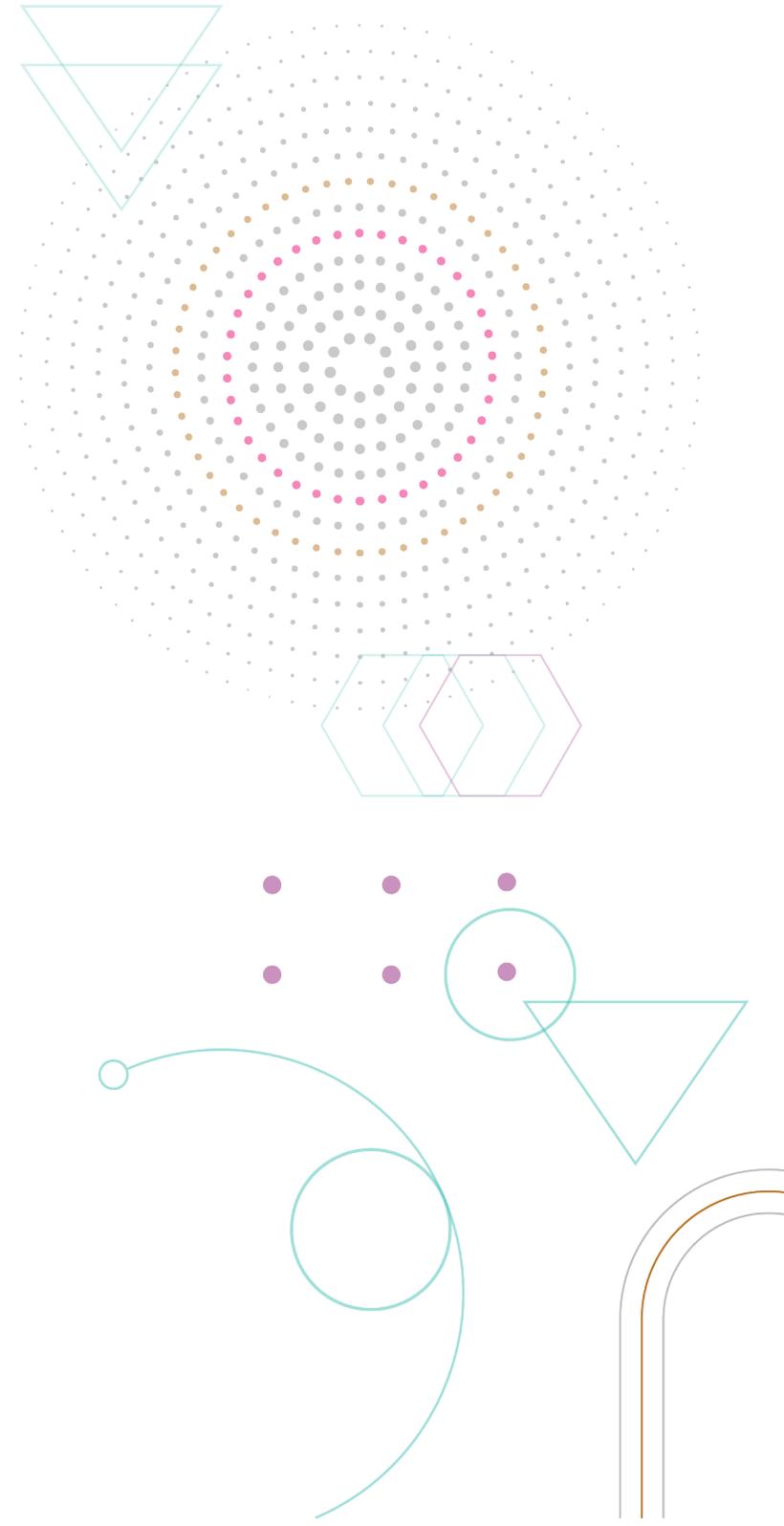**Australian Government**
Department of the
Prime Minister and Cabinet

Doherty Institute COVID-19 modelling:
2nd tranche

November 2021

* All graphs in this slide deck are from the Doherty Institute

Overview

On 6 August 2021, the National Cabinet commissioned the Doherty Institute to undertake a second tranche of COVID-19 modelling to further inform decisions on the staged reopening of Australian jurisdictions.

