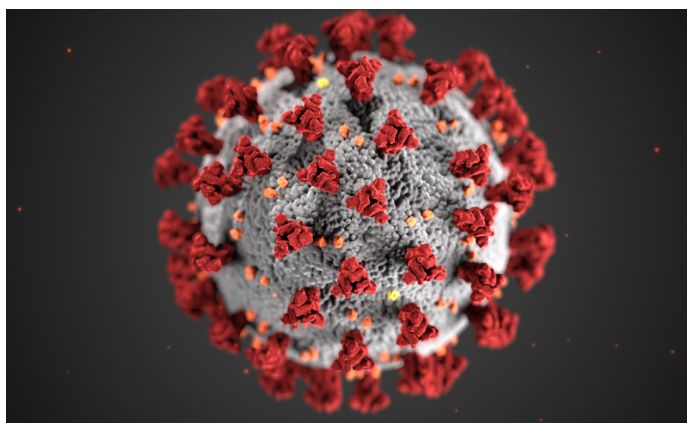


NZ's COVID-19 response compared to selected other jurisdictions: Australia, Taiwan and the United States

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Media discourse in NZ has involved comparing NZ's COVID-19 response with a range of other jurisdictions, especially: Australia, Taiwan and the US. In this blog we update the data comparisons for these selected places. We find that Taiwan is the top performer with a cumulative death rate that is around 1800 times lower than the US's (for NZ the difference with the US is 136 times lower). Taiwan's high quality performance still holds a number of lessons for NZ with its ongoing response.

Previously we have reported on OECD country data with NZ having the lowest mortality rate from COVID-19 in this grouping [1]. But over the last six months we have observed that media discourse in NZ has particularly involved comparing NZ's COVID-19 response with a smaller range of jurisdictions, especially: Australia, Taiwan and the US. Interest in this subject has recently been increased by a false claim from US President Donald Trump that New Zealand "was having a big surge of cases" relative to the situation in the US.

In this blog we update the numbers around the key health outcomes for these jurisdictions and comment on the differences and potential lessons for NZ.

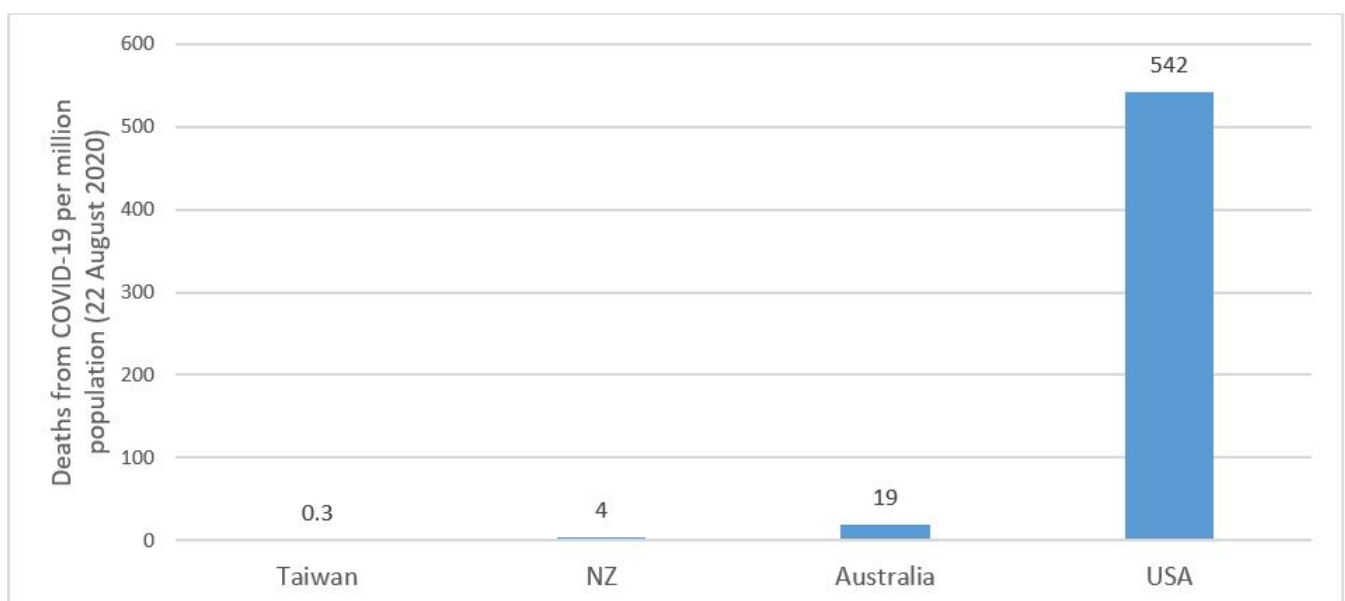
Table 1: Key COVID-19 pandemic data on selected jurisdictions (as per 22 August; probable and confirmed cases and data from the Worldometer website: <https://www.worldometers.info/coronavirus/#countries>; with slight differences from other sources that just use confirmed cases eg, WHO data).

