Influenza is at a moderate level of activity. COVID-19 remains at a low level of activity and RSV is at a low level of activity.

Summary

COVID-19 activity is stable at a low level. Influenza activity has declined and is at a moderate level of activity. Test positivity for influenza, which is a key indicator of activity, has decreased to 4.9%. Considering all RSV indicators, activity is at a low level. Pertussis, or whooping cough, activity continues to increase in school aged children.

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 Wastewater Surveillance Program, Whole Genome Sequencing (WGS) data and the NSW Sentinel Laboratory Network 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: The presentations to and admissions from EDs for COVID-19 remained stable this week. Influenza-like illness (ILI) ED presentations decreased this week. Presentations and admissions for bronchiolitis in young children remain at a high level.

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

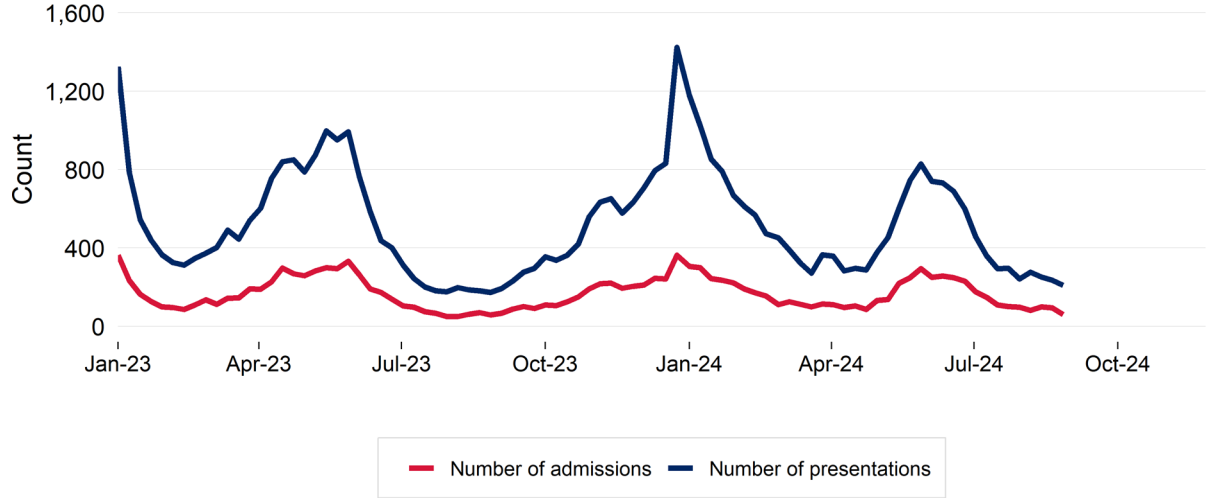


Figure 2. 'Influenza-like illness' weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 1 January 2023 - 1 September 2024, persons of all ages

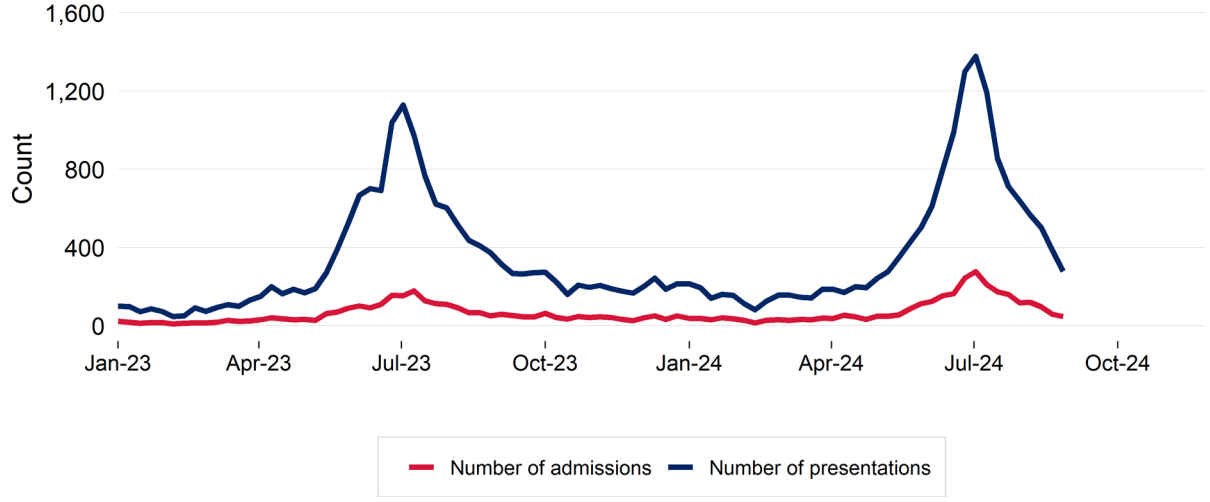
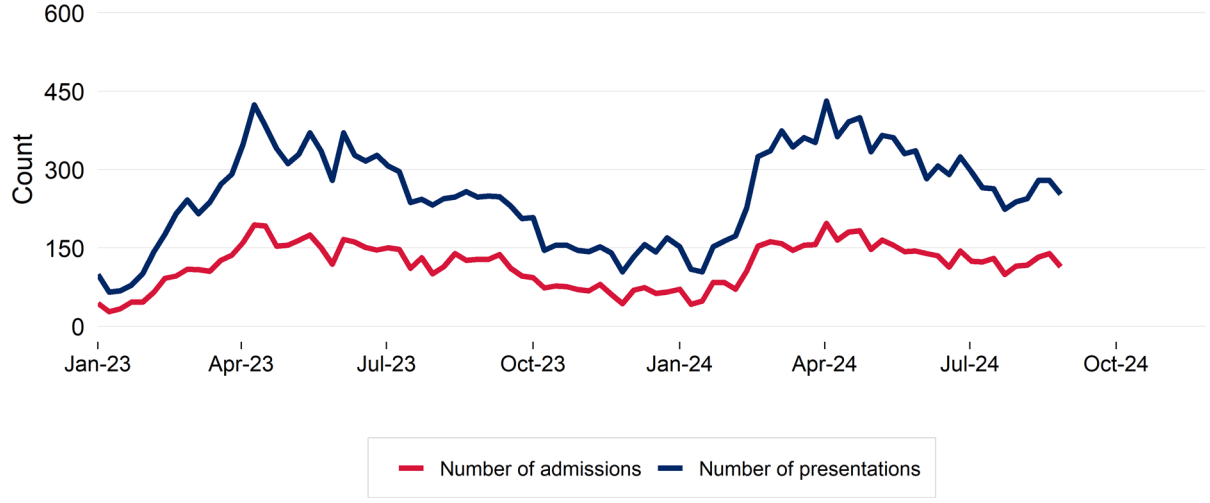


Figure 3. Bronchiolitis weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 1 January 2023 - 1 September 2024, children aged 0-4 years



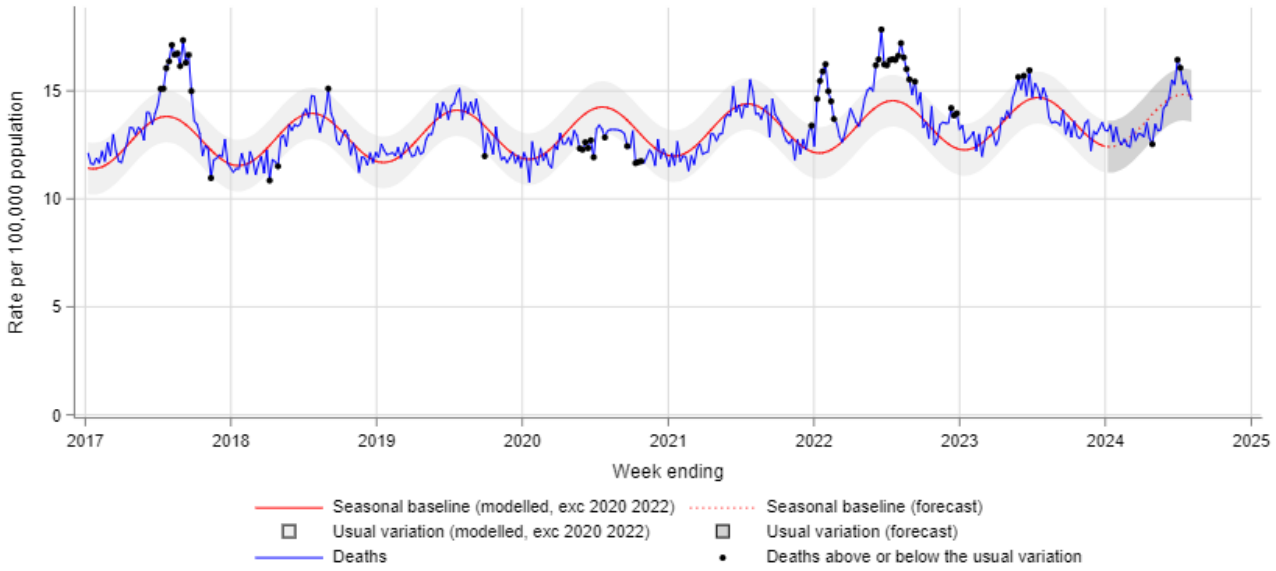
Death surveillance

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, 1 January 2017 to 4 August 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 30 June 2024 to 4 August 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.

