COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 44, ENDING 31 OCTOBER 2020

Published 4 November 2020

SUMMARY FOR THE WEEK ENDING 31 OCTOBER

- There were eight locally-acquired cases in NSW this week – an increase of 33% compared to the previous week.
- Seven of the eight locally-acquired cases were linked to known cases or clusters.
- Three of the five (60%) symptomatic cases entered isolation more than three days after their onset of illness.
- All 14 locally-acquired cases reported in the two weeks up to 31 October were residents of South Western Sydney LHD.
- There was one new cluster reported this week in South Western Sydney. The source for this cluster is currently under investigation.
- Testing numbers have slightly increased compared to the previous week (up 2%).
- Testing rates have increased for the third week in a row for children aged up to 17 years but decreased for all other age groups 18 years and older.
- Emergency Department visits for bronchiolitis (a common disease of infants often caused by respiratory syncytial virus (RSV)) have increased since early September.
- People of all ages must seek testing at the first sign of symptoms, however mild, to stop transmission of COVID-19 in the community.

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 31 Oct	Week ending 24 Oct
Number of cases **with symptoms** at diagnosis	75% (6/8)	83% (5/6)
Proportion of cases in isolation at least 48 hours before symptoms	17% (1/6)	100% (5/5)
Cases **not in isolation** at symptom onset		
Proportion tested (swabbed) within:		
• 1 day of symptom onset	40% (2/5)	-
• 2 days of symptom onset	40% (2/5)	-
• 3 days of symptom onset	60% (3/5)	-
Proportion tested more than 3 days after symptom onset	40% (2/5)	-
Proportion who entered isolation within:		
• 1 day of symptom onset	40% (2/5)	-
• 2 days of symptom onset	40% (2/5)	-
• 3 days of symptom onset	40% (2/5)	-
Proportion who entered isolation more than 3 days after symptom onset	60% (3/5)	-
Number of tests conducted	84,860	83,523
Proportion notified to NSW Health by the laboratory within:		
• 1 day of swab collection	88% (7/8)	100% (6/6)
• 2 days of swab collection	88% (7/8)	100% (6/6)
• 3 days of swab collection	100% (8/8)	100% (6/6)
Proportion notified to NSW Health by the laboratory more than 3 days after the swab collection	0% (0/8)	0% (0/6)
Proportion of locally-acquired cases interviewed by public health staff within 1 day of notification to NSW Health	100% (8/8)	100% (6/6)
Proportion of close contacts (identified by the case) contacted by public health within 48 hours of case notification	100%	100%

Interpretation: In the week ending 31 October, six of the eight locally-acquired cases reported symptoms at the time of diagnosis. One of the six cases was a close contact of a previously reported case and was in isolation at least 48 hours before developing symptoms.

Seven locally-acquired cases were notified to NSW Health within one day of swab collection. The case notified three days after swab collection was a close contact of a previously confirmed case and was already in isolation at the time of notification. All cases were interviewed within one day of notification.

SECTION 2: HOW IS THE OUTBREAK TRACKING IN NSW?

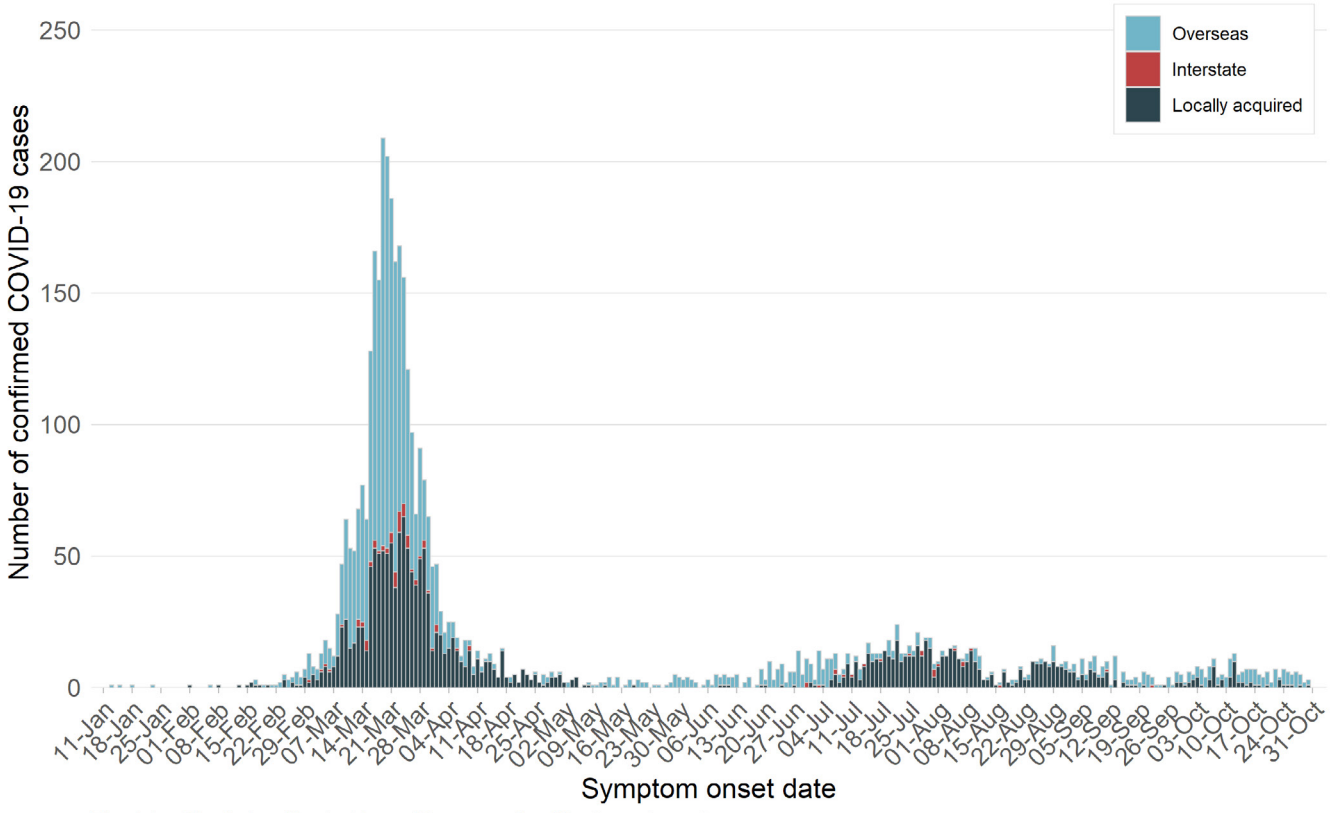
Table 1. COVID-19 cases and tests reported in NSW, up to 31 October 2020

	Week ending 31 Oct	Week ending 24 Oct	% change	Total to 31 Oct
Number of cases	43	46	↓ 4%	4,237
Overseas acquired	35	39	↓ 10%	2,286
Interstate acquired	0	0	-	90
Locally acquired	8	6	↑ 33%	1,861
No links to other cases or clusters	1	0	-	435
Number of deaths	0	0	-	55
Number of tests	84,860	83,523	↑ 2%	3,081,225

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: The majority (83%) of COVID-19 infections diagnosed in NSW in the last two weeks have been overseas acquired.

