NSW Respiratory Surveillance Report - week ending 04 May 2024

COVID-19 and influenza activity remain at low levels. RSV activity remains at high levels.

Summary

While currently at low levels, there is some suggestion from emergency department and notification data that COVID-19 and influenza activity may be increasing. Measures of RSV continue to show a high level of activity though there has been some decline in the youngest children.

Everyone can help reduce the spread of respiratory pathogens through simple measures such as, staying home if unwell and wearing a mask if you need to go out, staying up to date with recommended vaccinations and practicing good hygiene, including regular handwashing.

Data sources and methods

NSW Health continually reviews the methods used to monitor respiratory virus activity in New South Wales. This is due to changes in testing, notification patterns and levels of respiratory virus, including COVID-19, in the community. These changes affect the usefulness of notifications for monitoring virus activity and community transmission over time. The Public Health, Rapid, Emergency and Syndromic Surveillance (PHREDSS) data, COVID-19 sewage surveillance program, whole genome sequencing (WGS) data and sentinel laboratory respiratory virus test results are currently of most value for monitoring COVID-19 and other respiratory viruses of importance in the community. Registration of positive COVID-19 rapid antigen tests (RAT) in NSW ceased on 30 September 2023 and notifications now only reflect cases referred by a doctor for PCR. NSW Health also monitors COVID-19 outbreaks in residential aged-care facilities that are published by the Australian Government and COVID-19 antiviral prescriptions dispensed in NSW.

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 the impact on the health system.

Interpretation: There has been a slight increase in presentations and admission to EDs for COVID-19 and influenza. Presentations and admissions for bronchiolitis in young children remain at a high level with a slight decrease this week.

Figure 1. 'COVID-19' weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023-2024, persons of all ages.

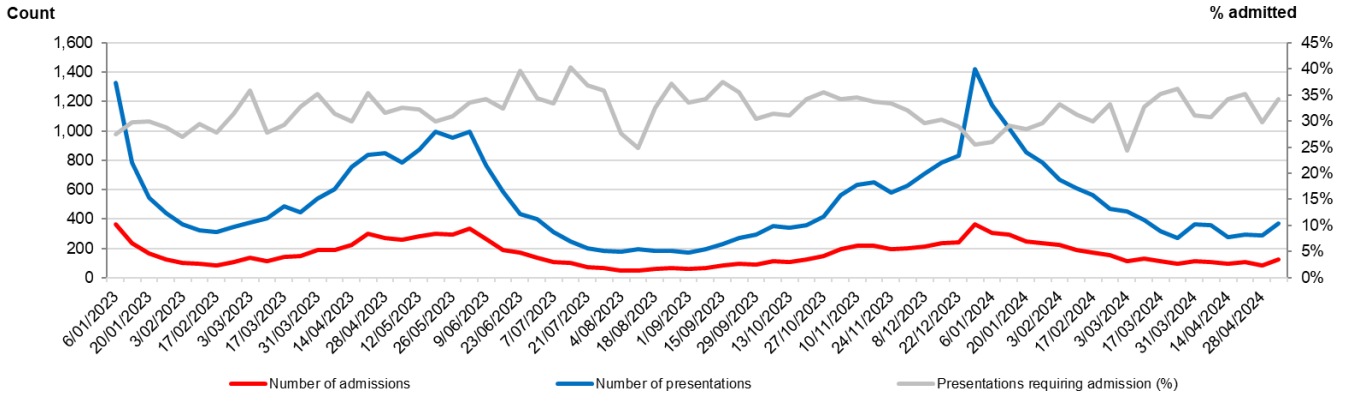


Figure 2. 'Influenza-like illness' weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023-2024, persons of all ages.

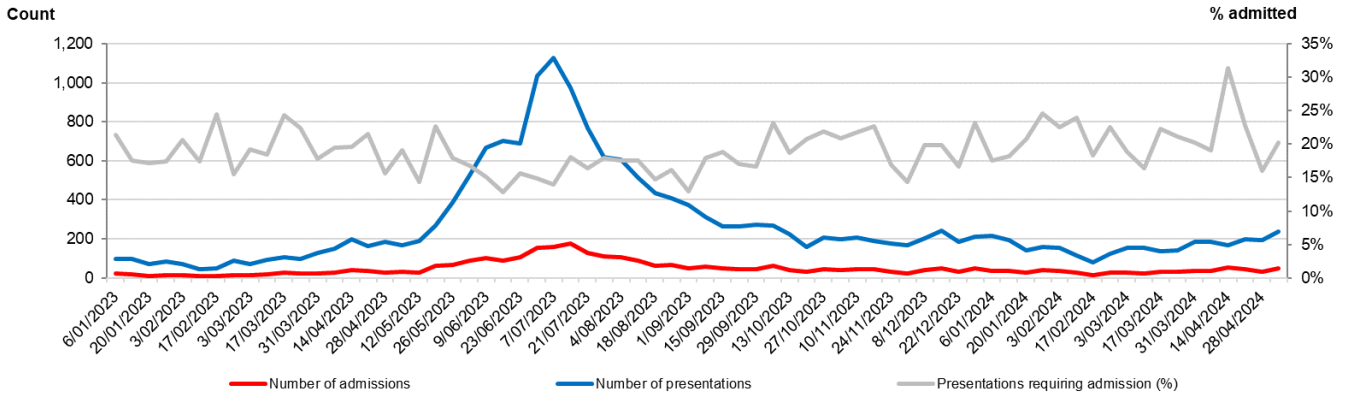
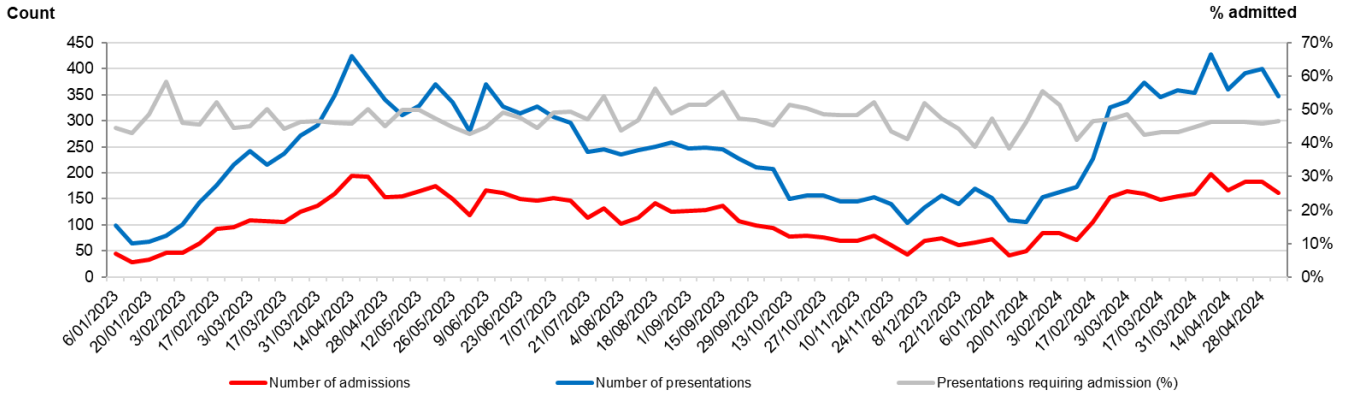


Figure 3. Bronchiolitis weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023-2024, children aged 0-4 years.



