

COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 43, ENDING 24 OCTOBER 2020

Published 28 October 2020

SUMMARY FOR THE WEEK ENDING 24 OCTOBER

- There were six locally-acquired cases in NSW this week – a decrease of 81% compared to the previous week.
- All six locally-acquired cases were linked to known cases or clusters.
- All locally-acquired cases with reported symptoms were in isolation at the time of diagnosis or before developing symptoms.
- The majority of locally-acquired cases reported in the two weeks up to 24 October were residents of South Western Sydney LHD (59%, 22/37) and Western Sydney LHD (22%, 8/37).
- Testing numbers have decreased compared to the previous week (down 6%).
- The NSW Sewage Surveillance Program reported six detections of SARS-CoV-2. One detection was from the Bathurst catchment area and was not associated with reported cases.
- Despite low case numbers, it is important to maintain social distancing and remain vigilant for symptoms, however mild.

SECTION 1: PREVENTING THE SPREAD OF COVID-19 – WE ALL PLAY A ROLE

Indicators of effective prevention measure for COVID-19 in NSW in the past two weeks

	Week of reporting	
	Week ending 24 Oct	Week ending 17 Oct
Number of cases with symptoms at diagnosis	83% (5/6)	74% (23/31)
Proportion of cases in isolation at least 48 hours before symptoms	100% (5/5)	9% (2/23)
Cases not in isolation at symptom onset		
Proportion tested (swabbed) within:		
• 1 day of symptom onset	-	29% (6/21)
• 2 days of symptom onset	-	38% (8/21)
• 3 days of symptom onset	-	38% (8/21)
Proportion tested more than 3 days after symptom onset	-	62% (13/21)
Proportion who entered isolation within:		
• 1 day of symptom onset	-	24% (5/21)
• 2 days of symptom onset	-	38% (8/21)
• 3 days of symptom onset	-	38% (8/21)
Proportion who entered isolation more than 3 days after symptom onset	-	62% (13/21)
Number of tests conducted	83,372	88,757
Proportion notified to NSW Health by the laboratory within:		
• 1 day of swab collection	100% (6/6)	81% (25/31)
• 2 days of swab collection	100% (6/6)	100% (31/31)
• 3 days of swab collection	100% (6/6)	100% (31/31)
Proportion notified to NSW Health by the laboratory more than 3 days after the swab collection	0% (0/6)	0% (0/31)
Proportion of locally-acquired cases interviewed by public health staff within 1 day of notification to NSW Health	100% (6/6)	100% (31/31)
Proportion of close contacts (identified by the case) contacted by public health within 48 hours of case notification	100%	100%

Interpretation: Five cases this week reported symptoms at the time of diagnosis and sought testing. All five symptomatic cases were close contacts of previously reported cases and were in isolation at least 48 hours before developing symptoms.

All locally-acquired cases were notified to NSW Health within one day of swab collection. All cases were interviewed within one day of notification.

SECTION 2: HOW IS THE OUTBREAK TRACKING IN NSW?

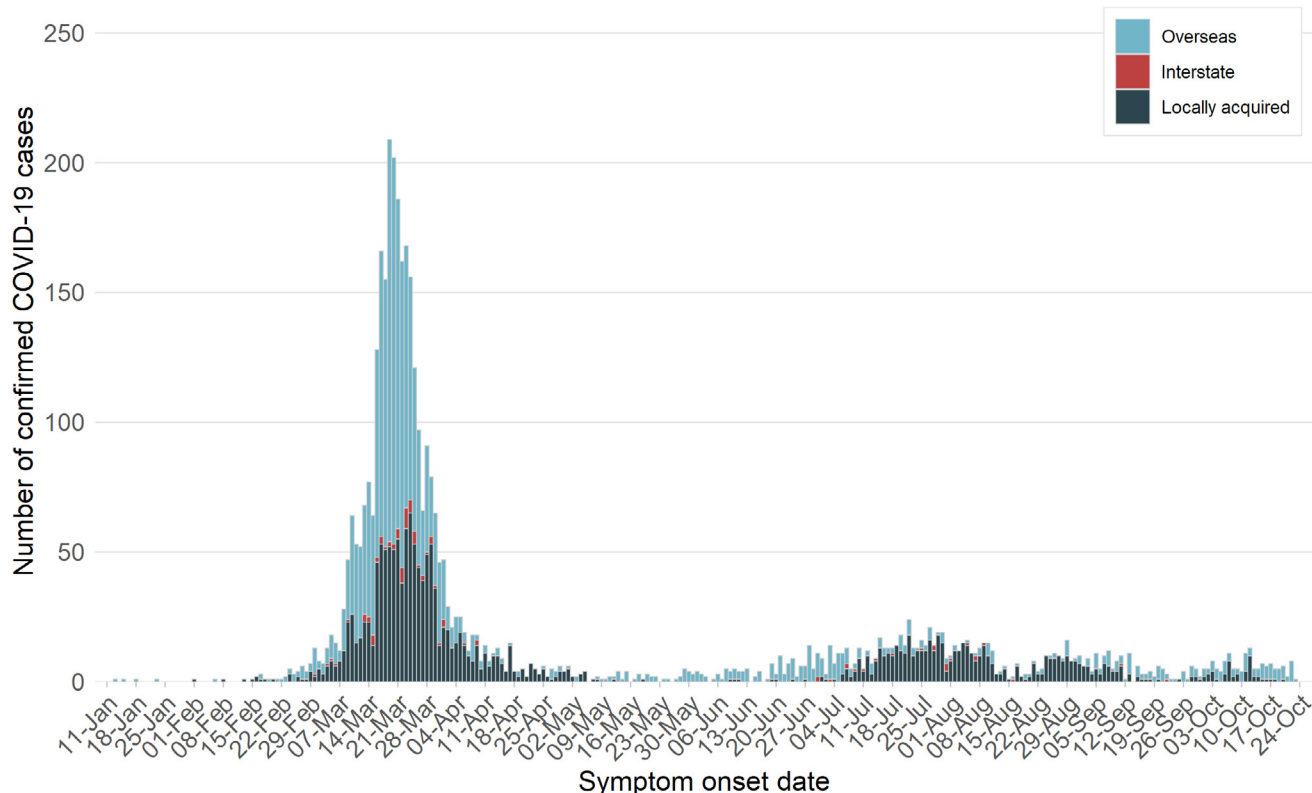
Table 1. COVID-19 cases and tests reported in NSW, up to 24 October 2020

	Week ending 24 Oct	Week ending 17 Oct	% change	Total to 24 Oct
Number of cases	46	58	↓ 21%	4,195
Overseas acquired	40	27	↑ 48%	2,252
Interstate acquired	0	0	-	90
Locally acquired	6	31	↓ 81%	1,853
No links to other cases or clusters	0	3	↓ 100%	434
Number of deaths	0	0	-	55
Number of tests	83,372	88,757	↓ 6%	2,996,231

Note: The case numbers reported for previous weeks is based on the most up to date information from public health investigations.

To understand how the outbreak is tracking we look at how many new cases are reported each day and the number of people being tested. Each bar in the graph below represents the number of new cases based on the **date of symptom onset**.

Figure 1. COVID-19 cases by likely infection source and illness onset, NSW, 2020



The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Over half (64%) of COVID-19 infections diagnosed in the last two weeks in NSW have been overseas acquired.

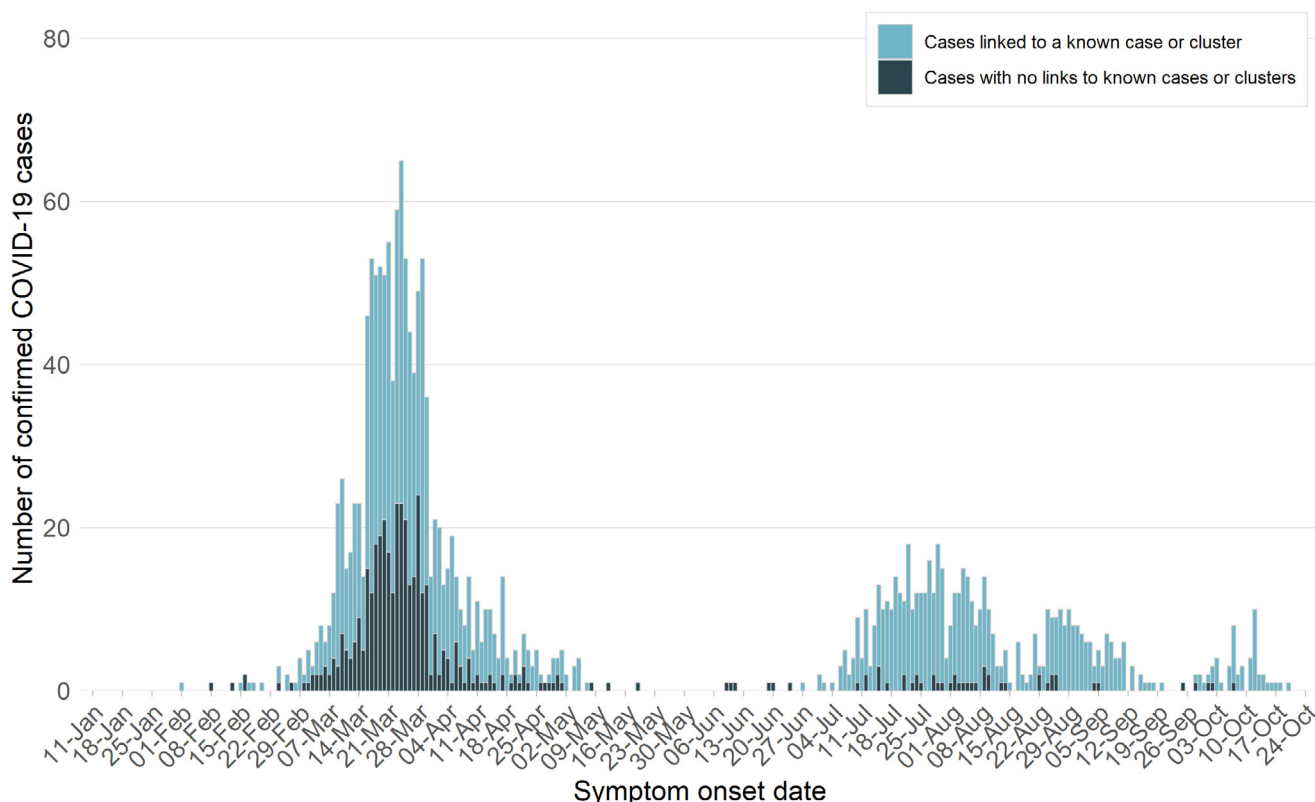
How many NSW cases were infected in Victoria?

In response to the continued community transmission in Victoria, border measures were introduced to limit the spread of infection into NSW. From 8 July, under the Public Health (COVID-19 Border Control) Order 2020, a person who has been in Victoria within the last 14 days must not travel to NSW without a permit. The last case acquired in Victoria was reported on 1 October.

How much transmission is occurring in NSW?

All new cases are investigated by public health staff to determine the likely source of infection and to identify **clusters**. To understand the extent of community transmission, locally-acquired cases who have had contact with a case or who are part of a known cluster are considered separately to those with an unidentified source of infection. Cases with no links to other cases or clusters suggest that there are people infected with COVID-19 in the community who have not been diagnosed. Currently, public health efforts are focused on contact tracing to limit further spread in the community, and identifying the source of infection for every case.

