

EDITORIAL REVIEW

The new challenge for cataract surgeons

I. Howard Fine, Richard S. Hoffman and Mark Packer

LLC
 Drs. Fine, Hoffman, and Packer MD, Eugene, Oregon, USA

Correspondence to Mark Packer, LLC, 1550 Oak Street, Suite 5, Eugene,
 OR 97401, USA
 Tel: +1 541 687 2110; e-mail: mpacker@finemd.com

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Abbreviation

IOL intraocular lens

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The era immediately following World War II was, in many ways, the golden age of medicine. Antibiotics became available. Vaccinations helped reduce, and in some cases almost obliterate, many diseases, including smallpox and polio. There were new transplantations of organs and tissues, and open-heart surgery became a reality. There was a proliferation of medical technology and many physicians who were trained in areas of expertise in the military during the war emerged as specialists.

The tendency toward physician specialization resulted in marked improvements in patient care and therapeutic options. Physicians were universally respected and often adored.

Unfortunately, there has been a recent decline in the value of physician experience, knowledge, judgment and skill. This can be contributed partially to the explosive expansion of costly technology and escalating health-care costs. Patients seem reluctant to participate in these increased costs in spite of the value they place on health and their expectations for the best of care and perfect outcomes.

There also has been a rise in iatrogenic disease, characterized first by thalidomide and other drug side effects, later by hospital-based infections, and then physician errors, such as wrong-limb amputations.

This has been coupled with an intrusion into the doctor-patient relationship by hospital administrators, insurance bureaucrats and healthcare investors. Managed care

resulted in an intrusion into physicians' medical decision-making and the application of new technologies and therapeutic modalities by healthcare bureaucrats who often had very little medical training. These changes occasionally resulted in inappropriate medical care.

Over the past 20 years, physicians have found themselves in a market-based environment with respect to costs such as rent, salaries for personnel and equipment, and in a socialized environment with respect to reimbursement. This has been the worst of all scenarios. As expenses rose, reimbursement decreased. This was compounded by the effect of the malpractice crisis which continues today, unabated in most places.

All of this has led to a dramatic change in physicians' attitudes. We see physicians emerging from residency and fellowship training looking for jobs rather than careers. Many young physicians are more interested in time off and benefits than they are in being professionally challenged. Early practitioners are more reluctant to take on difficult cases and seem less interested in learning new techniques.

There also has been a loss of choice in practice location as the need for access to patients through insurance 'panels' restricts young physicians' entry into certain marketplaces.

All of these factors have led to frustration, cynicism and early retirement on the part of many physicians. When I arrived in Oregon in 1970, the average age of retirement for ophthalmologists was 70. More recently, it has been 55.

Intraocular lens ruling changed the game

The practice model that has resulted from the residuals of Medicare price controls and managed care could be characterized as high-volume, efficient, low-cost care. However, the Centers for Medicare and Medicaid Services' decision in May of 2005 allowing patients to pay for presbyopia-correcting intraocular lenses (IOLs) is changing the practice model.

When Medicare acknowledged the irrepressible advance of technology, it was faced with three choices: (1) paying for the new technologies and going broke, (2) denying those technologies to Medicare patients and

converting them to second-class citizens with respect to healthcare, or (3) allowing patients to pay for new technologies; this was the only logical option.

Medicare patients can now choose to have the latest technology if they are willing to cover the extra cost themselves. The result of this change in Medicare's guidelines will be a practice model characterized as high-quality, personalized, patient-paid care.

The transition to this new model of practice is going to be an enormous challenge to many ophthalmologists. It is our belief that refractive lens exchange will soon become the dominant surgical procedure in ophthalmology as presbyopia is the most common refractive error.

As increasing numbers of patients are successfully treated with refractive lens exchange, there will be a groundswell of demand for the surgical procedure. Technology will continue to expand and patients will achieve better functional vision than they have experienced prior to the adverse effects of aging or disease. This will lead to a return to a market-based economy for physician reimbursement and an accompanying increase in competition.

The surgical treatment of presbyopia has a price associated with the promise, and once the price is paid by patients the promise will have to be delivered. Market forces will drive patients to surgeons who deliver superior results, as happened when the market share went to phaco surgeons using foldable IOLs rather than surgeons persisting with extracapsular cataract extraction.

Keeping up with intraocular lens technology

IOLs currently available for correcting presbyopia in the USA include the ReZoom (AMO, Santa Ana, CA, USA), ReStor (Alcon Laboratories, Fort Worth, TX, USA) and Crystalens (eyeonics, Aliso Viejo, CA, USA).

Currently under investigation are the Tecnis Multifocal IOL (AMO), Synchrony Dual-Optic Accommodative IOL (Visiogen, Irvine, CA, USA), the Kellan TetraFlex Lens (Lenstec, St. Petersburg, FL, USA), the NuLens Accommodative IOL (Herzeliya, Israel), and the Light Adjustable IOL (Calhoun Vision, Pasadena, CA, USA).

On the horizon are the Sarfarazi Accommodative IOL (Bausch & Lomb, Rochester, NY, USA), SmartIOL (Medennium, Irvine, CA, USA) and the injectable IOLs being studied by a number of companies.

There are distinct differences between presbyopia-correcting lenses currently available in the USA. The ReStor lens has excellent distance vision (with occasional compromise under conditions of bright illumination),

excellent near vision, which is closer to the eye than some patients prefer, and compromised intermediate vision in some cases.