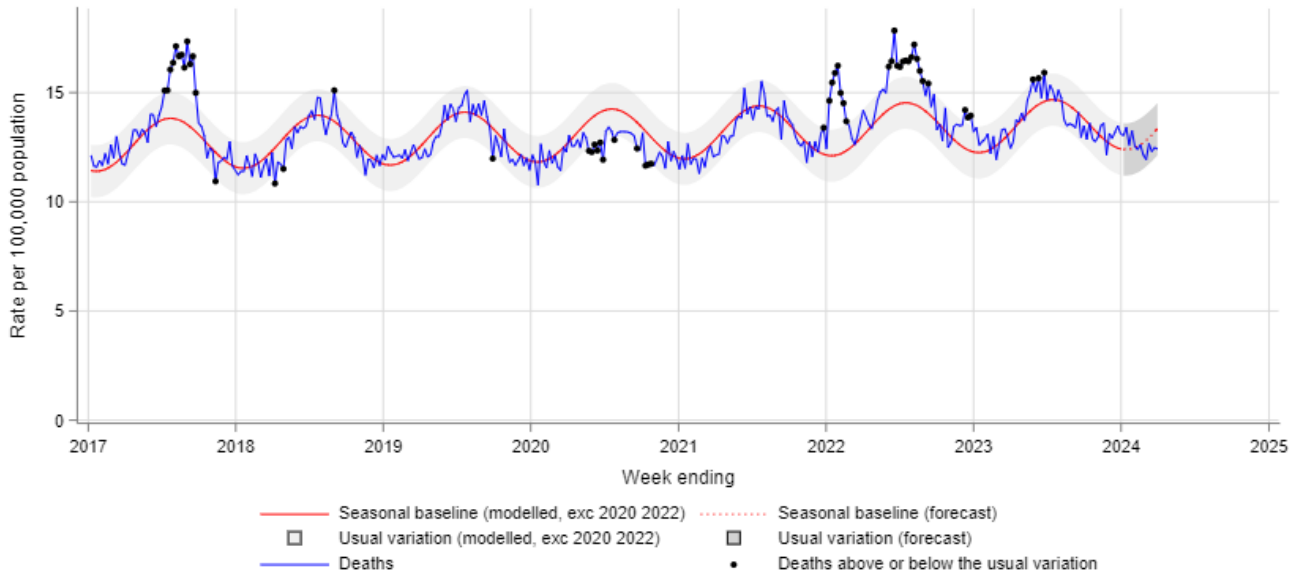
Death surveillance

All-cause mortality

The model for rapid surveillance of excess all-cause mortality in NSW is updated annually, and has a focus on surveillance for increased mortality in recent months. The model outputs for the current year should not be directly compared to previous years' outputs, due to a change in the baseline of the model. The NSW model supports surveillance of the impact of circulating viruses such as COVID-19 and influenza on all-cause mortality. This is not the same approach as that used by the ABS or by the Actuaries Institute to examine excess mortality associated with COVID-19 during the pandemic period. These approaches modelled excess mortality in the absence of COVID-19.

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 31 March 2024



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 25 February 2024 to 31 March 2024. For additional information see COVID-19 surveillance report data sources and methodology for details.

Notifications of COVID-19, influenza and RSV

Notification data is obtained from laboratory tests for infections. This indicator provides information about community infection.

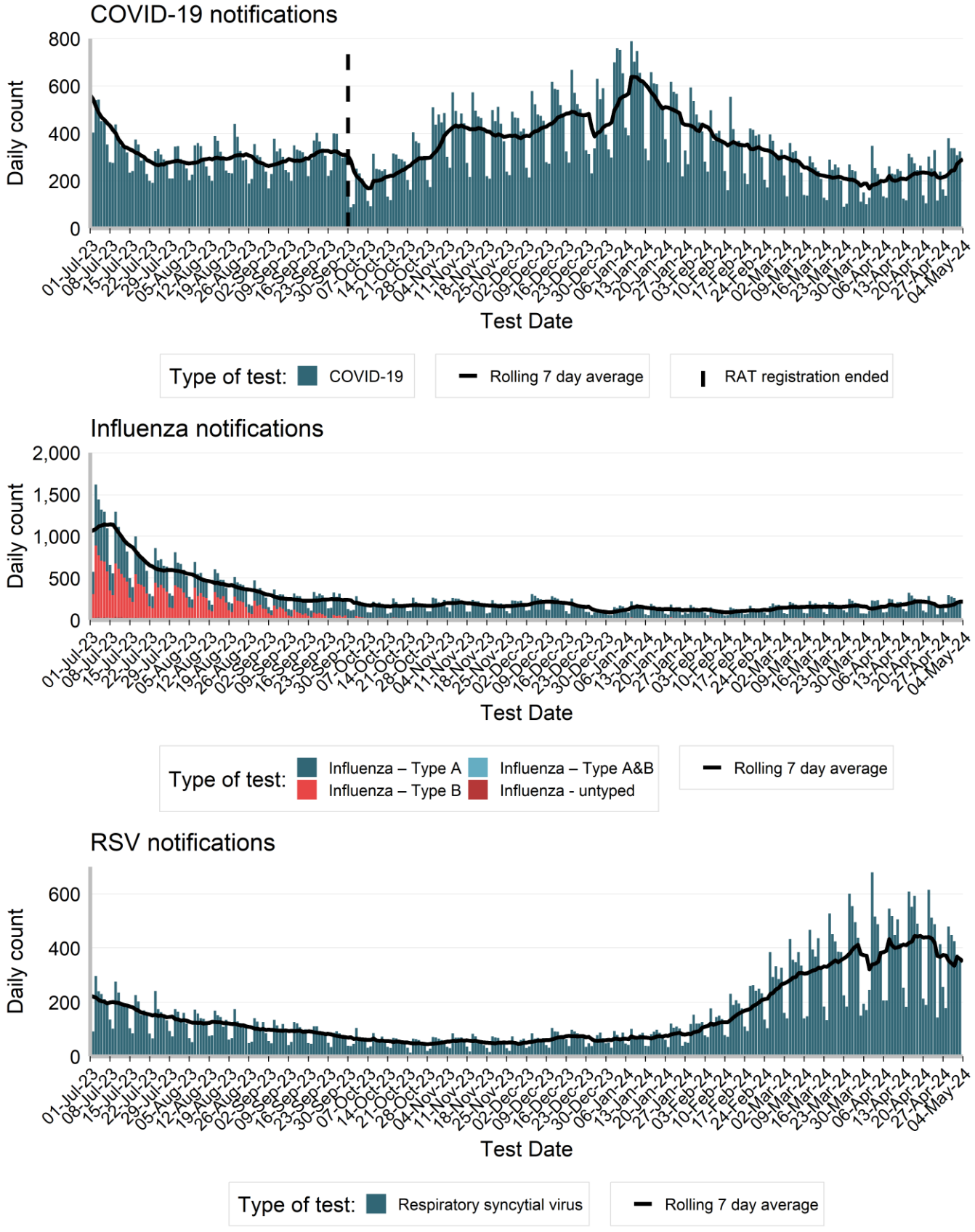
Interpretation: In the past week there was an increase of 34% in COVID notifications, an increase of 30% in influenza notifications, and a decrease of 7% in RSV notifications.

Table 1: Notifications of COVID-19, influenza and RSV, NSW, tested in the week ending 04 May 2024.

	COVID		Influenza		RSV	
	week ending 04 May 2024	Year to Date	week ending 04 May 2024	Year to Date	week ending 04 May 2024	Year to Date
Gender						
Female	1,175	22,631(55%)	816	9,812(52%)	1,296	16,176(51%)
Male	842	18,364(45%)	709	9,020(48%)	1,133	15,307(49%)
Age group (years)						
0-4	146	4,100(10%)	226	2,532(13%)	1,355	20,061(64%)
5-9	43	803(2%)	179	2,291(12%)	150	2,241(7%)
10-19	105	1,860(5%)	176	2,420(13%)	120	1,172(4%)
20-29	178	3,249(8%)	155	1,996(11%)	90	894(3%)
30-39	243	4,451(11%)	196	2,331(12%)	131	1,380(4%)
40-49	256	4,152(10%)	174	2,124(11%)	92	908(3%)
50-59	196	4,076(10%)	148	1,723(9%)	112	1,077(3%)
60-69	227	4,542(11%)	120	1,390(7%)	118	1,265(4%)
70-79	242	5,588(14%)	86	1,219(6%)	140	1,244(4%)
80-89	278	5,520(13%)	51	613(3%)	94	917(3%)
90+	112	2,660(6%)	15	209(1%)	27	344(1%)
Local Health District of residence						
Central Coast	66	1,467(4%)	70	633(3%)	97	1,588(5%)
Far West	20	163(0%)	0	18(0%)	2	28(0%)
Hunter New England	180	3,313(8%)	74	995(5%)	253	2,276(7%)
Illawarra Shoalhaven	111	1,882(5%)	59	875(5%)	167	1,713(5%)
Mid North Coast	61	1,159(3%)	8	222(1%)	79	495(2%)
Murrumbidgee	87	1,185(3%)	76	462(2%)	48	288(1%)
Nepean Blue Mountains	86	1,865(5%)	88	869(5%)	206	1,942(6%)
Northern NSW	55	1,434(3%)	28	361(2%)	45	556(2%)
Northern Sydney	318	4,954(12%)	205	3,336(18%)	304	4,659(15%)
South Eastern Sydney	193	4,418(11%)	156	2,278(12%)	225	3,294(10%)
South Western Sydney	223	5,873(14%)	247	2,913(15%)	353	5,732(18%)
Southern NSW	40	700(2%)	18	195(1%)	43	295(1%)
Sydney	109	3,286(8%)	112	1,500(8%)	138	2,025(6%)
Western NSW	68	935(2%)	29	254(1%)	81	495(2%)
Western Sydney	405	7,965(19%)	346	3,859(20%)	384	6,054(19%)
Aboriginal status						
Aboriginal and/or Torres Strait Islander	39	891(2%)	47	415(2%)	82	846(3%)
Not Aboriginal or Torres Strait Islander	1,142	23,274(57%)	824	10,398(55%)	1,100	13,699(43%)
Not Stated / Unknown	838	16,863(41%)	655	8,039(43%)	1,247	16,965(54%)
Total	2,019	41,028(100%)	1,526	18,852(100%)	2,429	31,510(100%)

