

compared to baseline estimates and projections (40% for active trachoma and 25% for visual impairment), the programme was not adequate to control trichiasis.

Conclusion: The SAFE strategy may be effective when implemented for a longer duration, to an adequate extent, and with concurrent development programmes. SAFE should be routinely evaluated in order to improve its implementation. Further investigation of its socio-economic impact is recommended.

Evaluation of cataract surgical outcomes in Cicendo Eye Hospital, Bandung, West Java, Indonesia



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Aims: Cicendo Eye Hospital is a referral hospital in West Java Province. Every year, the hospital performs about three thousand cataract operations on average. However, cataract surgical outcome has not been evaluated. Outcome is an important indicator for monitoring the progress of the hospital's cataract surgical services towards the goals of VISION 2020.

Methods: This was a prospective observational study of all consecutive, age-related cataract operations booked on the elective list at the hospital from 1 April 2006 to 31 June 2006. Data were collected by means of a standardised computer cataract surgery outcome record form. Pre-operative visual status was recorded and the post-operative visual outcomes were measured at one day and one month after surgery. Analysis was done to identify the risk factors for poor outcome.

Results: A total of 443 patients were operated on. The mean age was 63 years and 52% of all patients were male. Using the WHO definition, 26.6% were blind pre-operatively and 72.69% of all eyes operated had visual acuity <3/60. Most of the operations were extracapsular extractions with intraocular implantation. One day after surgery, 42.44% of eyes achieved a visual outcome better than 6/18. At one month, this was the case for 76.08% of eyes. A poor outcome of less than 3/60 was seen in 11 cases (2.48%) at one month after surgery. Intra- and post-operative complications were seen in 10.84% of all cases, mainly due to vitreous loss (66.67%). Intra-operative complications, systemic diseases present before the operation, and associated eye diseases were significant risk factors for poor outcome.

Conclusion: At one month after surgery, visual outcome of the operated eye almost attained WHO criteria for available correction. The most significant risk factor for poor outcome was intra-operative complications, which could be minimised by improving skills and taking due care during operations.

An evaluation of eye health promotion activities to increase the use of eye care services in the Kilimanjaro VISION 2020 Direct Referral Site programme



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Aims: To assess community awareness about the Kilimanjaro VISION 2020 Direct Referral Site (DRS) eye care programme in Tanzania and the effectiveness of promotion strategies to increase the use of eye care services, and to solicit ideas on how these activities can be improved.

Methods: Quantitative methods were used to analyse secondary data (30,019 patient records collected at the point of service between January 2003 and June 2006) about how patients received information about the Kilimanjaro VISION 2020 DRS programme. Additionally, 75 interviews were conducted at markets,

mosques, and churches in the districts of Same, Mwanga, and Hai to complement the retrospective data. Qualitative methods were used to collect perceptions about eye diseases and about the programme from patients, the community, and health facility personnel. Fifteen semi-structured interviews were conducted with patients and families of operated and non-operated cataract patients. Focus group discussions with community leaders and health facility workers involved a total of 47 participants. Purposive non-probability sampling was used to select participants. The sample included a roughly equal balance of men and women.

Results: The quantitative analysis of existing data revealed that most respondents (39.3%) had received information from churches or mosques. The second most frequently mentioned source of information was posters (25.4% of responses), followed by radio, medical personnel, other sources, and village leaders. The qualitative analysis showed a high level of awareness about eye diseases, with cataract emerging as the most commonly recognised eye problem. Some people were aware that an operation was the treatment for cataract, but there was limited understanding amongst the community and health facility workers of what the operation entailed. However, patients who had undergone the operation were able to give quite detailed accounts. The conceptions held by community members provided useful entry points for future promotional work. One community member suggested that "the word upasujaji (operation) gives a bad impression, meaning to cut the eye." Suggestions from others included explaining the operation in terms of cleaning of the eye, removing the cataract, or correcting the eye. Many people in the DRS areas were able to describe in detail how the programme worked and what services were provided. However, users wanted more clarity, particularly about the costs of surgery. Health facility workers were both aware of and involved in the promotional activities. The community perceived the DRS programme as providing an affordable service close to home which included transportation to hospital. People reported that the eye health promotion activities had helped to dispel fear about surgery. There were, however, a few comments about how the programme had become too "business-like," not allowing enough time for detailed examination. Opinions about how best to communicate the DRS programme emphasised multiple-method approaches, and suggested improvements to the posters, greater use of interpersonal channels, more time for promotional activities in the build-up before a DRS visit, and the use of loudspeakers.

Conclusion: Promotional activities have created awareness, encouraged the use of eye care services, provided opportunities for facility workers and community members to participate, and fostered positive attitudes towards the DRS programme. There is room for improvement: we can increase the reach of promotional activities, perfect the posters, ensure greater clarity on the issue of fees for services, and build interpersonal channels to encourage more two-way communication with users.

Cataract surgical outcome and gender-specific barriers to cataract services in Tilganga Eye Centre and its outreach microsurgical eye clinics in Nepal



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Aims: To evaluate the cataract surgical outcome in Tilganga Eye Centre (TEC) and its outreach microsurgical eye clinic, to determine the barriers to patient uptake of cataract services in both urban (TEC) and rural (outreach clinic) settings, and to explore gender-specific health care-seeking behaviour.

