

Community Eye Health

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SUPPORTING VISION 2020: THE RIGHT TO SIGHT

TECHNOLOGY FOR VISION 2020

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The Global Initiative for the Elimination of Avoidable Blindness (World Health Organization, 1997), which is VISION 2020's base document, emphasises the need for appropriate and affordable technology for the delivery of eye care on a global scale. The past ten years have already seen initiatives which have immeasurably increased access to eye care in developing countries. The outstanding achievement has been the mass production of low cost, high quality intraocular lenses, first by Aurolab in India, and then by the Fred Hollows Foundation. These organizations have substantially reduced the cost of IOLs, which are now widely distributed on the world market, and thus brought high quality cataract surgery within the reach of millions more people.

IAPB Technology for VISION 2020 Working Group

By 2001 working groups had formed to

address VISION 2020 priorities such as low vision and refractive errors. However, it was only in October 2001 that the International Agency for the Prevention of Blindness (IAPB) decided to set up a working group on technology. This group met for the first time at a workshop on 26th and 27th April 2002 in Sydney, Australia, after the International Congress of Ophthalmology. Twenty four people representing 15 organizations attended.

The workshop's objectives were:

- To share information about current availability of resources on appropriate technology for eye care
- To identify priorities for development, taking into account common needs and the resources available
- To agree the way forward.

The working group recognized the wide variation which exists between countries regarding norms and standards of eye care equipment, and committed itself to promoting the use of high quality equipment and consumables within national eye care



Learning to repair & sharpen instruments

Photo: Photography Department, Aravind Eye Hospital, India

A NEW SERIES . . .

APPROPRIATE TECHNOLOGY FOR VISION 2020

The *Journal of Community Eye Health* begins a new series of articles with an introduction by **Catherine Cross, Chairperson, IAPB Technology for VISION 2020 Working Group.**

The Working Group met for the first time on 26 and 27 April, 2002, in Sydney, Australia.

D D Murray McGavin
MD FRCOphth
Editor

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programmes. Further, the group seeks to encourage the development of appropriate national standards and monitoring systems. A series of priorities were agreed by members of the group on which they will work over the coming year.

1. Establishing a purchasing network. It was agreed to set up an e-mail network among the procurement managers responsible for purchasing equipment and consumables for their organizations. The intention is to share information on the suitability of items as well as on issues such as freighting and customs requirements. Procurement managers interested in joining the network should contact Philip Hoare at Sight Savers International (phoare@sightsavers.org).

2. Identifying equipment and consumables for development. It was recognized that further work needs to be done to identify low-cost items for development and how these will be developed. There was discussion over the increasing need for low cost lasers, particularly in the treatment of posterior capsule opacification after cataract surgery. The group felt that research was needed to determine the scale of need for treatment of PCO, as well as for angle closure glaucoma, and agreed that this should be followed up.

3. Achieving a common standard list of equipment and consumables. Several organizations have lists to assist staff and partners order suitable items. However, it was felt that these lists needed to be reviewed and consolidated. It would be helpful to include sections appropriate for setting up services at primary and at secondary level, as well as for training purposes. The list would need to be flexible and adaptable for regional differences, and, most important, information relating to suppliers and manufacturers should be included, with local maintenance and ser-

vice facilities, and guide prices.

Providing an up-to-date service to eye care partners has major financial implications to which the group will have to give further thought. In the meantime, the International Resource Centre at the International Centre for Eye Health has offered to act as a collection point for existing lists, and for the collation of information on equipment maintenance (see below). *All technology group members, and readers of this article, are asked to ensure that copies of relevant information are sent to the Resource Centre, ICEH, at the address given on this page.*

4. Providing service support, education and training. Aravind Eye Hospitals in Tamil Nadu, India have considerable experience in delivery of high quality services. Two colleagues from Aravind made presentations on the equipment requirements for high volume cataract surgery and on issues around servicing and maintenance. Many items of essential eye care equipment lie idle for lack of maintenance or, simply, spare parts. The working group agreed that in order to achieve the objectives of VISION 2020 and aid sustainability, it would be necessary to:

- Integrate equipment maintenance personnel into the eye care team and provide training
- Ensure that all eye care personnel achieve a basic understanding of the principles and practice of maintenance
- Increase the availability of training, information, and post-training support.

A short training course for maintenance personnel has been running at Aravind four times a year for several years and Aravind has facilitated the establishment of a similar course in Kaduna, Nigeria. A different model, of itinerant service personnel, exists in Pakistan and may also start in

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Kenya. Nevertheless, this represents a fraction of the need, and the working group agreed that ways have to be found to expand maintenance training. One idea is the establishment of 'technology centres'.