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

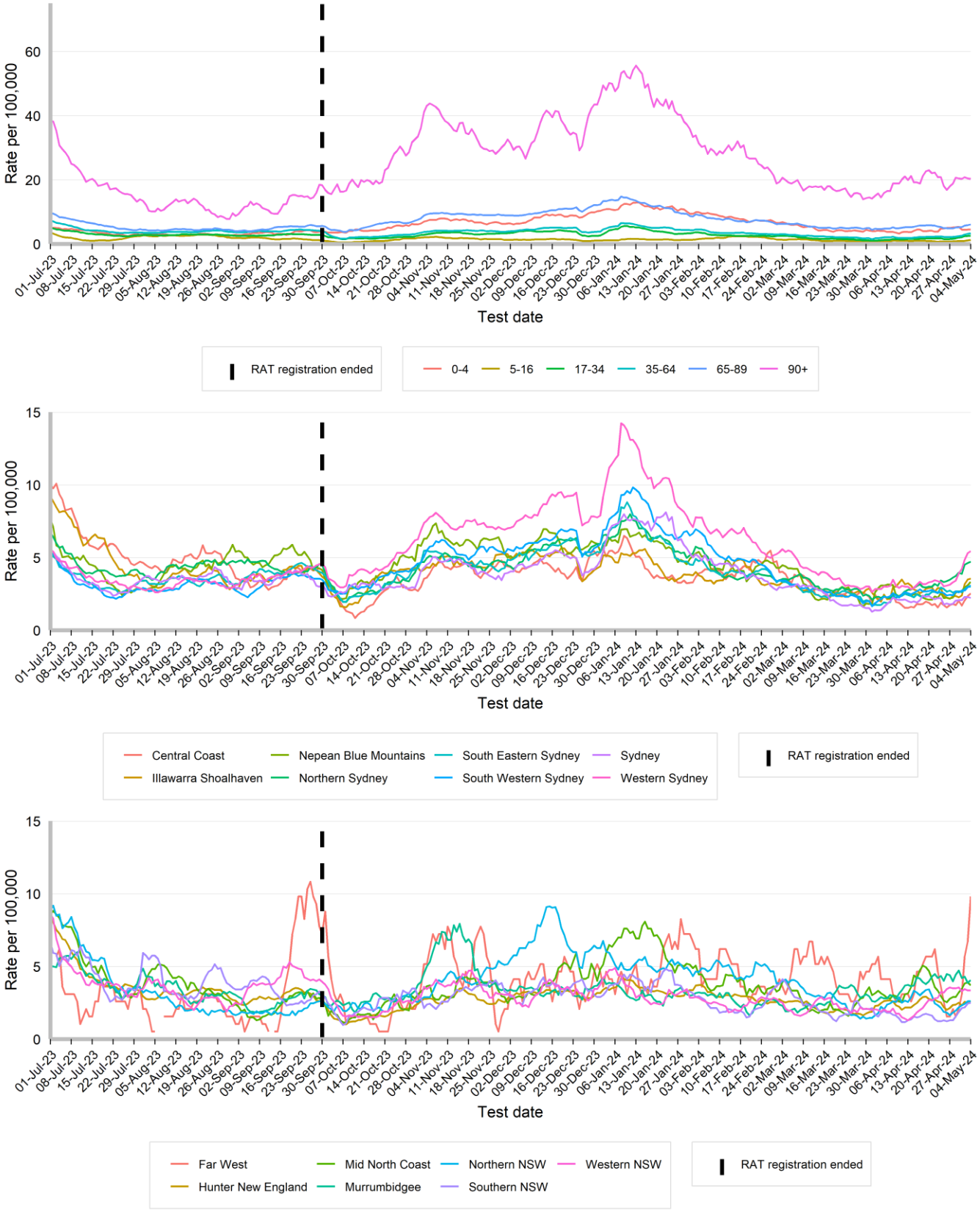
Figure 5. People notified with COVID-19, Influenza and RSV, by date of test and type of test performed, NSW, 01 July 2023 to 04 May 2024.



Rates of COVID-19 notifications per 100,000 population

Interpretation: Rates of COVID-19 notifications are stable across all ages. Those aged 90 and over continue to experience the highest rate of notification. LHDs with smaller populations, such as Far West LHD, will experience greater variability in notification rates.

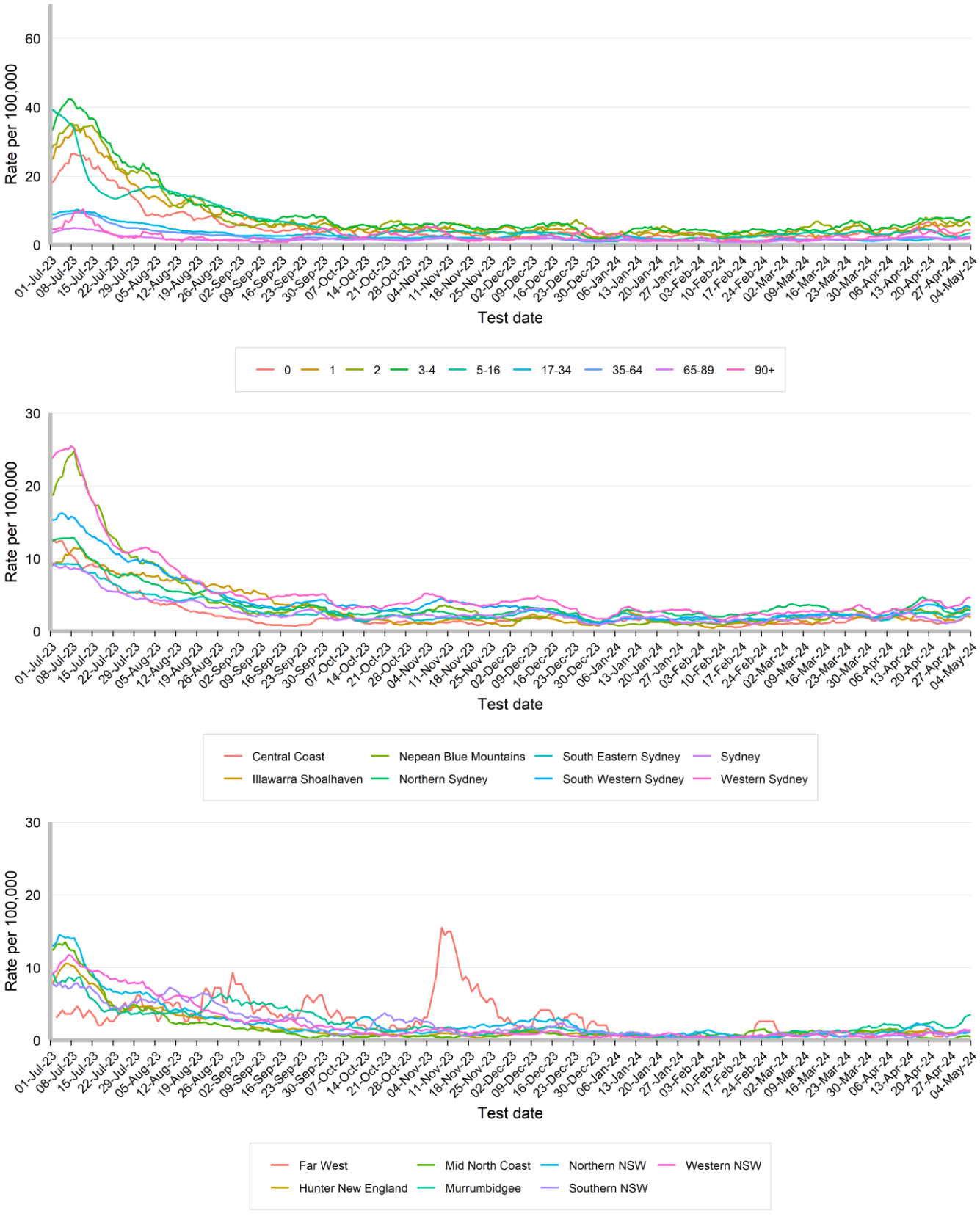
Figure 6. Daily seven-day rolling average rate of COVID-19 notifications per 100,000 population, by age group, Local Health District and test date, NSW, 01 July 2023 to 04 May 2024.



