COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 42 ENDING 23 October 2021

Published 4 November 2021

Overview

Table 1. Number and proportion of COVID-19 cases in NSW by likely source of infection to week ending 23 October 2021

	202	20	20	Total	
	Jan – Jun	Jul – Dec	01 Jan – 15 Jun	16 Jun – 23 Oct	TOlai
Locally acquired	1,236 (39 %)	807 (52 %)	51 (7 %)	67,691 (100 %)	69,785 (95 %)
Interstate acquired	67 (2 %)	23 (1 %)	0 (0%)	20 (<1 %)	110 (<1 %)
Overseas acquired	1,892 (59 %)	714 (46 %)	641 (93 %)	235 (<1 %)	3,482 (5 %)
Total	3,195 (100 %)	1,544 (100 %)	692 (100 %)	67,946 (100 %)	73,377 (100 %)
Deaths	51	5	0	501	557

Summary for the week 17 October to 23 October 2021 (inclusive)

In the week ending 23 October 2021:

- There were 2,187 locally acquired cases reported.
- The ten LGAs with the highest number of cases were:
 - o Albury LGA with 194 (9%) cases
 - Canterbury-Bankstown LGA with 170 (8%) cases
 - o Liverpool LGA with 162 (7%) cases
 - Cumberland LGA with 114 (5%) cases
 - Blacktown LGA with 101 (5%) cases
 - o Newcastle LGA with 101 (5%) cases
 - Lake Macquarie LGA with 100 (5%) cases
 - o Central Coast LGA with 90 (4%) cases
 - Campbelltown LGA with 83 (4%) cases
 - o Kempsey LGA with 81 (4%) cases
 - o 975 (45%) cases were residents across 67 other LGAs
- There were 4 cases in overseas returned travellers (a reduction of 33% from the previous week).
- There were 27 deaths in people diagnosed with COVID.
- 24.2% of locally acquired cases aged 12 and over were fully vaccinated. This compares with around 70.3% of the NSW population aged 12 and over who had been fully vaccinated (that is, had completed their recommended vaccine schedule more than 2 weeks before, by 9 October).
- Testing rates decreased compared to the previous week (down 7%), with the highest testing rates in the Nepean Blue Mountains, South Western Sydney, and Western Sydney LHDs, and with large increases in the Murrumbidgee and Mid North Coast LHDs.
- 312 sewage samples were tested for fragments of SARS-CoV-2. Of these, there were 139 detections. Detections from Armidale, Quirindi, Uralla, Moree, Inverell, Guyra, Old Bar, Harrington, Byron Bay, Bonny Hills, Woolgoolga, South West Rocks, Wagga Wagga Kooringal, Leeton, Bega, Moruya, Narooma, Jerilderie, Boorowa, Ulladulla, Blayney, Buronga, Lightning Ridge, Canowindra, Gulgong, and Nyngan occurred with no known or recent cases in the catchment. Cases were also identified in Bonny Hills, Lightning Ridge, South West Rocks and Harrington following detections in recent weeks. Note that cases may have been identified in these catchments after 23 October.

Indicators of effective prevention for COVID-19 in NSW for the week ending 23 October 2021

On receipt of a laboratory notification diagnosis of COVID-19, NSW Health now sends a text message to the case informing them that they and their close contacts are required to isolate and asking them to answer a short questionnaire.

Where a mobile number is not available, NSW Health works with the NSW Police to locate and inform the case as soon as possible.

Table 2. Measures of public health action, NSW, for the period from 10 October to 23 October 2021

	Week ending 23 Oct	Week ending 16 Oct
Proportion locally acquired cases notified to NSW Health by the laboratory within 1 day of specimen collection	84% (1840/2187)	83% (2218/2681)
Locally acquired cases contacted by text message within 1 day of notification to NSW Health	95% (2079/2187)	90% (2402/2681)
Number of high-risk cases fully interviewed by public health staff within 1 day of responding to the NSW Health text message	88% (492/562)	92% (487/530)
Locally acquired cases fully interviewed by public health staff within 1 day of notification to NSW Health	92% (2006/2187)	95% (2548/2681)

Interpretation: In the week ending 23 October, 84% of cases were notified to NSW Health within a day of test, 92% of cases were fully interviewed within one day of notification and 95% of cases were sent a text message to advise of their positive result, provide isolation requirements and to identify high risk exposure settings. Of those who responded to this message and were identified as high-risk cases, 88% were interviewed within one day of notification. The results indicate that the public health response is contacting the majority of cases with sufficient speed to isolate cases. NSW Health uses this information to adjust methods and prioritisation of cases.

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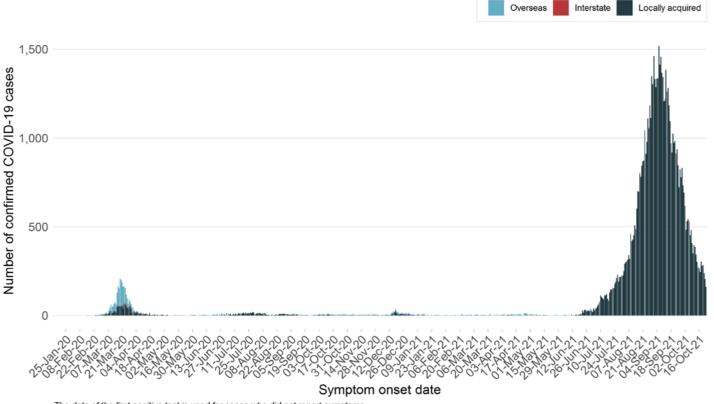
COVID-19 Vaccination program

- Australian Government Department of Health reports the number of vaccine doses administered across Australia —
 Daily COVID-19 vaccine rollout numbers
- Australian Government Department of Health also reports the percentage of fully vaccinated individuals by LGA —
 Vaccination rate by LGA
- Therapeutic Goods Administration (TGA) report data on received reports of suspected side effects (also known as adverse events) and other safety information from Australia and overseas Weekly COVID-19 vaccine safety report
- AusVaxSafety is conducting active vaccine safety surveillance of the vaccines in use. Surveillance data have been

Section 1: How is the outbreak tracking in NSW?

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 reported illness onset, NSW, from 13 January 2020 to 23 October 2021



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

Interpretation: Between 13 January 2020 and 23 October 2021, there were 73,377 confirmed COVID-19 cases in NSW. Of those, 3,482 (5%) were overseas acquired, 110 (<1%) were interstate acquired, and 69,785 (95%) were locally acquired. Cases who tested positive by 23 October are included, but are plotted by earliest symptom onset date. As cases typically develop symptoms prior to being notified, the number of cases reported by symptom onset date will appear to decline in more recent days, even if the total number of cases reported on that day does not.

Four major waves of COVID-19 cases

The epidemiology of COVID-19 in NSW continued to evolve since the first three cases were reported in NSW on 25 January 2020 in people who acquired their infection in China. The first locally acquired COVID-19 case in NSW was reported on 2 March 2020 and by mid-March case numbers had increased rapidly in overseas returned travellers and their contacts and within localised community outbreaks. In NSW, the number of reported daily cases peaked on 27 March 2020 at 213 cases. Public health action and the introduction of a range of stringent control measures, including the closure of international borders, 14-day mandatory quarantine for returned travellers and restrictions of movement within NSW lead to a decline in cases. Community transmission was interrupted by the end of May 2020.

In early July seeding of SARS-CoV-2 into South Western Sydney from an outbreak in Melbourne led to a second wave of infection. Following intensive public health action community transmission was again interrupted by the end of November 2020.

In December 2020 two new introductions of SARS-CoV-2 caused outbreaks in Sydney's Northern Beaches and Berala in Sydney's West. Community transmission was again interrupted by the end of January 2021.

The current outbreak across NSW began in mid-June 2021 in Sydney's east, and spread from there to West and South Western Sydney. Clusters have developed in the Central Coast, Hunter New England, Western NSW, Far Western NSW, and Southern NSW regions.

Section 2: Locally acquired COVID-19 transmission in NSW in the last four weeks

Table 3. Locally acquired COVID-19 cases by LHD of residence and week reported, NSW, 26 September to 23 October 2021

			Week ending				Days since last
	Local Health District	23 Oct	16 Oct	09 Oct	02 Oct	Total	case reported
Metropolitan	South Western Sydney	471	630	958	1,501	3,560	0
Local Health	Western Sydney	249	438	680	1,126	2,493	0
Districts	South Eastern Sydney	142	196	340	557	1,235	0
	Sydney	139	233	314	462	1,148	0
	Illawarra Shoalhaven	102	198	381	536	1,217	0
	Central Coast	90	115	209	231	645	0
	Nepean Blue Mountains	82	105	202	286	675	0
	Northern Sydney	56	49	124	210	439	0
Rural and	Hunter New England	426	489	558	458	1,931	0
Regional	Murrumbidgee	229	46	10	10	295	0
Local Health Districts	Mid North Coast	93	14	11	13	131	0
DISTRICTS	Western NSW	41	83	89	210	423	0
	Southern NSW	21	28	118	139	306	0
	Northern NSW	18	29	40	25	112	1
	Far West	12	12	17	33	74	0
	Correctional settings	12	13	21	37	83	0
	NSW*	2,187	2,681	4,078	5,844	14,790	

^{*}Includes people with a usual place of residence outside of NSW, and those for whom LHD was not available at the time of data extraction.

Interpretation: There were 2,187 locally acquired cases reported in the week ending 23 October 2021. The largest proportion of cases were residents of South Western Sydney LHD (471, 22%) followed by Hunter New England LHD (426, 20%), Western Sydney LHD (249, 11%) and Murrumbidgee LHD (229, 11%). Correctional settings include all cases diagnosed while residing in NSW correctional facilities. Case numbers in metropolitan LHDs have continued to fall over the last four weeks, while some regional LHDs are experiencing new (Murrumbidgee, Mid North Coast) or continued outbreaks (Hunter New England).

Section 3: Epidemiology of local cases with COVID-19 from 16 June 2021 to 23 October 2021

Since 16 June 2021, NSW has experienced a cluster of COVID-19 infections caused only by the delta variant of the SARS-CoV-2 virus. This section describes some of the epidemiological features of this cluster.

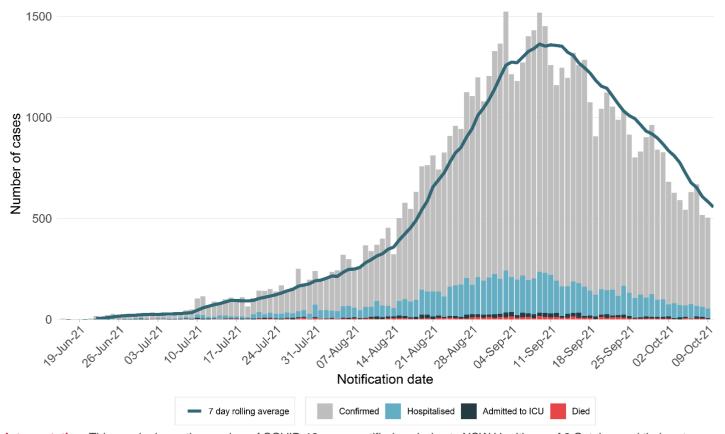
Table 4. COVID-19 cases and tests reported, NSW, from 16 June 2021 to 23 October 2021

	Week ending 23 Oct	Week ending 16 Oct	% change	Since 16 Jun
Number of cases	2,191	2,688	-18 %	67,946
Locally acquired	2,187	2,681	-18 %	67,691
Known epidemiological links to other cases or clusters	1,473	1,223	20 %	26,812
No epidemiological links to other cases or clusters	714	1,458	-51 %	40,879
Overseas acquired	4	6	-33 %	235
Interstate acquired	0	1	-	20
Number of Tests	519,356	559,468	-7 %	13,410,580

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

Interpretation: Almost all cases reported in the last two weeks in NSW were locally acquired (4,868/4,879 cases, or 99.8%).