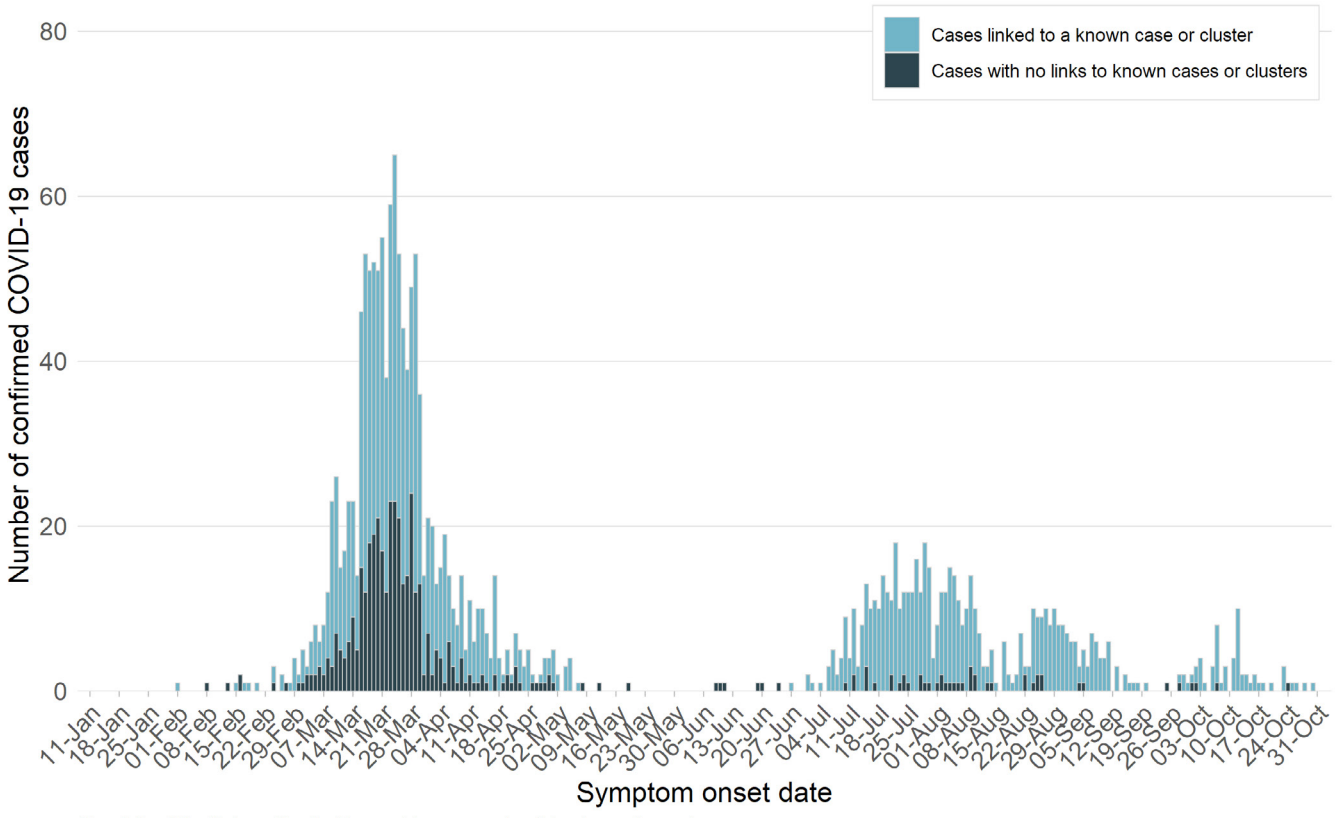
How many NSW cases were infected in Victoria?

