

NSW Respiratory Surveillance Report - week ending 14 May 2022

COVID-19 Summary

- The rate of people reported with COVID-19 per 100,000 population remained stable in all age groups and most Local Health Districts (LHDs) this week. The rate increased slightly in some rural and regional LHDs.
- PCR testing has increased slightly, with 221,402 PCR tests for COVID-19 reported this week, an increase of 4% since the previous week. The proportion of PCR tests that were positive COVID-19 remained stable at 14%.
- 570 people with COVID-19 were admitted to hospital and 58 were admitted to ICU this week, which is a decrease since the previous week. The seven-day rolling averages of daily hospital admissions decreased to an average of 83 daily admissions from 99 last week and for ICU admissions decreased to an average of 8 daily admissions from 9 last week. Hospital admissions include people with COVID-19 who are admitted for other reasons.
- There were 90 COVID-19 deaths reported this week. Five of the deaths reported were in people aged under 65 years. Deaths may not have occurred in the week in which they were reported.

Influenza summary

- Hospital and laboratory surveillance continues to show a sharp increase in influenza activity in the community, which is earlier in the year than has been observed in previous winter influenza seasons.
- The rate of people reported with influenza per 100,000 population increased in all LHDs this week.
- Of the 30,801 tests conducted for influenza, the proportion positive has increased to 12.4% from 9.0% in the previous week.
- Emergency department presentations for influenza-like illness (ILI) requiring an admission have increased to 129 compared to 60 admissions in the previous week. This represents 17.3% of all ILI emergency department presentations this week. The proportion of presentations that were admitted was highest for people aged 65 years and over.
- Influenza A is the dominant circulating strain and of these influenza A (H1N1) is mostly circulating in children and influenza A (H3N2) is affecting adults. Of the samples sent to the WHO reference laboratory for characterization, both H1N1 and H3N2 samples appear to be a good match to the vaccine.
- Notifications of respiratory syncytial virus (RSV) have been increasing since the beginning of April. There were 766 cases notified this week, up from 508 cases notified last week. Emergency department presentations for bronchiolitis, which is a clinical diagnosis generally caused by RSV, have also increased with 355 presentations for bronchiolitis this week, up from 215 presentations in the previous week. 40.6% of bronchiolitis presentations this week were admitted to hospital.

Data sources

The NSW Respiratory Surveillance Report consolidates data from a range of sources to provide an understanding of what is happening in the community. This data includes laboratory results, hospital administrative data, emergency department syndromic surveillance, death registrations and community surveys.

COVID-19 hospital admissions, intensive care unit admissions, and deaths

- COVID-19 vaccines are very effective in preventing the severe impacts of infections with the virus. Almost 95 per cent of people aged 16 and over in NSW have received two doses of a COVID-19 vaccine, while more than 65 per cent of people eligible for their third dose have received it. With such high vaccination coverage in the community, a greater proportion of people admitted to hospital or an intensive care unit (ICU) with COVID-19 are now vaccinated with two or three doses. However, people who are not vaccinated remain far more likely to suffer severe COVID-19. The minority of the overall population who have not been vaccinated are significantly overrepresented among patients in hospitals and ICUs with COVID-19. Note that some people with COVID-19 who are admitted to hospital or ICU are admitted for conditions unrelated to their COVID-19 infection, and these admissions will not be prevented by vaccination.
- Despite the substantial protection from COVID-19 provided by vaccination, older age remains a significant risk factor for serious illness and death with COVID-19, particularly when combined with significant underlying health conditions.

Figure 1. Daily seven-day rolling average of people with COVID-19 admitted to hospital within 14 days of their diagnosis, NSW, 1 January to 14 May 2022

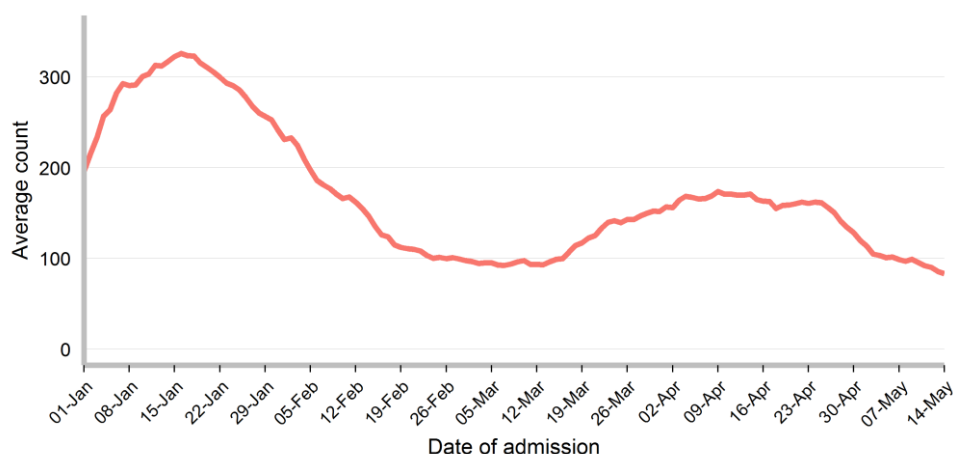
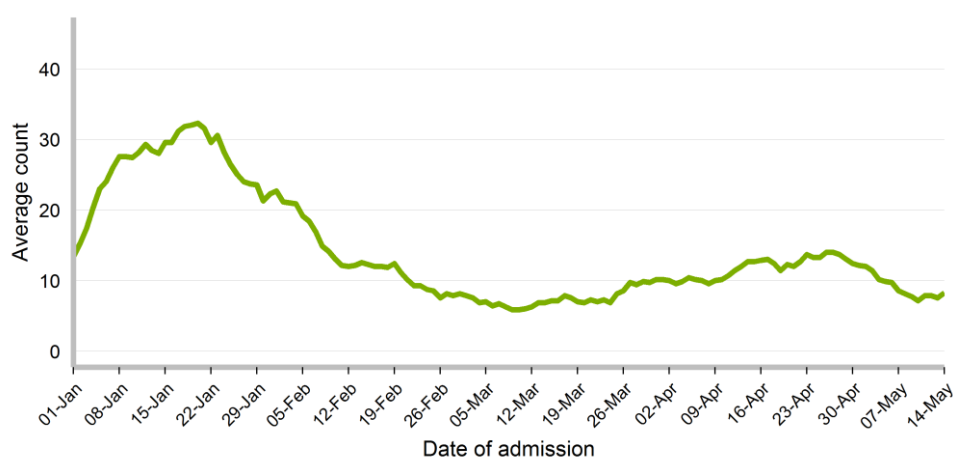


Figure 2. Daily seven-day rolling average of people with COVID-19 admitted to intensive care units, NSW, 1 January to 14 May 2022



- Hospital admissions and ICU admissions in people with COVID-19 have decreased in the last week.
 - 570 people diagnosed with COVID-19 in the previous 14 days were admitted to a NSW public hospital. The seven-day rolling average of daily hospital admissions decreased to an average of 83 admissions by the end of this week, compared with 99 admissions at the end of the previous week.
 - 58 people diagnosed with COVID-19 were admitted to ICU. The seven-day rolling average of daily ICU admissions decreased to an average of 8 admissions by the end of this week, compared with 9 admissions at the end of the previous week.