Rates of influenza notifications per 100,000 population

Interpretation: Rates of influenza notifications are low across age groups and LHDs. There is a slight increase in rates for the youngest children.

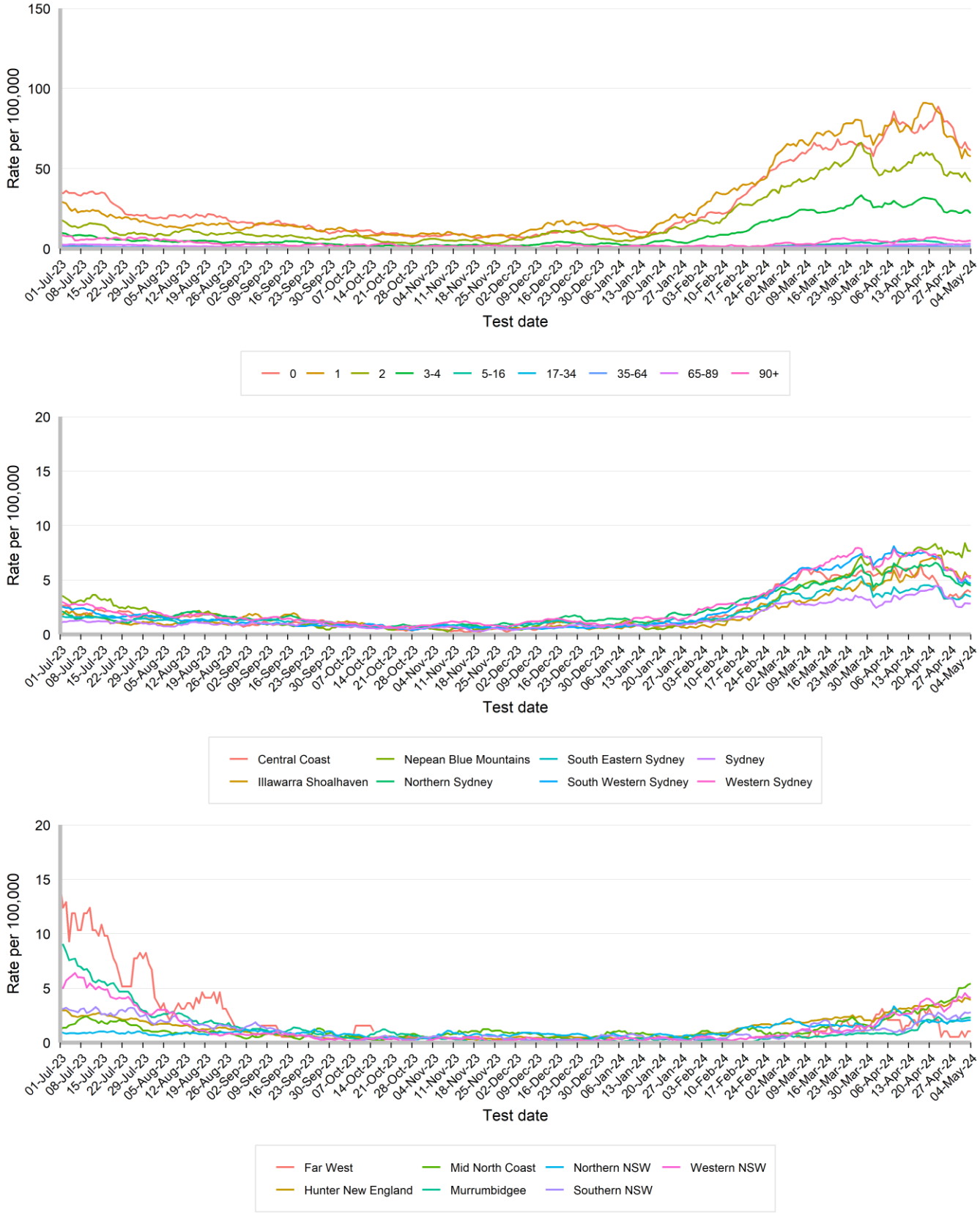
Figure 7. Daily seven-day rolling average rate of influenza notifications per 100,000 population, by age group, Local Health District and test date, NSW, 01 July 2023 to 04 May 2024.



Rates of respiratory syncytial virus notifications per 100,000 population

Interpretation: Rates of RSV notifications remain high. Rates in children less than two years of age have declined in recent weeks.

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 July 2023 to 04 May 2024.

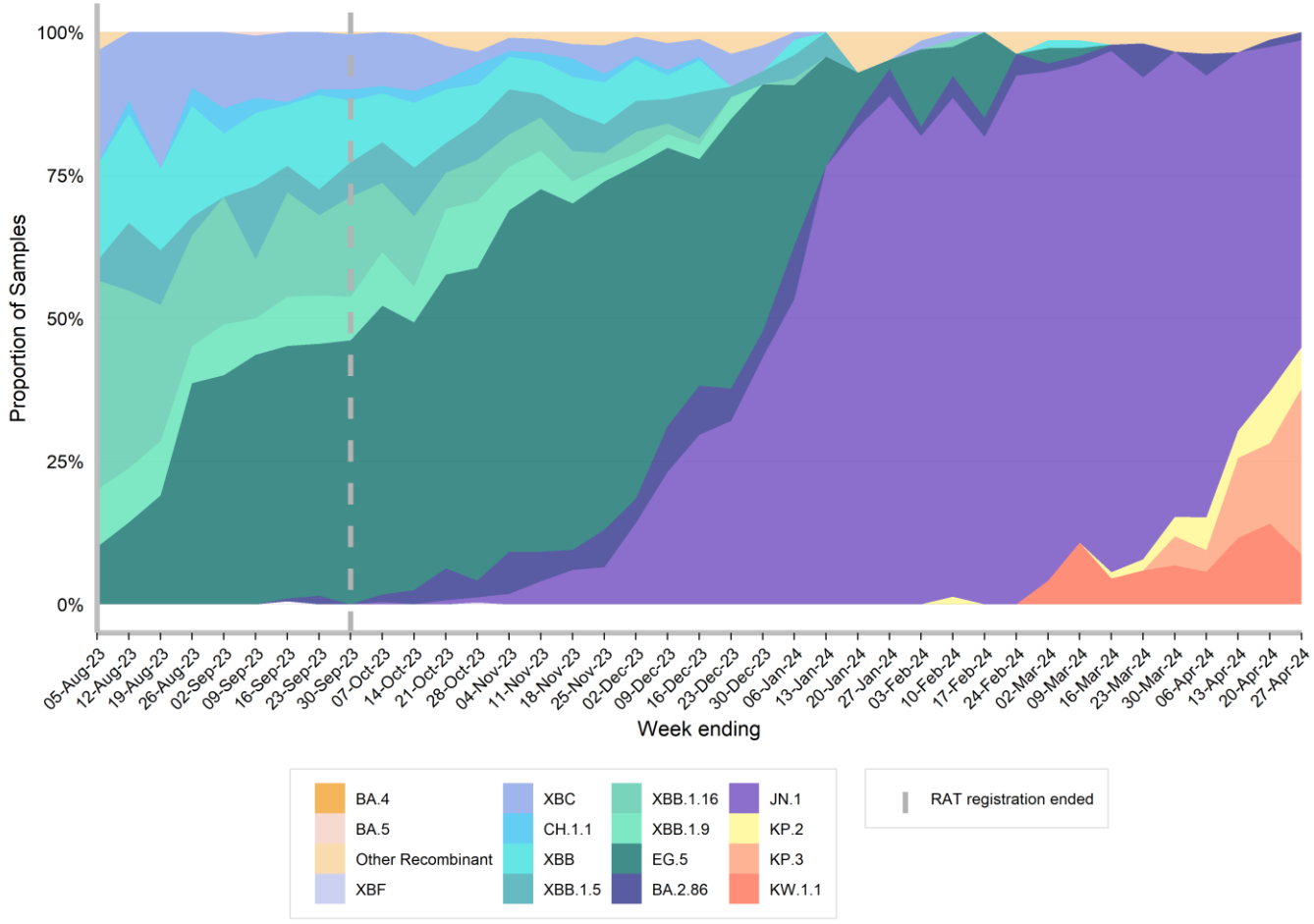


COVID-19 Whole Genome Sequencing

Specimens from people with COVID-19 undergo whole genome sequencing to identify and understand the behaviour of circulating variants. Community samples are sourced from cases who test via PCR at community pathology services, and may not necessarily reflect the distribution in all cases across NSW. NSW continues to monitor results from cases who are admitted from ICU to monitor for increased disease severity and from cases who return from overseas to monitor for new variants introduced into NSW. There is a lag between the date a PCR test is taken and the date that the results of WGS are reported.

