Gertrude's Children's Hospital,
the Daktari Smart Telemedicine Program

The Challenge:

Facilitating healthcare for the 72% of Kenyans who live outside of urban areas and face long journeys to seek care in a health system that's already buckling from overcrowded hospitals and healthcare worker scarcity

For the nearly three-fourths of Kenya's population who live outside of urban areas, barriers to healthcare access in rural areas have serious consequences. Accessing adequate healthcare has long been a challenge for these populations, as most healthcare specialists and subspecialists live and work in urban centers. Patients often put off appointments and forgo treatment altogether to avoid expensive and time-consuming journeys to see doctors and specialists.

Healthcare workers in Kenya are limited as well, which compounds the problem. In 2020, Kenya had 12,792 registered physicians — a ratio of 26 physicians per 100,000 people. These challenges of rural healthcare delivery too often lead to overcrowding in limited medical facilities and high mortality rates among rural populations due to the inaccessibility of specialty care.

This is why Gertrude's Hospital Foundation has set out to improve access to healthcare in rural areas of Kenya, partnering with M-PESA Foundation, Safaricom PLC, Gertrude's Children's Hospital, and county governments to launch the Daktari Smart telemedicine program. The program, which includes AMD Global Telemedicine's virtual care platform and connected medical devices, launched in November 2021.

The Approach:

Leverage telemedicine technology for remote clinical exams that are as close to in-person care as possible for pediatric patients

Gertrude's Children's Hospital first developed a telehealth program in 2016 to improve access to healthcare in rural areas, specifically for children between the ages of 0 and 21, in two remote locations: Garissa County and Narok County.

Between 2016 and 2017, the hospital used AMD Global Telemedicine's AGNES platform to attend to over 250 referral cases. The hospital also trained 90 community health workers in Garissa and Narok counties through the platform to help with medication adherence, patient follow-ups after clinic appointments, and identification of conditions such as malnutrition in children.

Gertrude's Children's Hospital and its partners took learnings from the pilot program and applied them to the current Daktari Smart project, launching the new iteration in November 2021. Now, the hospital uses AMD's AGNES Connect platform and integrated primary care devices to extend quality specialist care to children in four rural counties. The goal of the telehealth program is to further optimize the capacity and reach of healthcare delivery systems, allowing level IV and level V hospitals to access specialists.

Through the Daktari Smart program's use of AMD's integrated devices, health workers at the local partner health facilities can connect with specialists at Gertrude's Children's Hospital by placing the medical devices on patients within local facilities while connecting patients directly to remote specialists. This avoids any misconceptions about a patient's symptoms and provides a real-time evaluation from the off-site specialists.

Gertrude's Children's Hospital also uses the AMD platform to train local healthcare workers and community members to improve community health. For example, the hospital connects with local care providers via technology to provide more in-depth training about common diseases and with mothers to educate them about proper nutrition for children. Gertrude's Children's Hospital has also trained more community health volunteers, who are instrumental in the health system as they spread health education in the local communities, identify difficult cases, and refer patients to facilities.

What's more, the bandwidth requirement for the telehealth solution is low, ranging from 2Mbps to 8Mbps. This means that the platform can still collect data from connected medical devices and serve as a communication platform in rural and underserved areas that do not have fiber connectivity.

"Most of the solutions that are currently in Kenya do not have medical devices and mainly talk about doing videoconferencing. And so, on our end, we felt that we would like a platform that has medical devices so that we're able to examine the patient in real time. That's why we opted to go with AMD."

— *Dr. Carol Waweru, Gertrude's Hospital Foundation Manager*

The Outcome:

Faster, More Accurate Diagnosis and Treatment to Improve Community Health

- Serving four counties, soon to expand to six, with hopes of expansion to 47 counties
- Reducing time to accurate diagnosis and effective treatment
- Providing access to free specialist care and treatment to 32,400 children in rural and underserved areas
- Reducing the amount of time and money needed for patients who would otherwise have to seek tertiary care
- Building capacity for more than 300 health workers serving in the rural health facilities
- Training 360 community health volunteers in the local communities

With the Daktari Smart program, Gertrude's Children's Hospital has been able to expand its reach from two counties to four and has ramped up its patient volume to more than 100 patients per month.

> "With this platform, we wanted local communities to be able to access specialists, like pediatricians, within the comfort of their local environments."
>
> — *Dr. Waweru*

Where patients once had to travel for days to see specialists (some of the implementation sites are about 400 kilometers away from the hospital in Nairobi), they can now avoid such barriers to healthcare and receive treatment in a matter of hours. Instead of becoming discouraged and

putting off appointments, as the hospital saw with its previous referral program, patients can now connect with specialists right from their local clinics. "We are able to assess the patient and come to a bottom-line diagnosis," said Dr. Keven Pateti of Samburu County Referral Hospital. This accessibility shortens the time needed for an accurate diagnosis and effective treatment.

For example, one young girl in a rural county visited a local healthcare facility and was connected with a specialist through the Daktari Smart program. She had previously been diagnosed with malaria at a local clinic, but specialists from Gertrude's Children's Hospital recognized that her correct diagnosis was actually cancer. With this discovery, specialists are now able to develop and help the child navigate a proper treatment plan.

The Future of Healthcare for Kenya's Rural Population

With positive results and community feedback from both the pilot and current telehealth programs, Gertrude's Children's Hospital remains excited by the possibility of further improving healthcare access to rural areas of Kenya.

"I get very satisfied when I see that I can offer care to a child remotely, follow up with that child, and see that they are back to normal. Let's use this technology to reach patients and not wait for them to come to us."
— Dr. Renson Mukhwana, Pediatrician at Gertrude's Children's Hospital

In the next five years, the hospital plans to bring the Daktari Smart program to 43 more counties, expanding its reach into all 47 counties and enabling every community in Kenya to have easier access to high-quality healthcare.