

An Experience in the Wills Academic Global Ophthalmology Fellowship and Beyond

By Crystal Lee, MPH | Faculty Reviewer: John Anhalt, MD

An early interest in global health

Even before medical school, Dr. John Anhalt knew he wanted to serve communities all over the globe—after college, he joined the Peace Corps for two years, teaching math and science in the Kingdom of Lesotho. After seeing the vast differences between the health care in Lesotho and in the United States, Dr. Anhalt was inspired to apply to medical school with the intention of pursuing a specialty in infectious disease before launching a career in global medicine. It was not until his ophthalmology rotation in University of Texas San Antonio, that he

realized that ophthalmology, with its mix of medical and surgical management, would be a perfect fit for his career aspirations.

Cataracts, though reversible, were—and still are—the leading cause of blindness in the developing world. From a global health perspective, cataract surgery has a substantial impact on individuals' quality of life and life expectancy. Furthermore, cataract surgery has permeating economic implications as it not only mobilizes a population who would otherwise be unable to care for themselves due to blindness but also allows their overburdened caretakers the freedom to finish schooling, find work, or take care of other family needs. After Dr. Anhalt finished his residency at Wills Eye, he began his global health career starting with the one-year Wills Academic Global Ophthalmology Fellowship.



Dr. Anhalt examines post-op patients at a clinic in Serabu, Sierra Leone.

Joining the Wills Academic Global Ophthalmology Fellowship (AGO)

Throughout the past decade, global health in ophthalmology has shifted from physician-focused mission trips to helping develop sustainable community-driven improvements in existing systems. In an American Academy of Ophthalmology article, Dr. Feilmeier of Midwest Eyecare describes the goal of modern global ophthalmology as, “to develop long-term and mutually beneficial relationships

that improve the existing situation in an underserved location and to facilitate these changes in a sustainable way.¹

As one of the five global ophthalmology fellowships in the United States, the Wills Academic Global Ophthalmology fellowship collaborates with four primary international sites: the Aravind Eye Hospital System and LV Prasad Eye Institute, which are both in India, Rwanda International Institute for Ophthalmology (RIIO), and Hôpital d'Université d'Etat d'Haiti (HUEH) in Port-Au-Prince in Haiti.² Fellows spend half the year teaching junior residents in the Wills Eye Cataracts and Primary Care Clinic (CPEC) and the other half spending time abroad. During Dr. Anhalt's 2019-2020 fellowship year, he visited a number of different sites worldwide including five weeks at LVPEI, one week in the Aravind, two weeks in Sierra Leone, two weeks in RIIO, and two weeks in Lesotho. Unfortunately, due to the global pandemic in early 2020, a number of his trips were postponed.

Seeing firsthand the impact of Global Ophthalmology in diverse health systems around the globe

One of Dr. Anhalt's first rotations in his AGO fellowship was in the Aravind Hospital System, a mammoth system in southern India that serves a population of over 50 million people through a sprawling network of 80 primary care facilities, 6 outpatient eye examination centers, and 14 eye hospitals.³ Even more impressive is the 2,500 "vision screening outreach" weekend camps that bring ophthalmologic care to remote villages as far as five hours by bus. In these

outreach trips, one physician and a team of ophthalmic technicians, affectionately referred to as "Sisters," set up a mobile eye clinic with the support of a local host family from the community. In an outreach camp in Kandanur, Dr. Anhalt and the team screened around 600 patients in only 8 hours, which included visual acuity, gross ocular pathology, cataract and surgical needs (done by the physician), lacrimal duct or interocular pressure checks, and refraction if needed. The methodical and



Ophthalmic technicians ("Sisters") set up a mobile exam clinic in Kandanur, India.

efficient flow of the clinic and the highly trained Sisters, who perform most portions of the exams, are the main reasons that such a high volume of patients are able to be seen. At the end of the screening day, patients in need of surgery and 1 - 2 family members are taken back to Aravind hospitals and boarded for 2 - 3 days for pre-operative planning, surgery, and post-operative checks.

