

A conversation with SEE International, January 6, 2020

Participants

- Randal Avolio – President & CEO, SEE International
- Dr. Jeffrey Levenson – Chief Medical Officer, SEE International
- Alex Cohen – Senior Fellow, GiveWell

Note: These notes were compiled by GiveWell and give an overview of the major points made by Mr. Avolio and Dr. Levenson.

Summary

GiveWell spoke with Mr. Avolio and Dr. Levenson of SEE International (SEE) to learn more about the organization. Conversation topics included SEE's program model, its counterfactual impact, and its room for more funding.

Program model

Cataracts (clouding of the lens within the human eye) are the leading cause of preventable blindness in the world, responsible for almost half of all the world's blindness. 90% of that blindness is concentrated among the world's poorest people, who are unable to afford curative surgery. With the advent of new, less technology-dependent surgical techniques, cataracts can now safely and effectively be removed, and vision restored, via a ten-minute surgery that costs less than \$50 per case. SEE works to bring this surgery to people in need.

SEE is based in Santa Barbara, California, and was founded in 1974 by humanitarian ophthalmologist Dr. Harry S. Brown to provide vision care to high-need populations. It primarily operates in low- and middle-income countries (LMICs) in Central America (e.g. Honduras, El Salvador, Nicaragua, Guatemala), the Caribbean (e.g. Haiti, the Dominican Republic), Asia (e.g. India, Nepal, the Philippines), Africa (e.g. Namibia, Côte d'Ivoire) and Oceania (e.g. Fiji). Approximately 10% of SEE's work is based in the US.

To date, SEE has provided sight-restoring surgeries to a cumulative total of almost 600,000 patients globally.

Core services

SEE's services include one or more of the following components:

- **Short-term programs** – Through SEE's short-term programs, volunteer ophthalmologists travel to host sites and work alongside local doctors for up to 10 days. SEE typically operates approximately 200 programs annually.
- **Equipment program** – SEE provides short- and long-term donated, new, and used ophthalmic equipment based on a site's needs assessment, the level of impact the funding would leverage, and available funding.
- **Direct supply support** – SEE provides surgical materials that may be lacking locally.

Cataract surgery

Cataract surgery represents over 90% of the surgeries provided by SEE, as it is one of the simplest and most cost-effective vision-restoring interventions available.

SEE employs three different techniques for cataract surgeries: Phacoemulsification (a modern technique), Extracapsular Cataract Extraction, and Manual Small-Incision Cataract Surgery (MSICS). MSICS, which is no longer taught in many ophthalmology programs, is typically the most effective technique for patients in LMICs—where cataracts go untreated for longer periods of time. (MSICS enables doctors to quickly remove more mature cataracts). SEE is a leading expert and instructor in MSICS.

Other eye surgeries

Other eye surgeries that SEE provides include:

- **Pterygium surgery** – SEE commonly conducts pterygium surgeries, as pterygia (growths on the cornea) sometimes cause blindness and also complicate cataract surgeries by obstructing visibility of cataracts.
- **Child eye muscle surgery** – SEE operates specific clinics to provide children with specialized eye muscle surgeries that prevent the development of lazy eye (incomplete connections between the eye and the brain) and improve the appearance of children that may otherwise be stigmatized.

Targeting of host sites

SEE prioritizes sites with higher need and where it has strong existing relationships with local partners. Additionally, it only provides services upon the invitation of local health authorities.

SEE works closely with local partners to identify specific constraints and is highly adaptable to partners' needs. It has found that its assistance is typically required due to one or a combination of the following factors:

- **Lack of doctors** – Host sites often lack a sufficient number of skilled ophthalmologists to treat all patients in need. For example, there are approximately 56 ophthalmologists per million people in the US. However, in some LMICs in Sub-Saharan Africa, there are only 1-2 ophthalmologists per million people.
- **Lack of patients able to afford care** – Patients in targeted countries are largely unable to afford vision care, resulting in underutilization of local ophthalmologists and a large backlog of untreated patients.
- **Lack of supplies and equipment** – Local ophthalmologists may not possess sufficient supplies (e.g. cautery, intraocular lens implants) and equipment (e.g. microscopes) to adequately care for patients.

Recruitment and training

SEE regularly attends ophthalmology conferences, where it is able to recruit new volunteers. After recruitment, SEE offers MSICS courses that train ophthalmologists with a necessary skill set that prepares them for working in a humanitarian setting.

Ophthalmologists then sign up to volunteer on a SEE program and develop their proficiency over time by initially performing surgeries on a limited number of patients under the supervision and mentorship of SEE's senior surgeons. SEE estimates that a high level of MSICS proficiency requires performing 300-500 surgeries.

Many of SEE's volunteers have been with the organization for decades. Some of SEE's doctors choose to return to the same locations each year, while others travel to new locations.

Partnership with local doctors

SEE's programs only operate in settings where local ophthalmologists are currently practicing—both to a) ensure adequate health infrastructure is in place, and b) transfer skills from SEE's doctors to local doctors and from local doctors to SEE's doctors, as many host ophthalmologists are highly proficient in MSICS.