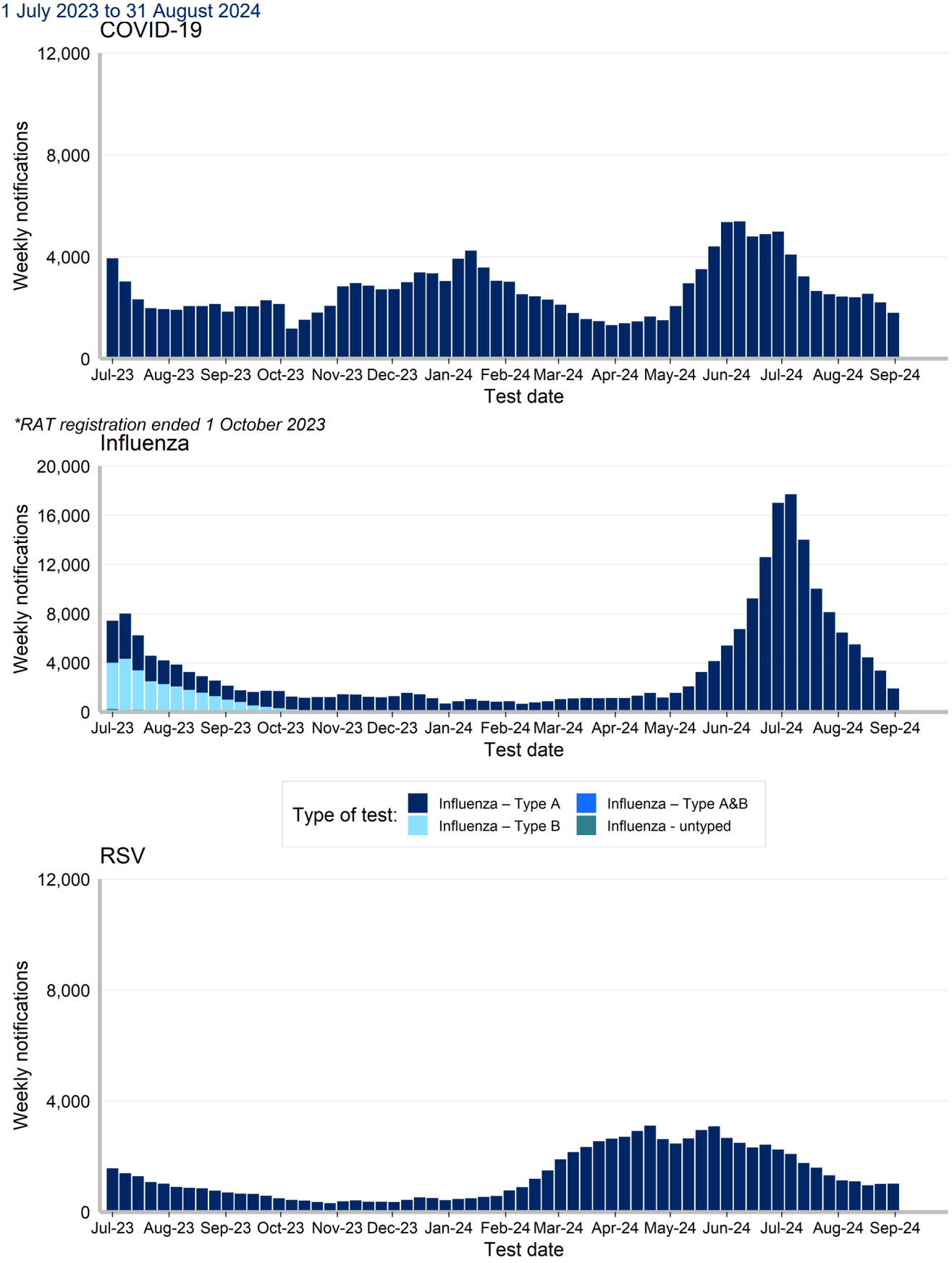
Interpretation: In the past week there was a decrease of 17% in COVID-19 notifications, a decrease of 43% in influenza notifications, and an increase of 3% in RSV notifications.

Table 1: Notifications of COVID-19, influenza and RSV, NSW, tested in the week ending 31 August 2024

	COVID		Influenza		RSV	
	Week ending 31 August 2024	Year to Date	Week ending 31 August 2024	Year to Date	Week ending 31 August 2024	Year to Date
Gender						
Female	1,013	57,221 (57%)	996	78,903 (52%)	513	33,718 (52%)
Male	787	43,958 (43%)	909	71,869 (48%)	506	30,818 (48%)
Age group (years)						
0-4	138	9,094 (9%)	297	22,803 (15%)	433	34,202 (53%)
5-9	77	2,898 (3%)	301	24,094 (16%)	126	5,740 (9%)
10-19	157	5,958 (6%)	274	24,904 (17%)	112	4,313 (7%)
20-29	143	7,463 (7%)	178	14,836 (10%)	40	2,179 (3%)
30-39	195	11,005 (11%)	240	18,504 (12%)	55	3,087 (5%)
40-49	209	10,589 (10%)	198	15,559 (10%)	58	2,485 (4%)
50-59	216	9,776 (10%)	137	10,691 (7%)	44	2,819 (4%)
60-69	186	10,644 (11%)	134	8,505 (6%)	52	3,179 (5%)
70-79	207	13,085 (13%)	92	6,201 (4%)	43	3,127 (5%)
80-89	194	13,772 (14%)	45	3,648 (2%)	42	2,457 (4%)
90+	90	6,933 (7%)	11	1,101 (1%)	15	974 (2%)
Local Health District of residence						
Central Coast	80	3,982 (4%)	72	5,306 (4%)	46	2,423 (4%)
Far West	3	310 (0%)	3	260 (0%)	0	103 (0%)
Hunter New England	128	8,546 (8%)	137	11,676 (8%)	133	5,733 (9%)
Illawarra Shoalhaven	84	4,955 (5%)	130	5,921 (4%)	37	3,398 (5%)
Mid North Coast	18	2,313 (2%)	72	1,771 (1%)	15	1,219 (2%)
Murrumbidgee	41	3,040 (3%)	69	4,373 (3%)	56	2,202 (3%)
Nepean Blue Mountains	117	5,232 (5%)	75	9,488 (6%)	53	4,207 (7%)
Northern NSW	41	3,451 (3%)	199	3,427 (2%)	33	1,581 (2%)
Northern Sydney	277	13,348 (13%)	263	19,494 (13%)	114	8,733 (14%)
South Eastern Sydney	205	10,536 (10%)	193	14,221 (9%)	93	6,234 (10%)
South Western Sydney	247	13,672 (13%)	177	25,034 (17%)	136	9,882 (15%)
Southern NSW	22	1,980 (2%)	57	2,276 (2%)	16	1,277 (2%)
Sydney	112	7,715 (8%)	118	10,204 (7%)	63	4,102 (6%)
Western NSW	46	2,963 (3%)	51	3,620 (2%)	50	1,990 (3%)
Western Sydney	375	18,470 (18%)	286	33,368 (22%)	175	11,340 (18%)
Aboriginal status						
Aboriginal and/or Torres Strait Islander	37	2,239 (2%)	53	4,190 (3%)	36	2,025 (3%)
Not Aboriginal or Torres Strait Islander	957	56,078 (55%)	984	78,614 (52%)	490	29,492 (46%)
Not Stated / Unknown	810	42,952 (42%)	870	68,056 (45%)	494	33,058 (51%)
Total	1,804	101,269 (100%)	1,907	150,860 (100%)	1,020	64,575 (100%)

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

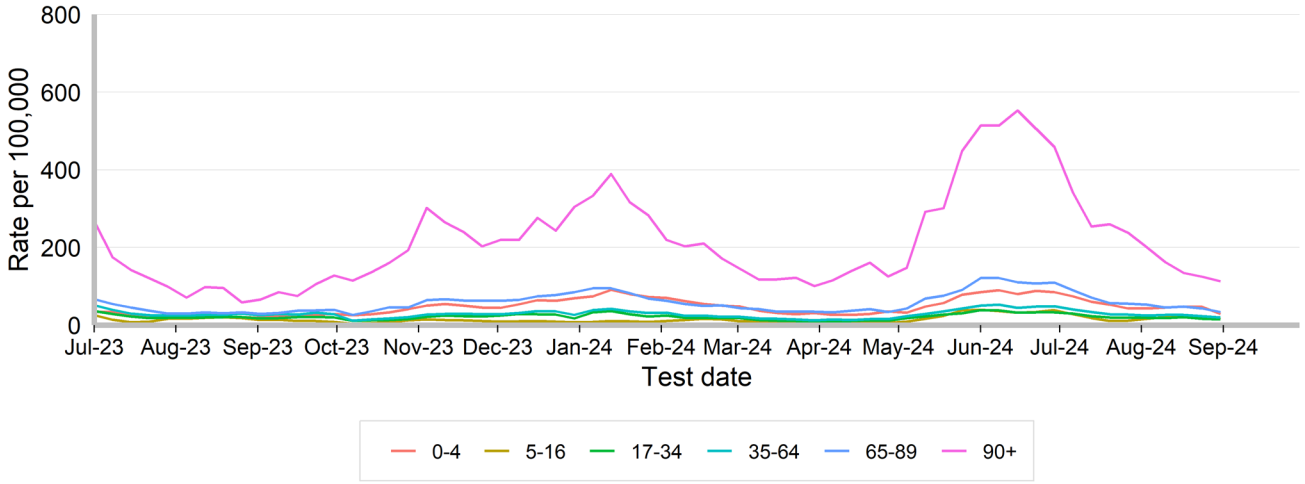
Figure 5. Weekly notifications of COVID-19*, Influenza and RSV, by date of test and type of test performed, NSW, 1 July 2023 to 31 August 2024