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



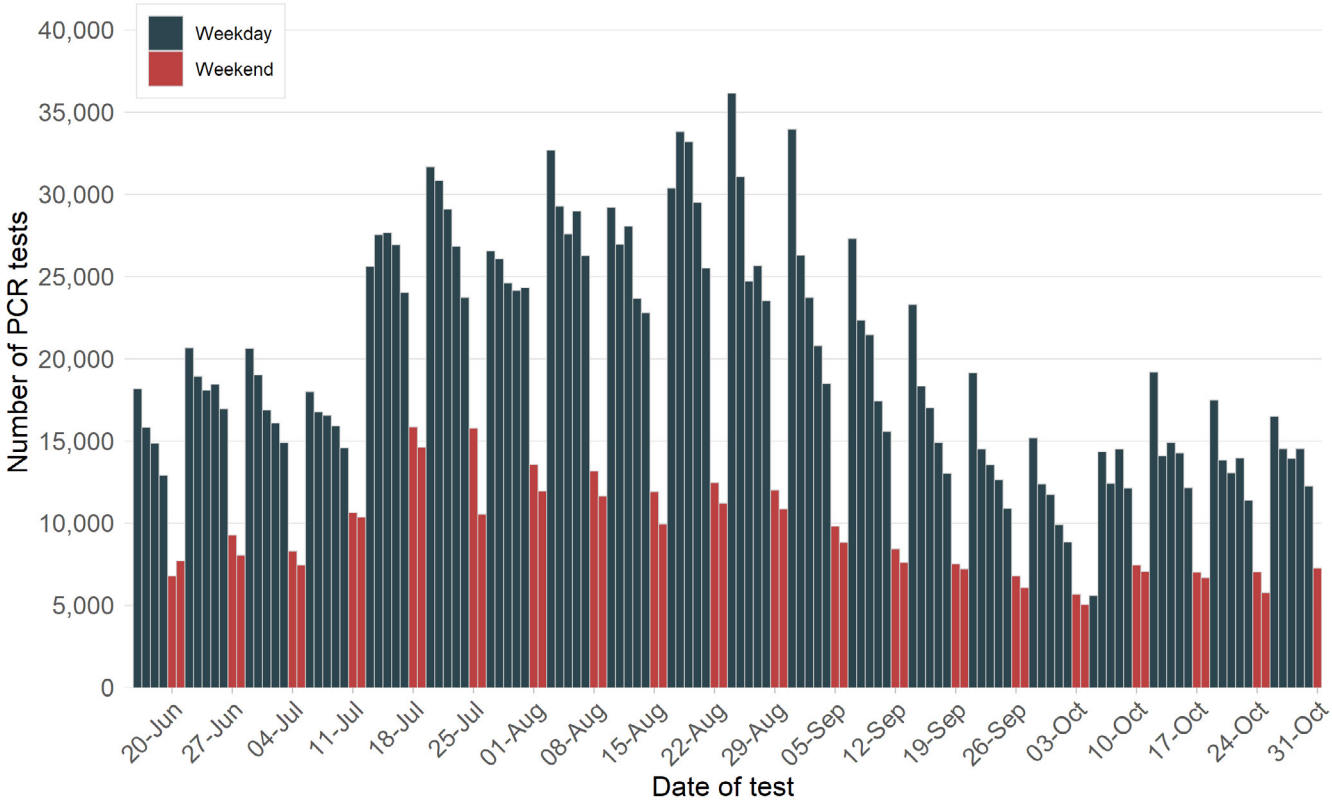
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Of the locally-acquired cases with an onset in the last four weeks, 96% 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.

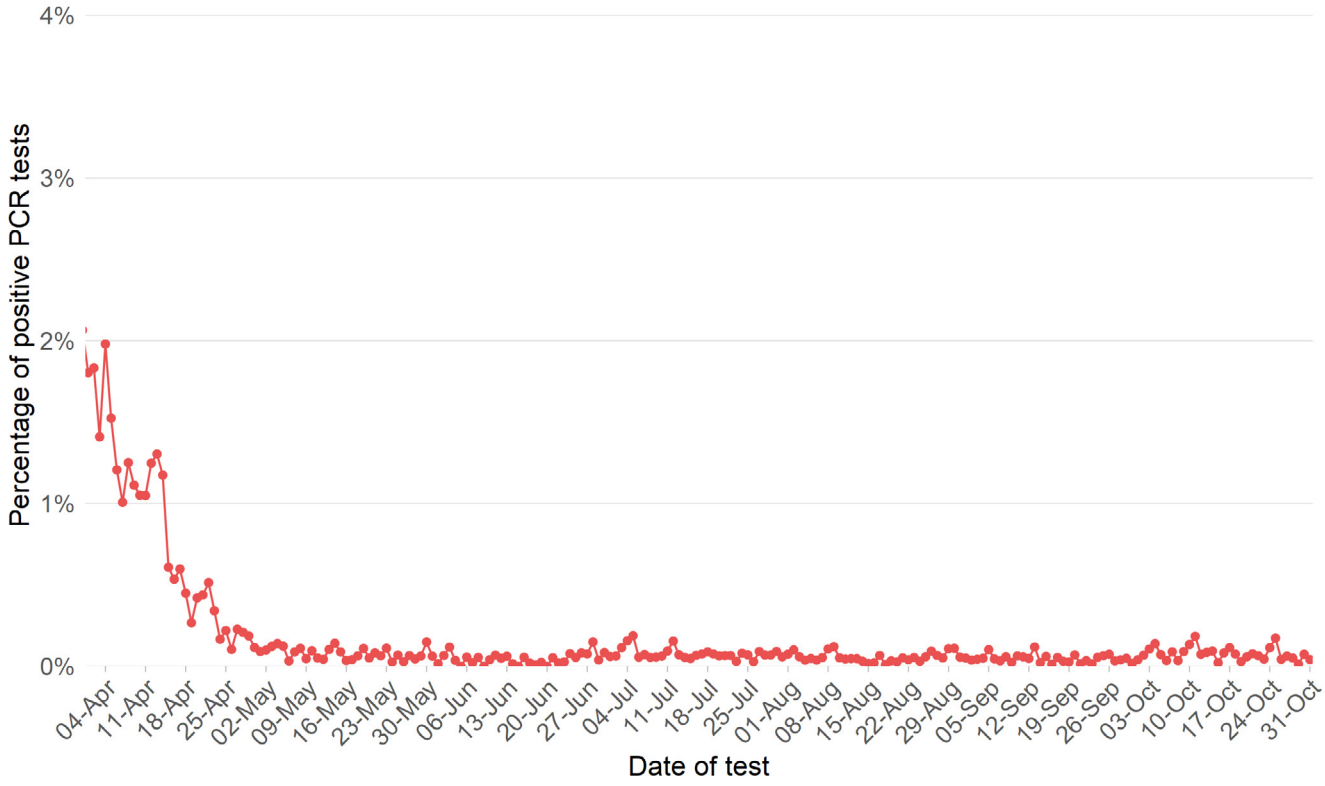
Interpretation: Early in the outbreak the focus of testing was on returned travellers and close contacts of confirmed cases, whereas now testing is recommended for anyone with even mild respiratory symptoms or unexplained fever.

Testing numbers in the week ending 31 October were slightly higher when compared with the previous week. An average of 1.5 tests were conducted per 1,000 people in NSW each day for the past two weeks.