Characteristic / key metric	Australia	NZ	Taiwan	United States
Total cases of COVID-19 (cumulative)	24,602	1671	487	5,812,607**
Cumulative cases per 1 million population	963	334	20	17,546
Total deaths from COVID-19	485	22*	7	179,541***
Cumulative deaths per 1 million population	19	4	0.3	542

* The NZ deaths from COVID-19 need to be considered in the context of the decline in weekly deaths associated with the lockdown response [2], most recently estimated at around 1200 fewer deaths in 2020 compared to the same time period in 2019 [3].

** The reported case numbers for the US are likely to be major under-estimates. Eg, the true number of infected cases based on sero-survey data could be over 10 times higher than reported cases [4].

*** The true death toll in the US from COVID-19 and conditions associated with health systems disruption from the pandemic is also likely to be higher according to US studies (ie, a third more deaths [5]; and 28% more deaths [6]).



Why is Taiwan the best performing jurisdiction?

Clearly the top performing jurisdiction in this list is Taiwan, with a cumulative death rate from COVID-19 that is over 1800 times lower than the US (see Figure). Furthermore, this

success has been achieved despite Taiwan's proximity to the original source of the pandemic, Wuhan in Mainland China. We have worked with Taiwanese epidemiologists to document some of the potential reasons for Taiwan's success. Preliminary findings suggest that Taiwan had developed extensive public health infrastructure pre-COVID-19. A key element was having dedicated agencies, notably the Taiwan Centers for Disease Control established in 1990 and a National Health Command Center established in 2004 following the SARS pandemic. This infrastructure allowed for timely responses to COVID-19 in terms of border screening/control, well-developed contact tracing methods (both digital and conventional) and use of isolation/quarantine methods which have been maintained to date. Taiwan has also very high mask use in public places.

Other commentators have also discussed Taiwan's successful preparations and response [7]. Even now we believe that NZ and other nations could still learn from Taiwan in virtually all these domains, but particularly in having high quality quarantine processes, use of digital technologies, and requirements for mass masking in public settings.



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Australia's highly diverse performance

The results in the Table above don't reflect how well Australia has done at the State and Territory level. Indeed the states of South Australia, Australian Capital Territory (ACT), Western Australia, Northern Territory and Tasmania have all had over 100 days with no community transmission (Queensland too can probably be added to this list if the source of infection of one elderly woman is identified). Even the state of Victoria had nearly

eliminated community transmission of the COVID-19 pandemic virus until it suffered a major quarantine facility failure. It might still be possible in coming weeks for Victoria and New South Wales to eliminate community transmission (see this modelling work for Victoria) – but there is also a chance of failure and then the possible switch to just a suppression strategy.

As one of us has previously suggested, a clear lesson from Australia for NZ is “Do quarantine well” [8]. Another Australian expert, Prof Mary-Louise McLaws, has also spoken to NZ media in favour of purpose-built facilities for quarantine [9]. Perhaps this means NZ needs to seriously consider moving from the use of hotel facilities for isolation/quarantine towards building dedicated facilities outside of cities (eg, at military bases that can accept international flights such as Ōhakea air base [10]).

The United States’ performance

As per the tabulated data above, the US has not performed well in response to this pandemic (the death rate being 136 times higher than NZ). One graphic image of the problem from the *New York Times* was one from the excess number of dead bodies: “The spectacle of dead New Yorkers left to decay in broad daylight in rental trucks on a crowded street in Brooklyn underscored the scale of challenge facing the city as it tries to absorb the effects of the coronavirus pandemic” [11].

There are many possible reasons for the poor response by the US but in a recent publication University of Canterbury researchers consider some in comparison to NZ [12]. Leadership is one of these: “Jacinda Ardern appears to have delivered US President, Donald Trump, a master class in crisis management.” These NZ researchers also compare the more favourable responses of NZ politicians to expert scientific advice compared to the US (ie, Ardern and Bloomfield vs Trump and Fauci). A Canadian anthropologist has also linked social inequality and the lack of social cohesion in the US to its failed pandemic response [13].

A feature of the US is that public health guidance is often delegated to states, which may then delegate to counties or cities within states. As an indicator of the diverse response there are for example 13 of 48 contiguous states that currently have state-wide restrictions on travel, 2 have only city level restrictions, 2 have only recommendations for state-wide restrictions, and 31 have no state-wide or city level restrictions (including the 3 states with the highest case load: California, Texas, and Florida).

Beyond, the disparate intrastate travel guidance, the oft-politicised public health control measures vary widely between cities within counties and between counties within states. Illustrating how difficult it is to summarise public health measures within the US, most counties in Florida require masks to be worn inside businesses and recommend them outdoors, but at least 3 counties and 5 cities have rejected mask-wearing mandates, with one county’s law enforcement even banning the use of any mask by law enforcement or visitors to the law enforcement facilities (source).

In summary, international comparisons of COVID-19 responses and outcomes are a helpful source of observational evidence to inform management of this pandemic. There are increasingly useful tools to assist such comparisons, including those that provide pandemic data (eg, Worldometer used here) and sites that document the pandemic responses (eg, COVID-19: Government Response Stringency Index).

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