

# Engineers enter fight against AIDS in Africa

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(AP) -- Getting AIDS test results from labs to remote villages once took weeks in Mozambique, with the information sent by courier along the impoverished country's terrible roads. The delay could mean death.

Now, communications engineers have adapted office printers and cell-phone technology to wirelessly and immediately relay test results. Britain's Sequoia Technology Group and Telit Wireless said Tuesday the printers are being rolled out elsewhere in Africa after initial success in Mozambique, where the project has been running for a year.

Phillip Collins of Telit said in an interview that his company's technology is more often used for monitoring electricity meters than saving lives. It took on the printer project at the Clinton Foundation's request.

Tim Clayton of Sequoia said he has visited Mozambican clinics where printers have been installed, and learned about the push to ensure AIDS does not kill children.

"It's pretty significant impact when you see it firsthand," Clayton said in an interview.

It's another innovative use of cell-phone technology, which Collins called the "single most common means of long-range technology being used today" around the world. In Africa, cell-phone technology is used to transfer money from customer to vendor, and [wildlife researchers](#) have put no-frills cell phones in weatherproof cases on collars around

elephants' necks to track the animals' movements.

Mary Pat Kieffer, a Mozambique-based expert with the Elizabeth Glaser Pediatric AIDS Foundation, said babies in remote villages were dying before doctors could get [test results](#) and start treatment. Kieffer was not involved in the printer project, but has seen it at work and said in an interview it has helped "in closing the loop" on a lifesaving circle.

The advanced technology needed to check for HIV, the virus that causes AIDS, in newborns is available at four laboratories in Mozambique, said Dr. Ilesh Jani, director of Mozambique's National Institute of Health.

Blood drawn from babies believed to have been exposed to HIV can be drawn and stored dry on filter paper. Kieffer said [health workers](#) have created networks to pick up samples and deliver them to the labs, a first step that itself was once a source of delay.

Kieffer added that since she began working in Africa a decade ago, the number of labs has increased, as has their capacity - a matter of equipment and staff.

"When you get a positive result, it's very urgent, you have to do something quickly," Kieffer said.

HIV-positive babies who are quickly put on treatment are much more likely to survive, health workers say. In the first six months alone that the program was up and running in Mozambique, 20,000 results were relayed to the printers.

Labs processing thousands of tests lack the staff to call clinics or send results by cell-phone message. Results stacked up until they could be sent in batches by courier.

Clayton said the technological fix is fairly simple. Engineers removed the guts from standard printers and replaced them with cell-phone technology. A computer at the lab can relay results from multiple tests simultaneously to clinics using GPRS technology. Printers can be left on so results can be streamed. If the power fails, the results are stored until it comes back.

At the clinics, "the only thing you have to do is to tear off the paper from the printer and hand it to the doctor," the National Institute of Health's Jani said.

GPRS is reliable, and cheaper than sending a cell-phone text message, Clayton said.

Clayton said the trickiest component was creating a system, set up in Britain, to link lab computers to clinic printers. Now that the system is up and running, it will be easy to replicate elsewhere, Clayton said. Plans are in place to use the printers in Botswana, Kenya, Tanzania, Uganda and Zimbabwe.

Mozambique still struggles with a shortage of health workers and medicine, Jani said. He praised the printer project, but cautioned: "No technology is a magic bullet."

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