Guest editorial

Challenges with starting vitreoretinal services in the developing world

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Service development and improvement within ophthalmology has taken a whole new dimension with the constant improvement of equipment, and the development of therapies that significantly improve the management of our patients and as such alters their visual prognosis for the better. This improvement and increased reliance on both diagnostic and surgical equipment with the concomitant use of intravitreal therapies has arguably been felt more in the field of retinal diseases.

In the developing world, the high capital cost of equipment and technology though prohibitive is further exacerbated by the new trend of almost all instruments and accessories being disposable and not reusable. This has added a further economic burden to the practice of vitreo-retinal surgery in the developing world. The advent of modern optical diagnostic scanning and angiography devices has altered the management of several retinal diseases. This is compounded by the need to assess retinal structure after the use of therapies for the eye. Ophthalmologists and providers of healthcare within the developing world are now burdened with additional issues that hitherto where not factored in the setup of retinal services. How does one convince providers to make huge capital purchases of diagnostic and surgical equipment? How do you maintain quality consumable supplies? How do you convince patients to have repeated injections of anti-vascular endothelial growth factor (anti-vegf) inhibitors? How do you convince your department to buy a more expensive microscope? How do you explain the constant need of Ocular Coherence Tomography (OCT) scans? These are a few of the questions one has to ask prior to starting a vitreo-retinal service.

However all these things though difficult are surmountable as long as there is political will from the provider and healthcare institution for the provision of these services. For many developing countries this would mean inter-facing with national Governments which has a dimension of it's own. Most Governments are bureaucratic at the best of times, however without political will and understanding of the impact and morbidity caused by retinal diseases any provider would struggle to start a vitreo-retinal service. The Government also affects the cost of these equipments and consumables through the use of taxes, duties and levies. Some countries have zero rated duty on medical equipment, but even then, the tax authorities understanding of medical consumables is poor and healthcare providers can be penalised by high duties on them. The cost of delivering vitreo-retinal care is high compared to something like small incision cataract surgery, and once again it is important for purchases of healthcare be they, patients, insurance companies or the government to understand that the reimbursement

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costs have to be higher to enable the enterprise to succeed. This is particularly so with the advent of intravitreal injections, where patients with diabetic maculopathy, retinal vascular disease and macular degeneration might require monthly injections for a prolonged period. This burden has been further exacerbated in certain countries by the refusal of the drug licensing authorities to allow the use of an affordable "off label" but widely used alternative to expensive intravitreal therapies.

The other main ingredient in the provision of a vitreo-retinal service is the human resource component. The training requirements are not only for the medical and nursing staff, but technicians have to be trained to operate machines, and medical engineers trained to repair faults and service machines. For the ophthalmologist a period of intense training is required after their general ophthalmology training to become adept at the management of vitreo-retinal conditions. The surgical workload is high as is the complexity of cases, and the mainstay of training is continued immersion in cases. This presents a potential problem when there is no local vitreo-retinal training available. Training would have to be organised outside of the country and this can be difficult given, cost of training, distance, regulatory approvals and language barriers.

After the political will of any healthcare purchaser has been acquired, and all the capital investments have been made, with an appropriate reimbursement tariff and staff have been appropriately trained, there is still a factor in the developing world that makes the practice of vitreo-retinal surgery more difficult than in the developed world. Our patients present later than elsewhere in the world, and unfortunately there are several cases of patients who only present when both eyes are affected. The severe economic constraint of several people in the developing world means that the financial implication of seeking medical attention is not just limited to the cost of healthcare but the loss of earnings one would have to endure, particularly if there is a long distance to seek healthcare. This drastically alters the spectrum of pathology seen in the developing world compared to that seen in higher income countries, the cases require more aggressive surgical intervention and input with perhaps more operations performed.

In order to develop and execute a high quality retinal service it is imperative to liase with those who have been through the procedure before there, are several problems that can be overcome by discussing with colleagues in the same country or region. It helps if possible to form institutional links for support and alliances. Sometimes in the developing world it is simple things like considering the quality of electricity before deciding on the machine to buy that might make a difference between a machine that is perpetually faulty and requires repairs and one that isn't. These institutional links can help with staff training, advice with strategy and procurement as well as a sounding board for ideas. Though the setup and development of a retinal service is challenging, it is by no means difficult. These services are required in our part of the world, where visual morbidity means far more than not seeing, it means lack of income for not just the patients but potentially for a lot of other people being supported by the patient. It is imperative for healthcare commissioners and providers to understand all these facts and appreciate the complexity of delivering vitreo-retinal services in low to middle income countries, to enable access to fantastic modern techniques and therapies in the management of retinal diseases.