NSW Respiratory Surveillance Report - week ending 11 February 2023

COVID-19 Summary

- This week there has been a decrease in the number of people notified with COVID-19 and a reduction in the number of people with COVID-19 admitted to hospital.
- XBF is the most common variant circulating. BR.2, which was previously dominant, is now being outcompeted. There has been increased growth over last two weeks in XBB sub-lineages, including XBB.1.5
- There were 5,587 people diagnosed with COVID-19 this week, a decrease of 9% since the previous week.
- The seven-day rolling average of daily hospital admissions decreased to an average of 26 admissions by the end of this week, compared with 41 admissions at the end of the previous week. There were 180 people with COVID-19 admitted to hospital and 26 people admitted to ICU this week.
- Emergency department presentations for coronaviruses requiring an admission have decreased to 84 from 95 admissions in the previous week.
- There were 61 COVID-19 deaths reported this week. Deaths may not have occurred in the week in which they were reported.

Other respiratory viruses summary

- Influenza activity is currently at low levels with PCR positivity remaining below 2% for tests reported by the NSW sentinel laboratory network. Influenza activity in the northern hemisphere is falling following their early seasonal peak. Vaccination continues to be recommended.

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. Data in this report are collected for surveillance purposes and are indicative of trends. Data should not be compared between reports as data for previous weeks are updated when new information becomes available.

Changes to report

As of 10 February 2023, NSW Health will report only positive SARS-CoV-2 test results. Recent changes to the COVID-19 public health orders for COVID-19 means it is no longer necessary for laboratories to provide data on negative PCR test results, in line with other diseases. Positive COVID-19 results, through both PCR tests and notified rapid antigen test results, will continue to be reported. NSW Health uses a wide range of surveillance systems, including hospital data, sewage surveillance, and genomic sequencing, to closely monitor COVID-19 and inform its public health response.

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

Figure 1. Daily seven-day rolling average of people with COVID-19 admitted to hospital within 14 days of their diagnosis, NSW, 01 October 2022 to 11 February 2023

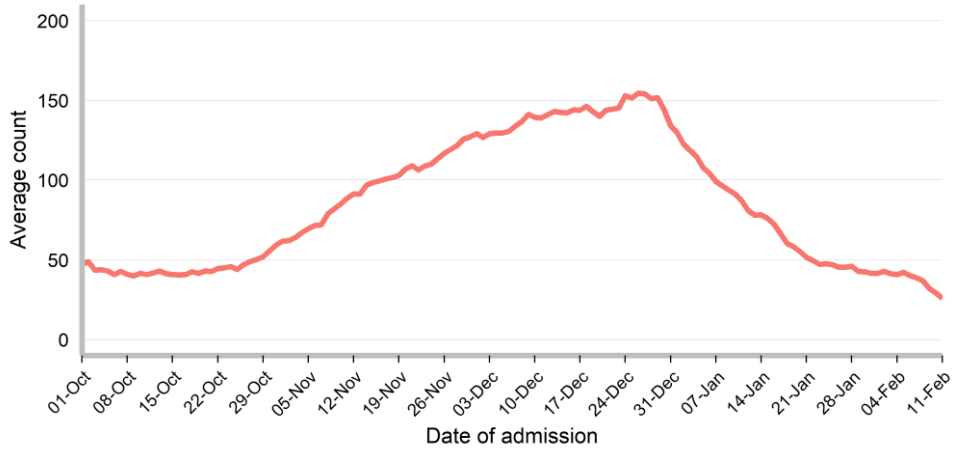
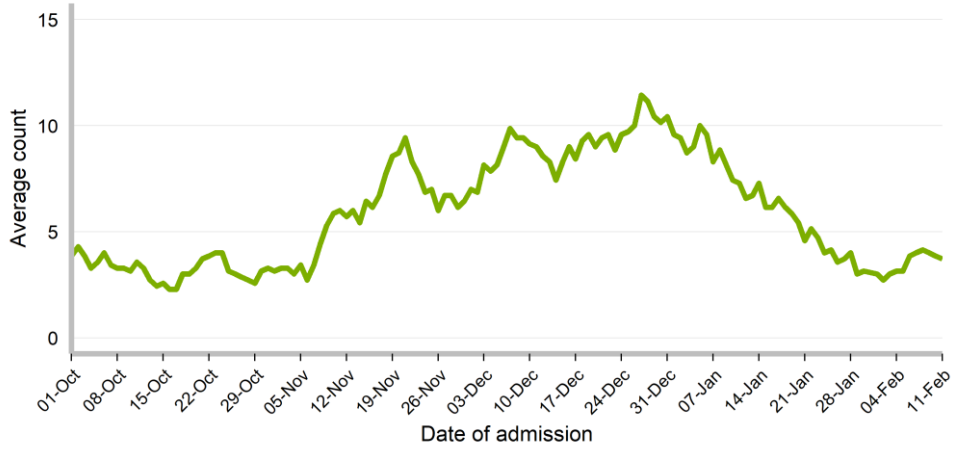


Figure 2. Daily seven-day rolling average of people with COVID-19 admitted to intensive care units, NSW, 01 October 2022 to 11 February 2023



- Hospital admissions in people with COVID-19 have decreased in the last week. ICU admissions for people with COVID-19 have increased in the last week
- One hundred eighty 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 26 admissions by the end of this week, compared with 41 admissions at the end of the previous week.
- Twenty six people diagnosed with COVID-19 were admitted to ICU. The seven-day rolling average of daily ICU admissions increased to an average of 4 admissions by the end of this week, compared with 3 admissions at the end of the previous week.