Figure 2. Locally acquired COVID-19 cases by likely infection source and illness onset, NSW, 2020



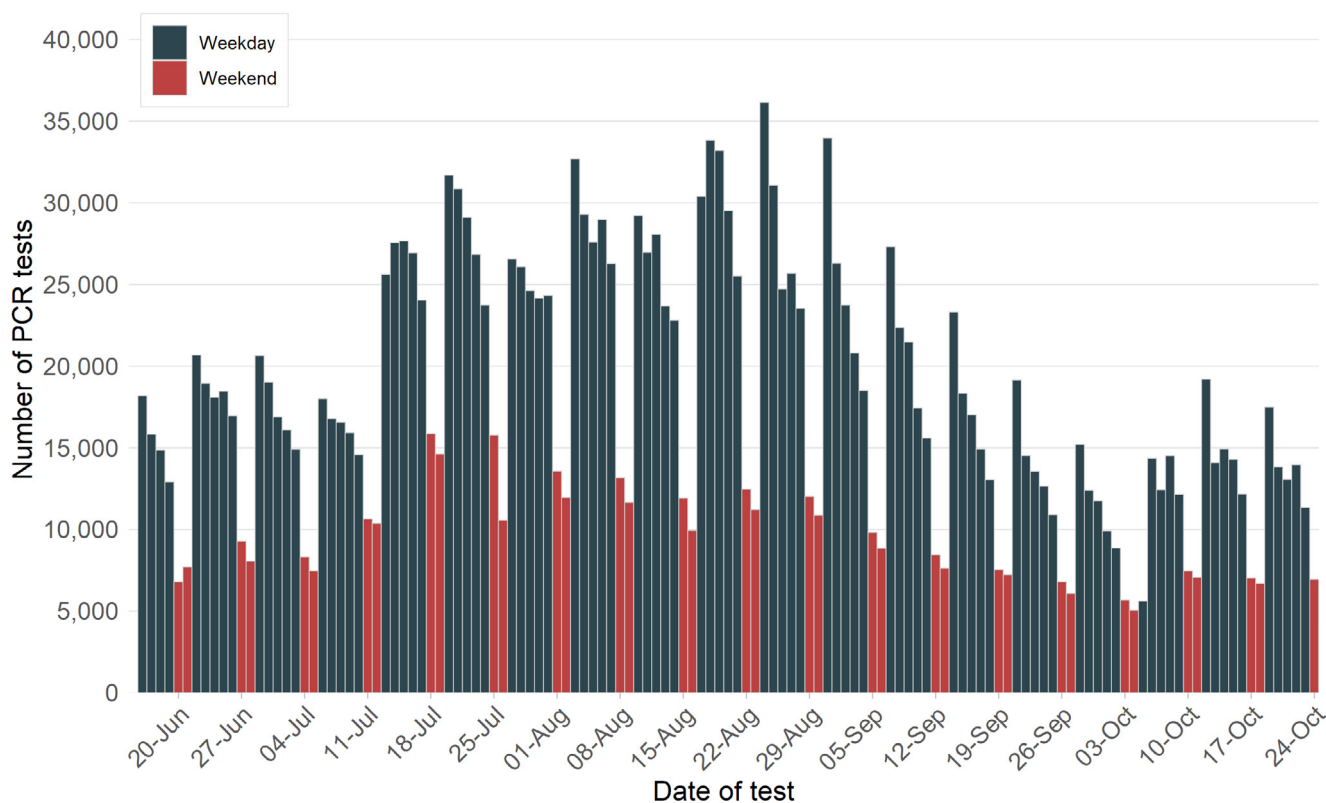
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Of the locally-acquired cases with an onset in the last four weeks, 93% (50/54) were linked to known cases or clusters.

How much testing is happening?

The bars on the graph below show the number of tests by the date a person presented for the test.¹ While public health facilities are open seven days a week, less testing occurs through GPs and private collection centres on weekends and public holidays. This explains the lower number of tests on weekends.

Figure 3. Number of PCR tests per day, NSW, 2020



Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

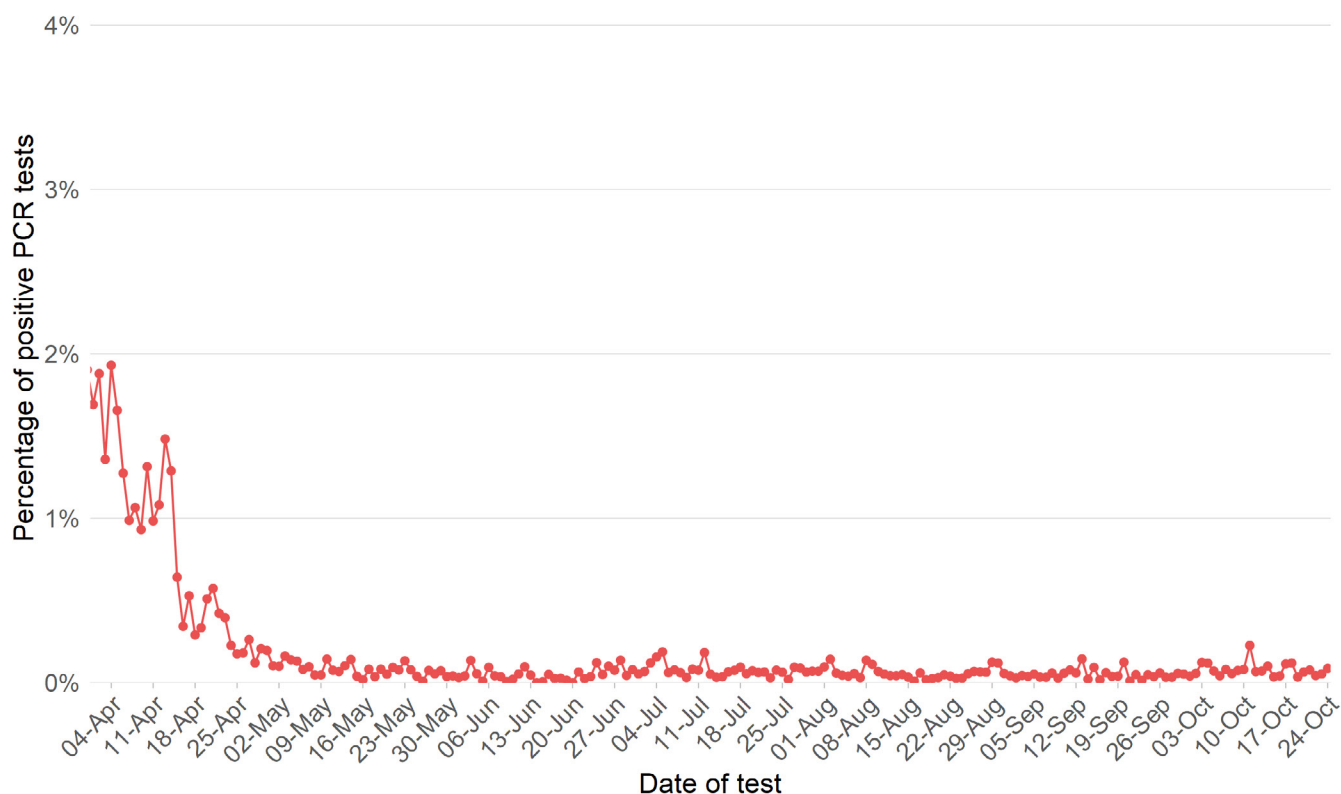
Interpretation: Early in the outbreak the focus of testing was on returned travellers and close contacts of confirmed cases, whereas now testing is recommended for anyone with even mild respiratory symptoms or unexplained fever.

Testing numbers in the week ending 24 October were slightly lower compared with the previous week. An average of 1.5 tests were conducted per 1,000 people in NSW each day in the past week, compared to an average of 1.6 tests per 1,000 people in the previous week.

¹ The number of tests per day displayed below is different to the 24 hour increase in tests reported each day as there are delays in some laboratories providing negative results to NSW Health.

What proportion of tests are positive?

Figure 4. Proportion of PCR tests positive for COVID-19, NSW, 2020

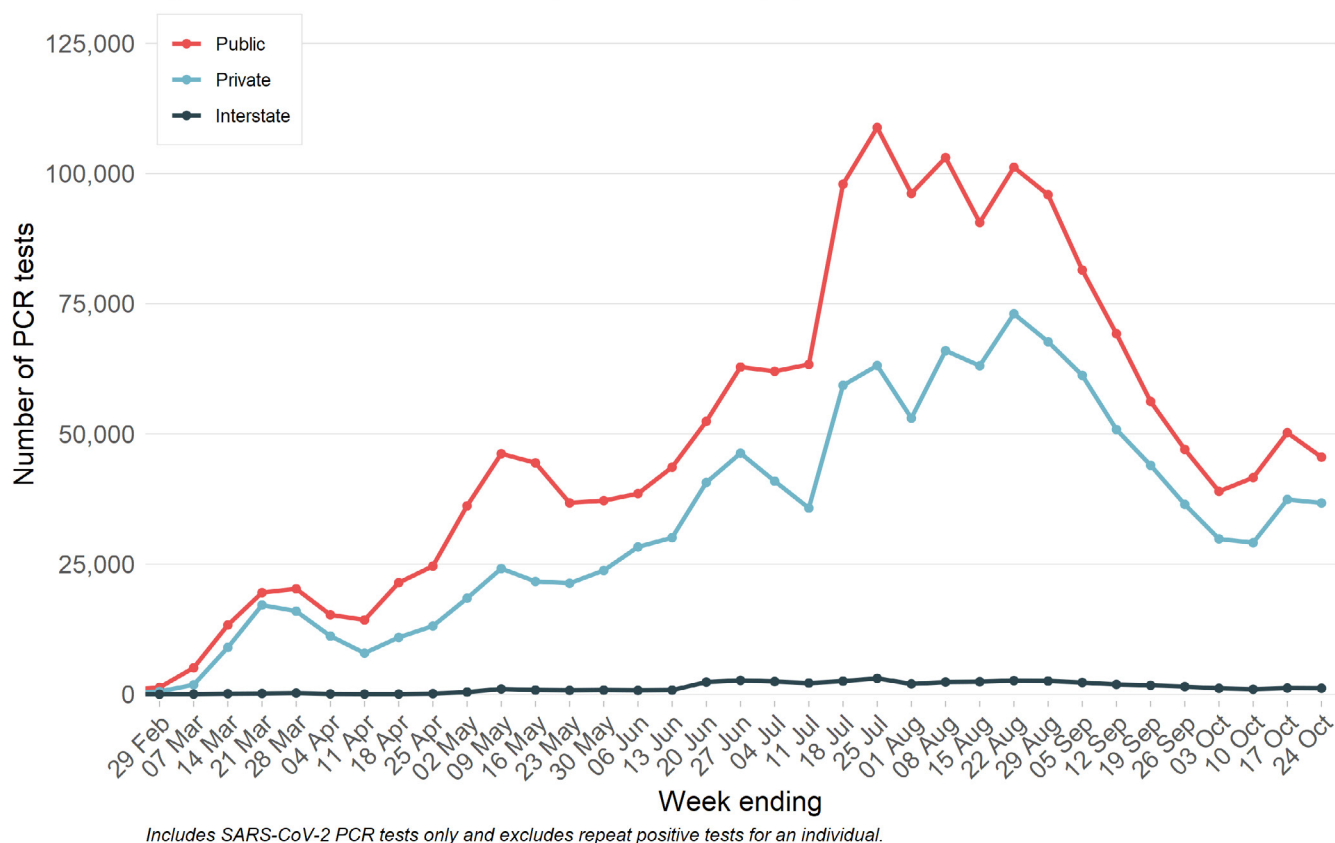


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

Interpretation: The proportion of tests positive for COVID-19 in NSW declined in mid-March to early May, and then stabilised at very low levels. Despite high rates of testing, the overall proportion of tests found to be positive indicate low levels of transmission in the community.

Which laboratories are doing the testing?

Figure 5. Number of PCR tests by week and facility type, NSW, 2020



Interpretation: In the week ending 24 October, testing in both public and private facilities decreased compared to the previous week. Approximately 55% of PCR tests were conducted at public laboratories during this period.

SECTION 3: COVID-19 TRANSMISSION IN NSW IN THE LAST FOUR WEEKS

Information from cases who were diagnosed in the last four weeks is used to understand where COVID-19 is spreading in the community. This takes into account the **incubation period** and the time it takes for people to seek testing and for the laboratory to perform the test.

Table 2. Locally-acquired COVID-19 cases in NSW, by week and source of infection, 27 September to 24 October 2020

Locally-acquired cases	Week ending				Total
	24 Oct	17 Oct	10 Oct	3 Oct	
Cases who are linked to a known case or cluster	6	28	17	0	51
Cases with no links to other cases or clusters	0	3	2	1	6
Total	6	31	19*	1*	57

*Includes a past infection.

Interpretation: The majority (89%) of cases in the four weeks ending 24 October were linked to known cases or clusters. There were no cases reported in the last week with no links to cases or clusters.