Figure 2. COVID-19 cases by outcome and notification date with 7 day backward rolling average, NSW, from 16 June 2021 to 9 October 2021



Interpretation: This graph shows the number of COVID-19 cases notified each day to NSW Health, as of 9 October and their outcome. All dates are based on the date of the case's notification rather than the date they were hospitalised, admitted to ICU or died. Because there can be a delay between a person becoming ill with COVID-19 and when they may require hospitalisation (currently, a median of 5 days) or between becoming ill and dying (currently, a median of 11 days), data is provided to 9 October, allowing sufficient time to capture the development of severe illness or death among the most recently notified cases. Since mid-September, there has been a steady decline in the number of cases, and the number of hospitalised cases. See Section 6 for further details on hospitalisations over time.

Local Government Areas

Table 5a. Top 20 metropolitan LGAs of residence, ordered by locally acquired COVID-19 cases in the last 7 days, per 100,000 population rate, NSW, 16 June to 23 October 2021

LGA name		Last 7 days	Current NSW outbreak (16 Jun-23 Oct 2021)			
20A name	Cases	Cases Cases per 100,000 population		Cases per 100,000 population		
Liverpool	162	71	5,562	2,444		
Campbelltown	83	49	2,647	1,548		
Cumberland	114	47	8,874	3,674		
Canterbury-Bankstown	170	45	11,135	2,946		
Shellharbour	33	45	536	732		
Fairfield	79	37	4,566	2,157		
Penrith	74	35	3,179	1,493		
Blacktown	101	27	6,824	1,822		
Camden	27	27	993	979		
Randwick	42	27	1,287	827		
Central Coast	90	26	1,252	364		
Lithgow	5	23	39	181		
Wollondilly	12	23	223	420		
Wollongong	46	21	1,537	705		
Shoalhaven	20	19	268	254		
Sydney	47	19	1,951	792		
Bayside	33	18	1,511	847		
Woollahra	10	17	174	293		
Inner West	33	16	859	428		
Waverley	11	15	334	450		

Table 5b. Top 20 regional and rural LGAs of residence, ordered by locally acquired COVID-19 cases in the last 7 days, per 100,000 population rate, NSW, 16 June to 23 October 2021

LGA name		Last 7 days	Current NSW outbreak (16 Jun-23 Oct 2021)			
2071 1141113	Cases	Cases per 100,000 population	Cases	Cases per 100,000 population		
Albury	194	357	235	432		
Kempsey	81	272	109	366		
Walgett	9	151	86	1,445		
Greater Hume Shire	14	130	17	158		
Wentworth	9	128	33	468		
Balranald	2	86	3	128		
Cessnock	51	85	320	533		
Bourke	2	77	156	6,023		
Maitland	62	73	414	486		
Newcastle	101	61	638	385		
Mid-Coast	56	60	140	149		
Edward River	5	55	18	198		
Lake Macquarie	100	49	712	346		
Berrigan	4	46	5	57		
Coolamon	2	46	2	46		
Federation	5	40	5	40		
Tamworth Regional	24	38	103	165		
Bathurst Regional	16	37	84	193		
Murray River	4	33	7	58		
Port Stephens	23	31	175	238		

Interpretation: The top 20 metropolitan LGAs contributed 55% of all locally acquired cases in the week ending 23 October. The five LGAs with the highest case rates per 100,000 population are in a rural and regional area and are associated with known clusters. Although case numbers in most regional LGAs are relatively small, because the population is also small, the case rate is substantially higher than observed in some metropolitan LGAs.

Source of infection for locally acquired cases in NSW

Figure 3a. Source of infection for locally acquired cases, Metropolitan LHDs, from 16 June to 23 October 2021

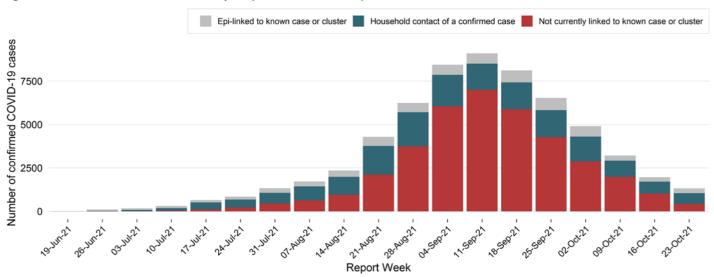
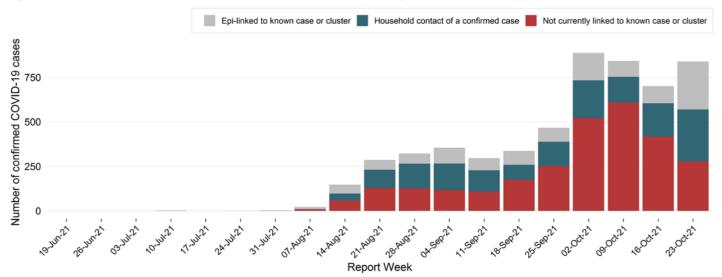


Figure 3b. Source of infection for locally acquired cases, rural and regional LHDs, from 16 June to 23 October 2021



Note: This graph does not include cases in Justice Health and correctional facilities and those for whom LHD was not available at the time of data extraction.

Interpretation: In the week ending 23 October, cases decreased by 32% in metropolitan LHDs (1,331 compared to 1,964 the previous week), and increased by 20% in rural and regional LHDs (840 compared to 701 the previous week). Of the 1,331 cases reported this week in metropolitan LHDs, 624 (47%) were household contacts, 285 (21%) were epidemiologically linked but not household contacts and 422 (32%) were not currently linked to a case or cluster. There were 840 cases reported this week in rural and regional LHDs. Of these, 293 (35%) are household contacts, 270 (32%) are epidemiologically linked but not household contacts and 277 (33%) have not currently been linked to a case or cluster. Although cases have increased in rural and regional LHDs this week, the proportion of unlinked cases has decreased, suggesting that rural and regional LHD contact tracing efforts are identifying the majority of cases source of infection.

Age breakdown of locally acquired cases, NSW, from 16 June - 23 October 2021

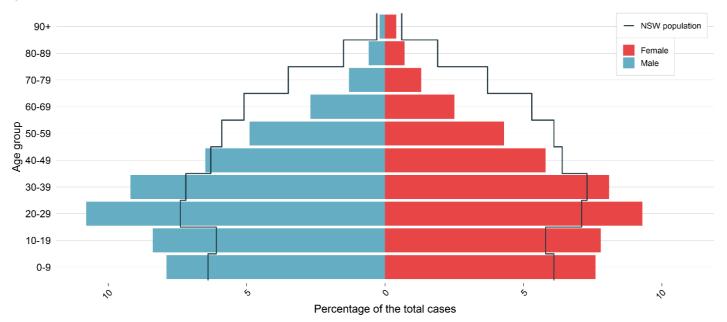
The median age of cases between 1 January 2020 and 15 June 2021 was 37 years (interquartile range (IQR) = 25-55 years). By contrast, between 16 June and 23 October 2021, there have been 67,691 locally acquired cases. The median age was 29 years (IQR = 16-44 years).

Table 6. Demographics of infections among locally acquired cases by gender and age, NSW, 16 June to 23 October 2021

Locally acquired cases	Number of cases
Gender	
Female	32,061 (47.4%)
Male	35,500 (52.4%)
Age group	
0-9	10,496 (15.5%)
10-19	10,971 (16.2%)
20-29	13,590 (20.1%)
30-39	11,679 (17.3%)
40-49	8,385 (12.4%)
50-59	6,212 (9.2%)
60-69	3,533 (5.2%)
70-79	1,731 (2.6%)
80-89	877 (1.3%)
90+	217 (0.3%)
Total	67,691 (100.0%)

Note: Gender breakdown does not include cases for whom gender is non-specified or non-binary.

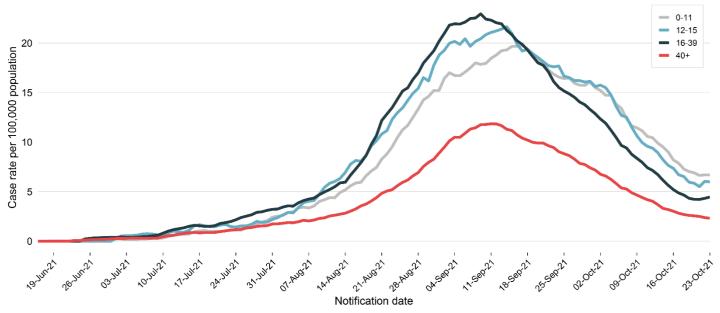
Figure 4. Current wave locally acquired case percentage (n = 67,561) by age and gender, NSW, from 16 June to 23 October 2021



Note that the figure does not include cases for whom gender is non-specified.

Interpretation: In the current outbreak from 16 June 2021, the majority of cases are 20-29 and all age groups under 40 are over-represented among the cases, relative to their proportion in the NSW population. The over representation of younger age group and under representation among older groups may be due to increased social mixing amongst younger groups and higher vaccination rates in older groups.

Figure 5. Seven day backward rolling average of COVID-19 cases rate per 100,000 population by age and notification date, NSW, from 16 June 2021 to 23 October 2021



Interpretation: The graph shows the rolling average of the rate of cases notified per day by age group. The peak of infections per day for those aged 40+ and those aged 16-39 occurs around 10 September and has steadily declined since that time. People aged 12-15 became eligible for vaccination from 13 September and children aged 11 years and under are not yet eligible for vaccination in Australia. Rates of cases in both groups peaked in mid-September and have been decreasing at similar rates.

Section 4: COVID-19 in specific populations

Aboriginal people

Aboriginal and Torres Strait Islander communities are recognised as a priority group due to key drivers of increased risk of transmission and severity of COVID-19 which include mobility, remoteness, barriers to access including institutional racism and mistrust of mainstream health services, crowded and inadequate housing, and burden of disease.

In the week ending 23 October 2021 there were 353 locally acquired cases of COVID-19 reported in Aboriginal people. Of the 353 cases, 25 (7.1%) were fully vaccinated (see Section 5 for a full description of vaccination status). Since 16 June 2021 there have been 5,380 Aboriginal people diagnosed with COVID-19, representing 7.9% of all locally acquired cases in that time. This is an overrepresentation among Aboriginal and Torres Strait Islander people, who represent 3.4% of the NSW population, according to the Australian Bureau of Statistics.

