NSW Respiratory Surveillance Report - week ending 13 May 2023

Summary

NSW is continuing to experience elevated levels of transmission of respiratory viral infections, including COVID-19, influenza and respiratory syncytial virus (RSV) infection, associated with the beginning of winter. Indicators which are not influenced by the amount of testing for COVID-19, including sewage and healthcare worker furloughing, continue to show moderate to high levels of COVID-19 transmission in the community.

Most laboratory confirmed notifications are for COVID-19 with 13,545 people notified with COVID-19 this week, an increase of 18% since the previous week. Compared to the previous week, notifications of influenza have increased by 35% to 1,282 and RSV notifications have decreased slightly. Emergency department admissions for coronavirus, influenza-like illness and bronchiolitis have all increased over the last few weeks.

Rates of COVID-19 notifications are stable across all ages. Those aged 90 and over continue to experience the highest rate of notification with a notable increase over the last week. This age group is likely to continue to seek PCR testing at higher rates than younger age groups. There has also been an increase in people aged 5 to 16. Rates of influenza have been stable across all ages except those aged 0 to 4 and 5 to 16 years where rates are increasing. This may be explained by high levels of mixing associated with schools and childcare and higher rates of testing in this age group. Rates of RSV notifications have been decreasing or stable across all ages except those aged 90 years and older. Consistent with the known high burden of RSV in young children, the 0 to 4 age group has the highest rate of RSV notifications. It is highest in those aged less than 2 years old.

We continue to monitor COVID-19 variants to understand changes in transmissibility and ability to cause significant illness. The evolving Omicron sublineages continue to drive community transmission by evading immunity.

Data sources and methods

The data source for this report updates as new information becomes available. Therefore, this report cannot be directly compared to previous versions of the NSW Respiratory Surveillance Report or to previous reporting periods. For additional information on the data sources and methods presented within this report please refer to COVID-19 surveillance report data sources and methodology.

Public Health Rapid, Emergency, Disease and Syndromic Surveillance

The PHREDSS system provides daily information about presentations to NSW public hospital emergency departments and subsequent admission to hospital categorised by symptom profile. Here we report on COVID-19, influenza-like illness and bronchiolitis (which is mainly caused by respiratory syncytial virus, RSV). These PHREDSS indicators, particularly the number of people admitted to hospital, are useful for monitoring the severity of illness and impact on the health system.

Interpretation: Emergency department admissions for coronavirus, influenza-like illness and bronchiolitis have all increased over the last few weeks. However, as a proportion of presentations admissions remain stable suggesting the severity of disease has not increased.

Figure 1. 'COVID-19' weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023, persons of all ages.

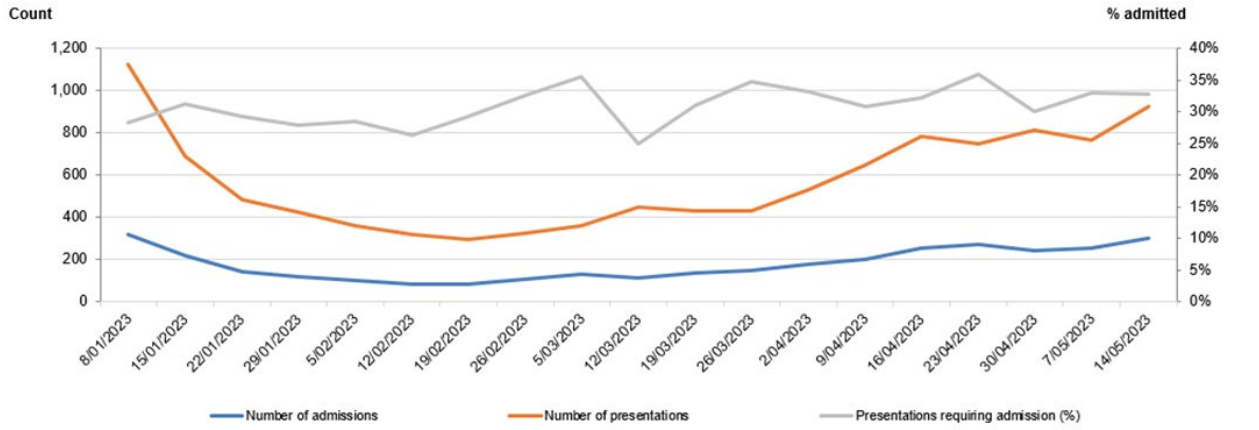


Figure 2. 'Influenza-like illness' weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023, persons of all ages.

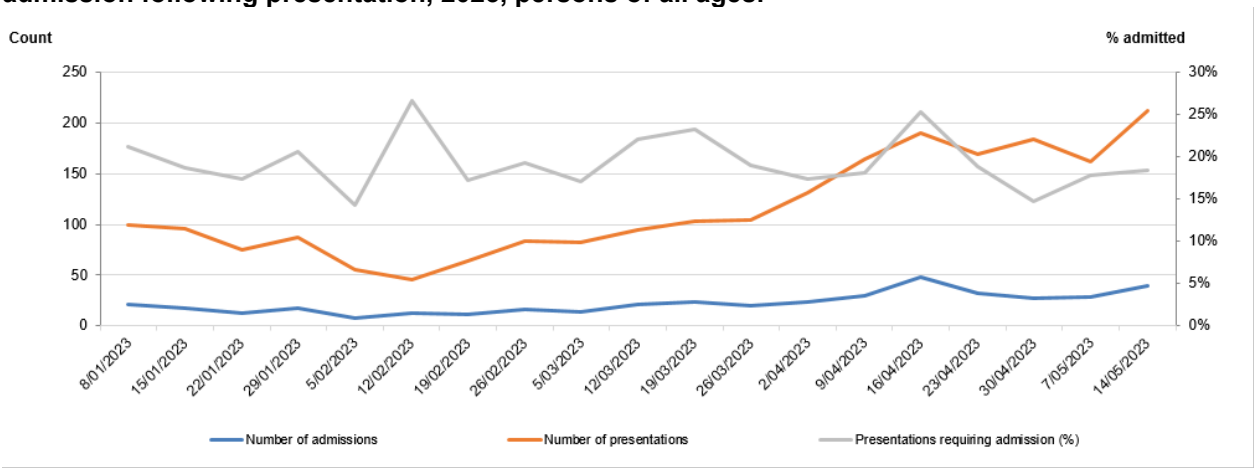
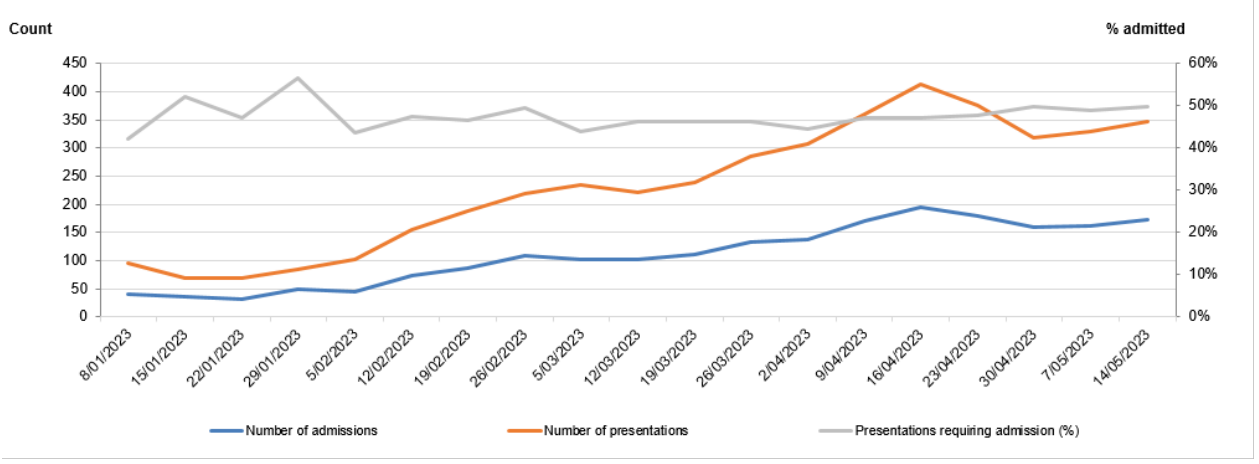


