

## NSW Respiratory Surveillance Report week ending 7 May 2022

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### COVID-19 summary

- The rate of people diagnosed with COVID-19 per 100,000 population decreased or remained stable in all age groups and Local Health Districts, except for Far West NSW which has had an increase in cases this week. PCR testing has increased, with 178,626 PCR tests for COVID-19 reported this week, an increase of 7% since the previous week. The proportion of PCR tests that were positive COVID-19 has decreased to 14%.
- The seven-day rolling average of daily hospital and ICU admissions decreased this week. Hospital admissions decreased to an average of 87 daily admissions from 124 last week and ICU admissions decreased to an average of 8 daily admissions from 12 last week. Hospital admissions include those for COVID-19 as well as those admitted for other reasons.
- There were 102 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

- Key indicators from hospital and laboratory surveillance indicate that influenza activity in the community is continuing to increase indicating a likely early start to the winter influenza season.
  - The rate of people reported with influenza per 100,000 population has increased in all Local Health Districts and age groups except for those aged 20 to 29 years this week.
  - Of the 25,556 tests conducted for influenza, the proportion positive has increased to 9.1% from 5.3% in the previous week.
  - Emergency department presentations for influenza-like illness requiring an admission have increased to 58 compared to 39 admissions in the previous week. The greatest relative increase is in age groups 0-4 years old (9 compared to 8 in the previous week), 17-34 years old (14 compared to 8 in the previous week) and 65 years and older (20 compared to 10 in the previous week).
  - 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 characterisation, both H1N1 and H3N2 samples appear to be a good match to the vaccine.
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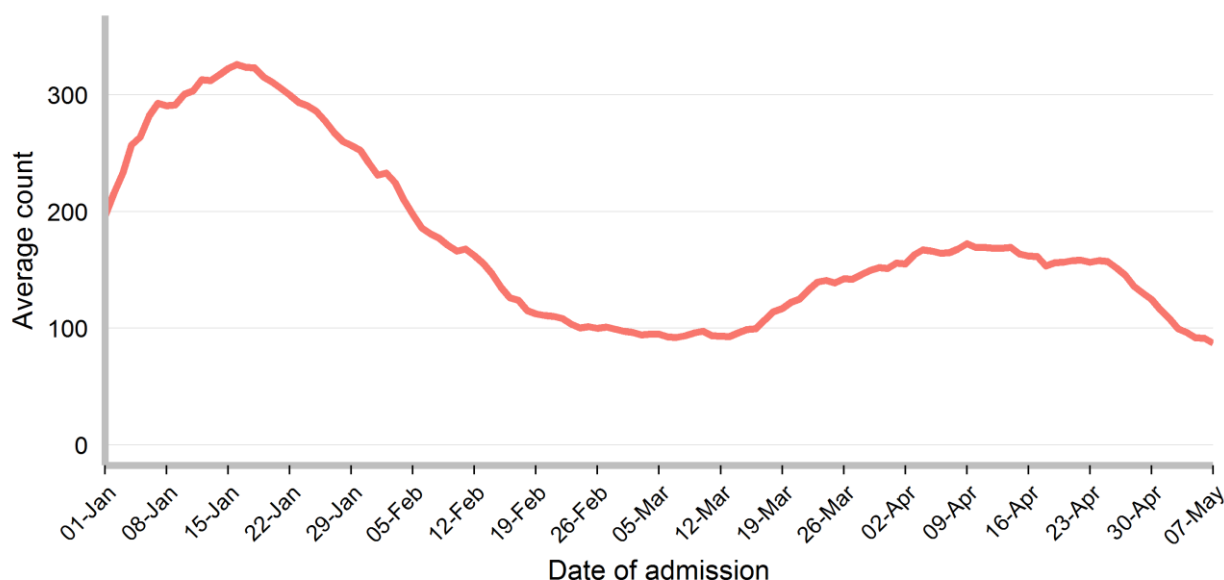
## Data sources

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.

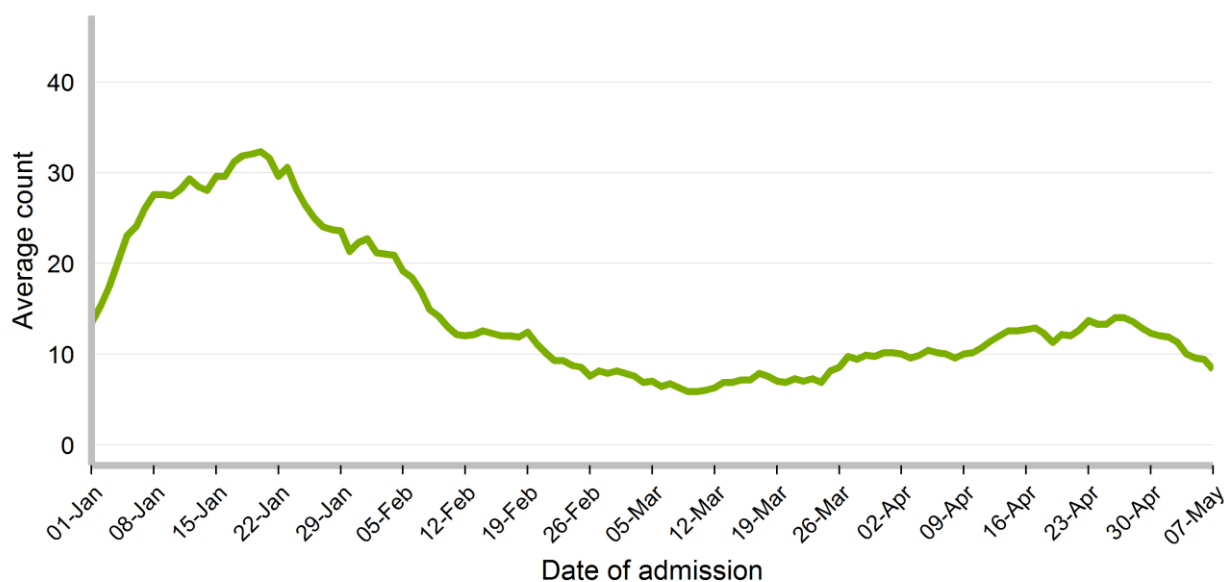
### COVID-19 hospital admissions, intensive care admissions, and deaths

- 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 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 because some people with COVID-19 who are admitted to hospital or ICU are admitted for conditions unrelated to their COVID-19 infection, 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 7 May 2022**



**Figure 2. Daily seven-day rolling average of people with COVID-19 admitted to intensive care units, NSW, 1 January to 7 May 2022**



## Epidemiological week 18, ending 7 May 2022

- Hospital admissions and ICU admissions in people with COVID-19 have decreased in the last week.
  - 610 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 87 admissions by the end of this week, compared with 124 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 intensive care unit (ICU) admissions decreased to an average of 8 admissions by the end of this week, compared with 12 admissions at the end of the previous week.