Interpretation: KP.2, KP.3 and KW.1.1 are sub-lineages of JN.1. We have reported on these sub-lineages separately from the JN.1 group this week because of their increasing prevalence. Emergence of COVID-19 variants has been associated with new waves of COVID-19 infections, so we continue to closely monitor these trends.

Figure 9. Estimated distribution of COVID-19 sub-lineages in the community, 05 August 2023 to 27 April 2024.



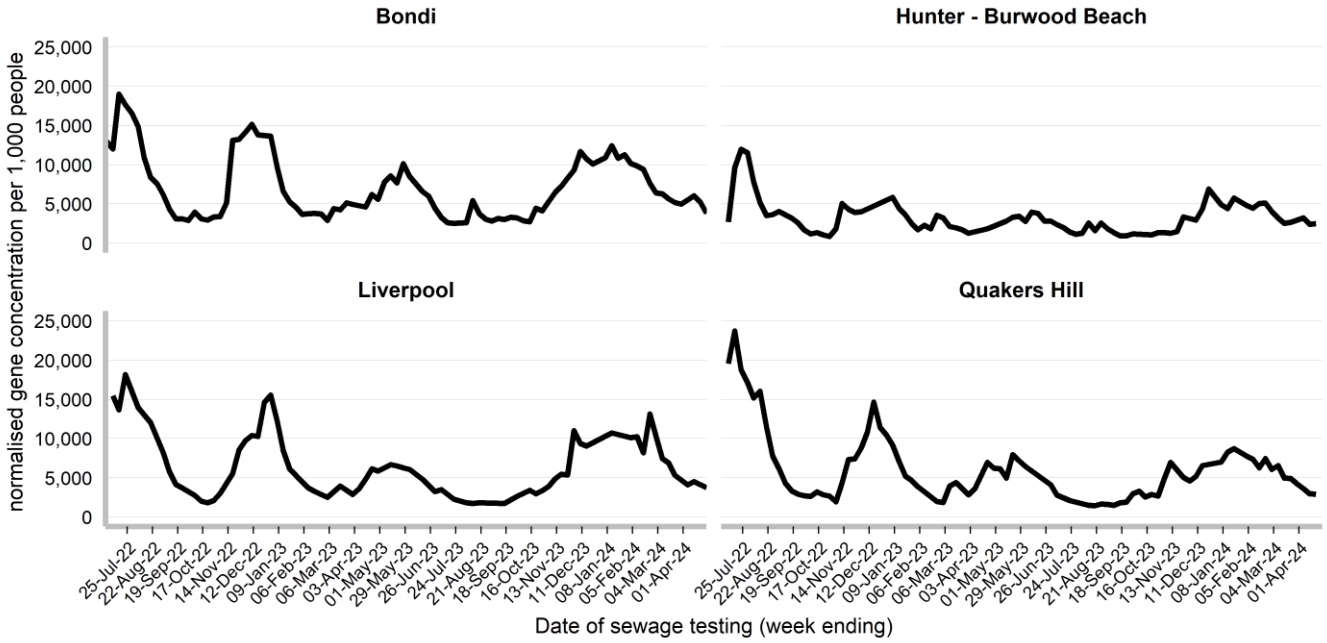
Other surveillance indicators

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 01 May 2024. 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 are low in all catchment areas.

Figure 10. Gene concentration, per 1,000 people in each sewage catchment, 1 July 2022 to 27 April 2024.*

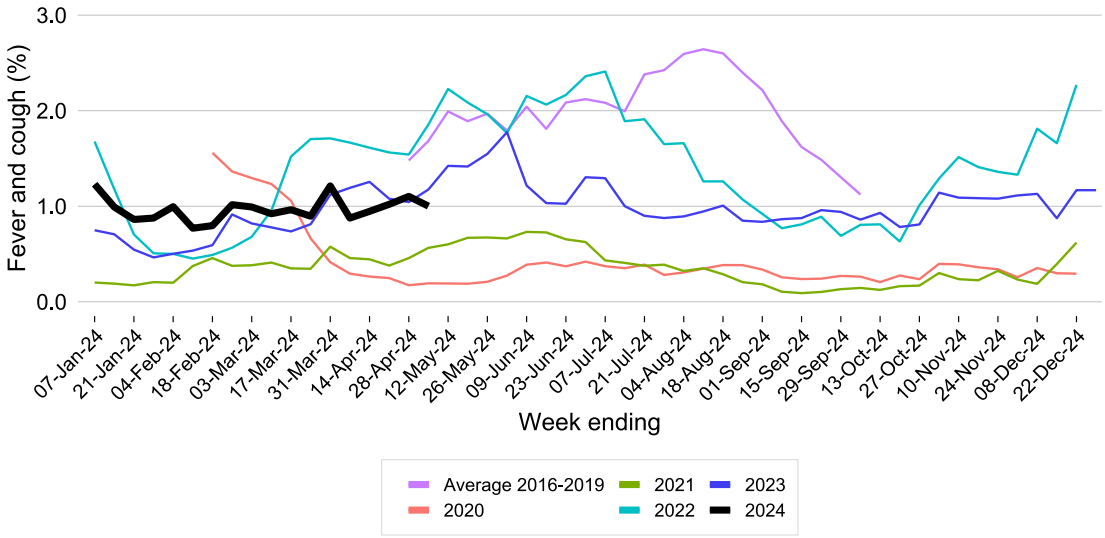


*Note these graphs have not been updated for the most recent week due to high rainfall impacting the calculation of gene concentration.

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/

Figure 11. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 05 May 2024.



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: COVID-19 and influenza test positivity are low.

Figure 12. Number and proportion of tests positive for COVID-19 at sentinel NSW laboratories, 1 January 2023 to 05 May 2024.

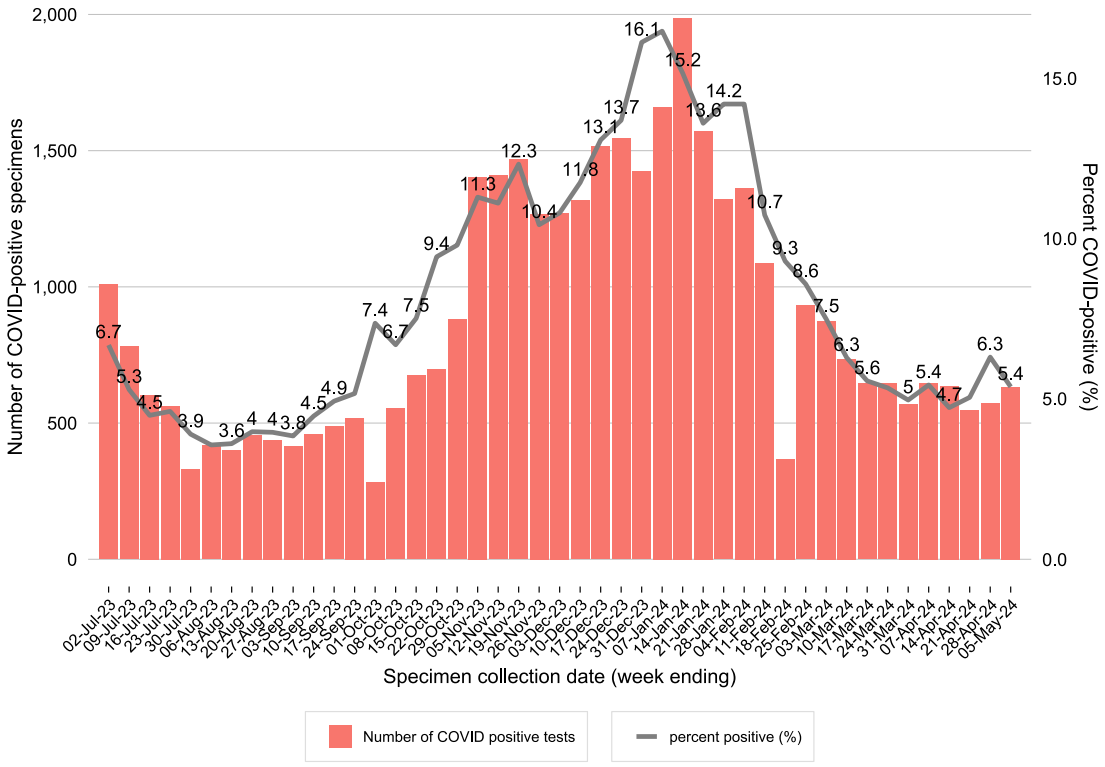


Figure 13. Number and proportion of tests positive for influenza at sentinel NSW laboratories, 1 January 2023 to 05 May 2024.