Figure 3. Bronchiolitis weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023, children aged 0-4 years.



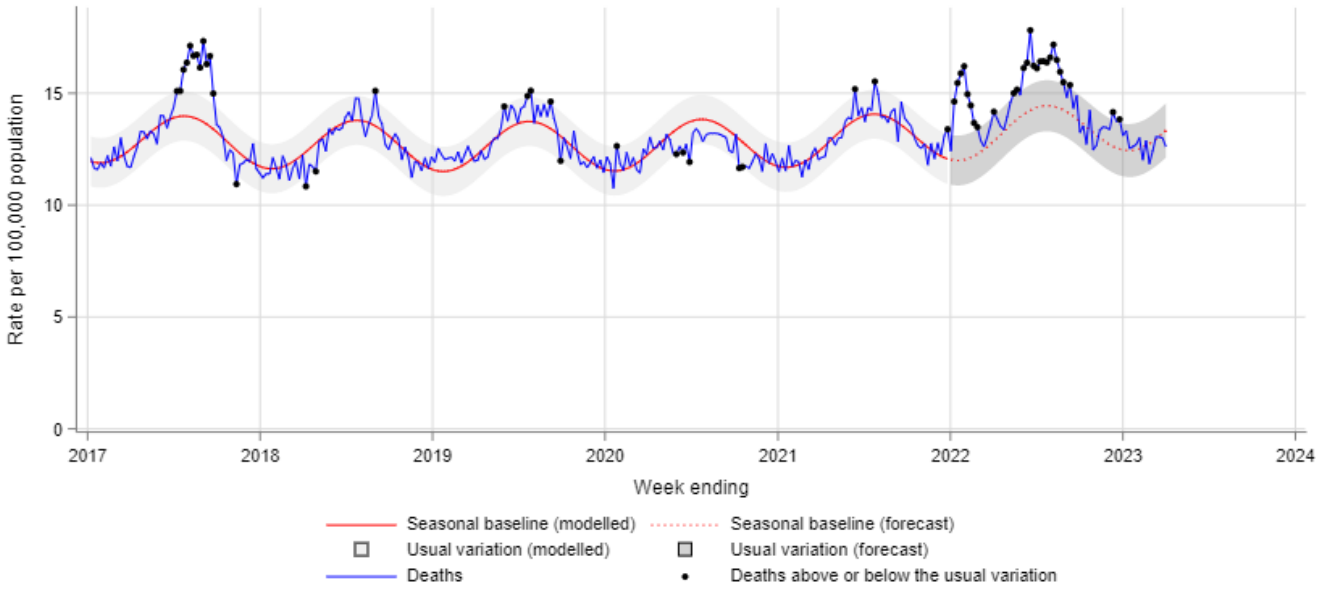
Death surveillance

All-cause mortality

All-cause mortality provides a comprehensive measure of total impact of health threats, such as severe influenza period, COVID-19 and heatwaves, by counting both deaths directly attributable and indirectly associated with the threat. Monitoring all-cause mortality allows rapid assessment of changing patterns of mortality, and whether the number of deaths in a period is more or less than expected. In this report mortality is determined from counts of deaths in the NSW Registry of Births Deaths & Marriages. The rate of death per week is presented with the seasonal baseline, which summarises the historic (2017-2021) rate of deaths for corresponding week (red dashed line, grey shading indicates the 95% confidence interval). This indicator provides a signal of the impact from any significant and prolonged cause of death on the NSW population.

Interpretation: Weekly lag adjusted all-cause mortality is within the usual variation.

Figure 4. All-cause death rate per 100,000 population, all ages, 2017 to 2 April 2023.



Notes:

In this report, due to the time interval between a death occurring and the date on which the death is registered, only deaths reported 4 weeks prior to the date of analysis are used. Deaths are lag adjusted for the weeks ending 26 February 2023 to 2 April 2023. For additional information see data sources and methods for details.

Death rates presented in this report are not directly translatable to analyses in the ABS Provisional Mortality Statistics and Actuaries Institute COVID-19 Working Group reports which make specific comparisons of mortality in the pre and during pandemic periods.

Notifications of COVID-19, influenza and RSV

Notification data is obtained from laboratory tests for infections, and for COVID-19 only includes tests reported by the public to NSW Health. This indicator provides information about community infection. However, it can be impacted by changes in testing behavior and access and is therefore not comparable to historic reporting periods that had high levels of case ascertainment.