## Epidemiological week 18, ending 7 May 2022

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 7 May 2022

	Admitted to hospital (but not to ICU)	Admitted to ICU	Deaths
<b>Gender</b>			
Female	289	21	42
Male	259	40	60
Not stated / inadequately described	1	0	0
<b>Age group</b>			
0-9	37	1	0
10-19	16	2	0
20-29	37	3	0
30-39	45	1	0
40-49	24	2	1
50-59	45	7	2
60-69	54	11	12
70-79	103	20	16
80-89	126	12	30
90+	62	2	41
<b>Local Health District</b>			
Central Coast	32	4	1
Illawarra Shoalhaven	25	4	3
Nepean Blue Mountains	17	3	2
Northern Sydney	40	9	9
South Eastern Sydney	76	8	23
South Western Sydney	94	9	8
Sydney	63	5	15
Western Sydney	43	3	7
Far West	1	0	0
Hunter New England	65	4	16
Mid North Coast	11	0	0
Murrumbidgee	13	3	6
Northern NSW	21	2	3
Southern NSW	7	4	5
Western NSW	28	3	3
<b>Vaccination status</b>			
Three or more doses	284	25	62
Two doses	121	21	17
One dose	8	1	3
No dose/Unknown	160	16	20
<b>Total</b>	<b>573</b>	<b>63</b>	<b>102</b>

- Of the 102 people who were reported to have died with COVID-19, 43 were aged care residents. Twelve of these people died in hospital and 31 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, one was unvaccinated, one had received two doses and three 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.

Epidemiological week 18, ending 7 May 2022

## Notifications of COVID-19 and influenza

Table 2. Number of notifications of COVID-19 and influenza, by age group and Local Health District, NSW, reported in the week ending 7 May 2022

	Week ending 7 May 2022			Year total		
	COVID-19		influenza	COVID-19		influenza
	PCR	RAT		PCR	RAT	
<b>Age group</b>						
0-4	1,582 (46%)	1,885 (54%)	143	52,912 (58%)	37,873 (42%)	464
5-9	1,056 (29%)	2,628 (71%)	157	63,898 (45%)	78,287 (55%)	434
10-19	2,480 (31%)	5,592 (69%)	563	145,659 (46%)	168,201 (54%)	1,139
20-29	4,767 (45%)	5,873 (55%)	467	206,698 (63%)	123,721 (37%)	1,131
30-39	5,593 (45%)	6,816 (55%)	234	193,157 (58%)	140,095 (42%)	580
40-49	4,591 (44%)	5,730 (56%)	153	156,772 (56%)	121,518 (44%)	342
50-59	4,778 (50%)	4,709 (50%)	116	122,505 (63%)	73,108 (37%)	267
50-69	3,936 (55%)	3,175 (45%)	75	84,065 (67%)	42,204 (33%)	177
70-79	2,560 (60%)	1,739 (40%)	59	45,027 (69%)	20,215 (31%)	133
80-89	1,198 (68%)	567 (32%)	26	19,049 (75%)	6,488 (25%)	56
90+	333 (80%)	82 (20%)	6	5,909 (82%)	1,327 (18%)	16
<b>Local Health District*</b>						
Central Coast	1,268 (41%)	1,845 (59%)	129	42,200 (50%)	41,911 (50%)	236
Illawarra Shoalhaven	1,931 (50%)	1,951 (50%)	108	61,176 (58%)	44,861 (42%)	278
Nepean Blue Mountains	1,590 (45%)	1,973 (55%)	71	53,827 (56%)	43,030 (44%)	134
Northern Sydney	4,202 (47%)	4,686 (53%)	275	119,795 (56%)	95,717 (44%)	575
South Eastern Sydney	4,096 (54%)	3,501 (46%)	359	141,241 (63%)	83,399 (37%)	845
South Western Sydney	3,963 (53%)	3,545 (47%)	148	161,856 (65%)	85,494 (35%)	569
Sydney	3,647 (58%)	2,651 (42%)	177	105,956 (64%)	58,482 (36%)	523
Western Sydney	4,825 (55%)	3,875 (45%)	247	174,798 (67%)	87,924 (33%)	744
Far West	94 (22%)	331 (78%)	13	1,950 (33%)	3,961 (67%)	21
Hunter New England	3,643 (37%)	6,092 (63%)	256	108,163 (49%)	113,595 (51%)	380
Mid North Coast	225 (16%)	1,217 (84%)	27	12,606 (30%)	29,043 (70%)	47
Murrumbidgee	594 (22%)	2,115 (78%)	72	22,544 (38%)	37,001 (62%)	117
Northern NSW	561 (23%)	1,901 (77%)	58	24,055 (43%)	31,567 (57%)	142
Southern NSW	721 (37%)	1,228 (63%)	31	18,802 (47%)	21,290 (53%)	52
Western NSW	941 (35%)	1,773 (65%)	23	29,756 (47%)	33,156 (53%)	62
<b>Total</b>	<b>32,301 (46%)</b>	<b>38,684 (54%)</b>	<b>2,000</b>	<b>1,078,725 (57%)</b>	<b>810,431 (43%)</b>	<b>4,741</b>

\*Excludes cases in correctional settings and hotel quarantine.

Figure 3. Number of people diagnosed with COVID-19, by date of test and type of test performed, NSW, 1 January to 7 May 2022