Table 1. 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 11 February 2023

	Admitted to hospital (but not to ICU)	Admitted to ICU	Deaths
Gender			
Female	77	11	32
Male	102	15	29
Transgender	0	0	0
Not stated / inadequately described	1	0	0
Age group (years)			
0-9	14	0	0
10-19	5	0	0
20-29	8	2	0
30-39	6	0	0
40-49	9	1	0
50-59	12	3	1
60-69	25	5	5
70-79	38	10	12
80-89	46	5	26
90+	17	0	17
Local Health District of residence*			
Central Coast	7	5	4
Illawarra Shoalhaven	15	0	6
Nepean Blue Mountains	4	1	1
Northern Sydney	19	2	6
South Eastern Sydney	21	2	7
South Western Sydney	24	3	5
Sydney	13	3	4
Western Sydney	21	2	9
Far West	1	0	0
Hunter New England	19	1	7
Mid North Coast	10	1	5
Murrumbidgee	9	1	2
Northern NSW	11	0	4
Southern NSW	1	2	1
Western NSW	4	3	0
Total	**180**	**26**	**61**

*Excludes cases in correctional settings

- Twenty six of the deaths were aged care residents. Five of these people died in hospital and 21 died at an aged care facility.
- One of the deaths occurred at home and was diagnosed with COVID-19 prior to death.
- Deaths are identified from the NSW Registry of Births Deaths and Marriages (BDM). If a person dies in NSW, their death must be registered under the Births, Deaths and Marriages Registration Act 1995 (Part 7). NSW Health receives a secure feed from the BDM on a daily basis under the Public Health Act 2010 (Part 129A). Seventy five percent of COVID-19 deaths in 2022 have been registered in less than four weeks of death. Deaths reported to a coroner will be registered with the BDM, however cause of death information may be delayed as it is not recorded until there is a coronial determination.

Notifications of COVID-19

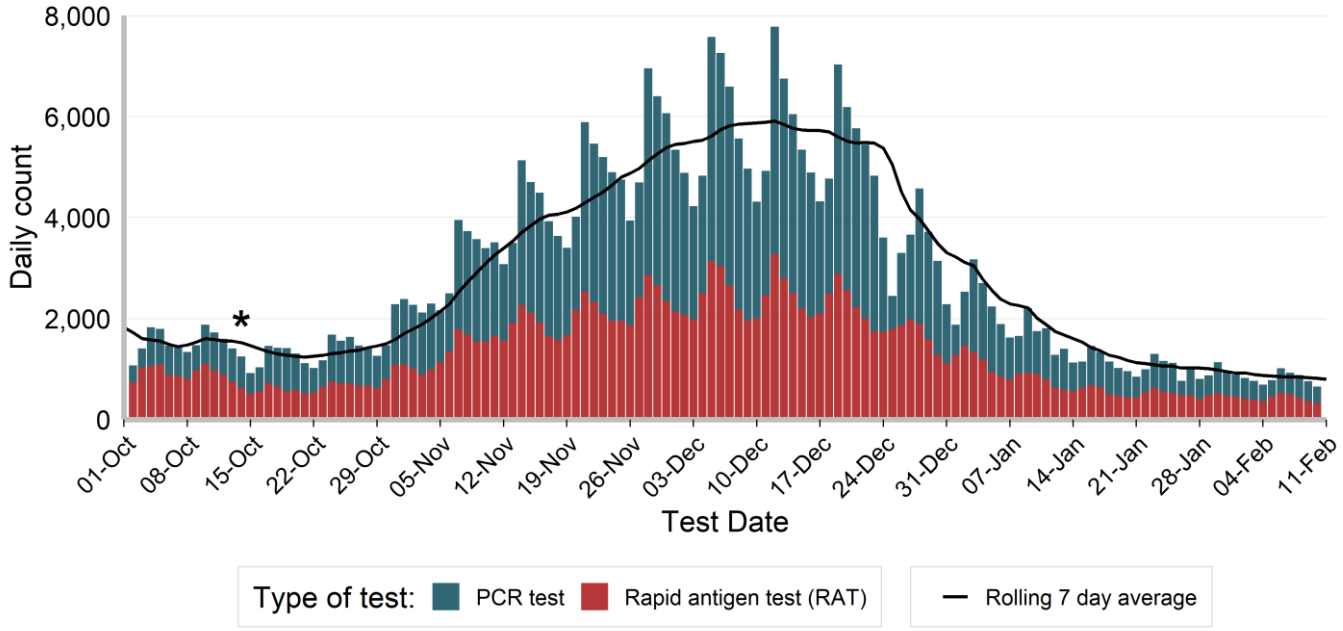
Table 2. Notifications of COVID-19 by gender, age group, Local Health District, NSW, tested in the week ending 11 February 2023

	Week ending 11 February 2023			Year to date
	PCR	RAT	Total	Total
Gender				
Female	1,499 (54.2%)	1,637 (58.0%)	3,136 (56.1%)	30,655 (56.7%)
Male	1,268 (45.8%)	1,181 (41.9%)	2,449 (43.8%)	23,357 (43.2%)
Transgender	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Not stated / inadequately described	0 (0.0%)	2 (0.1%)	2 (0.0%)	62 (0.1%)
Age group (years)				
0-4	118 (4.3%)	73 (2.6%)	191 (3.4%)	1,933 (3.6%)
5-9	68 (2.5%)	171 (6.1%)	239 (4.3%)	1,307 (2.4%)
10-19	174 (6.3%)	354 (12.6%)	528 (9.5%)	3,105 (5.7%)
20-29	300 (10.8%)	357 (12.7%)	657 (11.8%)	7,064 (13.1%)
30-39	384 (13.9%)	501 (17.8%)	885 (15.8%)	8,397 (15.5%)
40-49	388 (14.0%)	460 (16.3%)	848 (15.2%)	7,540 (13.9%)
50-59	337 (12.2%)	342 (12.1%)	679 (12.2%)	7,403 (13.7%)
60-69	353 (12.8%)	306 (10.9%)	659 (11.8%)	7,134 (13.2%)
70-79	330 (11.9%)	185 (6.6%)	515 (9.2%)	5,745 (10.6%)
80-89	213 (7.7%)	55 (2.0%)	268 (4.8%)	3,252 (6.0%)
90+	102 (3.7%)	16 (0.6%)	118 (2.1%)	1,184 (2.2%)
Local Health District of residence[#]				
Central Coast	87 (3.2%)	158 (5.8%)	245 (4.5%)	2,614 (4.9%)
Illawarra Shoalhaven	201 (7.4%)	122 (4.5%)	323 (5.9%)	3,456 (6.5%)
Nepean Blue Mountains	106 (3.9%)	120 (4.4%)	226 (4.1%)	2,301 (4.4%)
Northern Sydney	362 (13.3%)	287 (10.5%)	649 (11.9%)	6,304 (11.9%)
South Eastern Sydney	376 (13.8%)	236 (8.6%)	612 (11.2%)	5,697 (10.8%)
South Western Sydney	308 (11.3%)	221 (8.1%)	529 (9.7%)	5,314 (10.1%)
Sydney	263 (9.7%)	193 (7.0%)	456 (8.4%)	4,553 (8.6%)
Western Sydney	442 (16.3%)	261 (9.5%)	703 (12.9%)	6,818 (12.9%)
Far West	2 (0.1%)	9 (0.3%)	11 (0.2%)	119 (0.2%)
Hunter New England	299 (11.0%)	484 (17.7%)	783 (14.4%)	7,548 (14.3%)
Mid North Coast	36 (1.3%)	128 (4.7%)	164 (3.0%)	1,500 (2.8%)
Murrumbidgee	47 (1.7%)	163 (5.9%)	210 (3.8%)	1,545 (2.9%)
Northern NSW	73 (2.7%)	138 (5.0%)	211 (3.9%)	1,852 (3.5%)
Southern NSW	41 (1.5%)	87 (3.2%)	128 (2.3%)	1,334 (2.5%)
Western NSW	72 (2.7%)	134 (4.9%)	206 (3.8%)	1,911 (3.6%)
Aboriginal status[^]				
Aboriginal and/or Torres Strait Islander	59 (2.1%)	135 (4.8%)	194 (3.5%)	1,862 (3.4%)
Not Aboriginal or Torres Strait Islander	1,679 (60.7%)	2,268 (80.4%)	3,947 (70.6%)	38,786 (71.7%)
Not Stated / Unknown	1,029 (37.2%)	417 (14.8%)	1,446 (25.9%)	13,426 (24.8%)
Total	**2,767 (100%)**	**2,820 (100%)**	**5,587 (100%)**	**54,074 (100%)**