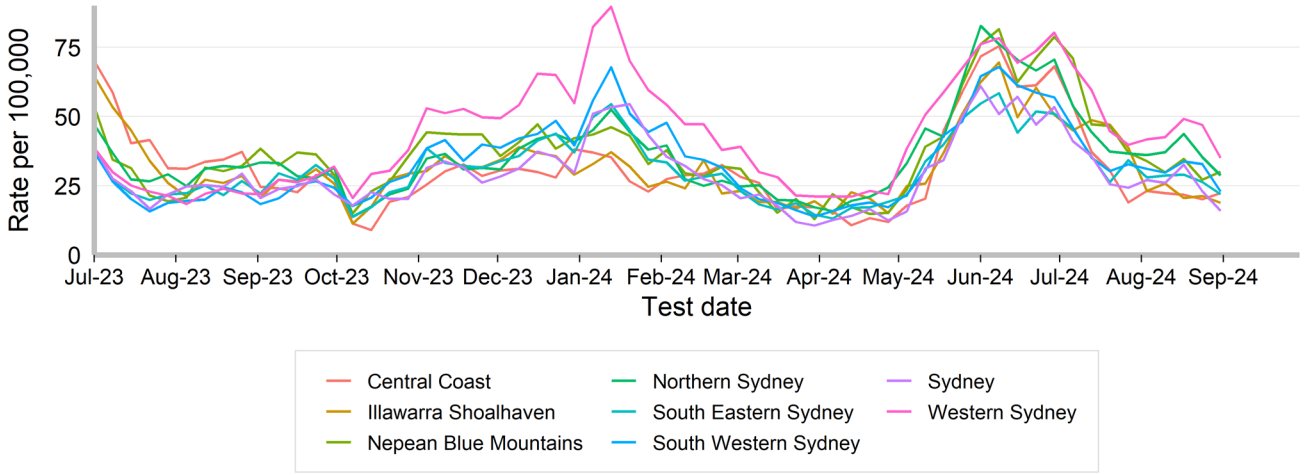
Rates of COVID-19 notifications per 100,000 population

Interpretation: Rates of COVID-19 notifications are stabilising across most age groups. Notification rates in those aged 90 and over continue to decrease.

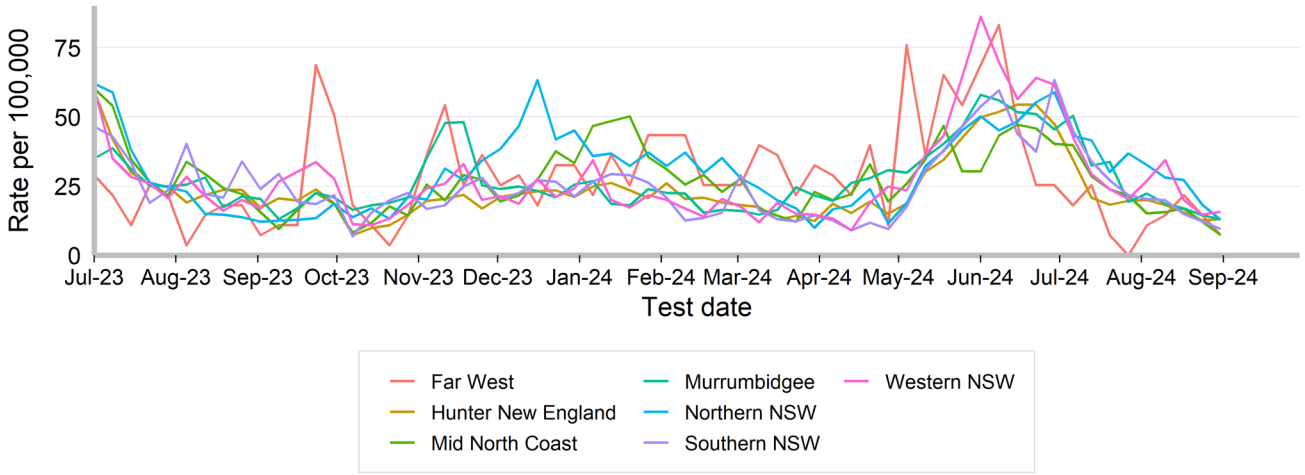
Figure 6. Weekly rate of COVID-19* notifications per 100,000 population, by age group, Local Health District and test date, NSW, 1 July 2023 to 31 August 2024



*RAT registration ended 1 October 2023



*RAT registration ended 1 October 2023

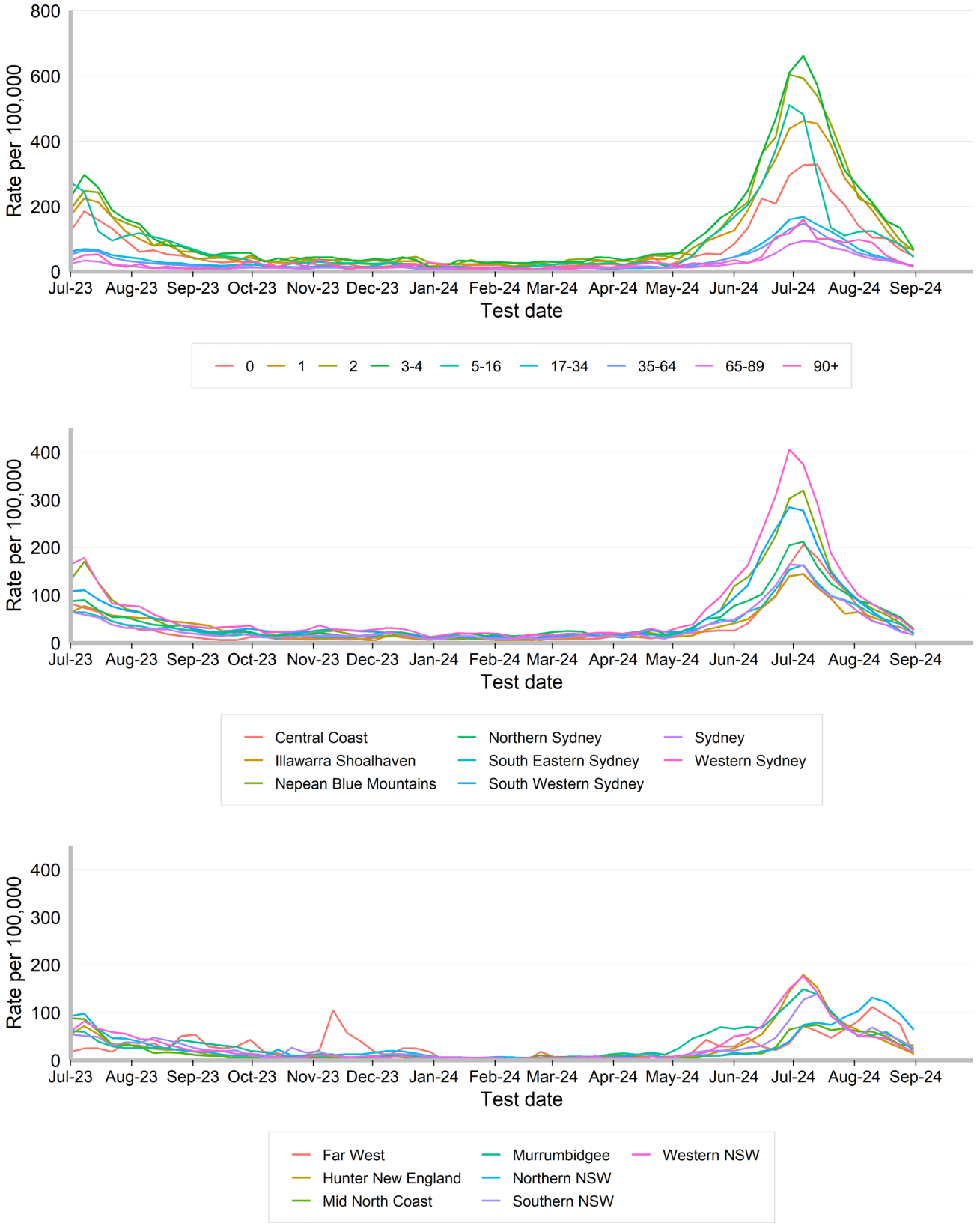


*RAT registration ended 1 October 2023

Rates of influenza notifications per 100,000 population

Interpretation: Rates of influenza notifications decreased across all age groups. These patterns are also observed across all the Local Health Districts.

