

Local researchers working on rapid diagnostic test

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Researchers here are working on a rapid diagnostic test for Covid-19 that can potentially be used at general practitioner clinics, joining the race to produce fast, reliable tests that can be used at places which do not have specialised laboratory equipment.

Teams from the National Centre for Infectious Diseases (NCID), hospitals, the Agency for Science, Technology and Research, the National University of Singapore (NUS) and Duke-NUS Medical School are working to develop accurate and reliable rapid diagnostic tests, said Professor Tan Chorh Chuan, chief health scientist at the Ministry of Health.

This is critical because identifying such patients is like finding a needle in a haystack, with symptoms such as fever and cough being very common, experts say.

The current standard test for Covid-19 is the polymerase chain reaction (PCR) test, a laboratory test that detects the genetic material of the virus in patient specimens. It is done mostly at hospitals and is not available at GP clinics.

“This test is accurate and in Singapore, we have sufficient capacity to do a high volume of tests,” said Prof Tan. “However, the challenge with PCR tests is they typically take two to three hours to be done and require the use of specialised machines.

“For GPs and polyclinics, the ideal test has to be accurate, fast (30 minutes or so), and simple to do without the need for special equipment.”

Researchers around the world are developing and testing such diagnostic kits, he said.

In a Feb 20 local paper published in the medical journal *Jama*, Prof Tan and other experts here noted that having such a screening test in the primary care setting would identify suspected cases as early as possible and reduce community spread.

Many patients who sought help at primary care clinics had symptoms such as dry cough, sore throat, low-grade fever or malaise before these worsened several days later. Covid-19 looks like any other upper respiratory tract infection (URTI) in the initial stage of the disease, said Associate Professor Hsu Li Yang, the infectious diseases programme leader at NUS Saw Swee Hock School of Public Health.

The vast majority of such infections or URTI in Singapore are not Covid-19 cases. Yet, the consequence of missing a case could be that new clusters of infection will be created, while trying to isolate every case of URTI would result in hospitals being overwhelmed by non-Covid-19 cases, he said.

A definitive diagnostic test that is both sensitive and specific, with a quick turnaround time and which can be performed in a GP clinic, will be useful, said Prof Hsu. “Unfortunately, there is no such test available yet,” he added. “An alternative would be to expand the current laboratory capacity here such that primary care clinics can also send in specimens for testing, which will reassure the patients and their families.”

The lab test has its challenges, though. Associate Professor Raymond Lin, director of the National Public Health Laboratory at NCID, said that in a few patients, it may be difficult to obtain a specimen with enough material to test. This is why the virus may not be detected in the first test in some patients but may turn up as positive in subsequent tests, he said.

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