Methods: The records of 562 patients who had undergone cataract surgery in the hospital from 1 January 2006 to 30 June 2006 and of 178 patients treated by the outreach clinics were analysed. Surgical

outcomes were measured using the OUTCOME software package. An open-ended questionnaire was used to interview 80 cataract patients with visual acuity <6/60 (38 in hospital, 42 in outreach clinics), in order to explore possible gender-specific barriers to cataract surgery. **Results:** At discharge from the hospital, 69.9% of patients presented with visual acuity (VA) >6/18 and 78% presented with best corrected visual acuity (BCVA) >6/18. At the three-week follow-up, 79.4% presented with VA >6/18. On providing them with best correction, VA was >6/18 in 93.2%. A total of 50 (8.9%) presented with VA <6/60 at discharge. At three-week follow-up, 2.8% presented with VA <6/60, which improved to 2.4% when best corrected. At discharge from the outreach clinic, 79.2% of patients presented with VA >6/18 and 85.5% presented with BCVA >6/18. At the three-week follow-up, 72.8% presented with VA >6/18. When best corrected, VA was >6/18 in 93.6%. A total of 16 (9%) presented with VA <6/60 at discharge. At three-week follow-up, 5.8% presented with VA <6/60, which improved to 2.6% when best corrected. The rate of complications was 7.8% in the hospital and 6.7% in the outreach clinics. The causes of poor outcome were surgical complications and case selection in the hospital, and refractive error ($p=0.02$) and case selection in the outreach clinics. Urban women chose to seek cataract services later, as they felt able to cope with their deteriorating vision, whereas rural women gave the long distance to services as the main reason for postponing surgery. For urban and rural men, the main barriers were cost and the lack of someone to accompany them.

Conclusion: Good visual outcome can be achieved in outreach clinics if strict protocols are followed. Operative complications and the rate of poor vision are not significantly different in both settings, despite the differences in environment. To bridge the barriers presented by distance and a lack of money, it is possible to carry out operations with good outcomes closer to rural communities.

Cost

Cost analysis of cataract services by eye care providers in Nigeria



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Aim: To determine and compare cost-effectiveness of cataract services in different eye care settings in Nigeria.

Methods: The study was conducted in three eye care facilities in the states of Lagos and Ogun in Nigeria between January and December 2005. Patient records were retrieved from three eye hospitals: a private hospital, a government hospital, and an NGO hospital. Recruitment criteria included all bilaterally blind cataract patients above the age of 40 with visual acuity (VA) <6/60 on the Snellen visual acuity chart who had undergone cataract operations in one eye. Twenty to thirty per cent of the operated patients were traced to their homes and interviewed to determine their vision-related quality of life, using an adapted version of the Indian vision function questionnaire, the IND-VFQ33. Cost data included provider and patient costs. Major outcome measures were cost-effectiveness ratios, restoration of good vision post-operatively, gain in utility and quality-adjusted life years (QALYs) post-operatively, change in vision-related quality of life, and patient satisfaction.

Results: Within the period of the study, 350 cataract operations were performed in the private hospital, 53 in the government hospital, and 543 in the NGO hospital. Among the patients who were bilaterally blind, 60 were in the private hospital (17%), 15 were in the government hospital (28%), and 147 were in the NGO hospital (27%). The mean age was 66.59 years (standard deviation 0.50). The unit cost of cataract surgery was highest in the government hospital (US \$2,734), while good sight restoration (VA \geq 6/18) was highest in the private hospital. The NGO hospital was the most cost-effective, at US \$224 per QALY gained. Patient

satisfaction was greatest for the private hospital and lowest for the government hospital.

Conclusion: Although cataract surgery in the private and NGO eye care sectors in Nigeria falls within an acceptable range of cost-effectiveness, there is an urgent need to reduce unit cost. Cost outlay, output and outcome of cataract surgery need to be reviewed in the government sector.

Comparing the cost-effectiveness of school eye screening versus a primary eye care model to provide refractive error services for children in India



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Aim: To compare the cost-effectiveness of school eye screening (SES) for refractive errors with a primary eye care (PEC) model that provides comprehensive eye care, including refractive services, to children of school age.

Methods: Retrospective data from SES and PEC clinics in Delhi slums for 2005–2006 were examined. Children who had been dispensed spectacles through both models over 12 months were surveyed. Visual acuity with and without spectacles was measured and the children's spectacle-wearing behaviour was evaluated. The quality-adjusted life years (QALYs) gained were calculated using utility analysis for each model and were compared.

Results: The SES model was more cost-effective than the PEC model in all areas. In the SES model, the cost to examine a child was US \$0.64, the cost to examine and dispense spectacles was US \$12.13, and the undiscounted cost per QALY was US \$18.11. In the PEC model the cost of examining a child was US \$3.10, the cost of examining and dispensing spectacles was US \$25.58, and the undiscounted cost per QALY was US \$45.42. The correlation of spectacles prescribed to spectacles manufactured was excellent in both models, with a combined correlation of 98%. The sensitivity of teachers screening for vision impairment was 100%, while their specificity was 59.8%.

Conclusion: School eye screening in India is a highly cost-effective method of correcting visual impairment due to refractive errors in school-age children and should be expanded where possible. As not all children can be examined through school screening, comprehensive eye care clinics play an important role in the correction of refractive errors, but at a higher cost.



Barry Lester

The South Delhi slum where Barry Lester conducted a survey of children who had received spectacles. INDIA