisation have defined a person with low vision as “one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10° from the point of fixation, but who uses, or is potentially able to use, vision for the planning or execution of a task”.

Low Vision service is a widely utilised term that describes a variety of services being offered to persons with visual impairment. Low vision services are offered at primary, secondary and tertiary levels. Services at primary level consist of awareness, vision screening, referral, and basic rehabilitation. Services at secondary level comprise of diagnosis, refraction, assessment, prescription and referral to other services. At tertiary level the main emphasis is on diagnosis, low vision care, training and mentoring, rehabilitation, research and advocacy.

According to WHO, globally there are 37 million people who are blind and 124 million people with low vision. Approximately 68 million of these people have irreversible vision impairment and require low vision services<sup>1</sup>. This does not include the number of persons with VI due to uncorrected refractive errors. Most of those with low vision are older people and the numbers will double over the next 20-30 years because of the aging population. An estimated more than 2 million people are living with blindness in Bangladesh, Pakistan and Sri Lanka, and an additional six million people have some kind of vision impairment and low vision.

---

<sup>1</sup> Pararajasegaram, R. Editorial: Low Vision Care: The need to Maximize Visual Potential, Community Eye Health Vol 17 No 14 2004

## **Low Vision Practices**

Many cases of low vision cannot be helped by medical intervention, but it is estimated that more than 50% of people with low vision could be helped with low vision devices such as magnifiers and telescopes, or by services such as mobility training. To ensure that appropriate assistance is given to those in need it has been necessary to create, develop and adapt a wide variety of simple and complex technological devices to support those delivering services and the end users.

A regional Low Vision Resource Centre was established in Hong Kong with the support of Hong Kong Society for Blind. This resource centre has been able to procure the devices on significant reduced costs with quality assurance through its research and development section. Presently, the clinics supported by Sightsavers, CBM and Dark & Light are using locally produced low vision devices and assessment tests from the Low Vision Resource Centre in Hong Kong.

While there is a clear need for a central source for Low Vision devices, there is also a need to ensure production of low cost devices locally. From a recent review of the Bangladesh low vision programme, it was noted that a wide range of optical and non-optical devices are produced and available locally. These include spectacle magnifiers, prismatic spectacle magnifiers, stand magnifiers, illuminated lamp magnifiers, CCTV, bold line note books, typoscopes, writing guides, and reading stands. Binoculars of up to 3X are also sourced from local markets.

The failure to provide appropriate low vision services prevents many individuals from achieving full social inclusion and optimal quality of life, increases costs to family and society, and deprives society of the human and economic contribution those individuals could make. Sightsavers International with its local partners facilitated the development of the national low vision programmes in South Asian region especially in Bangladesh, Pakistan and Sri Lanka. Services that the low vision clinics currently provide include low vision assessment, provision of low vision devices, training in the use of low vision devices, and referral to relevant services.

**Bangladesh** is a country of 145 million persons, and about 40% live below poverty. According to a population based survey (2000-2003), the prevalence of blindness is estimated to be 1.2% -1.4% in the population 30 and above. This means that there are nearly 650,000 blind people in Bangladesh. The survey also identified that there are 250,000 persons over 30 years who could potentially benefit from Low Vision services.

A recent pilot project in Bangladesh has shown that Low Vision services can also be effectively provided at primary/community level where similar, but sometimes less complex technologies now exist. Community based workers have been trained to identify Low Vision persons and carry out assessments of functional vision. A toolkit has been developed to assist community workers, which includes E chart, steel tape, pinhole, torch and a variety of optical devices that can be dispensed by the worker. Workers have also received training which allows them to support the individual and community, including schools, to adapt existing equipment and technologies to ensure they are more accessible to persons with low vision – these modifications have often proven to be beneficial to the community as a whole. It is anticipated that this pilot will be further developed and delivery of low vision services will form an integral part of community based programming for the blind and visually impaired.

The low vision production centre in Bangladesh is producing many low vision aids which are catering the needs of devices that are frequently dispensing from the clinics. In case of mild/moderate low vision patients 60% patients are benefited using spectacle magnifiers which are available in this production centre.

Low Vision service has also utilised the development of Information Technology to increase outreach and coverage. Closed Circuit Television (CCTV) has been successfully adapted as a very effective tool for persons with low vision. This intervention, until recently considered to be out of reach for persons from developing world, is now locally produced in Pakistan and Bangladesh, where affordable high quality colour CCTV is available.

Very recently a new initiative has been taken to increase access and utilisation of educational materials and technologies for the Visually Impaired students at the University level to successfully complete their education. The Dhaka University Central Library has over 550,000 books/journals in addition to department libraries. Unfortunately, none of these books and reference materials is available either in Braille or audio format. Further, these students are not in a position to access computer and internet facilities due to the unavailability of accessible ICT facilities and skills. The University authority provided space/room in the central library to establish the study corner. Sightsavers International supplied the equipments, devices and some of the necessary books in Braille for the VI students. The Librarians will be trained and the students will have opportunity to develop their capacity in Information-communication technology (ICT) and utilise Braille printed versions of reference books provided by the project.

**Pakistan**, with a population of 163 millions and about 35% are marginalised. According to a population based survey in 2002- 2004, the prevalence of blindness is estimated to be 0.9% in Pakistan. This means that there are nearly 1.3 million blind people and there are 4 million people with vision impairment.