Table 1. Number of people with a COVID-19 diagnosis in the previous 14 days who were admitted to hospital, admitted to ICU or reported as having died in the week ending 14 May 2022

	Admitted to hospital (but not to ICU)	Admitted to ICU	Deaths
Gender			
Female	279	19	40
Male	253	37	50
Not stated / inadequately described	38	2	0
Age group (years)			
0-9	38	3	0
10-19	19	3	0
20-29	47	2	0
30-39	47	5	0
40-49	41	3	2
50-59	41	8	2
60-69	55	10	6
70-79	91	12	20
80-89	131	12	28
90+	60	0	32
Local Health District (LHD) of residence*			
Central Coast	25	2	3
Illawarra Shoalhaven	32	2	4
Nepean Blue Mountains	10	2	3
Northern Sydney	46	6	11
South Eastern Sydney	65	5	13
South Western Sydney	93	6	16
Sydney	42	2	10
Western Sydney	49	6	5
Far West	1	0	1
Hunter New England	62	4	8
Mid North Coast	11	3	1
Murrumbidgee	21	2	0
Northern NSW	31	1	7
Southern NSW	13	3	5
Western NSW	29	10	3
Vaccination status			
Three or more doses	266	25	58
Two doses	122	13	16
One dose	11	0	1
No dose/Unknown	171	20	15
Total	570	58	90

* Excludes cases in correctional settings and hotel quarantine.

- Of the 90 people who were reported to have died with COVID-19, 37 were aged care residents. Nine of these people died in hospital and 28 died at an aged care facility.
- Five of the deaths occurred at home. Of these, one was diagnosed after death.

- Five people aged under 65 years died with COVID-19. Of these, four had received two doses of a COVID-19 vaccine and one had received three doses. All five had records of significant underlying health conditions that increase the risk of severe disease from COVID-19.
- Reported deaths were classified as COVID-19 deaths if they met the surveillance definition in the Communicable Diseases Network of Australia's COVID-19 National Guidelines for Public Health Units. Under this definition, deaths are considered COVID-19 deaths for surveillance purposes if the person died with COVID-19, not necessarily because COVID-19 was the cause of death. Deaths may be excluded if there was a clear alternative cause of death that was unrelated to COVID-19 (e.g. major trauma).
- COVID-19 related deaths are notified to NSW Health from a range of sources, including public and private hospitals, aged care facilities, and the Coroner. Not all deaths reported by NSW Health occurred in the week in which they are reported as there is sometimes a delay between a death occurring and it being reported to NSW Health. NSW Health does not report deaths under investigation by the Coroner until the Coroner issues their findings on the cause of death.

Notifications of COVID-19 and Influenza

Table 2. Number of notifications of COVID-19 and Influenza, by age group and Local Health District and time period, NSW, 2022

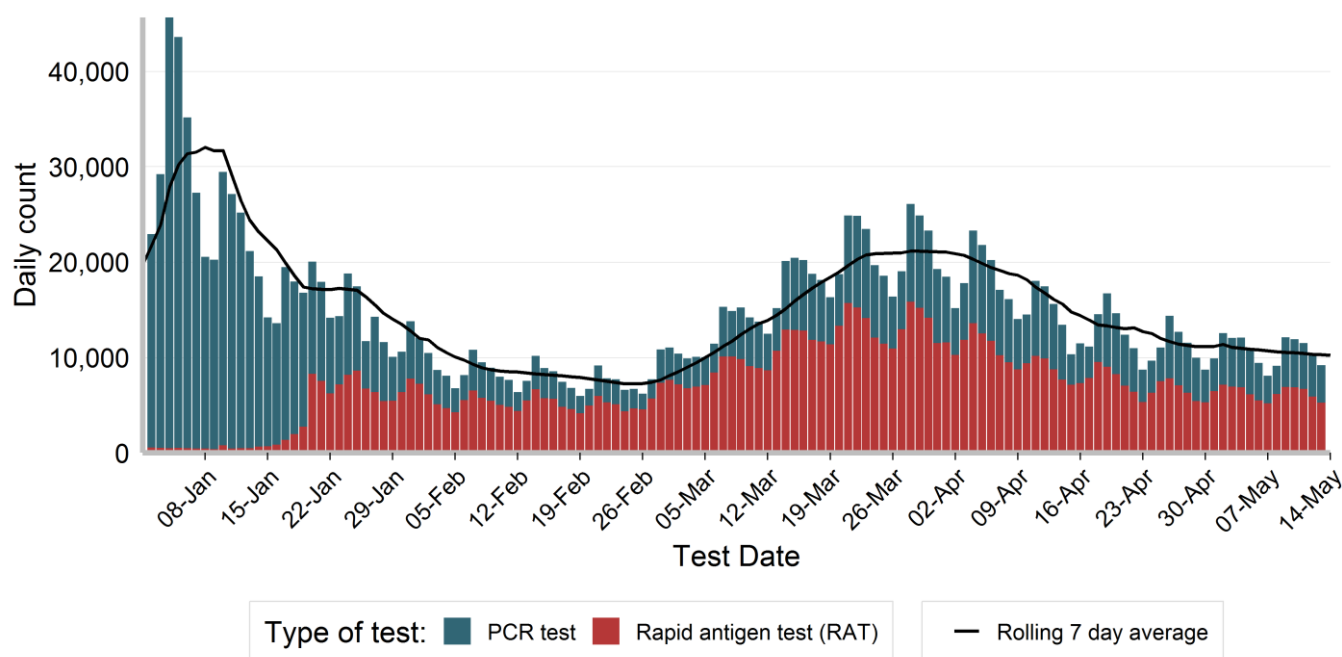
	Week ending 14 May 2022			Year total		
	COVID-19		Influenza	COVID-19*		Influenza
	PCR	RAT		PCR	RAT	
Gender						
Female	16,720 (44%)	21,672 (56%)	1,805	579,091 (56%)	451,583 (44%)	4,425
Male	14,763 (45%)	18,263 (55%)	1,790	547,498 (58%)	402,719 (42%)	4,527
Not stated / inadequately described	50 (47%)	57 (53%)	6	1,676 (58%)	1,230 (42%)	19
Age group (years)						
0-4	1,489 (44%)	1,863 (56%)	330	54,435 (58%)	39,902 (42%)	919
5-9	1,128 (28%)	2,887 (72%)	463	65,071 (44%)	81,363 (56%)	999
10-19	2,519 (29%)	6,189 (71%)	983	148,267 (46%)	174,760 (54%)	2,232
20-29	4,113 (43%)	5,407 (57%)	510	210,927 (62%)	129,550 (38%)	1,750
30-39	5,313 (43%)	7,013 (57%)	407	198,651 (57%)	147,559 (43%)	1,048
40-49	4,635 (43%)	6,233 (57%)	296	161,584 (56%)	128,137 (44%)	679
50-59	4,507 (49%)	4,755 (51%)	233	127,120 (62%)	78,161 (38%)	530
50-69	3,819 (53%)	3,354 (47%)	154	87,999 (66%)	45,682 (34%)	351
70-79	2,460 (60%)	1,626 (40%)	131	47,568 (68%)	21,896 (32%)	281
80-89	1,157 (68%)	549 (32%)	75	20,228 (74%)	7,067 (26%)	142
90+	391 (77%)	116 (23%)	19	6,306 (81%)	1,448 (19%)	39
Local Health District of residence#						
Central Coast	1,286 (39%)	1,984 (61%)	273	43,536 (50%)	44,008 (50%)	510
Illawarra Shoalhaven	1,782 (48%)	1,960 (52%)	193	63,011 (57%)	46,926 (43%)	471
Nepean Blue Mountains	1,480 (41%)	2,111 (59%)	141	55,355 (55%)	45,274 (45%)	276
Northern Sydney	4,034 (46%)	4,730 (54%)	377	123,961 (55%)	100,746 (45%)	954
South Eastern Sydney	3,903 (55%)	3,256 (45%)	525	145,239 (63%)	86,888 (37%)	1,387
South Western Sydney	3,875 (52%)	3,603 (48%)	494	165,846 (65%)	89,271 (35%)	1,500
Sydney	3,114 (55%)	2,595 (45%)	233	109,151 (64%)	61,223 (36%)	862
Western Sydney	4,604 (55%)	3,795 (45%)	565	179,535 (66%)	91,947 (34%)	1,324
Far West	112 (27%)	301 (73%)	18	2,070 (33%)	4,277 (67%)	40
Hunter New England	3,477 (37%)	6,046 (63%)	345	111,763 (48%)	120,032 (52%)	762
Mid North Coast	204 (12%)	1,449 (88%)	37	12,819 (30%)	30,612 (70%)	85
Murrumbidgee	633 (20%)	2,561 (80%)	156	23,206 (37%)	39,716 (63%)	274
Northern NSW	539 (21%)	1,981 (79%)	106	24,617 (42%)	33,744 (58%)	249
Southern NSW	783 (35%)	1,463 (65%)	52	19,631 (46%)	22,806 (54%)	106
Western NSW	1,095 (35%)	2,053 (65%)	79	30,883 (47%)	35,325 (53%)	142
Aboriginal status						
Aboriginal or Torres Strait Islander	847 (36%)	1,528 (64%)	124	39,955 (54%)	33,437 (46%)	241
Not Aboriginal or Torres Strait Islander	26,566 (47%)	30,221 (53%)	1,635	968,130 (61%)	618,892 (39%)	4,268
Unknown^	4,120 (33%)	8,243 (67%)	1,842	120,182 (37%)	203,204 (63%)	4,463
Total	31,533 (44%)	39,992 (56%)	3,601	1,128,267 (57%)	855,533 (43%)	8,972

