ASPI
**AUSTRALIAN
STRATEGIC
POLICY
INSTITUTE**

Returning to work during the pandemic
Testing, surveillance, apps and data as our near term future

Michael Shoebridge

The early signs are that the national cabinet's social distancing measures, and the Australian people's compliance with them, are slowing the rate of growth of Covid-19 infections. Plenty of voices are already speculating about various restrictions being lifted, if not in quite as uninformed a way as President Trump.[1]

It's tempting to feel that we've succeeded so we can all relax now, but I don't think anyone looking at the world, listening to those with real knowledge and examining the evidence thinks that's possible. As our premiers, our Chief Medical Officer, international experts and Australia's own Norman Swan tell us, we're nowhere near ending this pandemic in Australia.[2]

We won't be unless one of two things happens: we get a vaccine that's effective and widely available faster than even the best case accelerated development says is possible (still some 12–18 months away), or we suppress Covid-19 inside Australia's borders and keep those borders sealed biologically against the virus.[3]

Back to work post-it-note on calendar: iStockphoto/Thinglass.

Let's imagine we don't get either of those answers in the next six months, or for some time beyond then. So, the coronavirus remains highly infectious and also devastating for a sizeable chunk of the Australian population, and its spread can be limited primarily through social distancing, rapid quarantining of the infected and the isolation of our most vulnerable.

Let's imagine also that the current social distancing measures stay in place, but we enable sections of our society and economy to resume business through specific measures designed to allow that, while preventing a reacceleration of the spread of the virus.

How might we do this? For all the WHO's systemic failures on Covid-19, and its shameful prioritising of Chinese Government sensitivities over global health, the organisation's boss got one thing right a little while ago when he said countries should 'test, test, test'.[4] *Vox* magazine's survey of experts on this put it better: 'Test millions. Test early. Test late. Test over and over. Test until the whole damn pandemic is over.'[5]

Step one in controlling Covid-19 in a world without a vaccine is having data on who has the virus, who hasn't, and who has had it but recovered. Doing this means having extremely widespread testing operating across the Australian population, every day.[6] That testing either happens in our homes or on our arrival at places of gathering.

That's the world that people in Wuhan are living in now.[7] It's in no way 'back to normal' pre-virus, but it's not a complete lockdown either.

The practicality of such widespread testing depends on the availability of tests that are cheap to manufacture, simple to distribute and simple to administer and evaluate. This seems to be becoming a practicality, as researchers are developing tests that spot both infection with the virus and antibodies that show a person has had the virus.[8]

Finger-prick tests seem the most likely candidates.[9] Early versions haven't been accurate enough to be useful, showing too many false negatives and false positives; however, rapid development continues. If tests can't be sufficiently simple and accurate to take at home, then we're back to the Wuhan model of testing on arrival at any places where groups need to gather in numbers for work or education. That allows trained personnel to administer and evaluate tests. The issue then becomes being able to test people rapidly as they arrive, both for efficiency reasons and to minimise infection being spread while people wait.

Tests and results are not enough, obviously. The data from them needs to be analysed in as close to real time as possible and used for rapid decision-making if we're not to face a re-emergence of Covid-19 spread at scale in our population. Here, there are also promising developments.

The Wuhan experience shows Chinese authorities using WeChat—a widely available social media application that's also a 'hub' for Chinese citizens to engage with government authorities—as the data gatherer for their tests. This can allow those who test negative for the virus or who show that they've already been infected but have recovered to be given what is essentially a 'digital Covid-19 passport'.

Such a digital passport can allow individuals to enter workplaces and to travel and interact with others for that day. Its renewal depends on the test result next day.

A non-authoritarian parallel is the unprecedented cooperation between Apple and Google to use people's smartphones and their Bluetooth proximity detection capabilities to be a ubiquitous and real-time contact-tracing system for nations' health authorities.[10] Imagine widespread real-time testing on arrival at workplaces, schools and universities, with test data fed to an app that also enables real-time contact tracing for those who've come into contact with a person who is infected. Iceland's government has already approved an app that uses GPS to track users, and users can allow access to that data for government contact tracing.[11] One-third of Icelanders had already downloaded the app shortly after its release. Reports say the national cabinet is considering an opt-in app for this purpose[12].

We would be wise to supplement this individually based testing with community health surveillance measures, such as analysing infection prevalence and location through sewage testing, as is done with illegal drugs.[13]

This combination of testing, analysis and surveillance could get many Australian workplaces and educational institutions back to some kind of operation beyond working from home well before a vaccine is developed.

