COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 27, ENDING 4 JULY 2020

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SUMMARY FOR THE WEEK ENDING 4 JULY

- Testing rates remain high throughout NSW and case counts remain low, indicating limited transmission of COVID-19 in NSW.
- The recent increase in cases in Victoria serves as a timely reminder that infections can spread rapidly in the community.
- While current data indicates limited influenza transmission, increasing reports of rhinovirus highlight the current potential for respiratory viruses to circulate in the community.
- NSW Health urges anyone who develops respiratory symptoms, regardless of how mild, to get tested for COVID-19 and stay at home until symptoms have resolved and a COVID-19 infection has been excluded.
- Measures to prevent the spread of infection including handwashing, covering coughs and social distancing are especially important as we are now in the school holiday period and people may be mixing more with others.

SECTION 1: HOW IS THE OUTBREAK TRACKING IN NSW?

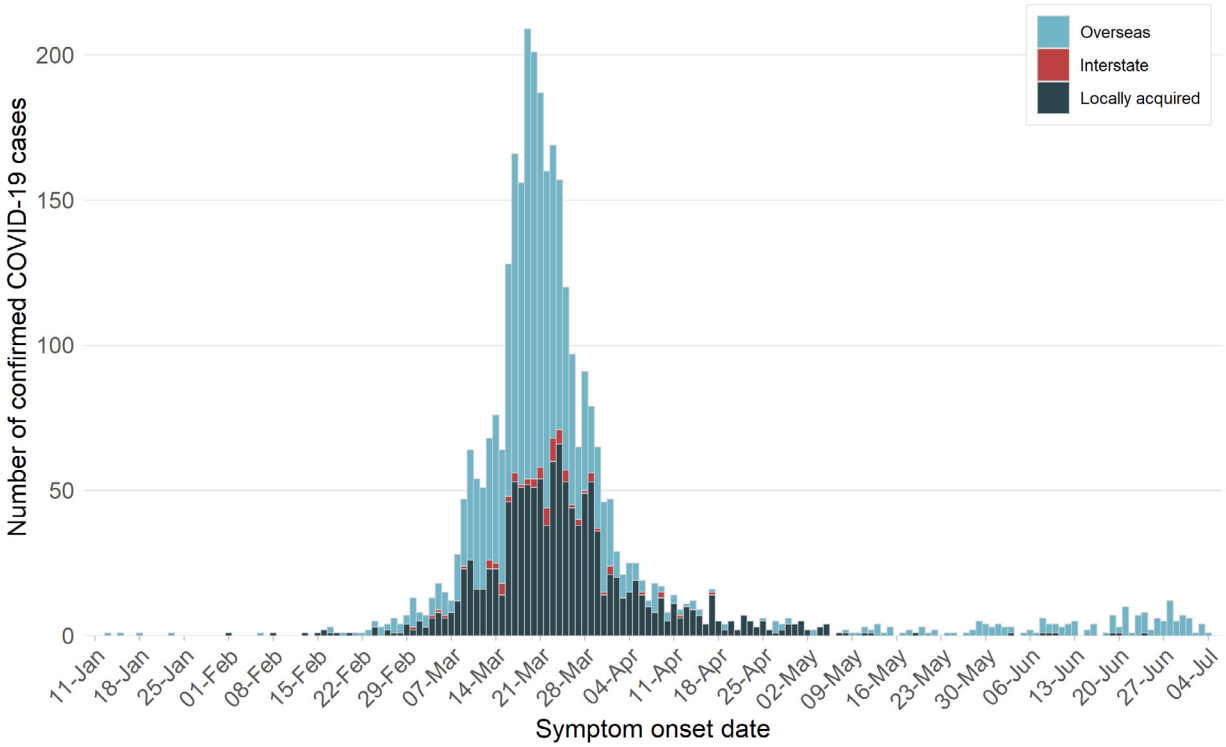
Table 1. COVID-19 cases and tests reported in NSW, up to 4 July 2020

	Week ending 4 July	Week ending 27 June	% change	Total to 4 July
Number of cases	51	37	+37.8%	3,231
Overseas acquired	*50*	*34*	*+47.1%*	*1,921*
Interstate acquired	*0*	*0*	-	*69*
Locally acquired	*1*	*3*	-	*1,241*
Number of deaths	0	1	-	51
Number of tests	108,328	108,524	-0.2%	964,763

Note: The case numbers reported for previous weeks is based on the most up to date information from public health investigations.

To understand how the outbreak is tracking we look at how many new cases are reported each day and the number of people being tested. Each bar in the graph below represents the number of new cases based on the **date of symptom onset**.

Figure 1. COVID-19 cases by likely infection source and illness onset, NSW, 2020



The date of the first positive test is used for cases who did not report symptoms.

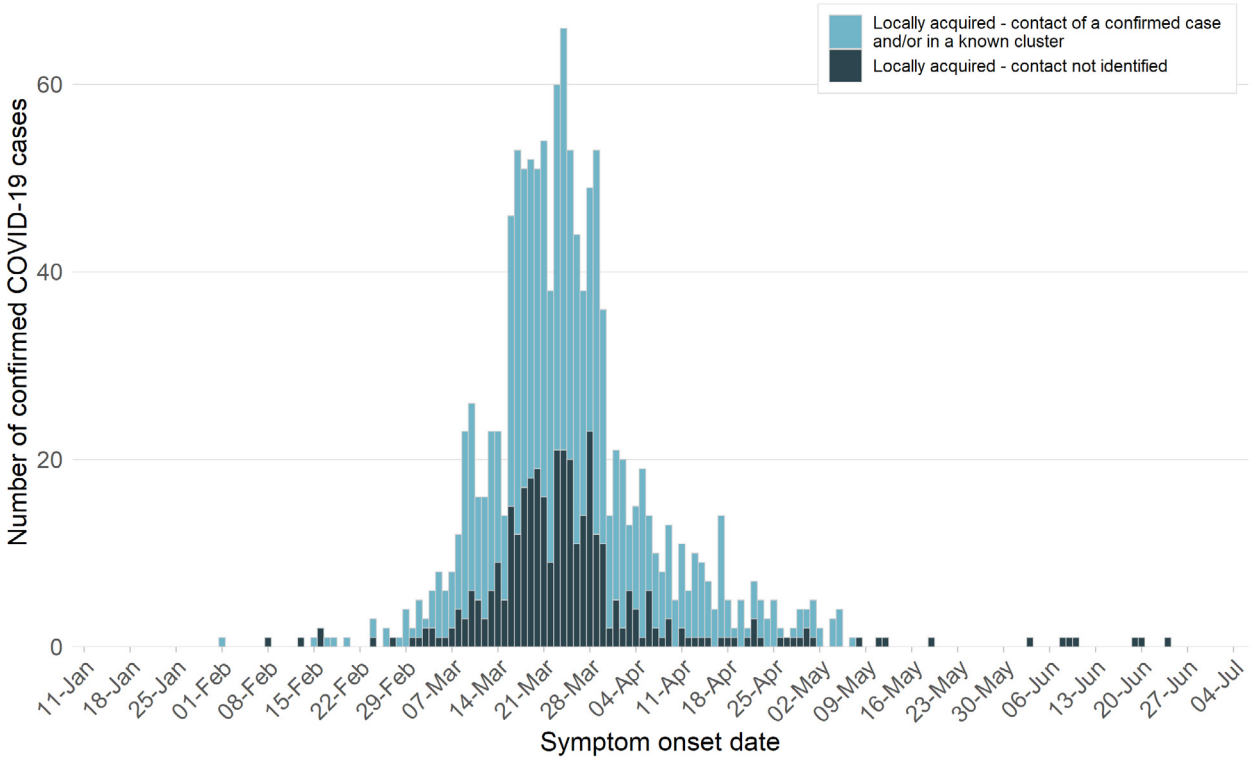
Interpretation: Approximately 60% of COVID-19 infections diagnosed in NSW to 4 July have been **overseas acquired** and the remaining 40% have been **locally acquired**. The number of new cases diagnosed in NSW has decreased significantly since the peak in mid-March. The recent increase in overseas-acquired cases is largely due to a program of screening all overseas travellers 10 days after arrival in NSW.

How much transmission is occurring in NSW?

All new cases who have not travelled outside of NSW are investigated by public health staff to determine the likely source of infection and identify **clusters**. To understand the extent of community transmission, locally-acquired cases who have had contact with a case or who are part of a known cluster are considered separately to those with an unidentified source of infection. Cases with no source identified suggest that there are people infected with COVID-19 in the community who have not been diagnosed.

In March, when the number of new cases diagnosed each day was high, public health efforts were focussed on contact tracing to limit further spread in the community. With a decline in cases, increased attention is given to identifying the source of infection for every case. High rates of testing are needed to ensure cases are identified as quickly as possible. Careful attention is given to understanding where transmission is occurring as social distancing measures are relaxed.