Table 3. Locally-acquired COVID-19 cases by LHD of residence, 27 September to 24 October 2020

Local Health District	Week ending				Total	Days since last case
	24 Oct	17 Oct	10 Oct	3 Oct		
Central Coast	0	0	0	0	0	54
Illawarra Shoalhaven	0	0	0	0	0	50
Nepean Blue Mountains	0	0	0	0	0	39
Northern Sydney	0	1	2	0	3	11
South Eastern Sydney	0	1	0	0	1	10
South Western Sydney	6	16	12	1	35	0
Sydney	0	5	1	0	6	10
Western Sydney	0	8	4	0	12	10
Far West	0	0	0	0	0	205
Hunter New England	0	0	0	0	0	79
Mid North Coast	0	0	0	0	0	186
Murrumbidgee	0	0	0	0	0	47
Northern NSW	0	0	0	0	0	91
Southern NSW	0	0	0	0	0	75
Western NSW	0	0	0	0	0	53
Total	6	31	19*	1*	57	

*Includes a past infection.

Interpretation: The majority of locally-acquired cases reported in the two weeks up to 24 October were residents of South Western Sydney LHD (59%, 22/37) and Western Sydney LHD (22%, 8/37).

COVID-19 cases with no links to known cases or clusters

Cases with no identified links to known cases or clusters suggest that there are people infected with COVID-19 in the community who have not been diagnosed. Testing of people with whom they have been in contact in the 14 days prior to symptom onset, and more broadly in the local community, is important to identify the source of the infection, detect other cases and prevent further transmission in the community.

Table 4. Locally-acquired COVID-19 cases with no identified links to known cases or clusters by LHD of residence, 27 September to 24 October 2020

Local Health District	Week ending				Total
	24 Oct	17 Oct	10 Oct	3 Oct	
Central Coast	0	0	0	0	0
Illawarra Shoalhaven	0	0	0	0	0
Nepean Blue Mountains	0	0	0	0	0
Northern Sydney	0	0	0	0	0
South Eastern Sydney	0	1	0	0	1
South Western Sydney	0	1	2	1	4
Sydney	0	0	0	0	0
Western Sydney	0	1	0	0	1
Far West	0	0	0	0	0
Hunter New England	0	0	0	0	0
Mid North Coast	0	0	0	0	0
Murrumbidgee	0	0	0	0	0
Northern NSW	0	0	0	0	0
Southern NSW	0	0	0	0	0
Western NSW	0	0	0	0	0
Total	0	3	2	1*	6

*Includes a past infection.

Interpretation: Extensive public health investigations were able to identify the source of infection for all six locally-acquired cases in the week ending 24 October.

SECTION 4: CURRENT COVID-19 CLUSTERS IN NSW

Public health staff interview all new cases at the time of diagnosis to identify the likely source of their infection. Cases are also asked to report all the locations visited and people with whom they have been in contact within their infectious period (two days prior to symptom onset until the time of isolation). Close contacts are quarantined to limit the spread of infection to others and encouraged to seek testing.

Cases in community settings

In the week ending 24 October, there were six cases reported that were linked to a known case or cluster. Of these:

- one case was linked to the Oran Park community cluster
- three cases were linked to the Oran Park childcare centre cluster
- one case was linked to a private health clinic in Liverpool
- one case was a household contact of a previously reported case.

Oran Park community cluster

On 6 October, South Western Sydney Public Health Unit was notified of a case in an Oran Park resident. The case did not report any contact with a known case of COVID-19. A public health investigation was undertaken to identify a possible source for the case, including testing among friends and family. The investigation led to the diagnosis of COVID-19 in the likely source case, an asymptomatic family friend who was likely exposed at work at Liverpool Hospital in early September.

In the week ending 24 October there was one case reported who was a household contact of a known case associated with the Oran Park community cluster. In total, excluding the source, there are 15 cases associated with this cluster.

Oran Park childcare centre cluster

On 12 October, the Public Health Unit was notified of a case from the Oran Park community cluster who had attended a childcare centre while infectious. In response, NSW Health issued a public health alert classifying all staff and children who attended the childcare centre between 2 and 13 October inclusive as close contacts. All close contacts were advised to get tested immediately and self-isolate for 14 days from when they last attended.

In the week ending 24 October there were three cases linked to the childcare centre cluster, including two household contacts and one close contact of a previously reported case who attended the centre. In total, there are seven people linked to this cluster: three cases who attended the centre, three household contacts of these cases, and a family member of a case who acquired their infection in a social setting.

Private health clinic cluster

On 7 October, Western Sydney Public Health Unit was notified of a case in a healthcare worker at a private health clinic in Bella Vista. On the same day, a second case was reported in a resident of South Western Sydney. The second case was a household contact of another staff member (who subsequently tested positive) who worked at both the clinic in Bella Vista and a related private clinic in Liverpool. Close contacts among staff and patients were placed in isolation and recommended for testing, and both clinics were closed for cleaning.

In the week ending 24 October there was one new case linked to this cluster in a household contact of a healthcare worker who was exposed at the Liverpool clinic.

Table 5. Cases linked to private health clinic cluster by setting of exposure

Setting of exposure	Exposure site	Exposure site	No. cases	Cases in household/ social setting	Total cases
		Local area			
Primary exposure location					
Healthcare	Private health clinic	Liverpool	4	2	6
Healthcare	Private health clinic	Bella Vista	1	3	4
Total			5	5	10

Interpretation: Excluding the source, a healthcare worker that worked at both clinics, there are 10 cases linked to this cluster: three healthcare workers, one patient, one visitor accompanying a patient who attended the Liverpool clinic, one social contact, and four household contacts of cases from the clinic.

Previously reported active clusters with no new cases identified this week

Lakemba cluster

The last case associated with this cluster was notified on 14 October in a household contact of a healthcare worker that worked at the GP clinic. Excluding the source, who is a healthcare worker linked to a known case, there are eight cases linked to this cluster including a healthcare worker, two patients that attended the GP clinic, and five household contacts from two separate families.

Table 6. Previously reported clusters with no new cases identified in the week ending 24 October 2020

Date cluster first identified	Cluster	Cases linked in the week ending 24 Oct	Date of last case
10 Oct	Lakemba cluster	0	14 Oct

Clusters with no ongoing public health risk

There have been no new cases linked to the Concord Hospital cluster for more than four weeks. Two or more incubation periods have now passed since the last case and there is no ongoing public health risk. This cluster is now closed.

SECTION 5: COVID-19 IN SPECIFIC POPULATIONS

COVID-19 in healthcare workers

The following describes infections of COVID-19 in healthcare workers (HCWs) and those that were potentially acquired in healthcare settings in NSW. HCWs in this section includes roles such as doctor, nurse, orderly, paramedic, laboratory technician, pharmacist, administrative staff, cleaners, and other support staff. Public health units routinely undertake investigations of cases of COVID-19 infections in healthcare to identify ongoing risks in healthcare settings.

There were no new COVID-19 cases in HCWs reported in the last week. In total, there have been 37 cases of COVID-19 in HCWs since 1 August. Of these, 23 HCWs were potentially infected in healthcare settings. A further seven cases were household contacts of a known case, four were exposed in community settings, and for three cases the source of infection is unknown.

Table 7. Potential healthcare-acquired infections for HCWs by healthcare setting in the past four weeks

Healthcare setting	Week ending				Total
	24 Oct	17 Oct	10 Oct	3 Oct	
NSW public health setting	0	0	1	0	1
Private health setting	0	2	2	0	4
Total	0	2	3	0	5

Interpretation: The majority (80%; 4/5) of potentially healthcare-acquired cases in the last four weeks were reported in private health settings in NSW.

Clusters associated with healthcare-acquired infections in HCWs

Of the 23 potentially healthcare-acquired infections in HCWs reported since 1 August, 20 were associated with five clusters in healthcare settings: two from Hornsby Hospital, seven from Liverpool Hospital, seven from Concord Hospital, three from two related private health clinics in Bella Vista and Liverpool, and one case from a GP clinic in Lakemba.

Aboriginal people

Aboriginal people are considered to be a vulnerable group for serious COVID-19 disease due to their high burden of chronic disease. Additionally, transmission within Aboriginal communities is likely to be high due to factors such as high number of people per household and barriers to accessing healthcare.

No cases in Aboriginal people were reported in the week ending 24 October. In total, 45 Aboriginal people have been diagnosed with COVID-19, representing 1% of all cases in NSW. The last case of COVID-19 in an Aboriginal person was reported on 6 September.

Pregnant women

No cases in pregnant women were reported in the week ending 24 October. The last reported case was on 19 October. In total, 30 pregnant women have been diagnosed with COVID-19 in NSW. As those who test negative are not interviewed, testing rates among pregnant women are not available.

SECTION 6: DEATHS

How many people have died as a result of COVID-19?

In total, 1.3% of cases (55 people) have died as a result of COVID-19 infection, most of whom were 70 years of age or older, including 28 residents of aged care facilities with known COVID-19 outbreaks. Approximately 22% (12/55) of the deaths were in overseas-acquired cases.

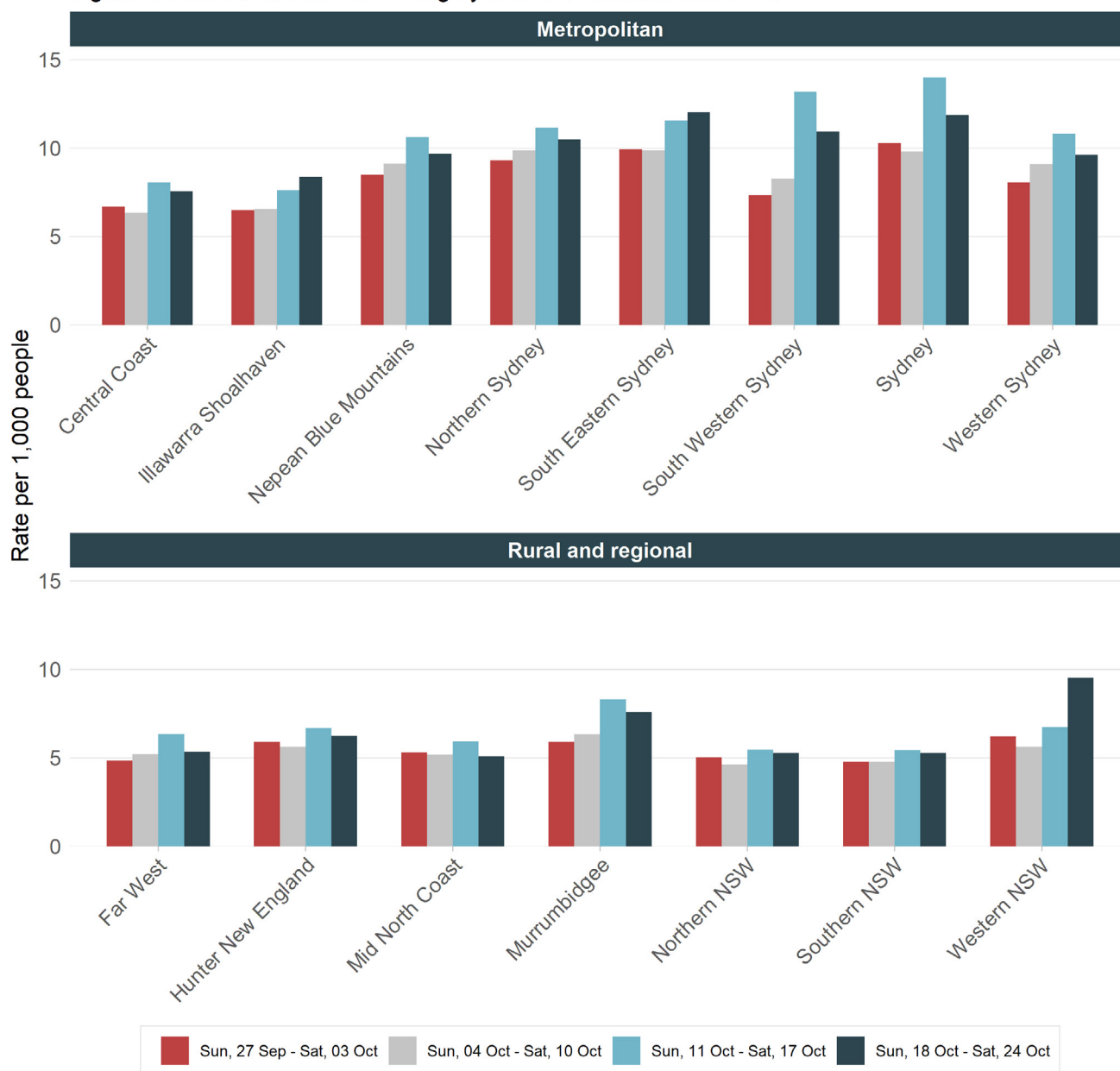
Table 8. Deaths as a result of COVID-19, by age group, NSW, 2020

Age group	Number of deaths	Number of cases	Case fatality rate
0-4 years	0	72	0%
5-11 years	0	74	0%
12-17 years	0	121	0%
18-29 years	0	954	0%
30-49 years	0	1283	0%
50-59 years	1	599	0.2%
60-69 years	4	569	0.7%
70-79 years	14	363	3.9%
80+ years	36	160	22.5%
Total	55	4195	1.3%

Interpretation: Cases older than 80 years of age had both the highest number of deaths and the highest case fatality rate. No cases below the 50-59 age group have died as a result of COVID-19.