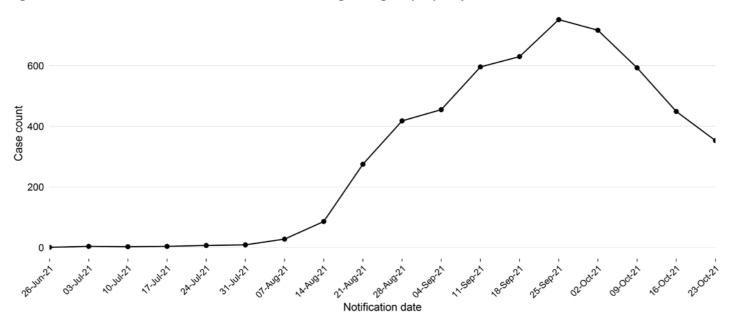
Table 7. Demographics of infections among Aboriginal people by gender, age, and vaccination status, NSW, 16 June to 23 October, 2021

Aboriginal people	Number of cases	
Gender		
Female	2,706 (50.3%	%)
Male	2,666 (49.6%	%)
Age group		
0-9	1,303 (24.2%	%)
10-19	1,210 (22.5%	%)
20-29	1,013 (18.8%	%)
30-39	790 (14.7%	%)
40-49	534 (9.9%	%)
50-59	334 (6.2%	%)
60-69	145 (2.7%	%)
70-79	41 (0.8%	%)
80-89	8 (0.1%	%)
90+	2 (0.0%	%)
Vaccination status		
Fully vaccinated	206 (3.8%	%)
Partially vaccinated	359 (6.7%	%)
Un-vaccinated	2,641 (49.1%	%)
Under investigation*	621 (11.5%	%)
Not eligible for vaccination (aged 0-11 years)	1,553 (28.9%	%)
Total	5,380 (100.0%	%)

^{*} Vaccination status is updated regularly using both the Australian Immunisation Register and the patient's interview. Note: Gender breakdown does not include cases for whom gender is non-specified or non-binary.

Interpretation: Since 16 June, almost a quarter of cases of COVID-19 among Aboriginal people have been in children aged 0-9 years. The Aboriginal population in NSW is younger than the non-Aboriginal population, and therefore a higher proportion of the Aboriginal population are too young to be eligible for vaccination.

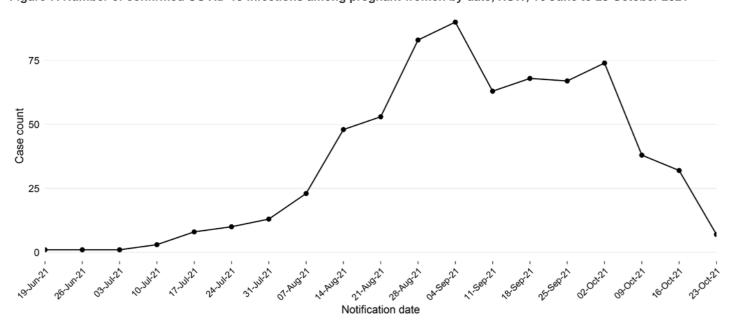
Figure 6. Number of confirmed COVID-19 infections among Aboriginal people by date, NSW, 16 June to 23 October 2021



Pregnant women

In the week ending 23 October 2021 there were 7 locally acquired cases of COVID-19 reported in pregnant women. Of the 7 cases, 1 (14%) was fully vaccinated. Since 16 June 2021 there have been 683 pregnant women have been diagnosed with COVID-19, representing 1% of all locally acquired cases in that time.

Figure 7. Number of confirmed COVID-19 infections among pregnant women by date, NSW, 16 June to 23 October 2021



Correctional settings

In the week ending 23 October there were 12 locally acquired cases of COVID-19 reported in people residing in correctional settings. Of the 12 cases, none were fully vaccinated. Since 16 June 2021 there have been 469 people residing in correctional settings diagnosed with COVID-19, representing 0.7% of all locally acquired cases.

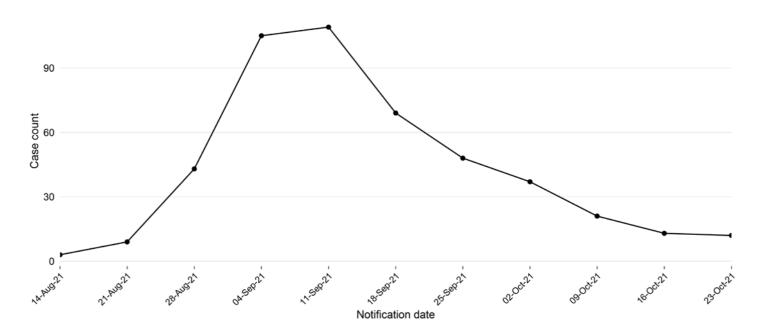
Table 8. Demographics of infections in correctional settings by gender, age, and vaccination status, NSW, 16 June to 23 October, 2021

Cas	ses residing in correctional settings	Number of cases
Gende	er	
	Female	23 (4.9%)
	Male	446 (95.1%)
Age g	roup	
	0-9	0 (0.0%)
	10-19	27 (5.8%)
	20-29	135 (28.8%)
	30-39	169 (36.0%)
	40-49	91 (19.4%)
	50-59	35 (7.5%)
	60-69	7 (1.5%)
	70-79	4 (0.9%)
	80-89	1 (0.2%)
	90+	0 (0.0%)
Vaccir	nation status	
	Fully vaccinated	23 (4.9%)
	Partially vaccinated	56 (11.9%)
	Un-vaccinated	259 (55.2%)
	Under investigation*	131 (27.9%)
Total		469 (100.0%)

^{*} Vaccination status is updated regularly using both the Australian Immunisation Register and the patient's interview.

Interpretation: Since 16 June, most cases of COVID-19 among people residing in correctional settings were male and aged 30-39 years, consistent with the demographics of correctional populations generally.

Figure 8. Number of confirmed COVID-19 infections among people residing in correctional settings by date, NSW, 16 June to 23 October 2021



Healthcare workers

The following describes infections of COVID-19 in healthcare workers (HCWs). HCWs in this section includes roles such as doctor, nurse, orderly, paramedic, laboratory technician, pharmacist, administrative staff, cleaners, and other support staff. Public health units routinely undertake investigations of COVID-19 cases in healthcare workers to identify ongoing risks in healthcare settings.

In the week ending 23 October, there were 5 healthcare workers diagnosed with COVID-19. Of these, 1 (20%) was potentially infected in a healthcare setting, 2 (40%) were social or household contacts of previously reported cases and 2 (40%) are currently not linked. Three (60%) cases were fully vaccinated and one (20%) were partially vaccinated.

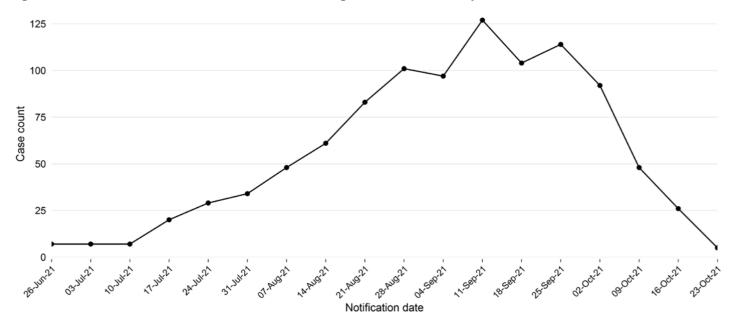
In total there have been 1070 cases of COVID-19 in health care workers since August 2020. Of these, 193 were potentially infected in healthcare settings. A further 314 cases were linked to social or household contacts, and for 563 cases the source of infection is either unknown or under investigation. Prior to August 2020, there were 35 cases identified in HCWs who had worked in a health facility in the 14 days prior to symptom onset or date of testing (see COVID-19 in healthcare workers in NSW).

Table 9. Number of healthcare worker infections by source of infection and proportion fully vaccinated, NSW, 16 June to 23 October, 2021

	Last 7 days			Current NSW outbreak (16 Jun-23 Oct 2021)		
Healthcare workers	Number of HCWs	Fully vaccinated	Partially vaccinated	Number of HCWs	Fully vaccinated	Partially vaccinated
Healthcare acquired	1	0 (0%)	0 (0%)	168	66 (39%)	16 (10%)
Community acquired	2	1 (50%)	1 (50%)	297	119 (40%)	36 (12%)
Not currently linked	2	2 (100%)	0 (0%)	545	231 (42%)	57 (10%)
Total	5	3 (60%)	1 (20%)	1010	416 (41%)	109 (11%)

Interpretation: Since 16 June, most healthcare workers associated with the current NSW outbreak have been infected in the community and outside of a healthcare setting (842/1010, 83%). Of the 1010 healthcare workers that have been diagnosed with COVID-19 in the current outbreak, 416 (41%) have been fully vaccinated and 109 (11%) have been partially vaccinated.

Figure 9. Number of confirmed COVID-19 infections among healthcare workers by date, NSW, 16 June to 23 October 2021



Aged care workers

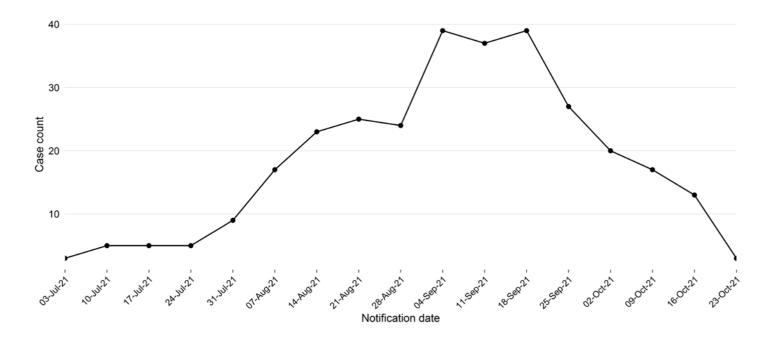
Since 16 June 2021, there have been 311 cases reported in aged care workers. Of these, 119 (38%) were fully vaccinated, and 63 (20%) people had received one effective dose.

Table 10. Number of aged care worker infections by source of infection and proportion fully vaccinated, NSW, 16 June to 23 October 2021

	Last 7 days			Current NSW outbreak (16 Jun-23 Oct 2021)			
Aged care workers	Number of ACWs	Fully vaccinated	Partially Vaccinated	Number of ACWs	Fully vaccinated	Partially Vaccinated	
Acquired at aged care facility	0	0 (0%)	0 (0%)	61	19 (31%)	17 (28%)	
Community acquired	2	2 (100%)	0 (0%)	96	38 (40%)	12 (12%)	
Not currently linked	1	1 (100%)	0 (0%)	154	62 (40%)	34 (22%)	
Total	3	3 (100%)	0 (0%)	311	119 (38%)	63 (20%)	

Interpretation: In the week ending 23 October there were 3 aged care workers diagnosed with COVID-19. Of these, none were infected in an aged care facility, 2 (67%) were social or household contacts of previously reported cases and 1 (33%) is not currently linked. Most aged care workers since 16 June have acquired their infection outside of an aged care facility (250/311, 80%), and many were fully vaccinated, indicating that efforts to stop transmission within aged care facilities, including high vaccination rates among staff, have been successful.

