Special Communication

Mobile eye services: Literature review with special reference to the experience of Al-Basar International Foundation

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ABSTRACT

Purpose: To evaluate the concept of quality assured mobile eye services (MES) in implementing the vision 2020 initiative. Materials and Methods: Literature review as well as the medical records of Al-Basar International Foundation (BIF) on MES. Emphasis was focused on the causes of blindness, objectives, operation, management and the benefits of MES, a critical appraisal of MES, training for MES and the relationship with other organizations and concerned government agencies. Findings: More than 38 countries have been included in this exercise during which more than 620 eye camps have been conducted. More than two million people have benefited from the services provided including medicines and glasses in these eye camps and about 180,000 sight restoring surgeries performed for cataract, glaucoma etc. Conclusion: Quality assured MES are a very important means of tackling the problems of blindness and implementing the vision 2020 initiative. The adoption of this concept by major stakeholders in the prevention of blindness (e.g. WHO, IAPB) will bring an additional momentum to the achievement of this noble goal.

Key words: Al-Basar International Foundation, eye camps, mobile eye services

INTRODUCTION

According to the recent statistics of the WHO, more than 37 million people are blind and more than 124 millions are visually disabled. Ninety percent of these live in developing countries. In spite of all the efforts being made to address this problem, blindness increases annually by two million and is expected that by the year 2020, there would be 90 million blind and 200 million partially blind people.

‘Vision 2020’ is a global initiative launched on February 18, 1999 by the WHO and the International Agency for the Prevention of Blindness (IAPB). Its aim is to eliminate the main causes of avoidable blindness by year 2020, and give all people in the world “the right to sight”. This is to be achieved by facilitating the planning, development and implementation of sustainable national eye care programs. The initiative is based on the three core strategies of disease control: human resource development and infrastructure and technology, incorporating the principles of primary health care.

Owing to the lack of expertise, special equipment and facilities and financial resources in many countries of Africa and Asia, the poor and even those who can afford to pay, have no access to the facilities necessary to help them. For these people, the out-reach programs of the Mobile Eye Services (MES) fill that need.

The idea of MES (traditionally called eye camps) started in India a long time ago. It has been adopted by other Asian countries such as Nepal, Pakistan, and Sri Lanka. Al-Basar International Foundation (BIF) started its activity in 1989 in Pakistan and later, extended its operations to Africa in 1991, conducting two eye camps in Zanzibar and Niamey, Niger. To the best of the author’s knowledge, these were the first organized eye camps ever held in Africa, to address the problem en mass.

MES is a crash eye program dealing mostly with cataract cases which account for almost 50% of the world’s blindness. During a short period, 400 to 600 eye surgeries were performed with meager resources in remote areas with substantial outcomes.
The main causes of diminished vision and blindness worldwide are: cataract 47.8%, glaucoma 12.3%, age-related macular degeneration (AMD) 8.7%, corneal opacities 5.1%, diabetic retinopathy 4.8%, childhood blindness 3.9%, and trachoma 3.6%.[1] This is in addition to uncorrected refractive errors for which accurate data is not available.

Cataract, which makes up the single most common cause of blindness, is a significant clouding of the eye’s natural lens, that compromise the amount of light focused on to the retina i.e vision.[5] It can cover the lens partially or completely. It is either stationary or rapidly progressive.[6]

Glaucoma, in the other hand, is a group of diseases that lead to deterioration of vision without warning or symptoms. Over three million Americans have it, but only half of them know that they have glaucoma.[7] Intraocular pressure (IOP) increases to dangerous levels, leading to optic nerve damage. This can result in decreased peripheral vision and, eventually, blindness.[8]

Age-related macular degeneration (AMD) is a disease associated with aging that gradually destroys the macula, the center for sharp vision. It is the leading cause of visual impairment and blindness in Americans aged 65 and older.[9]

Diabetics do not only get retinopathy that eventually leads to severe impairment of vision, but also are more likely to develop other eye problems such as cataracts and glaucoma.[10]

Globally, there are an estimated 1.4 million blind children, around three quarters of whom live in developing countries.[11] A recent analysis of data indicated that vitamin A deficiency (xerophthalmia) is the leading cause of childhood blindness in developing countries.[12]

Trachoma is a highly contagious infectious disease of the eye caused by the bacterium Chlamydia trachomatis. Cicatrisation of the conjunctiva with distortion of the eyelids usually results in a blinding corneal scar.[13]

WHY A REVIEW ON MES?