SECTION 7: COVID-19 TESTING IN NSW

Figure 6. Rates of COVID-19 testing by LHD of residence and week

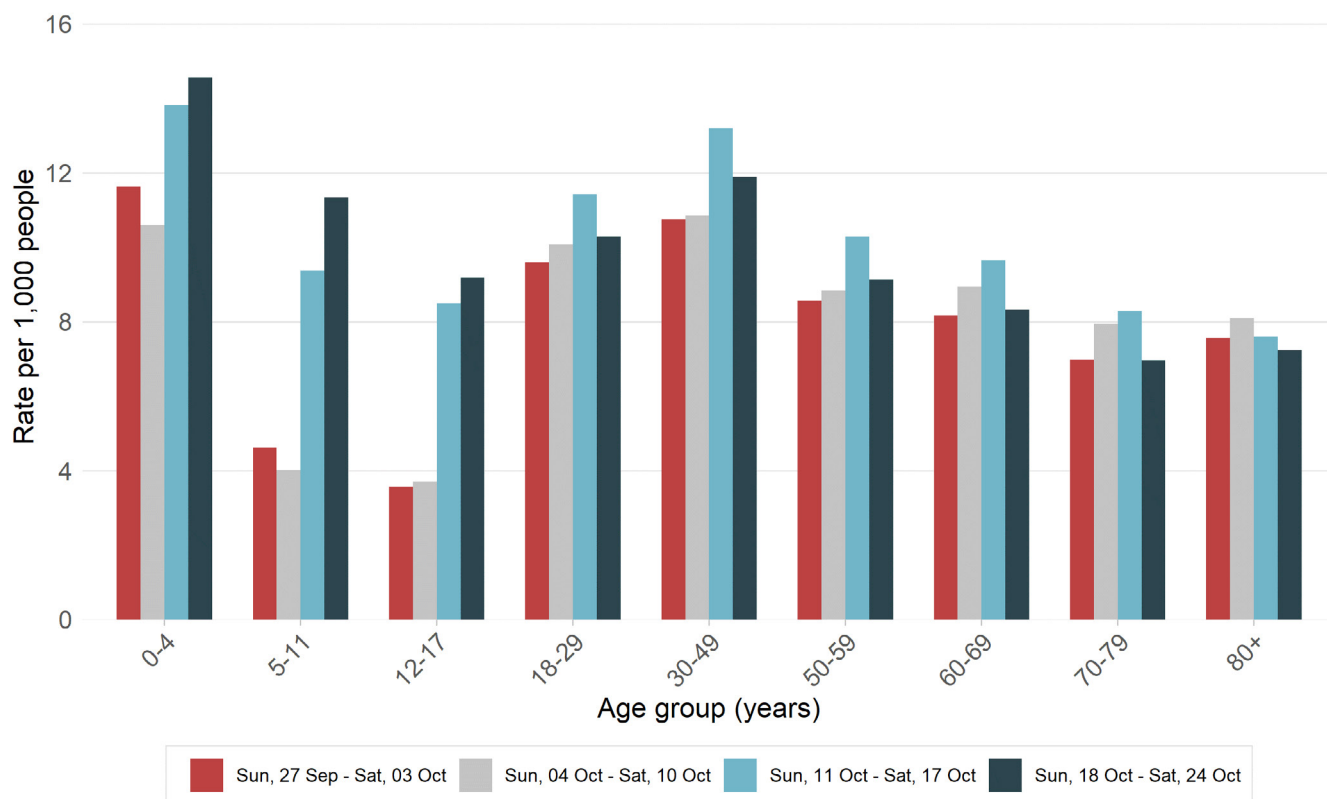


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 24 October were slightly lower compared to the previous week (10 per 1,000 vs 11 per 1,000). Testing increased in Illawarra, South Eastern Sydney, and Western NSW in the last week and decreased across all other LHDs. The increase in testing in Western NSW is likely in response to a positive sewage detection of SARS-CoV-2 in Bathurst during the past week.

Testing by age group

Figure 7. Rates of COVID-19 testing by age group and week

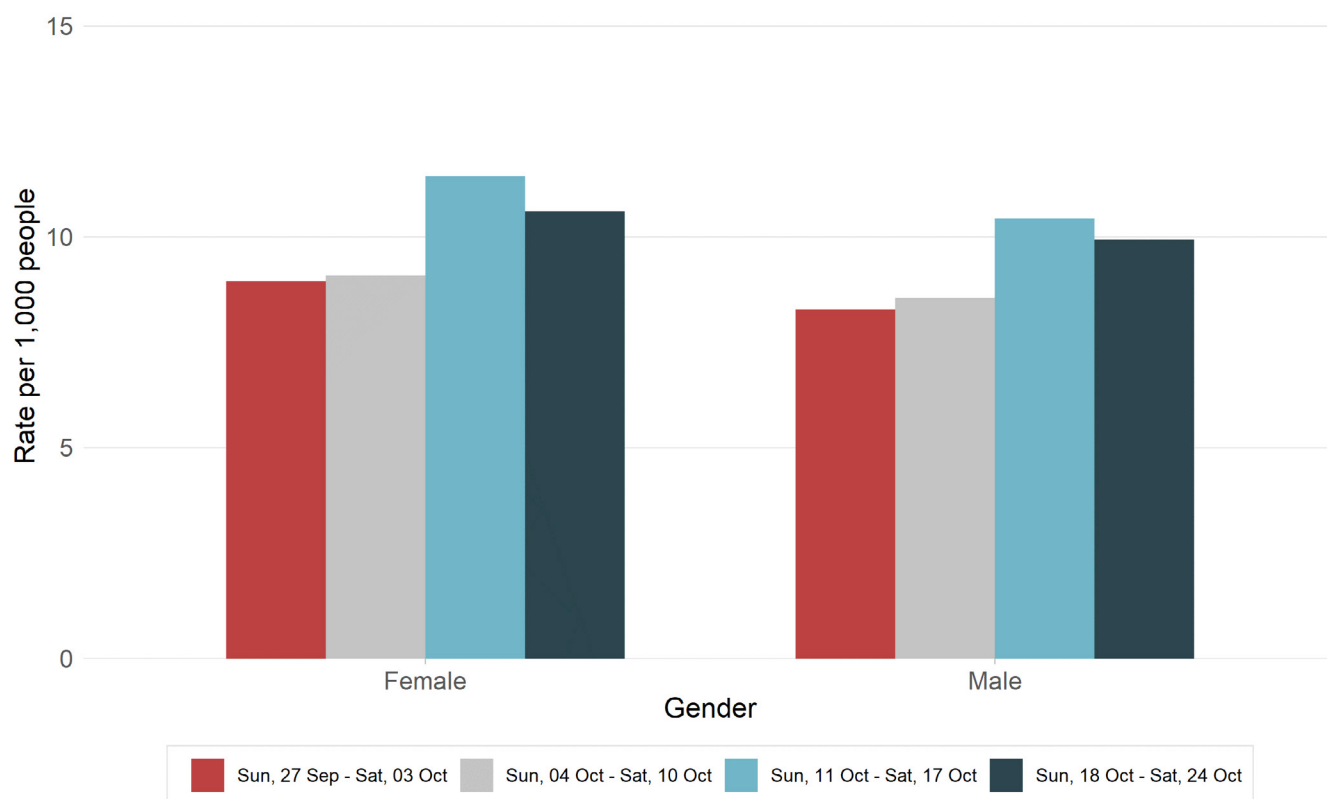


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates increased for the second week for children and decreased for age groups 18 years and older for the week ending 24 October.

Testing by gender

Figure 8. Rates of COVID-19 testing by gender and week



Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates are consistently higher in females compared with males, although this difference has narrowed in the past few weeks. Testing rates decreased in both males and females in the week ending 24 October compared to the previous week.

NSW Sewage Surveillance Program

The NSW Sewage Surveillance Program tests untreated sewage for fragments of the COVID-19 (SARS-CoV-2) virus at sewage treatment plant locations across NSW. Testing sewage can help track infections in the community and provide early warning of an increase in infections. These tests provide data to support NSW Health's response to COVID-19.

An infected person can shed virus in their faeces even if they do not have any symptoms, and shedding can continue for several weeks after they are no longer infectious. The NSW sewage surveillance for SARS-CoV-2 is in the preliminary stages of analysis and work is progressing to assess the significance of the results. For example, it is not currently known how many cases can be detected per population. A small number of cases in a large sewage catchment may not be detected by sewage surveillance due to factors such as dilution, inhibition, reduction in shedding over the infection period or movement of cases.

In the week ending 24 October 2020, 53 sewage samples were tested for fragments of SARS-CoV-2. Of these, six detections were reported: these samples were taken from the Bondi, Malabar, Glenfield, West Camden, Quakers Hill and Bathurst treatment plants. All detections apart from Bathurst were associated with reported cases. The detection from the Bathurst treatment plant on 21 October resulted in a public health alert for residents and visitors to Bathurst to be aware of symptoms and to isolate and get tested with even the mildest symptoms. The sample was from wastewater over the weekend of the Bathurst 1000 motor race, indicating a current or a previous infection in someone who attended or worked at the race. Follow up testing of sewage samples were negative. The table below shows results for previous weeks from various sites across NSW. Ulladulla and Culburra Beach have been added as new sites.