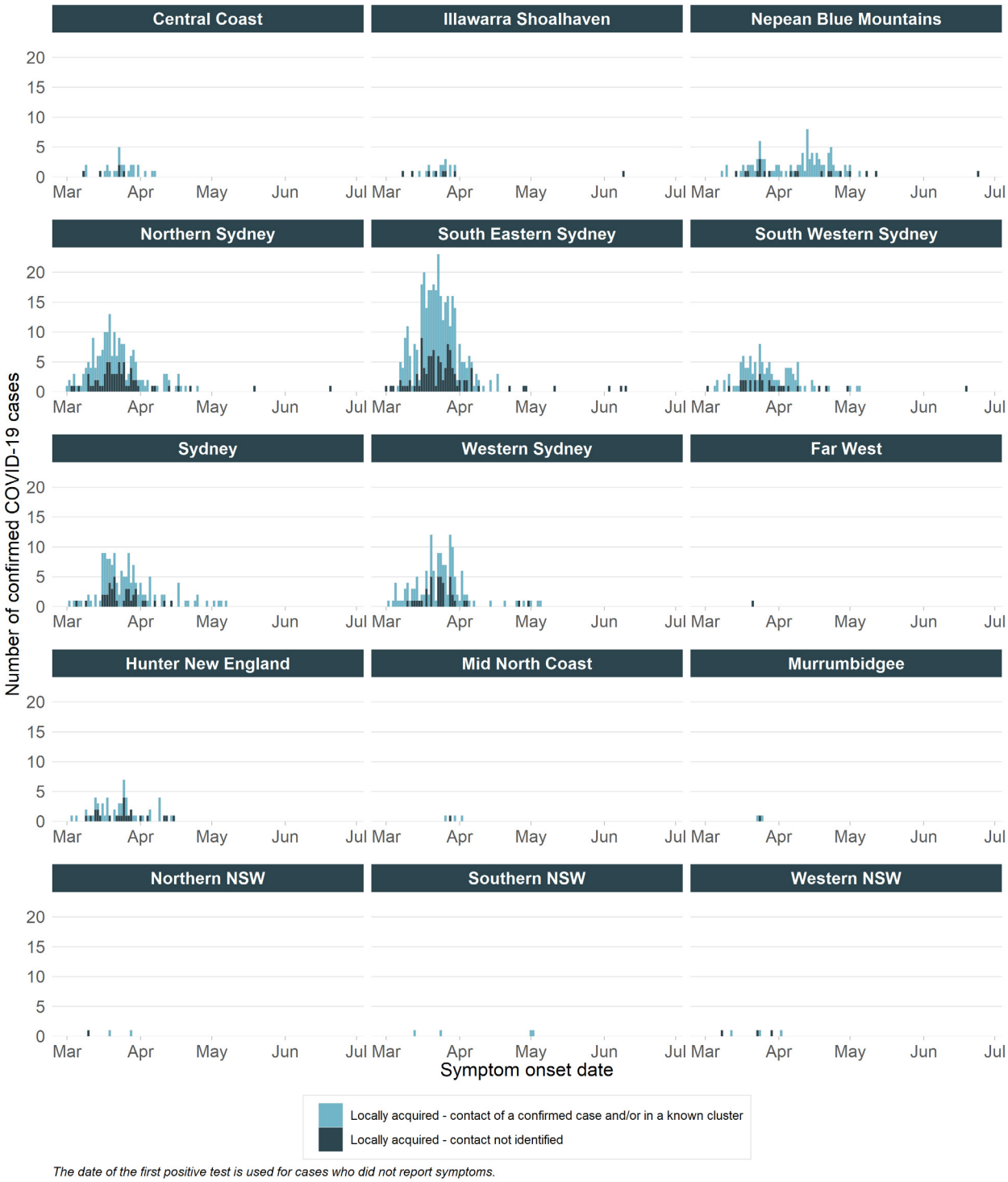
Figure 2. Locally acquired COVID-19 cases by likely infection source and illness onset, NSW, 2020



The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Larger clusters occurred in NSW before many of the strict social distancing rules were introduced. Since this time, there has been a decline in COVID-19 cases both with a known and unknown source of infection.

Figure 3. Locally acquired COVID-19 cases by LHD of residence and illness onset, NSW, 2020



The date of the first positive test is used for cases who did not report symptoms.

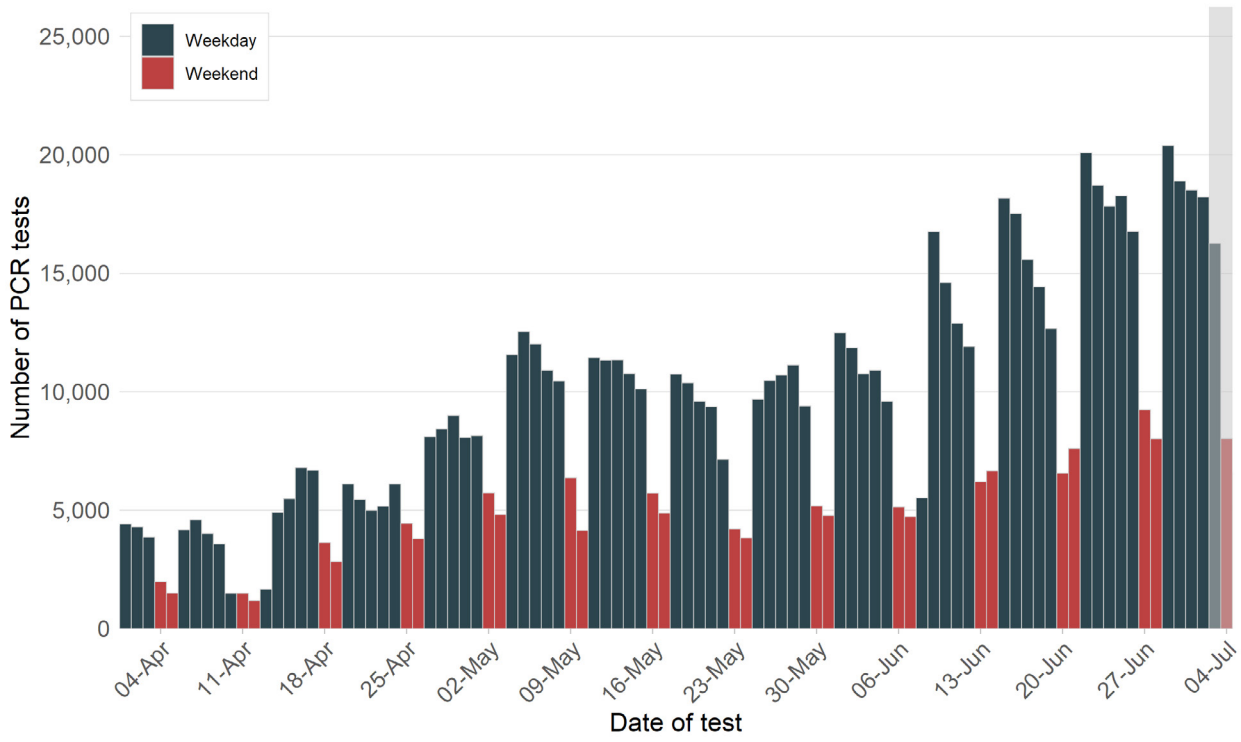
Interpretation: Early in the outbreak infections were more common in residents of metropolitan Sydney (particularly in South Eastern Sydney and Northern Sydney Local Health Districts (LHDs)) and this likely reflected the residence of travellers who returned from countries with COVID-19 transmission. During April there was an increase in cases in Nepean Blue Mountains LHD, largely due to an outbreak in the Anglicare Newmarch House aged care facility. This outbreak has since ended with no new cases since 4 May. No cases have been diagnosed in residents of rural or regional LHDs since May.

How much testing is happening?

High rates of testing are essential to identify and isolate people who are infectious and to allow contact tracing (quarantining of all people potentially infected by a case) to limit the spread of infection. Testing is not recommended for those in the community without symptoms except in special settings when cases have been identified such as aged care, health care, disability homes and schools.

The bars on the graph below show the number of tests by the date a person presented for the test.[1] While public health facilities are open seven days a week, less testing occurs through GPs and private collection centres on weekends and public holidays. This explains the lower number of tests on weekends.

Figure 4. Number of PCR tests per day, NSW, 2020

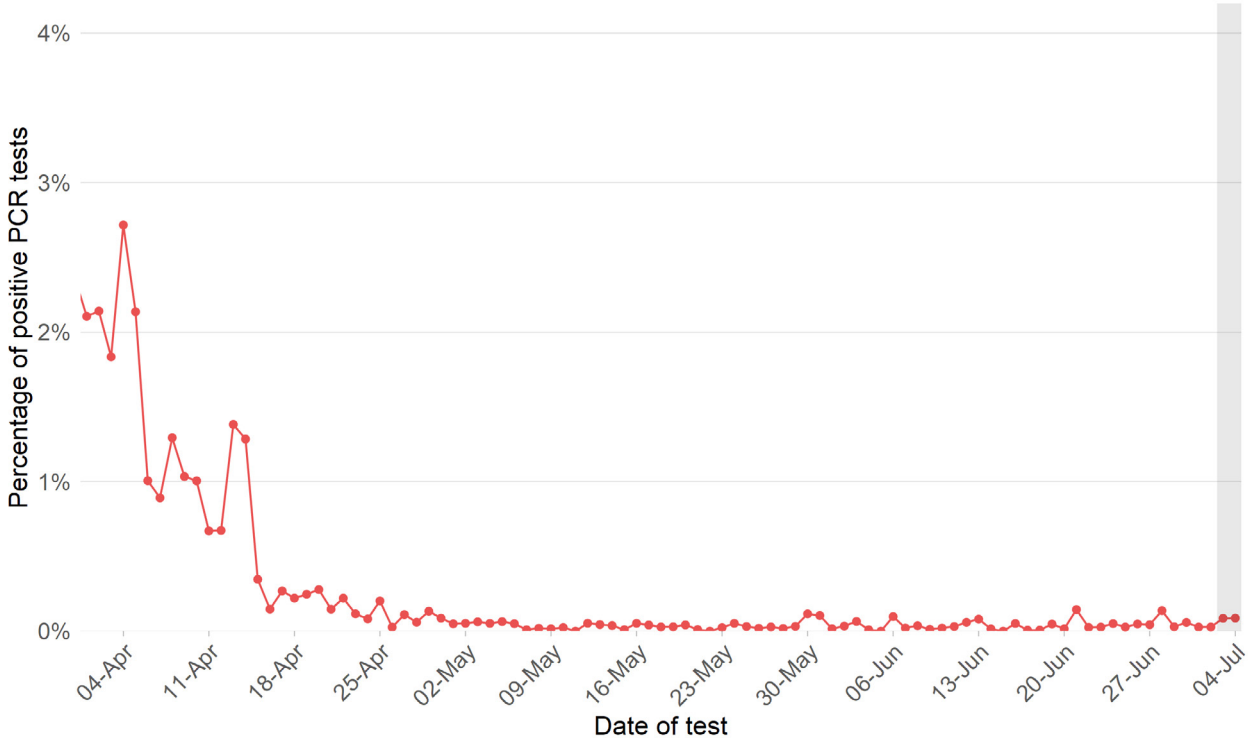


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.
Counts in the shaded area may be incomplete due to a delay in reporting negative results.

Interpretation: COVID-19 testing has increased significantly since April in line with the changes in testing criteria and increased availability of testing. Early in the outbreak the focus was on returned travellers and close contacts of confirmed cases, whereas now testing is recommended for anyone with even mild respiratory symptoms or unexplained fever. Throughout June testing rates increased, with a record daily number of 20,390 tests carried out on Monday 29 June.

