

Smartphone app that diagnoses cervical cancer, lymphoma invented at Harvard Medical School

By Rachel Carbonell

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Photo: Dr Cesar Castro believes a new app will help speed up the diagnosis of cancer. (Dana-Farber/Harvard Cancer Centre)

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US researchers have developed a smartphone app that can be used to diagnose cervical cancer and cases of lymphoma.

The new app, developed at Harvard Medical School, harnesses several technological advances, including what is essentially a kind of miniature microscope.

The head of the cancer program for systems biology at Massachusetts General Hospital and one of the lead researchers on the project, Cesar Castro, said the process involved introducing samples of blood or saliva into a small cartridge attached to a smart phone.

"We secured an extra biopsy from women who were undergoing a cervical biopsy to begin with, because they had a suspicious pap smear previously," he said.

Dr Castro said the results of the smart phone module showed a link between readouts of the device with the gold standard of screening effectiveness.

The application was also able to detect cases of lymphoma and a range of other diseases.

"We also extended our work to look at DNA from a virus and so the application could be extended into infectious disease," Dr Castro said.

A study detailing the development in the Proceedings of the National Academy of Sciences (PNAS) showed the test was fast and inexpensive.



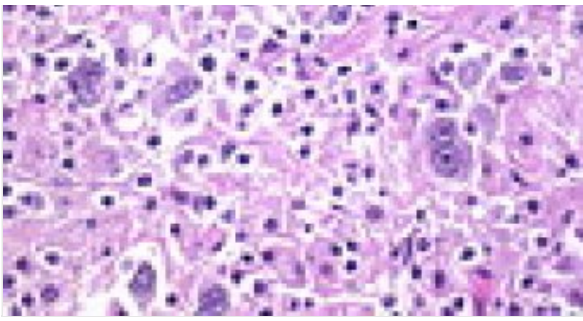


Photo: It's hoped a new app could speed up the diagnosis of cancers like lymphoma.
(www.webpathology.com)

It found a cancer screening test using this application would give a result in less than an hour, for less than \$US2.

Dr Castro said the application was not designed for the average citizen.

"We would think these would be in community centres, or at least in areas where there will be a seamless kind of integration into the next step with respect to treatment," he said.

Dr Castro said the application required further testing.

"We can certainly move beyond biopsies and use human blood to align with kind of the current push with wearables and other technologies," he said.

"Information could then be sent to one provider and that could allow certainly to open the channels of communication."

Dr Castro said privacy was still a concern as raw data from the application must be processed by a computer and sent back to the smart phone.

"That's a concern even with our paper records," he said.

"And so we believe and are optimistic that the security technologies will evolve in parallel."

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