Perhaps the most interesting part of this healthcare model is how it is funded. Although over 40% of the cataracts volume comes from the free outreach camps, most patients cannot afford to pay for treatment. 50% of patients in the Aravind system get care for free or steeply

subsidized, while the other half of patients pay on a sliding scale based on what they can afford. Payers and non-payers receive the same standard care and are seen by the same physicians. However, payers are offered more customized treatments such as premium/multifocal intraocular lenses (IOL) and femto-assisted surgery

Remarkably, this financial system is not only sustainable, but profitable, through the sheer volume of patients served and the fact that Aravind manufactures most of its equipment in-house. Without the outreach events or the trust that Aravind has built in the South Indian people, Aravind would not have evolved into such a sprawling health system in only 44 years.⁴

As an AGO fellow, Dr. Anhalt learned Manual Small Incision Cataract Surgery (MSICS), the most common technique in the Aravind system and the rest of the world, during his time at LVPEI. In comparison to phacoemulsification, which is the gold standard for cataracts in the United States, MSICS is less expensive to do, requires less equipment, still produces excellent results, and can be used safely for very dense cataracts.⁵ With the efficiency of the Aravind system, physicians are able to perform about 100 cases per day

Although Dr. Anhalt was only there for a short time, he was able to experience firsthand the innerworkings of an efficient and advanced healthcare system, which was truly humbling. He was also able to work on a small research project during his time at Aravind. This mutually beneficial exchange of knowledge, experience, and culture is why Aravind has continued to be a clinical site for all of Wills AGO fellows.

The LVPEI in Hyderabad is one of the

longer rotations in the AGO, spanning 4+ weeks, but one of the most important for fellows to learn MSICS.^{6,7} Though similar in size and structure to Aravind, LVPEI takes its reputation as a leading academic medical center seriously by organizing journal clubs, research presentations, and Grand Rounds six days per week.

All clinical staff, including students, are required to attend the lectures. Another hospital system that AGO fellows rotate through, the Rwanda International institute for Ophthalmology (RIIO), was established in 2011, and has a new residency program as of 2018.⁸ AGO fellows have a similar role that they have in Wills Eye's CPEC: namely, teaching residents how to perform a comprehensive eye exam. Although MSICS is the most common form of cataracts surgery performed in RIIO, AGO fellows also teach residents how to use phaco. For Haiti, one of the oldest sites for Wills Eye Global Health outreach, access to ophthalmological care has been affected greatly by the devastation of the 2010 earthquake. Most of the responsibilities AGO fellows have in Haiti are centered around teaching local residents.

Coming home to life as an attending physician in the midst of a global pandemic

After completing the AGO fellowship in June 2020, Dr. Anhalt continued his career at Wills, joining the CPEC department and serving as the director of the AGO Fellowship. Although he is at the beginning of his career as an attending physician, Dr. Anhalt's experience in global health has been an instrumental part of his practice today such as his



Dr. Anhalt poses with the OR staff at a clinic in Serabu, Sierra Leone.

understanding of many diverse healthcare systems, his skill in MSICS surgery for complex cataracts cases, and his passion for teaching the next generation of global ophthalmologists.

In the setting of a global pandemic, many global health trips have been postponed. Despite that, Dr. Anhalt and the rest of the Wills Eye Global Department are investigating ways it can make ophthalmology care more accessible at home. Recognizing that there is a gap in ophthalmologic care in Philadelphia due to lack of insurance, underinsurance, or ineligibility for insurance, they created the idea of making a primary ophthalmology clinic that would treat all patients regardless of ability to pay. The appropriately named “Access Clinic” will be located in the historic BOK building in South Philadelphia, and will be staffed by the AGO fellow and volunteer faculty, such as Dr. Anhalt and other AGO alumni. This clinic is a monumental development

as the first free ophthalmology clinic in the United States.

While travel restrictions have limited Wills Eye Global’s ability to reach some of its partners, it has allowed them time to reallocate resources towards unmet needs domestically and how to best utilize available technology to continue our work remotely. Wills Eye Global has been using online lectures and skill workshops to continue education for AGO sites. Specifically, conferencing platforms like Zoom have allowed Wills faculty to give live lectures and interact with trainees, while trainees can access the Wills knowledge portal to view recorded lectures. Using the Measley Ophthalmic Surgical Training Lab (MOST lab), which is the new Wills Wetlab, Wills faculty can telecast wet lab simulations of surgical techniques to trainees anywhere in the world.

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