[#]Excludes cases in correctional settings

[^]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.

Figure 3. People notified with COVID-19, by date of test and type of test performed, NSW, 01 October 2022 to 11 February 2023



** from the 14th October RATS were no longer required to be notified*

- There were 5,587 people diagnosed with COVID-19 this week, a decrease of 9% since the previous week.

Figure 4. Daily seven-day rolling average rate of COVID-19 notifications per 100,000 population, by age group and test date, NSW, 01 October 2022 to 11 February 2023

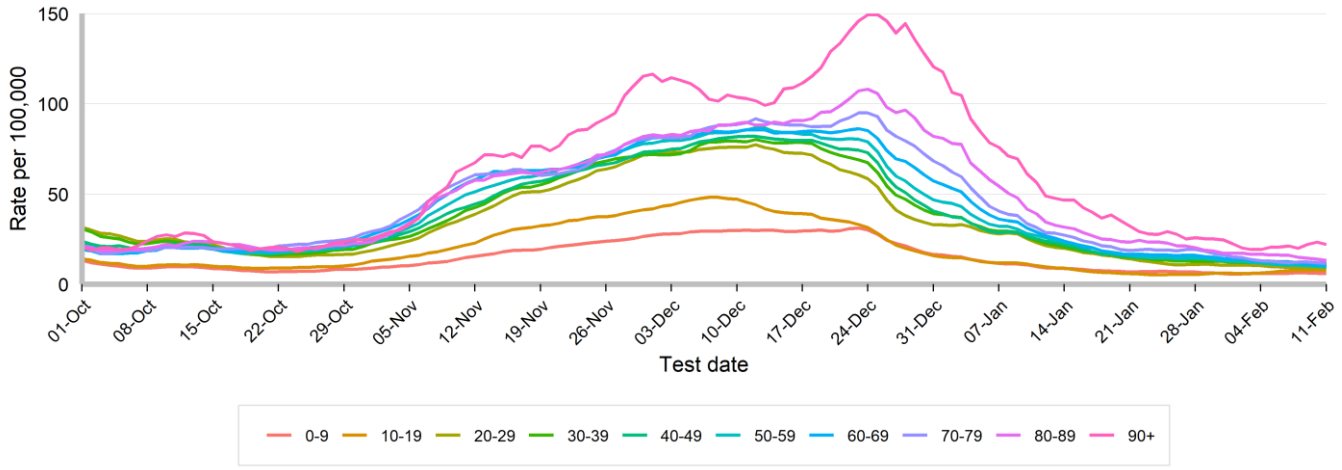


Figure 5. Daily seven-day rolling average rate of COVID-19 notifications per 100,000 population, by metropolitan Local Health District and test date, NSW, 01 October 2022 to 11 February 2023

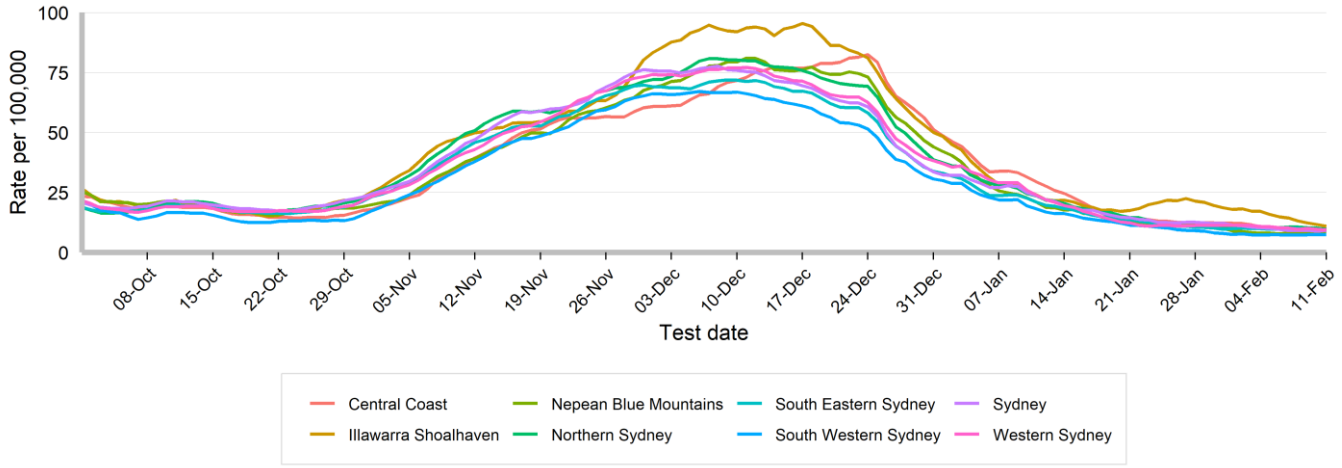
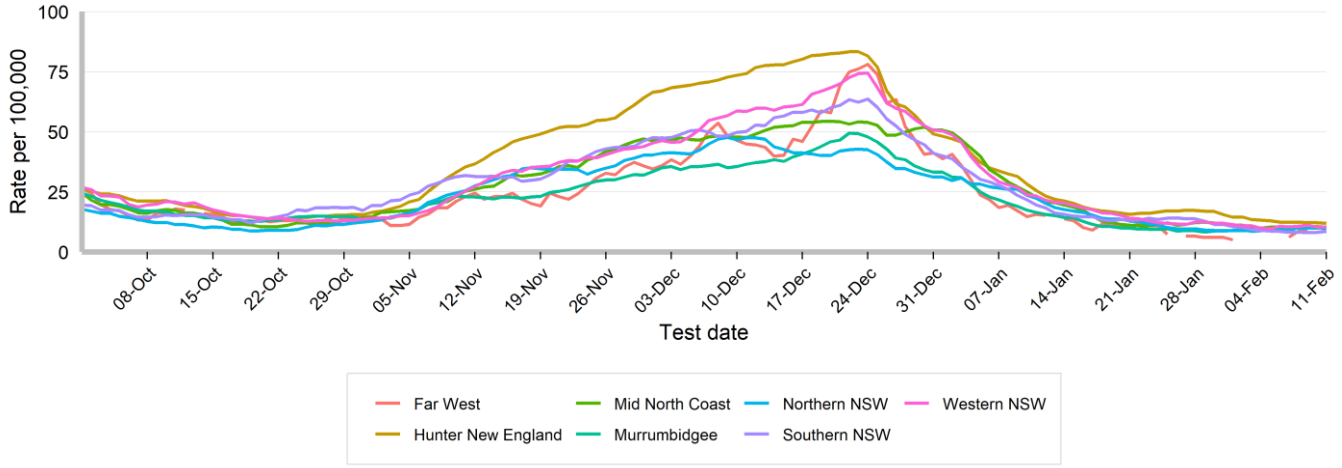


