

Learning to live with COVID-19 in Australia: time for a new approach

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Key points

- The emergence of the Delta variant of COVID-19 in Australia has usurped one decision we thought was in our control – when we would let the virus in
- A strategy of having zero cases Australia wide is no longer an option. We must find a workable, ethical and economically sustainable approach to controlling disease incidence, hospitalisations and deaths
- The test, trace and isolate model used to date in Australia will need to change as we move through the different phases of the transition plan
- We are on track to live with the virus and control the disease from early 2022

Abstract

The emergence of the Delta variant of SARS-CoV-2 has made Australia's 'COVID-zero' strategy unviable. As signalled by the Australian Government's *National plan to transition Australia's national COVID-19 response*, we need to plan a pathway forward for life beyond lockdown. However, this plan must be guided by long overdue discussions on our tolerance for serious illness, and hospital and intensive care unit capacity. The modelling that informs the national transition plan remains relevant, even with increases in case numbers, but one crucial thing that does change if cases continue to escalate is the effectiveness of test, trace and isolate models. As we move into suppression mode with higher rates of the population fully vaccinated, we will no longer need to find every case. This is among the many shifts in approach that will shape our transition by early 2022 to living with – and controlling – the disease.

Introduction

The Australian Government's *National plan to transition Australia's national COVID-19 response*¹, with vaccination targets for shifts from the current Phase A ('vaccinate, prepare and pilot') to Phases B (70% adult population vaccinated) and C (80% vaccination), is a one-page document of enormous ambition. Released on 30 July 2021, this is the first joint commitment from Australia's National Cabinet that articulates a coordinated shift in focus from elimination of SARS-CoV-2 transmission to one focusing on containment of serious coronavirus disease 2019 (COVID-19) illness. The aim is to bring the management of COVID-19 back into line with our other notifiable communicable diseases, ultimately transitioning to a 'post-vaccination phase' (Phase D), where the international borders are open, and quarantine is reserved for high-risk inbound travellers.

The transition plan's release should have signalled that it was time, if not way past time, for discussion on Australia's tolerance for serious illness, and hospital and intensive care unit capacity, and therefore should have agreed limits to guide the detail in the plan as it is rolled out. The national agreement underpinning the plan also promised to set tighter upper and lower limits on

the variable risk tolerance for community transmission that has emerged across the country among political leaders. Instead, some leaders have retreated into a protectionist position of zero tolerance.

Our confidence in the path out of our current situation, in which more than half of the Australian population is affected by lockdowns, is also not helped by the realisation that we are shifting into our transition from a very un-COVID-zero position. The B.1.617.2 (Delta) variant has usurped one important decision we thought was in our control – when we would let the virus in.

The Delta variant: a game changer

COVID-zero was never a formally agreed approach but became the practical interpretation of the national “aggressive suppression” strategy. It was the only way most states and territories believed they could deliver short-term certainty – lockdown was kept in place long after the last new cases in Melbourne’s second wave in 2020 to be sure the outbreak was over. Similarly, lockdowns have been introduced across a number of states and territories to avert an outbreak in response to any transmission of the virus in the community, or even the slightest risk.

This was before the emergence of Delta, and of course this variant has changed everything. Now, with national full vaccination levels still well below 50%, we can no longer use traditional test, trace and isolate methods to contain outbreaks. This is despite now having well-resourced, rapid responses by experienced contact tracing teams. Sydney, New South Wales (NSW), tried to contain the Delta point-source outbreak for 10 days before conceding and locking down.² Victoria experienced dual seeding events that health officials tried to manage with contact tracing, but also conceded when the same pattern emerged – contacts rapidly traced were consistently found to already be infected and, worse, had already been infectious for an average of more than one day.³

It is the terrible combination of high attack rates and shortened incubation that makes Delta a game changer. The arrival of widespread community transmission also thrusts Australia into its transition plan, and now the virus has set the clock running; our two most populous cities and nation’s capital must push to complete vaccination rollouts with the virus circulating in the community. This does, however, move us beyond those uncomfortable questions about how many COVID-19 deaths we are willing to tolerate, with zero cases Australia wide no longer an option, even for the most risk averse. In the outbreak jurisdictions at least, we are now drawn into the more compelling global experiment to find a workable, ethical and economically sustainable approach to controlling disease incidence and hospitalisations.

What modelling can tell us about easing COVID-19 restrictions

Uncontrolled community transmission as we enter Spring was not in the plan. In fact, the modelling conducted for the Australian Government by the Doherty Institute collaboration to inform the vaccine target gateways into the first two phases⁴ assumed we were coming from a zero-case base. The community transmission simulated in the modelling was seeded with 30 cases, the number you need for a virtual outbreak to take off. The model was run out to a 6-month horizon, the time limit for the relevance of parameters within the model based on current settings. Much can change in 6 months in a pandemic, as it did before the plan was even launched.

