Headline	Cheap smartphone device detects HIV, syphilis in 15 minutes		
MediaTitle	Daily Express (KK)		
Date	09 Feb 2015	Color	Black/white
Section	Nation	Circulation	30,557
Page No	25	Readership	97,836
Language	English	ArticleSize	156 cm²
Journalist	N/A	AdValue	RM 321
Frequency	Daily (EM)	PR Value	RM 963

Cheap smartphone device detects HIV, syphilis in 15 minutes

WASHINGTON: US and Rwandan researchers say they have developed a low-cost smartphone accessory capable of detecting HIV and syphilis from a finger prick of blood in just 15 minutes, Xinhua news agency reported.

This is the first device that replicates all the functions of a lab-based blood test and works by detecting markers of infectious diseases: HIV antibody, treponemal-specific antibody for syphilis and non-treponemal antibody for active syphilis infection.

The manufacturing cost of the device is only US$34, much lower than the US$18,000 that current gold standard of diagnostics, known as the enzyme-linked immunosorbent assay (ELISA), needs.

The accessory was recently piloted by health care workers in Rwanda who used it to test blood finger-pricked from 96 patients, many of whom were women at risk for mother-to-child transmission of sexually transmitted diseases.

The researchers said the device delivered test results displayed on the phone screen within 15 minutes and performed almost as well as the ELISA test.

Nearly all patients preferred it to lab-based tests, which could take up to two or more hours.

"Our work shows that a full laboratory-quality immunoassay can be run on a smartphone accessory," said lead author Samuel Sia, associate professor of biomedical engineering at Columbia University.

"This kind of capability can transform how health care services are delivered around the world," Sia said.

The device, or dongle, can easily connect to a smartphone or computer. It is small and light enough to fit into one hand and draws all the power it needs to run by plugging into a smartphone's audio jack.

Researchers believe that this lab-on-a-chip device could help scale up early detection of HIV and syphilis especially in mobile or field clinics.

"Our dongle presents new capabilities for a broad range of users from health care providers to consumers," Sia said.

"By increasing detection of syphilis infections, we might be able to reduce deaths by tenfold. We might be able to scale up HIV testing at the community level with immediate antiretroviral therapy that could nearly stop HIV transmissions and approach elimination of this disease," he added.

The work, also comprising researchers from Rwanda Biomedical Centre, was published in the US journal Science Translational Medicine. –Bernama