

Kadisco Hospital: Increasing Access to Quality and Affordable Diagnosis

In Ethiopia in 2012, there were nearly 9 million new tuberculosis (TB) cases and 1.3 million TB deaths. Approximately 1.2 million people are living with HIV in the country, and HIV and TB co-infection is high. Among HIV and TB patients, various diseases and conditions present which require pathology services for accurate diagnosis, for example neoplastic conditions, such as lymphoma and Kaposi's Sarcoma. In addition, pathology is used for prevention and treatment of the most common forms of cancer in Ethiopia – breast cancer and cervical cancer.

Access to pathology services in Ethiopia is very limited, particularly high quality services that provide a reliable diagnosis. According to a World Bank report there are only 33 pathologists in the entire country. Due to low quality and significant backlog, those with the means often send tests abroad, which can take a long time and cost more than \$300. Patients without the resources are sent to referral centers far from rural areas, making the consultation time consuming and costly.

Kadisco General Hospital has been offering health services in Addis Ababa for nearly eight years, and employs one of two dermapathologists and one of 33 pathologists in the country. The HANSHEP Health Enterprise Fund, implemented by the SHOPS project, selected Kadisco to establish an automated pathology lab and develop Ethiopia's first telepathology service, the practice of using digital imaging of slides to remotely provide diagnoses.

The Business Model

Through Kadisco's telepathology service, rural hospitals will be able to send slides electronically and receive a diagnosis without burdening patients with travel expenses. In addition, instituting telepathology will allow Kadisco to obtain second opinions as well as subspecialty opinions from expert pathologists in the United States and elsewhere.

To build capacity for their telepathology services, Kadisco is developing a training facility for laboratory technicians and pathologists from public and private institutions. Establishing a pool of trained technicians is essential to the success of the telepathology service, as poorly developed slides compromise the quality of diagnosis. Training will be facilitated by a multi-headed microscope that allows trainees and experts to view the slides at the same time.



Dr. Fuad Temam, who oversees the pathology lab, reviews a lab slide on the new scanner.

Kadisco Hospital

Grantee at a Glance

- Vision: Providing low-cost, timely and accurate diagnoses across Ethiopia
- Innovation type: Ethiopia's first real-time telepathology service
- Health focus: HIV/AIDS, maternal and child health, oncology, and dermatology
- Target population: Adults and children of all income levels throughout the country
- Country: Ethiopia

Through these efforts to increase capacity, Kadisco expands operations and increases the health care workforce in underserved regions of the country.

Ethiopia's First Real-time Telepathology Service

The Health Enterprise Fund grant funded the infrastructure to provide telepathology services and train laboratory technicians and dermapathologists. Kadisco automated the pathology laboratory to increase capacity and hired and trained lab technicians in the preparation of quality slides. Kadisco also procured and installed a slide scanner and 10MB internet connectivity for the telepathology system, as well as a multi-headed microscope equipped with a digital camera.

With this equipment Kadisco is now able to provide top quality pathology services, and the only real-time telepathology services in the country. Kadisco established a relationship with University of Pennsylvania to receive second opinions, cutting the cost of a second opinion from \$250 to \$50, and making the service affordable for a greater proportion of Ethiopia's population. To ensure high quality health services, the fund connected Kadisco with the Stepwise Lab Quality certification program, enabling Kadisco to seek accreditation for their laboratory.

Providing low-cost, timely access to quality diagnoses requires the whole hospital to run efficiently. The Health Enterprise Fund supported a lean six sigma kaizen event at Kadisco. Kaizen is a management and manufacturing concept that focuses on continuous improvement to eliminate waste and control quality. The training reached 30 employees in 10 of the hospital's departments.

The Impact

“ [A] major success, I would say, is using this grant as a stepping stone because Kadisco General Hospital is going to open up a pathology lab which it didn't have before.” — Dr. Fuad Temam

With too few physicians to meet demand and even fewer pathologists, telepathology is a critical means of increasing diagnoses, consulting with outside experts, and improving accuracy. In the pilot phase of the telepathology laboratory, Kadisco has reduced turnaround time for pathology diagnoses from three to four weeks down to an average of three days. Within the first month of working with the Health Enterprise Fund, the telepathology lab has provided services to over 1,000 patients. The lab is gradually recovering its costs, contributing revenue to support the hospital's other services. In the future, when additional laboratory technologists from rural areas are trained to develop quality slides, patients will be able to receive a diagnosis at their nearest health facility connected with Kadisco.

Kadisco has also formed a partnership with St. Paul Medical School of Ethiopia to establish a sub-specialty training program in dermatopathology, the first of its kind in Ethiopia. The program will begin with two dermatologists, and will expand to provide dermapathologists for other regions.

When faced with a potentially life-threatening condition, accuracy and timeliness of a diagnosis is critical. The Kadisco telepathology lab provides this quality service while increasing access through reduced cost, improving health outcomes for a greater number of Ethiopians.

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For more information about the SHOPS project, visit: www.shopsproject.org



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