Table 9. Locations with positive SARS-CoV-2 detections in sewerage samples since August for the week ending 24 October 2020

Pop.	Sewage treatment plant	LHD	18 Jul	25 Jul	1 Aug	8 Aug	15 Aug	22 Aug	29 Aug	5 Sep	12 Sep	19 Sep	26 Sep	3 Oct	10 Oct	17 Oct	24 Oct
			29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
60,514	Blue Mountains (Winmalee)	NBMLHD															
4,681	North Richmond	NBMLHD															
13,052	Richmond	NBMLHD															
110,114	Penrith	NBMLHD															
69,245	Warriewood	NSLHD															
1,241	Brooklyn	NSLHD															
31,924	Hornsby Heights	NSLHD															
57,933	West Hornsby	NSLHD															
318,810	Bondi	S&SESLHD															
233,176	Cronulla	SESLHD															
1,857,740	Malabar 1	S&SES&SWSLHD															
	Malabar 2	S&SES&SWSLHD															
181,005	Liverpool	SWSLHD															
98,743	West Camden	SWSLHD															
6,882	Wallacia	SWSLHD															
14,600	Picton	SWSLHD															
161,200	Glenfield	SWSLHD															
1,341,986	North Head	NS&WSLHD															
26,997	Castle Hill Cattai	WSLHD															
	Castle Hill Glenhaven	WSLHD															
163,374	Quakers Hill	WSLHD															
119,309	Rouse Hill	WSLHD															
37,061	Riverstone	WSLHD															
163,147	St Marys	NBM&WSLHD															
16,068	Bombo	ISHLHD															
73,686	Shellharbour	ISHLHD															
196,488	Wollongong	ISHLHD															
147,500	Gosford-Kincumber	CCLHD															
-	Wyong-Toukley	CCLHD															
32,000	Ulladulla	ISHLHD															
11,000	Culburra Beach	ISHLHD															
5,000	Perisher	M&SLHD															
8,400	Thredbo	M&SLHD															
3,000	Jindabyne	M&SLHD															
8,000	Cooma	M&SLHD															
500	Charlottes Pass	M&SLHD															
51,750	Albury composite	M&SLHD															
22,419	Goulburn	M&SLHD															

			18 Jul	25 Jul	1 Aug	8 Aug	15 Aug	22 Aug	29 Aug	5 Sep	12 Sep	19 Sep	26 Sep	3 Oct	10 Oct	17 Oct	24 Oct
			Week														
Pop.	Sewage treatment plant	LHD	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
21,000	Batemans Bay	M&SLHD															
8,000	Eden	M&SLHD															
15,500	Merimbula	M&SLHD															
5,000	Bermagui	M&SLHD															
7,800	Deniliquin	M&SLHD															
48,000	Queanbeyan	M&SLHD															
50,000	Wagga Wagga composite	M&SLHD															
2,050	Bourke	W&FWLHD															
36,603	Bathurst	W&FWLHD															
19,000	Broken Hill	W&FWLHD															
500	Dareton	W&FWLHD															
11,600	Parkes	W&FWLHD															
37,000	Dubbo	W&FWLHD															
24,000	Armidale	HNELHD															
45,000	Tamworth	HNELHD															
10,000	Moree	HNELHD															
12,000	Forster	HNELHD															
225,834	Hunter - Burwood Beach	HNELHD															
60,000	Hunter - Shortland	HNELHD															
115,000	Hunter - Belmont	HNELHD															
60,000	Hunter - Morpeth	HNELHD															
58,300	Hunter - Boulder Bay	HNELHD															
35,000	Hunter - Raymond Terrace	HNELHD															
2,500	Hunter - Karuah	HNELHD															
18,958 (both plants total)	Byron Bay - Ocean Shores	N&MNCLHD															
	Byron Bay	N&MNCLHD															
31,104	Ballina	N&MNCLHD															
72,000 (Tweed District)	Tweed - Kingscliff	N&MNCLHD															
	Tweed - Hastings Point	N&MNCLHD															
54,370	Port Macquarie	N&MNCLHD															
50,000	Coffs Harbour	N&MNCLHD															

	not sampled
	SARS-CoV-2 not detected
	SARS-CoV-2 detected
	sampling commenced in week 29 (week ending 18 July 2020)
c	composite of the separate influent samples
I	result from another laboratory

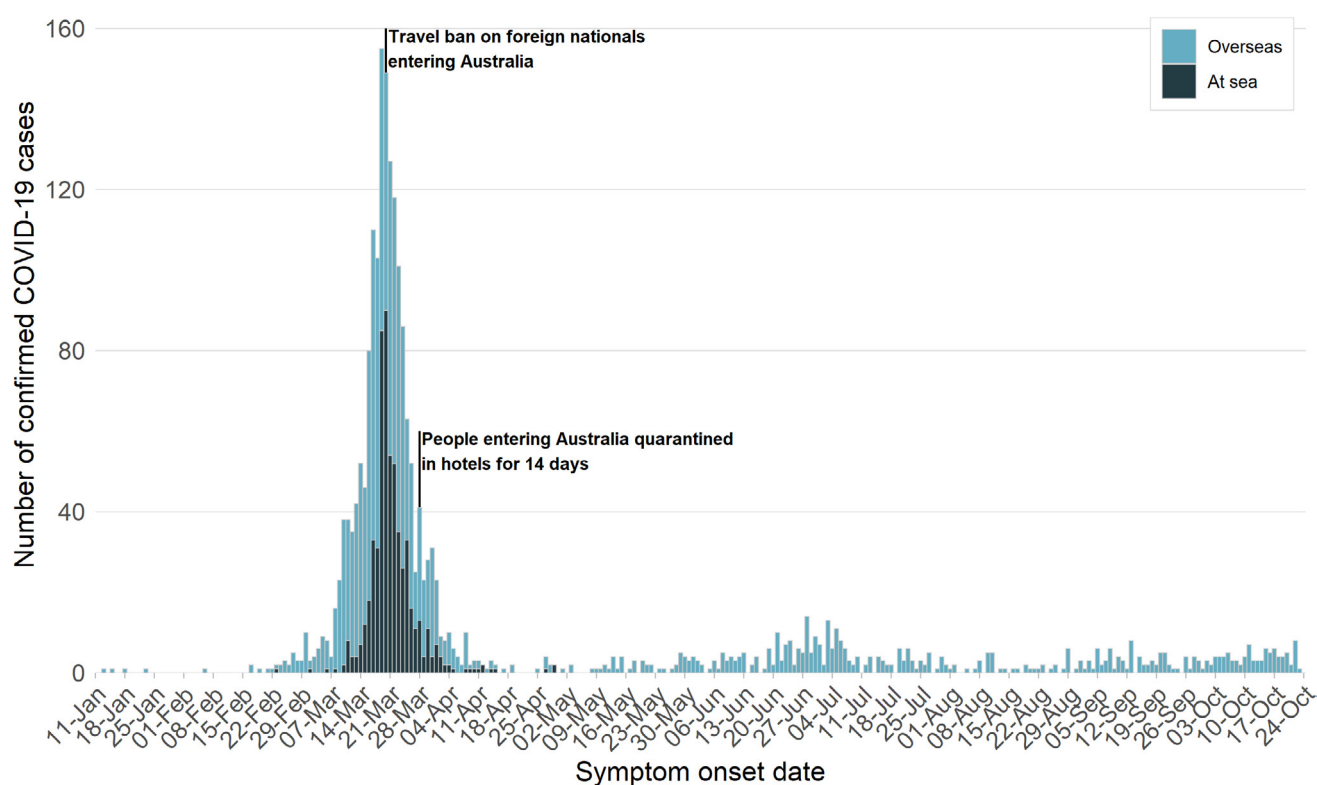
Interpretation: There were six detections of SARS-CoV-2 in the last week. One detection from Bathurst was not associated with previously reported cases in the local area. There was a significant increase in testing in Bathurst Regional LGA in the past week following the positive detection in the region.

SECTION 8: COVID-19 IN RETURNED TRAVELLERS

To limit the spread of COVID-19 into NSW, travel restrictions were introduced for all non-Australian citizens and permanent residents. In addition, since 29 March returned travellers have been quarantined in hotels for a 14-day period and travellers who develop symptoms are isolated until no longer infectious.

The graph below shows the number of cases in returned travellers by the date of symptom onset. Cases acquired at sea refers to those cruise ship passengers who acquired their infection prior to disembarking in NSW.

Figure 9. Overseas acquired COVID-19 cases by infection source and illness onset, NSW, 2020



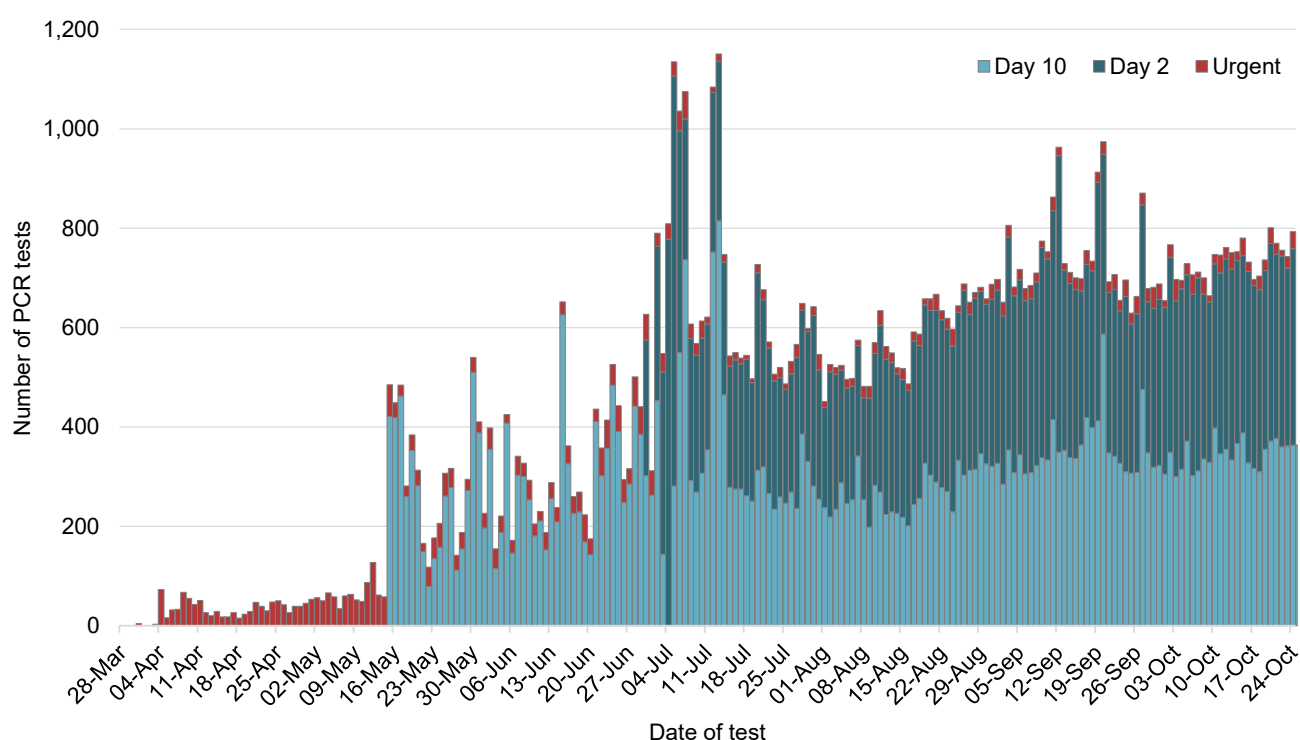
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: The number of new cases in returned travellers has decreased markedly since March in line with travel restrictions and declined further again since mid-July. There were 40 overseas-acquired cases reported in the week ending 24 October, 48% more than the previous week.

Hotel quarantine

The program of screening all overseas travellers after arrival in NSW commenced on 15 May 2020. From 30 June 2020, the program was extended to include screening on both day two and day 10 after arrival.

Figure 10. COVID-19 testing in returned travellers in hotel quarantine, reported from 29 March to 24 October, NSW, 2020



Interpretation: In the week ending 24 October, there were 5,303 tests conducted through the hotel quarantine screening programs. Of these, 10% were screening tests for domestic travellers from Victoria. Since hotel quarantine began on 29 March, a total of 95,749 PCR tests have been conducted with 479 overseas-acquired cases and four interstate-acquired COVID-19 cases detected while in hotel quarantine.

SECTION 9: OTHER RESPIRATORY INFECTIONS IN NSW

Influenza and other respiratory virus cases and tests reported in NSW, up to 18 October 2020

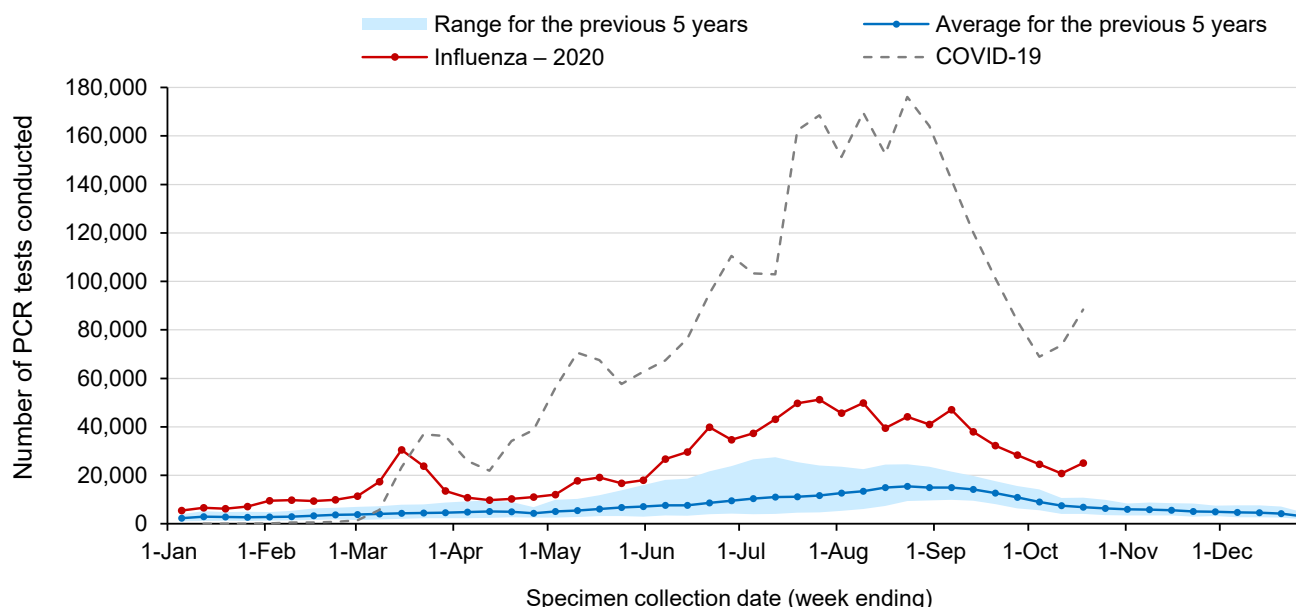
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted; not all samples are tested for all respiratory viruses.