[1] The number of tests per day displayed below is different to the 24 hour increase in tests reported each day as there are delays in some laboratories providing negative results to NSW Health.

Figure 5. Proportion of PCR tests positive for COVID-19, NSW, 2020

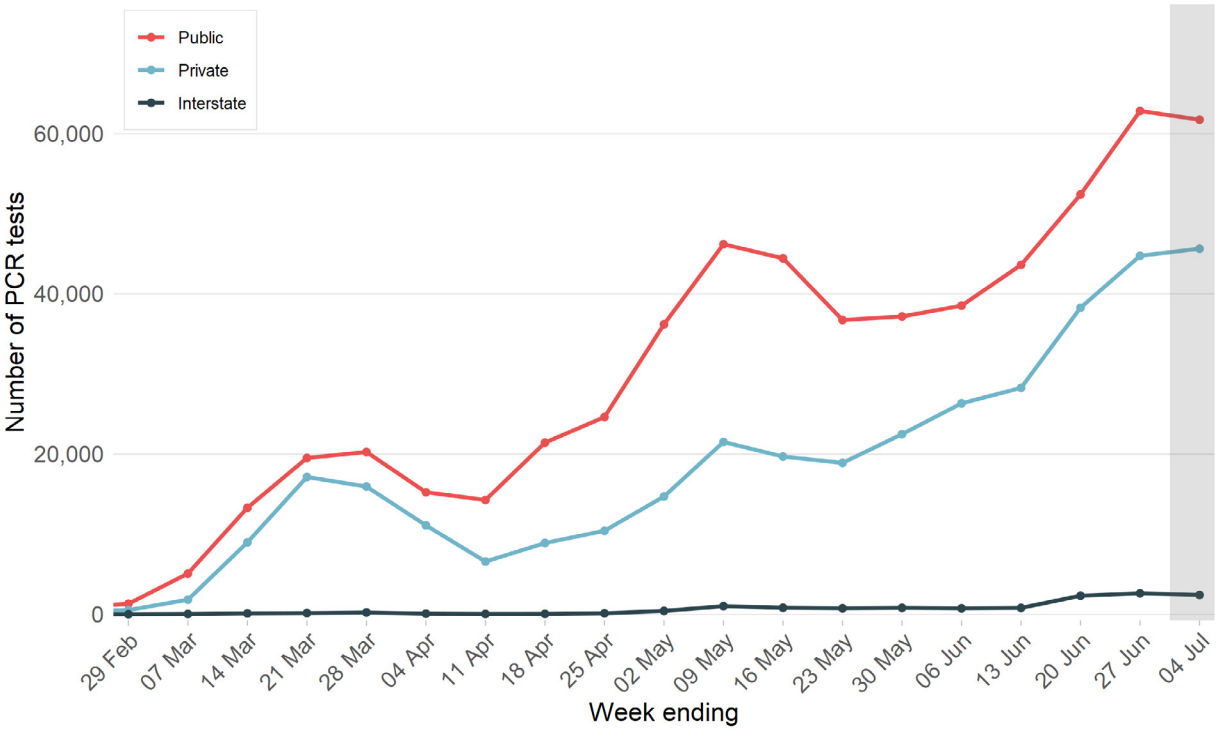


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.
Counts in the shaded area may be incomplete due to a delay in reporting negative results.

Interpretation: The proportion of tests positive for COVID-19 in NSW declined since mid-March to early May, and has stabilised at very low levels since, despite the high rates of testing. This suggests there is currently limited transmission in the community.

Which laboratories are doing the testing?

Figure 6. Number of PCR tests by week and facility type, NSW, 2020



Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.
Counts in the shaded area may be incomplete due to a delay in reporting negative results.

Interpretation: In the week ending 4 July, approximately 60% of tests were done in public laboratories. The recent increases in testing have occurred in both public and private laboratories.

SECTION 2: COVID-19 TRANSMISSION IN NSW IN THE LAST FOUR WEEKS

To understand the extent of COVID-19 transmission in the community, public health staff carefully consider information collected from each new case at the time of diagnosis. The following is a review of locally-acquired cases based on the date of symptom onset.[2]

Information from cases who became unwell in the last 28 days is used to understand where COVID-19 is spreading in the community. This takes into account the **incubation period** and the time it takes for people to seek testing and the laboratory to perform the test. Some people who test positive to COVID-19 do not report having any symptoms despite thorough investigation. As it is not possible to determine when these cases were infected they are excluded in a review of recent transmission.

Table 2. Symptomatic locally-acquired COVID-19 cases in NSW, by week of onset and source of infection, 7 June to 4 July 2020

Locally-acquired cases	Week of symptom onset			
	4 July	27 June	20 June	13 June
Contact of a confirmed case and/or part of a known cluster	0	0	0	0
Source not identified	0	0	2	3
Total	**0**	**0**	**2**	**3**

Interpretation: No links have been identified between the five cases with a symptom onset in the last four weeks. Three of the recent cases attended or worked at different schools during their infectious period. All three schools were located in metropolitan Sydney and, following diagnosis, cases were promptly isolated and close contacts were quarantined.

While it is encouraging that the number of cases remains low, high rates of testing are required to rapidly identify cases to prevent the spread of infection. This is especially important as social distancing rules relax. Maintaining 1.5 m distance between people outside the household limits the opportunity for transmission.

[2] This analysis differs from Table 1, which is presented by date of report.

Cases and testing by gender

Five cases had symptom onset during the four-week period; three males and two females.

Table 3. Rates of COVID-19 testing by gender, up to 4 July 2020*

Gender	Week ending 4 July		Week ending 27 June		Total to 4 July	
	No. tests	No. tests per 1,000 population	No. tests	No. tests per 1,000 population	No. tests	No. tests per 1,000 population
Female	58,966	14.5	59,496	14.6	540,347	132.6
Male	48,859	12.2	48,872	12.2	421,054	104.9

*Excludes cases with unavailable information on gender.

Interpretation: Testing was similar for both males and females in the week ending 4 July compared with the previous week. Females continue to have a higher rate of testing compared to males.

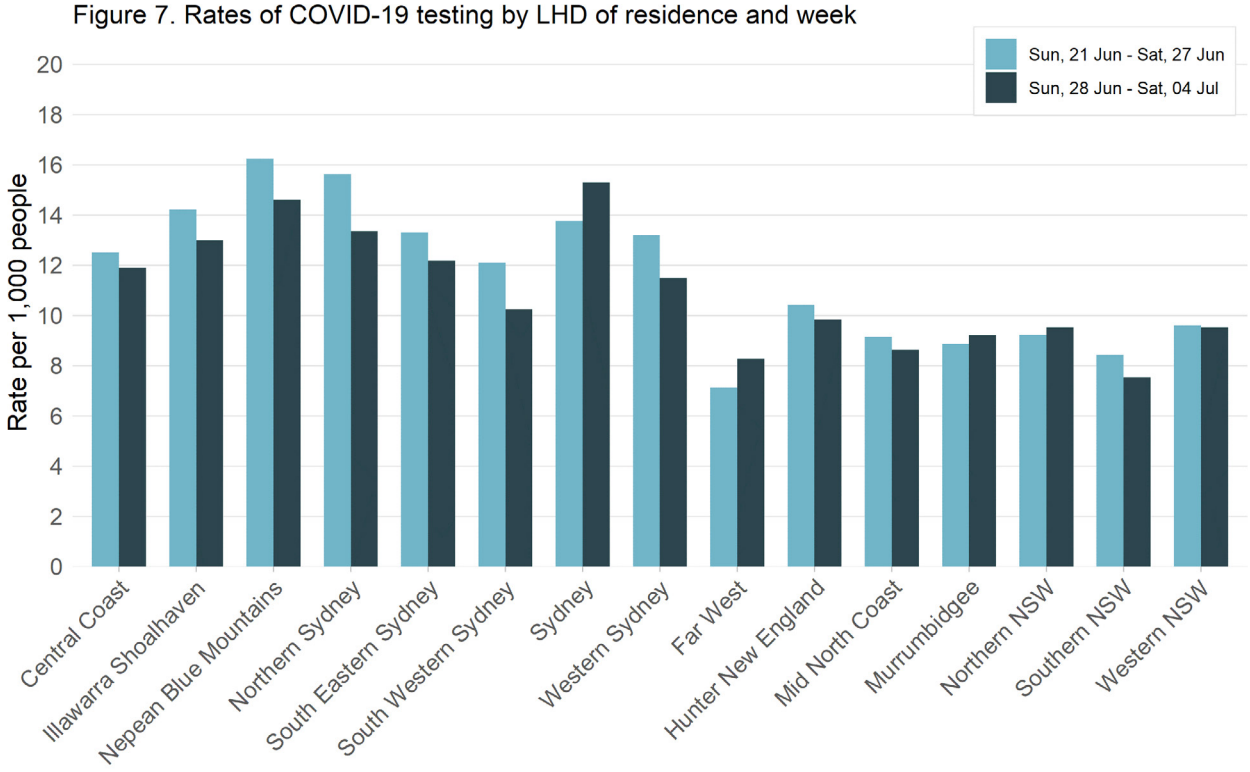
Cases and testing by Local Health District of residence

Table 4. Symptomatic locally-acquired COVID-19 cases by LHD of residence and week of onset, 7 June to 4 July 2020

Local Health District	Week of symptom onset				Total
	4 July	27 June	20 June	13 June	
Central Coast	0	0	0	0	**0**
Far West	0	0	0	0	**0**
Hunter New England	0	0	0	0	**0**
Illawarra Shoalhaven	0	0	0	1	**1**
Mid North Coast	0	0	0	0	**0**
Murrumbidgee	0	0	0	0	**0**
Nepean Blue Mountains	0	0	0	0	**0**
Northern NSW	0	0	0	0	**0**
Northern Sydney	0	0	1	0	**1**
South Eastern Sydney	0	0	0	2	**2**
South Western Sydney	0	0	1	0	**1**
Southern NSW	0	0	0	0	**0**
Sydney	0	0	0	0	**0**
Western NSW	0	0	0	0	**0**
Western Sydney	0	0	0	0	**0**
Grand Total	**0**	**0**	**2**	**3**	**5**

Interpretation: The five cases with symptom onset in the last four weeks included two residents of South Eastern Sydney LHD and one resident each from Illawarra Shoalhaven, Northern Sydney and South Western Sydney LHD. It is unknown where the cases were infected.

