

COVID-19 Australia Situation Report

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Data Summary

A summary of the raw data is given below in table 1. Overall, there have been no COVID-19 related deaths today. There was a statistically significant low number of cases today with only Victoria marginally above zero. A statistically significant and vigilant response to the threat of a new COVID-19 wave has been shown in most states due to high testing numbers. Albeit, QLD and NSW testing numbers are not significant at 95% confidence; nevertheless, they are near or exceed the mean estimate to remain as strong results.

Table 1: COVID-19 observations from today.

State	Today's Data			Significance [†]			Mean Estimate ^{††}		
	Cases	Deaths	Tests	Cases	Deaths	Tests	Cases	Deaths	Tests
1 ACT	0	0	715	*	*	*	3	1	513
2 NSW	0	0	15695	*	*	~	12	1	14861
3 NT	0	0	962	*	*	*	2	1	382
4 QLD	0	0	5656	*	*	~	4	1	5528
5 SA	0	0	4936	*	*	*	3	1	3173
6 TAS	0	0	345	*	*	*	4	1	532
7 VIC	2	0	25144	*	*	*	82	1	15316
8 WA	0	0	10123	*	*	*	3	1	3308

[†] Confidence intervals were calculated using a log-normal transformation and applying the Cox method, as the distributions of the variables are non-parametric. * represents a statistically significant observation with 95% confidence and ~ denotes an insignificant result.

^{††} A point estimate of the population means back-transformed from the log-normal distributions of each variable.

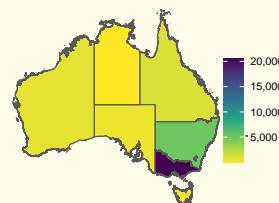


Figure 1: Total cases in states.

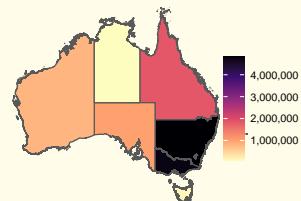


Figure 2: Total tests in states.

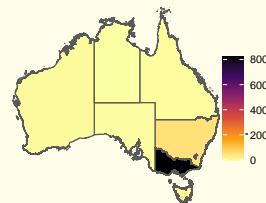


Figure 3: Total deaths in states.

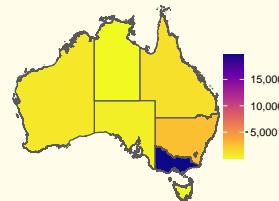


Figure 4: Total recoveries in states.



Figure 5: Active cases in states.

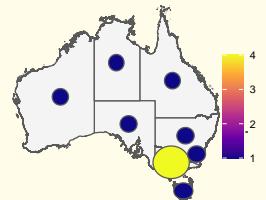


Figure 6: Cases per 1,000 tests.

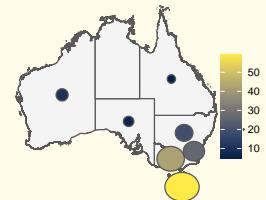


Figure 7: Deaths per 1,000 recoveries.

Data Trends

Figures 1 to 7 aside show the current state of COVID-19 in Australia for several important indicators. Victoria and NSW show higher numbers in nearly all measures, which is indicative of a more detrimental impact due to COVID-19 in more densely populated areas.

Figures 8 and 9 below show the time evolution of daily confirmed COVID-19 cases and tests in Australia. There are prominent peaks in COVID-19 cases for nearly all states, these are broadly known as waves. Note the logarithmic scale of the plots in order to correctly interpret the evolution in COVID-19 testing. A strong response in testing is clearly displayed for most states as a result of the Victorian second wave. Lastly, note the lag in testing with respect to confirmed COVID-19 cases. This is representative of the time-delay in the Australian response to make COVID-19 testing available for the wider community.

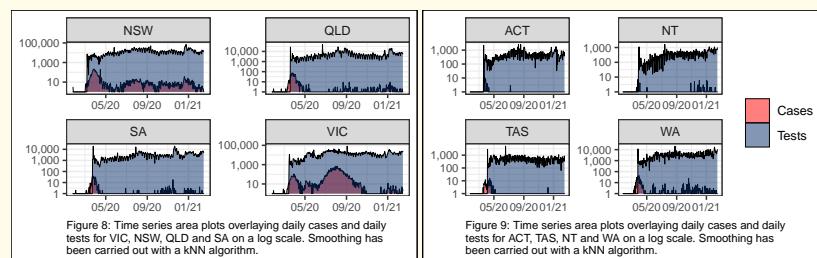


Figure 9: Time series area plots overlaying daily cases and daily tests for ACT, TAS, NT and WA on a log scale. Smoothing has been carried out with a KNN algorithm.

Figures 10 and 11 now visualise the 14 day moving averages in all states for COVID-19 cases and tests. Fluctuating average COVID-19 case spikes, albeit in their single digits, occur mainly in NSW, QLD, SA and WA, which are surrounded by periods of no change. Average COVID-19 testing appears to be upwards trending in response to confirmed cases in mainly NSW, SA and VIC. WA appears to have reached a peak in average testing at fortnight close.

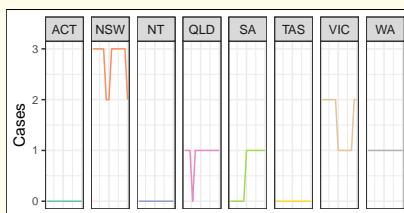


Figure 10: Sparkline plots showing the change in the COVID-19 case moving average over the last 14 days in all states. Note: kNN smoothed results differ slightly from original data.

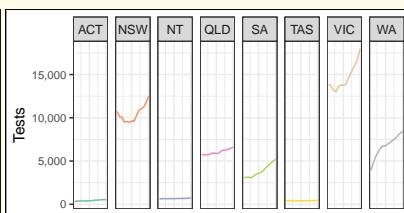


Figure 11: Sparkline plots showing the change in the COVID-19 test moving average over the last 14 days in all states. Note: kNN smoothed results differ slightly from original data.

Data source as of 16 February 2021: <https://git.io/JtXFn>