Figure 6. Daily seven-day rolling average rate of COVID-19 notifications per 100,000 population, by rural and regional Local Health District and test date, NSW, 01 October 2022 to 11 February 2023



Emergency department and community surveillance

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

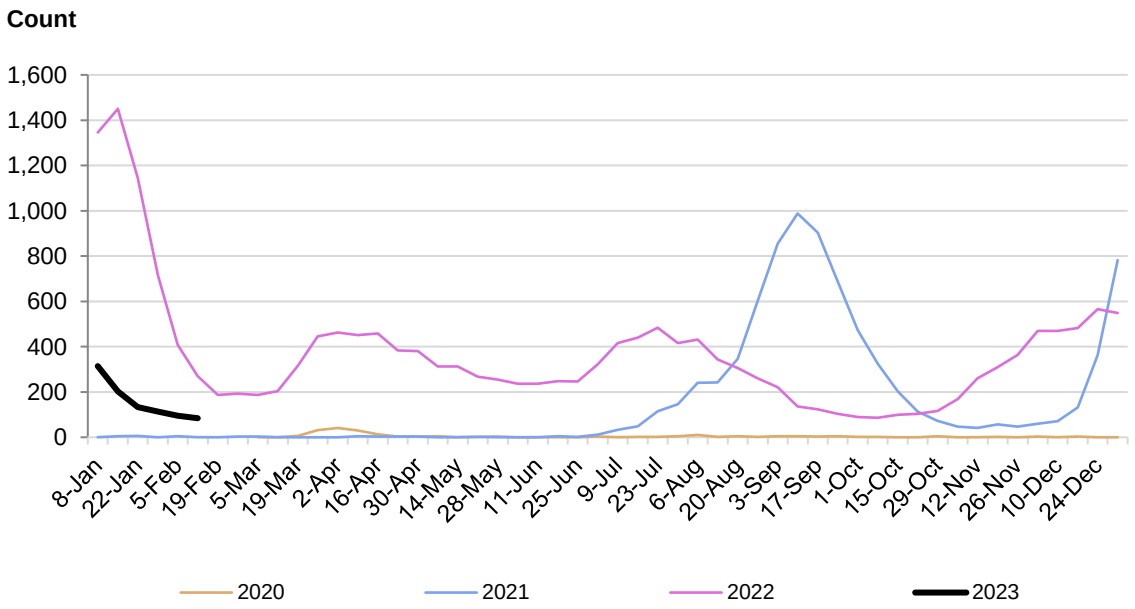
The NSW Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system provides daily monitoring of most unplanned presentations to NSW public hospital emergency departments (EDs) and all emergency Triple Zero (000) calls to NSW Ambulance. Emergency hospital presentations and ambulance 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 *'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 ICD-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 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 7. Weekly counts of unplanned emergency department (ED) presentations for 'coronaviruses/SARS', that were admitted, for 2023 (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 84 from 95 admissions in the previous week.