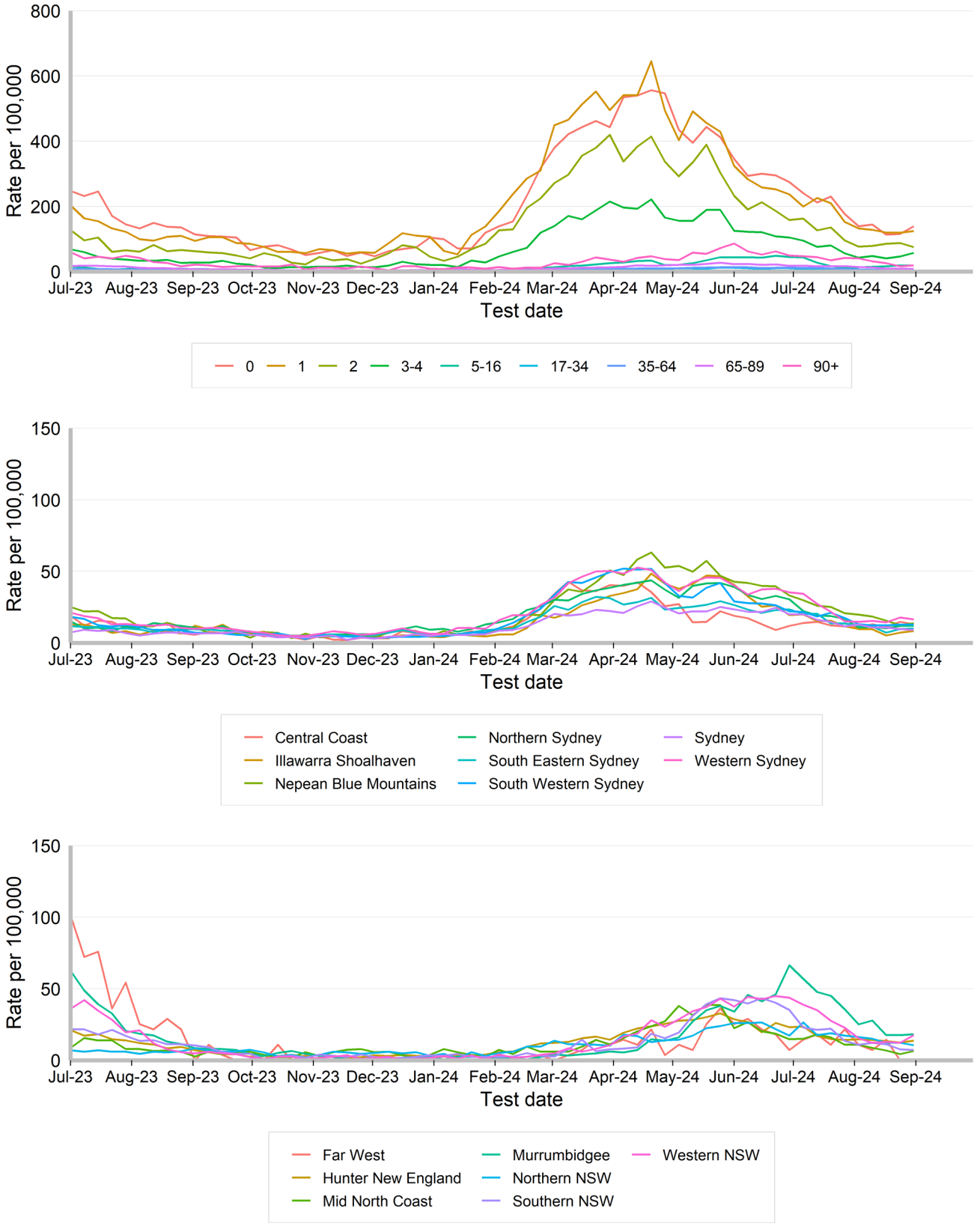
Figure 7. Weekly rate of influenza notifications per 100,000 population, by age group, Local Health District and test date, NSW, 1 July 2023 to 31 August 2024



Rates of RSV notifications per 100,000 population

Interpretation: Rates of RSV notifications are highest in children under 5 years of age, these rates are decreasing or stabilising.

Figure 8. Weekly rate of respiratory syncytial virus notifications per 100,000 population, by age group, Local Health District and test date, NSW, 1 July 2023 to 31 August 2024



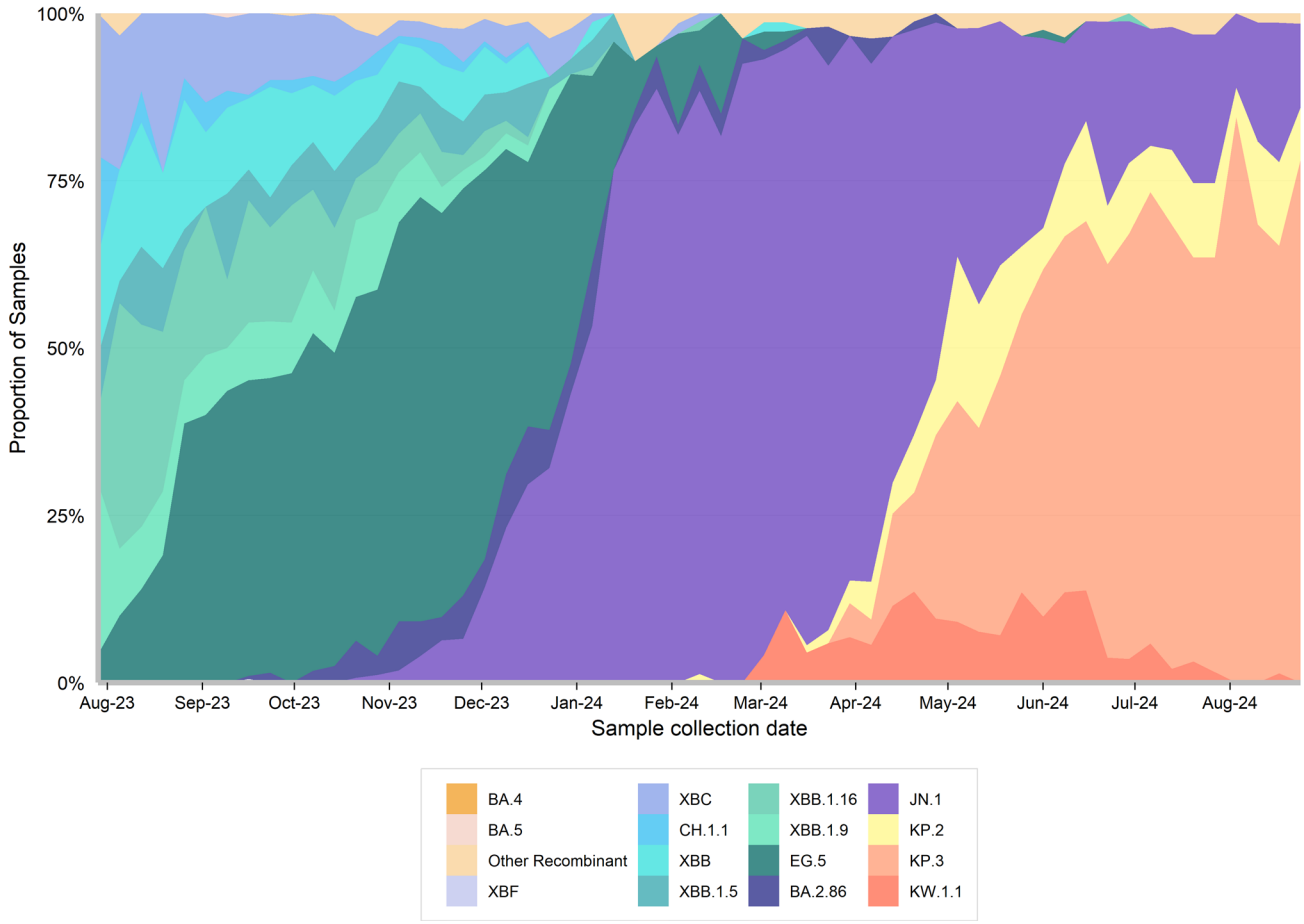
Other surveillance indicators

COVID-19 Whole Genome Sequencing

A subset of specimens from people who test positive with COVID-19 via PCR at NSW Health Pathology services undergo whole genome sequencing each week to identify and understand the behaviour of circulating variants. This sample may not necessarily reflect the distribution of all cases across NSW. NSW continues to monitor the sub-lineages in samples from ICU to monitor for increased disease severity.