[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

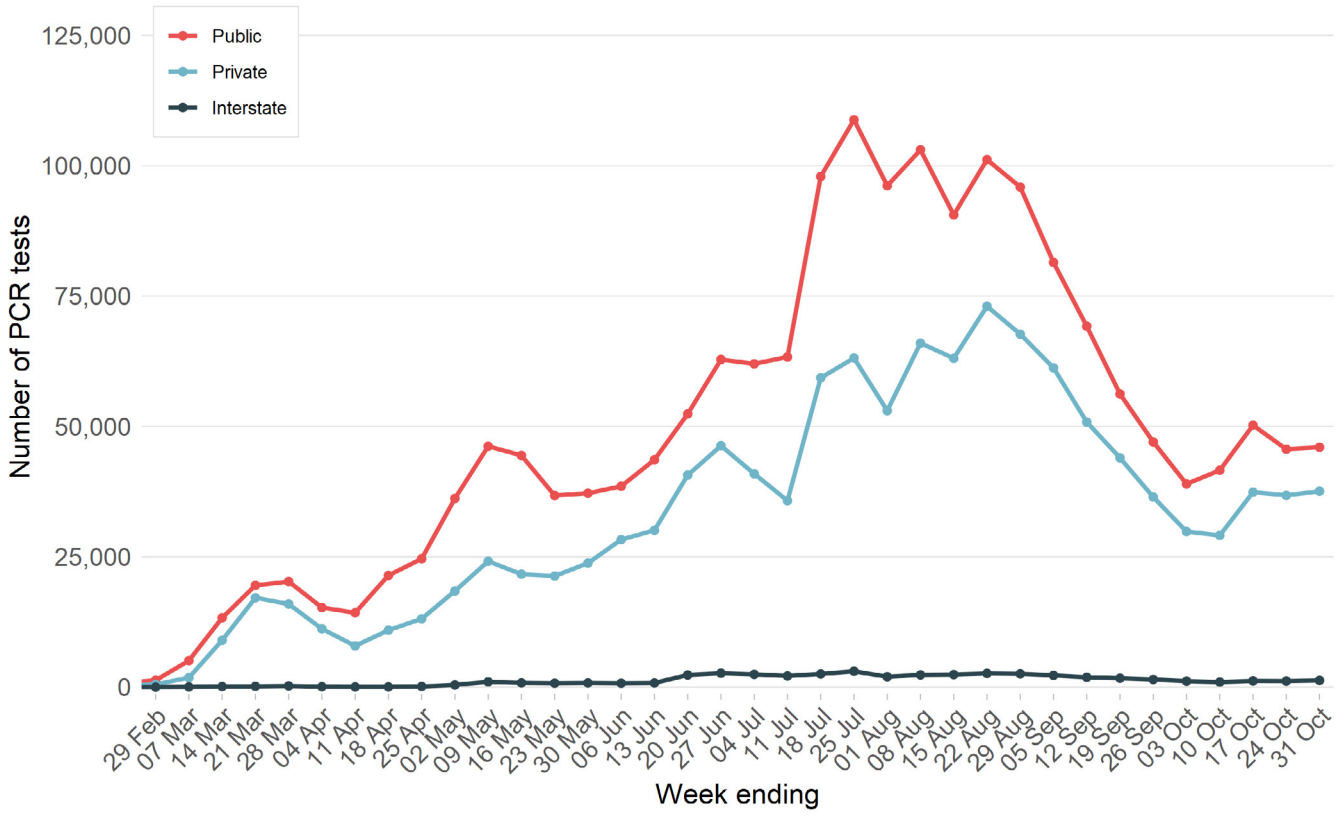


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

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



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

Interpretation: In the week ending 31 October, testing in both public and private facilities slightly increased compared to the previous week. Approximately 54% 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, 4 October to 31 October 2020

Locally-acquired cases	Week ending				Total
	31 Oct	24 Oct	17 Oct	10 Oct	
Cases who are linked to a known case or cluster	7	6	28	17	**58**
Cases with no links to other cases or clusters	1	0	3	2	**6**
Total	**8**	**6**	**31**	**19***	**64**

*Includes a past infection.

Interpretation: The majority (91%) of cases in the four weeks ending 31 October were linked to known cases or clusters. There was one case reported in the last week with no links to cases or clusters.

Table 3. Locally-acquired COVID-19 cases by LHD of residence, 4 October to 31 October 2020

Local Health District	Week ending				Total	Days since last case
	31 Oct	24 Oct	17 Oct	10 Oct		
Central Coast	0	0	0	0	**0**	**61**
Illawarra Shoalhaven	0	0	0	0	**0**	**57**
Nepean Blue Mountains	0	0	0	0	**0**	**46**
Northern Sydney	0	0	1	2	**3**	**18**
South Eastern Sydney	0	0	1	0	**1**	**17**
South Western Sydney	8	6	16	12	**42**	**1**
Sydney	0	0	5	1	**6**	**17**
Western Sydney	0	0	8	4	**12**	**17**
Far West	0	0	0	0	**0**	**212**
Hunter New England	0	0	0	0	**0**	**86**
Mid North Coast	0	0	0	0	**0**	**193**
Murrumbidgee	0	0	0	0	**0**	**54**
Northern NSW	0	0	0	0	**0**	**98**
Southern NSW	0	0	0	0	**0**	**82**
Western NSW	0	0	0	0	**0**	**60**
Total	**8**	**6**	**31**	**19***	**64**	

*Includes a past infection.

Interpretation: All locally-acquired cases reported in the two weeks up to 31 October were residents of South Western Sydney LHD (100%, 14/14).

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, 4 October to 31 October 2020

Local Health District	Week ending				Total
	31 Oct	24 Oct	17 Oct	10 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	0	1	0	**1**
South Western Sydney	1	0	1	2	**4**
Sydney	0	0	0	0	**0**
Western Sydney	0	0	1	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	**1**	**0**	**3**	**2**	**6**

Interpretation: Extensive public health investigations were unable to identify the source of infection for one locally-acquired case in the week ending 31 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 31 October, there were seven cases reported that were linked to a known case or cluster. Of these:

- two cases were linked to the Oran Park community cluster
- one case was linked to the Lakemba cluster
- four cases were linked to a cluster in Hoxton Park, South Western Sydney.

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 31 October, there were two cases reported in household contacts of previously reported cases associated with the Oran Park community cluster. Both cases were in isolation more than 48 hours prior to symptom onset or test date. In total, excluding the source, there are 17 cases associated with this cluster.

Lakemba cluster

On 10 October, a person living in the Sydney Local Health District tested positive for COVID-19. The case did not report any links to a known case. This case reported visiting three medical practices before diagnosis and a public health investigation was undertaken to identify a possible source for the case. On 11 October, a healthcare worker who provided direct care to the case tested positive. Testing of the healthcare worker's close contacts identified a household member as the probable source of their infection. This household member was also a healthcare worker in South Western Sydney – the source of their infection is under further investigation.