The second tranche comprised three work packages:

Public health response

High risk settings
Indigenous Communities
Local Government Areas
Schools

International arrivals and quarantine

Doherty's latest modelling incorporates updated parameters and recent evidence, and again confirms the previous recommendations regarding the 70% and 80% thresholds for moving to Phases B and C of the National Plan to transition Australia's National COVID-19 Response remain robust.

Public health response

» With high case numbers and high vaccination rates, tracking down every casual contact and conducting long interviews is not effective nor sustainable.

» Streamlined public health responses, such as testing and isolating only close contacts, combined with high vaccination rates, are effective at reducing transmission risks in a community with high case numbers and/or more susceptible to COVID-19. There is no requirement for casual contacts to test or quarantine.

» Ongoing evaluation and assessment will help ensure responses are fit for purpose and effective.

7 days of isolation for vaccinated people who test positive is, on average, as effective at reducing transmission risk as 14 days of isolation.

With a high level of case-initiated contact tracing, NSW reduced transmission potential by 40%.

Keeping schools open

» Twice-weekly rapid antigen testing (RATs) screening of students helps detect cases early and significantly reduces the chance of an outbreak in schools, particularly in communities at high risk of outbreaks.

» If an outbreak is detected, daily testing of class contacts for 7 days and excluding only positive cases (test-to-stay) would reduce outbreaks and minimise days of face-to-face learning lost (as illustrated below).
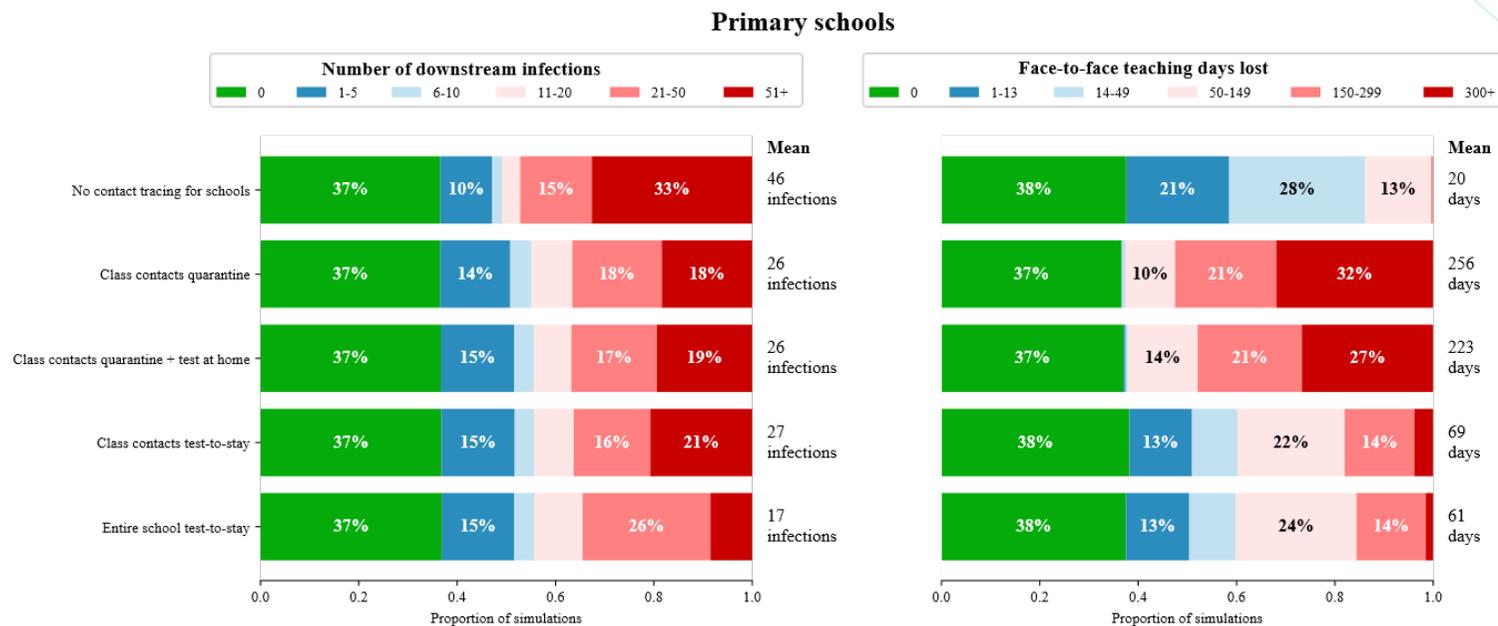
Primary schools