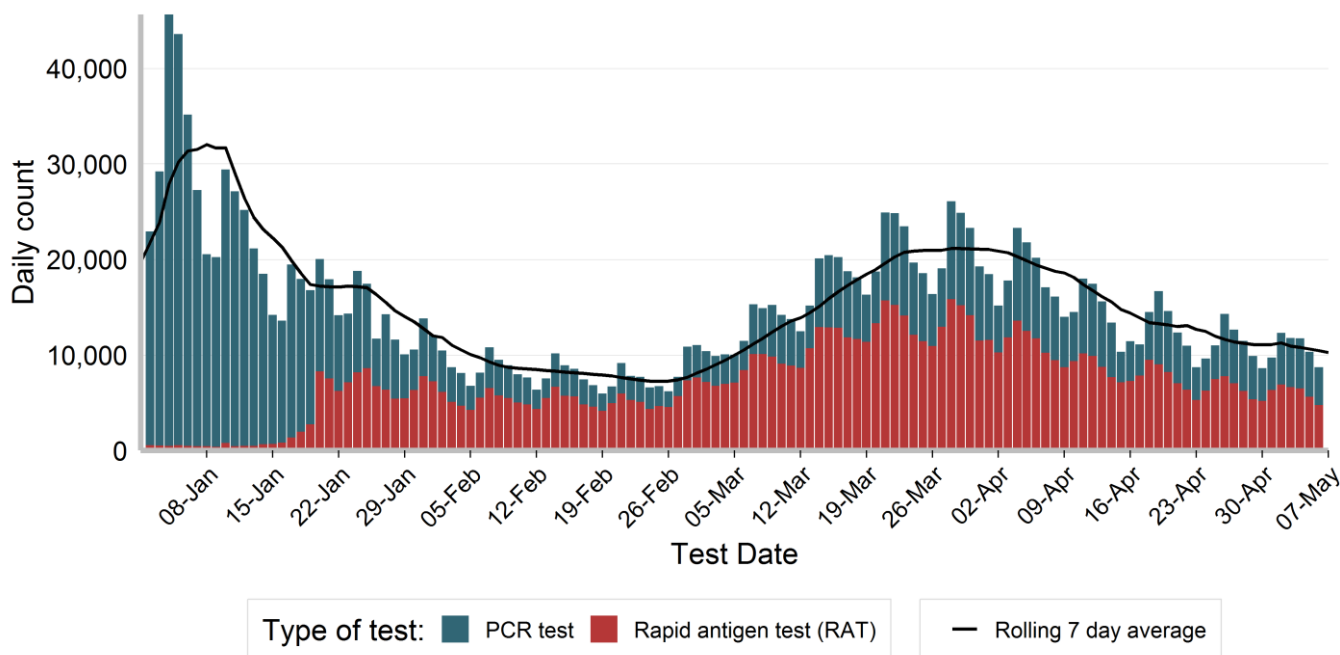
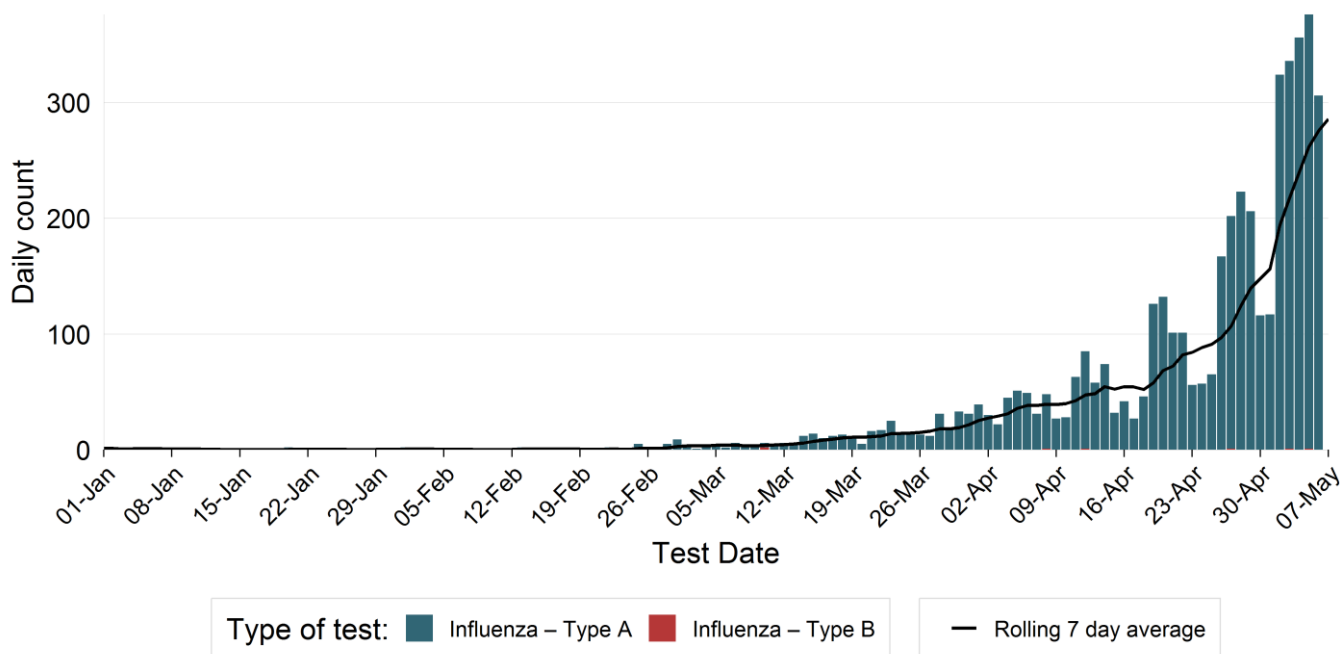


Figure 4. Number of people diagnosed with influenza, by date of test and type, NSW, 1 January to 7 May 2022



- There were 71,617 people diagnosed with COVID-19 this week, a decrease of 8% since the previous week.
- There were 2,000 people diagnosed with influenza this week, an increase of 93% 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 7 May 2022

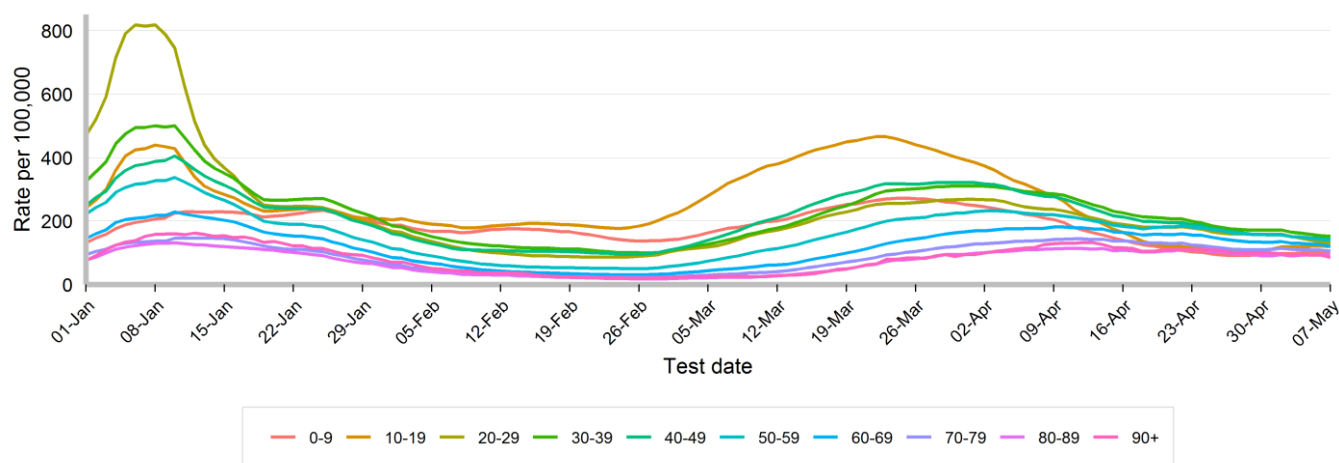


Figure 6. Daily seven-day rolling average rate of people reported with COVID-19 per 100,000 population, by metropolitan Local Health District and test date, NSW, in the four weeks to 7 May 2022