It would require as strong compliance from our population as we're achieving with the current social distancing measures. And those measures would need to stay in place except for the workplaces and educational institutions that we could resource sufficiently well with testing.

The Apple and Google approach apparently protects individuals' identities from other users, who simply get an alert that they've been in close proximity to someone who has tested positive for the virus. The identities of those who do test positive would need to be shared with health officials for the app to be effective, however. Iceland's approach is based on individual citizens' consent to have their data provided to health authorities for contact tracing should they test positive. This opt-in approach appears to be what national cabinet is considering.

In parallel with testing and surveillance, we can expect to see therapeutic treatment of those who develop serious illness from Covid-19 to improve over coming weeks and months as Australian and international medical practitioners and scientists understand the virus and how it interacts with human bodies better, and as experimentation in treatment occurs globally[14].

There's enormous ground to cover to stop Covid-19 from being one of the ugliest killers that humans have experienced,[15] but that ground will be covered more rapidly than in the past because of the state of medical knowledge, the expertise of the globe's practitioners and researchers and very high levels of international cooperation.

As we've seen with ventilators and protective equipment, private initiatives are blossoming, but recognising them, making them coherent, and making their products available at scale is the work of governments. Where governments are shaping responses well (Taiwan, South Korea, New Zealand and Australia), the spread is being controlled; where they aren't, the pandemic is devastating (Italy, Spain, the US and Iran).[16]

In Australia, the national cabinet can orchestrate the testing and surveillance measures set out above, but it will also need to fund test and app development, and fund the investments in manufacturing and the operation of this new regime. Hundreds of thousands or perhaps even millions of tests repeated every day will involve thousands of Australians in making, distributing and administering the tests and assessing results across the country.

More than just focusing and funding the work, our governments need to design the approach in a way that works for our democracy. Australians have implemented government-directed social distancing measures in their personal and business lives without a heavy-handed penalty regime or repressive violence from internal security personnel, unlike the Chinese Government model for its own people.

To stay true to our society and our successful approach to date, surveillance of our citizens' health status and daily contacts through technology needs to be designed and run as part of the existing health surveillance system, not the security apparatus of our government.

And government leadership and funding commitments are needed well ahead of the rollout of such testing and surveillance because of the need for development to be informed by government policy. It's also key because manufacturing capacity has to be built for test production, administration and evaluation at the national scale, and the data analysis and functionality have to be designed and built into an app or apps that the government will endorse and use to issue Australian digital Covid-19 passports.

The fastest and most successful approach will be a public–private partnership between test developers and producers, app developers and operators and the Australian state and federal governments. We might ask a 'first mover' government such as Iceland's to let us use its app as our own starting point to shorten development time.

The national cabinet can be the focal institution for this partnership, but we'll need new money—probably billions of dollars—as well as the horsepower of all our state governments, the Australian Public Service and the corporate heavyweights in the National COVID-19 Coordination Commission to make this work. You can see that even with united effort, this new regime is months away.

Even when it's in place, before a vaccine is widely available, Australians will need to practise social distancing as we are now—at home, at work and in any other places where people gather. That's because the testing and surveillance regime will have holes no matter how accurate and widespread it is, and the coronavirus is highly infectious. At the same time, showing we're getting people back to workplaces and educational institutions will help engage the sections of our population who continue to see the measures taken so far as an overreaction.

Social distancing practices at work will look a bit like your employer has become hygiene-obsessed and your colleagues suspect you of being either just plain dirty or dangerous. Anyone who feels at all ill will simply not be able to go to school or work. On arrival, everyone will be tested prior to entry. Those who test positive will be put into immediate quarantine, while those who enter will need to practise workplace hygiene protocols.

It'll be smart—and mandatory—to have minimal staffing levels in workplaces, to use at-home work to the maximum extent possible, and to have mandatory disinfection and cleaning regimes in place in individual workplaces, schools and universities.

How widely this combination of measures can be applied across Australia's workplaces and educational institutions will depend not just on resourcing and availability, but also on the nature of the industry and workplace.

Industries and workplaces with high levels of contact with transient chunks of the broader population will probably need to remain subject to current restrictions—think cafes, restaurants, food courts, shopping centres, cinemas and hospitality, tourism and public sporting organisations.

