Singapore may use saliva as it ramps up testing capacity

MOH looking into feasibility of incorporating it into testing regime

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The use of saliva tests for Covid-19 is being considered by health authorities here, as Singapore ramps up its testing capacity.

Responding to queries from The Straits Times, the Ministry of Health (MOH) said it will continue to review global and local clinical research evidence on the feasibility of incorporating saliva testing into its testing regime. This is part of regular assessments on the suitability of new testing technologies, its spokesman said.

Saliva testing is already being administered in places such as Hong Kong, Japan and the United States as it is more convenient and less uncomfortable compared with nasal swab tests. Those who perform the test also reduce the risk of exposure and infection for healthcare staff and others who do the tests.

The British health authorities have begun trialing do-it-yourself test kits at home, hoping to detect asymptomatic cases early and ramp up the nation’s testing for Covid-19.

Some experts, though, are questioning the reliability of using saliva samples to detect Covid-19.

They note, for example, that even as some research may suggest that saliva sampling could be comparable to swabbing when conducting polymerase chain reaction tests, the saliva sample should include throat secretions, which generally have a higher viral load, to yield more accurate results.

Associate Professor Ho Li Yang, programme leader of infectious diseases and co-director of global health at the National University of Singapore’s Saw Swee Hock School of Public Health, said the viral load in “pure saliva” is relatively low, whereas “secretions from the back of the throat, which includes the oropharynx and nasopharynx, generally have a higher viral load”.

And if supervised self-administered at home, “the saliva collection may be done poorly or inappropriately, be it deliberately or inadvertently”, which could produce unreliable and inaccurate test results.

The process of obtaining nasopharyngeal secretions may also create respiratory droplets, which could be a concern if the saliva is collected in a crowded place without proper infection control and cleaning measures, Prof Ho said.

Still, saliva testing is not without its merits. Depending on the testing strategy and the population targeted for testing, administering saliva tests could reduce bottlenecks at mass testing centres as it would require fewer supervisors, who need not be medically trained for swabbing, said Prof Ho.

Currently, incoming travellers at Hong Kong airport are required to undergo saliva tests, as well as tests to administer and hardly require supervision.

Associate Professor Alex Cook, vice-dean of research at the Saw Swee Hock School of Public Health, said saliva testing – if approved here – could be “more palatable to groups who might be outliers in the workplace”, for example, young children.

As research continues in this area, Singapore-based molecular diagnostics company Lucence and the Agency for Science, Technology and Research have come up with a saliva collection kit called Salo-Sample.

About 2ml of saliva is collected through a funnel connected to a collection tube. A bottle of stabilisation fluid containing a reagent is then mixed into the sample, which stabilises the viral RNA – the genetic material of the virus – at room temperature for up to one week.

At the same time, the SureCoV-2 virus that causes Covid-19 is inactivated such that it will no longer have the ability to invade other cells. This will help reduce one’s risk of exposure to the virus when handling samples during collection, transport and testing.

The Straits Times understands that the test kit is now undergoing clinical validation studies, to assess its feasibility and reliability.

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