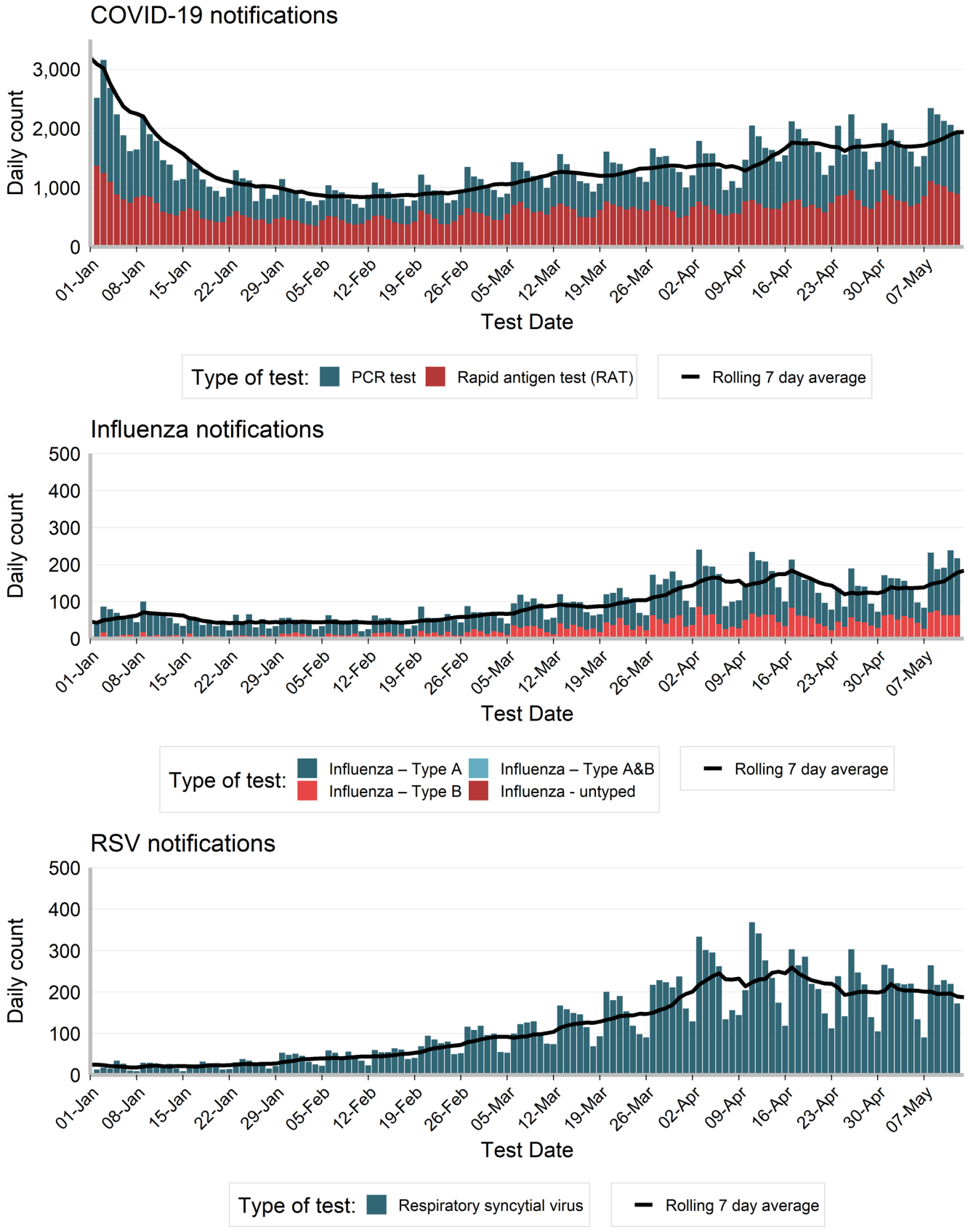
Interpretation: The number of notifications for COVID-19 and influenza increased slightly from the previous week and RSV remained stable (Table 1 and Figure 5). Children and young people continue to dominate notifications for influenza (Table 1) and COVID-19 notifications remain more common for females. The predominance of RSV notifications in young children reflects both the increased susceptibility of infants to infection and likelihood of being tested if unwell.

Table 1: Notifications of COVID-19, influenza and RSV, NSW, tested in the week ending 13 May 2023.

	COVID		Influenza		RSV	
	Week ending 13 May 2023	Year to Date	Week ending 13 May 2023	Year to Date	Week ending 13 May 2023	Year to Date
Gender						
Female	7,822	103,003(57%)	644	6,412(51%)	679	7,990(51%)
Male	5,709	76,760(43%)	635	6,163(49%)	631	7,707(49%)
Age group (years)						
0-4	493	5,651(3%)	189	1,831(15%)	679	9,987(64%)
5-9	613	4,948(3%)	285	2,546(20%)	61	642(4%)
10-19	1,400	13,453(7%)	248	1,878(15%)	43	476(3%)
20-29	1,336	21,795(12%)	92	1,029(8%)	54	469(3%)
30-39	2,031	27,768(15%)	133	1,581(13%)	67	664(4%)
40-49	2,122	26,226(15%)	146	1,353(11%)	32	442(3%)
50-59	1,792	25,205(14%)	77	836(7%)	71	611(4%)
60-69	1,547	23,610(13%)	42	698(6%)	71	780(5%)
70-79	1,109	17,497(10%)	45	507(4%)	86	713(5%)
80-89	757	9,975(6%)	19	260(2%)	96	631(4%)
90+	353	3,818(2%)	6	63(1%)	50	279(2%)
Local Health District of residence						
Central Coast	681	8,081(4%)	50	264(2%)	56	944(6%)
Far West	63	437(0%)	1	18(0%)	1	5(0%)
Hunter New England	1,768	22,597(13%)	95	794(6%)	165	909(6%)
Illawarra Shoalhaven	877	11,342(6%)	55	671(5%)	81	1,085(7%)
Mid North Coast	217	3,785(2%)	27	183(1%)	25	307(2%)
Murrumbidgee	485	5,058(3%)	65	319(3%)	34	200(1%)
Nepean Blue Mountains	706	8,588(5%)	81	529(4%)	82	922(6%)
Northern NSW	219	4,963(3%)	40	413(3%)	33	441(3%)
Northern Sydney	1,550	21,988(12%)	188	2,076(16%)	139	2,661(17%)
South Eastern Sydney	1,417	20,391(11%)	118	1,220(10%)	122	1,787(11%)
South Western Sydney	1,496	18,641(10%)	205	1,912(15%)	153	2,158(14%)
Southern NSW	379	4,421(2%)	13	120(1%)	34	162(1%)
Sydney	1,088	16,040(9%)	100	1,019(8%)	102	1,172(7%)
Western NSW	679	6,902(4%)	27	182(1%)	70	330(2%)
Western Sydney	1,878	24,300(14%)	210	2,794(22%)	211	2,571(16%)
Aboriginal status						
Aboriginal and/or Torres Strait Islander	424	5,654(3%)	36	316(3%)	42	507(3%)
Not Aboriginal or Torres Strait Islander	9,629	131,180(73%)	665	6,768(54%)	624	7,697(49%)
Not Stated / Unknown	3,494	43,131(24%)	581	5,506(44%)	644	7,498(48%)
Total	13,547	179,965(100%)	1,282	12,590(100%)	1,310	15,702(100%)

Note: Total includes all cases including those with missing gender, age, LHD; or who interstate or oversees residents.

