

Test smarter not harder for an agile system

7 August 2020, by Nathaniel Bloomfield, Christopher M Baker, Andrew Robinson



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Victoria is continuing to see record numbers of COVID-19 cases, despite four weeks of stage-three lockdown restrictions that has now led us into stage-four restrictions.

While we are well placed to respond to this crisis due to our extensive testing capability and contact tracing efforts, the national mantra that we should do as many tests as possible is problematic—and could actually hamper our ability to control the virus.

With the introduction of stage four restrictions in Victoria, it is time to reassess our testing strategy to ensure that it is efficient and effective.

The Victorian Government has undertaken a massive effort to scale up [testing capacity](#), and currently reports the results of [tens of thousands](#) of coronavirus tests a day. However, there are worrying signs that the system is starting to struggle from the sheer number of tests that need to be processed.

For example, there are reports of [test](#) results taking [up to a week or never arriving at all](#) and a growing [contact tracing backlog](#). Even more concerning is

that Victoria is relying on [other states](#) for support in processing tests—support that may evaporate if the outbreak in New South Wales worsens, for example.

Testing provides our only avenue to slow the spread of the disease without imposing greater levels of restrictions on the whole community. It allows us to identify infected individuals, support and isolate them, and identify their close contacts through tracing, and so reduce the potential for the disease to spread.

But testing is more than just taking a sample and sending it to a lab—there's data capture, and contact tracing for positives, but even the negatives take time and effort.

Contact tracing is only effective when it is done quickly. This is because each day that the outcome of a test is delayed is an extra day that exposed contacts will be unaware of the risk and have the potential to spread the disease.

When case numbers were low and the aim was to pick up every single positive case, testing anyone and everyone who wanted a test was a good strategy. Some action has been taken to make testing more targeted by reducing [voluntary asymptomatic testing](#), but more will need to be done.

Victoria may have little capacity to continue to increase its testing and contract tracing operations, and a system that suffers from lengthy testing and contact tracing delays is an ineffective one.

A potential solution may be for Victoria to further target its testing strategy by prioritizing tests that will have the most impact on slowing the spread of the virus. Victoria can't be [counting the books while the library burns](#).

The focus needs to be on putting out the biggest fires, which is a completely different scenario to that the other states and territories presently find

themselves in.

What are the factors that affect the priority of tests?

All tests are costly in both time and effort. But a test is only useful if the result can be obtained and used for contact tracing quickly, so that close contacts will be notified before they spread the disease.

Also, tests that come back as positive are more useful than those that are negative. A positive test will hopefully lead to someone actively changing their behavior, like staying home and not going to work, and will also lead to their contacts also isolating.

Finally, it is more useful to test someone with a large number of contacts. Under Victoria's lock-down restrictions, testing essential workers who need to be physically present each day will have much more value in comparison to an office-worker who is now working from home.

Shifting to a testing strategy that is more targeted may result in missing some cases that would otherwise be found, but the alternative is relinquishing control over which cases are missed—and continued delays.

Delaying diagnosis and contact tracing for those in aged care and the health system will have far more devastating consequences than for people already staying home under Stage 4 quarantine, and ideally already self-isolating if they have symptoms.

Others [have also called](#) for Victoria's testing strategy to be re-assessed, and this may be required before we can obtain [data of sufficient quality](#) to have a much more detailed picture of our progress in containing the virus.

The focus on the number of tests processed and positive cases each day is a crude measure for judging Victoria's progress in controlling the disease and can be misleading.

In addition to how long it has taken each test to be processed, it is important to know who is being tested, why each test was conducted, and the number of new contacts that have been exposed as

a result of positive cases.

Knowing who is currently being tested and why will be key to developing a more effective testing strategy. Counting close contacts will also be key to measuring our performance in controlling the virus, as not all positive cases are of equal concern, particularly if a positive case was already isolating due to contact tracing efforts.

We need to treat "testing to reduce disease spread" and "testing to understand community prevalence" as separate tasks.

However, they both compete for the same testing capacity, and therefore too much of one will make the other less effective.

We must make the hard decisions now to ensure that our testing is smarter, as otherwise Victoria's efforts to get ahead of their coronavirus outbreak will suffer.

More information: This article was first published on [Pursuit](#). Read the [original article](#).

Provided by University of Melbourne

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