## Time for a clear national COVID-19 strategy

To the Editor: Pandemic responses across the world have been highly reactive. However, there remain only three strategic options to managing coronavirus disease 2019 (COVID-19): mitigation, suppression and elimination (Box).[2] With the promise of efficacious new vaccines, mitigation is appropriately not considered as part of Australia's national strategy. However, our stated goal of achieving "no community transmission" remains poorly defined and risks missing important distinctions between elimination and suppression.[3]

Effective elimination is dependent both on getting to zero local cases and then staying there, with any new transmission chains immediately halted. All jurisdictions of Australia have now achieved elimination over significant periods, even without articulating this as their strategy. By comparison to suppression, greater relaxation of restrictions may well be allowable under an elimination approach if vigilance is maintained, as New Zealand has demonstrated.[4]

Although the challenges of ensuring quarantine of returning travellers are well recognised, this is an essential aspect of maintaining elimination and increases in importance as distancing restrictions are eased.

Australia's current strategy appears to imply suppression, with some virus circulating but with case numbers at manageable levels. Whether suppression has been achieved can be monitored by maintaining an effective reproduction number of no greater than one, or equivalently by ensuring the epidemic curve of new community cases is not upsloping. Importantly, the reproduction number and the rate of new cases at any point in time are unrelated — we could have effective suppression and a reproduction number of one with daily case rates of five, ten or 50. Our definition of no community transmission appears to imply complete identification of transmission chains with no "mystery cases", regardless of the number of new cases. These considerations are important in determining whether we have full visibility of the epidemic and effective contact tracing but do not determine the reproduction number.

The rapid spread of the virus necessitates a public health strategy that is clear, robust and agile. Improved control combined with the increasingly clear seasonality of the virus[5] suggest that control can be maintained throughout the summer. However, if vaccination has not been widely distributed before winter 2021 and we do not make clear choices, further major outbreaks remain likely.

**Competing interests**: The Epidemiological Modelling Unit at Monash University (under James Trauer) provides the COVID-19 forecasts for the Victorian Department of Health and Human Services. ■

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References are available online.

**Characteristics of coronavirus disease 2019 (COVID-19) epidemic response strategies (Trauer et al)**

| | Elimination | Suppression | Mitigation |
|---|---|---|---|
| Our definition | No cases or transmission, except in quarantined arrivals | Very low community case rates; limited transmission | Higher case rates, but within health service capacity |
| Key metric of success | No locally acquired cases | Effective reproduction number not exceeding one,* or a horizontal sloping epidemic curve of locally acquired cases | Hospital and ICU occupancy within (expanded) capacity |
| Accrual of significant population-level immunity | No | No[1] | Yes, likely to take many months, with considerable morbidity and mortality |
| Need for mobility restrictions and hygiene measures | Mobility may return to near normal while cases and transmission remain at zero; vigilance essential; likely need for episodic restrictions if quarantine escape occurs | Continuous need for high levels of restrictions; strong possibility of disruptive lockdowns given that community transmission persists | Unpredictable |
| Need for restrictions on international arrivals | Extremely high, and increases as distancing restrictions are eased | Moderate | Less important |
| Current appropriateness for Australian jurisdictions† | Reasonable | Reasonable | Not under consideration |

ICU = intensive care unit. * The effective reproduction number becomes more difficult to quantify precisely as numbers fall. † Given an effective vaccine appears likely.

1 Gidding H, Machalek D, Hendry A, et al. Seroprevalence of SARS-CoV-2-specific antibodies in Sydney, Australia following the first epidemic wave in 2020. *Med J Aust* 2020. https://www.mja.com.au/journal/2020/seroprevalence-sars-cov-2-specific-antibodies-sydney-australia-following-first [Preprint, 2 November 2020]

2 Meehan MT, Rojas DP, Adekunle AI, et al. Modelling insights into the COVID-19 pandemic. *Paediatr Respir Rev* 2020; 35: 64–69.

3 National Cabinet recommits to coronavirus suppression strategy amid outbreaks in Victoria, NSW. *ABC News* 2020; 24 July. https://www.abc.net.au/news/2020-07-24/national-cabinet-recommits-coronavirus-suppression-strategy/12489044 (viewed Oct 2020).

4 Cousins S. New Zealand eliminates COVID-19. *Lancet* 2020; 395: 1474.

5 Ma Y, Pei S, Shaman J, et al. Role of air temperature and humidity in the transmission of SARS-CoV-2 in the United States [preprint]. *medRxiv* 2020.11.13.20231472. 16 Nov 2020. https://doi.org/10.1101/2020.11.13.20231472 (viewed Nov 2020). ■