* Excludes 180,433 positive RATs registered up to 19 January 2022 for whom demographic information is not available.

Excludes cases in correctional settings and hotel quarantine.

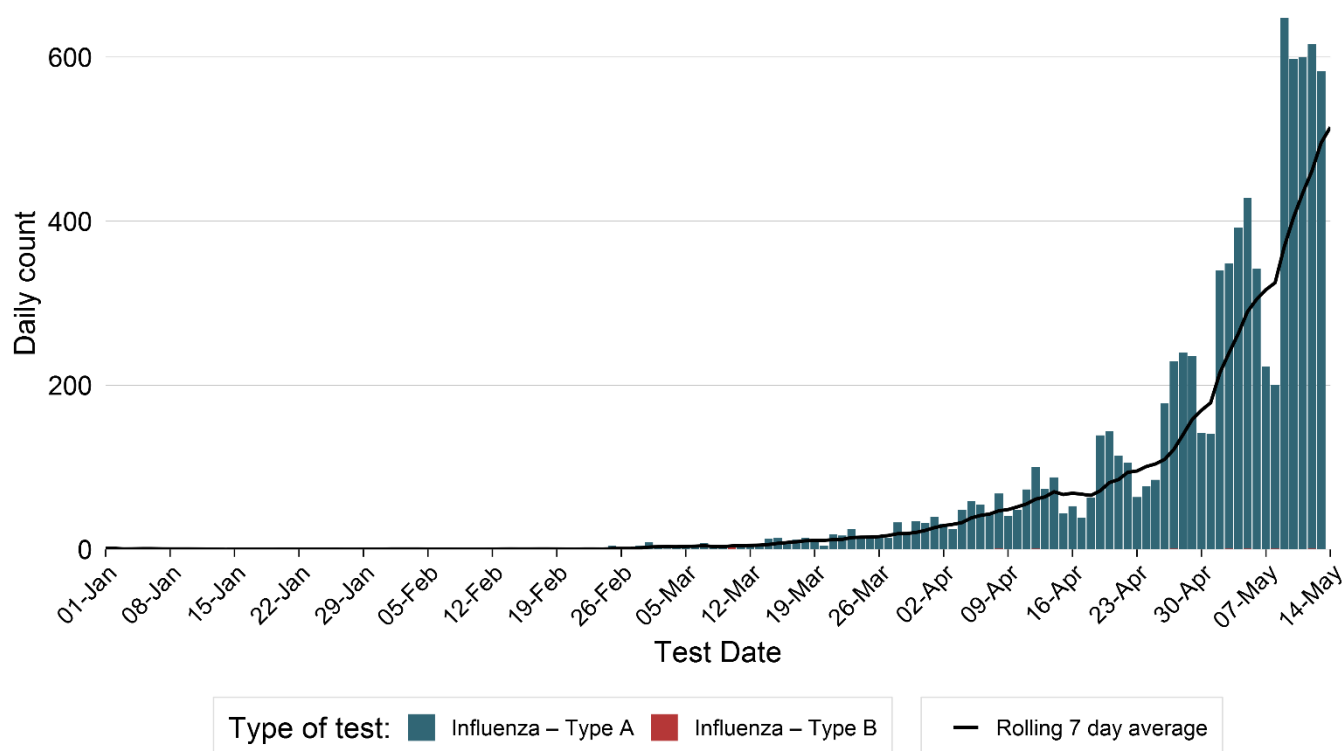
^ Aboriginal status is reported by COVID-19 cases when completing their RAT registration or responding to a short text message survey sent to cases detected by PCR. Not all cases respond to the question. For influenza cases, Aboriginal status is only known if it is collected and reported by the laboratory, which is not routine.

Figure 3. Number of people diagnosed with COVID-19, by date of test and type of test performed, NSW, 1 January to 14 May 2022*



* Excludes 180,433 positive RATs registered up to 19 January 2022 for whom test date is not available.

Figure 4. Number of people diagnosed with influenza, by date of test and virus type, NSW, 1 January to 14 May 2022



- There were 71,525 people diagnosed with COVID-19 this week, a decrease of 4% since the previous week.
- There were 3,601 people diagnosed with influenza this week, an increase of 63% since the previous week.

Figure 5. Daily seven-day rolling average rate of people reported with COVID-19 per 100,000 population, by age group and test date, NSW, in the four weeks to 14 May 2022