There is not much literature on MES or out-reach eye care programs. Ophthalmologists, public health workers, health administrators and health economists have to be enlightened about MES and their cost-effectiveness. On 28 May, 2003 in Geneva, the Fifty-sixth World Health Assembly (WHA) adopted a resolution that called for countries and the World Health Organization (WHO) to provide more support for the prevention of avoidable blindness, visual impairment and eye care in general. The primary purpose of this review is to increase the awareness of ophthalmologists and eye-health authorities to the importance and feasibility of MES and to reflect on the experience of BIF as a pioneering model for MES, especially in Africa. The other objective is to document the experience of BIF in this field, with reference to the magnitude of the problems encountered, and the results.

METHODOLOGY OF LITERATURE

Review

The methodology adopted to review literature on MES, involved the use of known search engines; Medline, PubMed, MedWeb and AllAboutVision.

The key words for the search were MES, eye camps, eye campaigns, objectives of MES, strategies of MES, vision and mission.

Emphasis was put on literature related to the continents of Africa and Asia. The methodology also involved the review of BIF records.

Much has been published about eye services. However, in this review, the author stresses the following titles; causes of blindness, objectives, operation, management and the benefits of MES, critical appraisal of MES, training for MES and the relationship with other organizations and government agencies.

Findings

Al-Basar International Foundation (BIF), a charitable non-governmental organization, registered in many countries, has been working towards the prevention and eradication of blindness and blinding diseases since 1989. It has a comprehensive “Blindness Control Program” which consists of establishing and operating eye hospitals, running human resource development centers and conducting mobile eye services (MES).

The major objective of the MES of the BIF is to provide eye care of the highest possible standard on the door-steps of under-served population of Africa and Asia, to help countries to reduce the backlog of cataract surgeries and to manage other causes of blindness with medicines and glasses.[14]

Operation of MES

BIF has developed its own professional team to run the MES. For this purpose, two hospitals, one in Karachi (Pakistan) and the other in Khartoum (Sudan) were established to teach and train personnel at the highest level alongside 17 hospitals in other parts of the Asia and Africa.
When and wherever eye campaigns are planned, a complete team of 18 members, composed of three senior and three junior surgeons, nine paramedics (ophthalmic nurses and technicians) and two managerial staff and a cook are drawn from the two hospitals mentioned above. The team travels with all necessary equipment/instruments i.e. microscopes, ophthalmoscopes, retinoscopes, a-scans, operating lights, autoclaves, ovens, microsurgical instruments, reading and distance glasses, eye-medicines and medical consumables. At the end of an eye camp, two post-operative follow-ups are performed; the first within a week and the second, 6-8 weeks later.

The procedure used by BIF in setting up a camp is as follows:

Selection of the site for the eye camp
The location of the camp site is determined by the demand of the people in a particular area for the services expected to be provided by the camp. Selection criteria include the density of population, size of the area to be served, and availability of statistics concerning eye morbidity. Availability of infrastructure and auxiliary services required for the camp is also a consideration. Permission is sought from the Ministry of Health in the selected country, and the licensing of the medical team obtained. Fitting BIF work into the national plan of prevention of blindness of the concerned country is an essential objective, so a request is made for information on eye diseases such as the prevalence and percentage of cataract blindness, incidence of glaucoma, trachoma, vitamin-A deficiency and other related eye diseases in the area.