Figure 10. Number of confirmed COVID-19 infections among aged care workers by date, NSW, 16 June to 23 October 2021



Section 5: COVID-19 vaccination status

COVID-19 vaccinations began in Australia on 22 February 2021. The first people to receive the COVID-19 vaccines were priority groups at a higher risk of COVID-19 infection, including quarantine and border workers, frontline healthcare workers, and aged and disability care residents and staff. People receiving vaccines are considered fully vaccinated two weeks after they complete the recommended course for that vaccine. All the vaccines being administered in Australia, and most from overseas, recommend a two-dose course.

The tables below show the number of COVID-19 cases by their COVID-19 vaccination status. Definitions of status are as follows:

- Cases reported as fully vaccinated completed the recommended vaccine course at least 14 days prior to known exposure to COVID-19 or arrival in Australia.
- Cases reported as **partially vaccinated** (one effective dose):
 - received their first dose of a two-dose vaccination course at least 21 days prior to known exposure to COVID-19 or arrival in Australia, or
 - received their second dose of a two-dose vaccination course less than 14 days prior to known exposure to COVID-19 or arrival in Australia, or
 - o received a single-dose vaccination course (currently only Johnson & Johnson vaccine) less than 14 days prior to known exposure to COVID-19 or arrival in Australia.
- Cases reported as no effective dose:
 - o received their first dose of a two-dose vaccination course less than 21 days prior to known exposure to COVID-19 or arrival in Australia, or
 - o have not received any vaccine dose.

Using the phrase "no effective dose" indicates that an insufficient period of time has elapsed to allow for maximal immune response provided by the vaccine. It does not indicate that vaccines are ineffective.

Table 11. Locally acquired COVID-19 cases by vaccination status and week reported, NSW, 16 June to 23 October 2021

Vaccination Status		Week	ending		16 Jun to	Total from	
	23 Oct 21	16 Oct 21	9 Oct 21	2 Oct 21	25 Sep 2021	16 Jun 2021	
Fully Vaccinated	392 (17.9%)	388 (14.5%)	500 (12.3%)	649 (11.1%)	2,697 (5.1%)	4,626 (6.8%)	
Partially Vaccinated	261 (11.9%)	342 (12.8%)	659 (16.2%)	924 (15.8%)	3,960 (7.5%)	6,146 (9.1%)	
No effective dose	907 (41.5%)	1,118 (41.7%)	1,669 (40.9%)	2,375 (40.6%)	28,700 (54.3%)	34,769 (51.4%)	
Under investigation*	60 (2.7%)	138 (5.1%)	279 (6.8%)	606 (10.4%)	8,523 (16.1%)	9,606 (14.2%)	
Not eligible for vaccination (aged 0-11 years)	567 (25.9%)	695 (25.9%)	971 (23.8%)	1,290 (22.1%)	9,021 (17.1%)	12,544 (18.5%)	
Total	2,187	2,681	4,078	5,844	52,901	67,691	

^{*} Vaccination status is updated regularly using both the Australian Immunisation Register and the patient's interview.

Interpretation: In the past week 392 locally acquired cases were fully vaccinated. This represents 17.9% of all cases, and 24.2% of all 1,620 cases who were eligible for vaccination (aged 12 years and over). This compares with around 70.3% of the NSW population aged 12 and over who had been fully vaccinated (that is, had completed their recommended vaccine schedule by 9 October). The proportion of cases who are fully or partially vaccinated will continue to increase as the rates of vaccination continue to increase in the community.

Clinical severity and COVID-19 vaccination

The COVID-19 vaccines available in Australia are very effective with evidence showing that people who are fully vaccinated are 70–95% less likely to get sick with COVID-19 compared with those who are not vaccinated. However, a small proportion of fully vaccinated people may still get the disease. As the proportion of the population who are vaccinated increases, the numbers of cases who are fully vaccinated will increase but this does not mean the vaccines are not working.

Of the 10,112 people hospitalised, 571 (5.6%) were too young to be vaccinated, 614 (6.1%) had received two effective doses, 772 (7.6%) had received one effective dose, and 8,155 (80.6%) had either received no effective doses or vaccination status has not yet been determined.

Of the 10,112 people hospitalised with COVID-19 in the current outbreak, 1,230 (12.2%) people were in ICU. Of these, 9 (0.7%) were too young to be vaccinated, 819 (66.6%) had not received an effective dose, and 84 (6.8%) were partially vaccinated. There were 45 (3.7%) fully vaccinated cases in ICU. For the remaining 273 (22.2%) people in ICU, vaccination status could not be determined, either through interview or searching the Australian Immunisation Register, suggesting they were unlikely to have been vaccinated in Australia, or that their Medicare registration is outside NSW.

Table 12. Hospitalisations, ICU admissions and deaths among locally acquired cases diagnosed with COVID-19, by vaccination status, NSW, from 16 June to 23 October 2021

Vaccination status	Hospitalised (%)	Hospitalised and in ICU (%)	Death (%)
Fully Vaccinated	614 (6.1%)	45 (3.7%)	66 (13.2%)
Partially vaccinated	772 (7.6%)	84 (6.8%)	62 (12.4%)
No effective dose	6,265 (62.0%)	819 (66.6%)	360 (72.1%)
Under investigation	1,890 (18.7%)	273 (22.2%)	11 (2.2%)
Not eligible for vaccination (aged 0-11 years)	571 (5.6%)	9 (0.7%)	0 (0.0%)
Total	10,112 (100.0%)	1,230 (100.0%)	499 (100.0%)

Table 13. Number of cases with a severe outcome (ICU and/or death), and proportion of cases with a severe outcome amongst all cases, by age, time of infection, and vaccination status

Age-	Numbe	er of cases with sever (ICU and/or death		Percentage of total cases by age group (%)				
group (years)	Jan 2020 – 15 Jun 2021	16 Jun – 23 Oct 2021: Fully vaccinated	16 Jun – 23 Oct 2021: Un- vaccinated	Jan 2020 – 15 Jun 2021	16 Jun – 23 Oct 2021: Fully vaccinated	16 Jun – 23 Oct 2021: Un- vaccinated		
0-9	0	-	0	0%	-	0 %		
10-19	1	0	23	<1%	0%	<1%		
20-29	4	1	87	<1%	<1%	1%		
30-39	15	3	127	1%	<1%	2%		
40-49	12	3	159	2%	<1%	3%		
50-59	30	12	230	4%	1%	6%		
60-69	44	12	202	7%	2%	12%		
70-79	46	32	147	12%	7%	21%		
80-89	26	24	118	21%	9%	33%		
90+	16	19	26	38%	19%	39%		
Total	194	106	1119	4%	2%	3%		

Interpretation: Prior to 15 June 2021, 4% of cases had a severe outcome, with an increasing risk of severe outcome with increasing age. Although vaccination was available in Australia for elderly groups before 15 June, there were very few locally acquired cases between February 22 (when vaccination began) and 15 June. Since 16 June, the likelihood of a severe outcome for un-vaccinated individuals is similar to the pre-delta period, while the likelihood of a severe outcome is substantially reduced amongst fully vaccinated individuals. Increased age remains a significant predictor of increased risk of a severe outcome, but the protective effects of vaccination are also more apparent as age increases. The analysis does not take into account the reduced risk of contracting COVID-19 amongst fully-vaccinated individuals.

Section 6: COVID-19 hospitalisations and deaths

How many people were in hospital each day with COVID-19?

Figure 11a. Estimated active cases (number of cases notified last 14 days), number of cases in hospital, in ICU and ventilated by date, NSW, from 16 June to 23 October 2021

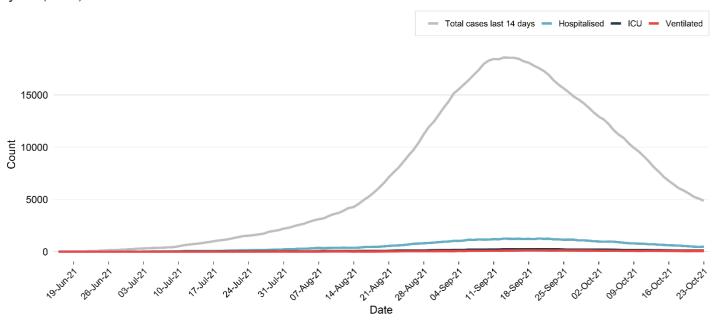
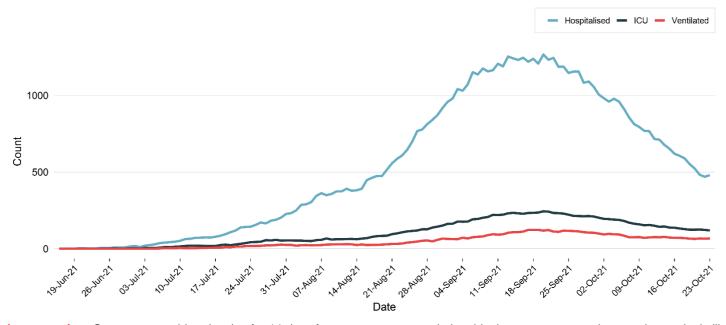


Figure 11b. Number of cases in hospital, in ICU and ventilated by date, NSW, from 16 June to 23 October 2021



Interpretation: Cases are considered active for 14 days from symptom onset; during this time a person may become increasingly ill and require hospitalisation. The top panel shows the total number of COVID-19 cases in the last 14 days, the number currently hospitalised, the number in ICU and the number ventilated. The bottom panel shows the number of COVID-19 cases in hospital each day, the number of cases in ICU each day and the number requiring ventilation each day. There can be a delay between a person becoming ill with COVID-19 and subsequently requiring a hospitalisation and people may be hospitalised before becoming cases. Additionally, people may require hospitalisation for long periods of time therefore reporting the number of cases hospitalised on any given date does not reflect the true proportion that will require hospitalisation. Currently there is a median delay of 5 days between a person becoming ill with COVID-19 and being admitted to hospital, and 11 days between becoming ill and dying.

How many people with a COVID-19 diagnosis were admitted to hospital wards?

People with COVID-19 can be hospitalised because of the disease but may also be hospitalised for other reasons not related to their COVID-19 diagnosis. For the purposes of surveillance, reported hospitalisation counts include all people who were admitted to any hospital ward, including emergency departments, around the time of their COVID-19 diagnosis. This does not mean that all the hospitalisations reported are due to a worsening of COVID-19 symptoms. The count does not include people managed in the community (e.g. including Hospital in the Home schemes).

In the week ending 23 October 2021, of the 2,187 locally acquired cases, there were 145 people who had a diagnosis of COVID-19 who were also admitted to a hospital ward, and 17 of those were admitted to ICU. In total, there have been 10,112 people with COVID-19 who were also hospitalised since the beginning of the current NSW outbreak.