It is important to note that the modelling assumes some level of public health intervention and safety measures; this is not ‘opening up’, but rather easing restrictions that we currently rely on to keep case growth under control as we progressively ‘hand over’ control to our vaccine coverage. For example, the REACT-1 study (not yet peer reviewed) from a community-based screening program of nearly 100 000 randomly sampled people in the UK reported a three-fold decrease in infections among those fully vaccinated compared with those not.⁵ Vaccine coverage will be our game changer as we gain more predictable control over the Delta strain.

The Doherty Institute modellers tested scenarios that included opening up with only 70% vaccine coverage of the adult population and ‘partial public health measures’: predicting 385 983 symptomatic cases and 1457 deaths over 6 months. This could be further mitigated with test, trace, isolate and quarantine practices in conjunction with ‘optimal public health safety measures’, reducing infections to 2737 and 2 deaths a month. The measures have not been defined but were factored into the models as the reduced transmission potential from measures in NSW when case numbers were low in March this year (optimal), compared with August in the midst of Victoria’s second wave (partial).

The transition plan portends only limited changes to policy or practices in Phase B, once 70% of adults are fully vaccinated, including some form of easing of restrictions and quarantine requirements for those who are fully vaccinated. The details are still being compiled, but vaccine passports have arrived, and we already see some limited benefits appearing in NSW with small gatherings of up to five fully vaccinated adults to be allowed outdoors from mid-September.⁶ Phase B also includes restoration of inbound passenger caps, higher caps for vaccinated returnee travellers from overseas, and limited increases in entry of certain visa holders to Australia, including students.

Phase C is a larger step with gradual international border reopening, especially for vaccinated travellers. By this stage, only baseline restrictions will be required in disease management, with lockdowns highly targeted,

if required at all. This is not a UK-style 'Freedom Day' or akin to any other international openings; this is a measured staged opening that allows our multiple disease control mechanisms to be adjusted as vaccine coverage rises.

Is the model still relevant if we have more than 1000 cases across cities and regional centres? All the parameters that act in union to produce downward pressure on transmission potential still apply, whatever the case number.⁷ What works across five households or workplaces will also work across 500.

But one crucial thing does change with scale, and that is the effectiveness of test, trace and isolate. Laboratories labour under a large increase in testing when case numbers are high and workplace and other screening accelerates. When turnaround times extend, more time is lost in finding contacts and the number of days they are potentially infectious in the community rises. Worker screening is no longer feasible with delayed results. Rapid antigen testing is being trialled to see if incidence rates are high enough in infection hotspots to lift the reliability of these tests.

We do not yet know what the test, trace and isolate model in the transition plan looks like, but it will have a different emphasis from the 360-degree approach employed to date that includes searching for transmission chains downstream for those exposed and also upstream for a possible source. We no longer need to find every case if we are in suppression mode and NSW Health may be paving the way ahead for all states as they shift emphasis under the sheer burden of case numbers.

Patchy vaccine uptake

The modelling attached to the transition plan tells us when we can expect vaccination coverage to afford a safer setting to moderate our other control measures. It will not happen exactly at 70% or 80%, but progressively. To date, vaccine uptake suggests that we could reach 70% of adults fully vaccinated by early November and 80% by December 2021. The concern is that we will have patchy uptake across states and across communities, so all this will need to be considered when assessing readiness for adjustment of infection control settings.

Restrictions of some kind will therefore be required wherever community transmission persists until we break through these targets and discover what it then takes to contain outbreaks, and when we can safely ease back on aggressive suppression. It is only at this point, Phase D, when we can actually open our international borders while still monitoring and managing COVID-19 as we would with other infectious diseases. Workplaces will progressively open as we ease out of current lockdowns, and trials underway in NSW will determine whether rapid testing or other measures will be used in higher-risk work settings to limit risk. Masks indoors will be the last precaution to go, and large gatherings the last banned activity to return,

although large events will no doubt happen sooner if we go the way of adopting vaccine passports as have other countries.⁸

The last phase of the transition plan has no vaccination target, rather it is predicated on us having COVID-19 locally and nationally controlled. Like Denmark⁹, we can look forward to stepped easing of restrictions as we keep hospitalisations in check. We are already seeing hospitalisation rates suppressed by vaccination coverage in those most at-risk. We are watching this transition in motion as we battle to contain this latest wave in south-east Australia.

Conclusion

We no longer need to find out the hard way if our public health response and vaccination rates under the plan will cope when the levee gates open and the virus arrives. Instead, we are testing our seaworthiness as we go. There is some reassurance in that, both for those who are impatient for change and concerned we might be too slow to launch, and for those who are anxious at the idea of a sudden opening. The virus is in the community, the COVID-19 response transition has begun, and we are on track to live with the virus, but control the disease, from the first quarter of 2022.

Peer review and provenance

Internally peer reviewed, invited.

Competing interests

CB was an independent expert adviser on the AstraZeneca Australia COVID-19 vaccine expert advisory committee.

Author contributions

CB is the sole author of the manuscript.

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