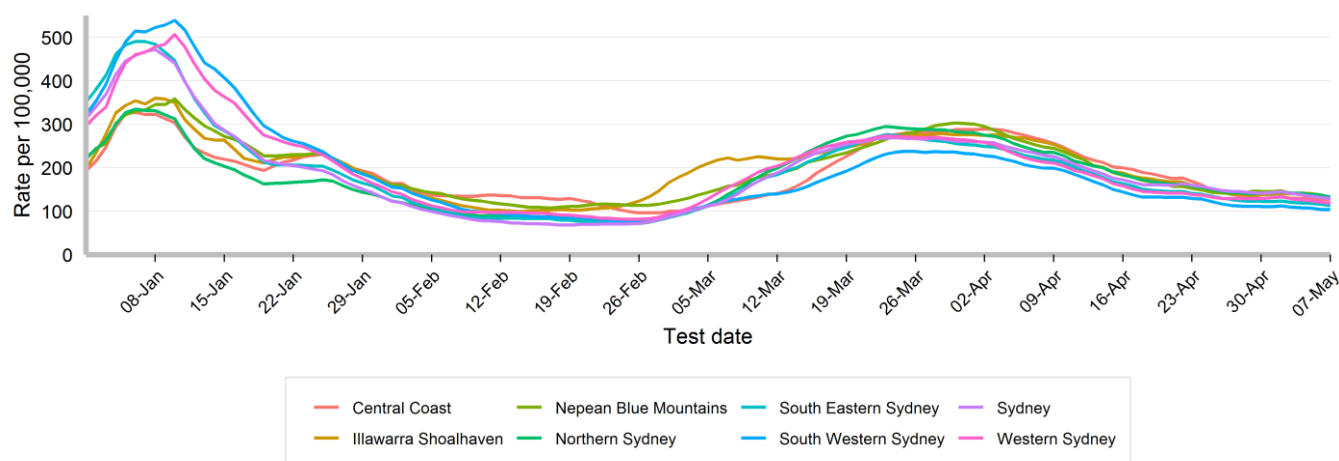
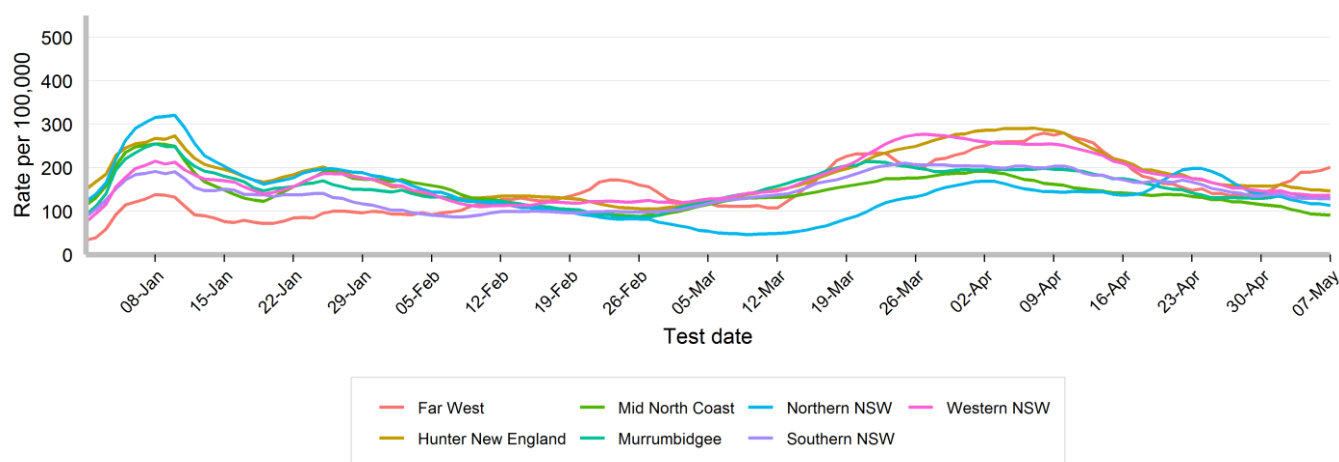


Figure 7. Daily seven-day rolling average rate of people reported with COVID-19 per 100,000 population, by rural and regional Local Health District and test date, NSW, in the four weeks to 7 May 2022



- The rate of people reported with COVID-19 per 100,000 population has decreased or remained stable in all age groups and Local Health Districts this week, except for Far West LHD where the rate has increased.



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 7 May 2022

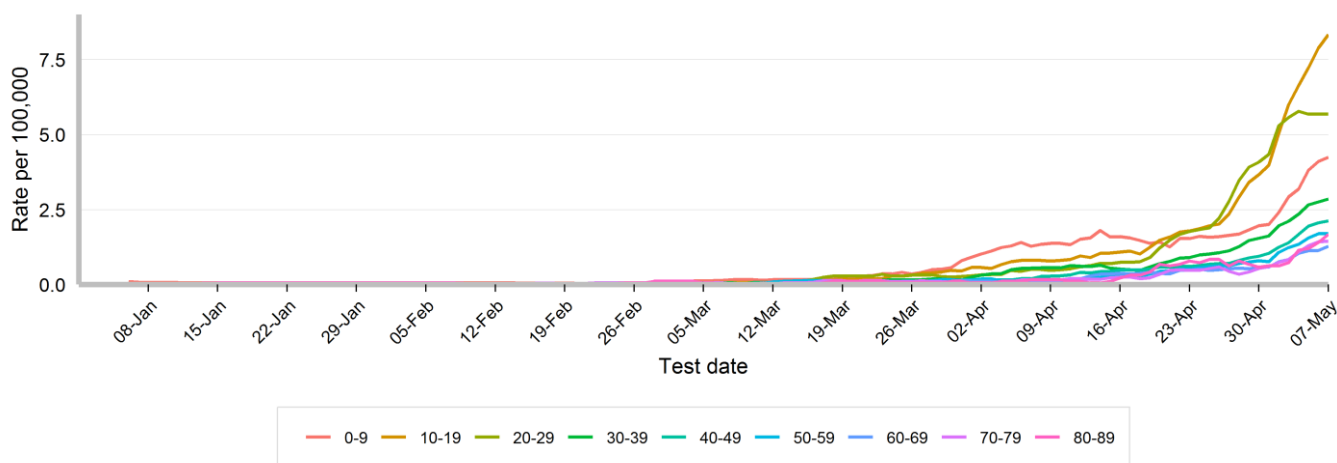


Figure 9. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by metropolitan Local Health District and test date, NSW, 1 January to 7 May 2022