The ReZoom has excellent distant vision with more mesopic halos than the ReStor. It has adequate intermediate and near vision, which is not necessarily excellent in bright illumination or adequate for prolonged reading in some cases.

The Crystalens – the only accommodative lens that is available in the USA – has excellent distance and intermediate vision, but is not quite as good at near vision. However, all of the light comes from the object of regard so there is no contrast loss. In our hands, the Crystalens has a higher enhancement rate in hyperopes because one cannot as accurately predict the effective lens position.

Patients do better when they are implanted binocularly rather than monocularly with all of these lenses. The data documents improvement over a period of longer than 1 year as a result of central nervous system processing.

Binocular and mix-and-match

Retrospective studies by Leonardo Akaishi, MD, in Brazil [1], and Frank A. Bucci, Jr, MD, in Wilkes-Barre, Pennsylvania, USA [2], show that mixing and matching IOLs can allow patients to achieve better functional vision by having the second eye implanted with a lens, different from the first eye, which compensates for the compromises of the lens implanted in the first eye. Minimonovision with the same IOL in the second eye may adequately enhance compromises.

The quadruple win

As with all challenges, this change in the practice model will create enormous opportunities. It also represents a quadruple win.

First, patients will be able to undergo a refractive surgical procedure, addressing all components of their refractive errors (nearsightedness, farsightedness, astigmatism, and presbyopia) with high likelihood of excellent results, and never develop cataracts. Second, physicians will be able to offer this procedure to their patients with less interference from government or private insurance carriers.

Third, the ophthalmic industry will benefit from a return on the investments made in research and technology. Finally, the federal government will experience the biggest win of all: healthcare financing will be relieved of one of its largest expenses – cataract surgery – as increasing numbers of baby boomers opt for refractive lens exchange and begin to receive Medicare coverage as pseudophakes.

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Looking to the future

What is it going to take to meet the new challenge? It will require a major change in thinking. Successful ophthalmologists will keep their minds open to new technologies and techniques and maintain a firm commitment to excellence, a desire to stay at the cutting edge, and a willingness to invest in the best facilities, personnel, and equipment.

Successful ophthalmologists who will be in practice for the next 5 or 10 years will be best served by maintaining ownership in a freestanding ambulatory surgery center. They will use optical and immersion methods of biometry. Accurate IOL power calculations will be essential. They will ascertain their surgically induced astigmatism by vector analysis, and they will perform minimally invasive phacoemulsification using the best equipment, best microscopes, best viscoelastics, and best hand-held instruments, including knives. They will be willing to update their equipment, facilities, and personnel. Finally, they will obtain and maintain the knowledge and skill to achieve good results in spite of complications.

These changes sound daunting, but they do not have to be accomplished all at once. Ophthalmologists can start by analyzing their results so they will know where they need to improve. A good place to start is learning how to address preexisting astigmatism, investing in appropriate biometry instrumentation, studying the various lenses available and patients' responses to them, and approaching colleagues and even competitors for joint ventures in surgery centers, or trying to buy into existing freestanding ambulatory surgery centers.

Physicians will have to monitor their outcomes, talk to their patients, and determine the best application in their own hands for each of these devices.

This necessitates a dramatic change in the doctor-patient relationship. Ophthalmologists will be able to become physicians once again, not just surgeons or technicians. There is going to be a demand and a need for increased communication between doctors and patients. This will entail a new view of informed consent, the management of patient expectations, prolonged postoperative follow-up care, a communicated commitment to helping patients achieve their goals, a willingness to go the extra mile, and the knowledge and skill to provide enhancements.

Ophthalmologists will optimally want to provide information regarding all the options for IOL choices. In addition to a discussion of the strengths, weaknesses and compromises of each IOL, there should be a

discussion of the possibility of mixing and matching IOLs and ultimately a recommendation by the ophthalmologist for a specific IOL for a particular patient.

The discussions will necessarily contain a detailed analysis of the patient's needs, desires, and expectations. In our practice, we give patients the statistical data on our ability to meet their demands by telling them what percentage of our patients achieve the goals that they themselves desire.

Finally, we still await better analyses of what to do with the new technologies in the presence of corneal disease, macular degeneration and high myopia with its very confusing track record regarding postoperative retinal detachment.

These changes represent enormous challenges for the current generation of ophthalmologists who have practiced in the old modality for a number of years. They will have to meet these challenges or be left behind by the marketplace.

In spite of all of this, we must never neglect the Medicare patient who cannot afford to pay the added premium for high-technology devices. Professor Arthur S.M. Lim, FRCS, of Singapore, iterated this very appropriately at the recent Asia Pacific Academy of Ophthalmology meeting in Singapore [3].

He said that, 'quality eye care for everyone, including those who cannot afford to pay, is an ideal that everyone should support.'

We will still be able to provide quality care for Medicare patients and should be willing and committed to do that. Are you ready for your next challenge?

A similar article was originally published in the November 2006 issue of *EyeWorld* magazine, published by the American Society of Cataract and Refractive Surgery.

Footnote
FOOT.

References

- 1 Akaishi L. Visual outcome following AcrySof ReStor IOL implantation in 1 eye and ReZoom multifocal IOL implantation in the contralateral eye [Poster]. Presented at the Symposium on Cataract, IOL and Refractive Surgery, American Society of Cataract & Refractive Surgery; San Francisco; 17-22 March 2006.
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- 3 Lim AS. Presentation at the 21st Congress of the Asia-Pacific Academy of Ophthalmology; Singapore; 10-14 June 2006.