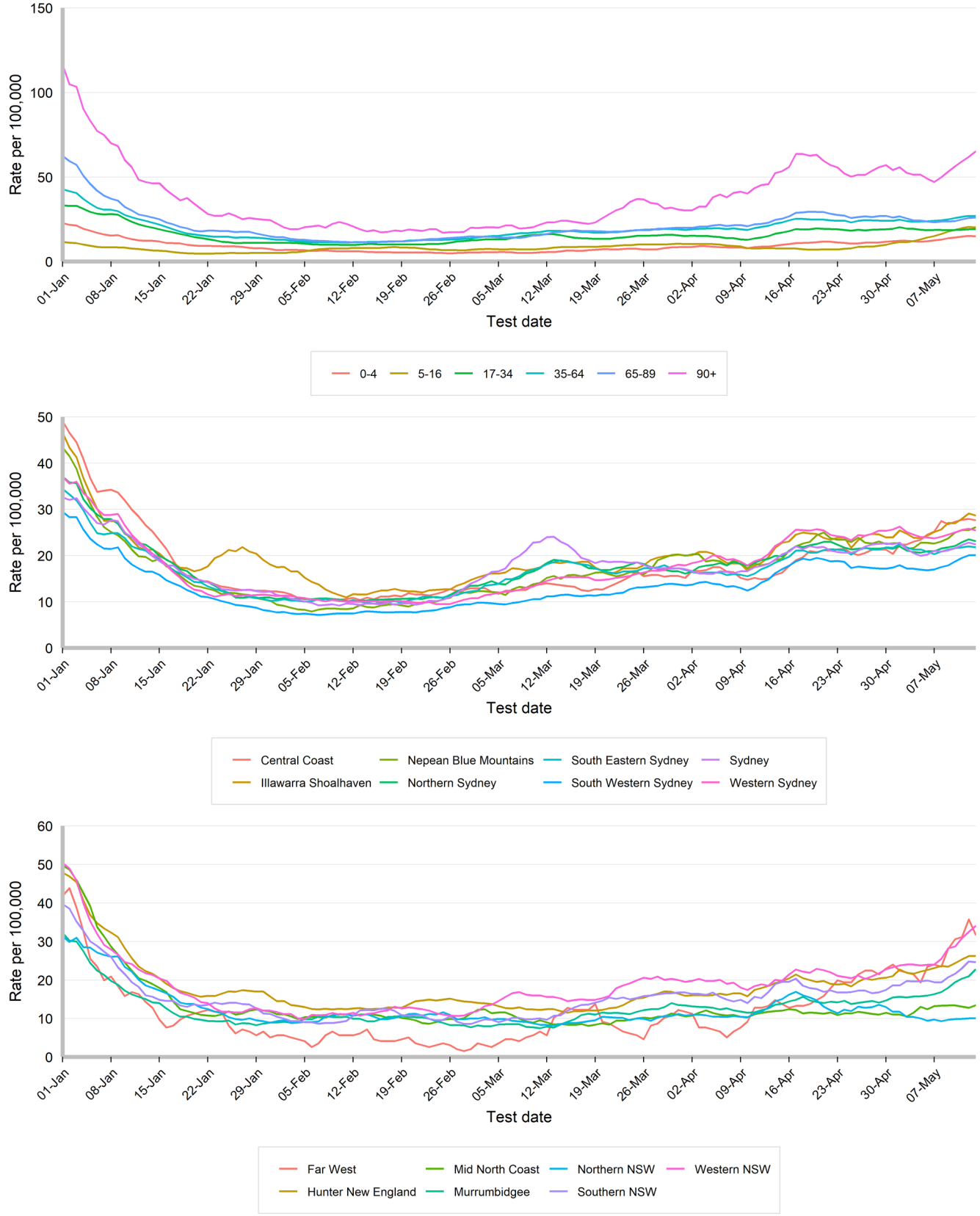
Figure 5. People notified with COVID-19, Influenza and RSV, by date of test and type of test performed, NSW, 01 January 2023 to 13 May 2023.



Rates of COVID-19 notifications per 100,000 population

Interpretation: Rates of COVID-19 notifications are stable across all ages with the exception of those aged 90 and over for whom a notable increase over the last week was observed. There has also been an increase in people aged 5 to 16.

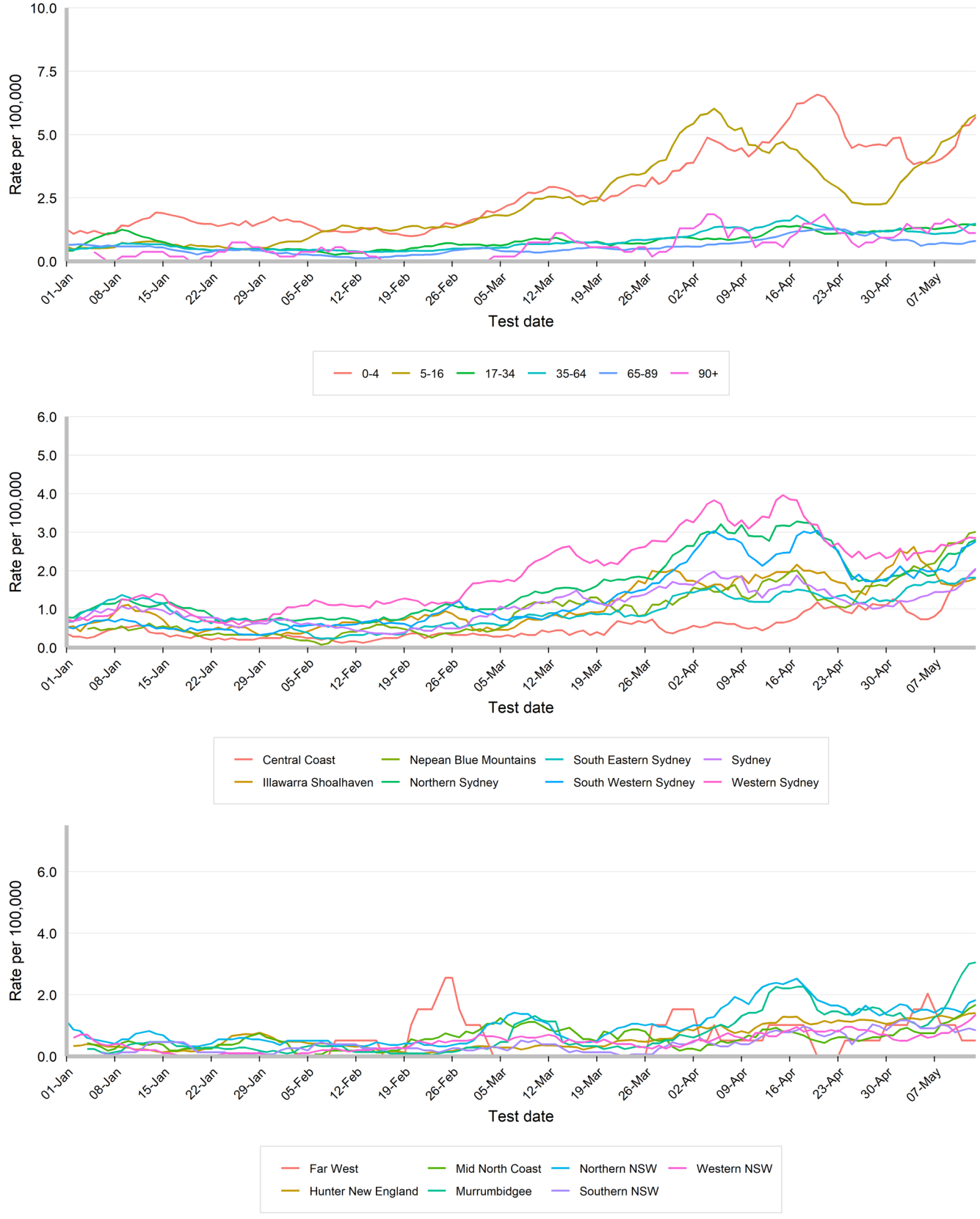
Figure 6. Daily seven-day rolling average rate of COVID-19 notifications per 100,000 population, by age group, Local Health District and test date, NSW, 01 January 2023 to 13 May 2023.



Rates of influenza notifications per 100,000 population

Interpretation: Rates of influenza notifications have been stable across all ages except those aged 0 to 4 and 5 to 16. This may be explained by greater levels of social mixing associated with schools and childcare and and/or lower rates of vaccine uptake and/or increased likelihood of being tested for influenza if unwell.

