Ivan Goldberg, MBBS, FRANZCO

Dr. Goldberg reminisces about his professional development and discusses Australian issues in glaucoma.

1. Of what importance was your fellowship in St. Louis to your career?

I interrupted my residency in Sydney, Australia, to spend 1 year as a research fellow in glaucoma at the University of New South Wales. This fellowship facilitated my acceptance, first as a fellow and then as a faculty member, by Bernard Becker, MD, and Michael Kass, MD, at Washington University in St. Louis. Also on the glaucoma faculty were Drs. Allan Kolker, Robert Moses, William Hart, Paul Palmberg, and Theodore Krupin. Visiting Professors included Drs. Stephen Drance, Douglas Anderson, Yoshiaki Kitazawa, Robert Shaffer, Jack Hetherington, Dunbar Hoskins, Thomas Zimmerman, Robert Stamper, John Keltner, Steven Podos, Stephen Obstbaum, and Richard Brubaker. Among the residents and fellows were Drs. Elizabeth Hodapp, Frank Ashburn, David Meltzer, and David Gieser. In those 2 years, I was exposed to many of the finest minds attempting to improve the understanding and management of glaucoma. The time I spent in St. Louis was like an intellectual banquet. I returned home invigorated, better skilled, and inspired.

My keenness to pass on whatever knowledge and skills I had acquired and to remain intellectually curious resulted in the evolution of my hospital and private practice into a glaucoma subspecialty service at a time when glaucoma was not regarded in Australia as a bona fide subspecialty of ophthalmology. With academic ophthalmology far weaker in Australia and New Zealand than in the US in 1980, it was important to incorporate clinical research into my private practice. My training in St. Louis made this possible.

2. What did organizing the 2002 International Congress of Ophthalmology in Sydney teach you?

It was a great honor and a unique opportunity to be a part of a cohesive team and to help put together the congress. In the face of increasing competition from many other professional meetings, it was vital to build on the accomplishments of earlier organizers in Singapore, Canada, and the Netherlands. The key to success was cooperation (1) with national and regional ophthalmic societies, (2) with subspecialty societies, (3) with a wide spectrum of journals and with every Australian and New Zealand ophthalmologist, all sources to distribute information about the meeting worldwide, and (4) most importantly with industry. Large and small companies alike not only participated in the meeting and supported it financially, but they helped publicize the meeting through their representative networks and to organize satellite meetings of their own in such a way as to bolster the main conference. Despite our concern that registration would be far lower than planned due to the tragedy of September 11, 2001, more than 7,000 individuals were involved in the meeting, a figure exceeding our targets. The healthy profit generated fueled many of the International Council's projects, and the Royal

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FAST FACTS

- On the Glaucoma Service and Visiting Ophthalmologist at Sydney Eye Hospital, University of Sydney, New South Wales, Australia, 1998 to present
- Director of Eye Associates, Sydney, New South Wales, Australia, 1980 to present
- President of and Member of the Executive Board for the Royal Australian and New Zealand College of Ophthalmologists, 2001 to 2002 and 1993 to 2003, respectively
- President of the South East Asian Glaucoma Interest Group, 1997 to present
- Co-Chair of the Glaucoma Patient Organization Liaison Committee, Association of International Glaucoma Societies, 2003 to present
- Vice-President of, Chair of the Education Committee of, and Council Member for The Glaucoma Foundation of Australia, Inc. (now Glaucoma Australia), 2000 to present, 1988 to present, and 1989 to present, respectively

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Australian and New Zealand College of Ophthalmologists (which had underwritten the meeting) used the remaining proceeds to establish a foundation to support research and education in these two countries.

3. What do you expect from objective perimetry, and will it replace the subjective tests used now?

Despite major improvements in traditional subjective perimetry and the interpretation of generated data, variability in sensitivity within and between tests combined with the challenge of obtaining reliable results from a significant group of patients make developing more objective tests important. Multifocal visual-evoked potential and electroretinographic technologies are the two methods currently being developed most actively. Each has advantages and disadvantages, but both show promise. Although their detection of defects has been validated and demonstrated to be reproducible, false positives are still a problem, and the diagnosis of progression remains rudimentary.

