Helping Haiti . . .

Clinical Engineer Shares Challenges to Rebuilding Medical Technology

Ismael Cordero was overwhelmed by the devastation in Haiti when he visited this year. But despite the damage to the country and what little medical technology it had, he was heartened by the resolve of the Haitian people and their desire to rebuild. In this edition of Tech World, *Cordero—a senior clinical engineer for ORBIS International—shares his story.*

My experience in Haiti started in April, when I was part of an assessment trip to ensure a coordinated and appropriate response to the devastation to eye care services in Haiti. In addition to the two ophthalmologists on the team, my job as a clinical engineer was to assess the condition of the medical equipment and clinical facilities.

We assessed 19 different eye care facilities spread over several cities in a trip sponsored and coordinated by the Pan American Health Organization (PAHO), the Haiti National Committee for the Prevention of Blindness, and international eye care organizations Sight Savers, and ORBIS.

At each eye care facility, we gathered information by talking to at least one ophthalmologist or the director. We listened to complaints and opinions and gave recommendations on the storage and maintenance of equipment, organization of outreach programs, and other aspects of prevention of blindness.

A significant portion of the ophthalmic equipment and facilities in the area affected by the earthquake were damaged. This worsened the already poor condition of much of the technology and infrastructure that existed prior to the earthquake.

In Haiti, up to 80% of the ophthalmic equipment has been donated by foreign agencies, and much of it is obsolete and no longer supported by the manufacturers. There is no local vendor support in Haiti for service and consumables of ophthalmic equipment. Parts, accessories, consumables, and maintenance services are obtained usually in Miami and hand carried back to Haiti by the ophthalmologists. There is no central source for procurement in Haiti, so each practice buys equipment and supplies independently in small amounts at higher costs since bulk purchasing is not practiced.

Since the equipment comes from many different sources—mostly donors—there is no uniformity or standardization of brands and models. This makes it very complicated to maintain and supply the equipment with spare parts and consumables. There is little to no coordination or prioritization of donations coming into the country, resulting in some services not having required items. Many donors send

Ismael Cordero, far left, recently traveled to Haiti to assess the state of ophthalmology equipment in Haiti. With him from left are **Yolene Saint Fleur**, Director of La Paix hospital; **Dr. Mike Maingrette**, a Haitian ophthalmologist that was part of the assessment team; and **Dr. Fernando Peña**, a Colombian ophthalmologist also part of the team.

unrequested items that are not needed.

Many of the government hospitals and clinics do not have the basic equipment needed to diagnose and treat eye conditions, resulting in a very low number of equipment-dependent treatments and surgeries being performed. Most hospitals and clinics also do not have biomedical equipment technicians (BMET) available to perform maintenance on ophthalmic equipment.

Already deteriorated equipment and facilities were further damaged by the earthquake, compounding the problems I mentioned earlier. Additionally, foreign medical relief agencies took over ophthalmic service areas in hospitals in order to perform orthopedic or emergency services. Equipment was removed from ophthalmic service areas and stored in less than ideal conditions that will undoubtedly result in damage. In some cases, little effort has been done to place the equipment in a secure and clean environment. Some of the equipment that is stored as a result of the earthquake is not available for much needed eye care in other locations.

To follow up the assessment visit, ORBIS is planning to rehabilitate the damaged equipment. We will need volunteer clinical engineers and BMETs to conduct operational checks on all ophthalmic equipment, perform a detailed diagnosis of all malfunctioning equipment, make any possible repairs on site, identify further repair/spare parts required, and make recommendations on the worthiness of repair vs. replacement. Additionally, volunteers will be needed to provide training to local BMETs.

Before traveling to Haiti, I was rather apprehensive about the trip since I had always heard how difficult things were in Haiti. I was also not sure how I would react to witnessing firsthand the overwhelming devastation. What I saw was definitely overwhelming, and Haiti is certainly a place that is very poor and has suffered many difficulties throughout its history. Despite these challenges, I found the Haitians to be very warm and positive in their thinking and during my whole time there, felt that people were receptive to my advice.

If anyone is interested in participating in my efforts, contact me at **ismael.cordero@orbis.org**.

—Ismael Cordero