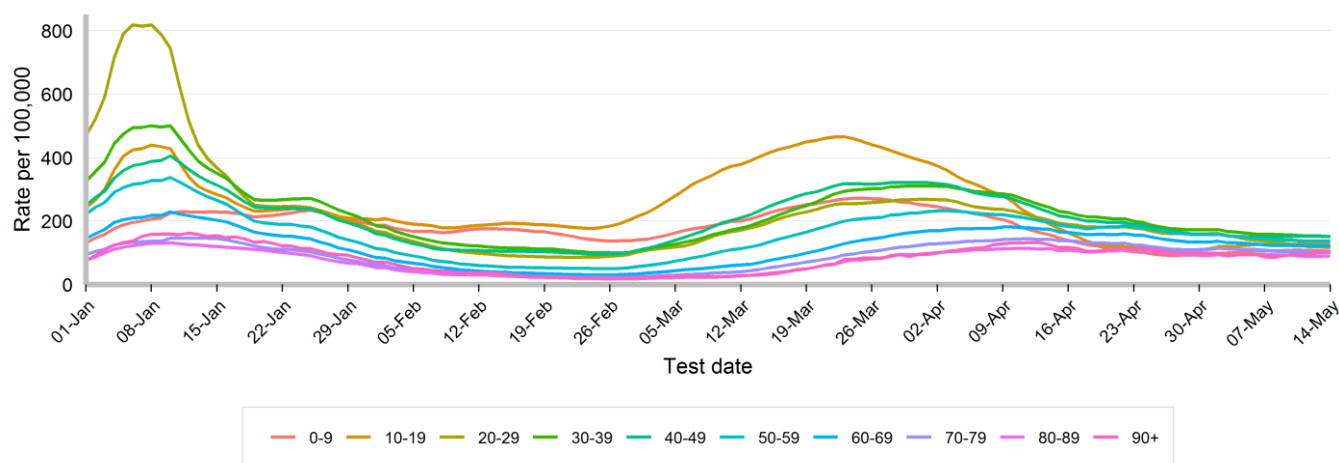


Figure 6. Daily seven-day rolling average rate of people reported with COVID-19 per 100,000 population, by metropolitan Local Health District and test date, NSW, in the four weeks to 14 May 2022

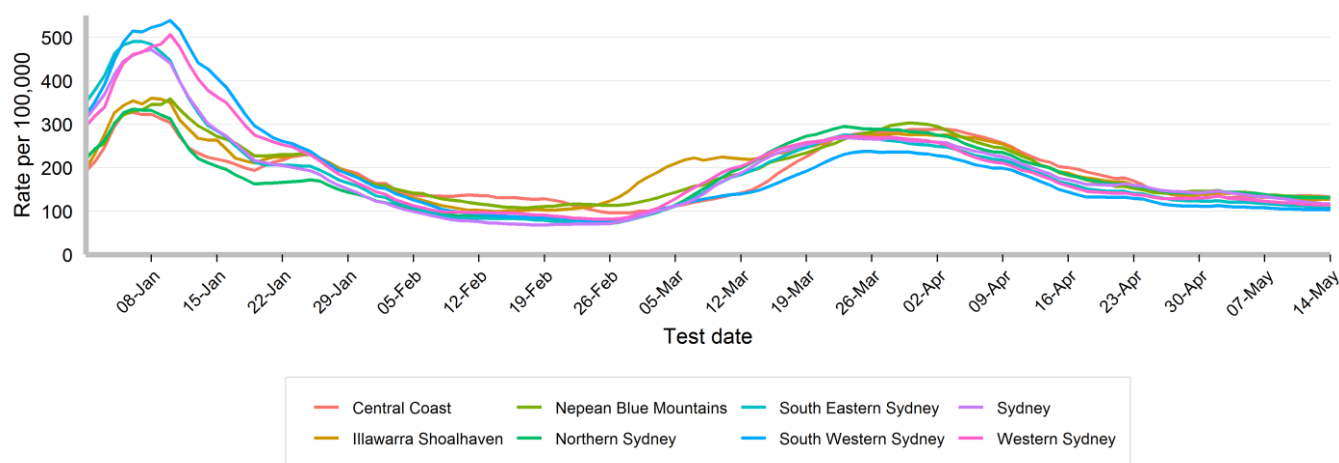
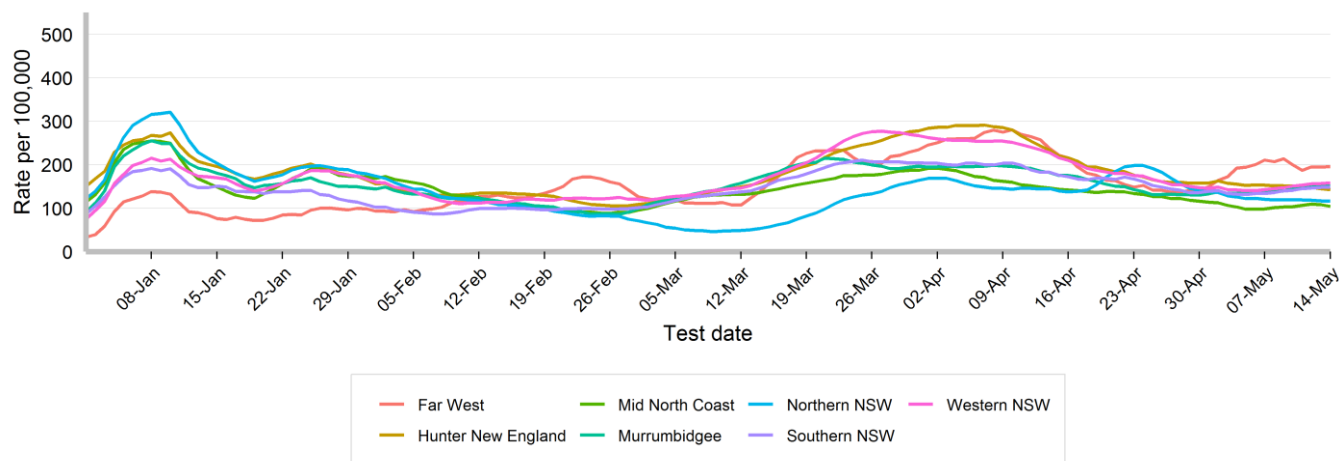


Figure 7. Daily seven-day rolling average rate of people reported with COVID-19 per 100,000 population, by rural and regional Local Health District and test date, NSW, in the four weeks to 14 May 2022



- The rate of people reported with COVID-19 per 100,000 population has remained stable in all age groups and most Local Health Districts (LHDs) this week. The rate increased slightly in some rural and regional LHDs.

Figure 8. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by age group and test date, NSW, 1 January to 14 May 2022

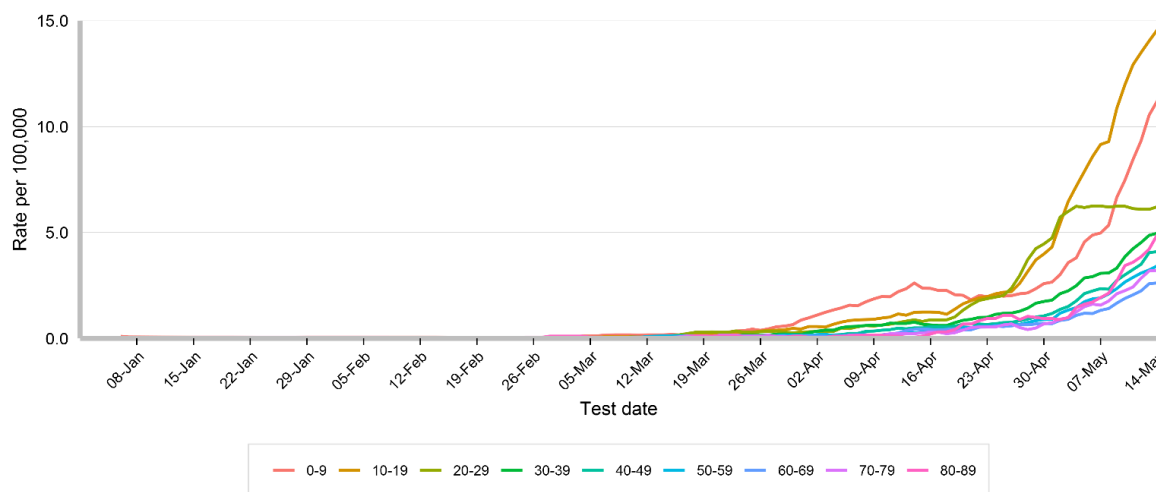


Figure 9. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by metropolitan Local Health District and test date, NSW, 1 January to 14 May 2022

