Donald L. Budenz, MD, MPH

Dr. Budenz explains how outreach efforts can make a significant impact on the care of patients worldwide and shines a light on his bookshelf at home.

What advice do you have for ophthalmologists who want to succeed in both practice and academics?

Teaching, research, service to an ophthalmic society, advocacy—all of these generally do not generate revenue. If you are committed to one or more of these activities, you need to work at an institution that will provide support in terms of time, salary, and personnel. It is fairly well known which institutions will support academic pursuits. A litmus test is how academically productive the faculty is. It is up to you to request support for your pursuits outside patient care. From the beginning of your negotiations with an institution, try to carve out academic time, at least 1 day a week. If you can get independent funding, that time can be expanded.

What prompted you to obtain a master's in public health degree, and how has it affected your career?

I stayed in academic ophthalmology because I love clinical research. After conducting glaucoma research for about 8 years, however, I felt that I had reached a plateau. I wanted to be able to design clinical trials and experimental (rather than observational) studies, analyze the results, and write them up in a way that was clinically useful. A master's program in public health teaches this skill set. I only considered one institution, the Johns Hopkins Bloomberg School of Public Health, because it has a long track record in ophthalmic epidemiology, which was my interest along with international health.

Now, instead of studying surgical outcomes, I have refocused my research on medical testing, particularly diagnostic testing in glaucoma and disease progression. The master's program introduced me to the field of determining what makes a medical test valid. A second area of interest for me currently is the epidemiology of ocular disease. By obtaining my MPH, I can now perform an entire study from start to finish without the help of a biostatistician or somebody who is experienced in study design. For example, I just completed a 2-year population study of adults aged 40 and older in Ghana, West Africa. My colleagues and I randomly screened subjects for eye disease and visual disability, and any patient who failed the examination was seen by an ophthalmologist. I designed and executed the study pretty much on my own. Lastly, I am now the instructor for the clinical trials graduate course at the University of Miami, which is offered by the Department of Epidemiology and Public Health. Few ophthalmologists get to teach a for-credit

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FAST FACTS

- Professor, Departments of Ophthalmology, Epidemiology, and Public Health, University of Miami School of Medicine, 2006 to present
- Associate examiner for the American Board of Ophthalmology, 2005 to present
- Compliance physician for the Department of Ophthalmology, University of Miami School of Medicine, and Anne Bates Leach Eye Hospital, both 2002 to present
- Associate medical director, Anne Bates Leach Eye Hospital, 2001 to present
- Diplomat for the AAO, 1992 to present
- Member of the American Ophthalmological Society (2009 to present), the Glaucoma Research Society (2008 to present), and the Society of Heed Fellows (1991 to present)
- Recipient of the AAO's Achievement Award (2004) and the AGS' Mid-career Physician Scientist Award (2008)
- Author of more than 100 peer-reviewed articles

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graduate course. It has been a great experience for me. I have learned as much from teaching that course as I have from performing clinical trials for 20 years.

Getting my MPH was the best thing I have ever done professionally, and it has led to the most fun activities of my career.

You have served as a volunteer surgeon to Ghana with the organization International Aid since 1994. Based on your experience, what can ophthalmologists hope to accomplish through international outreach efforts?

The most important contribution we can make is to teach local ophthalmologists. In 2 weeks—the length of my usual trip—I can only complete so many glaucoma surgeries. By teaching a local ophthalmologist to perform a trabeculectomy and manage the patient postoperatively, I can help 1,000 rather than 100 patients in a year.

The conditions in West Africa are pretty primitive. Ophthalmologists do not have access to visual field machines, fundus photography, or imaging technology. They do not know how to perform gonioscopy. It is very difficult for them to diagnose and appropriately treat glaucoma. Moreover, West Africa does not have a formal residency program where ophthalmologists perform surgery. They have to go abroad for surgical training, and they do not always get hands-on experience. For example, in Florida at least, the state regulations for licensing and who may and may not participate in a patient's care are so onerous that ophthalmologists visiting from other countries may not perform supervised surgery.

Like residency training programs in the United States, International Aid (http://www.internationalaid.org) has two or three centers in Ghana where visiting doctors perform surgery in their area of expertise while local ophthalmologists observe. After observing a few cases, the local doctors perform procedures under the volunteer surgeon's supervision for the rest of his or her trip. One volunteer is not going to teach local doctors how to perform a trabeculectomy in 2 weeks. Over the course of 2 years, however, with multiple volunteers each contributing 2 weeks of their time, the West African physicians will become comfortable with surgery and postoperative care. During my trip in July 2009, for example, I spent 2 days running a course on the diagnosis and management of glaucoma and the remaining 12 days supervising surgery.

We all have busy lives and practices that depend on us to generate revenue. Taking 2 weeks per year to volunteer is difficult but important. If I never saw another glaucoma patient in the United States, plenty of ophthalmologists would be available to provide quality care, even to the poorest in our population. If I do not travel to Ghana to teach and perform surgery, people will go blind every day. That sense of urgency draws me back to West Africa each year.

What are your top tips for managing late-onset bleb leakage?

First, realize that leaking blebs pose a threat to patients. Late-onset bleb leaks are an important risk factor for the development of endophthalmitis.[1,2] Filtering surgery penetrates the scleral and Tenon's barriers between bacteria and the great culture medium of aqueous humor and vitreous inside the eye. Glaucoma surgeons' aggressive use of antifibrotic agents (mitomycin C in particular) breaks down the last barrier, the conjunctiva. A leaking bleb is a sign that bacteria can enter the eye easily.

I treat bleb leaks fairly aggressively when they do not quickly resolve spontaneously. I have tried the various nonsurgical options such as fibrin glue and compression sutures. None works well. Conjunctival advancement is a successful treatment.[3] Amniotic membrane is less successful,[4] but I still use it for very large filtering blebs when I cannot use the patient's own conjunctiva for coverage. Conjunctival advancement can result in higher IOP later that may require medical therapy or surgical intervention. That is a manageable problem. Endophthalmitis is a blinding complication.

What is your favorite sort of literature, and what are you reading right now?

I never liked studying history in school, because it was taught in a boring manner. Good historical fiction allows me to learn about different cultures and time periods in an entertaining, escapist way. I am currently reading *City of Thieves: a Novel* by David Benioff, a young Russian-American writer. It is based on his grandfather's stories about surviving World War II in Russia. The story takes place in Leningrad when the Germans had the city surrounded, and it is told from the perspective of a 17-year-old boy who is caught looting a German paratrooper's corpse. A colonel in the Russian army will spare him and a deserting soldier from the penalty for their crimes (execution) if they obtain a dozen eggs for the colonel's daughter's wedding cake. ❑

1. Soltau JB, Rothman RF, Budenz DL, et al. Risk factors for glaucoma filtering bleb infections. Arch Ophthalmol. 2000;118(3):338-342.
2. Jampel HD, Quigley HA, Kerrigan-Baumrind LA, et al; the Glaucoma Surgical Outcomes Study Group. Risk factors for late-onset infection following glaucoma filtering surgery. Arch Ophthalmol. 2001;119:1001008.
3. Budenz DL, Chen PP, Weaver YK. Conjunctival advancement for late-onset filtering bleb leaks: indications and outcomes. Arch Ophthalmol. 1999;117:1014-1019.
4. Budenz DL, Barton K, Tseng SCG. Amniotic membrane transplantation for repair of leaking glaucoma filtering blebs. Am J Ophthalmol. 2000;130:580-588.