Figure 7. Rates of COVID-19 testing by LHD of residence and week



Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 4 July were similar when compared to the previous week (13 per 1,000 vs 13 per 1,000). Sydney, Far West, Murrumbidgee and Northern NSW LHDs reported higher rates of testing in the week ending 4 July when compared to the previous week.

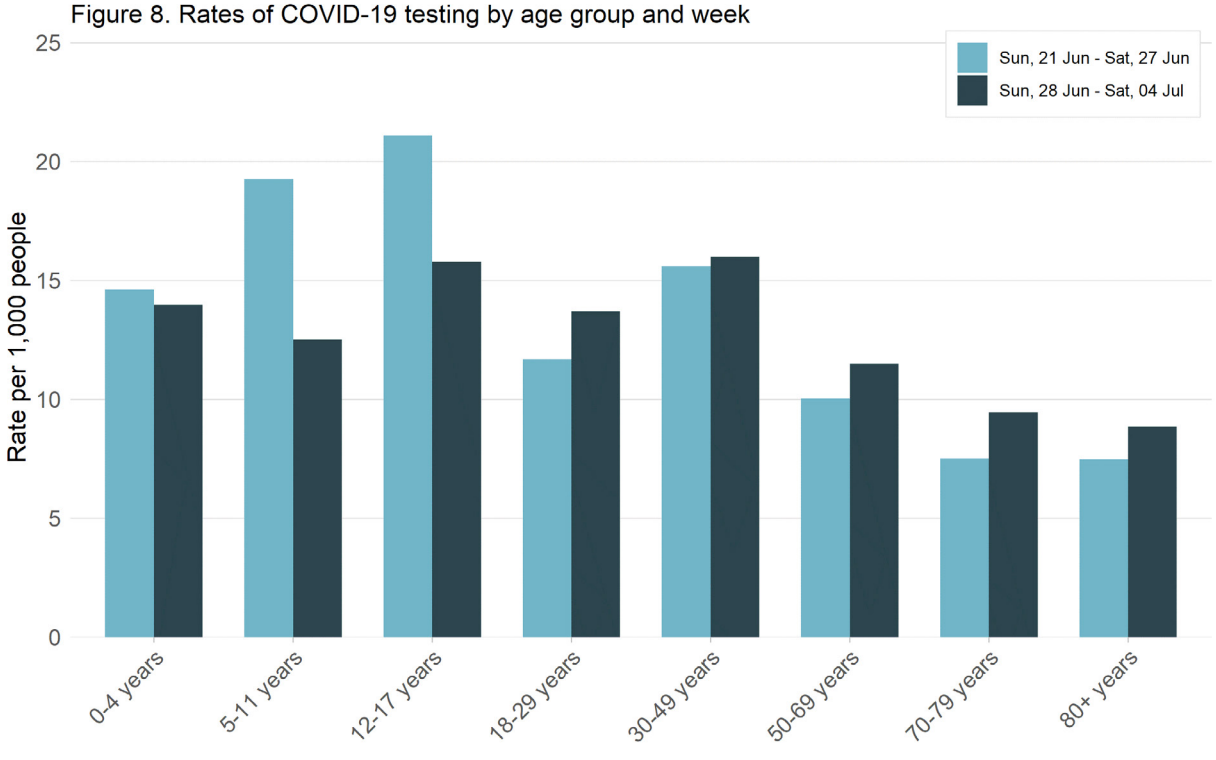
Cases and testing by age group

Table 5. Symptomatic locally-acquired COVID-19 cases by age group and week of onset, 7 June to 4 July 2020

Age group	Week ending				Total
	4 July	27 June	20 June	13 June	
0-4 years	0	0	0	0	**0**
5-11 years	0	0	1	0	**1**
12-17 years	0	0	1	0	**1**
18-29 years	0	0	0	2	**2**
30-49 years	0	0	0	1	**1**
50-69 years	0	0	0	0	**0**
70-79 years	0	0	0	0	**0**
80+ years	0	0	0	0	**0**
All ages	**0**	**0**	**2**	**3**	**5**

Interpretation: The five recent cases included a primary school-aged child, a secondary school-aged child and three adults aged less than 50 years.

Figure 8. Rates of COVID-19 testing by age group and week



Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates decreased in school-aged children in the week ending 4 July and increased in adults in all age groups.

Testing in areas of residence of COVID-19 cases with an unknown source

Cases with no source identified suggest that there may be people infected with COVID-19 in the community who have not been diagnosed. High rates of testing are necessary to identify other cases and enable public health action to limit the spread of infection. The following analysis is based on the date that the case was reported to NSW Health.

Table 6. Testing in areas for locally-acquired cases where no source was identified, reported from 7 June to 4 July 2020

LGA	Cases				Tests				Tests per 1,000 population			
	4 July	27 June	20 June	13 June	4 July	27 June	20 June	13 June	4 July	27 June	20 June	13 June
Central Coast	1	0	0	0	4,200	4,414	4,098	3,838	12.2	12.8	11.9	11.2

Interpretation: Rates of testing in Central Coast LGA were similar to the state rate each week for the last four weeks and only a single case was identified, indicating low rates of illness in the community. Testing also increased in the Inner West LGA where a recent case who was diagnosed interstate was reported to have worked while symptomatic.

How quickly are locally-acquired cases getting tested after symptoms begin?

All people who undergo testing are advised to stay at home while they are waiting for test results to avoid spreading infection to others. Diagnosis as close as possible to the time symptoms start is important as it enables close contacts to be quarantined early, which reduces the risk of further transmission. The case reported in the week ending 4 July was found to be a past infection and was not considered infectious at the time they were diagnosed with COVID-19.

How long does it take to get a positive COVID-19 test result?

To enable prompt public health action, laboratories prioritise the notification of positive COVID-19 test results to NSW Health. In certain circumstances, NSW Health may be informed of a potential positive result in samples undergoing further laboratory investigation prior to the final diagnosis. The time taken to receive a negative result is typically longer (data not shown).

Despite marked increases in testing since January, the median time from testing to notification of a positive result (measured in whole days) has remained stable at one day from test to notification for cases reported each week in the period 28 March to 16 May. Since 7 June, a total of eight locally-acquired cases have been diagnosed out of 381,060 tests.

Table 7. Time from testing to notification for locally-acquired COVID-19 cases reported from 7 June to 4 July 2020

Time from test to notification	Cases
Same day	1
1 day	2
2 days	4
3 days	1

Interpretation: Three of the eight newly diagnosed cases reported in the four weeks ending 4 July were notified to NSW Health within one day of the test being conducted.

Cases in Aboriginal people

No new cases among Aboriginal people were reported in the week ending 4 July. The most recent COVID-19 case in an Aboriginal person was an overseas-acquired case reported in the week ending 30 May.

Cases in pregnant women

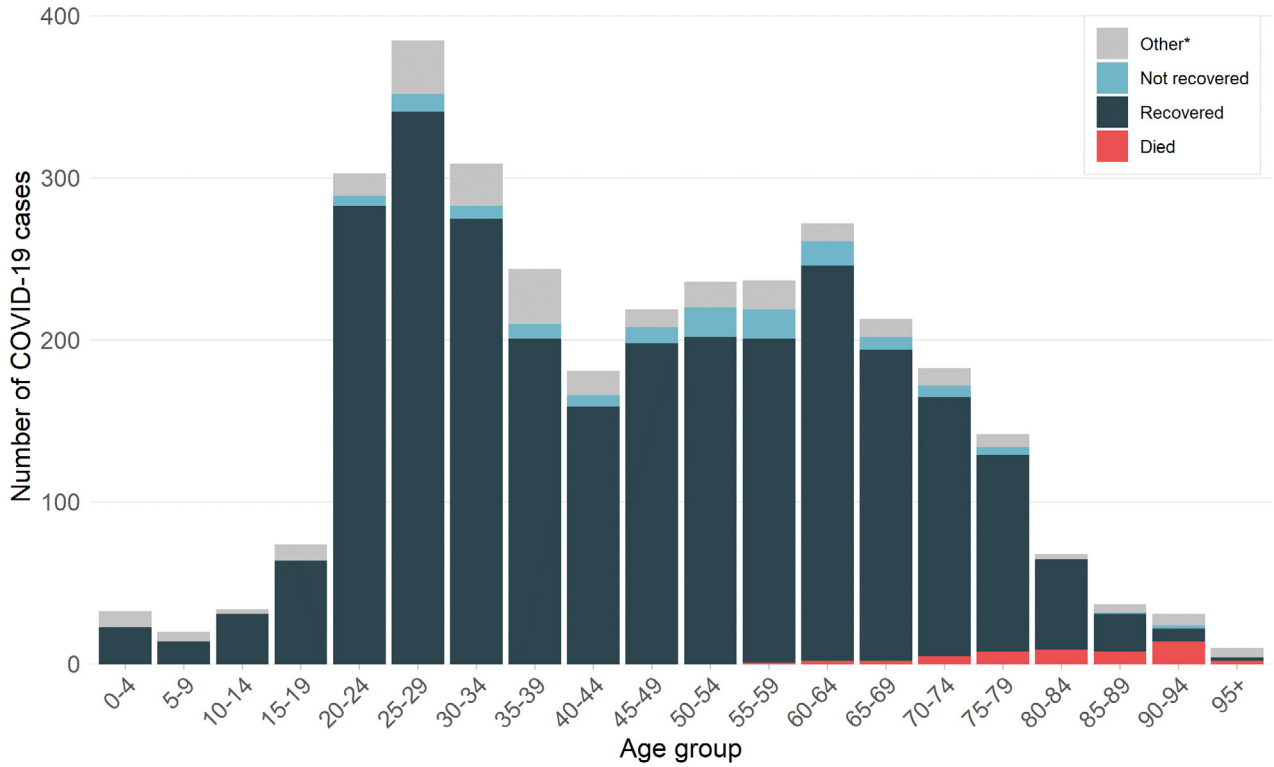
There were no new cases in pregnant women in the week ending 4 July.