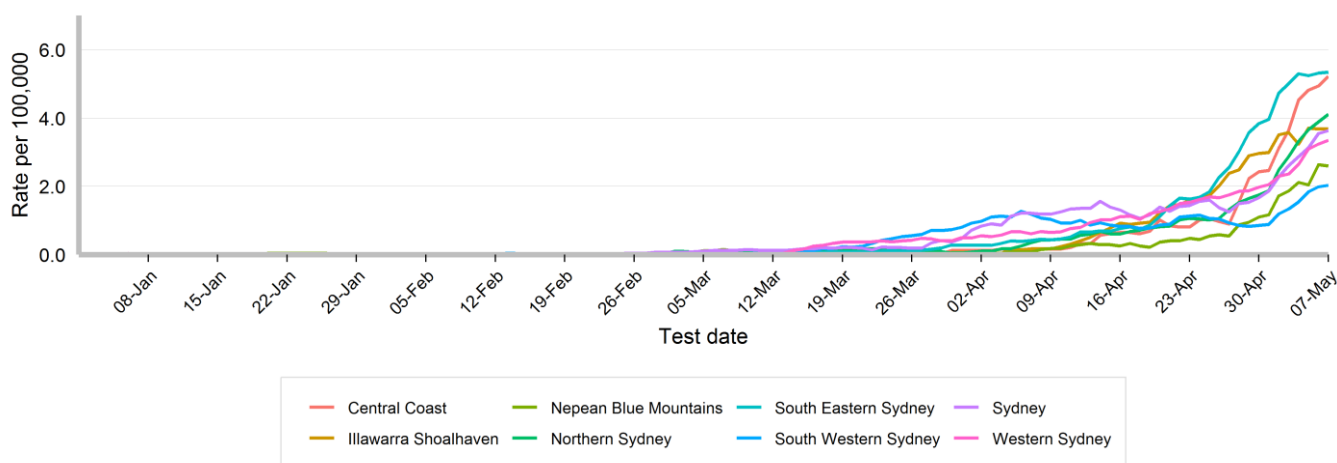
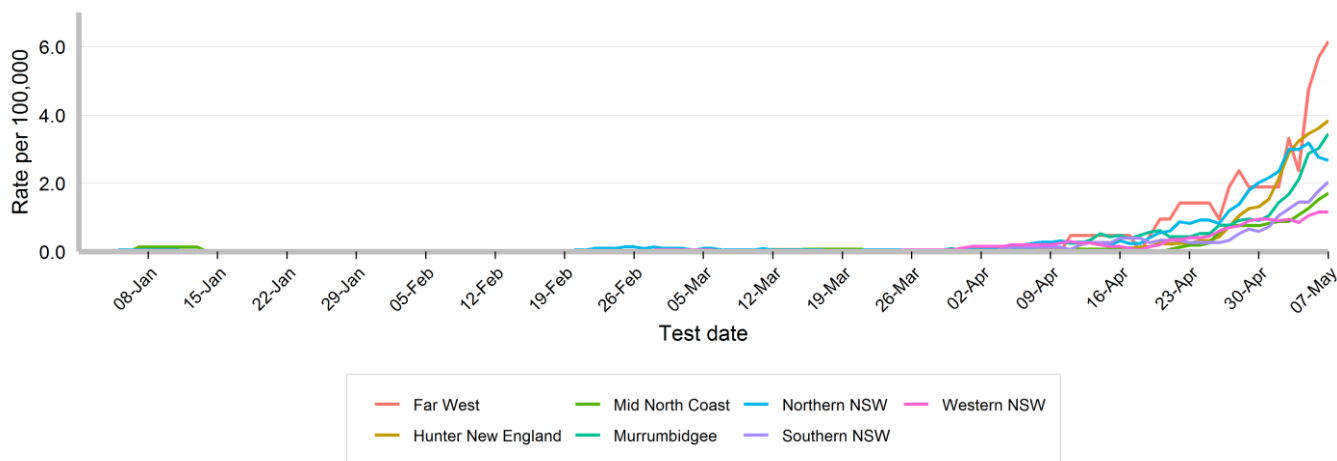


Figure 10. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by rural and regional Local Health District and test date, NSW, 1 January to 7 May 2022



- The rate of people reported with influenza per 100,000 population has increased in all age groups and Local Health Districts this week.

## Emergency department and community surveillance

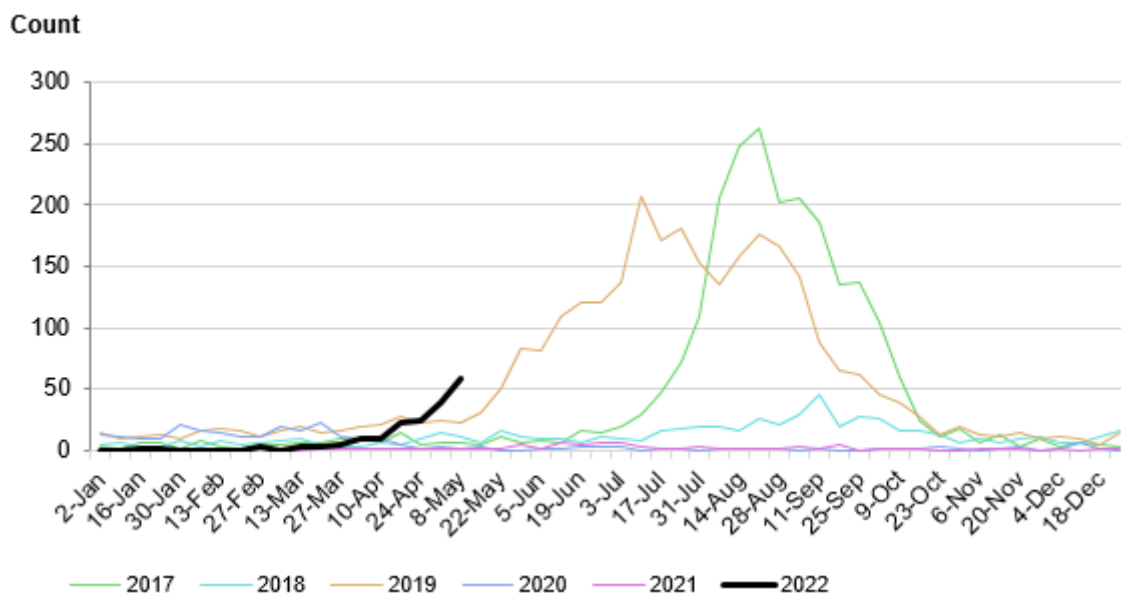
### Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system

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 influenza-like illness (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 requiring an admission also provides an indication of severity.