In the week ending 31 October there was one case linked to the Lakemba cluster in a household contact of a previously reported case. This case was asymptomatic and in isolation more than 48 hours prior to test date. In total, there are nine people linked to this cluster including one healthcare worker, two patients that attended the clinic, and six household contacts from two separate families. A further six cases have previously been reported among household and social contacts of the source case, who is a healthcare worker at the clinic.

Table 5. Cases linked to Lakemba cluster by setting of exposure

Setting of exposure	Exposure site	Exposure site: Local area	No. primary cases	Cases in household setting	Total cases
Primary exposure location					
Healthcare	GP clinic	Lakemba	3	6	9
Total			**3**	**6**	**9**

Interpretation: Excluding the source, a healthcare worker that is linked to a known case, there are nine cases linked to this cluster.

Hoxton Park cluster

On 28 October, a person living in the South Western Sydney Local Health District tested positive for COVID-19. A further three cases were later reported among household contacts and extended family. A public health investigation revealed that the family had spent time at multiple locations including retail stores, restaurants, a school and a trampoline park in South Western Sydney. In response, NSW Health issued a public health alert on 28 October, advising people who attended these venues at the time the case was present to get tested and isolate immediately.

An additional case was later reported in a person who attended the trampoline park and was not associated with the family. In total, including the source case who is not linked to any known case or cluster, there are five cases associated with this cluster. Three of the five cases were not in isolation more than three days after symptom onset and two were in isolation within 24 hours of symptom onset and whilst considered infectious.

Previously reported active clusters with no new cases identified this week

Oran Park childcare cluster

The last case associated with this cluster was notified on 20 October in a household contact of a child that attended childcare. Excluding the source, who is linked to the Oran Park community cluster, there are seven people linked to this cluster including three cases who attended the centre, three household contacts and one social contact of these cases.

Private health clinic cluster – Bella Vista & Liverpool

This cluster was associated with a private health clinic across two locations. The last case associated with this cluster was notified on 19 October in a household contact of a healthcare worker who was exposed at the Liverpool clinic. 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.

Table 6. Previously reported clusters with no new cases identified in the week ending 31 October 2020

Date cluster first identified	Cluster	Cases linked in the week ending 31 Oct	Date of last case
12 Oct	Oran Park childcare centre cluster	0	20 Oct
7 Oct	Private health clinic cluster	0	19 Oct

SECTION 5: COVID-19 IN SPECIFIC POPULATIONS

COVID-19 in healthcare workers

The following describes infections of COVID-19 in healthcare workers (HCWs) and which of those infections 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
	31 Oct	24 Oct	17 Oct	10 Oct	
NSW public health setting	0	0	0	1	**1**
Private health setting	0	0	2	2	**4**
Total	**0**	**0**	**2**	**3**	**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.

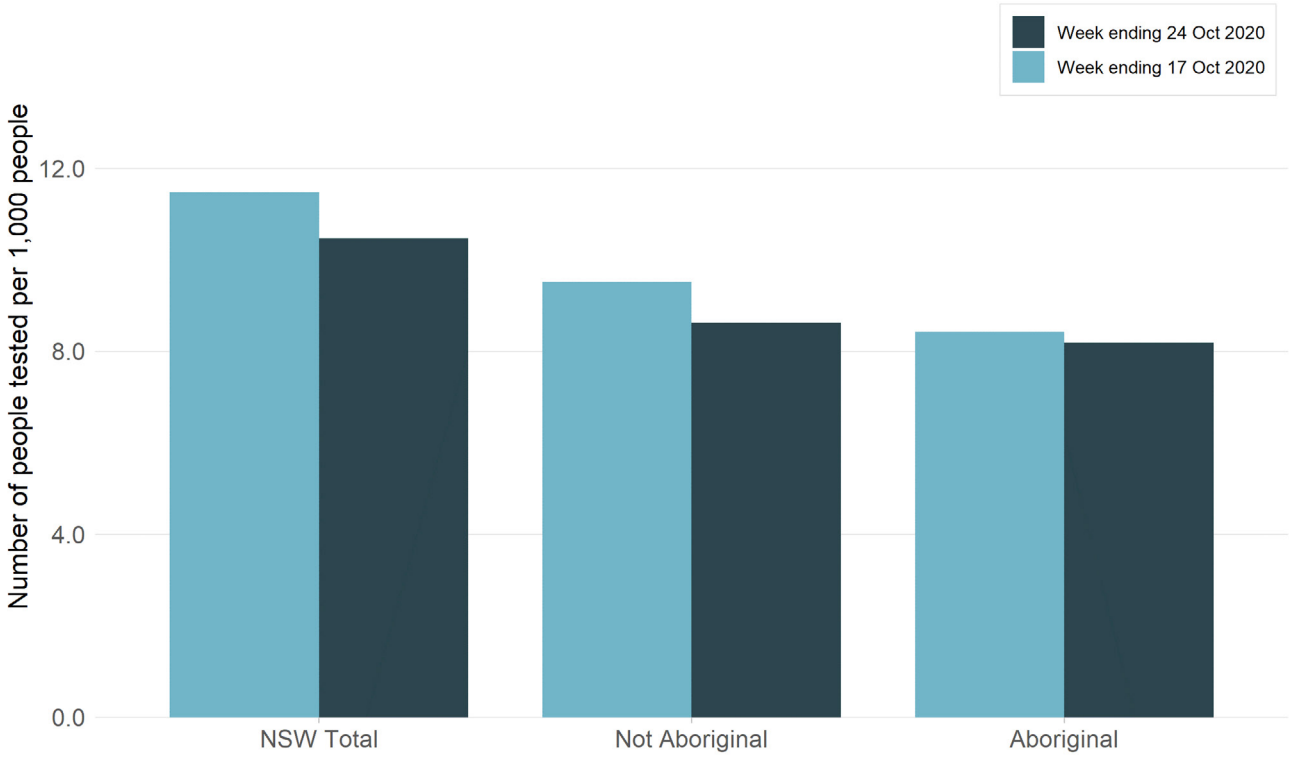
Aboriginal people

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 31 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.

While Aboriginal status is collected by public health staff on interview with the case at the time of diagnosis, those who test negative are not interviewed. Aboriginal status for those tested can be ascertained through linkage with other health information systems but there is a delay in getting this information. Results of the most recent linkage are available for people tested up to 24 October 2020, with Aboriginal status ascertained for approximately 90% of all COVID-19 test records.