SECTION 3: RECOVERY AND DEATHS

How many cases have recovered?

In NSW, recovery status for COVID-19 is assessed three weeks after the onset of illness by interviewing the case. Cases reporting resolution of all COVID-19 symptoms are considered to have recovered. Cases who have not recovered at three weeks are called in the following weeks until recovery. The bars on the figure below show the total number of cases by age group and health status up to 4 July. This includes all cases reported in NSW (acquired locally and overseas).

Figure 9. COVID-19 cases by age group and health status, NSW, 2020



*Cases with recovery data unavailable (including those within 3 weeks of symptom onset).
Includes both local and overseas acquired cases.

Interpretation: Overall, more than 85% of cases have recovered.

How many people have died as a result of COVID-19?

In total, 1.6% of cases (51 people) have died as a result of COVID-19 infection, most of whom were 70 years of age or older, including 28 residents of aged care facilities with known COVID-19 outbreaks. Approximately one-quarter of the deaths were in overseas-acquired cases.

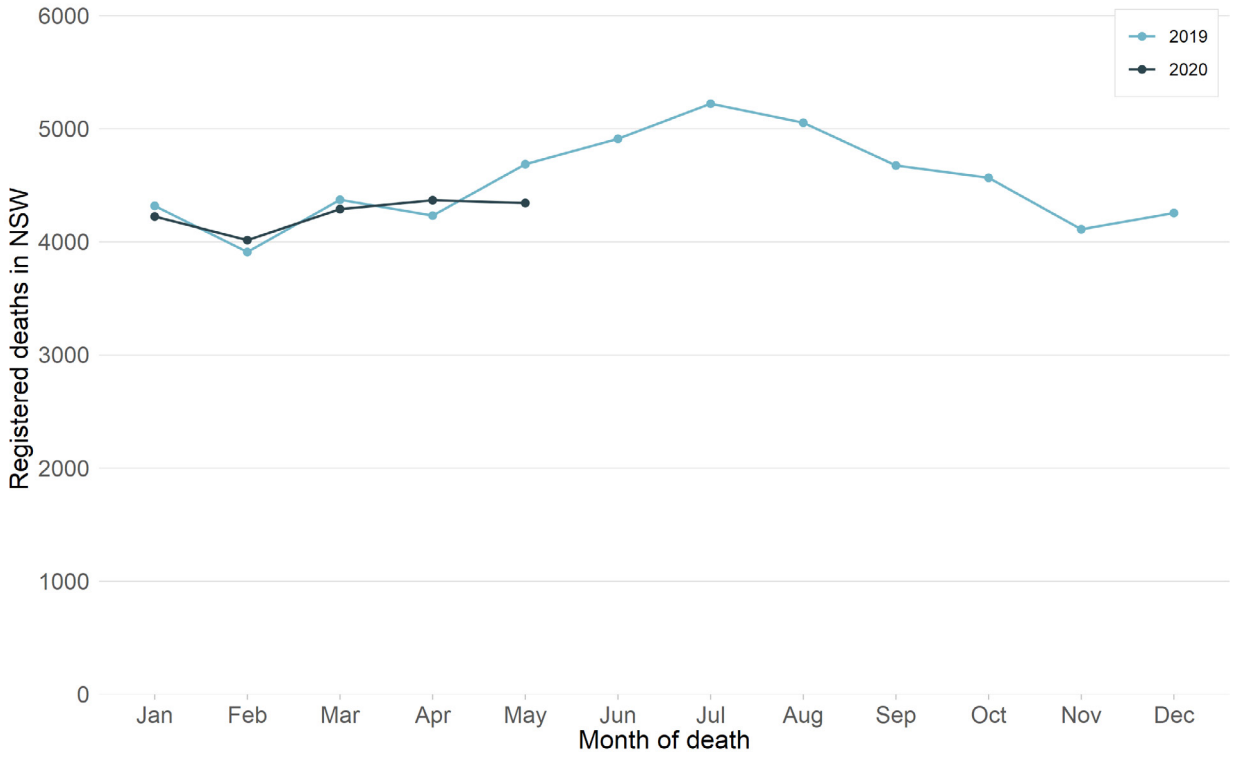
Internationally it is estimated that 4.7% of COVID-19 cases are reported to have died as a result of their infection.[3] Countries such as Italy, the United Kingdom and Spain have reported higher mortality rates (14.4%, 15.5% and 11.3%), while NSW reports similar rates to South Korea (2.2%) and New Zealand (1.9%).

[3] WHO Coronavirus disease (COVID-19) Situation Report – 168
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

How many people have died in NSW from any cause of death?

NSW Health receives notifications of all deaths notified to the NSW Registry of Births Deaths and Marriages. Deaths from any cause are seasonal, increasing in winter and decreasing in summer. On average there is a delay of about 14 days for a death to be registered and notified to NSW Health, and deaths referred to a coroner may take longer to register.

Figure 10. Deaths from any cause registered in NSW up to 02 July, 2020



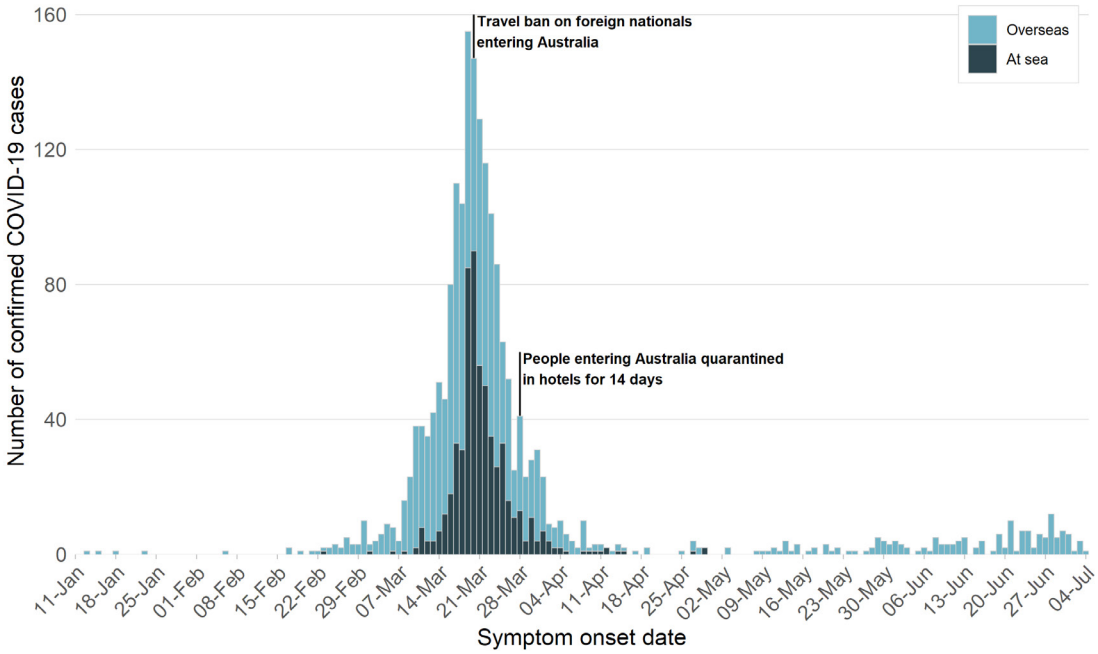
Interpretation: When compared to the same period in 2019, the numbers of registered deaths were slightly higher in April, but lower in May. While there is a lag in notification of deaths, there is no indication to date that the COVID-19 pandemic in NSW is causing an overall increase in mortality.

SECTION 4: COVID-19 IN RETURNED TRAVELLERS

To limit the spread of COVID-19 into NSW, travel restrictions were introduced for all non-Australian citizens and permanent residents. In addition, since 28 March returned travellers have been quarantined in hotels for a 14-day period and travellers who develop symptoms are isolated until no longer infectious.

The graph below shows the number of cases in returned travellers by the date of symptom onset. Cases acquired at sea refers to those cruise ship passengers who acquired their infection prior to disembarking in NSW.

Figure 11. Overseas acquired COVID-19 cases by infection source and illness onset, NSW, 2020



The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Up to 4 July, cruise ship passengers accounted for the largest number of overseas-acquired infections (581 cases). Following this, cases were most commonly returning from the United Kingdom (326 cases), United States (275 cases) and Pakistan (88 cases).

Overall, the number of new cases in returned travellers has decreased markedly in line with travel restrictions. However, given the low level of community transmission, returned travellers account for almost all cases (94%, 124 cases) reported in NSW in the last four weeks.

Most travellers diagnosed in quarantine are returning Australian nationals and the country where people acquired their infection in recent weeks can be influenced by the numbers and size of arriving repatriation flights. Effective hotel quarantine minimises the risk of transmission to the community. In the four weeks ending 4 July, cases had most commonly returned from Pakistan (65 cases).

Airport screening

Health screening of returning travellers was introduced for people returning from particular countries early in the outbreak but was expanded to all returning travellers on 21 March 2020. As part of the health screening passengers are asked to complete a questionnaire about their health upon arrival into Sydney International Airport. People with symptoms are assessed by an onsite health team and tested for COVID-19.

During the week ending 4 July, a total of 5,126 people were screened at Sydney International Airport and 119 were referred for testing. Since screening began on 2 February, a total of 92,204 people have been screened with 1,095 referred for onsite health assessment and testing.

