

Chapter 5

ORGANISING AN IDEAL EYE DONATION CENTRE / EYE BANK

Eye Donation Centre

The Eye Donation Centres can be classified into two categories

- (a) Those having facilities for only in-house enucleation :-

In hospitals or nursing homes where there are facilities provided to attend to the calls received within their own premises, the R.M.Os are given the necessary training to remove corneas from the bodies of the dead patients in the extent of deaths taking place within the hospital itself. **They do not attend to calls received from outside.**

- (b) Those having facilities for in-house enucleation as well as to attend calls received from outside :-

There are voluntary organisations and hospitals which also attend to calls **received from outside** by sending the required personnel along with the necessary instruments and equipment to the residence of the deceased or other hospitals etc. where there are no such facilities for enucleation. In our country, many voluntary organisations have involved themselves in eye donation activity as a part of service to the society. As mentioned in Chapter 2, in Mumbai there are two such Centres which have devoted themselves wholeheartedly to the cause of eye donation, one of them being the Arpan Eye Bank, where they have established a panel of family physicians who attend to Eye Donation calls in rotation on weekly basis. The other one is Tarun Mitra Mandal which has also established an intensive network of family physicians and social workers areawise all over Bombay.

The equipment requirements of an Eye Donation Centre would mainly consist of the required number of sets for enucleation (see Appendix D Part (e)), a refrigerator for storing ice-bags or the containers viz. thermocol boxes or thermos or igloos required for transporting eye balls or corneas sterile bottles containing metal clamps for holding the eye balls and an autoclave.

Eye Bank

As mentioned in Chapter 1, an ideal eye bank in the true sense of the term must provide all the facilities for enucleation as well as for evaluation, testing and preservation of corneas besides coordinating with various eye donation centres for collection and distribution of corneas.

(A) BASIC REQUIREMENTS

I. SPACE

(i) **For Testing Laboratories:** The area housing the laboratory has to be air-conditioned and care taken to ensure the maintenance of aseptic conditions to avoid any type of contamination while processing and evaluating the corneas. A total of 400 to 500 Sq.Ft. space is recommended for accommodating the laboratory space which would also include the space for storage, handling and distribution of corneas. If the facilities are available for blood testing in the hospital, the requirement for the serology testing may not be necessary.

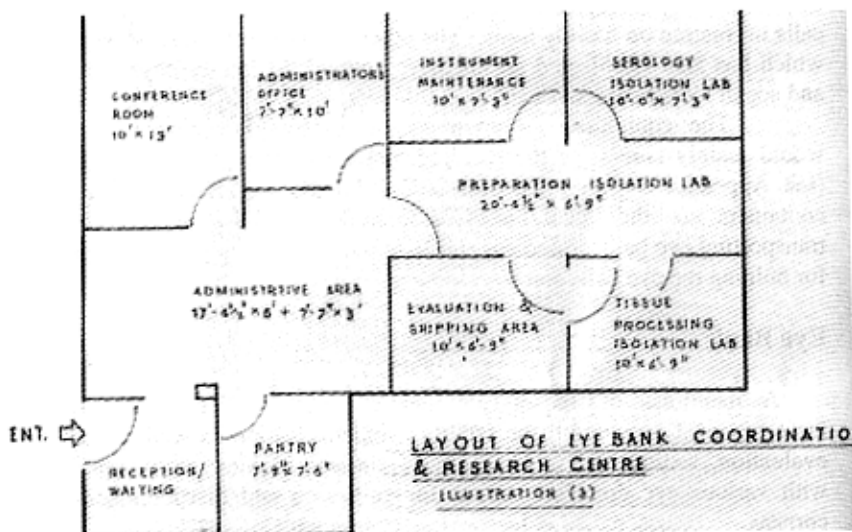
(ii) **For Administrative Purposes:** An additional space of atleast 250 to 300 Sq.Ft., is recommended to house the administration and clerical staff including the space for records, etc.

A layout for an ideal eye bank is shown in illustration (3). A total of 600 to 800 Sq.Ft. space is recommended for a well-planned eye bank to take care of various requirements.

II. EQUIPMENT

Besides the few sets of surgical instruments required for enucleation [See Appendix D part (c)], other equipment required for an eye bank would consist of:

- (i) Two Refrigerators – one for storing the corneal preservation media and the corneal tissue (frost-free refrigerator with -20° freezer is preferred) with a freezer section to provide ice-bags or shipping containers and the other smaller one would be needed for storing blood and test kits.