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

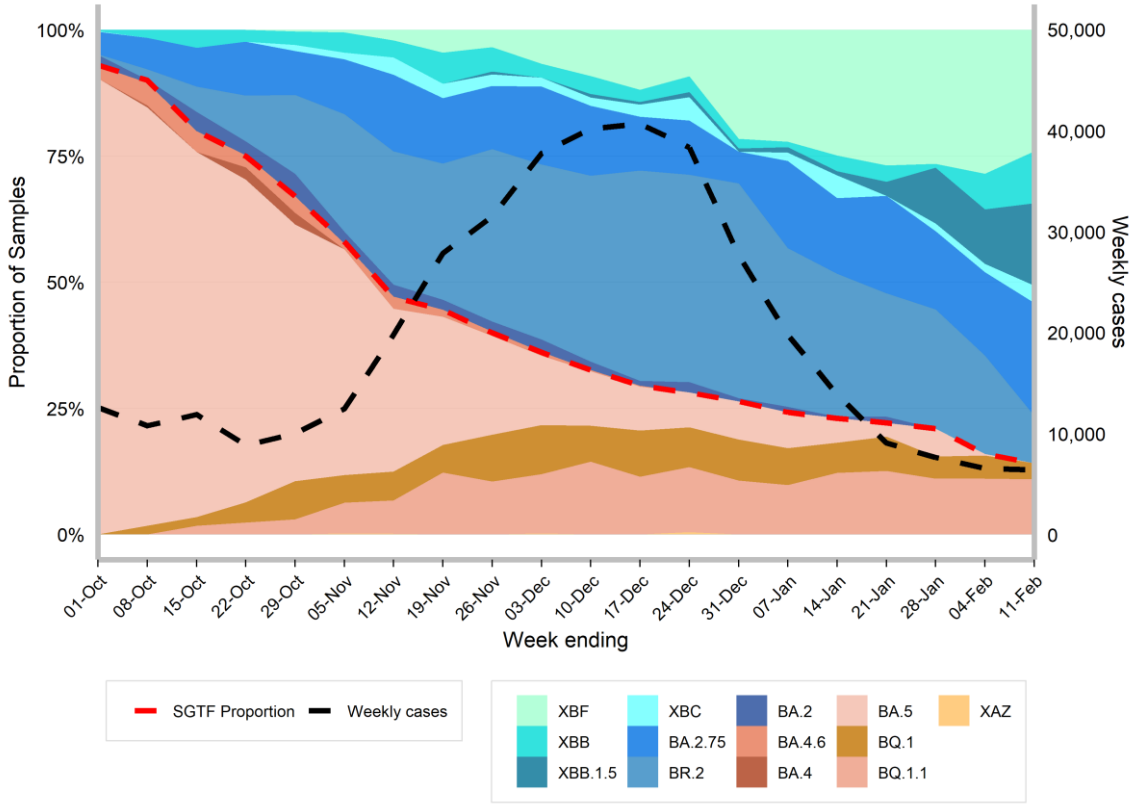
Like all viruses, the SARS-CoV-2 virus changes over time. The World Health Organization monitors these changes and classifies lineages according to the risk that they pose to global public health. Those that they identify as having changes that increase transmissibility, increase virulence, or decrease 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 04 February 2023

Variant	Week ending			
	14 January	21 January	28 January	04 February
Omicron (BA.2)	4 (0.8%)	3 (0.8%)	2 (0.8%)	0 (0%)
Omicron (BA.2.75)	86 (18.1%)	63 (17.7%)	46 (19.2%)	46 (15.2%)
Omicron (BA.2.75.2)	1 (0.2%)	0 (0%)	0 (0%)	0 (0%)
Omicron (BA.5)	19 (4%)	15 (4.2%)	8 (3.3%)	5 (1.7%)
Omicron (BQ.1)	30 (6.3%)	23 (6.5%)	7 (2.9%)	15 (5%)
Omicron (BQ.1.1)	56 (11.8%)	47 (13.2%)	23 (9.6%)	43 (14.2%)
Omicron (BR.2)	114 (23.9%)	78 (21.9%)	60 (25%)	62 (20.5%)
Recombinant (XBB)	12 (2.5%)	15 (4.2%)	16 (6.7%)	21 (6.9%)
Recombinant (XBB.1.5)	7 (1.5%)	15 (4.2%)	22 (9.2%)	33 (10.9%)
Recombinant (XBC)	17 (3.6%)	1 (0.3%)	2 (0.8%)	5 (1.7%)
Recombinant (XBF)	130 (27.3%)	95 (26.7%)	54 (22.5%)	73 (24.1%)
Recombinant (XBK)	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)
Total	476	356	240	303

- The BA.1, BA.4 and BA.5 lineages of the Omicron variant have a mutation that results in a failure of certain PCR test platforms to detect the S gene (SGTF). This mutation is typically not present in the BA.2 lineage, and therefore the detection of an S gene (SGTP) can be used as a proxy to estimate the prevalence of BA.2 and its sub-lineages in the community (Figure 8).
- 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 78% of SARS-CoV-2 positive specimens currently have an S gene detected (Figure 8).
- Figure 8 shows the distribution of sub-lineages in the community estimated using the ratio of SGTP/SGTF. This figure provides an indication of the sub-lineages which may be circulating in the community. This sample does not include overseas arrivals, or tests taken from hospitalised cases.

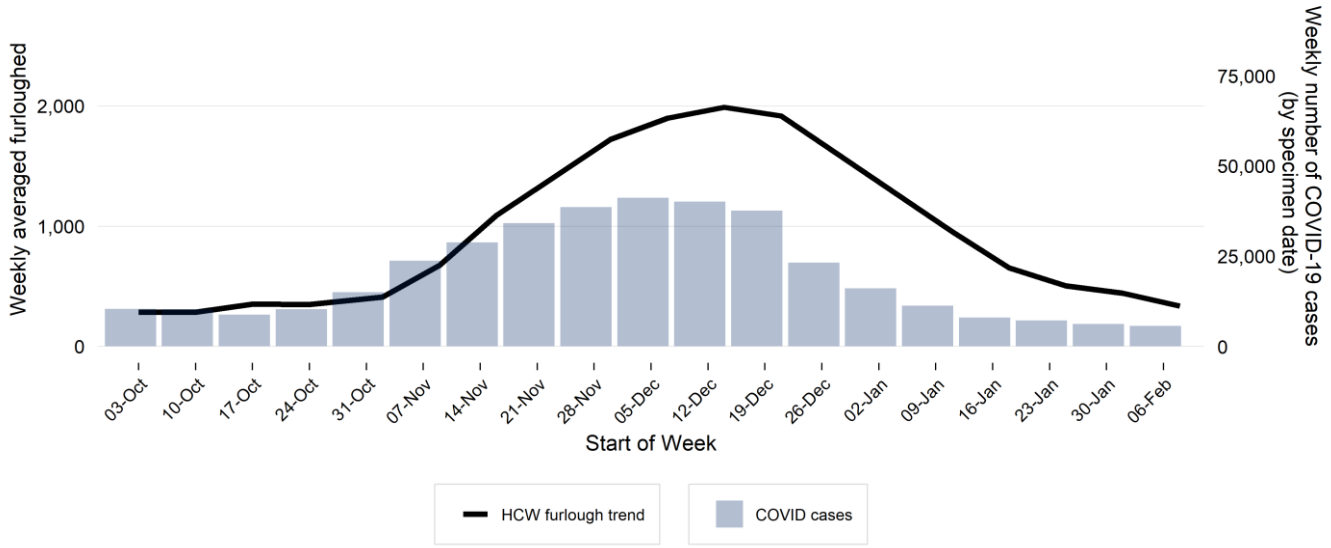
Figure 8. Estimated distribution of COVID-19 sub-lineages in the community, 01 October 2022 to 04 February 2023



NSW Healthcare worker furloughing

NSW Health collects data on the workforce impacts of COVID-19 within Local Health Districts. Healthcare workers are included in these statistics if they are in isolation and unable to work due to testing positive to COVID-19, exposure to COVID-19, and/or whilst waiting a negative test result. As healthcare workers can be exposed to COVID-19 within the community when the amount of COVID-19 circulating in the community increases the risk of exposure and transmission also increases leading to increased numbers of healthcare workers being furloughed (absent) from work. This indicator is helpful to assess the level of COVID-19 circulating in the community when community testing decreases. These data also provide an insight into the stress experienced within the healthcare system due to reduced staffing capacity.