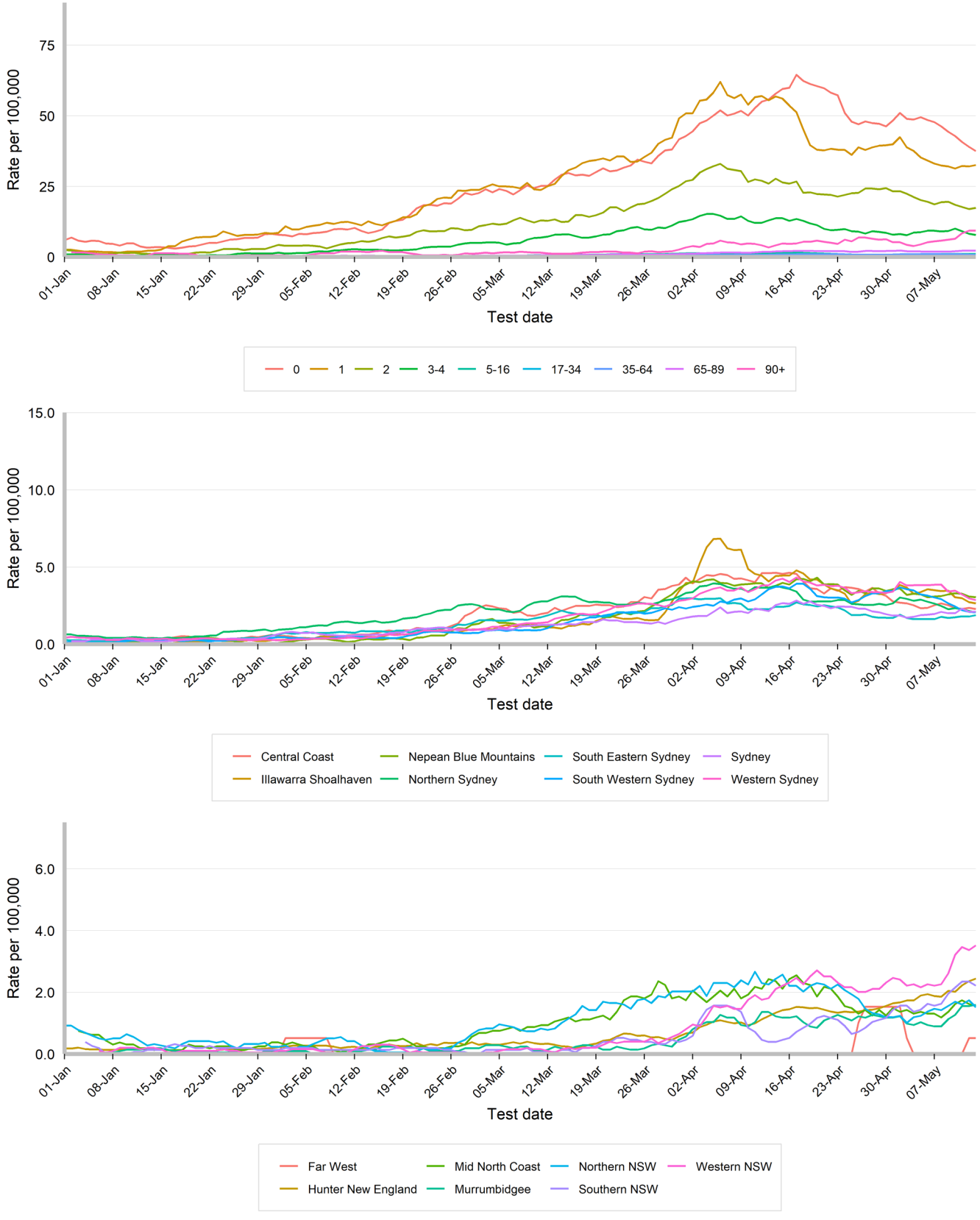
Figure 7. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by age group, Local Health District and test date, NSW, 01 January 2023 to 13 May 2023.



Rates of respiratory syncytial virus notifications per 100,000 population

Interpretation: Rates of RSV notifications have been decreasing or stable across all ages except those aged 90 years and older for whom rates while low have increased in the most recent weeks. Within the 0 to 4 age group the highest rate of RSV notifications is occurring in infants and children less than 2 years old.

Figure 8. Daily seven-day rolling average rate of respiratory syncytial virus notifications per 100,000 population, by age group, Local Health District and test date, NSW, 01 January 2023 to 13 May 2023.