- (ii) Blood Testing equipment.
- (iii) Autoclave for sterilizing instruments.
- (iv) Ultraviolet Hood – under which tissue dissection and preservation could be performed.
- (v) Slit lamp for evaluation of cornea.
- (vi) Specular Microscope. This is not an absolute necessity for an Eye Bank (see the note on Corneal Endothelial Evaluation – Chapter 4).

It is estimated that besides the cost of space to set up a well-planned, well-equipped eye bank with all the furniture, fixtures, partitions, equipments including air conditioning, laboratory area etc., would cost around 15-20 lakh of rupees.

III. ORGANISATION

Depending upon the workload, the number of staff required to man an eye bank would vary. However, in any case the following staff would be most essential for its successful functioning:

- (i) A technologist/s trained in all aspects of eye banking including the screening of corneas and carrying out the necessary blood tests.
- (ii) A Medical Director – either on full-time basis or on an honorary basis for providing overall guidance and advice. An Ophthalmologist with a background in corneal transplant would be desirable.
- (iii) An Eye Bank Manager to exercise an overall supervision of the Eye Bank under the direction and control of the Medical Director.
- (iv) An Administrative Assistant-cum-Clerk.
- (v) A Vehicle Driver (where necessary)
- (vi) Telephone with Fax facility. Further, some additional staff such as office boy/s, an operator for taking and sending round-the-clock messages etc. would be also required depending upon the workload.

IV. EXPENSES

This can be divided into two categories :

(A) Capital Cost

Besides the cost for procuring the necessary space, this would include the expenses for setting up the laboratory and administrative office and procuring all the necessary equipment. This can be divided into three parts:

1. Cost for procuring the space: This would depend on the location of the space.
2. Cost for setting up the laboratory and administrative office including the cost of air-conditioning (the laboratory part), electrification and furniture etc. This can be estimated to be between Rs.10 to 12 lakhs depending upon the area involved.
3. Cost for equipment etc.: This can be estimated to be around Rs.4 to 5 lakhs. This would include the cost of slit lamp, refrigerator, autoclave, the U.V. hood etc. If the blood testing facilities are to be provided, this cost would be extra. It also does not include the cost of specular microscope which can be considered as an optional.
4. Cost of vehicle: This would depend upon the type of vehicle procured. If the eye bank is attached to a large hospital, the vehicles available at the disposal of the hospital for other needs can be utilised to attend a call for enucleation also. Alternatively, if the number of calls are few, taxi or auto-rickshaw fare can be paid to the medical staff attending the calls.

(B) RECURRING EXPENDITURE

(i) Expenses for various tests: The expenses for carrying out the four tests, viz. HIV, Hepatitis B, Hepatitis C, and Syphilis, are estimated to be Rs.1,000 to 1,200 per test.

(ii) The staff salary and other recurring expenses per month are estimated to be as under:

a. Technician (no. depending upon workload)	Rs.3500-5000
b. Administrator / Eye Bank Manager (Part-time or Full-time, depending upon workload)	Rs.4500-7500
c. Office boy/s (no. depending upon workload)	Rs.2500-3000
d. Medical Director (Honorarium)	Rs.5000-7500
e. Clerk-cum-Telephone Operator/s	Rs.3000-3500
f. Telephone, Fax, electricity	Rs.3000-5000
g. Airconditioning for Laboratories	Rs.4000-5000
h. Rental of premises and other expenses— This would depend on the location and other factors.	

- i. The cost of attending calls for enucleation—
This would obviously depend upon the distance required to attend the call.
- j. Cost of services of medical practitioners for enucleation. (This can be avoided if a duly trained technician is permitted by the law to carry out the same).

The recurring expenditure would also cover an expenditure on such items as providing thermocol boxes or vacuum flask (for carrying the vials inside which the eye balls are to be kept), antibiotics required at the time of removal of corneas, ice, bottles containing stainless steel clamps to hold corneas, conveyance, medicines, viz. antibiotics in which eye balls are preserved, phone calls etc.

Need for a Centralised Eye Bank Coordination Centre

To justify such an organisation and the capital and recurring expenses involved in setting it up, there must be a minimum collection of 2000 to 2500 pairs of eye balls annually by the concerned eye bank. Presently, in our country, there is hardly any eye bank which is being run on such a systematic and professional basis. As mentioned earlier, a majority of our eye banks are in reality eye donation centres which collect between 10 to 100 pairs of eye balls in a year. They do not possess any equipment or the required staff to check the quality of the corneas collected by them. It may be beneficial to connect a number of such small eye donation centres to an apex eye bank where all the equipment, media and other facilities including the well-established means of communication are available. This apex eye bank could coordinate its activities with those of other apex eye banks and corneal transplant centres.