The most recent data available is for testing carried out to 18 October. A total of 1,035,001 influenza tests have been performed at participating laboratories to 18 October, with 25,078 tests conducted in the most recent week. Refer to Appendix B for PCR testing results for a range of respiratory viruses.

How much influenza testing is happening?

The red line in the figure below shows the number of PCR tests for influenza carried out each week. The blue line shows the average number of tests carried out for the same week in the last five years and the shaded area shows the range of counts reported in the previous five years. The grey line shows the number of COVID-19 tests.

Figure 11. Testing for influenza and COVID-19 by week, to 18 October 2020

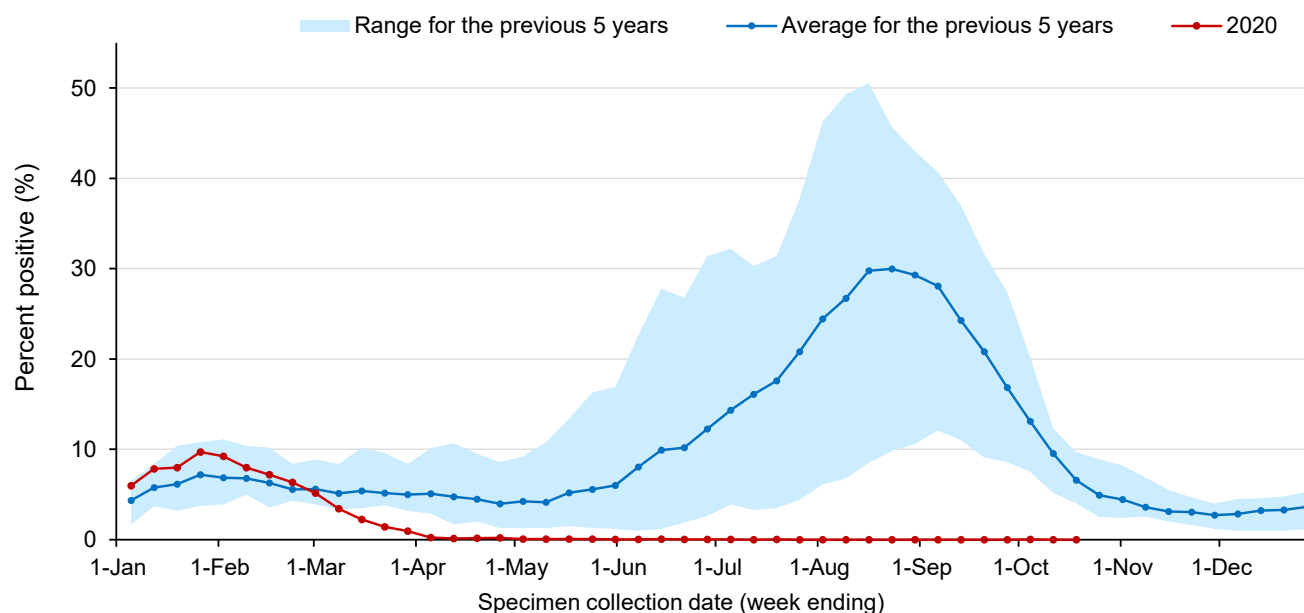


Interpretation: In every week this year, the number of influenza tests performed has exceeded the previous five-year average.

How much influenza is circulating?

The graph below shows the proportion of tests found to be positive for influenza with the red line showing weekly counts for 2020, the blue line showing the average for the past five years and the shaded area showing the range recorded in the previous five years.

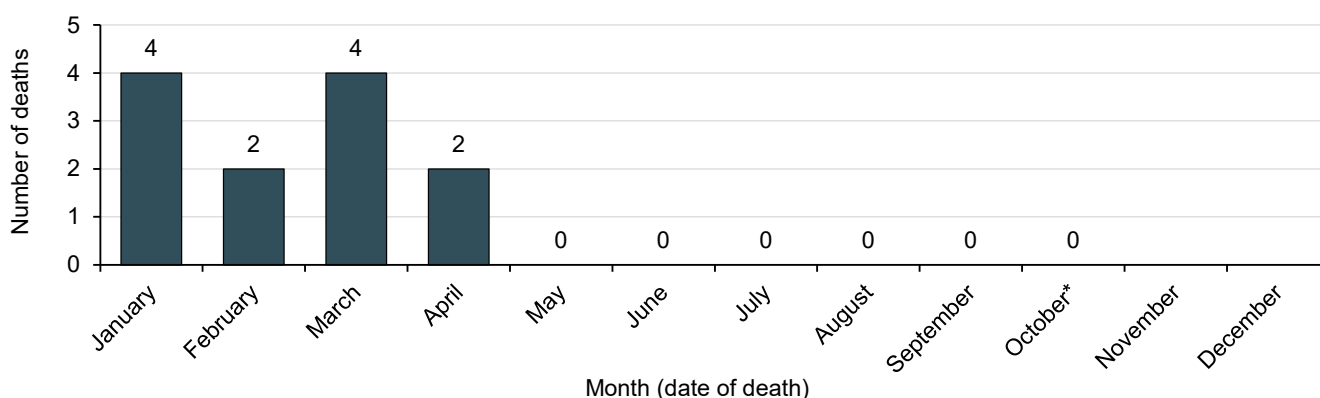
Figure 12. Proportion of tests positive for influenza, to 18 October 2020



Interpretation: In the week ending 18 October, the percent of influenza tests that were positive continued to be very low (0.01%), indicating limited influenza transmission in the community. Since early March, this percentage has remained far lower than the usual range for the time of year.

How many people have died as a result of influenza?

Figure 13. Laboratory-confirmed influenza deaths by month of death, to 18 October 2020



Note: *month to date.

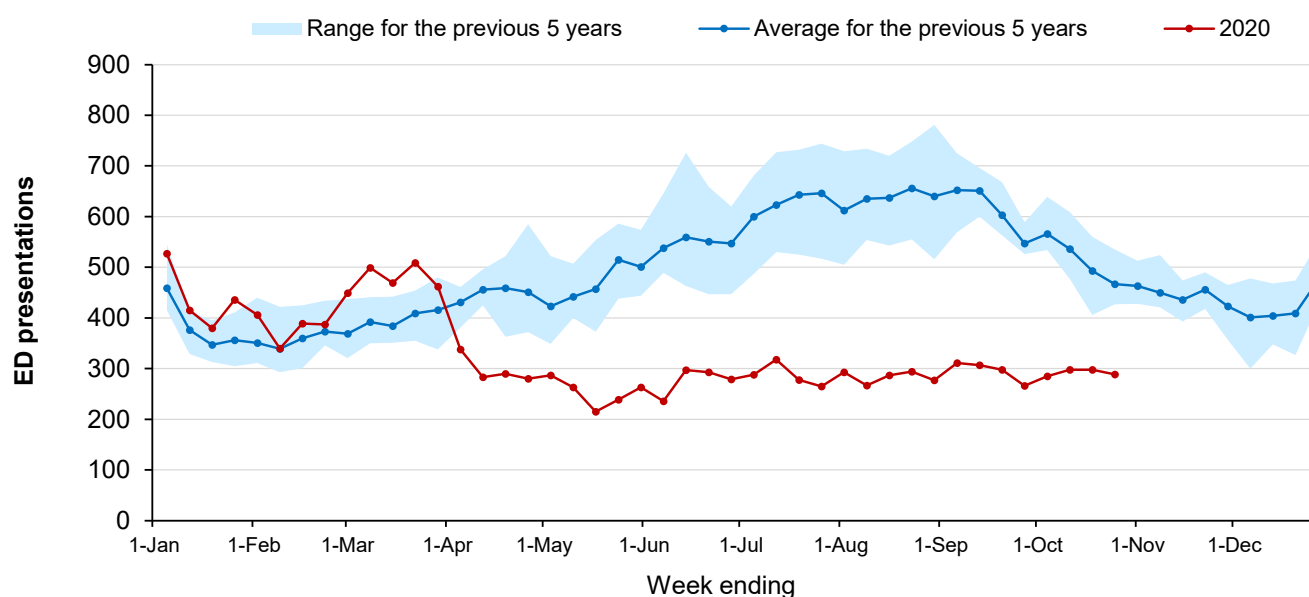
Interpretation: No influenza deaths were reported in the week ending 18 October. The number of influenza-related deaths identified via coroner's reports and death registrations from 1 January to 18 October 2020 is lower than the same period last year (12 deaths in 2020 compared with 312 in 2019).² Two-thirds of the deaths were in people aged 65 years and over.

² Includes deaths in people with laboratory-confirmed influenza.

How are emergency department presentations for pneumonia tracking?

The two figures below show weekly pneumonia and bronchiolitis presentations to Emergency Departments in NSW, using PHREDSS.³ The red line shows the weekly counts for 2020, the blue line shows the average for the same week for the past five years, and the shaded area shows the range recorded in the previous five years.

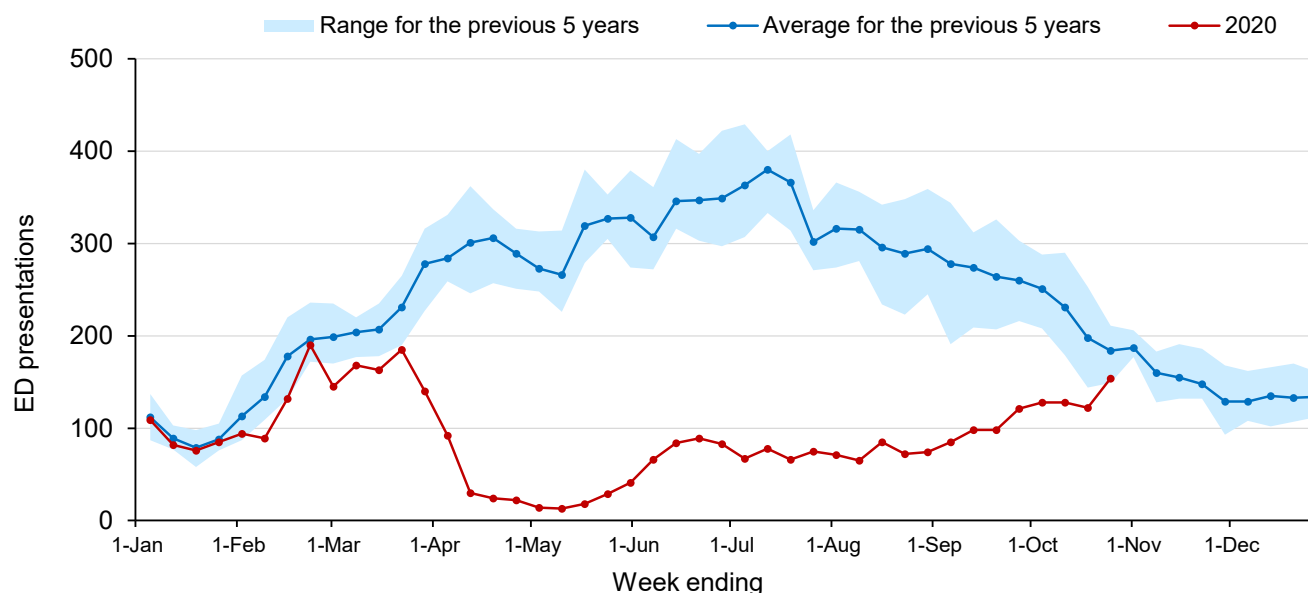
Figure 14. Emergency Department pneumonia presentations in NSW by week, to 25 October 2020



Interpretation: Pneumonia presentations include people with diagnoses of viral, bacterial, atypical or unspecified pneumonia, and Legionnaires' disease, but excludes 'pneumonia with influenza' and provides an indicator of more severe respiratory conditions. Pneumonia presentations decreased from the end of March and have continued to remain well below the usual range for this time of year.

³ NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance (PHREDSS) system, CEE, NSW Ministry of Health. Comparisons are made with data for the preceding five years. Includes unplanned presentations to 67 NSW emergency departments (accounts for 87% of total public ED activity).

Figure 15. Emergency Department bronchiolitis presentations in NSW by week, to 25 October 2020

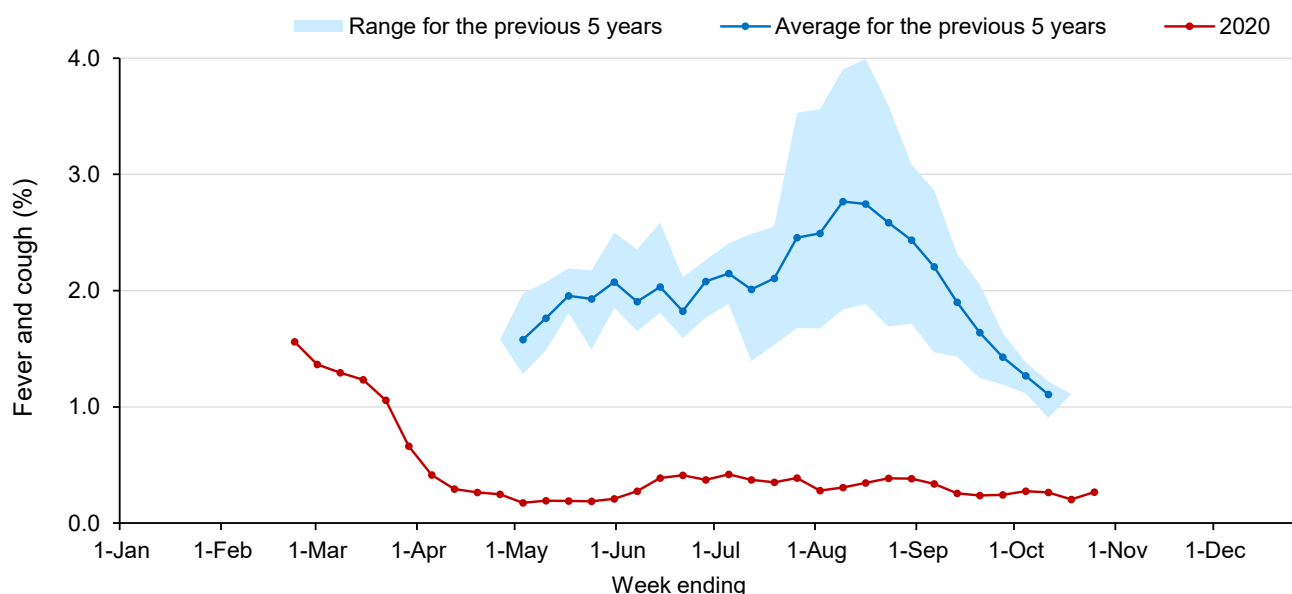


Interpretation: Bronchiolitis is a common disease of infants often caused by respiratory syncytial virus (RSV). Bronchiolitis presentations remain below the usual range for this time of year but have increased since early September. This increase corresponds to an increase in RSV detections.

How many people have flu-like symptoms in the community?

FluTracking is an online survey that asks participants to report flu-like symptoms, such as fever or cough, in the last week. Across NSW approximately 25,000-30,000 people participate each week. The survey usually commences at the beginning of May in line with the flu season but commenced at the end of February this year given the COVID-19 outbreak.

Figure 16. Proportion of FluTracker participants in NSW reporting influenza-like illness, to 25 October 2020



Interpretation: In NSW in the week ending 25 October, of the 16,040 people surveyed, 43 people (0.27%) reported flu-like symptoms. The proportion of people reporting symptoms remains well below the usual range for this time of year.

APPENDIX A: COVID-19 PCR TESTS IN NSW

Local Health District	Local Government Area	Week ending				Total	
		24 October		17 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Central Coast	Central Coast / LHD Total ²	2672	7.6	2847	8.1	110989	314.5
Far West	Balranald	23	9.8	11	4.7	440	188.2
	Broken Hill	60	3.4	93	5.3	4376	250.4
	Central Darling	9	4.9	10	5.4	325	176.7
	Wentworth	69	9.8	77	10.9	1967	278.9
	LHD Total ²	161	5.3	191	6.3	7108	235.8
Hunter New England	Armidale Regional	198	6.4	227	7.4	8580	278.8
	Cessnock	254	4.2	301	5.0	14209	236.9
	Dungog	42	4.5	47	5.0	2153	228.5
	Glen Innes Severn	28	3.2	29	3.3	1672	188.5
	Gunnedah	47	3.7	65	5.1	2945	232.2
	Gwydir	20	3.7	15	2.8	627	117.1
	Inverell	49	2.9	64	3.8	3819	226.1
	Lake Macquarie	1619	7.9	1614	7.8	75312	365.8
	Liverpool Plains	24	3.0	46	5.8	1896	239.9
	Maitland	616	7.2	720	8.5	34582	406.1
	Mid-Coast	370	3.9	389	4.2	20493	218.4
	Moree Plains	37	2.8	34	2.6	2724	205.4
	Muswellbrook	48	2.9	86	5.3	4103	250.5
	Narrabri	35	2.7	50	3.8	2494	189.9
	Newcastle	1438	8.7	1513	9.1	75178	454.1
	Port Stephens	449	6.1	439	6.0	25773	350.7
	Singleton	144	6.1	182	7.8	8392	357.7
	Tamworth Regional	395	6.3	429	6.9	19769	316.1
	Tenterfield	12	1.8	17	2.6	984	149.2
	Upper Hunter Shire	60	4.2	71	5.0	3649	257.3
	Uralla	31	5.2	22	3.7	1109	184.5
	Walcha	11	3.5	12	3.8	789	251.8
		LHD Total ²	5925	6.2	6370	6.7	310999
Illawarra Shoalhaven	Kiama	201	8.6	188	8.0	8221	351.5
	Shellharbour	783	10.7	654	8.9	25688	350.8
	Shoalhaven	728	6.9	649	6.1	29206	276.5
	Wollongong	1808	8.3	1709	7.8	68077	312.1
	LHD Total ²	3520	8.4	3200	7.6	131192	312.7
Mid North Coast	Bellingen	61	4.7	80	6.2	3076	236.7
	Coffs Harbour	399	5.2	411	5.3	17450	225.8
	Kempsey	173	5.8	198	6.7	7901	265.6
	Nambucca	85	4.3	89	4.5	4258	215.0
	Port Macquarie-Hastings	429	5.1	558	6.6	22216	262.8
	LHD Total ²	1147	5.1	1336	5.9	54901	243.3

Local Health District	Local Government Area	Week ending				Total	
		24 October		17 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Murrumbidgee	Albury	609	11.2	612	11.3	14464	266.1
	Berrigan	67	7.7	168	19.2	1777	203.1
	Bland	24	4.0	36	6.0	1357	227.2
	Carrathool	11	3.9	6	2.1	288	102.9
	Coolamon	20	4.6	26	6.0	1070	246.5
	Cootamundra-Gundagai Regional	73	6.5	73	6.5	2507	223.1
	Edward River	69	7.6	77	8.5	2279	250.9
	Federation	95	7.6	113	9.1	2392	192.3
	Greater Hume Shire	92	8.6	95	8.8	2707	251.5
	Griffith	165	6.1	174	6.4	7322	270.9
	Hay	14	4.8	16	5.4	459	155.7
	Hilltops	134	7.2	134	7.2	4450	237.9
	Junee	27	4.0	25	3.7	1092	163.4
	Lachlan ¹	19	3.1	21	3.5	848	139.6
	Leeton	54	4.7	60	5.2	2218	193.8
	Lockhart	18	5.5	16	4.9	697	212.2
	Murray River	20	1.7	40	3.3	706	58.3
	Murrumbidgee	18	4.6	24	6.1	691	176.4
	Narrandera	21	3.6	30	5.1	962	163.1
	Snowy Valleys	73	5.0	69	4.8	3784	261.3
	Temora	17	2.7	30	4.8	1125	178.4
	Wagga Wagga	636	9.8	649	10.0	21380	327.6
	LHD Total ²	2263	7.6	2476	8.3	74008	248.3
	Nepean Blue Mountains	Blue Mountains	876	11.1	968	12.2	36123
Hawkesbury		607	9.0	719	10.7	25767	382.9
Lithgow		152	7.0	103	4.8	5566	257.6
Penrith		2175	10.2	2406	11.3	91435	429.3
LHD Total ²		3779	9.7	4156	10.6	157590	403.1
Northern NSW	Ballina	242	5.4	272	6.1	12254	274.6
	Byron	252	7.2	259	7.4	11296	322.0
	Clarence Valley	192	3.7	209	4.1	9744	188.6
	Kyogle	43	4.9	40	4.6	1525	173.4
	Lismore	310	7.1	272	6.2	12660	289.8
	Richmond Valley	121	5.2	125	5.3	5950	253.6
	Tenterfield	12	1.8	17	2.6	984	149.2
	Tweed	473	4.9	517	5.3	21086	217.4
	LHD Total ²	1635	5.3	1696	5.5	74757	240.9

Local Health District	Local Government Area	Week ending				Total	
		24 October		17 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Northern Sydney	Hornsby	1288	8.5	1326	8.7	49141	323.2
	Hunters Hill	294	19.6	317	21.2	11647	777.5
	Ku-ring-gai	1680	13.2	1768	13.9	60499	475.8
	Lane Cove	858	21.4	852	21.2	31897	794.4
	Mosman	281	9.1	315	10.2	12336	398.2
	North Sydney	582	7.8	673	9.0	23459	312.7
	Northern Beaches	2661	9.7	2660	9.7	98922	361.7
	Parramatta ¹	2203	8.6	2646	10.3	75304	292.8
	Ryde	1276	9.7	1493	11.4	44649	340.1
	Willoughby	673	8.3	732	9.0	23857	293.9
	LHD Total ²	10014	10.5	10669	11.2	370613	387.7
South Eastern Sydney	Bayside	1726	9.7	1760	9.9	51339	287.8
	Georges River	1382	8.7	1498	9.4	44932	281.8
	Randwick	2124	13.7	1969	12.7	71358	458.5
	Sutherland Shire	2647	11.5	2520	10.9	95655	414.8
	Sydney ¹	3733	15.2	3654	14.8	109036	442.6
	Waverley	1046	14.1	1028	13.8	40700	547.8
	Woollahra	824	13.9	839	14.1	33291	560.6
	LHD Total ²	11547	12.0	11077	11.6	376529	392.6
South Western Sydney	Camden	2999	29.6	3222	31.8	54792	540.2
	Campbelltown	2514	14.7	2946	17.2	73093	427.6
	Canterbury-Bankstown ¹	3679	9.7	4997	13.2	118370	313.2
	Fairfield	1084	5.1	1309	6.2	61064	288.5
	Liverpool	2223	9.8	2880	12.7	90329	396.9
	Wingecarribee	509	10.0	575	11.2	20566	402.2
	Wollondilly	470	8.8	724	13.6	15931	299.7
	LHD Total ²	11352	10.9	13678	13.2	374972	361.1
Southern NSW	Bega Valley	149	4.3	202	5.9	8088	234.6
	Eurobodalla	224	5.8	224	5.8	13529	351.7
	Goulburn Mulwaree	248	8.0	244	7.8	8541	274.4
	Queanbeyan-Palerang Regional	288	4.7	288	4.7	11861	194.1
	Snowy Monaro Regional	110	5.3	115	5.5	5188	249.5
	Upper Lachlan Shire	53	6.6	46	5.7	1835	227.7
	Yass Valley	73	4.3	62	3.6	2935	171.8
	LHD Total ²	1145	5.3	1181	5.4	52004	239.6
Sydney	Burwood	287	7.1	283	7.0	9622	236.9
	Canada Bay	997	10.4	1069	11.1	39479	410.9
	Canterbury-Bankstown ¹	3679	9.7	4997	13.2	118370	313.2
	Inner West	2443	12.2	2716	13.5	94385	470.0
	Strathfield	524	11.2	573	12.2	17912	381.7
	Sydney ¹	3733	15.2	3654	14.8	109036	442.6
	LHD Total ²	8281	11.9	9756	14.0	289074	414.9