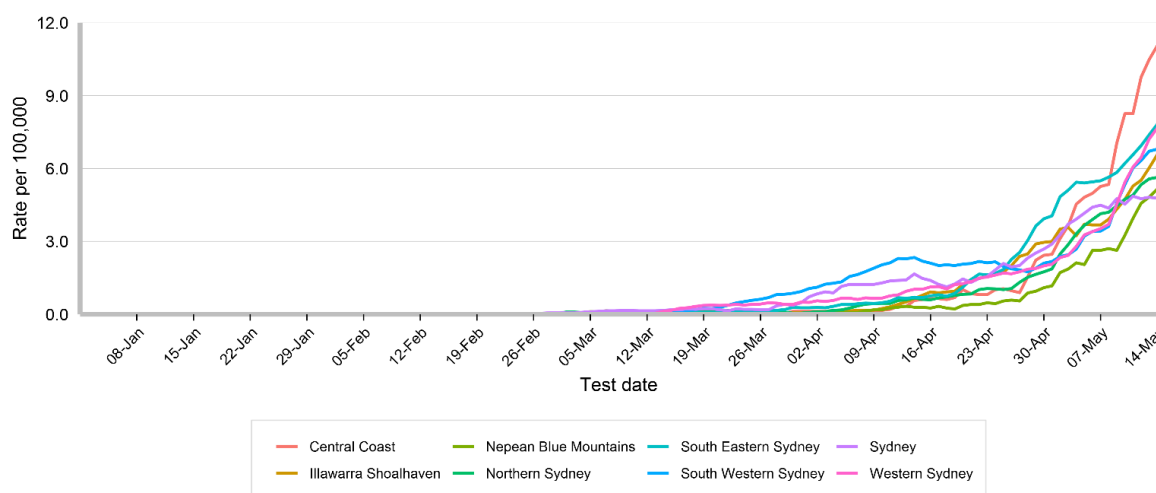
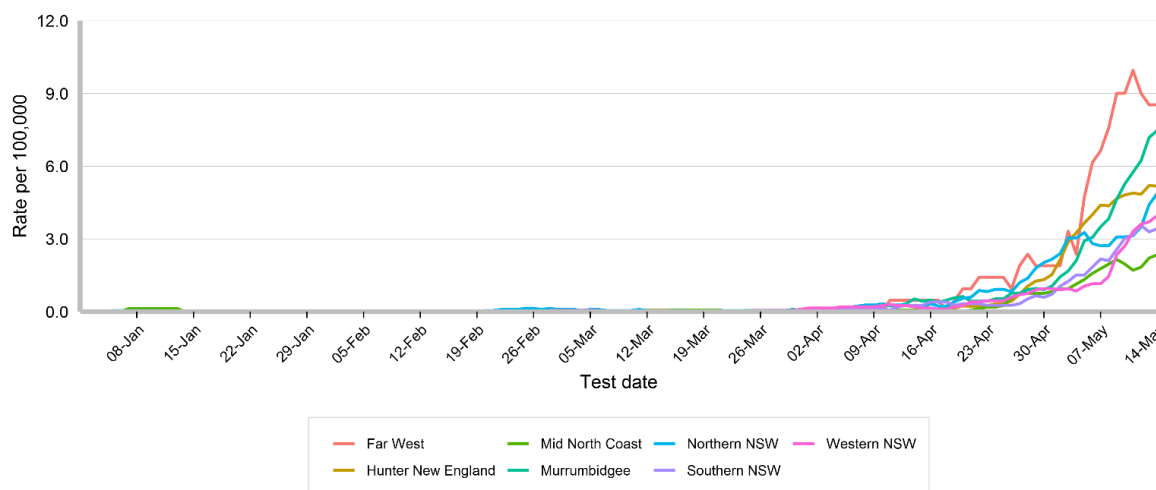


Figure 10. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by rural and regional Local Health District and test date, NSW, 1 January to 14 May 2022



- The rate of people reported with influenza per 100,000 population has increased in all age groups this week, except for people aged 20-29 years for who the rate has remained stable. The rate is highest in people aged 10-19 years, followed by people aged 0-9 years. The rate has also increased in all LHDs, with the highest rate in Central Coast LHD.

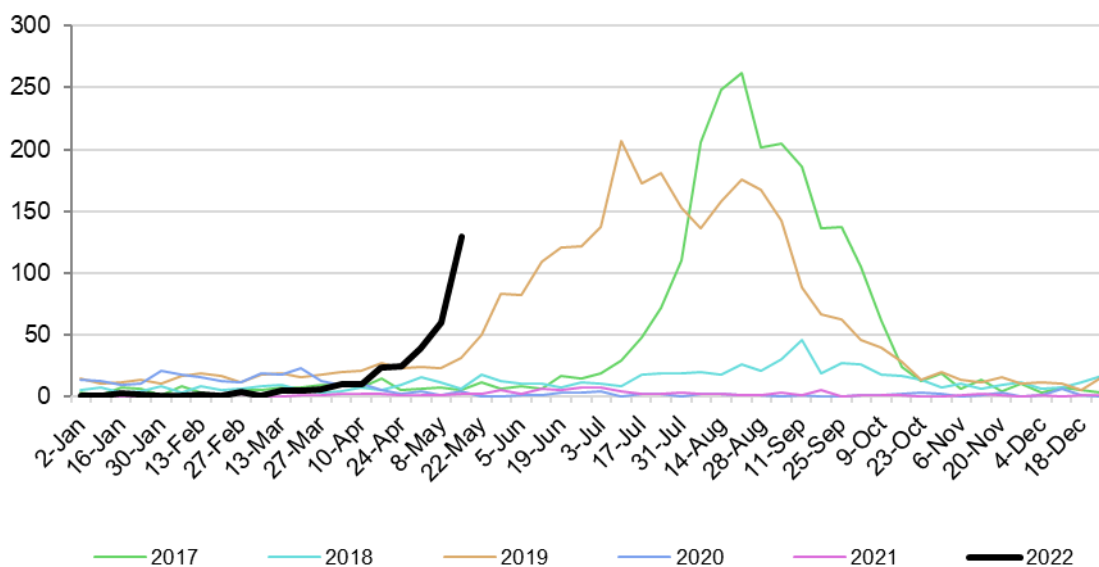
Emergency department and community surveillance

Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system

The NSW Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system provides daily monitoring of most unplanned presentations to NSW public hospital emergency departments (EDs) and all emergency Triple Zero (000) calls to NSW Ambulance. Emergency hospital presentations and ambulance calls are grouped into related acute illness and injury categories.