Table 14. Hospitalisations among people diagnosed with COVID-19, by age group, NSW

	Current outbreal	k since 16 Jun 2021 (Jan 2020 – 15 Jun 2021 (All cases)		
Age-group (years)	Hospitalised	Percentage of cases hospitalised ¹	Hospitalised per 100,000 population	Hospitalised	Percentage of cases hospitalised ¹
0-9	502	5%	49.7	4	2%
10-19	586	5%	60.8	10	3%
20-29	1,530	11%	130.5	27	2%
30-39	1,735	15%	148.2	46	4%
40-49	1,619	19%	156.7	48	7%
50-59	1,504	24%	154.7	78	11%
60-69	1,156	33%	137.5	117	18%
70-79	806	47%	138.3	92	23%
80-89	536	61%	195.4	52	43%
90+	138	64%	199.0	16	38%
Total	10,112	15%	125.0	490	9%

Interpretation: The highest number of cases hospitalised are aged 30-39 years (1,735, 15% of cases in that age range), followed by those aged 40-49 years (1,619, 19%). In NSW, cases aged 90 years and over have the highest rate of hospitalisation (199.0 per 100,000 people), followed by those aged 80-89 years (195.4 per 100,000 people).

How many people with a COVID-19 diagnosis admitted to ICU wards?

Table 15. ICU hospitalisations among people diagnosed with COVID-19, by age group, NSW

	Current outbrea	ak since 16 Jun 2021 (Jan 2020 – 15 Jun 2021 (All cases)		
Age-group (years)	Admitted to ICU	Percentage of cases admitted to ICU ¹	ICU admission per 100,000 population (keep)	Admitted to ICU	Percentage of cases admitted to ICU ¹
0-9	7	<1%	0.7	0	0%
10-19	29	<1%	3.0	1	0%
20-29	82	1%	7.0	4	0%
30-39	132	1%	11.3	15	1%
40-49	175	2%	16.9	12	2%
50-59	262	4%	26.9	28	4%
60-69	224	6%	26.7	41	6%
70-79	153	9%	26.3	33	8%
80-89	41	5%	14.9	13	11%
90+	0	0%	0.0	0	0%
Total	1105	2%	13.7	147	3%

Interpretation: The highest number of cases in ICU are aged 50-59 years (262, 4%). The highest rate of admission to ICU is also for those aged 50-59 years (262 cases, 26.9 per 100,000 people).

¹ There is often a delay between a person becoming ill with COVID-19 and subsequently requiring a hospitalisation or dying. In the current outbreak the median time between onset and hospitalisation is 5 days and between onset and death is 11 days. Therefore hospitalisations and deaths are under-reported for the most recently notified cases.

How many people have died following recent infection with COVID-19?

A COVID-19 death is defined for surveillance purposes as a death in a confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID-19 (e.g., trauma). There should be no period of complete recovery from COVID-19 between illness and death.

Since the start of the pandemic, 1% of cases (557 people) have died following a recent infection with COVID-19, most of whom were 80 years of age or older, including 84 residents of aged care facilities with known COVID-19 outbreaks. Approximately 3% (14/557) of the deaths were in overseas acquired cases.

There were 27 deaths in people diagnosed with COVID-19 reported this week including 5 people who were fully vaccinated, 3 people who were partially vaccinated, 18 who were unvaccinated, and one whose vaccination status was unknown (see Section 5 for the definitions of vaccination status).

Table 16. Deaths following recent infection with COVID-19, by age group

Age-group (years)	Current outbreak	since 16 Jun 2021 (Jan 2020 – 15 Jun 2021 (All cases)		
Age-group (years)	Number of deaths	Case fatality rate	Fatality rate per 100,000 population ²	Number of deaths	Case fatality rate ²	
0-9	0	0%	0.0	0	0%	
10-19	1	<1%	0.1	0	0%	
20-29	6	<1%	0.5	0	0%	
30-39	10	<1%	0.9	0	0%	
40-49	23	<1%	2.2	0	0%	
50-59	56	1%	5.8	1	<1%	
60-69	87	2%	10.4	4	1%	
70-79	119	7%	20.4	15	4%	
80-89	142	16%	51.8	20	16%	
90+	55	25%	79.3	16	38%	
Total	499	1%	6.2	56	1%	

Interpretation: Cases aged 80-89 years of age had the highest number of deaths, while those aged over 90 had the highest case fatality rate. Note that most of the deaths (72%) in the period since 16 June have been unvaccinated (see Table 12); Table 13 provides further details on the risk of severe outcomes (ICU admission and death) by vaccination status and age.

Table 17. Deaths following recent locally acquired infection with COVID-19, by age group and location, from 16 June to 23 October 2021

Age-group (years)	Health care facility	Aged care facility	Home
0-9	0	0	0
10-19	1	0	0
20-29	4	0	2
30-39	6	0	4
40-49	17	0	6
50-59	48	0	8
60-69	75	1	11
70-79	114	2	3
80-89	127	8	7
90+	45	10	0
Total	437	21	41

Interpretation: The majority of deaths following recent locally acquired COVID-19 infection have occurred in hospital (437/499, 88%). Twenty-one deaths in aged care facilities have been among people aged 60 years and over, while 41 deaths occurring at home have been in a younger cohort aged 20-89, and 25 (61%) of the deaths at home were tested forensically for infection (following death).

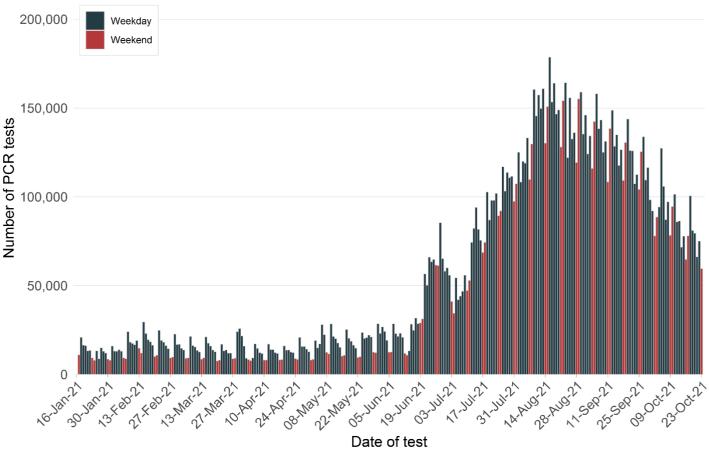
² There is often a delay between a person becoming ill with COVID-19 and subsequently requiring a hospitalisation or dying. In the current outbreak the median time between onset and hospitalisation is 5 days and between onset and death is 11 days. Therefore hospitalisations and deaths are under-reported for the most recently notified cases.

Section 7: COVID-19 testing in NSW

How much testing is happening?

The bars on the graph below show the number of negative tests by the date a person presented for the test. ³ While public health facilities are generally open seven days a week, there may be less demand and availability for testing through GPs and private collection centres on weekends and public holidays. This likely explains lower testing numbers on weekends.

Figure 12. Number of negative PCR tests per day, NSW, 9 January 2021 to 23 October 2021



Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

Interpretation: Testing numbers decreased in the week ending 23 October 2021 (down 7%) compared to the previous week. The average daily testing rate of 8.9 per 1,000 people in NSW each day decreased compared to the previous week of 9.6 per 1,000 people.

³ The number of tests per day displayed 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.

Testing and positivity rates by Local Health District

Figure 13a. Cases, testing rates per 1000 population, and percentage of tests which were positive for COVID-19, by LHD of residence, metropolitan LHDs, NSW, 16 June to 23 October 2021

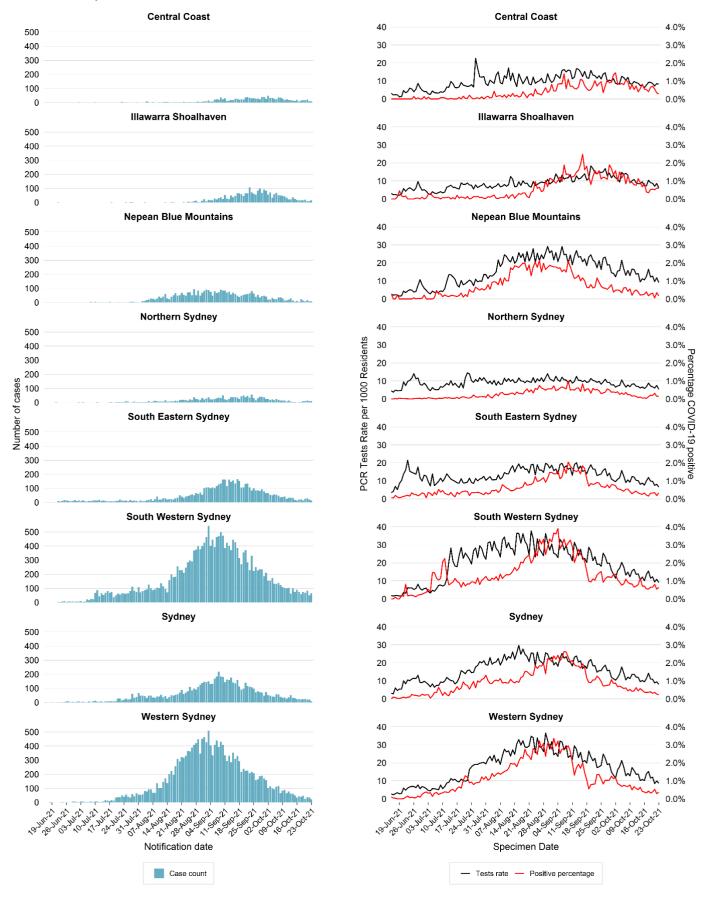
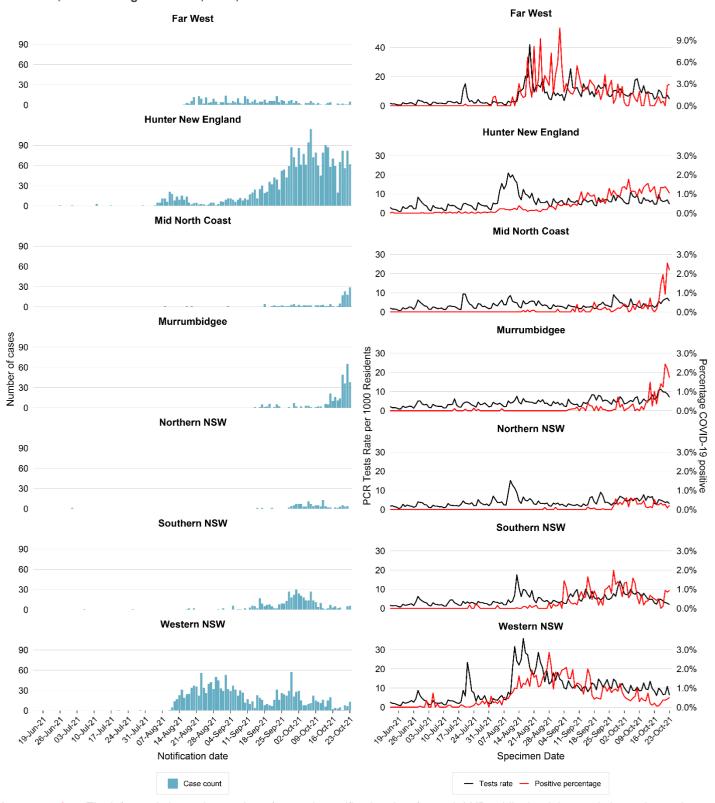


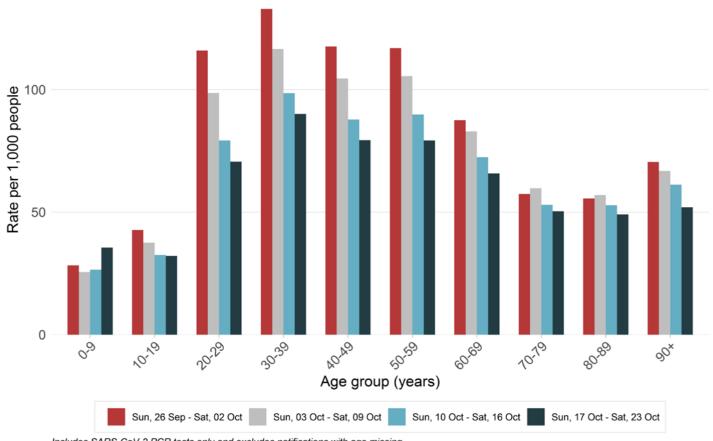
Figure 13b. Cases, testing rates per 1000 population, and percentage of tests which were positive for COVID-19, by LHD of residence, rural and regional LHDs, NSW, 16 June to 23 October 2021



Interpretation: The left panel shows the number of cases by notification date for each LHD, while the right panel shows the testing rate per 1,000 population (black line and left axis) and the percentage of tests which were positive (red line and right axis) for each LHD, from 16 June to 23 October 2021. Note that the axes differ within and between Figure 13a (metropolitan LHDs) and 13b (rural and regional LHDs). Percent positivity has generally been well below 3%, reflecting a high surveillance capacity and rapid case identification. Positivity generally follows the same trend as testing rates however where testing rates decrease and positivity remains stable or increases it may indicate higher number of cases in the community or be a result of more specific and targeted testing programs. Although case numbers in most regional LHDs are relatively small, because the population is also small, testing rates and positivity rates appear to show larger deviations than observed in some metropolitan LHDs.