SECTION 5: OTHER RESPIRATORY INFECTIONS IN NSW

Influenza and other respiratory virus cases and tests reported in NSW, up to 28 June 2020

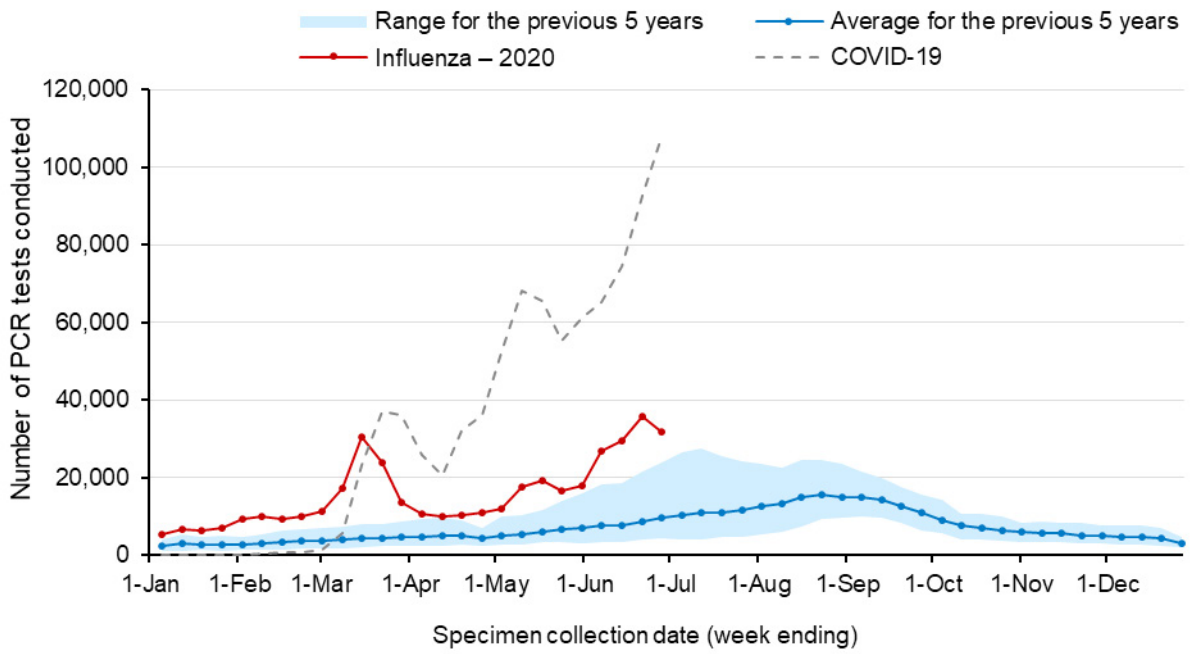
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted; not all samples are tested for all respiratory viruses.

The most recent data available is for testing carried out to 28 June. A total of 410,417 influenza tests have been performed at participating laboratories to 28 June, with 31,889 tests conducted in the most recent week. Refer to Appendix B for PCR testing results for a range of respiratory viruses.

How much influenza testing is happening?

The red line in the figure below shows the number of PCR tests for influenza carried out each week. The blue line shows the average number of tests carried out for the same week in the last five years and the shaded area shows the range of counts reported in the previous five years. The grey line shows the number of COVID-19 tests.

Figure 12. Testing for influenza and COVID-19 by week, to 28 June 2020

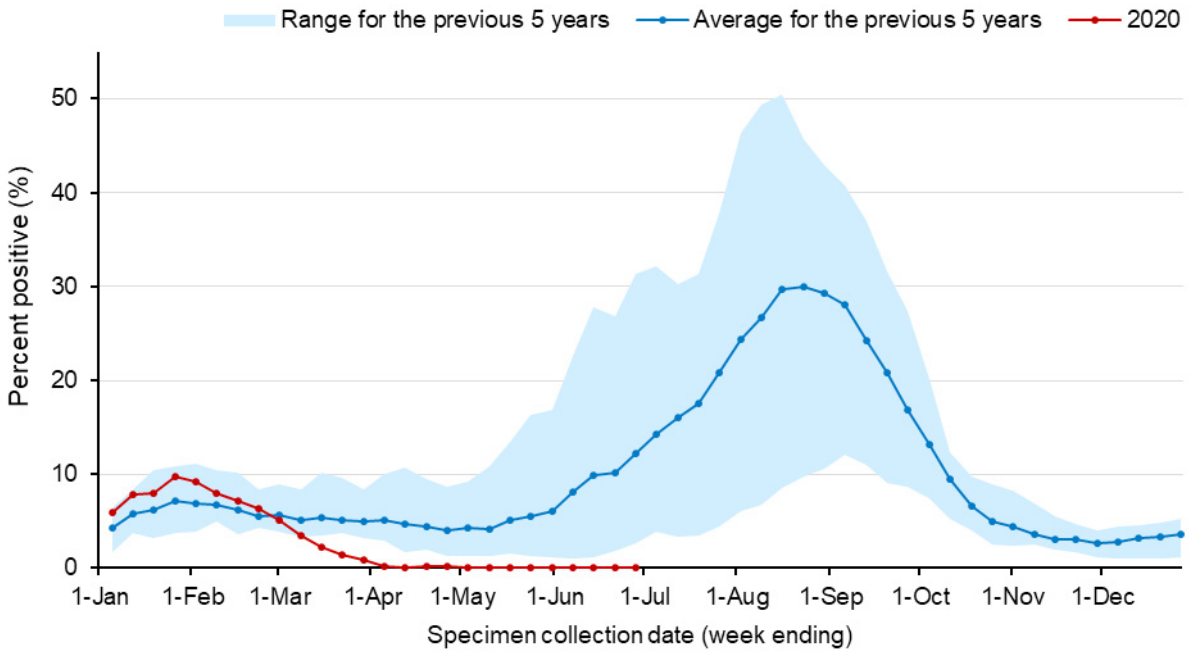


Interpretation: The number of influenza tests performed has exceeded the previous five-year average every week this year. The peak in March corresponds to an increase in testing for COVID-19 virus. The subsequent decline of influenza testing, and sharp increase in COVID-19 testing from early April, reflects changes in testing practices for COVID-19 introduced in late March so that testing for influenza and other respiratory viruses was by exception to enable laboratories to increase COVID-19 testing using common equipment.

How much influenza is circulating?

The graph below shows the proportion of tests found to be positive for influenza with the red line showing weekly counts for 2020, the blue line showing the average for the past five years and the shaded area showing the range recorded in the previous five years.

Figure 13. Proportion of tests positive for influenza, to 28 June 2020

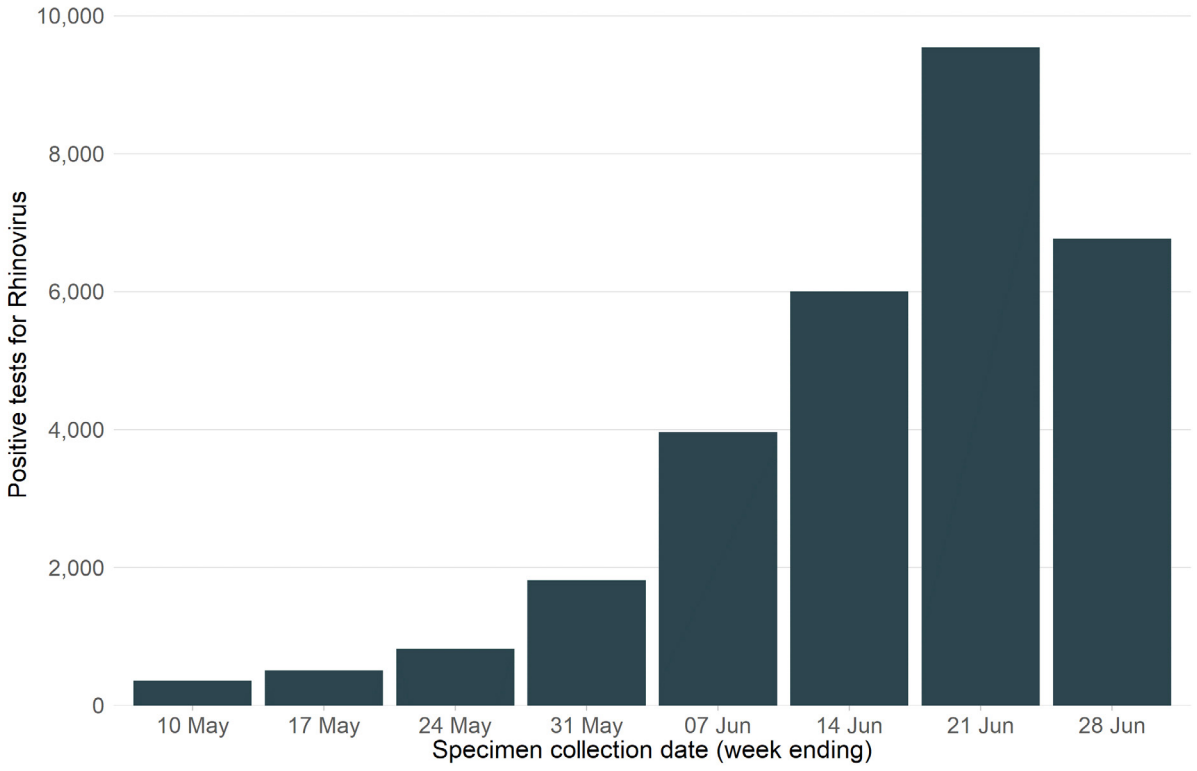


Interpretation: The percent of influenza tests that were positive in the week ending 28 June continues to be very low (less than 0.1%), indicating limited influenza transmission in the community.

How much rhinovirus is circulating?

Rhinovirus is the virus that causes the common cold and has been the respiratory virus most frequently identified by sentinel laboratories this year to 28 June 2020.

Figure 14. Rhinovirus diagnosed at sentinel NSW laboratories, 10 May to 28 June 2020



Interpretation: The number of rhinovirus cases exponentially increased from mid-May to mid-June but decreased in the most recent week.

How many people have died as a result of influenza?