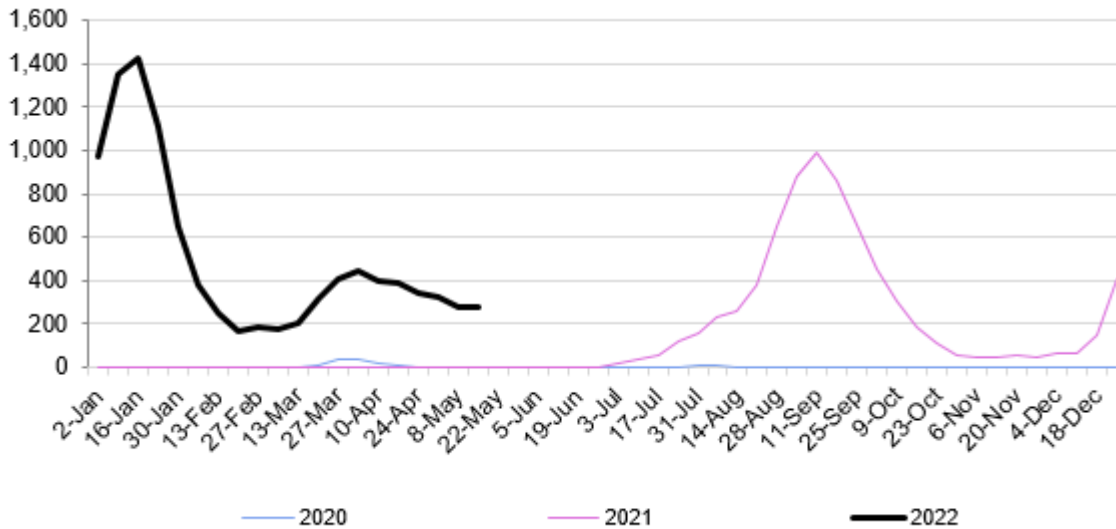
- The number of presentations and calls in each category is monitored over time to quickly identify unusual patterns of illness. Unusual patterns could signify an emerging outbreak of disease or issue of public health importance in the population. PHREDSS is also useful for monitoring the impact of seasonal and known disease outbreaks, such as seasonal influenza or gastroenteritis, on the NSW population.
- The 88 NSW public hospital EDs used in PHREDSS surveillance account for 95% of all ED activity in NSW public hospitals in 2020-2021, including most major metropolitan public hospitals (99%) and rural public hospitals (89%).
- The emergency department 'influenza-like illness' surveillance syndrome includes provisional diagnoses of ILI, influenza, including pneumonia with influenza and avian and other new influenza viruses. Influenza-like illness does not include COVID-19. The number of emergency department presentations for ILI reflects only a fraction of the impact of influenza on emergency departments but it is a useful marker of seasonal timing and trends. The number of presenting patients requiring an admission also provides an indication of severity.
- The emergency department 'coronaviruses/SARS' surveillance syndrome includes provisional diagnoses (SNOMEDCT and ICD-10-AM codes) for coronavirus infections SARS, MERS, COVID-19 or other coronaviruses, or clinical condition of Severe Acute Respiratory Syndrome (SARS). It excludes testing and suspected coronavirus codes. There are no IDC-9 codes for COVID-19, so COVID-19 ED presentations at Albury Hospital will be mapped to the fever/unspecified infection surveillance syndrome. A person with COVID-19 may be admitted for reasons other than COVID-19 and because of this the number of admissions from ED with a diagnosis of coronaviruses/SARS will be less than the number of confirmed cases of COVID-19 who are in hospital.

Figure 11. Weekly counts of unplanned emergency department (ED) presentations for 'influenza-like illness' that were admitted, for 2022 (black line), compared with the previous five years (coloured lines), persons of all ages, 88 NSW hospitals



- Emergency department presentations for influenza-like illness requiring an admission have increased to 129 (17.3% of all ILI presentations) compared to 60 admissions in the previous week. This represents 17.3% of all ILI emergency department presentations this week. The proportion of presentations that were admitted was highest for people aged 65 years and over at 60.3%, followed by 35-64 year olds (22.8%), 0-4 year olds (15.6%), 17-34 year olds (9.5%), and 5-16 year olds (6.4%).

Figure 12. Weekly counts of unplanned emergency department (ED) presentations for 'coronaviruses/SARS' that were admitted, for 2022 (black line), compared with the previous two years (coloured lines), persons of all ages, 88 NSW hospitals

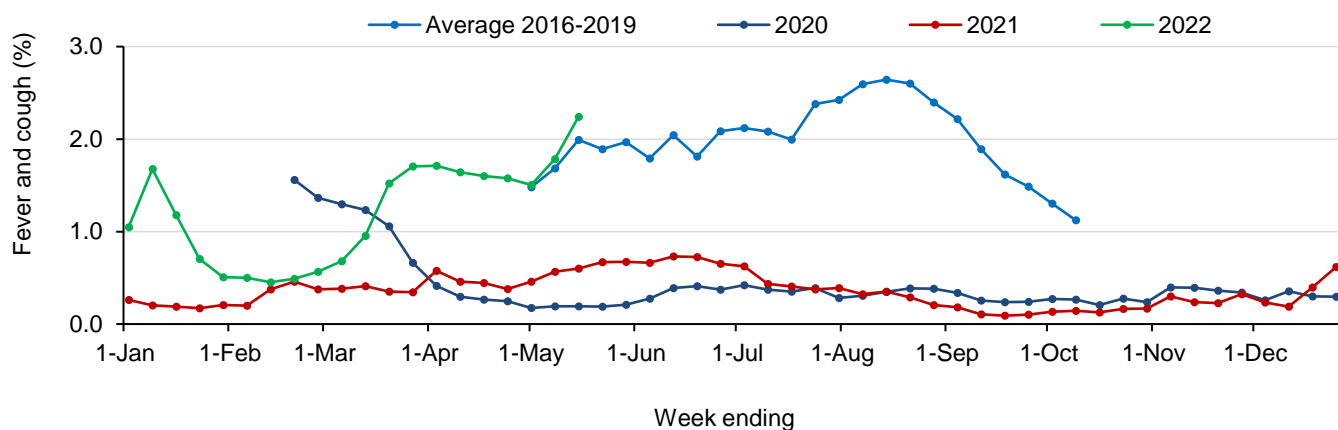


- Emergency department presentations for coronaviruses/SARS requiring an admission have decreased to 277 from 282 admissions in the previous week. There were 13 admissions for coronaviruses/SARS to a critical care ward from emergency departments this week.

FluTracking

FluTracking is an online health surveillance system used to detect epidemics of influenza across Australia and New Zealand. Participants complete an online survey each week to provide community level influenza-like illness surveillance, consistent surveillance of influenza activity across all jurisdictions over time, and year to year comparisons of the timing, attack rates and seriousness of influenza in the community. More information about FluTracking and ways to be involved are available here: <https://info.flutracking.net/about/>