Interpretation: KP.3 is the predominant variant in NSW. KP.2, KP.3 and KW.1.1 are sub-lineages of JN.1. We are reporting on these sub-lineages separately from JN.1 because of their increasing prevalence. The 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 weekly distribution of COVID-19 sub-lineages in the community, 29 July 2023 to 24 August 2024

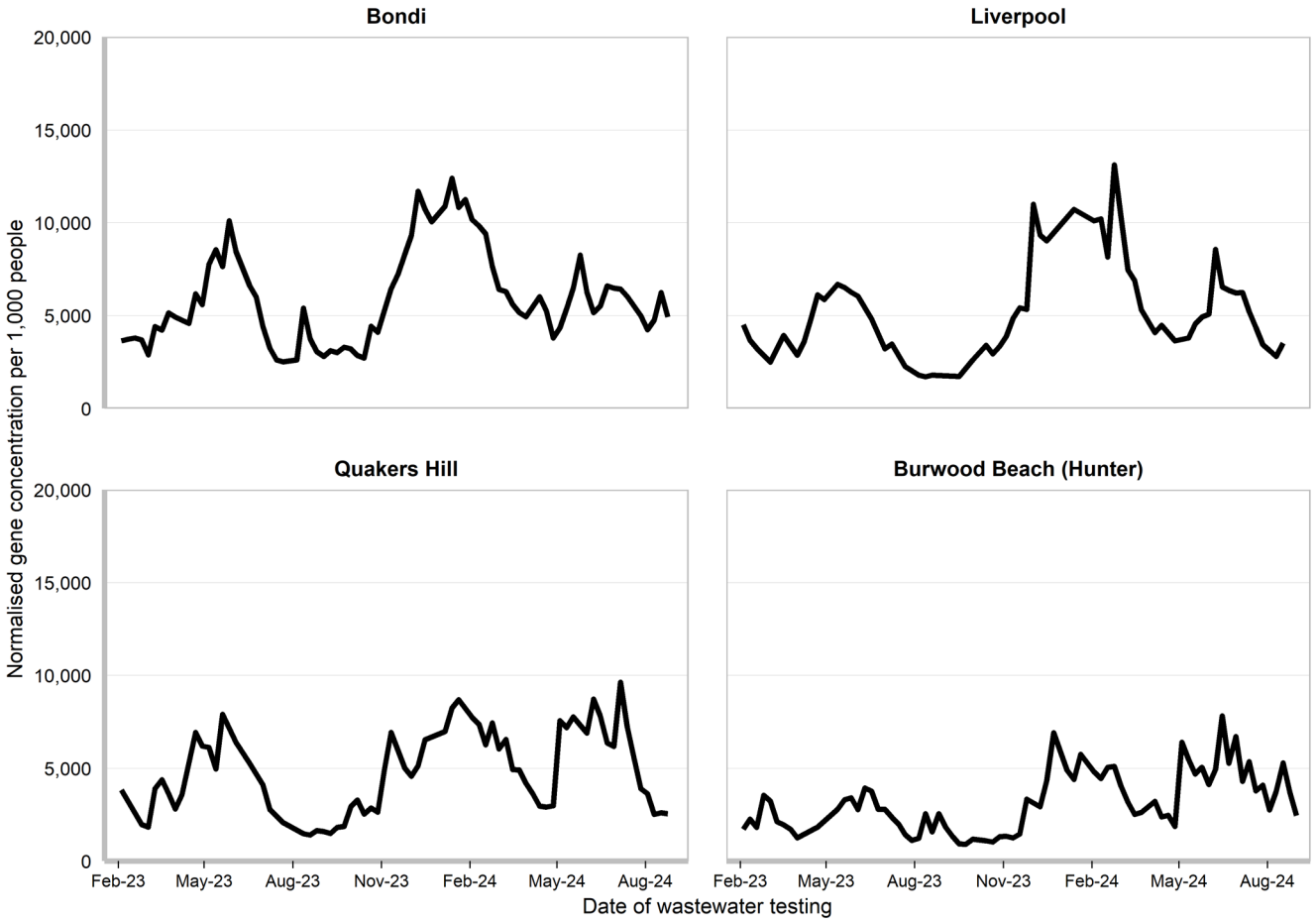


COVID-19 Wastewater Surveillance Program

Trends are presented for Bondi, Liverpool, Quakers Hill, and Burwood Beach (Hunter) wastewater catchments from 28 February 2023 to the week ending 31 August 2024. For more information, please see the COVID-19 Wastewater Surveillance Program website: https://www.health.nsw.gov.au/Infectious/covid-19/Pages/sewage-surveillance.aspx.

Interpretation: Gene concentrations per 1,000 people in the Bondi, Liverpool, Quakers Hill and Burwood Beach (Hunter) catchment areas are stable or falling.

Figure 10. Gene concentration, per 1,000 people in each wastewater catchment, 1 February 2023 to 31 August 2024



NSW Sentinel Laboratory Network

The NSW Sentinel Laboratory Network comprises of 12 public and private laboratories throughout NSW who provide additional data on positive and negative test results. This data helps us understand which respiratory viruses are circulating and their level of activity. Note that the number of laboratories providing data differs between viruses and changes between weeks (Tables 2 and 3).

Interpretation: COVID test positivity has slightly increased over the last five weeks but is now stabilising. Influenza test positivity has continually decreased since mid-July 2024. RSV test positivity has been decreasing since May 2024 but is now stabilizing at a low level.

Figure 11. Number and proportion of tests positive for COVID-19 at NSW sentinel laboratories by week, 1 July 2023 to 1 September 2024

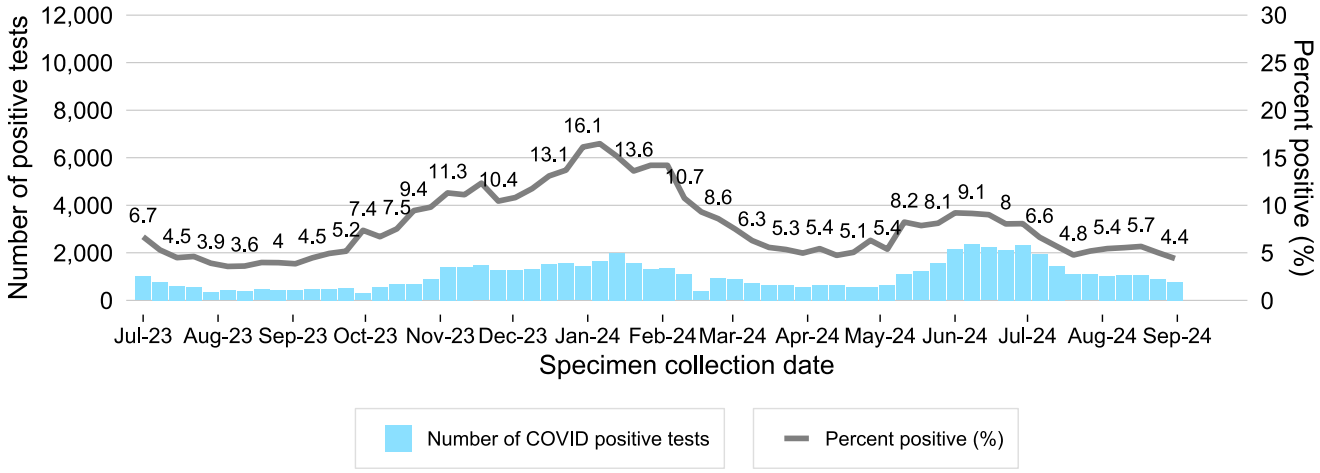


Figure 12. Number and proportion of tests positive for influenza at NSW sentinel laboratories by week, 1 July 2023 to 1 September 2024

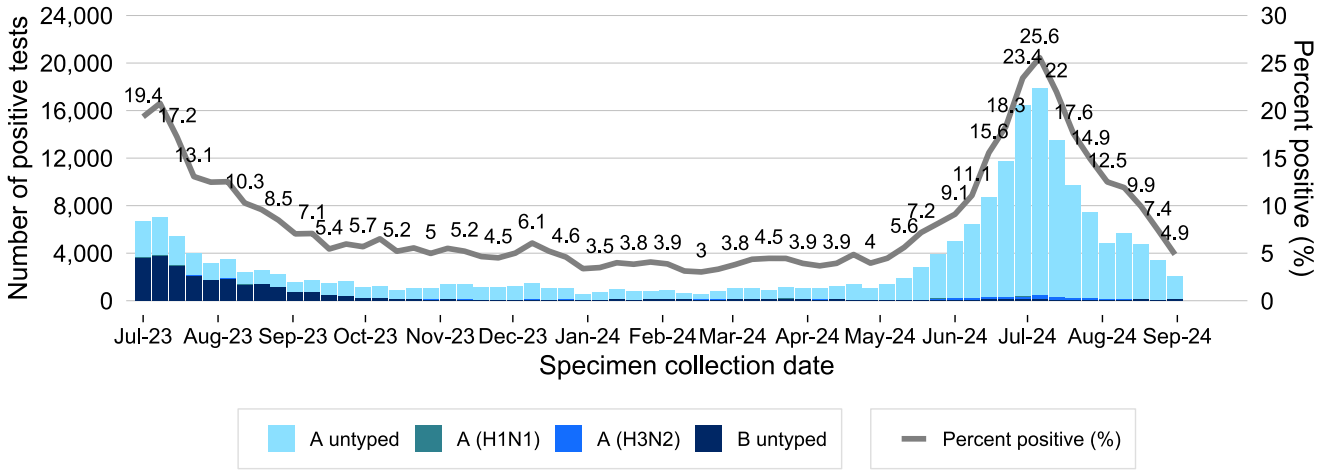


Figure 13. Number and proportion of tests positive for RSV at NSW sentinel laboratories by week, 1 July 2023 to 1 September 2024

