Clearing the cataract backlog

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From IMPACT: an International Initiative against Avoidable Disablement

One of many invaluable contributions which Professor Barrie Jones has made to international action for the prevention of blindness is that he so often found the apt phrase to express its objectives. At one of the earliest meetings of the International Agency he defined that objective as 'eliminating the over-burden of avoidable blindness'. That was later quantified to mean reducing the prevalence to not more than 0.5% of the population in any country and not more than 1% in any community.

During the 1960s surveys revealed the formidable scale of that 'over-burden', associated with cataract in the Indian subcontinent, with trachoma in the Middle East, with onchocerciasis in West Africa, and with that complex of malnutrition and infection which was later identified as xerophthalmia. The Indian figures revealed that 40% of the blindness was due to cataract, and for some years it was assumed that this phenomenon was peculiar to the Indian subcontinent. Later surveys in East Africa, in the Western Pacific region, and more recently in Latin America have revealed very similar figures, between 35% and 45% of the blindness due to cataract, and, though the most spectacular figures are in Southern Asia, it now seems likely that an excessive prevalence of cataract will be found in any underserved, deprived community where it is possible to identify blindness among upper age groups.

At the outset the World Health Organisation was reluctant to include cataract as one of the priorities of the global programme for the prevention of blindness. It was argued that trachoma and xerophthalmia are preventable at the level of primary health, that onchocerciasis can be controlled by an environmental intervention, but that cataract, being curable but not preventable, could not logically be included in a preventive programme. Such pendency was soon swept away by the flood of statistics and cataract was included as one of the four main priorities of the global programme.

Eye camps

In 1960 the Royal Commonwealth Society for the

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Blind, in collaboration with Indian ophthalmologists who had pioneered techniques of mass treatment in rural areas, began a process of upgrading the administration, surgical supervision, and aftercare in 'eye camps' which, at the time, were looked upon with understandable reserve by surgeons accustomed to more orthodox city practice. In 1969 the society launched the Eyes of India campaign, in which we invited partners throughout India to collaborate in organising mass treatment projects for cataract and to identify the major causes of rural blindness. That campaign—co-ordinated by a remarkable, blind, Indian administrator, Dr Rajendra Vyas—led on to the Indian national programme for the prevention of blindness launched a few years later on the personal initiative of Mrs Indira Gandhi. One of the objectives of that programme is to clear the backlog of cataract, which is estimated to cause the blindness of at least six million people in India.

Last year over 900 000 cataract operations were performed in India. Most of these operations were in rural camps, and, if the figures in Pakistan and Bangladesh are added, the total number is well in excess of 1 million. The Royal Commonwealth Society's programme in India involved camps in more than 2000 villages where 180 000 cataract operations were performed at a unit cost averaging £5-£6.

The word 'camp' perhaps gives a misleading impression of the scale of organisation and quality of treatment which is now possible in such projects. The small village camp, performing perhaps 40 cataract operations, ideally serves the needs of a single community, but much larger camps are now regularly organised involving impressive resources of a whole township: transport, multiple operating centres, thousands of daily meals, and a small army of volunteers.

In a 'disability camp' organised by the Government of India during the launching of the IMPACT programme in 1983 the 'camp'—preceded by the screening of 40 000 potential patients—consisted of a tented township organised round a well equipped State hospital. Eighty Indian visiting specialists joined with local doctors in performing some 12 000 operations, mostly for cataract but also with orthopaedic and ENT interventions.

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A mobile unit can range in size from a single vehicle to what is virtually a mobile hospital with a fleet of transport and comprehensive equipment. Sometimes, as in Pakistan and East Africa, supplies are sustained by a light aircraft.

Unprecedented expansion

The cataract backlog must be seen in the intimidating perspective of population growth in developing countries. Over the next 40 years the population of those countries is expected to double, but the number of people over 55 years of age will quadruple. Dr Carl Kupfer has estimated that in India, in order to reduce the accumulation of some 6 million people now blind by cataract and to keep pace with the 1–1½ million new cases each year, the number of operations performed annually must be in the region of 3 million. If the same arithmetic is applied to other mass population countries of Asia and Africa, a vast surgical need is revealed, implying unprecedented expansion in the whole base and concept of the ophthalmic profession.