Figure 15. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 15 May 2022

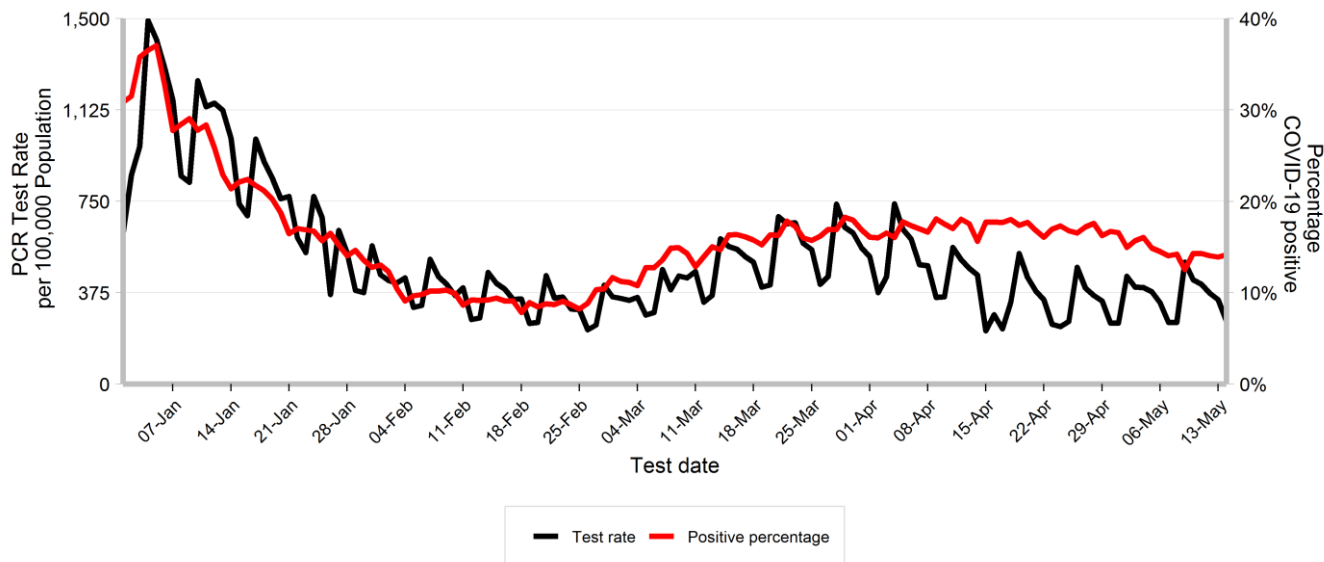


- The proportion of FluTracking participants reporting influenza-like illness has increased sharply in the last two weeks.
- Additional FluTracking reports are available at: <https://info.flutracking.net/reports-2/australia-reports/>

LABORATORY SURVEILLANCE

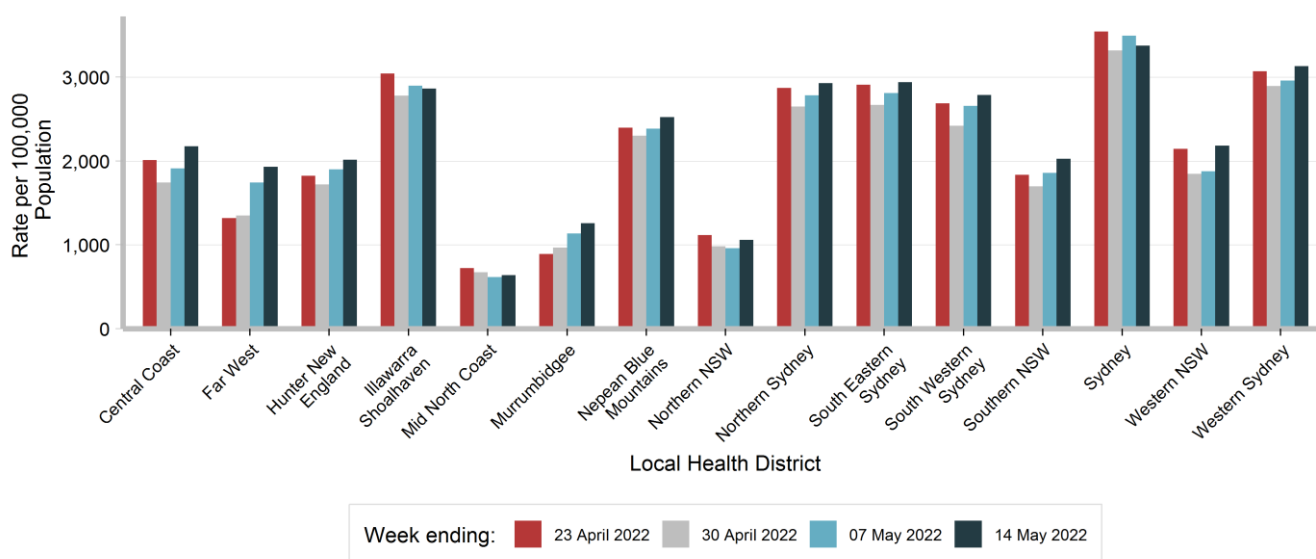
COVID-19 PCR testing

Figure 16. Rate of PCR tests for COVID-19 per 100,000 population per day, and percentage of PCR tests which were positive for COVID-19, by test date, NSW, 1 January to 14 May 2022



- There were 221,402 PCR tests reported this week. This is a 4% increase compared to 212,393 PCR tests reported in the previous week.
- The percentage of PCR tests that were positive for COVID-19 has remained stable at 14%, the same as at the end of the previous week.

Figure 17. Rate of PCR tests for COVID-19 per 100,000 population by Local Health District and test date, NSW, in the four weeks to 14 May 2022



- The PCR testing rate increased in most LHDs this week, except for Illawarra Shoalhaven and Sydney LHDs.

COVID-19 Whole Genome Sequencing

Whole genome sequencing (WGS) is a laboratory procedure that identifies the genetic profile of an organism. WGS can help understand how a virus transmits, responds to vaccination and the severity of disease it may cause. It can also help to monitor the spread of the virus by identifying specimens that have are genomically similar. WGS has been used in NSW since the start of the COVID-19 pandemic to inform epidemiological investigations, and to monitor for and analyse the behaviour of new SARS-CoV-2 variants circulating in the community. WGS is conducted at three NSW reference laboratories. Prior to August 2021, low community transmission meant that most positive specimens were able to be sequenced. However, since that time high case numbers have required prioritisation of specimens for sequencing.

Specimens from people with COVID-19 who are admitted to hospital or an ICU are prioritised to identify and understand lineages with increased disease severity. Specimens from overseas arrivals are also prioritised to monitor for the introduction of new variants into the community. This is not a random sample, therefore the proportion of sequences identified is not necessarily reflective of their distribution in the community. There is a lag between the date a PCR test is taken and the date that the results of WGS are reported, therefore the count of sequences for recent dates will increase over time.

Variants of Concern

- Like all viruses, the SARS-CoV-2 virus changes over time. The World Health Organization monitors these changes and classifies lineages according to the risk that they pose to global public health. Those that they identify as having changes that increase transmissibility, increase virulence, or decrease the effectiveness of vaccines or treatments are designated as variants of concern (VOCs).

Table 3. Variants of concern (VOCs) identified by whole genome sequencing (WGS) of virus from people who tested positive for SARS CoV-2 by PCR, by test date, NSW, in the four weeks to 14 May 2022

Variant	Week ending			
	23 April	30 April	07 May	14 May
Omicron (BA.1)	12	24	2	0
Omicron (BA.2)	429	488	428	12
Omicron (BA.2.12.1)	4	16	15	0
Omicron (BA.4)	4	6	9	0
Omicron (BA.5)	2	1	9	0
Recombinant BA.1/BA.2 (unclassified)*	1	0	1	0
Total	452	535	464	12

* Recombinant virus sequences occur when two separate virus strains merge, forming a new, single strain that contains genomic regions of both co-infecting strains.

- The Omicron variant (B.1.1.529) is currently the dominant COVID-19 variant circulating in the NSW community. Most recent specimens have been identified as the BA.2 sub-lineage.

