

Nearly 136 million people in Africa live with hearing difficulties: Tackling the crisis with a smartphone and an app

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In rural Kenya, 64-year-old John Kamau's world of silence is about to change. For decades, isolated by hearing loss from the community's

vibrant life and his grandchildren's conversations, he sees hope when a community health worker visits with a smartphone in hand.

This isn't just any visit; it's the gateway to Kamau's reconnection with the world, facilitated by breakthrough digital health tools on a smartphone.

A revolutionary hearing test app on the smartphone conducts precise assessments, followed by the provision of low-cost, high-quality hearing aids right there and then.

With these aids, programmed to his specific hearing profile using Bluetooth, Kamau can take part in ordinary conversations and hear his grandchildren laugh.

Kamau is one of many whose lives are being transformed through a high-tech, soft-touch approach: advanced digital technologies delivered through trained members of a community.

Africa's silent epidemic

In Africa, an estimated [136 million](#) people are currently living with hearing loss, a figure expected to swell to [337 million](#) by 2050.

This silent epidemic has profound social and economic repercussions contributing to a global cost of untreated hearing loss estimated at [US\\$980 billion](#) annually.

In Africa it is exacerbated by a dire shortage of audiologists, with fewer than one for [every million people](#), and the prohibitive costs of hearing aids for many in low- to [middle-income countries](#).

[Only 2%](#) of those who need hearing aids in Africa wear them.

There is also a widespread lack of awareness of the condition.

Revolutionizing access to hearing care

I am a professor of audiology at the University of Pretoria where—working together with the [World Health Organization](#) and the [hearX Foundation](#)—we have developed [digital devices](#) being used to test hearing loss across Africa.

We are pioneering [community-based hearing care](#) initiatives in low-income communities in Kenya, as well as Khayelitsha, Gugulethu, Mbekweni, Atteridgeville and the Eastern Cape province in South Africa.

1. A screening app for children

We have trained local community members to conduct hearing screenings in early childhood development centers. Close to 50,000 children have been tested at a cost of less than [US\\$6 per child](#).

Hearing loss is especially traumatic for children as it hampers language development and learning and leaves them at a disadvantage for life.

Community health workers need [minimal training](#) to carry out screenings with a [simple screening app](#) on an Android smartphone with calibrated headphones.

The app monitors noise in real time to make sure the surroundings are quiet enough for the test. Parents receive a [text message](#) with their child's results and next steps if further interventions are needed.

Community workers can also do eye tests on the same device in less than

three minutes.

2. Early child development training

We've launched a mobile health (mHealth) training program focusing on ear and hearing ability for teachers in early childhood development centers.

Daily multimedia WhatsApp messages train teachers to identify hearing problems. Teachers are taught to assess if a child needs to move to the front of the class or to go for a hearing test.

The program has already [successfully trained](#) thousands of teachers across South Africa.

3. Screening adults

Our collaboration with the World Health Organization has led to the creation of the [hearWHO](#) app, an official tool for screening adults.

The app features an easy-to-use test that plays numbers with a [background noise](#) and asks users to press on these numbers. Taking just two to three minutes to complete, the test has reached nearly 500 million people in over [190 countries since 2019](#).

The app displays user results and keeps a personalized track record of their hearing over time. It is available in English, Dutch, Mandarin, Russian and Spanish.

4. Hearing aids for communities

In a recent feasibility study for the WHO, we explored the provision of

hearing aids in low-income communities to inform the recently released [WHO guidelines](#).

Community health workers, aided by an artificial intelligence system, analyzed images of an eardrum. If the eardrum appeared normal—and a hearing loss was detected—he or she could be fitted immediately with hearing aids.

We have also partnered with the Clinton Health Access Initiative to expand our screening technology to [eight countries in Africa and Asia](#).

As we continue to confront the challenges of [hearing loss](#), the path forward is clear: integrating these innovative models into existing health care systems is imperative.

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