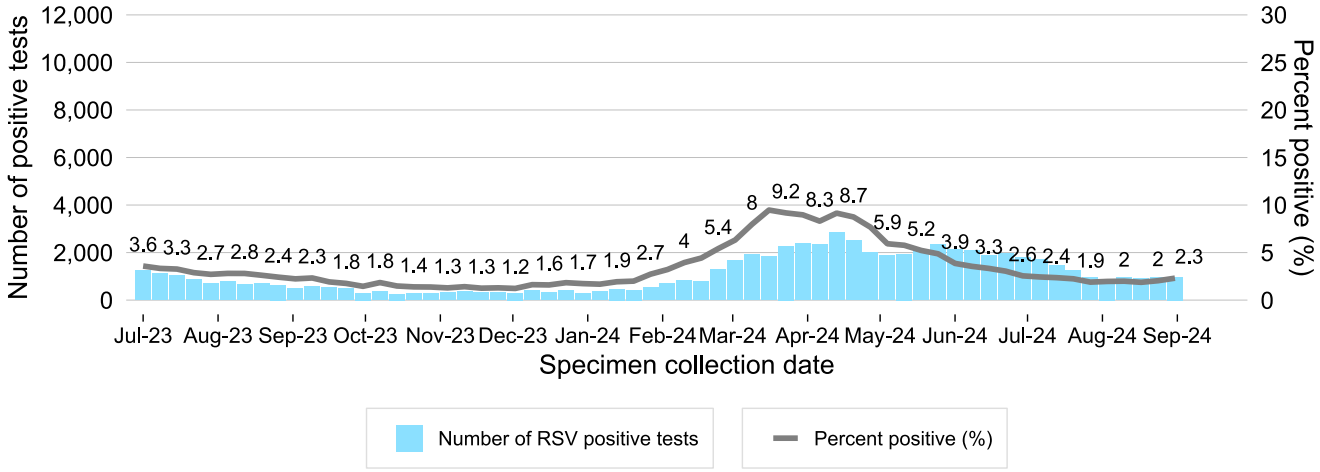


Figure 14. Number of positive PCR test results and proportion of tests positive for other respiratory viruses at NSW sentinel laboratories by week, 1 July 2023 to 1 September 2024

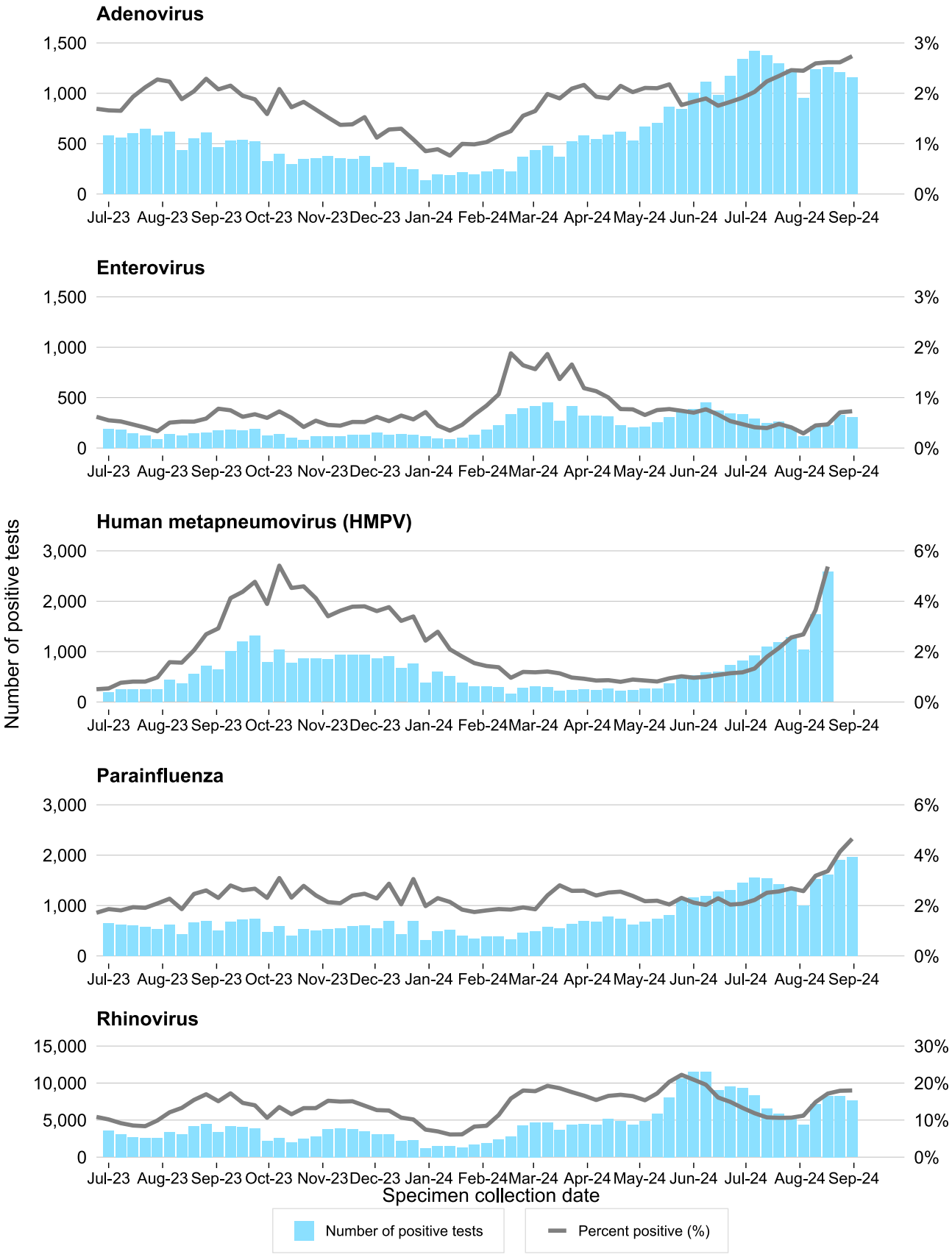


Table 2. Total number of COVID-19 notifications from NSW sentinel laboratories, in the four weeks to 1 September 2024

	Week ending							
	11 August		18 August		25 August		01 September	
	n	% pos	n	% pos	n	% pos	n	% pos
SARS-CoV-2	1,059	5.5%	1,072	5.7%	879	5.0%	759	4.4%
Number of COVID PCR tests conducted		19,113		18,914		17,525		17,235
Number of laboratories reporting COVID		4		4		3		4

Recent data is subject to change.

Table 3. Total number of other respiratory disease notifications from NSW sentinel laboratories, in the four weeks to 1 September 2024

	Week ending							
	11 August		18 August		25 August		01 September	
	n	% pos	n	% pos	n	% pos	n	% pos
Influenza	5,685	11.9%	4,766	9.9%	3,428	7.4%	2,056	4.9%
Respiratory syncytial virus (RSV)	950	2.0%	900	1.9%	941	2.0%	974	2.3%
Adenovirus	1,239	2.6%	1,257	2.6%	1,207	2.6%	1,155	2.7%
Human metapneumovirus (HMPV)	1,745	3.7%	2,584	5.4%	3,646	7.9%	3,246	7.7%
Rhinovirus	7,102	14.9%	8,249	17.2%	8,266	17.9%	7,598	18.0%
Enterovirus	214	0.4%	225	0.5%	327	0.7%	308	0.7%
Parainfluenza	1,521	3.2%	1,619	3.4%	1,910	4.1%	1,963	4.7%
Number of PCR tests conducted		47,768		48,066		46,143		42,205
Number of laboratories reporting		12		12		11		10