Figure 9. Average number of healthcare worker furloughing and number of COVID-19 notifications by week in NSW, 01 October 2022 to 12 February 2023



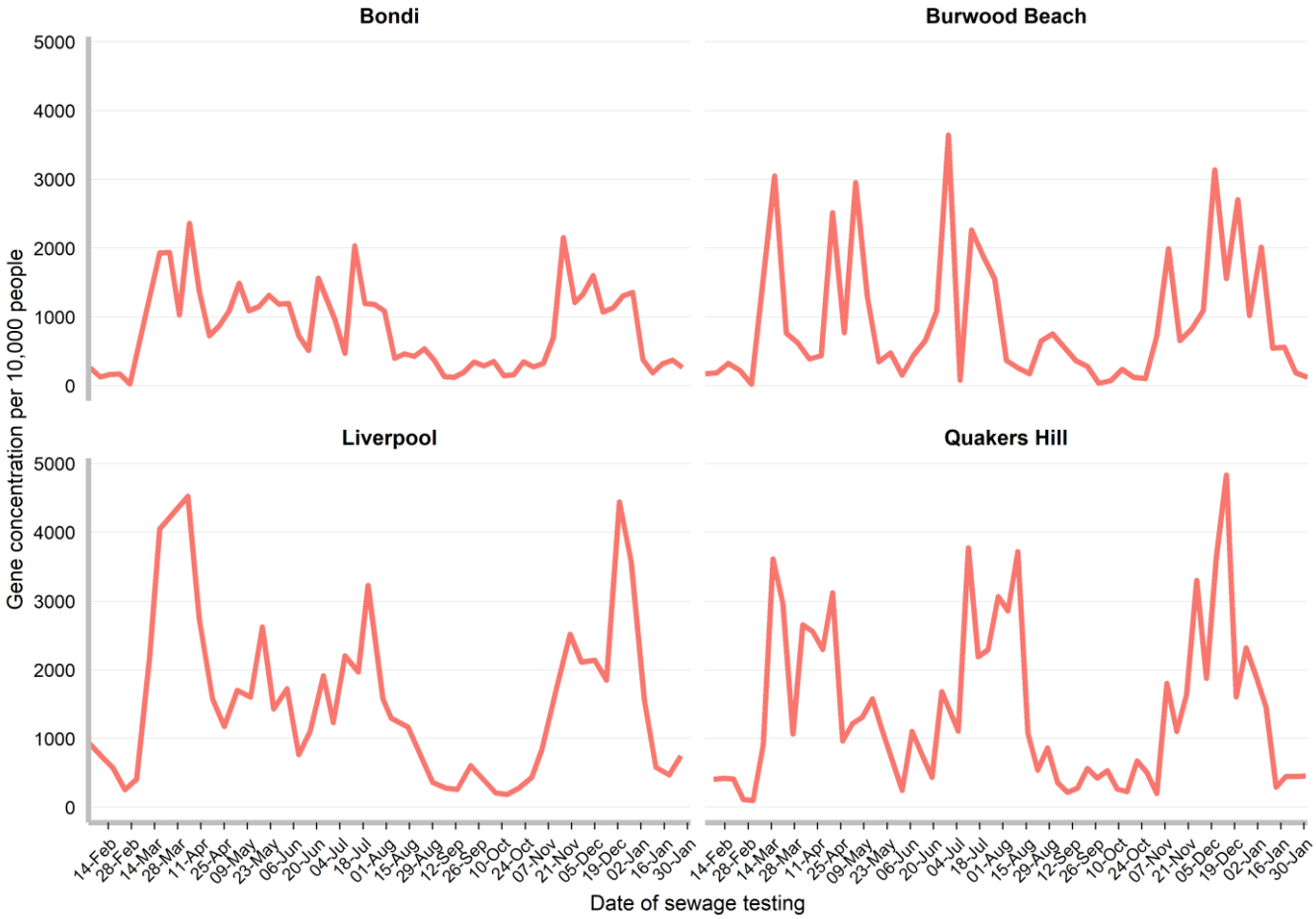
COVID-19 Sewage surveillance program

The NSW Sewage Surveillance Program tests untreated sewage for fragments of the SARS-CoV-2 virus that causes COVID-19. Gene copy numbers are influenced by many factors including virus shedding by people (which varies individually and over the course of the infection), dilution of virus within sewage – such as during rain, the period of time over which the sewage sample is collected, and the presence of chemicals and microorganisms in the sewage that affects how well the testing can detect SARS-CoV-2 virus fragments. Gene copy numbers are reported per 10,000 people in the catchment over time. Trends should be interpreted over an extended period to take into account these fluctuations in environmental conditions.

Trends are presented for Sydney Bondi, Quakers Hills, Liverpool and Burwood Beach sewage catchments from 5 February 2022 to the week ending 11 February 2023. Peaks in gene copy numbers can be seen that relate to peaks in COVID-19 notifications during March and July 2022. Dips in the graph in early April and July are due to heavy rain. Gene copy numbers have stabilised to low levels in recent weeks.