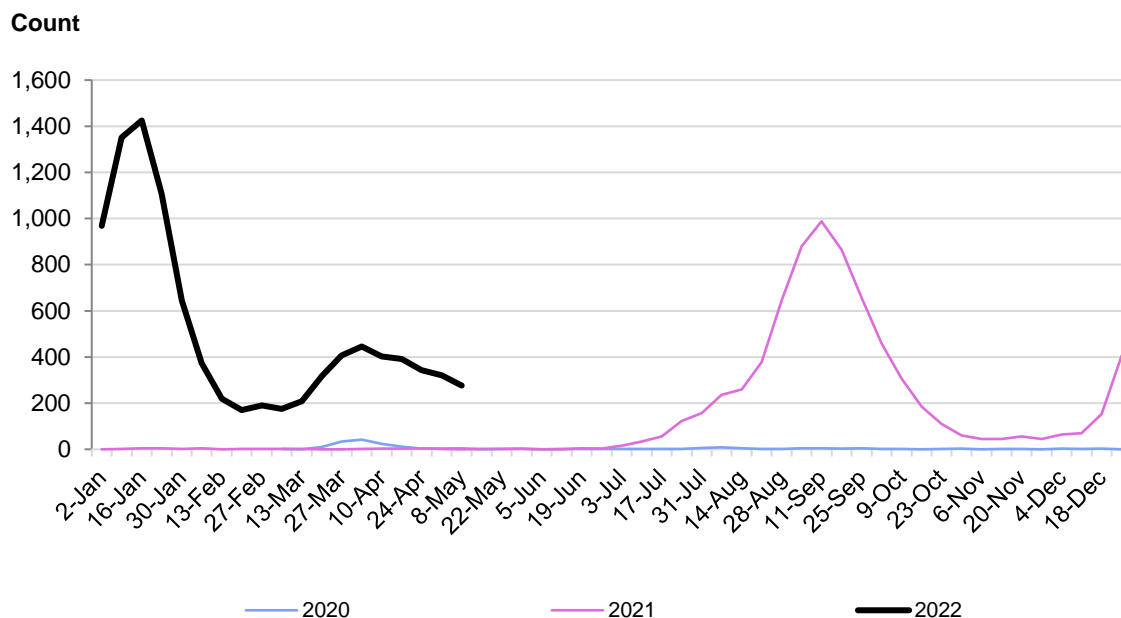
The emergency department ‘coronaviruses/SARS’ surveillance syndrome includes provisional diagnoses (SNOMED-CT and ICD-10-AM codes) for coronavirus infections SARS, MERS, COVID-19 or other coronaviruses, or clinical condition of Severe Acute Respiratory Syndrome (SARS). It excludes testing and suspected 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. 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 5 previous years (coloured lines), persons of all ages, 88 NSW hospitals



- Emergency department presentations for influenza-like illness requiring an admission have increased to 58 compared to 39 admissions in the previous week. This increase is most noticeable age groups 0-4 years old (9 compared to 8 in the previous week), 17-34 years old (14 compared to 8 in the previous week) and 65 years and older (20 compared to 10 in the previous week).

Figure 12. Weekly counts of unplanned emergency department (ED) presentations for coronaviruses/SARS, that were admitted, for 2022 (black line), compared with the 3 previous years (coloured lines), persons of all ages, 88 NSW hospitals

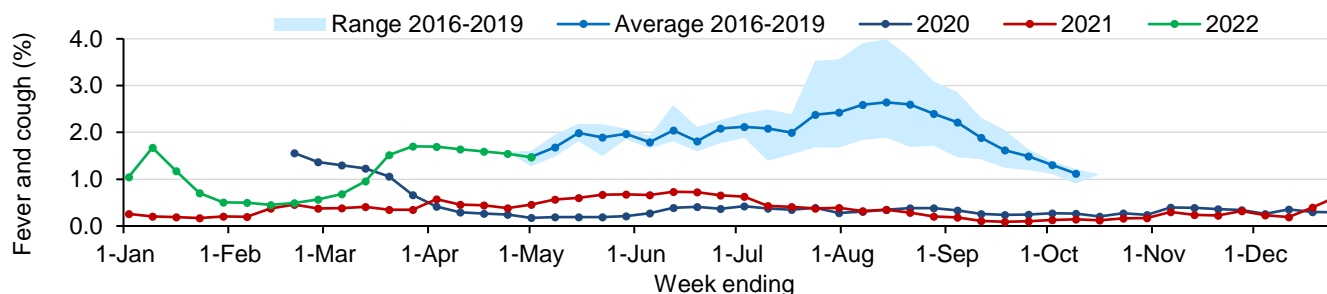


- Emergency department presentations for coronavirus/SARS requiring an admission have decreased to 276 compared to 321 in the previous week.