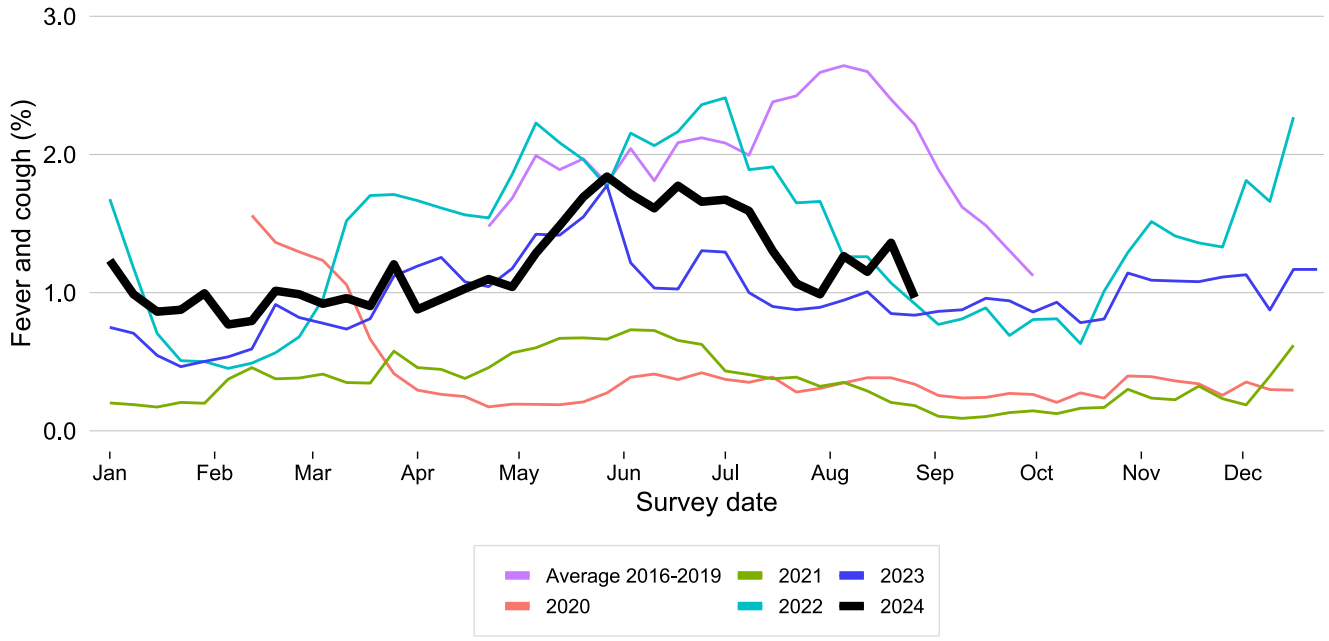
Recent data is subject to change.

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/

Interpretation: The proportion of people reporting fever and cough increased from February but has stabilised or decreased since June. This indicates that symptomatic respiratory illness is now stable among FluTracking participants.

Figure 15. Proportion of FluTracking participants reporting influenza-like illness, NSW, 1 January to 1 September 2024



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 16). Notifications of people with pertussis in NSW started to increase in 2023 and are expected to continue to increase. The highest rates of pertussis notifications are observed in children 5-14 years (Figure 17), and the number of notifications in this age group increased rapidly since February 2024 (Figure 18). Additional notification data can be found on the NSW Health pertussis data page.

Figure 16. Pertussis notifications and rates per 100,000 by year, 2009 to 2024 year to date (YTD)

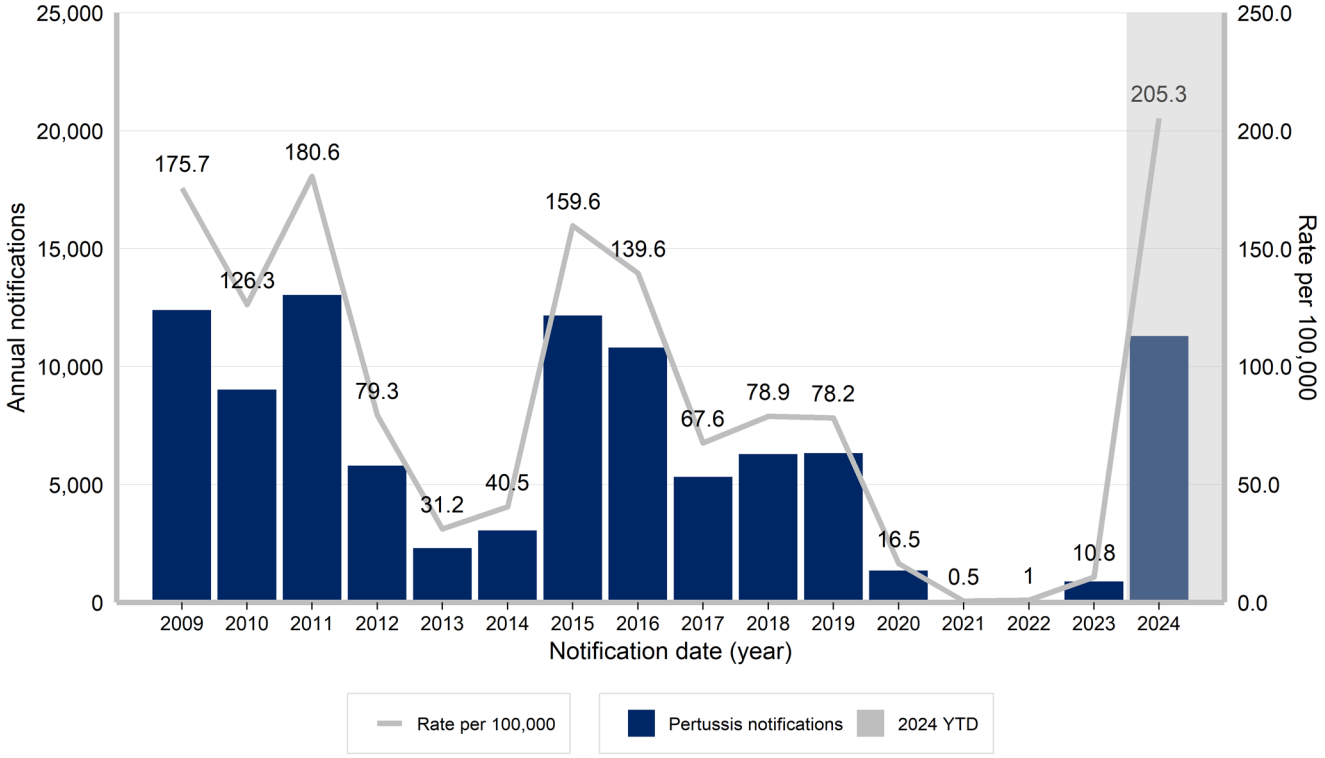


Figure 17. Monthly pertussis notification rates per 100,000 by age group, 1 January 2023 to 31 August 2024