Local Health District	Local Government Area	Week ending				Total	
		24 October		17 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Western NSW	Bathurst Regional	1033	23.7	377	8.6	14608	334.9
	Blayney	83	11.3	46	6.2	2409	326.5
	Bogan	17	6.6	15	5.8	526	203.9
	Bourke	16	6.2	7	2.7	410	158.3
	Brewarrina	1	0.6	3	1.9	272	168.8
	Cabonne	67	4.9	69	5.1	2424	177.8
	Cobar	19	4.1	17	3.7	747	160.4
	Coonamble	8	2.0	23	5.8	769	194.3
	Cowra	107	8.4	73	5.7	2658	208.6
	Dubbo Regional	414	7.7	422	7.9	14116	262.8
	Forbes	38	3.8	37	3.7	1702	171.8
	Gilgandra	14	3.3	16	3.8	771	181.9
	Lachlan ¹	19	3.1	21	3.5	848	139.6
	Mid-Western Regional	192	7.6	156	6.2	6407	253.7
	Narromine	17	2.6	29	4.5	1331	204.2
	Oberon	33	6.1	19	3.5	1341	247.8
	Orange	472	11.1	443	10.4	15570	366.8
	Parkes	56	3.8	63	4.3	3377	227.6
	Walgett	17	2.9	12	2.0	1338	224.8
	Warren	26	9.6	13	4.8	1043	386.7
	Warrumbungle Shire	57	6.1	45	4.9	2212	238.4
	Weddin	16	4.4	16	4.4	675	186.8
	LHD Total ²	2717	9.5	1919	6.7	75304	264.2
Western Sydney	Blacktown	3619	9.7	4098	10.9	134104	358.1
	Cumberland	2153	8.9	2466	10.2	79722	330.1
	Parramatta ¹	2203	8.6	2646	10.3	75304	292.8
	The Hills Shire	2508	14.1	2636	14.8	81500	457.9
	LHD Total ²	10129	9.6	11411	10.8	359054	340.8
NSW Total ³		83,372	10.3	88,757	11.0	2,996,231	370.4

¹Local Government Area (LGA) spans multiple Local Health Districts.

²Local Health District total counts and rates includes tests for LHD residents only. Murrumbidgee includes Albury LGA residents.

³NSW Total counts and rates include tests where residential information is incomplete.

See <https://www.health.nsw.gov.au/Infectious/covid-19/Pages/counting-tests.aspx> for detail on how tests are counted.

APPENDIX B: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 18 OCTOBER 2020

The reported testing numbers reflect the number of influenza PCR tests conducted. Not all samples are tested for all of the other respiratory viruses. Therefore, data presented may tend to under-represent current respiratory virus activity in NSW.

Specimen collection date	Total PCR tests conducted	Influenza A		Influenza B		Adeno-virus	Para-influenza	RSV	Rhinovirus	HMPV	Enterovirus
		No.	%Pos.	No.	%Pos.						
1 Jan—18 Oct 2020											
Total	1,035,001	6,622	0.64%	952	0.09%	7,464	9,068	7,346	122,538	2,073	4,619
Month ending											
3 February*	34,953	2,508	7.18%	401	1.15%	846	1,900	752	5,036	599	335
1 March	40,575	2,363	5.82%	315	0.78%	798	2,435	1,118	8,245	437	1,007
29 March	85,238	1,549	1.82%	200	0.23%	898	4,117	1,977	18,088	664	1,502
3 May*	54,128	70	0.13%	13	0.02%	175	273	410	2,250	48	210
31 May	71,525	35	0.05%	6	0.01%	237	62	115	3,511	27	112
28 June	130,922	42	0.03%	11	0.01%	629	83	178	28,321	112	246
2 August*	227,152	34	0.01%	2	0.00%	1,251	89	209	31,589	79	427
30 August	174,594	9	0.01%	2	0.00%	1,137	37	299	13,926	14	235
27 September	145,489	6	0.004%	1	0.00%	938	35	866	8,416	61	259
Week ending											
4 October	24,539	4	0.02%	1	0.00%	203	9	426	1,229	10	89
11 October	20,808	0	0.00%	0	0.00%	161	6	435	904	11	84
18 October	25,078	2	0.01%	0	0.00%	191	22	561	1,023	11	113

Notes: Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Serological diagnoses are not included.

HMPV - Human metapneumovirus

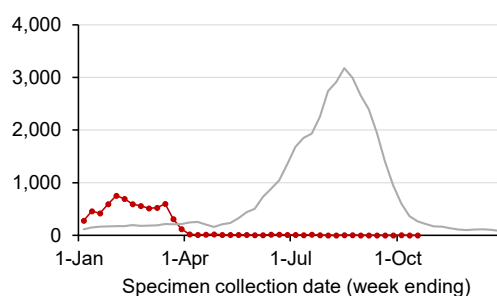
RSV - Respiratory syncytial virus

*Five-week period

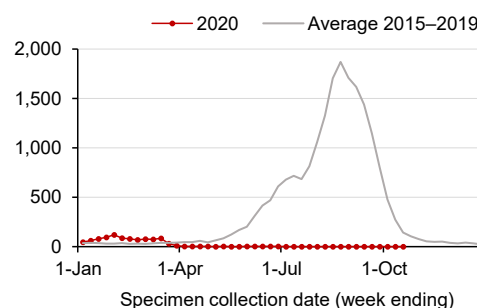
APPENDIX C: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 18 OCTOBER 2020

Not all samples are tested for all of the other respiratory viruses. Therefore, data presented may tend to under-represent current respiratory virus activity in NSW.

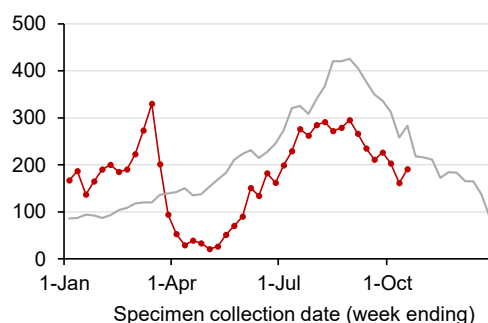
Influenza A



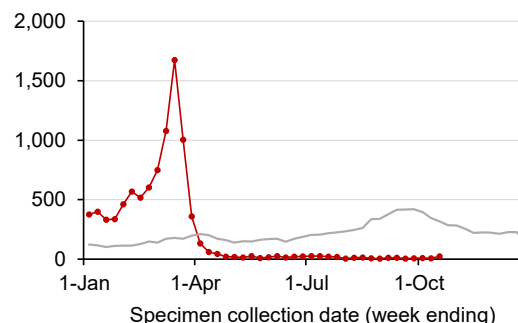
Influenza B



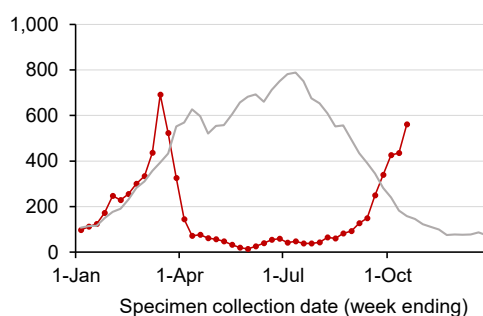
Adenovirus



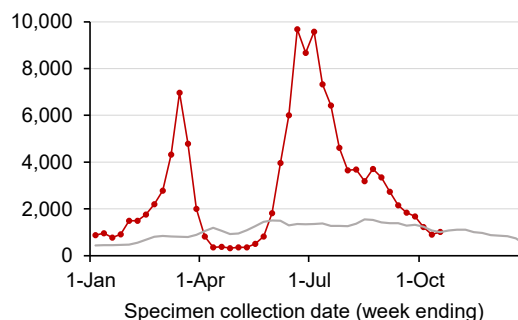
Parainfluenza



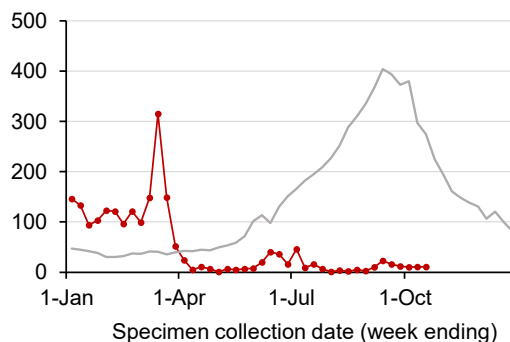
Respiratory syncytial virus (RSV)



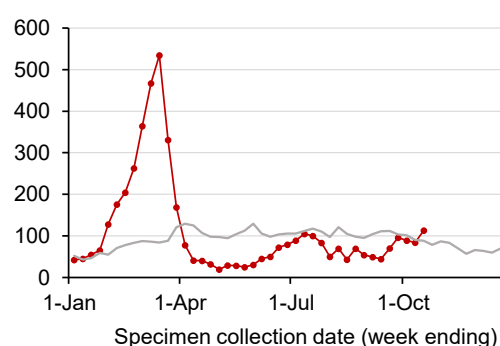
Rhinovirus



Human metapneumovirus (HMPV)



Enterovirus



Notes: Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Serological diagnoses are not included.

GLOSSARY

Term	Description
Case	<p>A person infected who has tested positive to a validated specific SARS-CoV-2 nucleic acid test or has had the virus identified by electron microscopy or viral culture. Blood tests (serology) is only used in special situations following a public health investigation and require other criteria to be met in addition to the positive serology result (related to timing of symptoms and contact with known COVID-19 cases).</p> <p>Case counts include:</p> <ul style="list-style-type: none"> - NSW residents diagnosed in NSW who were infected overseas or in Australia (in NSW or interstate), and - interstate or international visitors diagnosed in NSW who were under the care of NSW Health at the time of diagnosis.
Healthcare workers	Individuals who work within a hospital or other healthcare settings, including staff in direct or indirect contact with patients or infectious materials.
Incubation period	The time in which the case was infected. The incubation period for COVID-19 is between 1 and 14 days prior to symptom onset.
Overseas-acquired case	Case who travelled overseas during their incubation period. While testing rates in NSW are high and case counts are low, cases who have travelled overseas in their incubation period are considered to have acquired their infection overseas.
Interstate-acquired case	Case who travelled interstate during their infection and the public health investigation concludes the infection was likely acquired interstate.
Cluster	Group of cases sharing a common source of infection or linked to each other in some way.

Dates used in COVID-19 reporting

Event	Date name	Source
Person first starts to feel unwell	Date of symptom onset	Public health staff interview all cases at the time of diagnosis. This is the date provided to NSW Health by the case.
Person has a swab taken	Date of test	This date is provided to NSW Health by the laboratory when the test result (positive or negative) is notified.
Laboratory notifies NSW Health of result	Date of notification	<p>This date is provided to NSW Health by the laboratory. Laboratories prioritise notification of positive results to allow prompt public health action.</p> <p>Positive cases: The date of notification is collected by NSW Health on the day of notification. Cases are informed of their diagnosis by their doctor or public health staff as soon as the result is available. The date of notification to NSW Health is usually the same day as the date the case finds out about the result.</p> <p>Negative cases: Some laboratories notify NSW Health of negative results in batches at regular intervals. For these laboratories the date of notification to NSW Health does not reflect the date the negative result was available at the laboratory. NSW Health does not collect information on the date the person was informed of the result.</p>