

SARS-CoV-2 screening must go beyond the sick

by ASSOC PROF DR SYAHRIL ABDULLAH

THE number of Covid-19 cases has increased tremendously in the last week, heightening the anxiety of people as many tend to overreact when they develop flu or sore throat.

Currently, only those who have fever or acute respiratory illnesses and have travelled to affected areas or in close contact with confirmed cases are considered as persons under investigation (PUIs) and qualify for the screening process by the Ministry of Health (MoH).

Those who do not fulfil these set of parameters can opt to do screening at private healthcare facilities. A positive result would need to be further verified by the MoH-designated laboratory, such as the Institute for Medical Research (IMR).

The MoH is using the Real Time-Polymerase Chain Reaction (RT-PCR) method to screen for the infection. This method will be able to detect the presence of SARS-CoV-2 nucleic acid even when the patient develops no symptoms.

As a molecular biologist, I know this method is tedious, time-consuming, and a professional technician is needed to run the samples.

The cost for acquiring the reagents and kits — from the extraction of nucleic acid to running the

PCR — can be quite expensive.

The laboratory has to be extremely clean to avoid cross contamination, which could lead to a false positive result.

There could be few reasons for the selective screenings, such as (i) the limited availability of testing kits, specialised machines and trained personnel. Screening priority has to be given to the high-risk, healthcare workers and first responders; and (ii) the non-PUIs would need to be present at the sampling point, usually at the hospital.

This could overwhelm the health service and expose the non-PUI to the risk of contracting the virus at the hospital.

The non-PUIs, who are showing flu-like symptoms, are advised to recover at home. Those who are asymptomatic do not even know that they might have contracted the virus and remain contagious.

This stringent screening has left these individuals and the general Malaysian population unchecked. I believe that expanded testing is needed to identify more potential cases and also to learn how much the virus is spreading under the radar, so we are able to mitigate the impact of the virus.

And this should also include individuals who have been discharged by the hospital follo-

wing Covid-19 treatment.

I will give a few reasons why there is an urgent need to have widespread testing.

1. German-based study had shown that people with mild symptoms had high levels of the virus in throat swabs early in their illness (March 8). In addition, an article published in the *New England Journal of Medicine* (March 19) had reported that infected individuals who never developed symptoms could shed a similar amount of virus to those who did.

2. *Nature news* (March 20) estimated that these covert cases could represent some 60% of all infections. Self-isolation could prevent the spread of the disease to the public, but these covert cases could still affect their family members at home.

3. We are still unsure of how long the recovered patients remain contagious. A study in Wuhan had shown that traces of the virus could persist in the body for up to two weeks after the symptoms had vanished. More worrying is when an individual in China had persistent virus shedding for over a month (*The Lancet*, March 11).

4. The immune response to SARS-CoV-2 is not yet fully understood. According to Dr Li QinGyuan, director of pneumonia prevention and treatment at China-

Japan Friendship Hospital in Beijing, recovered patients might only develop short-term immunity. There is a possibility that the disease would relapse once the antibody disappears. Therefore, screening must also be performed to recovered patients to ensure they are fully free from the virus, so they do not get the disease twice.

5. We need to have a good epidemiological picture on the spread of the virus in our general population. By doing the widespread screening, we would see how the incidence, prevalence and severity vary over time. This could only be achieved when the whole disease spectrum is taken into consideration.

6. The data from the widespread screening process can tell us how effective the social restriction measures are in curtailing the spread of SARS-CoV-2 and thus whether these restrictions could be relaxed or additional policies should be implemented.

7. South Korea has managed to control the rate of infection by aggressive screenings and contact tracing, without locking down entire cities or taking some of the other authoritarian measures like China.

The Ministry of Science Technology and Innovation and Ministry of Higher Education have agreed

that universities with proper laboratories, infrastructure and technical abilities can take part in the screening efforts. I hope that this move will enable the non-PUIs and asymptomatic suspects to do the screening.

Unlike RT-PCR, the rapid test kit is not ideal for accurate and early detection of infection as the earliest appearance of the antibody against SARS-CoV-2 is approximately 10 days following infection. However, this kit may still be useful for widespread screening of asymptomatic infection and for research purposes.

“We have a simple message for all countries: Test, test, test,” said World Health Organisation DG. We must take heed of this advice.

Widespread screening regardless of the disease spectrum, and tracking close contacts of Covid-19 positive patients to the greatest extent possible, would prevent a significant number of people from spreading the disease further.

Assoc Prof Dr Syahril Abdullah is the deputy director at the Institute of Bioscience, Universiti Putra Malaysia. The views expressed are of the writer and do not necessarily reflect the stand of the newspaper's owners and editorial board.