Assuming one or the other technology can overcome these difficulties, I expect objective perimetry to enhance greatly the ophthalmologist's ability to diagnose glaucomatous visual field loss (perhaps earlier than white-on-white standard automated perimetry) in the vast majority of patients and suspects and to complement current assessments of visual function. In some circumstances, it may replace subjective testing.

4. Is the late detection of glaucoma problematic in Australia?

Although the exact numbers vary depending on the source of data, Australia has approximately 150,000 glaucoma patients, of whom about 75,000 have been diagnosed and are being treated. In addition, there are approximately 150,000 glaucoma suspects, most of whom will not develop the condition. These ratios are similar to those of other developed societies. As elsewhere, the challenge is to find patients at visual risk and to treat them appropriately. Disturbingly, a significant number of undiagnosed glaucoma patients detected by community screening had been seen by an optometrist, an ophthalmologist, or both within the previous 12 months.[1] This finding suggests that a lack of diagnosis often is not the result of Australians' poor access to eye care but a failure of that care to detect disease on routine review.

Glaucoma Australia was formed in 1986 with three main purposes. First, it seeks to raise community awareness of the glaucomas as potentially blinding diseases and to encourage earlier and regular eye examinations. Second, the organization supports glaucoma patients and their families with educational material, group meetings, and telephone counseling to enhance patients' perseverance with treatment. Third, it works to raise funds for glaucoma research. More recently, the organization has begun to act as an advocate for patients with governments and other relevant groups. Glaucoma Australia has been moderately successful in its goals. For example, the percentage of Australians receiving treatment for glaucoma in all age groups has risen slowly but steadily over the past 15 years, a trend suggesting greater capture of the undiagnosed 50%. Now, those involved in the organization are looking at strategies specifically to improve optic disc evaluation by general practitioners, optometrists, and ophthalmologists in order to facilitate detection of the disease.

These same goals prompted me to accept an invitation from Erik Greve, MD, to join Robert Ritch, MD, as Co-Chair of the Glaucoma Patient Support Group Liaison Committee of the Association of International Glaucoma Societies. During this past year, we helped to form the Glaucoma International Network as an umbrella organization for glaucoma patient groups worldwide. Glaucoma Australia has helped in the formation of similar groups in New Zealand and Singapore, and it is currently directly assisting South Africa, Israel, Thailand, and the Philippines.

5. What developments in glaucoma medications can ophthalmologists expect during the next 10 to 15 years?

The safety and efficacy of the prostaglandin analogues raised the bar high for medical management. Although new agents for reducing IOP are bound to appear, I think it more likely that advances will involve better drug delivery systems and more fixed drug combinations. While the latter should improve compliance through greater convenience for patients and reduced dispensing costs (compared with two agents used simultaneously but separately), the former should minimize noncompliance as well as local and systemic side effects and should maximize effectiveness.

In the future, medical therapy may well do more for patients with glaucoma than simply reduce their IOPs. Therapy may be able to influence blood flow to the relevant parts of the retina and optic nerve head and to offer neuroprotection. I envision neuroprotection as the direct pharmacological modification of cellular (probably retinal ganglion cells, but possibly astrocytes, glial elements, and/or Mueller cells as well) responses to noxious effects that otherwise would initiate apoptosis. Neuroprotective effects were suggested with betaxolol and brimonidine; the memantine trial (Allergan, Inc) will determine whether this systemic N-methyl-D-aspartate-receptor antagonist can slow glaucomatous progression as it seems to slow the progression of Alzheimer's and Parkinson's dementia. ❑

1. Wong EY, Keeffe JE, Rait JL, et al. Detection of undiagnosed glaucoma by eye health professionals. *Ophthalmology*. 2004;111:1508-1514.