Figure 6. Testing Rate per 1,000 by Aboriginality and week, NSW



Note: NSW Total includes persons tested in NSW without Aboriginality recorded.

Interpretation: Testing rates decreased slightly in the week ending 24 October compared to the previous week for Aboriginal and non-Aboriginal people. Testing rates for Aboriginal people have been lower than testing rates for non-Aboriginal people since early September. During May and June, testing rates were higher among Aboriginal people in NSW compared to non-Aboriginal people.

Pregnant women

One case in a pregnant woman was reported in the week ending 31 October. In total, 32 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.

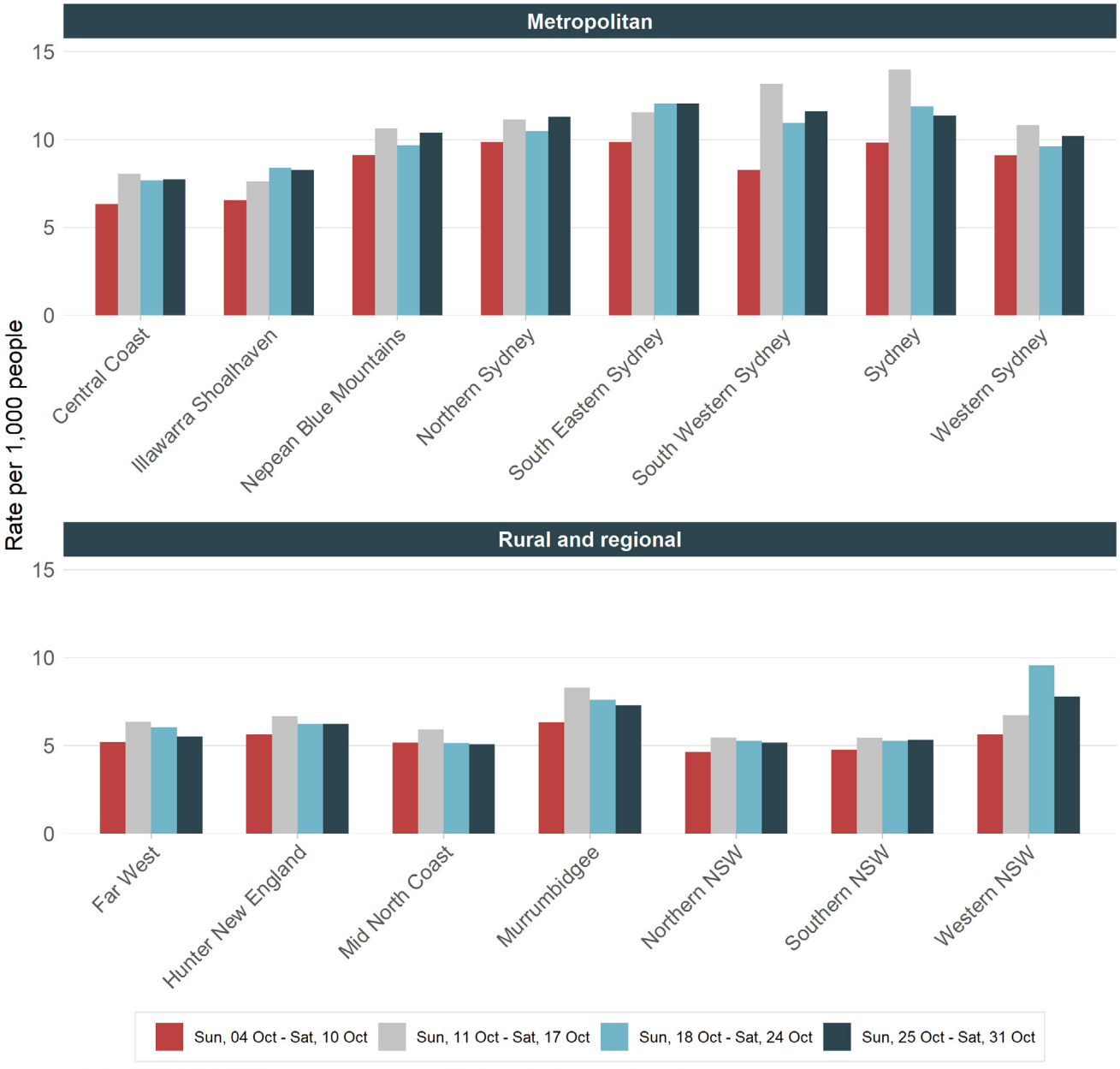
Table 8. Deaths as a result of COVID-19, by age group, NSW, 2020

Age group	Number of deaths	Number of cases	Case fatality rate
0-4 years	0	74	0%
5-11 years	0	76	0%
12-17 years	0	124	0%
18-29 years	0	959	0%
30-49 years	0	1305	0%
50-59 years	1	602	0.2%
60-69 years	4	573	0.7%
70-79 years	14	364	3.8%
80+ years	36	160	22.5%
Total	**55**	**4237**	**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 7. Rates of COVID-19 testing by LHD of residence and week