5. Distribution networks. How often do we find that eye care personnel are hampered by the lack of appropriate and functioning equipment? Ministry of Health eye units, as the end users, often have little or no influence over the ordering and procurement process. This leads to problems such as inappropriate, incomplete, non-standard items being received, so that the equipment is unusable, the ophthalmic personnel cannot work effectively and their morale suffers, as indeed do their patients.

The working group considered the feasibility of a network of regional or national technology centres which could facilitate:

- Bulk purchasing of agreed high volume items
- Advocacy for the registration of essential items not yet included on national Essential Drugs and Appliances lists
- Importing procedures, storage, maintenance, and distribution.

While recognizing the difficulties of making this concept operational, the group agreed to investigate it further to see whether it would be workable in one or more countries.

These were some of the key issues discussed by the IAPB Technology for

VISION 2020 Group. They recognized that improving access to appropriate equipment and supplies is vital to the development of eye care services and the ultimate success of VISION 2020. The group acknowledged that more can quickly be done to make available existing information through the e-mail purchasing network, and potentially through the ICEH Resource Centre. However, some of the other proposals, such as the development of information on the internet, have financial implications which will take time to resolve. We hope to bring readers progress reports in future editions of the Journal.

☆ ☆ ☆

Review Article

Training in Surgical Skills

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It was very interesting to read the letters relating to ICCE / ECCE in the *Journal of Community Eye Health* 2000; 14: 30–31. Many of the comments relate to outcomes of cataract surgery and mention the necessary skills / experience needed to obtain good outcomes. For these to be the norm rather than the exception, a set of conditions is required.

1. Knowledge of the procedure concerned.
2. Supervised training.
3. Practical surgical exposure and practice which leads to
4. Experience.
5. Follow-up and audit of outcomes to inform the previous steps.
6. Changes to steps 1 – 4, as necessary, to improve or maintain outcomes.

In my experience, supervised training and practice are the cornerstones to reaching a level of expertise which allows competent practice and thus experience. In turn, outcomes will improve.

The Role of the Trainee

The old method of 'see one, do one, teach one' does not work as far as surgical training is concerned. In order to learn a practi-

cal procedure it is vital to understand what is happening at each stage of the procedure and, to this end, new trainees should first of all observe and question the trainer. When an experienced surgeon operates he or she is using many small 'tricks' and manoeuvres which may not be obvious to the inexperienced observer. It can be very helpful to write down the steps of an operation in a notebook, firstly, to help learn the order of the procedure and, secondly, as a permanent record of a particular trainer's method.

It can also be very helpful to scrub with the nursing team in order to learn the steps of a procedure, as it is good discipline to anticipate, ahead of the surgeon, what is required next. It has been said that 'a good scrub nurse gives you what you need, not what you ask for!'. Working with nurses in this way can also be useful in terms of team-building.

When learning a new procedure for the first time it is helpful to break it up into small sections.

Instruction in a surgical technique should first of all take place away from patients. The use of plastic eyes or animal eyes is helpful and there are several surgical models which can be used for this.

In my experience it is very useful to attend a micro-surgical skills training course. The importance of learning how to hold instruments, what a particular instrument is for, how to tie knots, etc. cannot be over-emphasised. Traditionally, this has been left to the trainee to pick up by observation and it is interesting to see how many senior surgeons still do not tie reef knots appropriately!

One of the duties of all trainees is to practise. Doing anything to a high level requires dedicated practice and time. Surgery is no exception. This may sound obvious but the number of trainees who practise regularly is very small. If a skills laboratory is not available, then the ordinary operating microscope can be used when the operating theatre is not in use. Only plastic eyes or other non-organic material should be used in the operating theatre and unused sutures (which are no longer sterile) can be saved so that trainees can practise with them. A good set of instruments should be set aside for practice because just as a bad workman blames his tools, a good workman does not use bad tools.

Fig. 1 shows a skills board that has been developed by the Royal College of Ophthalmologists. This allows a number of procedures to be practised.

Fig. 2 shows a skills head which can hold an animal eye or a plastic eye. This simulates a human head and can be used under a microscope.

Pieces of fruit such as grapes and tomatoes are useful for practising capsulorhexis under the operating microscope.

Trainers

Once the microscope and instruments have been mastered and the trainee is comfortable using them, progress will be much more rapid in the operating theatre.

When planning a teaching session in surgical training it is useful to have a well-defined end point.

It is critical that all trainees should have regular and frequent exposure to surgery and there are a number of ways to achieve this.

1. Dedicate a set time on each operating