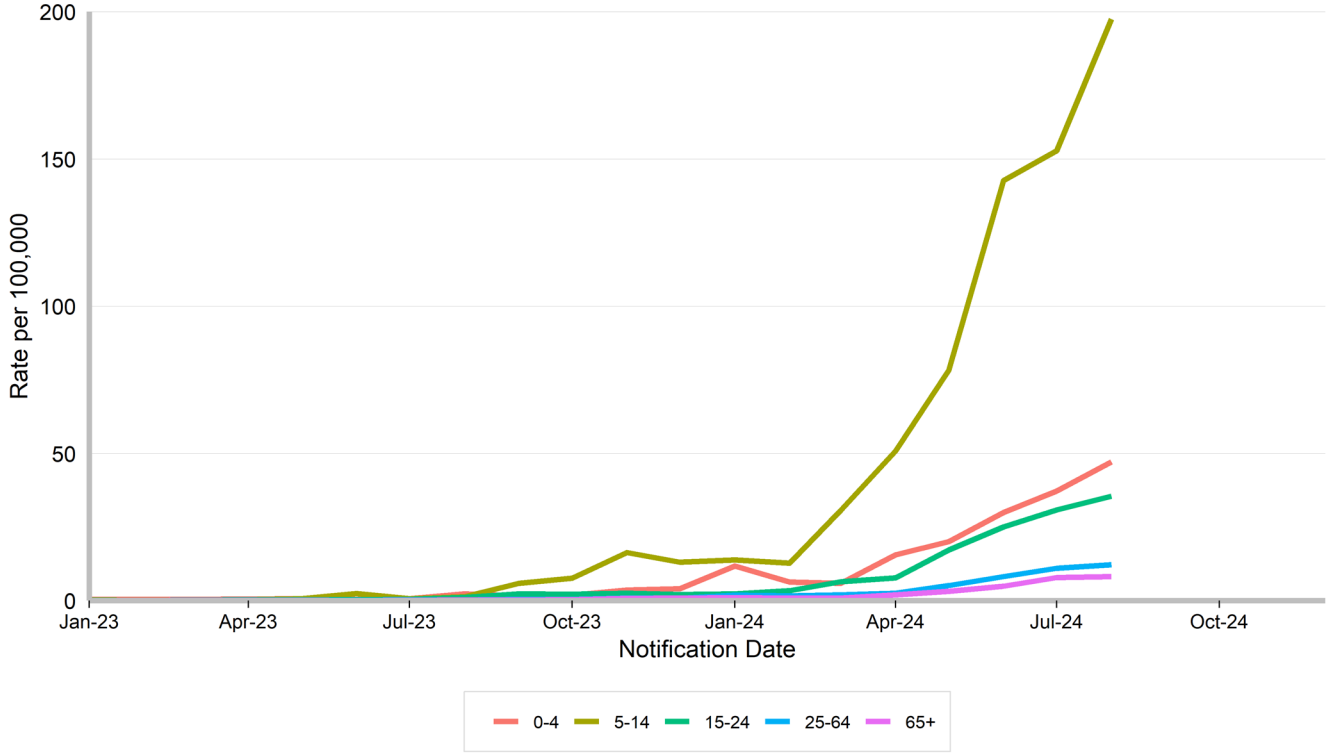
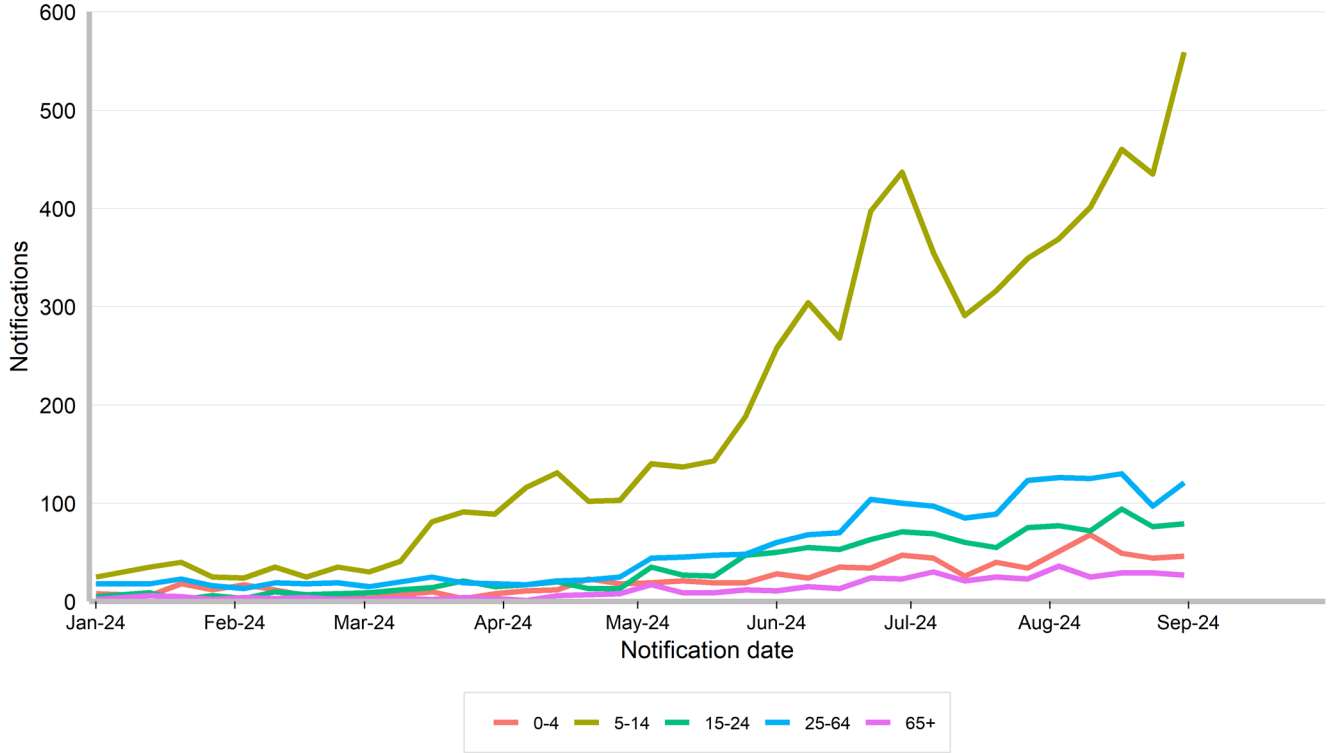


Figure 18. Weekly pertussis notifications by age group, 31 December 2023 to 31 August 2024



Pneumonia

There have been unseasonably high pneumonia presentations to emergency departments (ED) in NSW for children (Figure 19), particularly in those aged 5-16 years (Figure 20), and young adults (Figure 21). Within the ED, most pneumonia presentations are classified as unspecified pneumonia, that is, a specific cause of the pneumonia has not yet been 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.

Everyone can help reduce the spread of these 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 and covering your coughs and sneezes.

Figure 19. Unplanned emergency department (ED) weekly counts of presentations with a diagnosis of pneumonia, 1 January to 1 September 2024 and comparison with the previous 5 years, persons aged 0 – 4 years

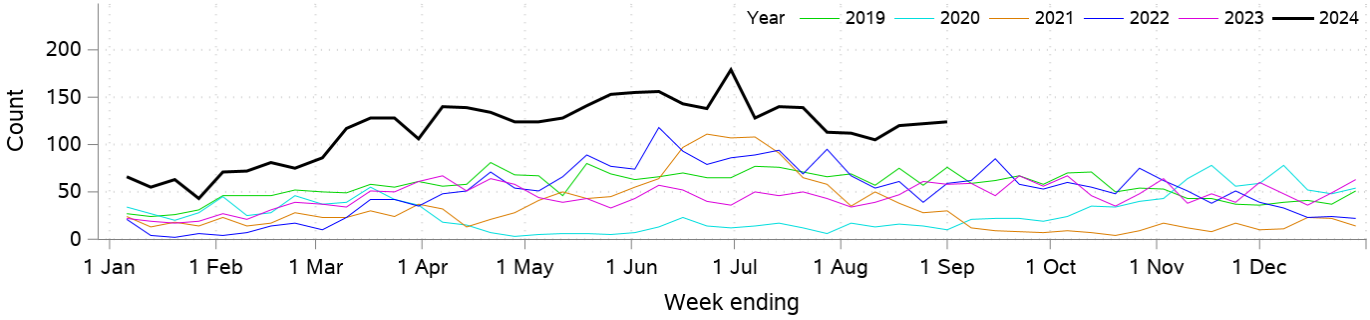


Figure 20. Unplanned emergency department (ED) weekly counts of presentations with a diagnosis of pneumonia, 1 January to 1 September 2024 and comparison with the previous 5 years, persons aged 5 – 16 years

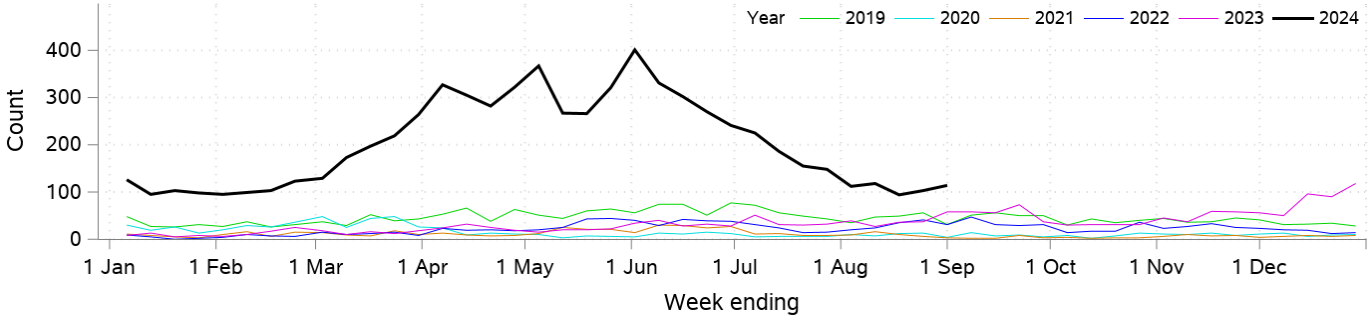


Figure 21. Unplanned emergency department (ED) weekly counts of presentations with a diagnosis of pneumonia, 1 January to 1 September 2024 and comparison with the previous 5 years, persons aged 17 – 34 years

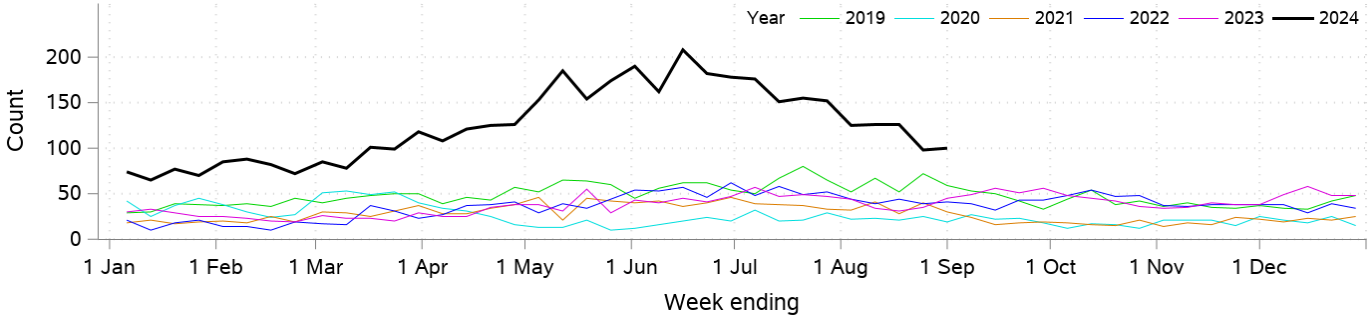


Figure 22. Pneumonia weekly counts of unplanned emergency department (ED) presentations and admission following presentation, 2023-2024, persons of all ages