Testing by age group

Figure 14. Rates of COVID-19 testing by age group and week, NSW, 26 September to 23 October 2021



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

Interpretation: In the week ending 23 October 2021, testing rates remained highest overall among those aged 20-59. All age groups except 0-9 years showed a steady decrease in testing rates over the past month.

Section 8: Variants of Concern (VoC)

Global surveillance monitors the prevalence of mutations in the SARS-CoV-2 virus, focusing particularly on mutations that may reduce vaccine effectiveness or enable re-infection. This report reflects the recommendations of <u>Australia's Communicable Diseases Genomics Network (CDGN)</u> for reporting of Variants of Concern (VoC) in NSW.

The CDGN reports on the Alpha (B.1.1.7), Beta (B.1.351), Gamma (P.1), Kappa (B.1.617.1) and Delta (B.1.617.2) internationally recognised VoCs. The first recognised VoC was the Alpha variant, in December 2020. The Delta lineage (B.1.617.2) was internationally recognised as a VoC on 11 May 2021 and is responsible for almost all locally acquired cases in the NSW outbreak from 16 June 2021.

Table 18. Variants identified among locally acquired COVID-19 cases by week reported, NSW, 29 November 2020 to 23 October 2021

Variant		Week e	29 Nov 2020 to	Total since		
Vallalit	23 Oct*	16 Oct*	9 Oct	2 Oct	25 Sep 2021	29 Nov 2020
Total variants identified	5	653	616	713	10,408	12,395
Alpha (B.1.1.7)	0	0	0	0	6	6
Beta (B.1.351)	0	0	0	0	1	1
Gamma (P.1)	0	0	0	0	0	0
Kappa (B.1.617.1)	0	0	0	0	0	0
Delta (B.1.617.2)	5	653	616	713	10,401	12,388

^{*}Note: identification of variants of concern is through whole genome sequencing. Results for reported cases in the most recent weeks may not be available at the time of reporting. All locally acquired cases sequenced in the week ending 23 October have been the Delta variant of concern.

Interpretation: Only the delta variant has been detected in recent weeks among locally acquired cases, and this is associated with the cluster that emerged in Sydney from 16 June 2021.

Table 19. Variants identified among overseas acquired COVID-19 cases by week reported, NSW, 29 November 2020 to 23 October 2021

Variant		Week e	29 Nov 2020 to	Total since		
Vallalit	23 Oct*	16 Oct*	9 Oct	2 Oct	25 Sep 2021	29 Nov 2020
Total variants identified	0	1	0	2	404	407
Alpha (B.1.1.7)	0	0	0	0	194	194
Beta (B.1.351)	0	0	0	0	33	33
Gamma (P.1)	0	0	0	0	6	6
Kappa (B.1.617.1)	0	0	0	0	9	9
Delta (B.1.617.2)	0	1	0	2	162	165

^{*}Note: identification of variants of concern is through whole genome sequencing. Results for reported cases in the most recent weeks may not be available at the time of reporting.

Interpretation: Only the delta variant has been detected in recent weeks among overseas acquired cases.

Section 9: NSW Sewage Surveillance Program

The NSW Sewage Surveillance Program tests untreated sewage for fragments of the COVID-19 (SARS-CoV-2) virus at sewage treatment plant locations across NSW. In Sydney, testing is undertaken from both the sewage treatment plant (inlet sites) and sites within the network (network sites). Testing sewage can help track infections in the community and provide early warning of an increase in infections. These tests provide data to support NSW Health's response to COVID-19.

An infected person can shed virus in their faeces even if they do not have symptoms, and shedding can continue for several weeks after they are no longer infectious. The NSW sewage surveillance for SARS-CoV-2 is in the preliminary stages of analysis and work is progressing to assess the significance of the results. For example, it is not currently known the minimum number of cases that can be detected in a catchment. A small number of cases in a large sewage catchment may not be detected by sewage surveillance due to factors such as dilution, inhibition, reduction in shedding over the infection period or movement of cases.

In the week ending 23 October, 312 sewage samples were tested for fragments of SARS-CoV-2. Of these, there were 139 detections:

Detections outside Sydney

There were 126 detections outside Sydney taken from the sewage treatment plants at Albury composite, Alstonville, Armidale (2), Ballina, Bateau Bay, Batemans Bay, Bathurst, Bega, Blayney, Bomaderry, Bombo, Bonny Hills, Boorowa, Bourke, Broken Hill (2), Broken Hill South, Buronga, Byron Bay, Canowindra, Casino, Charmhaven (2), Coffs Harbour (2), Cooma, Cowra, Crescent Head, Culburra Beach, Dareton, Dubbo, Dunbogan (2), Forster, Gerroa, Gosford – Kincumber, Goulburn, Gulgong, Gunnedah, Guyra, Gwandalan (2), Hallidays Point, Harrington, Hawks Nest, Hunter – Belmont, Boulder Bay, Branxton, Burwood Beach, Cessnock, Dora Creek, Edgeworth, Farley, Karuah, Kurri Kurri, Morpeth, Raymond Terrace, Shortland, Tanilba Bay and Toronto, Inverell, Jerilderie, Jindabyne, Leeton, Lightning Ridge, Mannering Park, Mittagong, Moree (2), Moruya (2), Moss Vale, Mulwala, Narooma (2), Narromine, North Grafton, Nyngan, Oberon, Old Bar, Orange, Port Macquarie (2), Queanbeyan, Quirindi (2), Singleton, South Grafton, South Kempsey, South Lismore, South West Rocks (2), St Georges Basin, Tamworth (2), Taree, Tweed - Banora Point (2), Ulladulla, Uralla (2), Wagga Wagga - Kooringal (2) and Narrung SBR (2), Walgett, Wauchope, Wellington, West Kempsey (3), Wilcannia, Wingham, Woolgoolga (2), Woy Woy (2), Wyong – Toukley, Wyong South (2), and Yass.

Sydney detections

Results for Sydney sites may be delayed to prioritise analysis of regional sites. In Sydney there were detections from the sewage treatment plants at McGraths Hill and South Windsor. There were also detections from the sewage networks and pumping stations at Caringbah (2), Eastern Creek (2), Miranda (2), Padstow 1 (2) and Rozelle (3).

Detections with no known cases

Detections from Armidale, Quirindi, Uralla, Moree, Inverell, Guyra, Old Bar, Harrington, Byron Bay, Bonny Hills, Woolgoolga, South West Rocks, Wagga Wagga - Kooringal, Leeton, Bega, Moruya, Narooma, Jerilderie, Boorowa, Ulladulla, Blayney, Buronga, Lightning Ridge, Canowindra, Gulgong, and Nyngan occurred with no known or recent cases in the catchment. Cases were also identified in Bonny Hills, Lightning Ridge, South West Rocks and Harrington following detections in recent weeks.

• Sampled sites with no SARS-CoV-2 fragment detections

There were no detections in the following catchments: Aberdeen, Ashford, Balranald, Bangalow, Baradine, Barraba, Bellingen, Bermagui, Bodalla, Boggabri, Bombala, Bowral, Bowraville, Bulahdelah, Ocean Shores, Cobar, Collarenebri, Condobolin, Coolah, Coolamon, Coonabarabran, Cootamundra, Coraki, Corowa, Crookwell, Delungra, Dunedoo, East Lismore, Eden, Evans Head, Forbes, Frederickton, Gilgandra, Glen Innes, Grenfell, Gundagai, Harden, Holbrook, Junee, Kyogle, Lake Cargelligo, Lennox Head, Manilla, Merimbula, Merriwa, Molong, Mudgee, Mullumbimby, Mungindi, Murrurundi, Nambucca Heads, Narrabri, Narrandera, Nowra, Parkes, Scone, Temora, Tenterfield, Tomakin, Trangie, Tumut, Tuross, Tweed - Hastings Point, Kingscliff and Murwillumbah, Vincentia, Wagga Wagga - Narrung Orbal, Walcha, Wardell, Warren, Wee Waa, Wentworth, Werris Creek, West Wyalong, Woodenbong, and Young.

New collection sites

The sewage treatment plants at Delungra, Ashford, Werris Creek, Barraba, Manilla, Boggabri, Gloucester, Old Bar, Wingham, Buladelah, Aberdeen, Merriwa and Murrurundi were added as new sites.

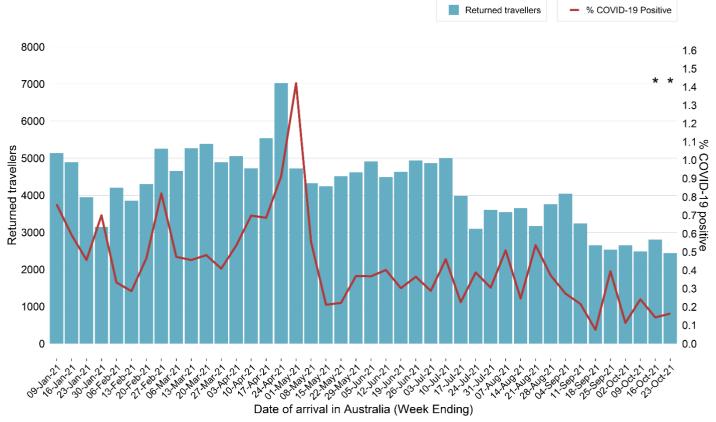
Section 10: COVID-19 in returned travellers

To limit the spread of COVID-19 into NSW, travel restrictions were introduced for all non-Australian citizens and permanent residents in mid-March 2020. In addition:

- From 29 March 2020 returned travellers have been quarantined in hotels for a 14-day period and travellers who develop symptoms are isolated until no longer infectious. Returned travellers are screened on entry and exit from quarantine and following release from quarantine.
- From 22 January 2021 (local time at departure point) all people travelling to Australia on flights must provide proof of a negative COVID-19 PCR test result at the time of check-in.