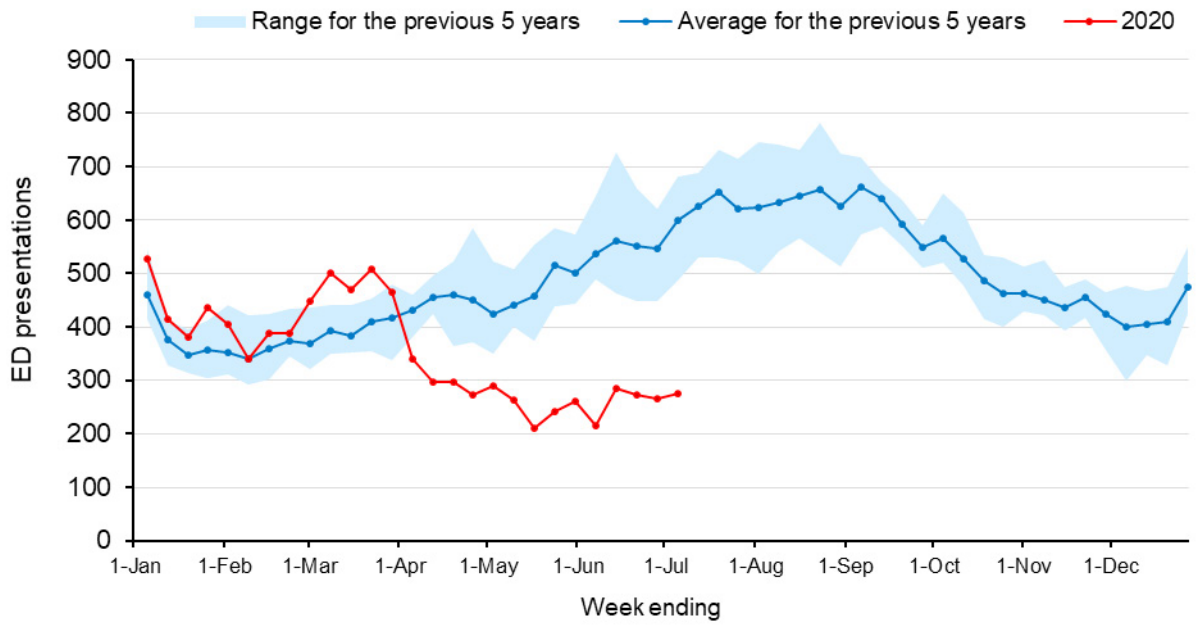
No influenza deaths were reported in the week ending 28 June. The number of influenza-related deaths identified via Coroner's reports and death registrations from 1 January to 28 June 2020 is lower than the same period last year (12 deaths in 2020 compared with 66 in 2019).[4] Two-thirds of the deaths were in people aged 65 years and over.

How are emergency department presentations for pneumonia tracking?

The figure below shows weekly pneumonia presentations to Emergency Departments in NSW. This includes presentations with diagnoses of viral, bacterial, atypical or unspecified pneumonia, and Legionnaires' disease, but excludes 'pneumonia with influenza' and provides an indicator of more severe respiratory conditions using PHREDSS.[5]

The red line shows the weekly counts for 2020, the blue line shows the average for the same week for the past five years and the shaded area shows the range recorded in the previous five years.

Figure 15. Emergency Department pneumonia presentations in NSW by week, to 5 July 2020



Interpretation: Pneumonia presentations decreased from the end of March and have continued to remain well below the usual range for this time of year.

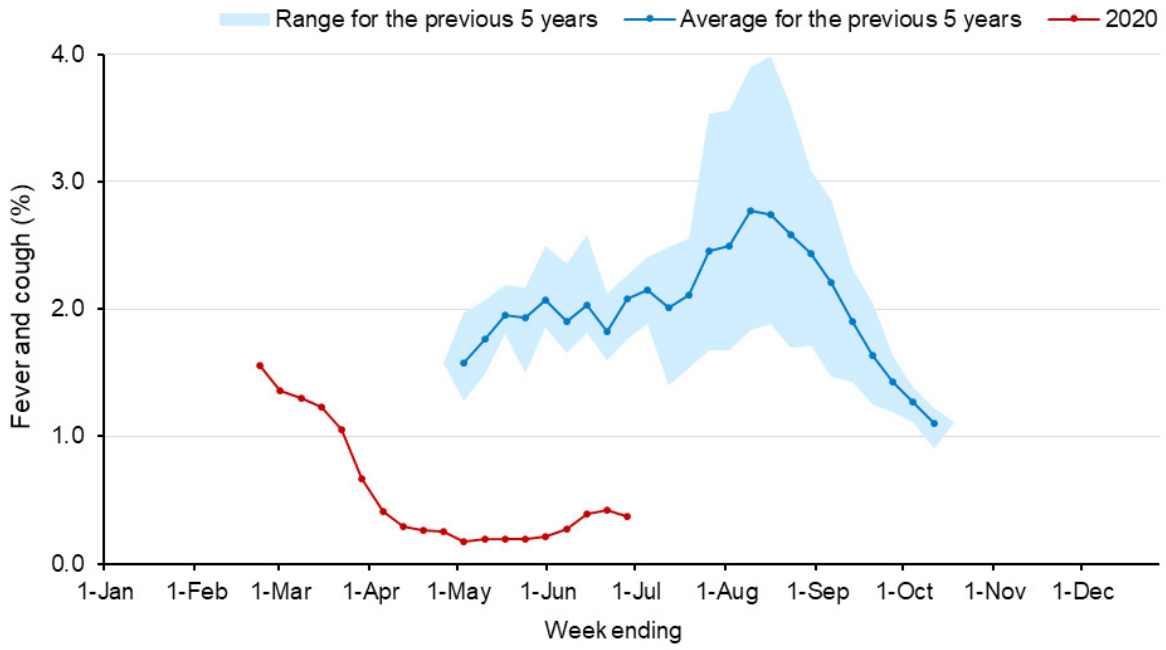
[4] Includes deaths in people with laboratory-confirmed influenza.

[5] NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance (PHREDSS) system, CEE, NSW Ministry of Health. Comparisons are made with data for the preceding 5 years. Includes unplanned presentations to 67 NSW emergency departments (accounts for 87% of total public ED activity).

How many people have flu-like symptoms in the community?

FluTracking is an online survey that asks participants to report flu-like symptoms, such as fever or cough, in the last week. Across NSW approximately 25,000-30,000 people participate each week. The survey usually commences at the beginning of May in line with the flu season but commenced at the end of February this year given the COVID-19 outbreak.

Figure 16. Proportion of FluTracker participants in NSW reporting influenza-like illness, to 28 June 2020



Interpretation: In NSW in the week ending 28 June, of the 24,880 people surveyed, 93 people (0.4%) reported flu-like symptoms. The proportion of people reporting symptoms has increased in recent weeks but remains well below the usual range for this time of year.

APPENDIX A: COVID-19 PCR TESTS IN NSW

Local Health District	Local Government Area	Week ending				Total	
		4 July		27 June			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Central Coast	Central Coast / *LHD Total*[2]	4200	11.9	4414	12.5	41886	118.7
Far West	Balranald	12	5.1	6	2.6	98	41.9
	Broken Hill	142	8.1	110	6.3	1489	85.2
	Central Darling	8	4.4	10	5.4	92	50.0
	Wentworth	88	12.5	89	12.6	573	81.2
	LHD Total[2]	250	8.3	215	7.1	2252	74.7
Hunter New England	Armidale Regional	242	7.9	228	7.4	3571	116.0
	Cessnock	488	8.1	575	9.6	5377	89.6
	Dungog	66	7.0	65	6.9	733	77.8
	Glen Innes Severn	80	9.0	47	5.3	728	82.1
	Gunnedah	82	6.5	84	6.6	767	60.5
	Gwydir	13	2.4	20	3.7	217	40.5
	Inverell	108	6.4	132	7.8	1468	86.9
	Lake Macquarie	2092	10.2	2266	11.0	25954	126.1
	Liverpool Plains	69	8.7	100	12.7	746	94.4
	Maitland	1035	12.2	1079	12.7	12056	141.6
	Mid-Coast	726	7.7	785	8.4	7937	84.6
	Moree Plains	87	6.6	65	4.9	1054	79.5
	Muswellbrook	164	10.0	192	11.7	1360	83.0
	Narrabri	51	3.9	75	5.7	915	69.7
	Newcastle	2214	13.4	2170	13.1	25086	151.5
	Port Stephens	793	10.8	848	11.5	8148	110.9
	Singleton	317	13.5	321	13.7	2973	126.7
	Tamworth Regional	541	8.7	618	9.9	8144	130.2
	Tenterfield	31	4.7	31	4.7	346	52.5
	Upper Hunter Shire	140	9.9	178	12.6	1329	93.7
	Uralla	27	4.5	30	5.0	430	71.5
	Walcha	18	5.7	21	6.7	296	94.5
	LHD Total[2]	9380	9.9	9923	10.4	109562	115.0
Illawarra Shoalhaven	Kiama	392	16.8	439	18.8	3015	128.9
	Shellharbour	1125	15.4	1282	17.5	9329	127.4
	Shoalhaven	1088	10.3	1143	10.8	10740	101.7
	Wollongong	2847	13.1	3101	14.2	23463	107.6
	LHD Total[2]	5452	13.0	5965	14.2	46547	110.9

Local Health District	Local Government Area	Week ending				Total	
		4 July		27 June			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Mid North Coast	Bellingen	136	10.5	123	9.5	1130	87.0
	Coffs Harbour	685	8.9	706	9.1	6343	82.1
	Kempsey	232	7.8	217	7.3	2703	90.9
	Nambucca	136	6.9	142	7.2	1465	74.0
	Port Macquarie-Hastings	760	9.0	876	10.4	6902	81.7
	LHD Total[2]	1949	8.6	2064	9.2	18543	82.2
Murrumbidgee	Albury	433	8.0	411	7.6	3180	58.5
	Berrigan	92	10.5	70	8.0	538	61.5
	Bland	58	9.7	51	8.5	412	69.0
	Carrathool	1	0.4	5	1.8	71	25.4
	Coolamon	38	8.8	38	8.8	350	80.6
	Cootamundra-Gundagai Regional	99	8.8	106	9.4	876	78.0
	Edward River	140	15.4	139	15.3	769	84.7
	Federation	78	6.3	131	10.5	656	52.8
	Greater Hume Shire	104	9.7	95	8.8	700	65.0
	Griffith	331	12.3	286	10.6	2152	79.6
	Hay	7	2.4	11	3.7	155	52.6
	Hilltops	165	8.8	184	9.8	1203	64.3
	Junee	35	5.2	41	6.1	305	45.6
	Lachlan[1]	65	10.7	35	5.8	255	42.0
	Leeton	69	6.0	87	7.6	695	60.7
	Lockhart	22	6.7	22	6.7	252	76.7
	Murray River	38	3.1	8	0.7	84	6.9
	Murrumbidgee	31	7.9	29	7.4	228	58.2
	Narrandera	21	3.6	45	7.6	297	50.4
	Snowy Valleys	140	9.7	112	7.7	1102	76.1
	Temora	36	5.7	45	7.1	429	68.0
	Wagga Wagga	799	12.2	727	11.1	7183	110.1
	LHD Total[2]	2747	9.2	2648	8.9	21743	72.9
Nepean Blue Mountains	Blue Mountains	1416	17.9	1514	19.1	13260	167.6
	Hawkesbury	997	14.8	1126	16.7	9048	134.5
	Lithgow	216	10.0	206	9.5	2063	95.5
	Penrith	3126	14.7	3555	16.7	32989	154.9
	LHD Total[2]	5718	14.6	6354	16.3	57048	145.9