In Mumbai, where several eye donation centres have been functioning in the city and its various suburbs, an Eye Bank Coordination and Research Centre has been established and nearly 80 percent of all the corneas received in the city from various eye donation centres are processed and evaluated at this Centre. The Centre has been provided with all the equipment including a specular microscope and also employs trained technicians to carry out all the activities related to the testing and evaluation of corneas. The Centre can be regarded as a model coordination centre. Presently, it is the coordinating agency for liaising with the concerned Ophthalmologists and the needy patients who register their needs with the Centre in advance. (See Appendix F(II) for more details.)

Sources of Eye Bank Funding

The funding of eye banks or eye donation centres is a very vital aspect calling for a fresh approach and thinking on the part of all concerned in our country. It will be quite obvious from the above

description that the starting and running of a well-planned and well-equipped eye bank would require a lot of funding.

Besides the capital cost involved in the procurement of all the equipment and furniture etc. required for the efficient functioning of the eye bank as described above, the recurring cost involved in maintaining the organisation and for carrying out various blood tests, maintenance of premises, attending to the enucleation and procurement of the requisite medium for preserving the corneas would be quite high.

Because of the absence of any financial stringency in the U.S.A. and U.K., the eye banks in these countries are well-organised and managed professionally being able to provide rigorous check-up as compared to the eye banks in our country. The largest eye bank in Baltimore, U.S.A. collects over 3500 pairs of eye balls annually. It has a full-time staff of 35 persons and its activities occupy a four-storeyed building. An average eye bank in the U.S.A. collects about 500 to 1000 pairs of corneas annually. Many of these eye banks are attached to large hospitals.

A study of eye banking in other countries reveals that in some of the developed countries like the U.S.A., the U.K., etc., the eye banks are run on a "No Profit - No Loss" basis and the recipient individual is charged officially for the eye balls provided. In London, the eye banks charge Pounds 100 to 175, i.e. about Rs.4750 to Rs.8250 per eyeball. In the U.S.A., the charges (labelled popularly as "Tissue Processing Fees") are \$1500 (Rs.70000) and are recovered from the medical insurance. In countries like Canada, besides the Tissue Processing Fees, the eye banks also get a substantial financial assistance from the Government.

Funding Scenario in India

There are eye donation centres or eye banks attached to an eye hospital. The cost of eye banking involving collection, processing and evaluation of cornea to be recovered will form part of overall expenditure of the hospital or will be recovered as a part of corneal transplant only.

Some of the eye donation centres in our country are run by voluntary organisations with the assistance provided by dedicated social workers and medical practitioners. For example, in the Mumbai city, number of such eye donation centres have been started by voluntary organisations assisted by dedicated social workers and medical practitioners. Some of the eye donation centres / banks also pay an honorarium to the medical practitioners who carry out the enucleation of corneas. As the corneas are provided free of cost as per the current practice, these organisations have to depend mostly on private donations.

At Eye Bank Coordination & Research Centre, in Mumbai, the corneas are provided free of cost or at a nominal cost to the poor patients. The Centre is dependent on voluntary donations to cover these costs. For those patients who are well-to-do and who can afford, are

requested to contribute as per their financial capacity towards the actual cost of processing, evaluation etc. The actual cost being incurred by the Centre is around Rs.4500/- - Rs.5000/- per cornea. This does not cover the cost of retrieval of cornea which is incurred by the Eye Donation Centres.

While no funding is provided by the State Government to such Eye Donation Centres / Eye Banks, the Government of India through its National Programme for Control of Blindness has committed to provide a sum of Rs.250 for every eye collected by the Eye Donation Centre and a sum of Rs.500 per eye to Eye Banks towards the cost of enucleation, processing, evaluation and preserving in MK media etc. There is also a non-recurring assistance of Rs.50,000/- provided for development of Eye Donation Centre and Rs.5,00,000/- for an Eye Bank for setting up / strengthening. The details about the same can be obtained by writing to the Secretary, Health Department, Government of India, New Delhi. The application for the financial assistance has to be recommended by the Health Department of State Government and these Eye Banks / Eye Donation Centres are required to be members of Eye Bank Association of India.

However, the experience of the author, while seeking financial assistance under the above scheme for the Eye Bank Coordination & Research Centre in Mumbai has not been encouraging in this regard. Inpite of being a registered Eye Bank and meeting all the criteria having a fully trained staff and state-of-the art equipment, the State Government has not responded by way of sending the necessary recommendation to the Central Government without any valid reason.