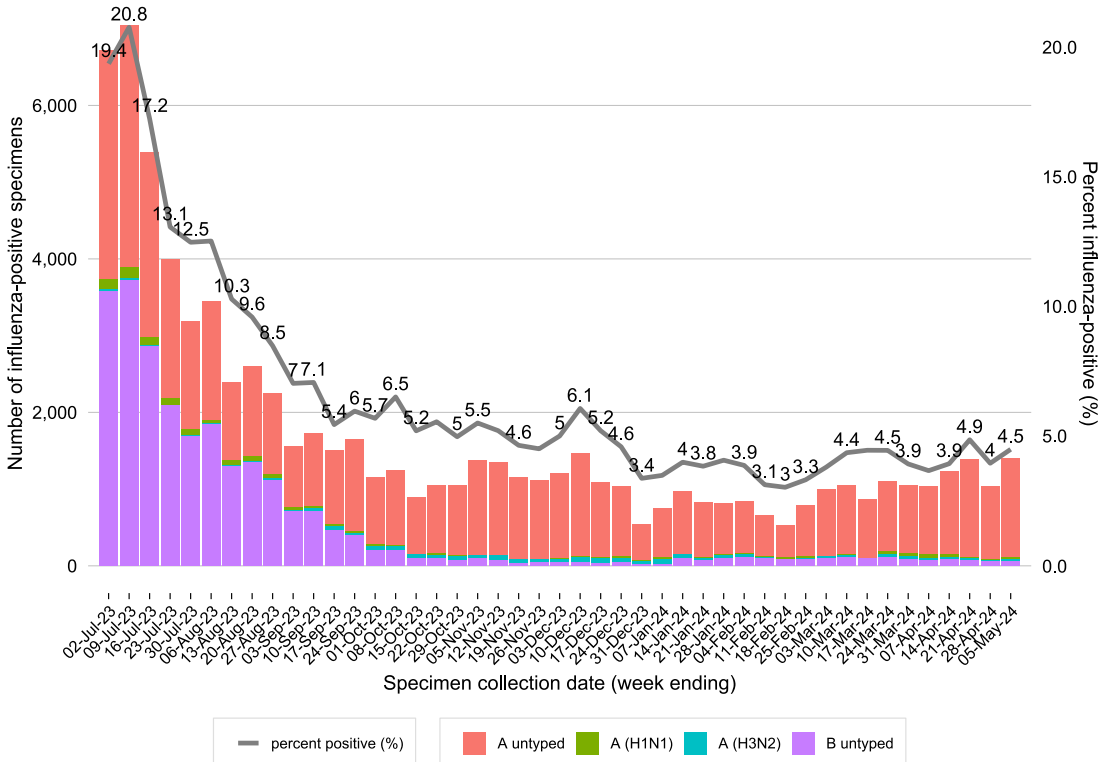


Figure 14. Number of positive PCR test results and proportion of tests positive for other respiratory viruses at sentinel NSW laboratories, 1 January 2023 to 05 May 2024.

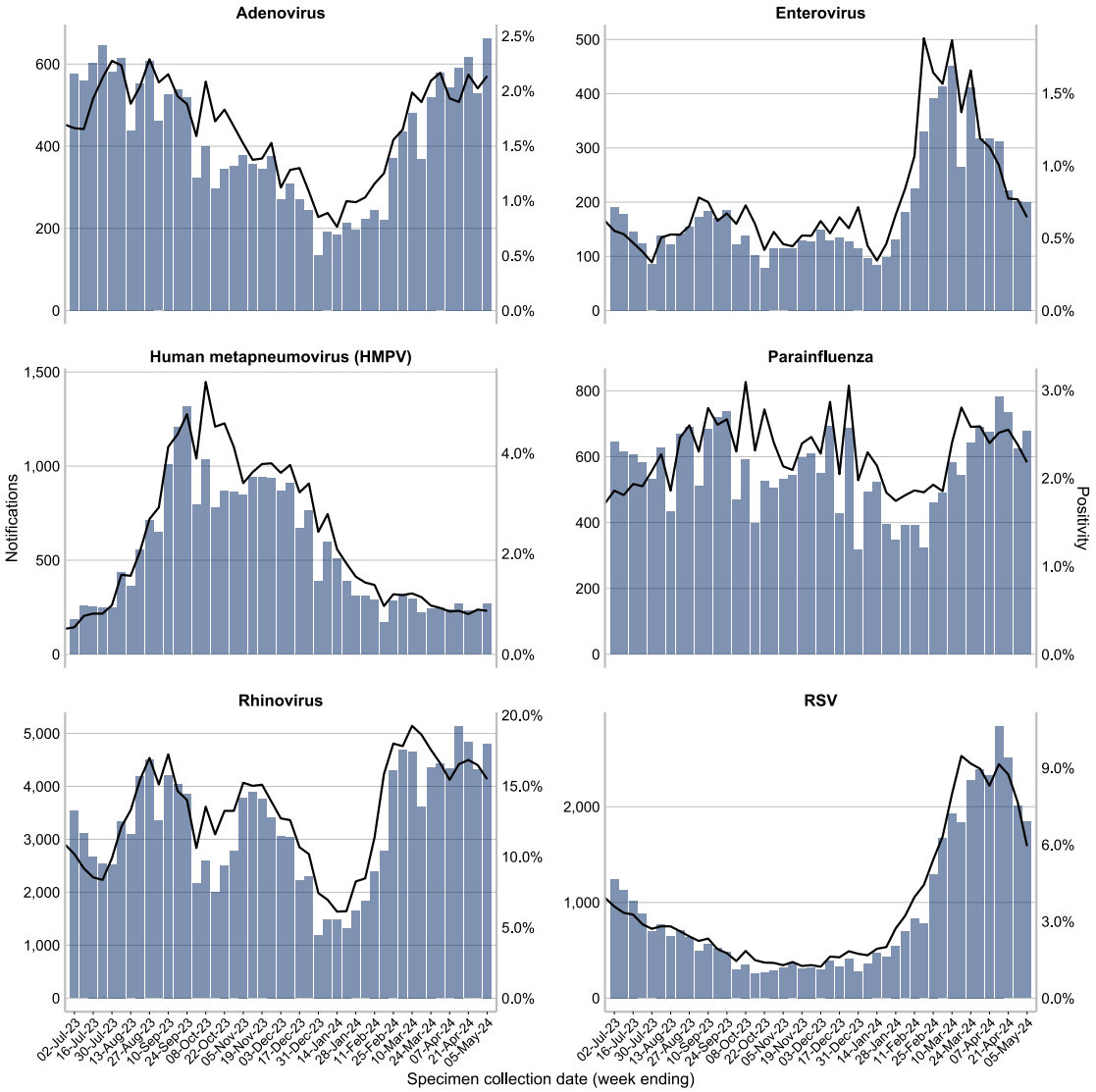


Table 2. Total number of respiratory disease notifications from sentinel laboratories, NSW in the four weeks to 05 May 2024.

	Week ending				Year to date
	14 April	21 April	28 April	05 May	
	n(% pos)	n(% pos)	n(% pos)	n(% pos)	n
Influenza	1,225 (3.9%)	1,396 (4.9%)	1,036 (4.0%)	1,394 (4.5%)	17,347
Adenovirus	591 (1.9%)	617 (2.1%)	530 (2.0%)	663 (2.1%)	7,173
Parainfluenza	783 (2.5%)	733 (2.6%)	624 (2.4%)	677 (2.2%)	9,767
Respiratory syncytial virus (RSV)	2,846 (9.1%)	2,512 (8.7%)	2,009 (7.7%)	1,845 (5.9%)	27,066
Rhinovirus	5,144 (16.5%)	4,835 (16.8%)	4,313 (16.5%)	4,804 (15.5%)	62,467
Human metapneumovirus (HMPV)	269 (0.9%)	230 (0.8%)	233 (0.9%)	268 (0.9%)	5,410
Enterovirus	312 (1.0%)	222 (0.8%)	201 (0.8%)	200 (0.6%)	4,653
Number of PCR tests conducted	31,113	28,726	26,194	31,040	438,323
SARS-CoV-2	636 (4.7%)	547 (5.1%)	572 (6.3%)	632 (5.4%)	16,796
Number of COVID PCR tests	13,441	10,828	9,067	11,743	194,050
Number of laboratories reporting	12	11	11	9	-
Number of laboratories reporting COVID	4	3	3	2	-

Recent data is subject to change.