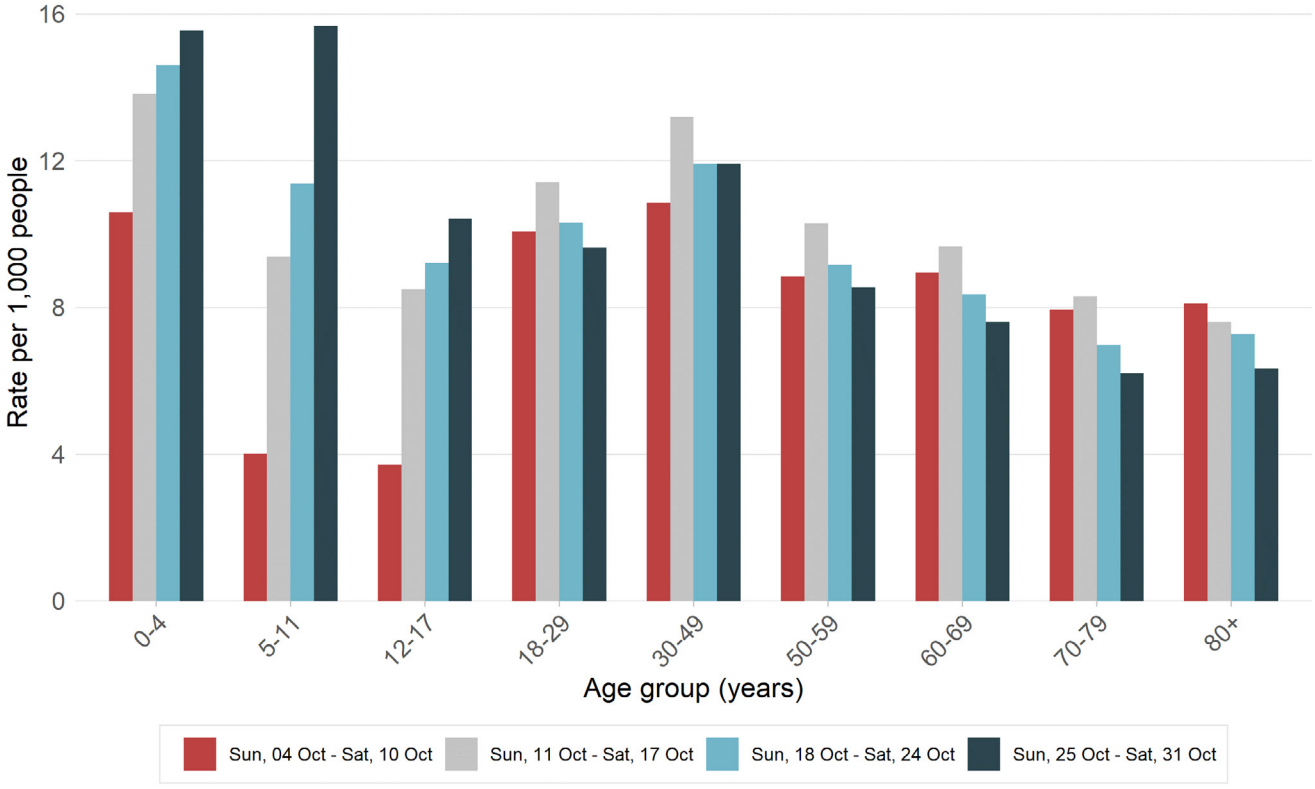


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 31 October were similar to the previous week (10 per 1,000). The greatest decrease in testing occurred in the Western NSW and Far West LHDs. The decrease in testing rates in Western NSW is likely due to elevated rates in Bathurst for the previous week following a positive sewage detection in the area in the week ending 24 October (23.7 vs 13.3 tests per 1,000 people). In the Bathurst region, this represents a reduction of 454 tests compared with the previous week. Testing rates increased slightly in South Western Sydney in the last week compared to the previous week in school-aged children, largely associated with contact tracing activities in the area. Testing rates were lower in all other age groups across South Western Sydney.

Testing by age group

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

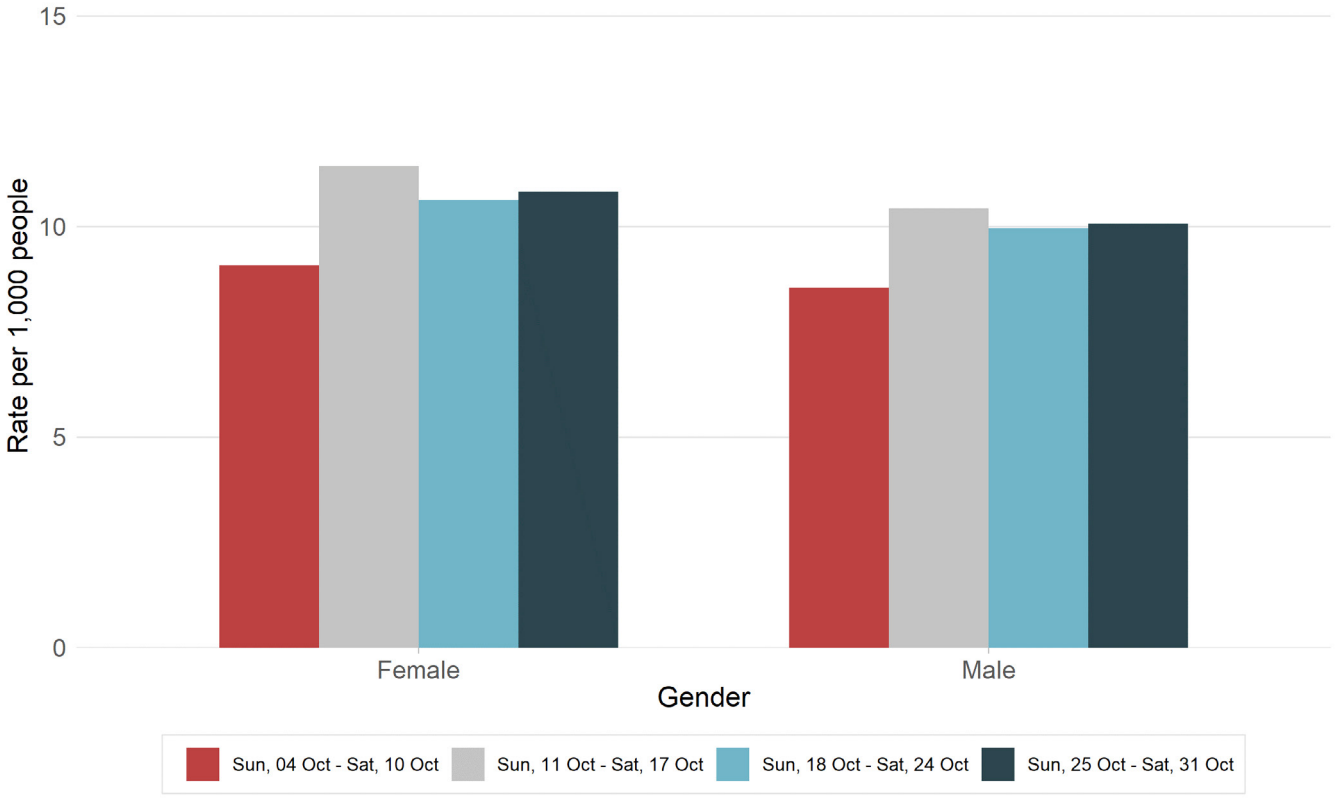


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates increased for the third week for children aged up to 17 years and decreased or remained steady for age groups 18 years and older for the week ending 31 October.