Local Health District	Local Government Area	Week ending				Total	
		4 July		27 June			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Northern NSW	Ballina	493	11.1	462	10.4	4804	107.7
	Byron	405	11.5	420	12.0	3962	112.9
	Clarence Valley	360	7.0	359	7.0	3645	70.6
	Kyogle	70	8.0	49	5.6	460	52.3
	Lismore	515	11.8	510	11.7	4406	100.8
	Richmond Valley	227	9.7	206	8.8	1973	84.1
	Tenterfield	31	4.7	31	4.7	346	52.5
	Tweed	878	9.1	858	8.9	7884	81.3
	LHD Total[2]	2958	9.5	2869	9.2	27219	87.7
Northern Sydney	Hornsby	1782	11.7	2002	13.2	15471	101.7
	Hunters Hill	429	28.6	477	31.8	4085	272.7
	Ku-ring-gai	1992	15.7	2687	21.1	17784	139.9
	Lane Cove	1180	29.4	1698	42.3	11116	276.8
	Mosman	396	12.8	453	14.6	4463	144.1
	North Sydney	805	10.7	844	11.3	8290	110.5
	Northern Beaches	3515	12.9	3772	13.8	35390	129.4
	Parramatta[1]	2435	9.5	2718	10.6	21413	83.3
	Ryde	1399	10.7	1542	11.8	14638	111.5
	Willoughby	770	9.5	958	11.8	7566	93.2
	LHD Total[2]	12783	13.4	14948	15.6	123010	128.7
South Eastern Sydney	Bayside	1614	9.1	1765	9.9	16095	90.2
	Georges River	1520	9.5	1626	10.2	14045	88.1
	Randwick	2134	13.7	2437	15.7	24411	156.8
	Sutherland Shire	3616	15.7	3969	17.2	32805	142.3
	Sydney[1]	2991	12.1	2861	11.6	31658	128.5
	Waverley	1059	14.3	1217	16.4	15734	211.8
	Woollahra	929	15.6	1026	17.3	11909	200.5
	LHD Total[2]	11705	12.2	12764	13.3	124510	129.8
South Western Sydney	Camden	1861	18.4	2542	25.1	15393	151.8
	Campbelltown	2157	12.6	2579	15.1	19767	115.6
	Canterbury-Bankstown[1]	3630	9.6	3535	9.4	35087	92.8
	Fairfield	1373	6.5	1676	7.9	12866	60.8
	Liverpool	2252	9.9	2595	11.4	21563	94.8
	Wingecarribee	693	13.6	816	16.0	6994	136.8
	Wollondilly	506	9.5	625	11.8	4379	82.4
	LHD Total[2]	10650	10.3	12558	12.1	98121	94.5

Local Health District	Local Government Area	Week ending				Total	
		4 July		27 June			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Southern NSW	Bega Valley	264	7.7	287	8.3	2334	67.7
	Eurobodalla	359	9.3	328	8.5	3384	88.0
	Goulburn Mulwaree	292	9.4	372	12.0	3179	102.1
	Queanbeyan-Palerang Regional	356	5.8	467	7.6	4523	74.0
	Snowy Monaro Regional	202	9.7	190	9.1	1594	76.7
	Upper Lachlan Shire	55	6.8	95	11.8	648	80.4
	Yass Valley	105	6.2	94	5.5	1097	64.2
	LHD Total[2]	1634	7.5	1833	8.4	16761	77.2
Sydney	Burwood	330	8.1	321	7.9	2961	72.9
	Canada Bay	1477	15.4	1456	15.2	13608	141.6
	Canterbury-Bankstown[1]	3630	9.6	3535	9.4	35087	92.8
	Inner West	4362	21.7	3336	16.6	32852	163.6
	Strathfield	557	11.9	571	12.2	5084	108.3
	Sydney[1]	2991	12.1	2861	11.6	31658	128.5
	LHD Total[2]	10664	15.3	9594	13.8	94185	135.2
Western NSW	Bathurst Regional	543	12.5	514	11.8	4559	104.5
	Blayney	65	8.8	91	12.3	835	113.2
	Bogan	17	6.6	27	10.5	183	70.9
	Bourke	57	22.0	27	10.4	147	56.8
	Brewarrina	6	3.7	8	5.0	109	67.7
	Cabonne	63	4.6	68	5.0	755	55.4
	Cobar	32	6.9	27	5.8	190	40.8
	Coonamble	23	5.8	24	6.1	296	74.8
	Cowra	93	7.3	112	8.8	878	68.9
	Dubbo Regional	545	10.2	521	9.7	4279	79.7
	Forbes	42	4.2	42	4.2	404	40.8
	Gilgandra	17	4.0	19	4.5	194	45.8
	Lachlan[1]	65	10.7	35	5.8	255	42.0
	Mid-Western Regional	299	11.8	286	11.3	2207	87.4
	Narromine	45	6.9	52	8.0	384	58.9
	Oberon	48	8.9	41	7.6	458	84.6
	Orange	501	11.8	539	12.7	4979	117.3
	Parkes	93	6.3	102	6.9	851	57.4
	Walgett	39	6.6	37	6.2	446	74.9
	Warren	35	13.0	49	18.2	322	119.4
	Warrumbungle Shire	80	8.6	102	11.0	723	77.9
	Weddin	16	4.4	19	5.3	195	54.0
	LHD Total[2]	2717	9.5	2737	9.6	23559	82.7

Local Health District	Local Government Area	Week ending				Total	
		4 July		27 June			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Western Sydney	Blacktown	4962	13.3	5704	15.2	44109	117.8
	Cumberland	2287	9.5	2514	10.4	21242	88.0
	Parramatta[1]	2435	9.5	2718	10.6	21413	83.3
	The Hills Shire	2859	16.1	3402	19.1	24230	136.2
	LHD Total[2]	12110	11.5	13908	13.2	107502	102.1
NSW Total[3]		**108,328**	**13.4**	**108,524**	**13.4**	**964,763**	**119.3**

[1]Local Government Area (LGA) spans multiple Local Health Districts.
[2]Local Health District total counts and rates includes tests for LHD residents only. Murrumbidgee includes Albury LGA residents.
[3]NSW Total counts and rates include tests where residential information is incomplete.
See https://www.health.nsw.gov.au/Infectious/covid-19/Pages/counting-tests.aspx for detail on how tests are counted.

APPENDIX B: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 28 JUNE 2020

The reported testing numbers reflect the number of influenza PCR tests conducted. Not all samples are tested for all of the other respiratory viruses. Therefore, data presented may tend to under-represent current respiratory virus activity in NSW.

Specimen collection date	Total PCR tests conducted	Influenza A	Influenza B	Adenovirus	Para-influenza	RSV	Rhinovirus	HMPV**	Enterovirus
1 Jan — 28 June 2020									
Count	410,417	6,572	945	3,545	8,868	4,550	63,415	1,887	3,407
% Positive		1.6%	0.2%	0.9%	2.2%	1.1%	15.5%	0.5%	0.8%
Month ending									
3/02/2020*	34,953	2,508	401	846	1,900	752	5,036	599	335
1/03/2020	40,575	2,363	315	798	2,435	1,118	8,245	437	1,007
29/03/2020	85,238	1,549	200	898	4,117	1,977	18,088	664	1,502
3/05/2020*	54,128	70	13	175	273	410	2,250	48	210
31/05/2020	71,525	35	6	237	62	115	3,511	27	112
Week ending									
7/06/2020	26,716	8	2	151	26	28	3,965	20	45
14/06/2020	29,628	19	3	134	13	39	6,004	40	50
21/06/2020	35,765	13	3	181	19	52	9,546	36	67
28/06/2020	31,889	7	2	125	23	59	6,770	16	79

Notes: Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Serological diagnoses are not included.
HMPV - Human metapneumovirus
RSV - Respiratory syncytial virus
*Five-week period

GLOSSARY

Term	Description
Case	A person infected who has tested positive to a validated specific SARS-CoV-2 nucleic acid test or has had the virus identified by electron microscopy or viral culture. Blood tests (serology) is only used in special situations following a public health investigation and require other criteria to be met in addition to the positive serology result (related to timing of symptoms and contact with known COVID-19 cases). Case counts include: - NSW residents diagnosed in NSW who were infected overseas or in Australia (in NSW or interstate), and - interstate or international visitors diagnosed in NSW who were under the care of NSW Health at the time of diagnosis.
Incubation period	The time in which the case was infected. The incubation period for COVID-19 is between 1 and 14 days prior to symptom onset.
Overseas-acquired case	Case who travelled overseas during their incubation period. While testing rates in NSW are high and case counts are low, cases who have travelled overseas in their incubation period are considered to have acquired their infection overseas.
Interstate-acquired case	Case who travelled interstate during their infection and the public health investigation concludes the infection was likely acquired interstate.
Cluster	Group of cases sharing a common source of infection or linked to each other in some way.

Dates used in COVID-19 reporting

Event	Date name	Source
Person first starts to feel unwell	Date of symptom onset	Public health staff interview all cases at the time of diagnosis. This is the date provided to NSW Health by the case.
Person has a swab taken	Date of test	This date is provided to NSW Health by the laboratory when the test result (positive or negative) is notified.
Laboratory notifies NSW Health of result	Date of notification	This date is provided to NSW Health by the laboratory. Laboratories prioritise notification of positive results to allow prompt public health action. Positive cases: The date of notification is collected by NSW Health on the day of notification. Cases are informed of their diagnosis by their doctor or public health staff as soon as the result is available. The date of notification to NSW Health is usually the same day as the date the case finds out about the result. Negative cases: Some laboratories notify NSW Health of negative results in batches at regular intervals. For these laboratories the date of notification to NSW Health does not reflect the date the negative result was available at the laboratory. NSW Health does not collect information on the date the person was informed of the result.