The graph above shows the **impact of alternative contact management approaches** on size of secondary infections and days of face-to-face learning lost in primary schools over 45 days following an outbreak. The results are for 1,000 simulations.

Indigenous Australians

» 80% vaccination coverage combined with strong public health measures will manage transmission and improve health outcomes for Indigenous populations.

» Quarantining of cases and close contacts off-community, such as in a hospital or other safe location, further reduces the overall size of an outbreak and its health impacts.

» Providing access to effective treatments will further promote health outcomes, particularly given limited clinical services in regional and remote Australia.

» A targeted reactive vaccination program can significantly reduce the total number of infections and severe health outcomes.

Once approved, high levels of vaccination coverage in children aged 5-11 years will help as children under 12 make up a larger proportion of these populations (3 times the national average in remote communities).

The Wilcannia outbreak demonstrated the effectiveness of community-led responses, such as door-to-door vaccination and local leadership to encourage vaccination, minimise the impact of COVID-19 outbreaks and prevent more severe outcomes.

Local government areas

» Transmission potential and the impact of vaccination and public health measures, such as stay at home orders, will differ across geographic areas and within subpopulations.

» Lockdowns are less effective in local government areas where there are a high number of people, including essential workers, who are unable to work from home.

» Test, trace, isolation and quarantine will continue to contribute to controlling transmission.

» Public health measures, and additional strategies in schools and workplaces, may be required to control outbreaks, particularly in higher risk areas.


National Plan to transition Australia's National COVID-19 Response
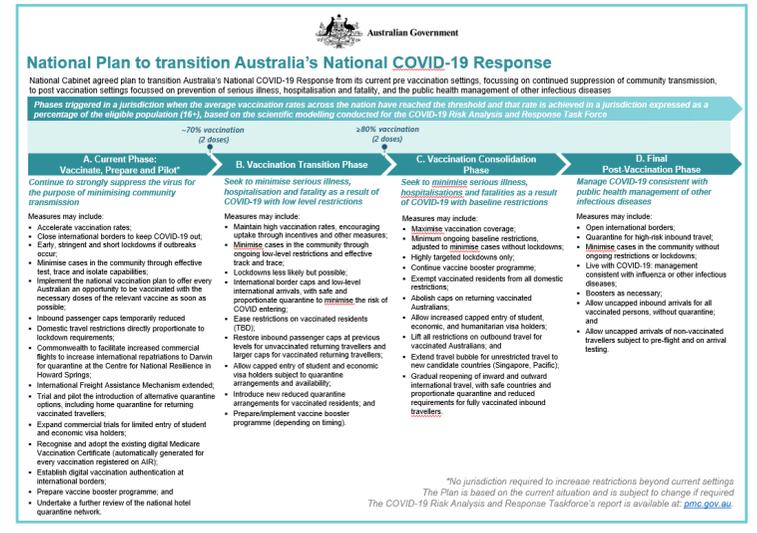
Under the National Plan, lockdowns will become less likely.

International arrivals

Vaccination of the Australian population reduces the infection risk from international arrivals. At 80% vaccination coverage, with ongoing 'low' public health and social measures and partial test, trace, isolate and quarantine, allowing international arrivals will not lead to large outbreaks and cases will be manageable, both in jurisdictions with established outbreaks and those with few or no local cases.