In Focus

Pertussis

Pertussis (commonly known as whooping cough) is caused by the bacteria *Bordetella pertussis*. Pertussis can cause serious illness in all ages but can be particularly dangerous in babies. Pertussis can cause pneumonia and can be life threatening. Anyone with pertussis can spread it to others. The bacteria spread from one person to another mainly when someone with the infection coughs and fine droplets that contain the bacteria spread into the surrounding air. Vaccination reduces the risk of infection and severe disease. There is seasonal variation in pertussis activity, with greater activity typically in the spring and summer months. Outbreaks of pertussis usually occur every few years as population immunity wanes. Public health interventions in place during 2020 and 2021 to reduce the transmission of COVID-19, also reduced other respiratory infections, including pertussis. In 2020 there was dramatic reduction in the rate of notifications to almost half of the low in 2013, with further reductions in 2021 and 2022 (Figure 15). Notifications of people with pertussis in NSW started to increase in 2023 and are expected to continue to increase. The highest rates of pertussis are observed in children 5-14 years (Figure 16). The number of notifications in this age group increased this week (Figure 17). Additional notification data can be found on the NSW Health pertussis data page.

Figure 15. Pertussis notifications and rates per 100,000 by year, 2009 to 2024 year to date (YTD).

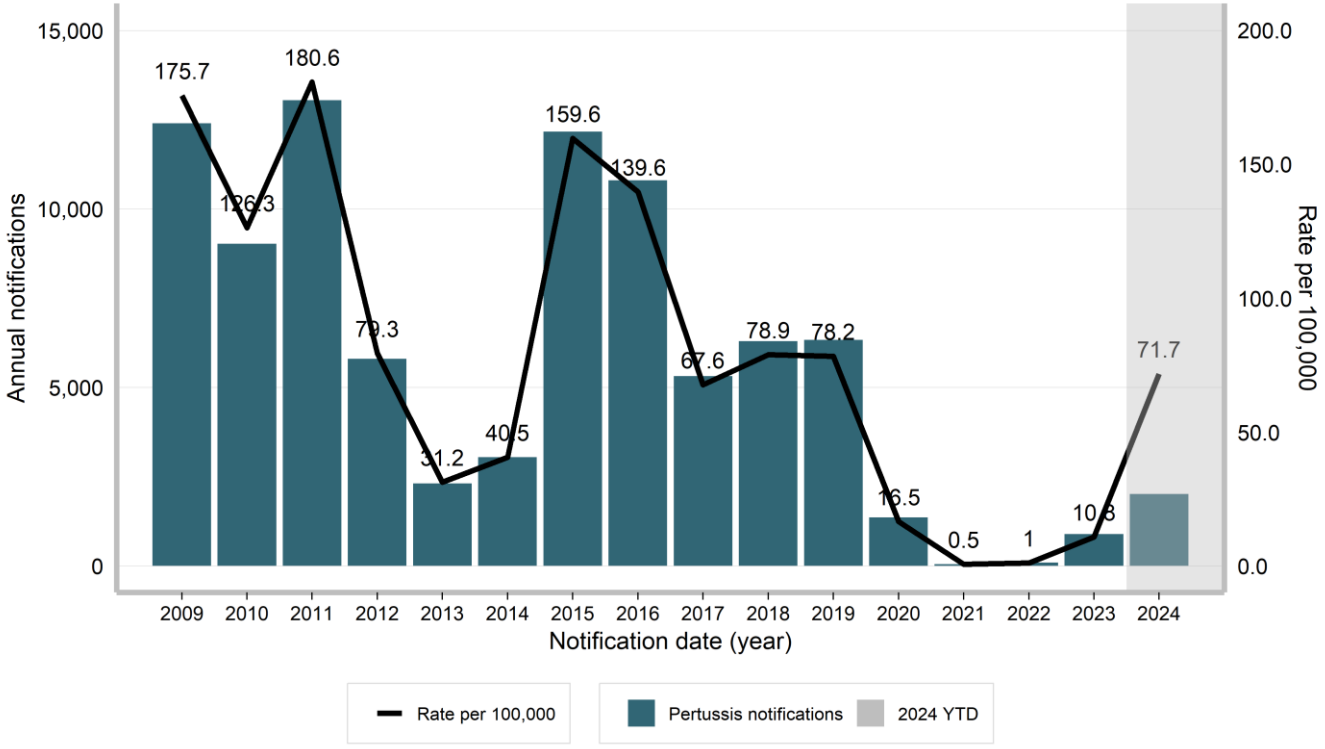


Figure 16. Monthly pertussis notification rates per 100,000 by age group, 1st September 2022 to 30 April 2024.

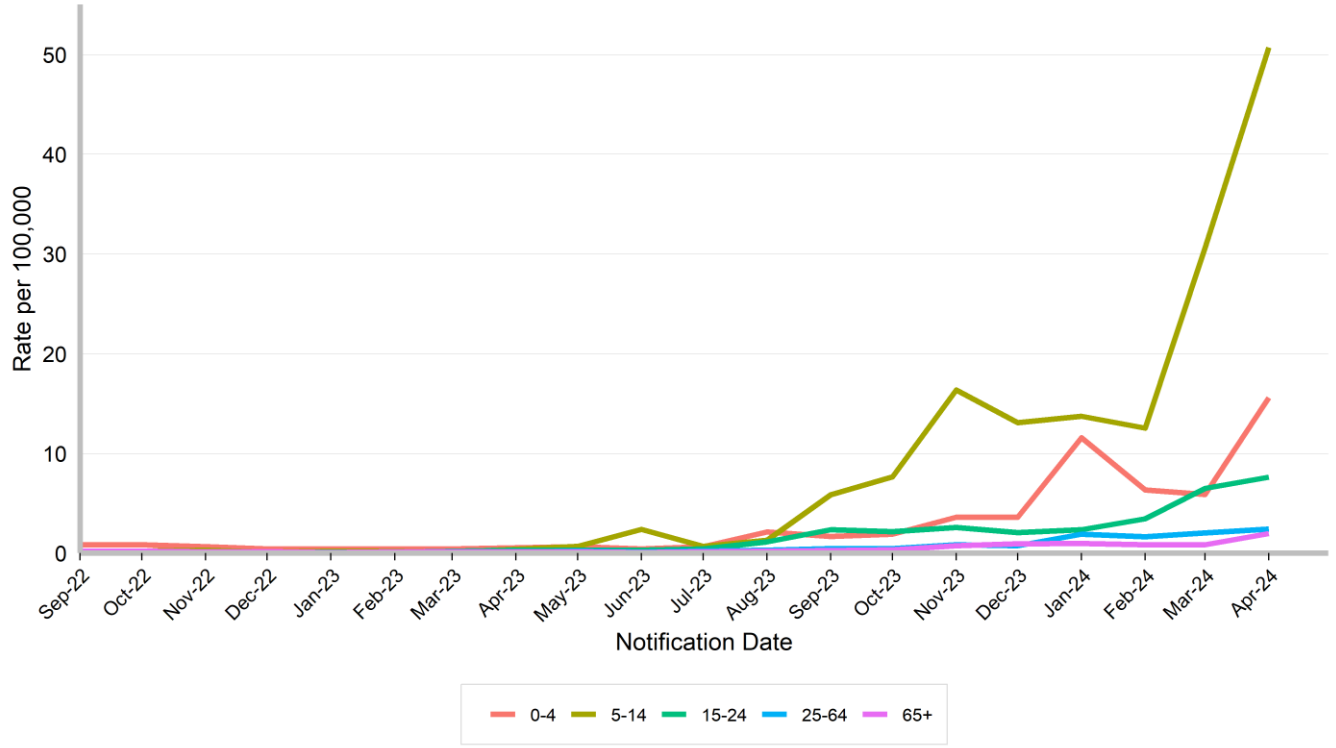
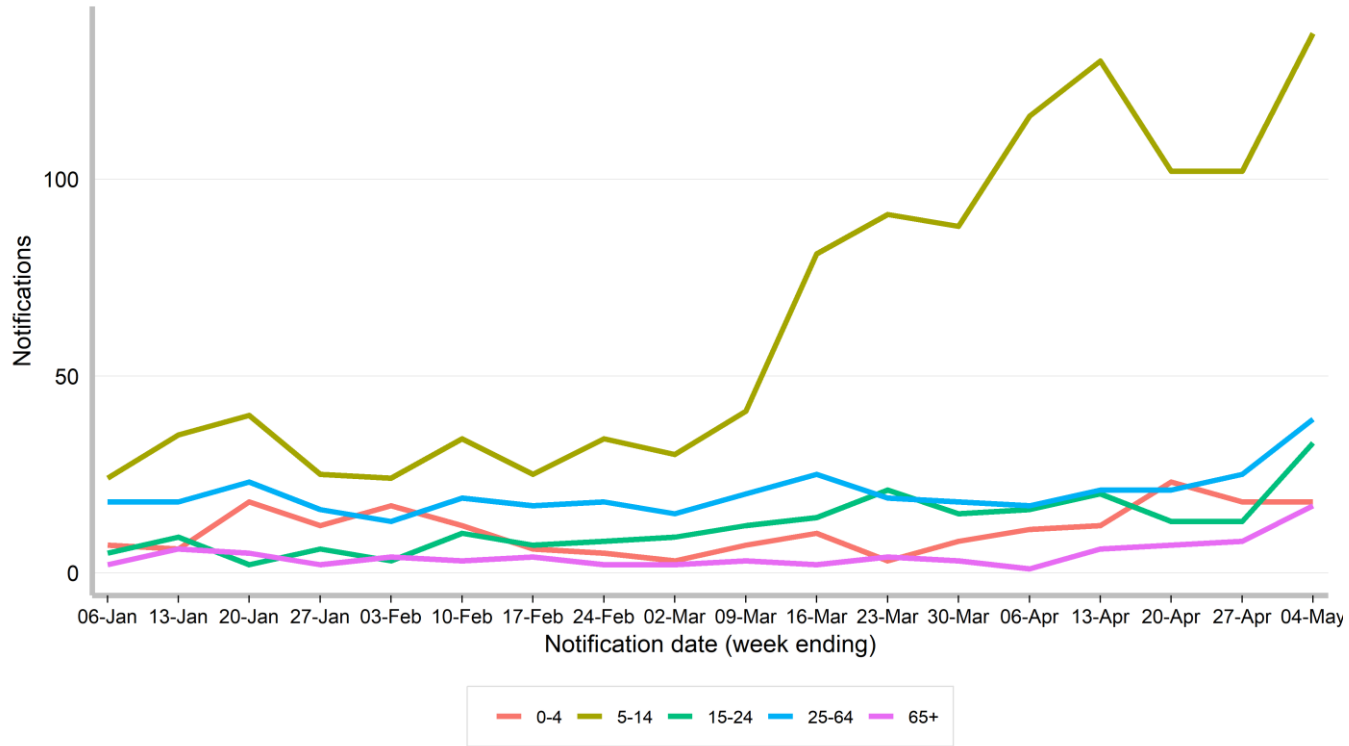