### 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 13. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 7 May 2022

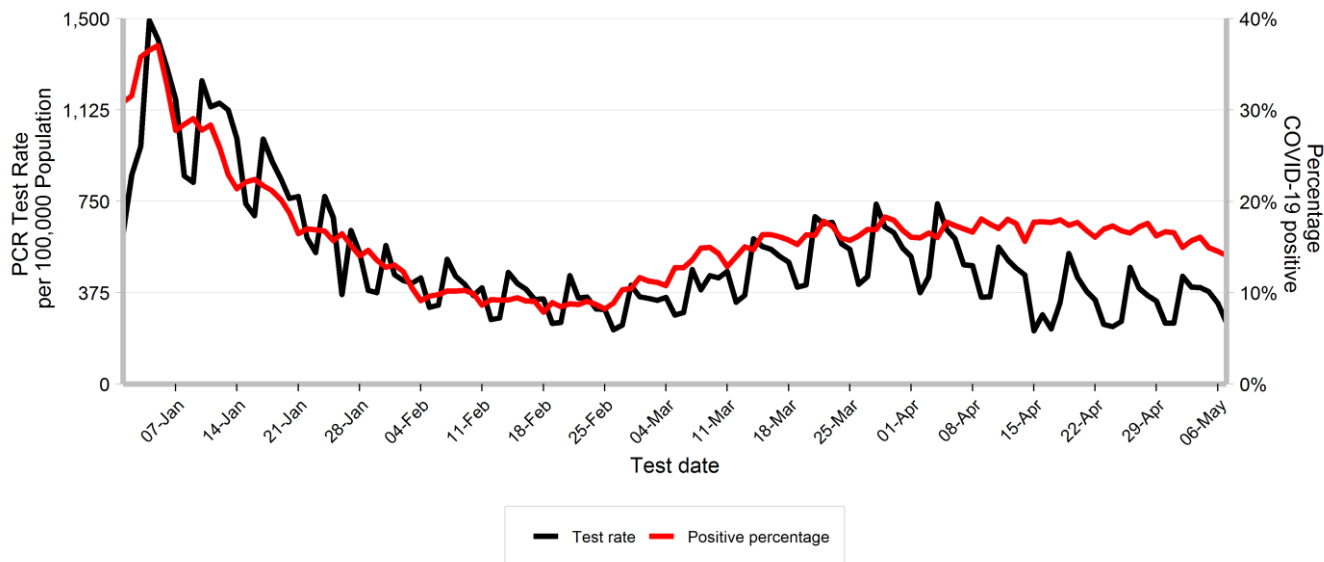


- The proportion of FluTracking participants reporting influenza-like illness has decreased over recent weeks.
- Additional FluTracking reports are available at: <https://info.flutracking.net/reports-2/australia-reports/>

## LABORATORY SURVEILLANCE

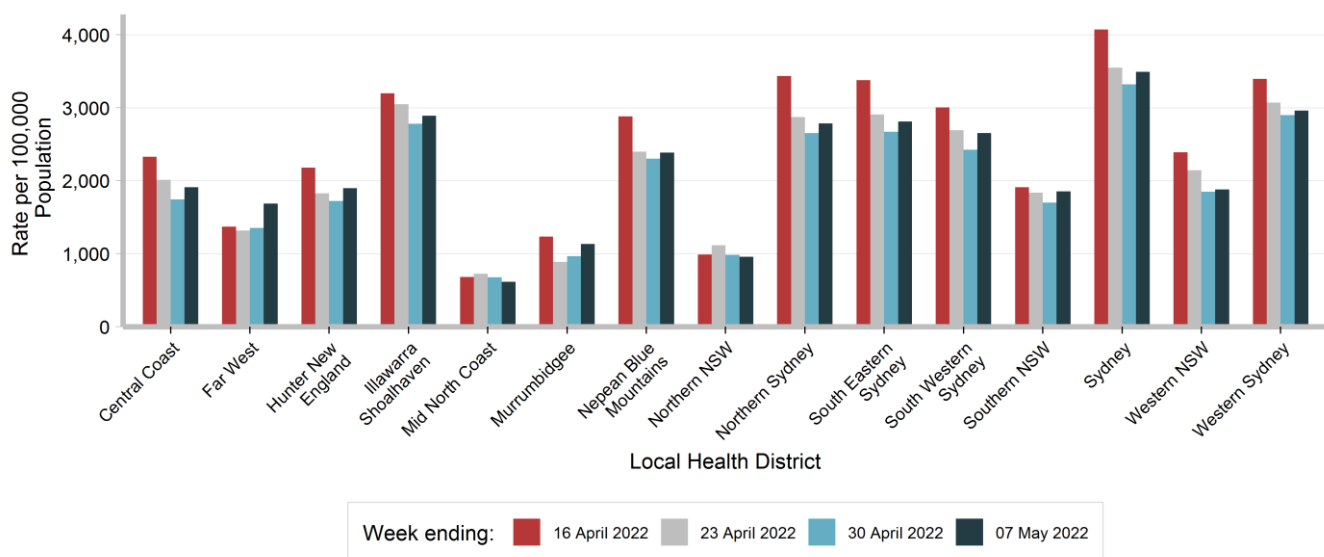
### COVID-19 PCR testing

Figure 14. 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 7 May 2022



- There were 178,626 PCR tests reported in the week ending 7th May 2022. This is a 7% increase compared to 166,360 PCR tests reported in the previous week.
- The percentage of PCR tests that were positive for COVID-19 has decreased to 14% from 17% at the end of the previous week.

Figure 15. Rate of PCR tests for COVID-19 per 100,000 population by Local Health District and test date, NSW, in the four weeks to 7 May 2022



- The PCR testing rate increased in most Local Health Districts (LHDs) this week, except for Mid North Coast and Northern NSW 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 Intensive Care Unit (ICU) are prioritised to identify and understand lineages with increased disease severity. Specimens from returned travellers 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 7 May 2022**

Variant	Week ending			
	16 April	23 April	30 April	07 May
Omicron (BA.1)	15	11	23	0
Omicron (BA.2)	472	411	326	5
Omicron (BA.2.12.1)	2	4	16	7
Omicron (BA.4)	0	4	4	5
Omicron (BA.5)	0	2	2	4
Recombinant BA.1/BA.2 (unclassified) <sup>^</sup>	0	1	0	1
<b>Total</b>	<b>489</b>	<b>433</b>	<b>371</b>	<b>16</b>

<sup>^</sup> 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.
- Twenty-nine BA.2.12.1 sequences have been identified in NSW to date. BA.2.12.1 is a sub-lineage of Omicron BA.2 and is being monitored closely after community transmission of the sub-lineage has been identified in the United States. The transmissibility and severity of this sub-lineage is currently unknown, and evidence is being gathered internationally.
- A new recombinant BA.1/BA.2 sequence has been identified in a specimen collected in the week ending 7 May 2022. The specimen was collected from a recent overseas arrival. The sequence does not belong to any established SARS-CoV-2 lineages and does not match any other sequences reported internationally. No community transmission of the sequence has been identified at the time of reporting.