Within this context of local controls, numbers of cases resulting from importations are anticipated to remain manageable within health system capacity. This remains the case for either a 7 day home quarantine or 'no quarantine' pathway.

7-day home quarantine	No quarantine
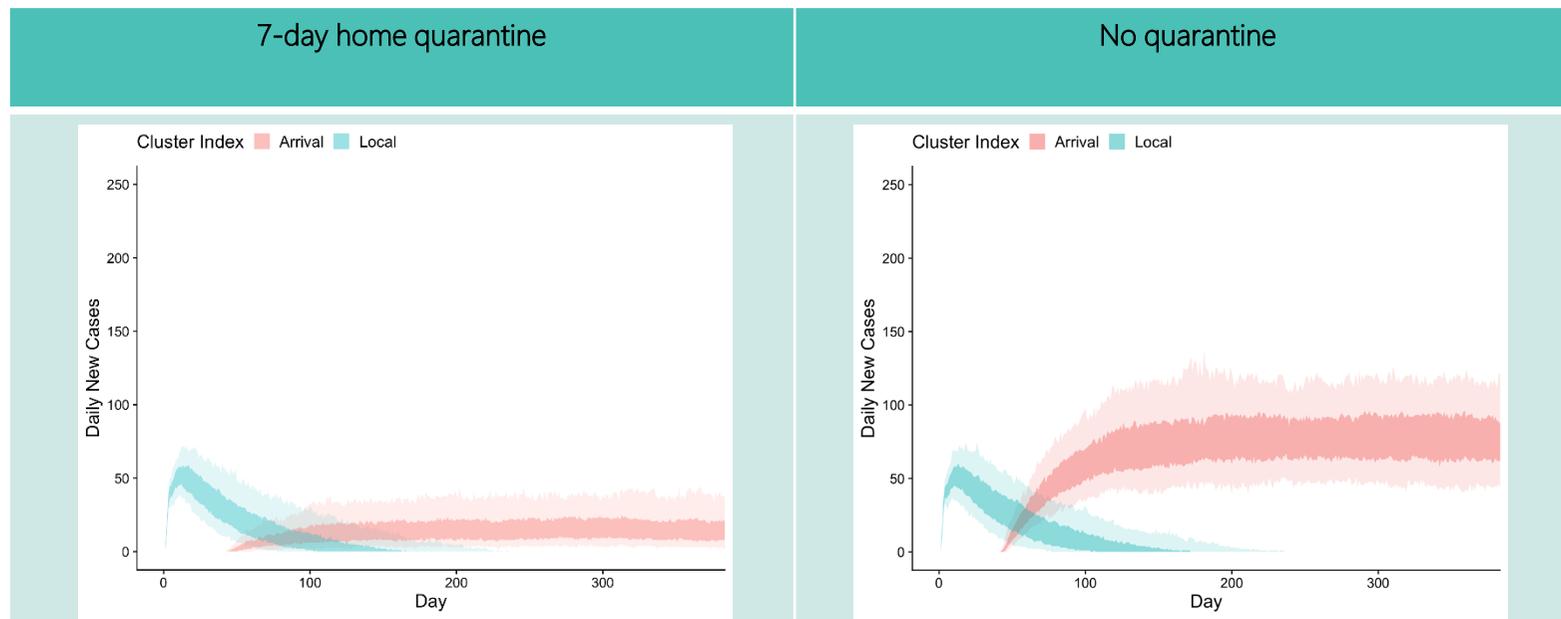
In the above graphs, teal shading shows new cases resulting from existing domestic outbreaks at the beginning of the simulation. Pink shading shows transmission initiated by infected international arrivals. Shaded areas show uncertainty across multiple simulations.

Traveller volumes in this scenario are 32,767 international arrivals a week for a single jurisdiction, with 80% of the Australian population aged 16+ fully vaccinated. Assuming all travelers are tested on days 1 and 5 following arrival.