Figure 17. Weekly pertussis notifications by age group, 31st December 2023 to 04 May 2024.



Pneumonia

There have been unseasonably high presentations to emergency departments (ED) in NSW for children and young adults with pneumonia, particularly in those aged 5 – 16 years (Figure 19), which have continued through April 2024. Emergency Departments initially classify most pneumonia presentations as unspecified pneumonia because a specific cause of the pneumonia has yet to be identified. This information may become available later in the admission or following discharge from hospital.

There is some indication, from a number of different data sources, that increases in pneumonia are likely contributed to by infection with *Mycoplasma pneumoniae*. *M. pneumoniae* is a common cause of pneumonia in school aged children and epidemics occur every 3-5 years. The last epidemic in NSW was before the COVID-19 pandemic. Both *M. pneumoniae* and *B. pertussis* cause persistent cough, sometimes wheezing and can cause pneumonia.

Figure 18. Unplanned emergency department (ED) presentations with a diagnosis of pneumonia, 1 January to 04 May 2024 and comparison with the previous 5 years, persons aged 0 – 4 years.

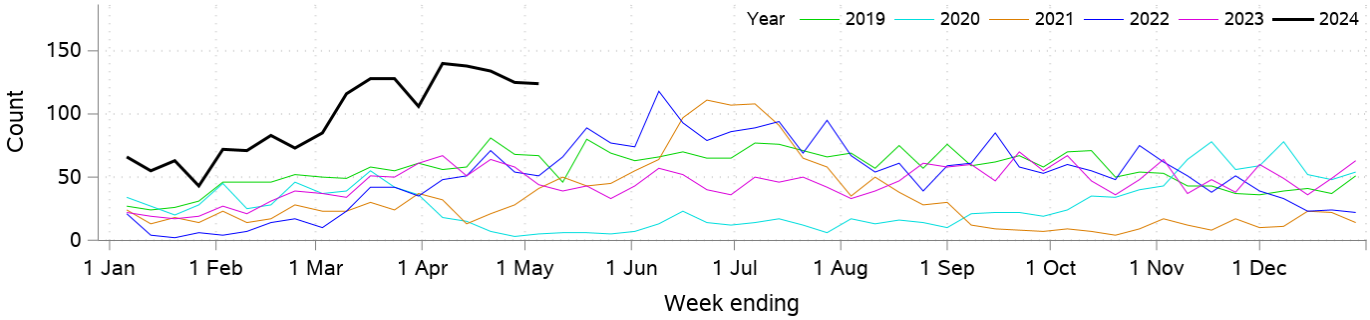


Figure 19. Unplanned emergency department (ED) presentations with a diagnosis of pneumonia, 1 January to 04 May 2024 and comparison with the previous 5 years, persons aged 5 – 16 years.

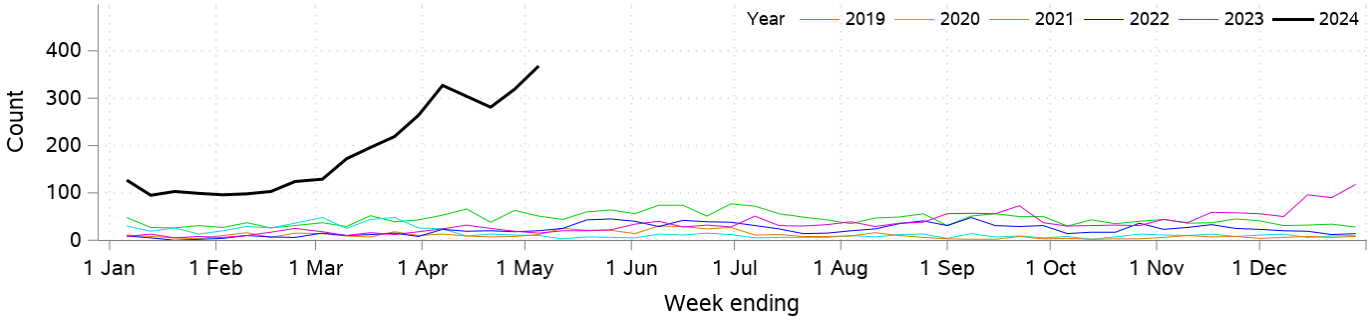


Figure 20. Unplanned emergency department (ED) presentations with a diagnosis of pneumonia, 1 January to 04 May 2024 and comparison with the previous 5 years, persons aged 17 – 34 years.

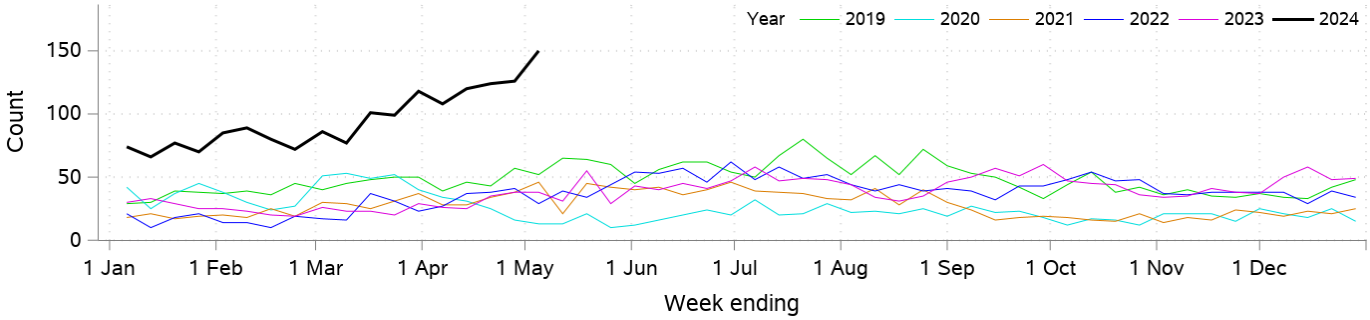


Figure 21. Pneumonia weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023-2024, persons of all ages.