The figure below shows the number of returned travellers screened at Sydney International Airport during 2021. Returned travellers include international flight crew who are required to be tested before leaving the airport.

Figure 15. Returned travellers screened at Sydney International Airport by week of arrival and percent COVID-19 positive, NSW, 3 January 2021 to 23 October 2021



*Returned travellers entering Australia in the past 14 days are still in quarantine and may return a positive result prior to the end of their hotel quarantine period.

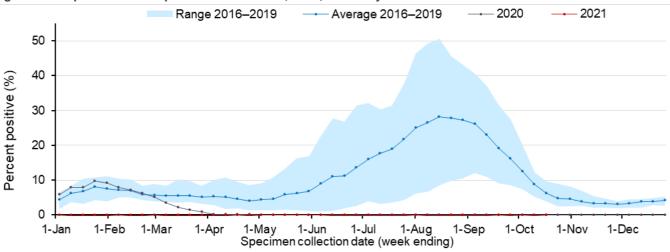
Interpretation: Since 3 January 2021, there has been on average 599 people screened on arrival through Sydney International Airport daily. In the last four weeks, 17 returned travellers have subsequently tested positive for COVID-19 while completing quarantine. The proportion of returned travellers who test positive for COVID-19 has been low. In the week ending 1 May 2021 the proportion increased to over 1% (1.4%) of returned travellers testing positive, but this has subsequently fallen back to lower levels.

Section 11: Other respiratory infections in NSW

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 2021, the dark blue line showing counts for 2020, the light blue line showing the average for 2016 to 2019 and the shaded area showing the range recorded for 2016 to 2019.

Figure 16. Proportion of tests positive for influenza, NSW, 1 January 2016 to 17 October 2021

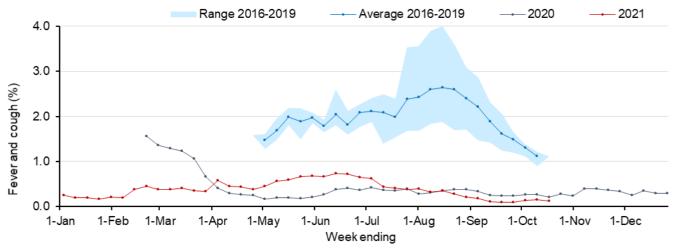


Interpretation: In the week ending 17 October, the percent of influenza tests that were positive continued to be very low (0.03%), indicating limited influenza transmission in the community. Since early March 2020, this percentage has remained far lower than the usual range for the time of year. There have been 20 influenza cases reported in 2021.

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 has continued throughout the year due to the COVID-19 outbreak.

Figure 17. Proportion of FluTracker participants reporting influenza-like illness, NSW, 1 January 2016 to 17 October 2021



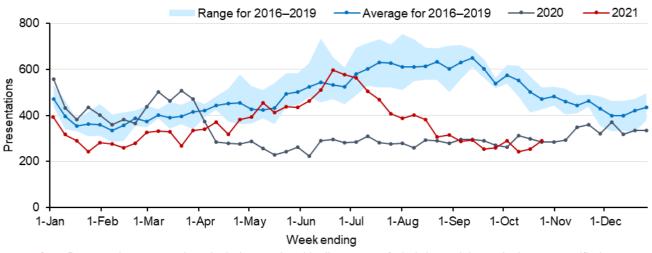
Interpretation: In NSW in the week ending 17 October 2021, of the 22,977 people surveyed, 30 people (0.13%) reported flu-like symptoms. In the last four weeks, 74% (92/125) of new cases of flu-like illness reported having a COVID-19 test. The proportion of people with flu-like symptoms being tested for COVID-19 decreased from January 2021, when 80% reported being tested, to around 50% between April and June 2021, and then increased to around 60% from June 2021 onwards.

How are emergency department presentations tracking?

Improved hygiene and social distancing measures implemented during the COVID-19 pandemic have impacts on a broad range of other viral and bacterial infections.

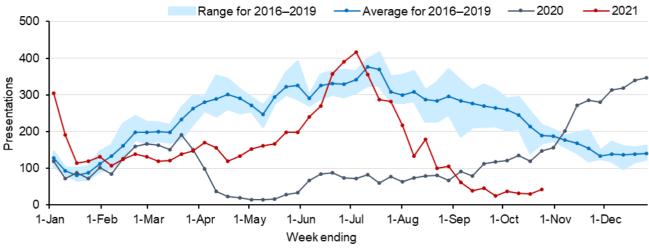
The figures below show weekly pneumonia and bronchiolitis presentations to Emergency Departments in NSW, using PHREDSS⁴. The red line shows the weekly counts for 2021, the dark blue line showing counts for 2020, the light blue line showing the average for 2016 to 2019 and the shaded area showing the range recorded for 2016 to 2019.

Figure 18. Emergency Department pneumonia presentations, NSW, 1 January 2016 to 24 October 2021



Interpretation: Pneumonia presentations include people 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. Since the beginning of the current outbreak from 16 June 2021, there has been a steady decline in pneumonia presentations, with the number of presentations in the week ending 24 October remaining significantly below the seasonal range for this time of year.

Figure 19. Emergency Department bronchiolitis presentations, NSW, 1 January 2016 to 24 October 2021



Interpretation: Bronchiolitis is a common disease of infants often caused by respiratory syncytial virus (RSV). Public health measures introduced last year around social distancing and improved hygiene practices coincided with a large decrease in bronchiolitis presentations for the majority of 2020. A rise in bronchiolitis presentations in the later part of 2020 corresponds to an increase in RSV detections (see Appendix C). Since the beginning of the current outbreak from 16 June 2021, there has again been a steady decrease in bronchiolitis presentations, with the number of presentations in the week ending 24 October remaining well below the seasonal range for this time of year.

⁴ 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 4 years. Includes unplanned presentations to 67 NSW emergency departments (accounts for 87% of total public ED activity).

Appendix A: COVID-19 PCR tests in NSW by Local Government Area

прропал	A: GOTIE TOT OIL	tooto III		Local Governmen		t Alea	
		23	Oct	ending 16	Oct	Total since Ja	anuary 2021
Local Health District	Local Government Area	No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Central Coast	LHD Total ²	20,584	8.3	20,030	8.1	510,150	206.5
	Kiama	1,130	6.9	1,061	6.5	27,663	169.0
	Shellharbour	5,442	10.6	5,646	11.0	118,576	231.3
Illawarra Shoalhaven	Shoalhaven	4,234	5.7	5,147	7.0	93,113	125.9
	Wollongong	13,141	8.6	14,628	9.6	330,541	216.5
	LHD Total ²	23,947	8.2	26,482	9.0	569,893	194.0
	Blue Mountains	4,452	8.0	5,104	9.2	126,025	227.6
Nepean Blue	Hawkesbury	7,217	15.3	7,870	16.7	163,816	347.8
Mountains	Lithgow	863	5.7	641	4.2	16,098	106.4
	Penrith	20,713	13.9	22,676	15.2	548,263	367.8
	LHD Totaf	32,882	12.0	35,878	13.1	843,568	308.2
	Hornsby	5,645	5.3	5,978	5.6	175,431	164.8
	Hunters Hill	1,404	13.4	1,415	13.5	43,097	411.0
	Ku-ring-gai	5,888	6.6	5,969	6.7	191,211	214.8
	Lane Cove	3,216	11.4	3,298	11.7	98,772	351.4
Northern	Mosman	1,192	5.5	1,193	5.5	38,809	179.0
Sydney	North Sydney	2,470	4.7	2,504	4.8	80,002	152.3
	Northern Beaches	14,544	7.6	14,045	7.3	463,026	241.9
	Parramatta ¹	14,340	8.0	16,131	9.0	473,642	263.1
	Ryde	6,804	7.4	7,554	8.2	241,891	263.2
	Willoughby	2,626	4.6	2,510	4.4	81,041	142.6
	LHD Total ²	46,084	6.9	46,825	7.0	1,483,193	221.7
	Bayside	12,332	9.9	14,253	11.4	391,615	313.6
	Georges River Randwick	10,752	9.6	11,709	10.5	333,584	298.8 321.5
		11,872	10.9	12,981	11.9	350,328	237.8
South Eastern Sydney	Sutherland Shire	13,427	8.3	14,317	8.9 9.6	383,925	282.9
Cyancy	Sydney ¹ Waverley	15,519 4,587	9.0 8.8	16,560 4,988	9.6	487,885 167,512	322.1
	Woollahra	3,421	8.2	3,299	7.9	125,150	301.1
	LHD Total ²	61,035	9.1	66,553	9.9	1,911,501	284.7
	Camden	9,408	13.3	9,857	13.9	269,914	380.1
	Campbelltown	14,702	12.3	15,350	12.8	441,032	368.6
	Canterbury-Bankstown ¹	32,522	12.3	37,155	14.1	1,218,525	460.6
Courth Wastern	Fairfield	18,629	12.6	21,948	14.8	696,307	469.9
South Western Sydney	Liverpool	20,812	13.1	23,321	14.6	655,257	411.3
•	Wingecarribee	2,167	6.1	2,526	7.1	59,813	167.1
	Wollondilly	2,616	7.0	3,106	8.4	76,034	204.4
	LHD Total ²	84,890	11.7	95,049	13.1	2,811,868	386.8
	Burwood	2,113	7.4	2,352	8.3	70,950	249.6
	Canada Bay	5,850	8.7	6,184	9.2	168,108	250.0
	Canterbury-Bankstown ¹	32,522	12.3	37,155	14.1	1,218,525	460.6
Sydney	Inner West	12,195	8.7	13,011	9.3	345,762	246.0
	Strathfield	4,860	14.8	5,225	15.9	154,218	469.5
	Sydney ¹	15,519	9.0	16,560	9.6	487,885	282.9
		-,-		-,		- ,	