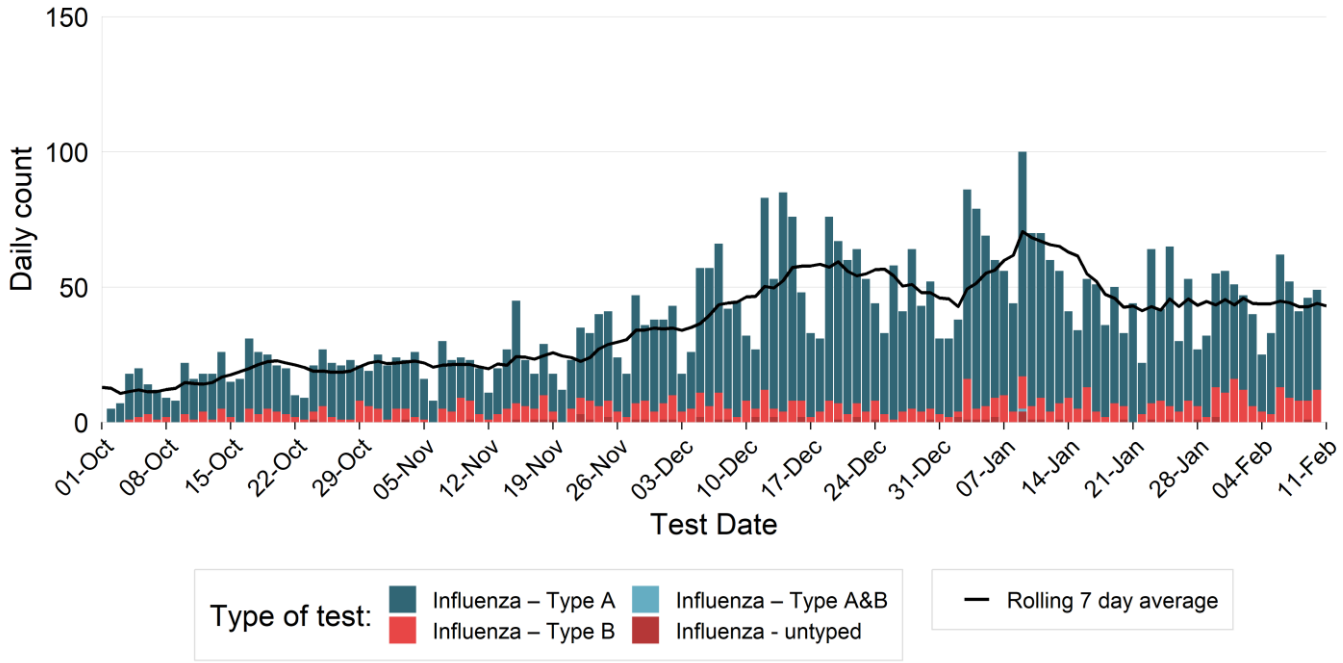
For more results, please see the COVID-19 Sewage Surveillance Program website: https://health.nsw.gov.au/Infectious/covid-19/Pages/sewage-surveillance-weekly-result.aspx.

Figure 10. Gene concentration, per 10,000 people in each sewage catchment, 5 February 2022 to 11 February 2023



Influenza and other respiratory viruses

Figure 11. People notified with influenza, by date of test and virus type, NSW, 01 October 2022 to 11 February 2023



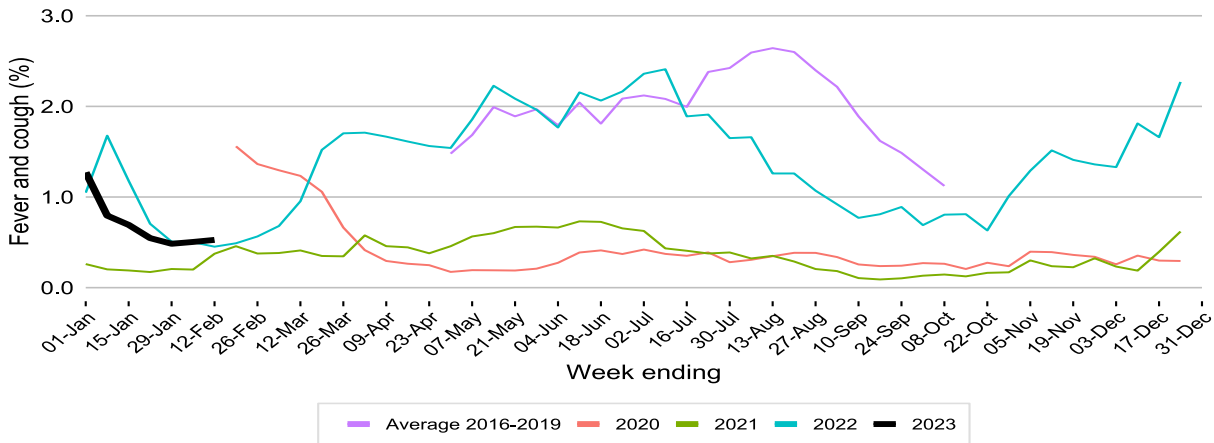
- There were 300 people diagnosed with influenza this week, a decrease of 2% since the previous week.

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.

The FluTracking weekly sample size is currently in a decreased inter-seasonal period. Between 31 October 2022 and 1 April 2023 participants are able to opt out of completing the weekly survey. In previous years roughly two thirds of participants continue to complete the weekly survey. Should there be a surge in COVID-19 or influenza activity, participants who have consented will be asked if they would like to recommence surveys earlier. Additional FluTracking reports are available at: https://info.flutracking.net/reports-2/australia-reports/

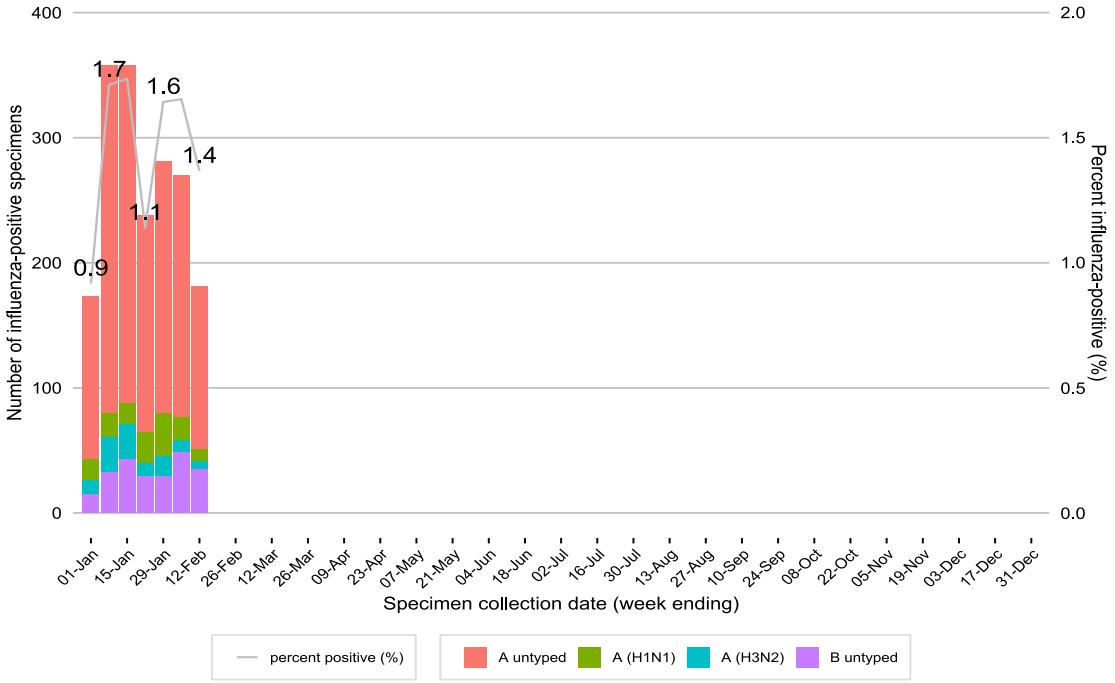
Figure 12. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 12 February 2023.