Ideally cataract operations should be performed only by a fully qualified ophthalmic surgeon. However, the number of patients is so great and the number of surgeons is so few that to insist on that principle everywhere would exclude the possibility of clearing the backlog. Fortunately it has been possible to approach this question not in terms of absolute principle but in relation to the degree of training and supervision necessary to achieve a safe cataract operation. In Bangladesh, with the help of ophthalmologists from Australia, general practitioners have been trained in a six-month course to undertake cataract surgery in rural areas. With their addition to the eye camp programme the number of cataract operations in that country has more than doubled over the last four years. In Kenya specially trained clinical officers, working with the mobile units, perform cataract operations. A rigorous review undertaken by the International Eye Foundation concluded that the work of these officers compared favourably with that of ophthalmic surgeons working in similar conditions. Specially licensed auxiliaries also undertake cataract operations in Fiji, Vietnam, and parts of China.

If it is possible to have a 'bottleneck' connected to a 'backlog' then the bottleneck in most eye camps is the time patients remain in the camp after treatment. The operation takes about 10 minutes, the convalescence from seven to 13 days. We have resisted the temptation to use lens implants because of the complications which might occur when a patient returns to a remote rural village. Consideration is now being given to whether, with improved operat-

ing procedures with more sutures, it might be possible safely to reduce the convalescent period to two days, thus opening the possibility of at least doubling the number of operations in each eye camp. Subjecting this traditional system to operational analysis must be done in such a way as not to destroy its spirit of improvisation and community involvement.

On the plains of India camps are suspended during the hot summer months. In areas where there is a regular demand for surgery small eye hospitals are being built to continue the work throughout the year.

The national programme in Thailand is particularly interesting because of its determination to clear the cataract backlog without creating a special 'vertical' structure for that purpose. It is estimated that there are 500 000 blind people in Thailand (1.14% of the total population) and that 47% of the blindness is due to cataract. District hospitals—there are more than 450 of them serving a rural population of 44 million—have the responsibility for case finding and postoperative care of cataract patients, who are referred for operation to 75 regional hospitals.

In a Thai district of 100 000 population there are likely to be from 250 to 400 cases of blinding cataract. With over 80 eye specialists now practising in rural areas, compared with 20 five years ago, the expectation is that by the year 1995 the anticipated backlog of 400 000 cases of curable cataract will have been cleared and, at the same time, the country's surgical capacity will have increased to deal with the anticipated 50 000 new cases each year. Under this system the unit cost of the cataract operation, convalescence, and spectacles is estimated at \$20, approximately £14.

Not only cataract

It is increasingly being recognised that the cataract backlog can no longer be treated in isolation. When the IMPACT programme was launched in Thailand last December, it was estimated that there are at least 300 000 deaf people in the country who could have a measure of hearing restored by middle ear surgery followed by amplification. Among orthopaedically handicapped people there are at least 200 000, mostly victims of poliomyelitis, who could have movement restored by surgery and prosthetic aids. Similar figures are being recorded in many other countries representing a disability backlog of such monstrous proportions that it must constitute one of the major challenges over the next decade to the health services of developing countries. The disablement lobbies in many countries, increasingly aware of the medical possibilities, are understandably demanding that the disabled in this generation have a right to remedial surgery.

Perhaps we too readily assume that this is a problem only for the developing countries. At the national seminar on the prevention of disablement, held at the Royal Society in London in February 1986 it was estimated that cataract is the cause of blindness for 8000–10 000 of the registered blind of the United

Kingdom. Many of these patients may have complicating factors but a majority could probably benefit from surgery. In some areas, particularly in the South of England, the waiting time for a cataract operation can be from three to four years. Perhaps we could do with an eye camp in Sussex.