			Week ending				
		23	Oct		Oct	Total since Ja	anuary 2021
Local Health District	Local Government Area	No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
	LHD Total ²	51,282	10.5	55,913	11.5	1,649,425	338.2
	Blacktown	33,788	12.9	38,598	14.7	994,928	379.6
Mastana	Cumberland	23,938	14.2	28,305	16.7	847,627	501.4
Western Sydney	Parramatta ¹	14,340	8.0	16,131	9.0	473,642	263.1
	The Hills Shire	13,064	10.5	14,254	11.4	381,893	306.6
	LHD Total ²	83,784	11.4	95,981	13.0	2,662,286	361.0
	Balranald	82	5.0	188	11.5	1,622	99.1
	Broken Hill	569	4.7	642	5.3	21,805	178.2
Far West	Central Darling	108	8.4	132	10.3	3,414	265.2
	Wentworth	681	13.8	897	18.2	6,366	128.9
	LHD Total	1,440	6.8	1,859	8.8	33,207	157.4
	Armidale Regional	605	2.8	526	2.4	24,593	114.2
	Cessnock	3,101	7.4	2,638	6.3	45,739	108.9
	Dungog	266	4.0	189	2.9	5,775	87.6
	Glen Innes Severn	139	2.2	130	2.1	4,545	73.2
	Gunnedah	315	3.6	506	5.7	8,982	101.2
	Gwydir	100	2.7	76	2.0	2,016	53.8
	Inverell	288	2.4	282	2.4	8,986	76.0
	Lake Macquarie	9,700	6.7	8,684	6.0	245,534	170.4
	Liverpool Plains	224	4.1	227	4.1	4,774	86.3
	Maitland	5,514	9.3	6,035	10.1	121,327	203.5
Hunter New	Mid-Coast	5,038	7.7	3,140	4.8	55,402	84.3
England	Moree Plains	340	3.7	370	4.0	9,219	99.3
	Muswellbrook	345	3.0	426	3.7	10,705	93.4
	Narrabri	251	2.7	274	3.0	6,252	68.0
	Newcastle	8,201	7.1	7,195	6.2	209,568	180.8
	Port Stephens	2,538	4.9	2,688	5.2	67,190	130.6
	Singleton	1,246	7.6	1,292	7.9	23,457	142.8
	Tamworth Regional	3,377	7.7	5,554	12.7	60,970	139.3
	Tenterfield	137	3.0	114	2.5	2,624	56.9
	Upper Hunter Shire	327	3.3	468	4.7	8,615	86.8
	Uralla	111	2.6	99	2.4	3,201	76.1
	Walcha	75	3.4	68	3.1	2,086	95.1
	LHD Total	42,233 265	6.3	40,957	6.1	931,115	139.7
	Bellingen Coffs Harbour	1,410	2.9 2.6	198	2.2 2.2	7,314	80.4 74.7
BAP I BL. AL	Kempsey	4,433	21.3	1,203 1,473	7.1	40,429 26,200	125.8
Mid North Coast	Nambucca	325	21.3	227	1.6	9,120	65.8
	Port Macquarie-Hastings	2,164	3.7	1,866	3.2	9,120 55,191	93.3
	LHD Total ²	2,16 4 8,597	5. <i>1</i>	4,967	3.2	138,254	93.3 87.5
	Albury	9,878	26.0	2,996	7.9	48,349	127.1
	Berrigan	9,676	3.2	2,996	7.9 2.6	3,165	51.7
Murrumbidgee	Bland	194	2.4	143	3.4	3,103	77.2
wananibiagee	Carrathool	20	1.0	39	2.0	3,229	45.0
	Coolamon	110	3.6	134	2.0 4.4	2,916	96.0
	Coolamon	110	3.0	104	4.4	2,910	90.0

			Week ending				
		23	Oct Week		Oct	Total since Ja	nuary 2021
Local Health District	Local Government Area	No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
	Cootamundra-Gundagai	277	3.5	297	3.8	7,219	91.8
	Regional Edward River	510	8.0	840	13.2	6,661	104.8
	Federation	837	9.6	663	7.6	7,782	89.4
	Greater Hume Shire	1,302	17.3	698	9.3	8,952	118.8
	Griffith	544	2.9	591	3.1	15,257	80.6
	Hay	53	2.6	70	3.4	1,194	57.8
	Hilltops	614	4.7	689	5.3	19,554	149.4
	Junee	129	2.8	161	3.4	3,674	78.5
	Lachlan ¹	126	3.0	141	3.3	3,080	72.4
	Leeton	223	2.8	246	3.1	5,242	65.4
	Lockhart	121	5.3	137	6.0	2,210	96.1
	Murray River	491	5.8	475	5.6	2,720	32.1
	Murrumbidgee	104	3.8	92	3.4	1,733	63.2
	Narrandera	109	2.6	111	2.7	2,135	51.7
	Snowy Valleys	339	3.3	391	3.9	7,154	70.6
	Temora	116	2.6	124	2.8	3,016	68.3
	Wagga Wagga	2,691	5.9	3,102	6.8	58,625	128.3
	LHD Total	18,782	9.0	12,191	5.8	212,668	101.9
	Ballina	1,348	4.3	2,999	9.6	43,627	139.7
	Byron	733	3.0	888	3.6	32,512	132.4
	Clarence Valley	2,663	7.4	4,423	12.2	29,411	81.3
	Kyogle	107	1.7	148	2.4	4,932	80.1
Northern NSW	Lismore	1,017	3.3	1,597	5.2	36,127	118.1
	Richmond Valley	799	4.9	850	5.2	19,343	117.8
	Tenterfield	137	3.0	114	2.5	2,624	56.9
	Tweed	1,950	2.9	1,837	2.7	57,051	84.0
	LHD Total ²	8,637	4.0	12,764	5.9	223,638	102.9
	Bega Valley	638	2.6	1,247	5.2	19,356	80.2
	Eurobodalla	549	2.0	785	2.9	23,910	88.8
	Goulburn Mulwaree	1,184	5.4	1,809	8.3	32,842	150.7
Southern NSW	Queanbeyan-Palerang Regional	1,386	3.2	2,184	5.1	44,396	103.8
	Snowy Monaro Regional	614	4.2	1,498	10.3	21,242	145.9
	Upper Lachlan Shire	170	3.0	192	3.4	5,639	100.0
	Yass Valley	427	3.6	294	2.5	12,205	102.0
	LHD Total	4,968	3.3	8,012	5.3	159,697	105.1
	Bathurst Regional	2,863	9.4	1,768	5.8	54,525	178.6
	Blayney	380	7.4	445	8.6	8,771	169.8
	Bogan	70	3.9	53	2.9	2,347	130.0
Western NSW	Bourke	311	17.2	322	17.8	5,857	323.1
WOStern NOW	Brewarrina	69	6.1	136	12.1	2,152	190.8
	Cabonne	357	3.7	533	5.6	10,479	109.8
	Cobar	194	6.0	194	6.0	3,421	104.9
	Coonamble	144	5.2	165	6.0	3,250	117.3

Epidemiological week 42, ending 23 October 2021

		Week ending				Total since January 2021		
		23	Oct	16	Oct	Total Since January 2021		
Local Health District	Local Government Area	No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population	
	Cowra	475	5.3	989	11.1	16,398	183.8	
	Dubbo Regional	4,701	12.5	5,937	15.8	136,200	362.2	
	Forbes	190	2.7	182	2.6	6,396	92.2	
	Gilgandra	146	4.9	125	4.2	4,274	144.0	
	Lachlan ¹	126	3.0	141	3.3	3,080	72.4	
	Mid-Western Regional	683	3.9	626	3.5	27,361	154.8	
	Narromine	379	8.3	441	9.7	9,948	218.1	
	Oberon	269	7.1	321	8.5	6,711	177.2	
	Orange	2,895	9.7	5,799	19.5	67,485	227.1	
	Parkes	285	2.7	385	3.7	12,028	115.8	
	Walgett	628	15.1	1,265	30.4	7,689	184.5	
	Warren	174	9.2	239	12.7	5,834	309.0	
	Warrumbungle Shire	244	3.8	255	3.9	6,674	102.8	
	Weddin	81	3.2	88	3.5	2,441	96.5	
	LHD Total ²	15,646	7.8	20,381	10.2	402,420	201.7	
NSW Total	NSW Total ³	504,791	8.9	543,842	9.6	14,543,482	256.8	

Source - Notifiable Condition Information Management System, accessed as at 8pm 25 Oct 2021

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 since January 2021 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, January 2021 to 17 October 2021

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.

Testing numbers in NSW from 28 December 2020-17 October 2021

Specimen	PCR tests	Influ	enza A	Infl	uenza B	Adeno-	Para-	RSV	Rhino-	HMPV	Entero-
collection date	conducted	No.	%Pos.	No.	%Pos.	virus	influenza	NOV	virus	HIVIF V	virus
Total	1,662,712	10	<0.01%	10	<0.01%	7,467	18,588	17,526	56,829	5,417	6,394
Month ending	Month ending										
31 January*	168,596	1	<0.01%	0	1	416	88	3,275	3,541	23	560
28 February	125,718	2	<0.01%	0	ı	419	106	2,386	8,667	22	910
28 March	95,458	0	-	0	-	507	354	1,909	8,891	18	1,187
2 May*	112,962	0	-	3	<0.01%	802	1,515	1,653	8,141	48	1,128
30 May	131,316	0	-	6	<0.01%	946	3,129	1,491	8,982	78	843
27 June	243,351	1	<0.01%	0	-	1,551	7,104	2,794	9,915	635	811
26 July	530,698	0	-	0	ı	1,463	4,603	3,014	5,089	1,991	587
29 August*	157,063	0	-	1	<0.01%	869	1,497	852	2,252	2,035	259
Week ending											
5 September	23,303	0	-	0	ı	87	68	54	212	192	20
12 September	23,446	0	-	0	ı	82	37	28	183	115	27
19 September	22,528	1	<0.01%	0	-	82	27	25	162	87	12
26 September	25,659	0	-	0	-	70	19	17	158	60	11
3 October	24,430	1	<0.01%	0	-	53	11	14	171	44	16
10 October	17,657	0	-	0	-	60	13	8	217	34	17
17 October	15,687	5	0.03%	0	-	57	17	6	239	35	10

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

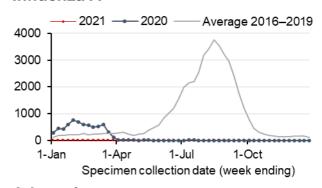
RSV - Respiratory syncytial virus

*Five-week period

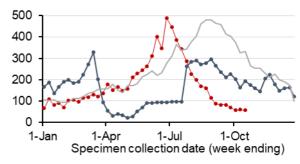
Appendix C: Number of positive PCR test results for influenza and other respiratory viruses at sentinel NSW laboratories, January 2020 to 17 October 2021

Not all samples are tested for all respiratory viruses. Therefore, data presented may tend to under-represent current respiratory virus activity in NSW.

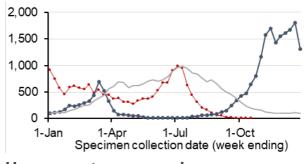
Influenza A



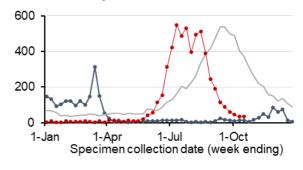
Adenovirus



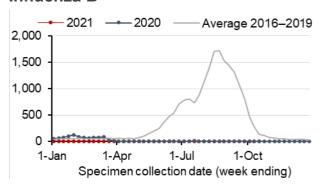
Respiratory Syncytial Virus



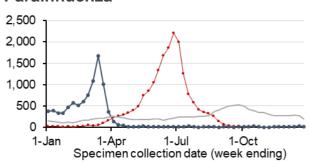
Human metapneumovirus



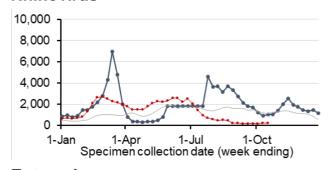
Influenza B



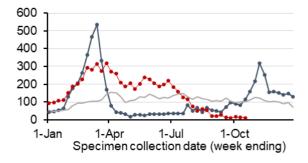
Parainfluenza



Rhinovirus



Enterovirus



Note: Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Serological diagnoses are not included.

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			
Health care workers	Individuals who work within a hospital or other healthcare settings, including staff in direct or indirect contact with patients or infectious materials.			
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 are 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.