All clinics in Pakistan had a good range and displays of low vision devices i.e. near and distance in a range of powers. These include spectacle magnifiers up to 24D, prismatic spectacle magnifiers up to 8D, stand magnifiers, illuminated lamp magnifiers, CCTV, bold line note books, typoscopes, writing guides, and reading stands. The devices stocked were sourced from the Low Vision Resource Centre in Hong Kong and many are produced in local optical workshops. Low vision started as provision of services through tertiary clinics in government and non-government hospitals. The expansion of low vision care has been through the development of secondary level clinics and their linkages with education and rehabilitation services as part of District Comprehensive Eye Services.

Text Accessibility and Legibility Centres (TALCs) have been established in public libraries and Universities in Pakistan to raise awareness. TALCs include the use of CCTV and computer software to enable persons with visual impairment to use computer technology to access information. This has enabled low vision persons to use and access books, newspapers, journals, etc. which were previously inaccessible.

**Sri Lanka** has a population of 20 million. An estimated 100,000 people are blind in the country, and 300,000 persons have visual impairment. The development of low vision services is part of the recently launched National plan of prevention and control of blindness (2007-2012). Sightsavers has already supported the establishment of two tertiary low vision clinics, and two are planned in next two years. Sightsavers has been supporting Sri Lanka Council for the Blind for setting up necessary technologies to increase production of books (computerised books, large print books, talking books) for people with visual impairment. These books are being provided to the University and public libraries and are helpful to many in accessing necessary information and education. Reduced costs of computer, availability of cheap CCTV and development of modified reading stands have enabled many low vision clients to live an independent life.

### **Low Vision Technology**

Low Vision is a visual impairment, not correctable by standard glasses, medicine or surgery that interferes with a person's ability to perform everyday activities. Low vision services include a broad spectrum of rehabilitation. i.e. clinical and functional assessment of visual impairment, environmental modification, education, skill, vocational development and recreational activities for the visually impaired. Low vision should not be separated from services to people who are blind or disabled or organisations working for development of communities. Assistive Technology has been pivotal to the development and scaling up of low vision care.

With just simple modifications and at home adaptations, a person with low vision can improve his/her mobility and independence. The concept of making objects "bigger,

brighter and bolder” will enhance the visibility of an individual and provide better accessibility to information, education and communication.

There are several ways in which an image can be enlarged for a low vision client. The low vision devices are divided into three main categories i.e. optical, non optical and electronic devices. The optical devices magnify the object by means of a lens or combination of lenses i.e. magnifiers, prism, telescopes and glare control devices. The non-optical devices are meant for increasing/magnifying the size of the object, for example large print books, lamps, bold-line paper, environmental modification, high contrast watches, etc. The electronic devices include closed circuit television, computers and conversation systems like talking books, watches, Braille, software to enlarge texts, magic view, daisy, dolphin etc.

Environmental factors that affect the performances of a person with low vision are addressed with low vision adaptive technology; such as modifying the size of an object. Simple, easy to understand, contrast background, enough and uniform distribution of light are some of the basic requirements to change and improve the environment. In addition, audio devices are now used to show services and facilities available in the tactile maps.

### **Key Challenges and Learning**

One of the key challenges in low vision care was the cost of the low vision devices. A determined effort was made to make these low vision devices affordable and cost effective.

Low vision clinics require the use of LogMAR visual acuity charts for the assessment of vision and to estimate needs for magnification. These charts are not normally available in hospital clinics as Snellen charts are more commonly used. The previously available LogMAR visual acuity charts are very expensive. The LVRC now stocks a range of specially produced visual acuity charts available for between \$10 and \$15.

Several challenges were faced during implementation of primary Low Vision project in Bangladesh. The most important challenge was the selection of service-providing NGOs with working experiences. The scattered locations of the service delivery NGOs were another challenge as follow-up of the activities at field level are difficult by training organisation. Other, smaller challenges included irregular and inadequate supply of low vision devices and the distant location of secondary and tertiary clinics.

A general reluctance was felt on the part of service providers in prescribing devices from Low Vision Resource Centre, Hong Kong due to the apprehension that they may not be able to replenish the stocks due to lack of funds. This feeling has been more prominent in Government sector that have no cost recovery mechanism as they provide free service.

## **Conclusion**

Low Vision products have changed the lives of many visually impaired people throughout the world. The use of innovative technology-based equipments and techniques by people with visual impairment and learning disabilities are part of today's rehabilitation engineering. In practice, the non-optical low vision devices have created avenues for fundamental interventions in visual rehabilitation. The Low vision technology created opportunity for the visually impaired children to be enrolled in the regular schools. Technologies have been central to the development of successful low vision interventions, but their high costs were an impediment in developing world.

Sightsavers has addressed this issue by increasing awareness, establishing a resource centre at Hong Kong with other partners, and building necessary capacities at local levels to produce low cost devices. This was further augmented by supporting and facilitating national low programmes with government and non government partners as per local settings and needs. This has reduced the costs low vision devices significantly and increased the outreach services immensely, which were nearly non-existent in the region a decade ago.

## **References**



Asia Pacific Low Vision Workshop, Report of a workshop. Hong Kong, 28-30 May, 2001. WHO/PBL02.87. Available online at [http://whqlibdoc.who.int/hq/WHO\\_PBL\\_02.87.pdf](http://whqlibdoc.who.int/hq/WHO_PBL_02.87.pdf)

Management of Low Vision in Children, Report of a WHO Consultation meeting. Bangkok, 23-24 July., 1992. WHO/PBL/93.27

Pararajasegaram, R. Editorial: Low Vision Care: The need to Maximize Visual Potential, Community Eye Health Vol 17 No 14 2004

Disability, Poverty and the MDGs DFID KAR 2005 & Poverty and Blindness SSI, 2006

Eliminating World Poverty, DFID White Paper, 2000

Management of Low Vision in Children, WHO/PBL/93.37