- The proportion of FluTracking participants reporting influenza-like illness increased this week.

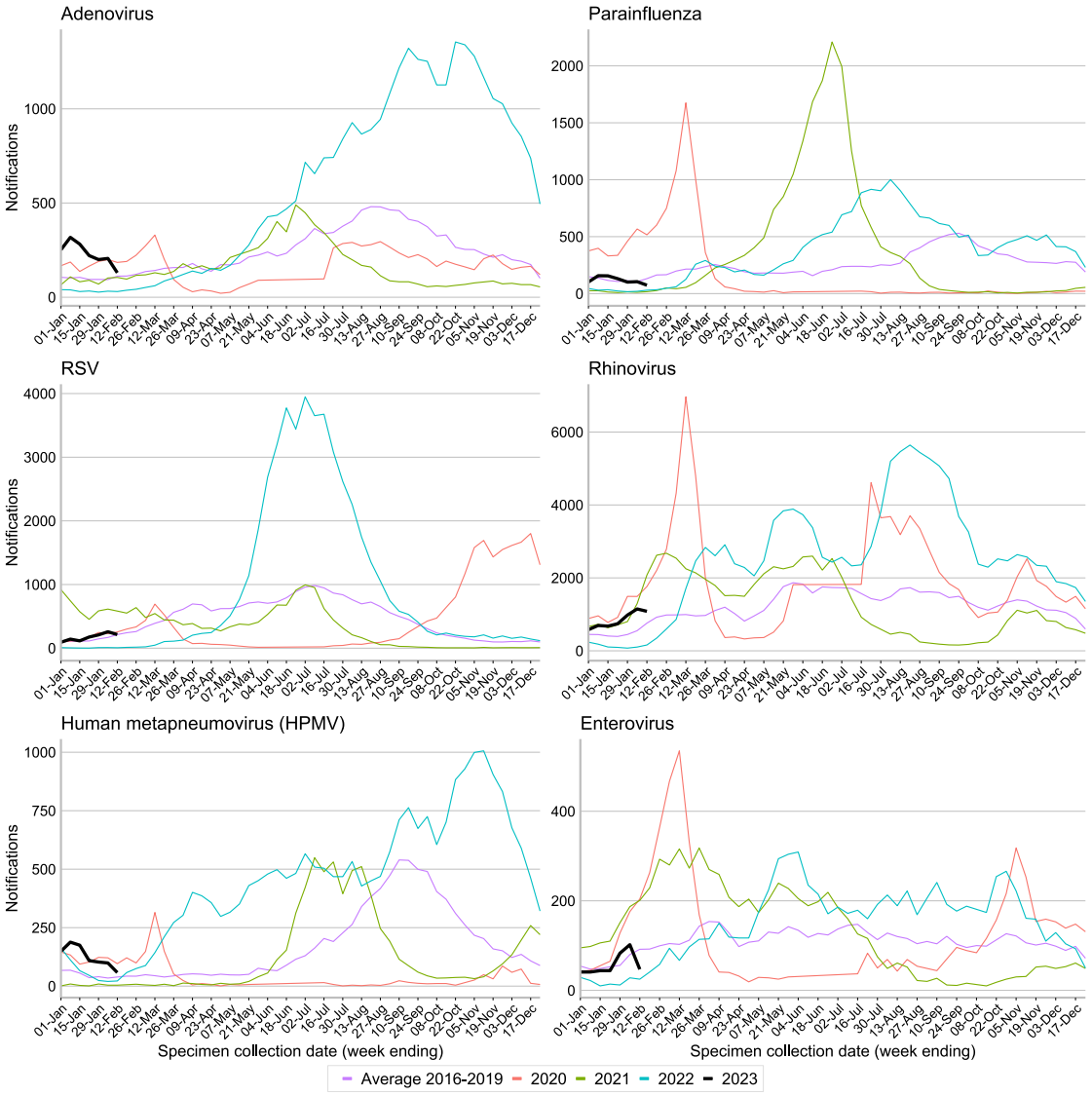
The NSW sentinel laboratory network comprises of 13 public and private laboratories throughout NSW who provide additional data on positive and negative test results. This helps us to understand which respiratory viruses are circulating as well as how much.

Figure 13. Number and proportion of tests positive for influenza at sentinel NSW laboratories, 1 January 2022 to 12 February 2023



- Of the 13,239 tests conducted for influenza, the proportion positive has remained stable below 2%.

Figure 14. Number of positive PCR test results for other respiratory viruses at sentinel NSW laboratories, 1 January 2022 to 12 February 2023.



- Recent data is subject to change. For the week ending 12 February 2023, 9 out of 13 sentinel laboratories have provided testing data at the time of reporting.

Table 4. Total number of respiratory disease notifications from sentinel laboratories, NSW in the four weeks to 12 February, 2023

	Week ending				Year to date
	22 January	29 January	05 February	12 February*	
Adenovirus	221	200	206	130	1,609
Respiratory syncytial virus (RSV)	175	209	258	214	1,206
Rhinovirus	742	979	1,148	1,083	5,904
Human metapneumovirus (HMPV)	109	103	99	58	881
Enterovirus	44	83	102	47	402
Number of PCR tests conducted	20,895	17,099	16,323	13,239	127,960

*Recent data is subject to change. For the week ending 12 February 2023, 9 out of 13 sentinel laboratories have provided testing data at the time of reporting.