Advance preparatory visit to the camp site
Important also is a preparatory visit to the site of the camp during which a check of the following is made:

- Camp site: (a) Preferably a large hospital or school to accommodate 3000 - 4000 outpatients, and 200 - 300 inpatients. (b) Availability of water and electricity supply at the camp site preferably 24 hours a day, seven days a week. (c) Furnished properly with air-conditioned operating rooms.
- Lodgings: For a team of 18-20 members should have bathrooms.
- Transportation: Vehicle to transport the team members to and from the camp site in the morning and late at night for one week or more as required.
- Meals for In-patients: Provision of meals to patients undergoing surgery throughout their stay.

The responsibilities of the local organizer of the camp.
The local organizer is expected to:

- Ensure that all necessary legal requirements are met before the opening date of the camp. These might include obtaining a written permission for the organization of the camp from the authorities concerned, procurement of the necessary visas for the team members, as well as import/export tax exemption and a permit for the clearance of medicines and equipment from customs, and arrangements for the reception of the team on arrival.
- Advertise the camp with exact dates, using flyers, pamphlets, banners and in the national media i.e. Radio, TV etc. and of course solicit the help of the tribal leaders.
- Provide five to six translators if necessary and solicit the help of 15 - 20 volunteers to organize the patients on the check-up days.
- Have the operation room prepared and ready: The operating theatre should be air-tight and air-conditioned; a large room/hall can be refurbished for this purpose.

Management of MES
The average cost for a one-week camp is US$ 30,000 - 40,000. This covers the screening and treatment of 4000 - 6000 patients, 400 - 600 cataract operations with phacoemulsification or extra-capsular cataract extraction with intraocular lens implantation (ECCE-IOL) and the distribution of 1000 eye-glasses. BIF is a charitable organization that accepts donations from individuals, groups, companies, different NGOs, and governments etc.

Outcomes of Al-Basar’s MES
More than 38 countries have been included in this exercise, during which more than 620 eye camps have been conducted. More than two million people have benefited from the services, receiving medicines, glasses and some eye-health education. In these eye camps, about 180,000 sight restoring surgeries have been performed for cataracts, glaucoma etc.

Criticism on MES
MES are usually criticized for the quality of the surgery performed especially with regard to a proper follow-up of the patients operated on. However, BIF MES has adopted a ‘Quality Managed Cataract Surgeries Program’ with a thorough pre-operative evaluation, strict intra-operative environment, meticulous post-operative schedules and surgeries performed by MES-oriented cataract surgeons.

Training for MES
BIF established its first hospital, Al-Ibrahim Eye Hospital in 1990 in Karachi, Pakistan. The hospital provides teaching and training to doctors, ophthalmologists and ophthalmic nurses and technicians. This centre is well-recognized
nationally and internationally. Most of the staff of MES and other hospitals of the foundation are drawn from this hospital. Another big hospital was established in Khartoum, Sudan, in 1996 for service delivery. In 2003, this hospital moved to a multi-storey building, was named Makkah Eye Complex, and started programs for teaching and training. It also provides support and manpower to other centres and MES.

Collaboration with other organizations and Governments
A request to conduct an eye camp is usually received from local NGOs, international NGOs and governments. Communication is via the BIF local hospitals or the BIF main office in Saudi Arabia. Local NGOs or/and the governments actively facilitate the selection of the area and the acquisition of written permission for the MES. In some countries, this would include the registration of BIF medical staff in the local Medical Council.

CONCLUSION

The role of mobile eye services is very important in tackling the problem of blindness with special reference to the global initiative of vision 2020. It has significantly helped needy countries and people of Africa and Asia. As BIF has developed its own teams for the services, the pace of the activities should be sustained so that more campaigns can be organized and more hospitals opened. Cataract blindness has reached frightening proportions. The adoption of the MES concept by WHO and IAPB, would significantly help to increase the rate at which surgeries for cataracts are performed and thereby reduce the burden of blindness in developing countries. This is achievable only by providing high quality surgeries with the help of professional and dedicated team of surgeons.

BIF, whose basic principle and obligation is to serve people irrespective of race, sex and creed endeavours to provide this service.

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