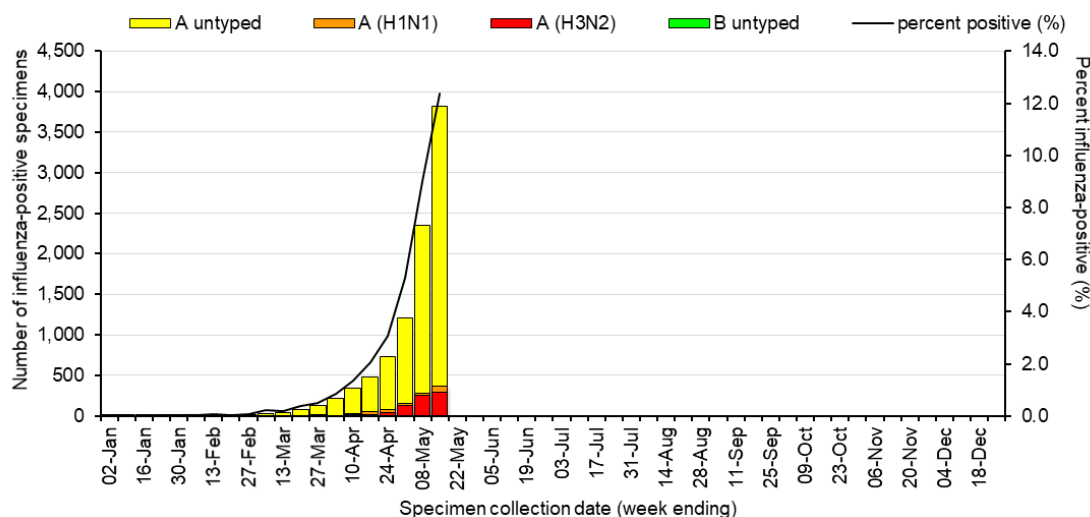
S Gene detection as a proxy for the BA.2 omicron sub-lineage

- The BA.1, BA.4 and BA.5 sub-lineages of the Omicron variant have a mutation that results in a failure of certain PCR test platforms to detect the S gene. This mutation is typically not present in the BA.2 sub-lineage, and therefore the detection of an S gene can be used as a proxy to estimate the prevalence of BA.2 in the community.
- A PCR testing platform used by a large private pathology provider in NSW can routinely report on detection of the S gene in a specimen positive for SARS-CoV-2. Around 98% of SARS-CoV-2 positive specimens currently have an S gene detected. This indicates that the BA.2 sub-lineage likely makes up around 98% of the SARS-CoV-2 detected in NSW. The S gene failure specimens have been prioritised for WGS, with the majority of these now being identified as BA.4 and BA.5, rather than BA.1.

Influenza and other respiratory viruses

The NSW sentinel laboratory network comprises of 13 public and private laboratories throughout NSW who provide additional data on positive and negative test results. This helps us to understand which respiratory viruses which are circulating as well as how much.

Figure 18. Number and proportion of tests positive for influenza at sentinel NSW laboratories, 1 January to 15 May 2022



- Of the 30,801 tests conducted for influenza, the proportion positive has increased to 12.4% from 9.0% in the previous week.

Figure 19. Number of positive PCR test results for other respiratory viruses at sentinel NSW laboratories, 1 January to 15 May 2022

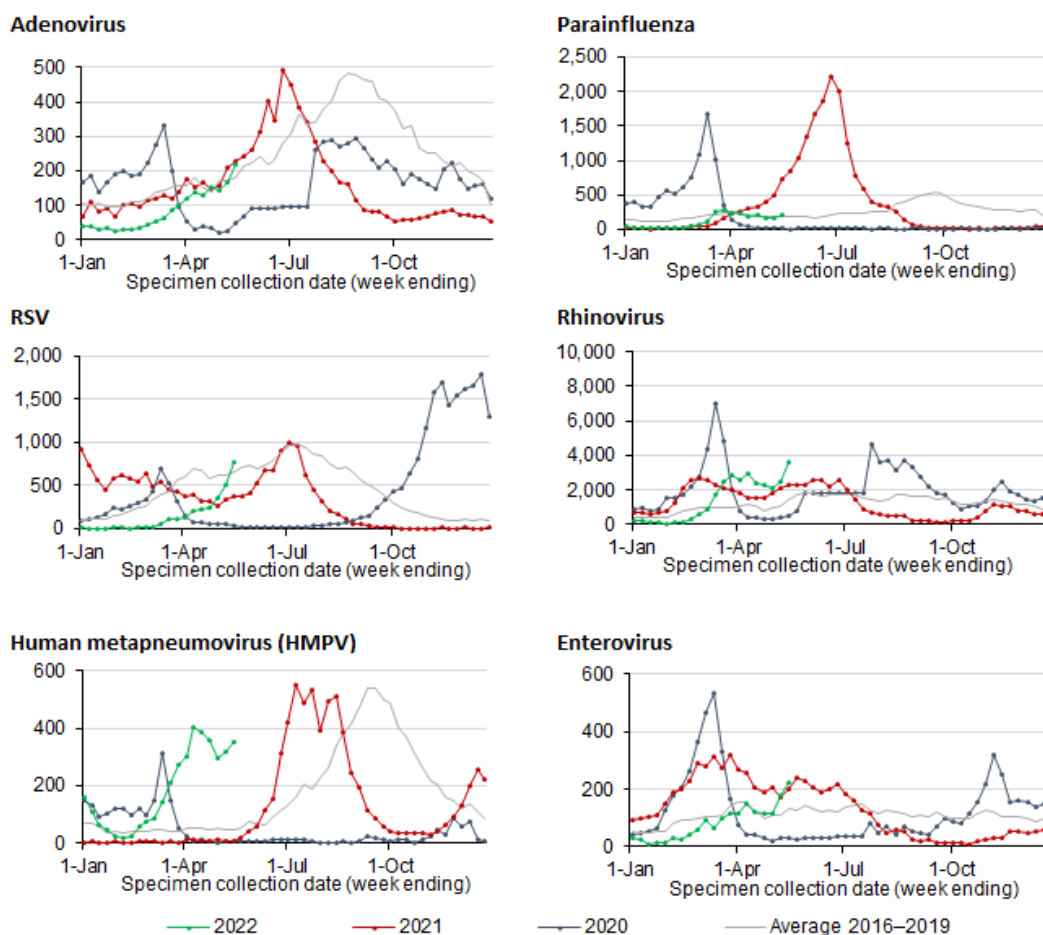


Table 4. Total number of respiratory disease notifications from sentinel laboratories, NSW in the four weeks to 15 May, 2022

	Week ending				Year to date
	24 April	1 May	8 May	15 May*	
Adenovirus	153	143	169	221	1,644
Parainfluenza	207	168	162	209	2,377
Respiratory syncytial virus (RSV)	245	357	508	766	2,784
Rhinovirus	2,286	2,056	2,470	3,577	27,825
Human metapneumovirus (HMPV)	357	298	316	351	3,549
Enterovirus	117	117	175	224	1,599
Number of PCR tests conducted	23,727	22,689	26,057	30,801	354,743

* Recent data is subject to change. For the week ending 15 May 2022, 11 out of 13 sentinel laboratories have provided testing data at the time of reporting.

- Notifications of respiratory syncytial virus (RSV) have been increasing since the beginning of April. There were 766 cases notified this week, up from 508 cases notified last week.
- Emergency department surveillance shows that presentations and admissions from emergency departments for bronchiolitis have also increased sharply in recent weeks. There were 355 presentations for bronchiolitis this week, up from 215 presentations in the previous week, with 40.6% of presentations being admitted to hospital. Bronchiolitis is a clinical diagnosis and is usually caused by RSV. It most often affects young children and babies under the age of two. The RSV factsheet has more information:
<https://www.health.nsw.gov.au/Infectious/factsheets/Pages/respiratory-syncytial-virus.aspx>