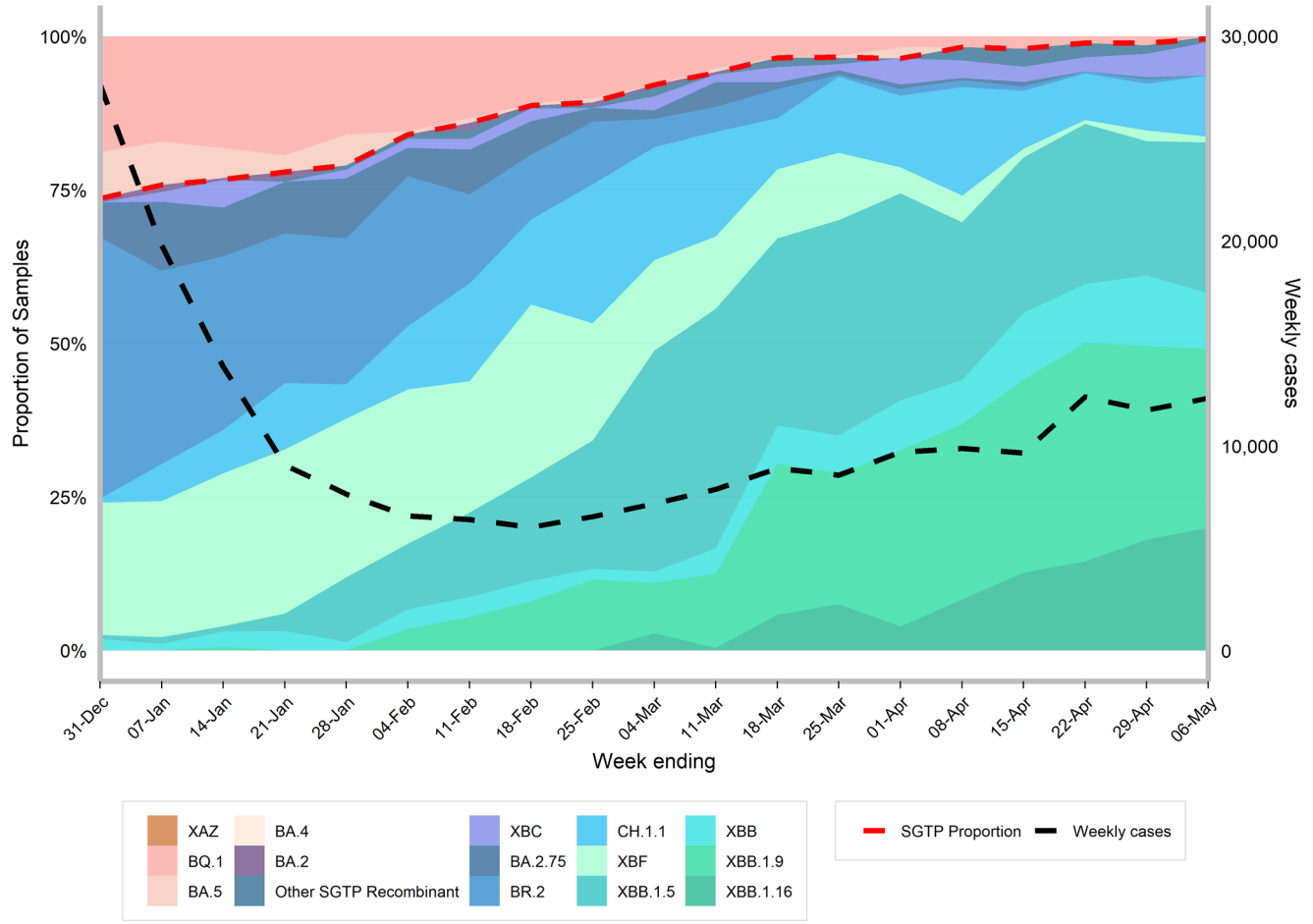


COVID-19 Whole Genome Sequencing

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. 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 99% of SARS-CoV-2 positive specimens currently have an S gene detected (Figure 9).

Interpretation: XBB sublineages account for most samples sequenced from the community. XBB.1.16 continues to increase as a proportion of all samples tested.

Figure 9. Estimated distribution of COVID-19 sub-lineages in the community, 01 January 2023 to 13 May 2023.



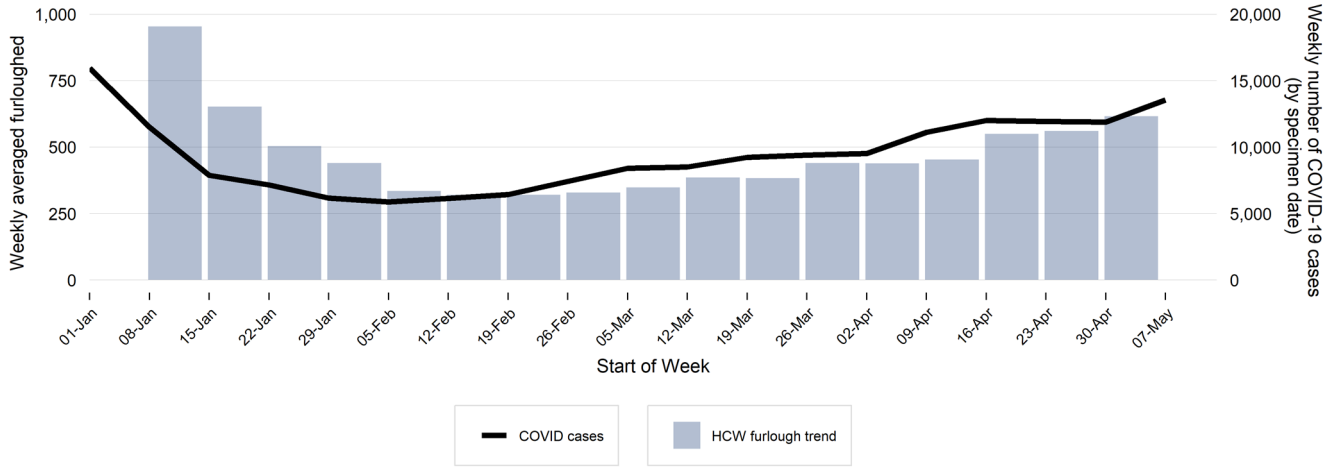
Other surveillance indicators

NSW Healthcare worker furloughing

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. This indicator is helpful to assess the level of COVID-19 circulating in the community when community testing decreases.

Interpretation: The number of healthcare workers furloughed has continued to increase indicating that exposure and transmission is still occurring at high levels.

Figure 10. Average number of healthcare worker furloughing and number of COVID-19 notifications by week in NSW, 01 January 2023 to 13 May 2023.

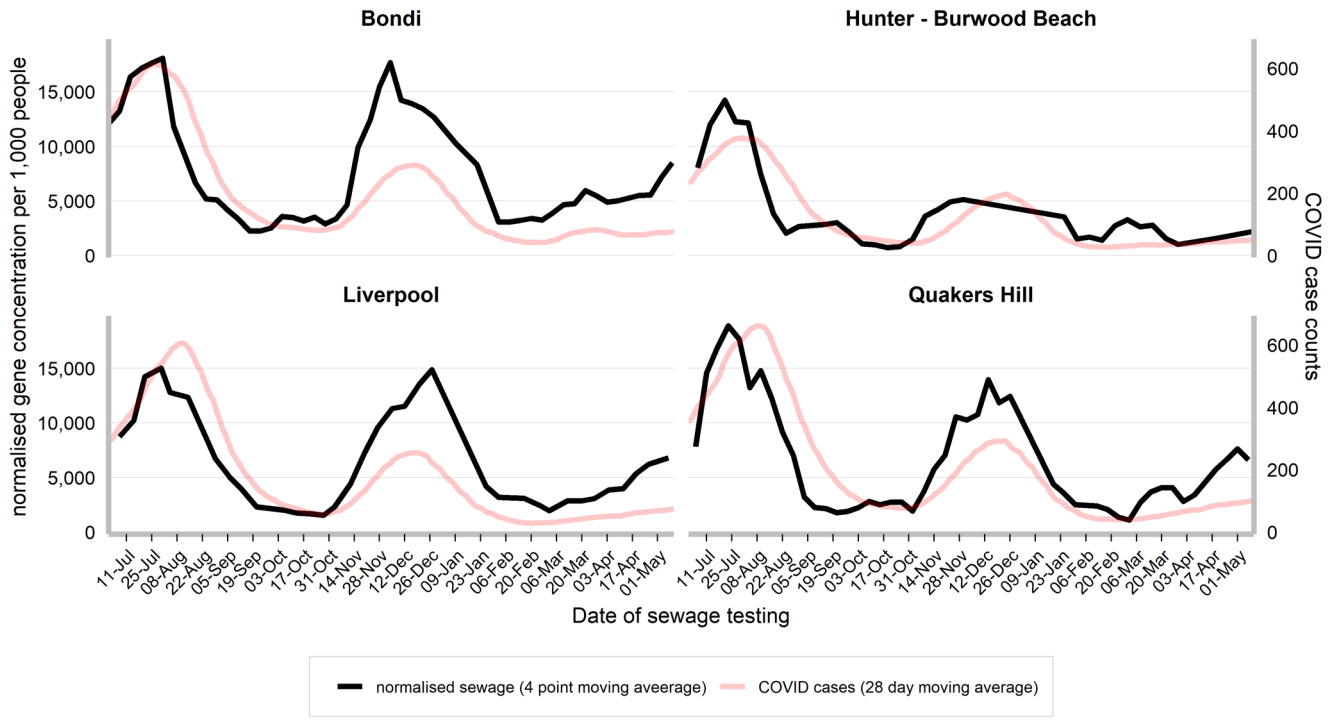


COVID-19 Sewage surveillance program

Trends are presented for Sydney Bondi, Quakers Hills, Liverpool and Burwood Beach sewage catchments from 5 February 2022 to the week ending 13 May 2023. For more information, please see the COVID-19 Sewage Surveillance Program website: https://www.health.nsw.gov.au/Infectious/covid-19/Pages/sewage-surveillance.aspx.