Due to underutilization, local ophthalmologists in LMICs typically conduct 50-300 cataract surgeries annually. However, through materials and mentorship provided by SEE, these doctors are able to perform a much higher volume of surgeries—consequently improving their skills and surgical outcomes. With significant experience, ophthalmologists may eventually be able to conduct 1,000-2,000 cataract surgeries annually. For example, over the past 15 years, the Namibian ophthalmologist Dr. Helena Ndume has been able to perform approximately 30,000 cataract surgeries, and she credits much of her success to SEE's assistance and partnership. (Dr. Ndume won the first-ever Nelson Mandela Humanitarian Prize for her sight-restoring work.)

Identification of local doctors

Local ophthalmologists are typically identified by SEE through word-of-mouth or through international ophthalmology conferences (e.g., the American Academy of Ophthalmology Annual Meeting).

Monitoring and evaluation

Postoperative examinations

The main risk of eye surgery is infection, which is very rare (i.e. occurs at a rate close to .1%). SEE's doctors conduct postoperative examinations the day after surgery to ensure patients are able to see properly and that no evidence of infection exists. If no issues are found, patients are provided with eye drops and typically do not need to return for additional care.

Local ophthalmologists are directed to follow-up with any patients that do present with issues during postoperative examinations.

Outcome data collection

SEE routinely collects data on surgical outcomes, which consistently demonstrate significant improvements in patients' vision. Data typically represents outcomes one day to one week after surgery, depending on a patient's specific circumstances. For example,

patients in urban settings are often able to return to health facilities for follow-up visits one week after surgery, while patients in more remote settings may only be able to attend a postoperative visit the day after surgery.

Available evidence strongly suggests that one-week outcome data is indicative of three-month outcomes. Additionally, SEE collects longer-term data from local ophthalmologists' private practices, which indicate that outcomes remain strong three months after surgery and beyond.

Volunteer Feedback

After volunteers return home, program coordinators request program feedback from traveling teams and in-country partners about the quality of service provided and any issues that may have arisen.

Volunteer feedback, as well as host needs assessments, inform decisions on how closely SEE would like to work in a particular host site. Quality outcomes are central to SEE's work. If it discovers questionable care being delivered by traveling teams or in-country partners, which is uncommon, it takes immediate action.

Counterfactual program impact

SEE has received strong evidence from local ophthalmologists demonstrating its counterfactual impact (i.e. that program outcomes would not have otherwise occurred in SEE's absence). For example, a local ophthalmologist practicing in a hospital in West Bengal, India, noted that SEE's provision of intraocular lens implants (which the hospital could not afford) has directly resulted in additional surgeries being performed—from approximately 9,000 in 2017 to an expected total of 15,000 in 2020.

Evidence of long-term lack of care

One explanation for SEE's high counterfactual impact could be that patients tend to live with vision issues for several years prior to receiving care. It does not currently collect data on the number of years its patients have lived with vision issues. However, identification of advanced cataracts during SEE's preoperative examinations may be a sufficient indication of long-term vision impairment, as the condition typically develops gradually over time—unlike retinal detachments, which can occur overnight.

Lack of alternatives

In the absence of SEE's services, most of the sites where it works would continue to be overwhelmed with high patient caseloads due to patients' inability to afford services, an insufficient number of doctors and facilities, and a lack of necessary supplies and equipment.

Room for more funding

SEE is a highly scalable organization and could easily absorb \$1-3 million to provide more surgeries to high-need populations through its existing partners across the world. For example, over the past four years, SEE has received an increase in support—which it has been able to use effectively, increasing the number of annual surgeries it performs from

approximately 11,000 in 2012 to over 60,000 in 2019. Furthermore, this number only reflects surgeries that were performed with assistance from SEE's doctors or through its direct supply support. SEE believes its annual impact exceeds 60,000 surgeries due to the skills local doctors have acquired from SEE's doctors, consumables, and the equipment SEE has provided (which may have spillover effects on other procedures beyond cataract surgery).

If SEE received funding on the order of \$5 million, it would likely need to spend six months to confidently identify and vet potential sites and partners—which would include regular traveling to potential sites. Funding on the order of \$50 million may require closer to one year of planning.

Use of additional funding

If it received additional funding, SEE would likely prioritize expanding its operations in the Philippines, India, and Nepal—followed by countries in South America and Sub-Saharan Africa (e.g., Namibia, Nigeria, Côte d'Ivoire, Kenya).

Average program costs

SEE estimates the average cost of one of its sight-restoring procedures at \$50 or less. Its core costs are related to planning and coordination (i.e., logistics costs and staff). Doctors are responsible for personal costs (e.g. flights, lodging, meals), and the majority of the supplies and equipment that SEE provides are donated by American companies or purchased from Appasamy Associates (an Indian company). In cases where donations from American companies are insufficient, SEE purchases the remaining necessary supplies and equipment.

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