The hygiene and distancing protocols will probably be easier for advanced manufacturing workplaces, it turns out, as those workplaces are already pretty socially distant, with low levels of staffing and high levels of automation.[17] A lot of construction work is mainly outdoors and is also now more mechanised than labour intensive. And a regime of testing workers on arrival, combined with strict workplace health protocols, will probably be feasible for many other manufacturing, large-scale agricultural and white collar workplaces—including our parliaments.

Small businesses will struggle in the absence of almost ubiquitous community testing, unless 'precinct' approaches provide testing and health hygiene for facilities that house groups of such businesses (shopping centres and business parks are examples).

This diversity across workplaces and organisations means that taking the path advocated here—tests, data, apps and surveillance—will involve a clear and pervasive communication effort between our leaders and our people. Confusion about who's in, who's out, which businesses can start planning to get back into operation in facilities now closed and which must stick to what they have now will unravel this approach. And being able to explain how the health surveillance approach has been designed to work with our democratic society and to not be a part of any future national security surveillance powers will be key to bringing different parts of our population along. Again, this communication task is a job for the national cabinet.

So, our next few months look like what we're all living through now. If the months beyond that are to be any different, then this 'test, surveil and operate' model needs to be planned and resourced rapidly now.

This won't be the fabled 'bridge back' to pre-pandemic life our leaders spoke of a couple of weeks ago, but it will get as much of Australia as is feasible back to work and life in ways that let more of our economy operate effectively and that are able to be sustained until a vaccine is developed and available. Given that a vaccine might take longer than the best case scenario of a year from now, that seems worth doing.

Notes

1   Brett Samuels, Morgan Chalfan, 'Trump says he hopes to have economy reopen by Easter', *The Hill*, 24 April 2020, online.
2   Richard Ferguson, Elias Visontay, Angelica Snowden, 'Coronavirus Australia live updates: *Ruby Princess* crisis deepens with two new deaths', *The Australian*, 13 April 2020, online; Norman Swan, 'Health report', *ABC News*, 13 April 2020, online.
3   Jamie Walker, 'Coronavirus: Plan B needed, says Australian vaccine hunter Jane Halton', *The Australian*, 11 April 2020, online.
4   Emma Farge, John Revill, '"Test, test, test": WHO chief's coronavirus message to world', *Reuters*, 17 March 2020, online.
5   Umair Irfan, 'The case for ending the Covid-19 pandemic with mass testing', *Vox*, 13 April 2020, online.
6   Ngaire Woods, Rajaie Batniji, 'A global Covid-19 exit strategy', *The Strategist*, 14 April 2020, online.
7   'Wuhan workers line up for mass testing after lockdown lifted', *Bloomberg*, 9 April 2020, online.
8   Josh Sandberg, 'Health authorities roll out new coronavirus tests to gauge infection's spread', *Wall Street Journal*, 10 April 2020, online.
9   Alexander Smith, 'Hopes for at-home finger-prick coronavirus test dashed after accuracy is questioned', *NBC News*, 9 April 2020, online.
10   Sam Schechner, Rolfe Winkler, 'Here's how Apple and Google plan to track the coronavirus through your phone', *Wall Street Journal*, 11 April 2020, online.
11   Erich Schwartzel, Alison Sider, Heather Haddon, 'The coronavirus economic reopening will be fragile, partial and slow', *Wall Street Journal*, 13 April 2020, online.
12   Andrew Probyn 'Coronavirus lockdowns could end in months if Australians are willing to have their movements monitored', *ABC*, 15 April 2020, online.
13   Kimberley Le Lievre, 'How testing sewage could help map Canberra's COVID-19 spread', *Canberra Times*, 12 April 2020, online.
14   Heidi Ledfor, 'How does COVID-19 kill? Uncertainty is hampering doctors' ability to choose treatments', *Nature magazine*, 9 April 2020, online.
15   Richard Horton, 'Offline: COVID-19—bewilderment and candour', *The Lancet*, 11 April 2020, 395(10231):1178, online.
16   'COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University', Johns Hopkins University of Medicine, online.
17   'How to reopen factories after covid-19', *The Economist*, 8 April 2020, online.

About the author

Michael Shoebridge is the Director of the Defence, Strategy and National Security Program at ASPI.

Important disclaimer

About Strategic Insights

ASPI

Returning to work during the pandemic
Testing, surveillance, apps and data as our near term future