Interpretation: Gene concentrations per 1,000 people have continued to increase over the previous weeks indicating that transmission continues to occur in the community despite decreases in case notifications.

Figure 11. Gene concentration, per 1,000 people in each sewage catchment, 1 January 2023 to 13 May 2023.

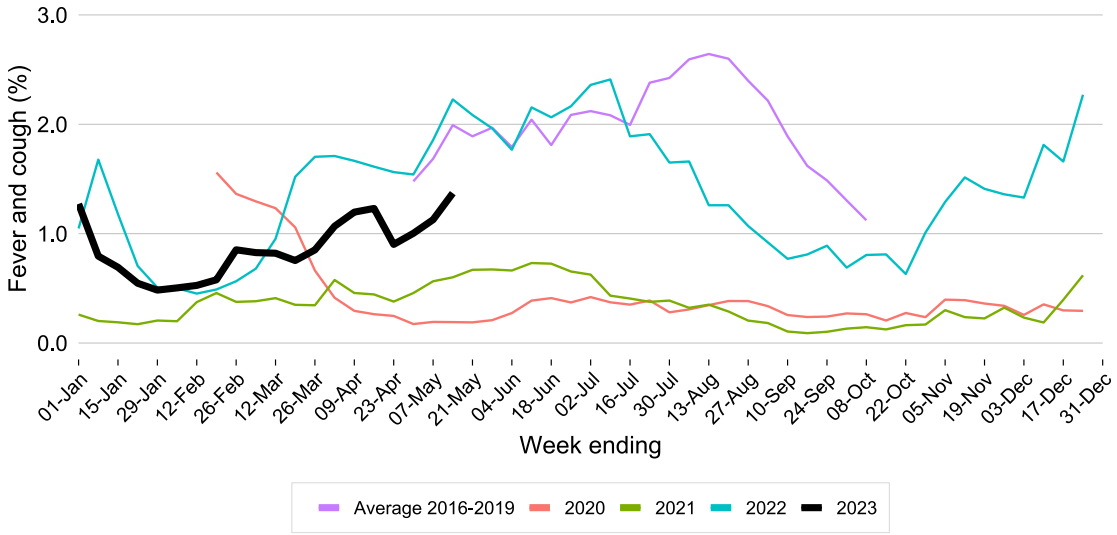


FluTracking and NSW sentinel laboratory network

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/

Interpretation: The proportion of people reporting fever and cough has been increasing since February. This indicates that symptomatic respiratory illness is continuing to increase in the community.

Figure 12. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 14 May 2023.



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.

Interpretation: There has been an increase in the proportion of these tests which are positive for influenza (Figure 13) or COVID-19 (Figure 14). This week's data was received from 6 of 13 laboratories for influenza PCR tests and 2 of 13 laboratories for COVID-19 PCR tests.

Figure 13. Number and proportion of tests positive for influenza at sentinel NSW laboratories, 1 January 2022 to 14 May 2023.

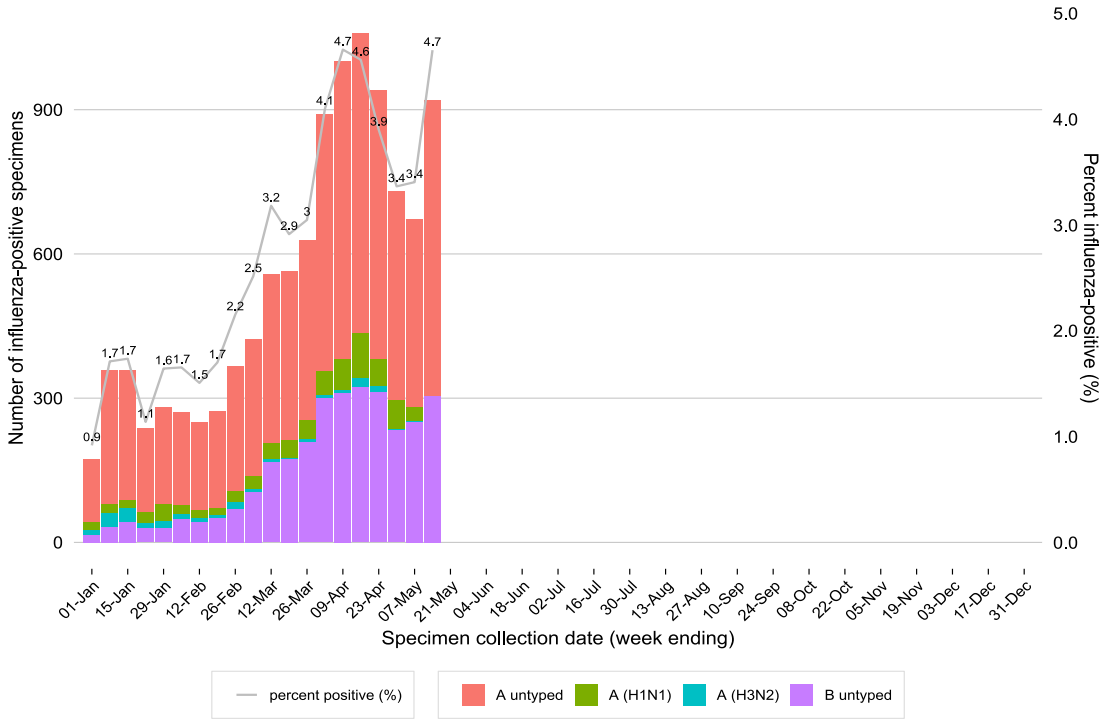


Figure 14. Number and proportion of tests positive for COVID-19 at sentinel NSW laboratories, 1 January 2022 to 14 May 2023.