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

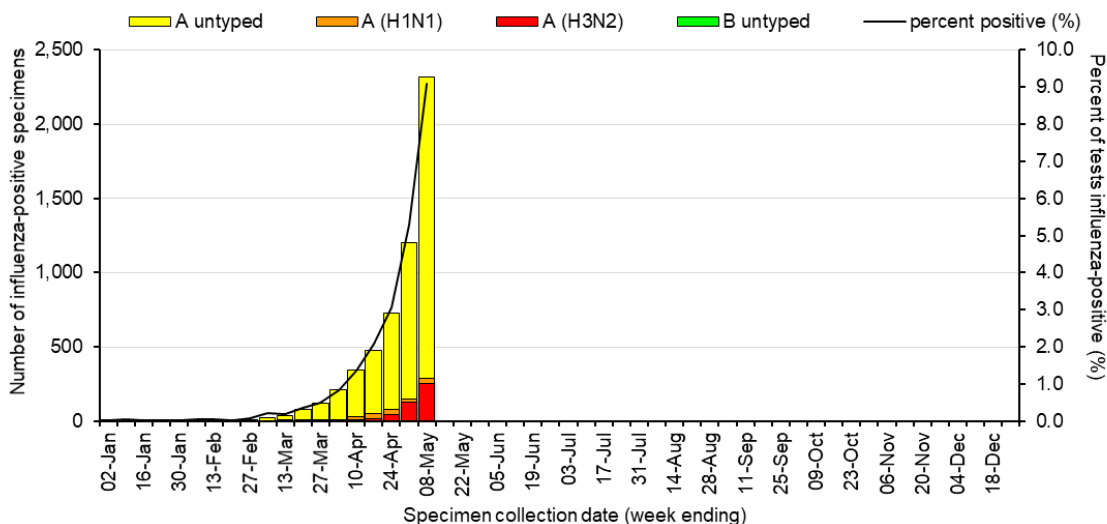
- The BA.1, BA.4 and BA.5 sub-lineages of the Omicron variant have a mutation that results in a failure of certain PCR test platforms to detect the S gene. This mutation is typically not present in the BA.2 sub-lineage, and therefore the detection of an S gene can be used as a proxy to estimate the prevalence of BA.2 in the community.

- The PCR test 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 most identified as BA.1 and a small proportion identified as BA.4 and BA.5.

### Influenza and other respiratory viruses

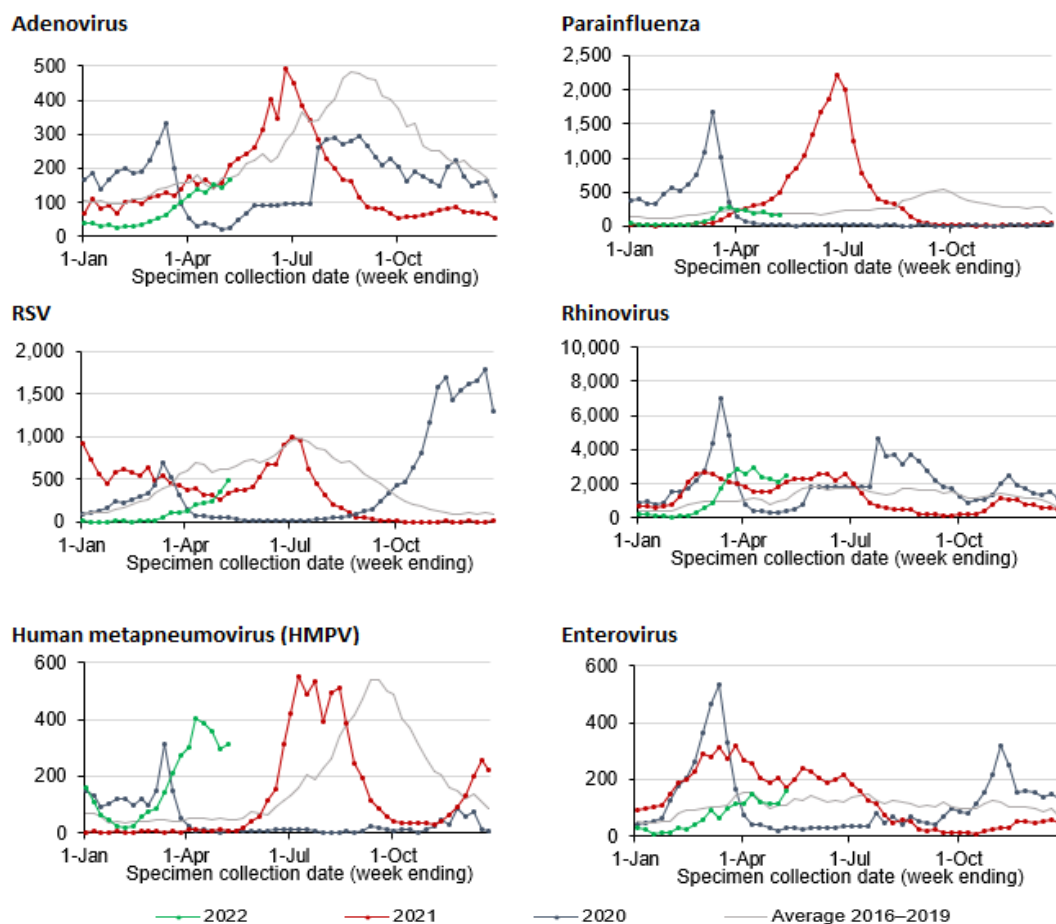
The NSW sentinel laboratory network comprises of 13 public and private laboratories throughout NSW who provide additional data on positive and negative test results. This helps us to understand respiratory viruses which are circulating as well as how much.

Figure 16. Number and proportion of tests positive for influenza at sentinel NSW laboratories, 1 January to 8 May 2022



- Of the 25,556 tests conducted for influenza, the proportion positive has increased to 9.1% from 5.3% in the previous week.

Figure 19. Number of positive PCR test results for other respiratory viruses at sentinel NSW laboratories, 1 January to 8 May 2022



## Epidemiological week 18, ending 7 May 2022

Table 4. Total number of respiratory disease notifications from sentinel laboratories, NSW in the four weeks to 8 May 2022

	Week ending				Year to date
	17 April	24 April	1 May	08 May*	
Adenovirus	127	153	143	142	1,421
Parainfluenza	191	207	168	142	2,164
Respiratory syncytial virus (RSV)	232	245	357	439	2,006
Rhinovirus	2,388	2,286	2,056	2,184	24,218
Human metapneumovirus (HMPV)	386	357	298	282	3,195
Enterovirus	119	117	117	128	1,360
<b>Number of PCR tests conducted</b>	<b>23,015</b>	<b>23,727</b>	<b>22,689</b>	<b>25,556</b>	<b>323,441</b>

\* Recent data is subject to change. For the week ending 8 May 2022, 11 out of 13 sentinel laboratories have provided testing data at the time of reporting.