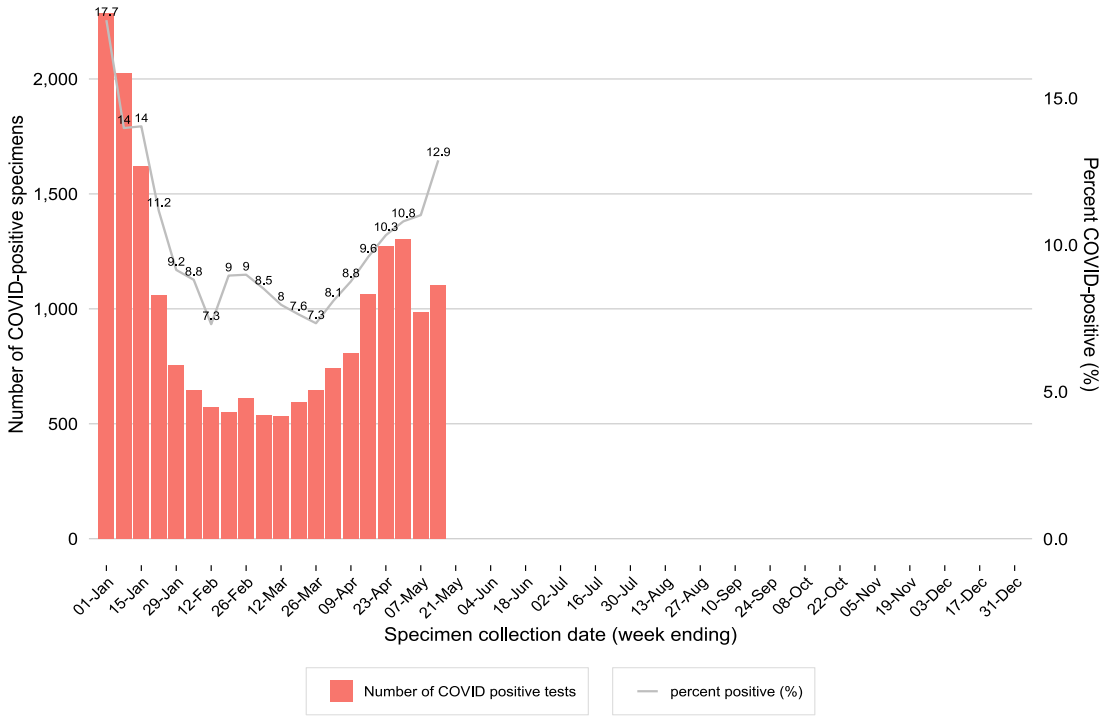


Figure 15. Number of positive PCR test results for other respiratory viruses at sentinel NSW laboratories, 1 January 2022 to 14 May 2023.

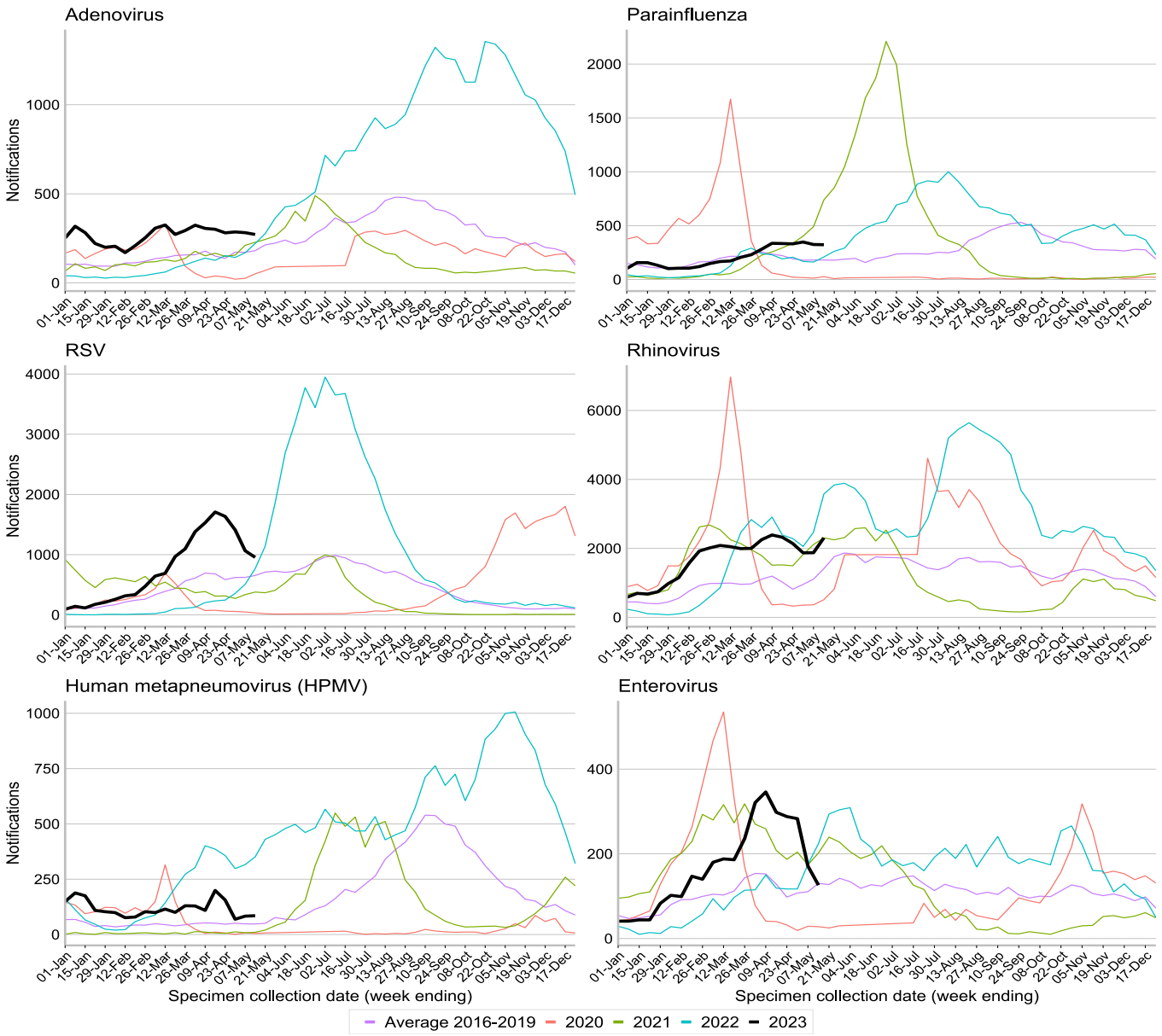


Table 2. Number of respiratory disease notifications from sentinel laboratories, NSW in the four weeks to 14 May 2023.

	Week ending				Year to date
	23 April	30 April	07 May	14 May*	
	n (% pos)	n (% pos)	n (% pos)	n (% pos)	n
Influenza	940 (3.9%)	729 (3.4%)	672 (3.4%)	919 (4.7%)	10,950
Adenovirus	281 (1.2%)	286 (1.3%)	282 (1.4%)	272 (1.4%)	5,361
Respiratory syncytial virus (RSV)	1,635 (6.8%)	1,411 (6.5%)	1,065 (5.4%)	955 (4.8%)	15,202
Rhinovirus	2,141 (8.9%)	1,871 (8.6%)	1,874 (9.5%)	2,307 (11.7%)	33,614
Human metapneumovirus (HMPV)	156 (0.6%)	069 (0.3%)	083 (0.4%)	085 (0.4%)	2,355
Enterovirus	288 (1.2%)	283 (1.3%)	171 (0.9%)	126 (0.6%)	3,364
Number of PCR tests conducted	**24,094**	**21,657**	**19,731**	**19,747**	**390,262**
SARS-CoV-2	1,271 (10.3%)	1,303 (10.8%)	986 (11.0%)	1,104 (12.9%)	19,707
Number of COVID PCR tests	**12,299**	**12,060**	**8,950**	**8,570**	**185,693**

*Recent data is subject to change. For the week ending 14 May 2023, 6 out of 13 sentinel laboratories have provided testing data at the time of reporting. 2 of the laboratories provided COVID testing data