Testing by gender

Figure 9. 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 were slightly higher in both males and females in the week ending 31 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 31 October 2020, 64 sewage samples were tested for fragments of SARS-CoV-2. Of these, five detections were reported – these samples were taken from the Bondi, Malabar, West Camden, Quakers Hill and Liverpool treatment plants. The Bondi and Malabar plants serve over 2 million people, including Sydney city and quarantine hotels, and have been positive for consecutive weeks. The detections at West Camden, Quakers Hill and Liverpool are associated with reported cases. The table below shows results for previous weeks from various sites across NSW. Lithgow, South Windsor, McGraths Hill, Bowral, Mittagong and Moss Vale have been added as new sites.

Table 9. Locations with positive SARS-CoV-2 detections in sewage samples since July for the week ending 31 October 2020

			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	31 Oct
			Week															
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
60,514	Blue Mountains (Winmalee)	NBMLHD																
4,681	North Richmond	NBMLHD																
13,052	Richmond	NBMLHD																
110,114	Penrith	NBMLHD																
12,000	Lithgow	NBMLHD																
19,000	South Windsor	NBMLHD																
8,000	McGraths Hill	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																

			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	31 Oct
			Week															
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
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																
73,686	Shellharbour	ISHLHD																
196,488	Wollongong	ISHLHD																
Regional sites																		
16,068	Bombo	ISHLHD																
14,700	Bowral	SWSLHD																
14,000	Mittagong	SWSLHD																
9,000	Moss Vale	SWSLHD																
32,000	Ulladulla	ISHLHD																
11,000	Culburra Beach	ISHLHD																
147,500	Gosford-Kincumber	CCLHD																
-	Wyong-Toukley	CCLHD																
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											c	c	c	c		c
	Albury Kremer St	M&SLHD																
	Albury Waterview	M&SLHD																
22,419	Goulburn	M&SLHD																
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											c	c	c	c	c	c
	Wagga Wagga - inlet 1	M&SLHD																
	Wagga Wagga - inlet 2	M&SLHD																
	Wagga Wagga - Kooringal STP	M&SLHD																
2,050	Bourke	W&FWLHD																
36,603	Bathurst	W&FWLHD															1	
19,000	Broken Hill	W&FWLHD																
500	Dareton	W&FWLHD																
11,600	Parkes	W&FWLHD																
37,000	Dubbo	W&FWLHD																
24,000	Armidale	HNELHD																

			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	31 Oct
			Week															
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
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
site moved to composite sample or ceased
sampling commenced in week 29 (week ending 18 July 2020)
c composite of the separate influent samples
l result from another laboratory

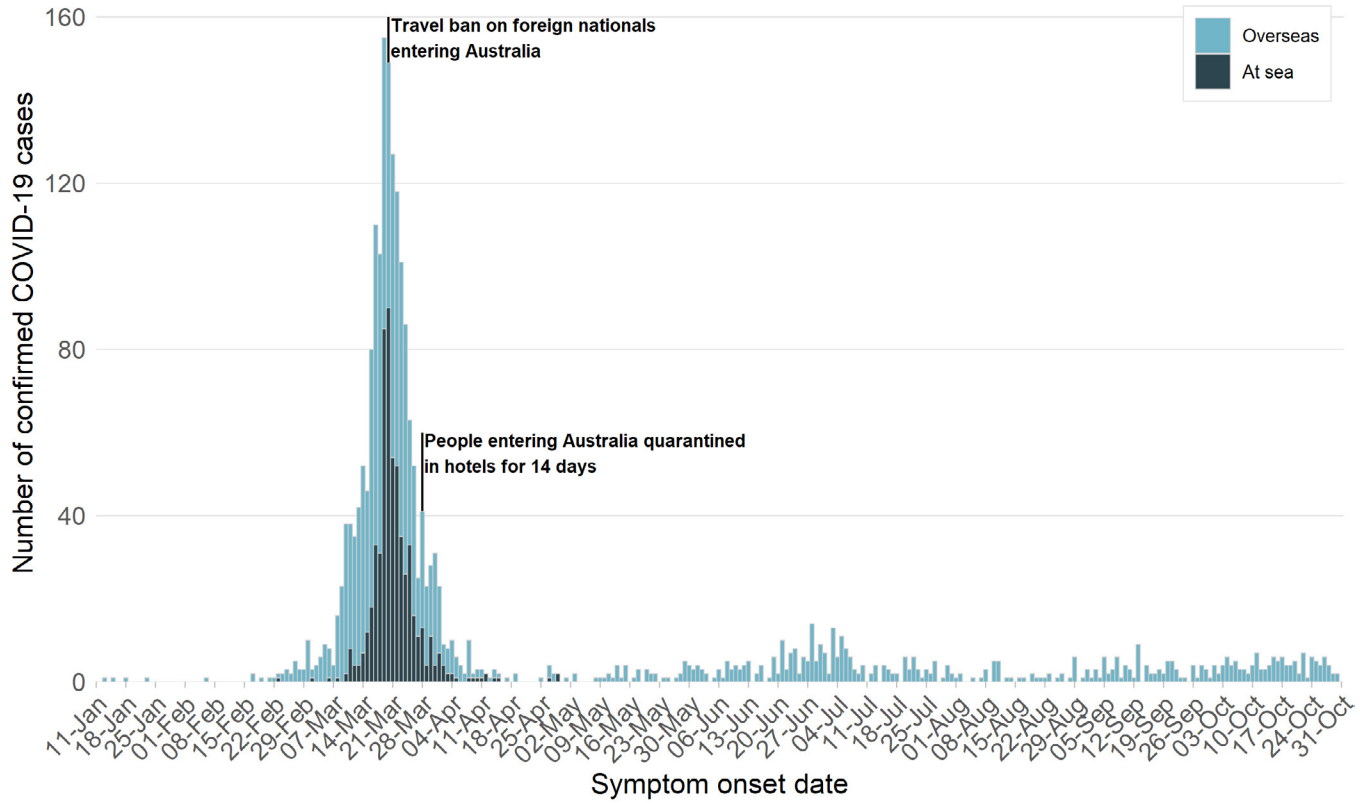
Interpretation: In the last week there were five detections of SARS-CoV-2. Detections from these catchment areas are associated with previously reported cases.

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



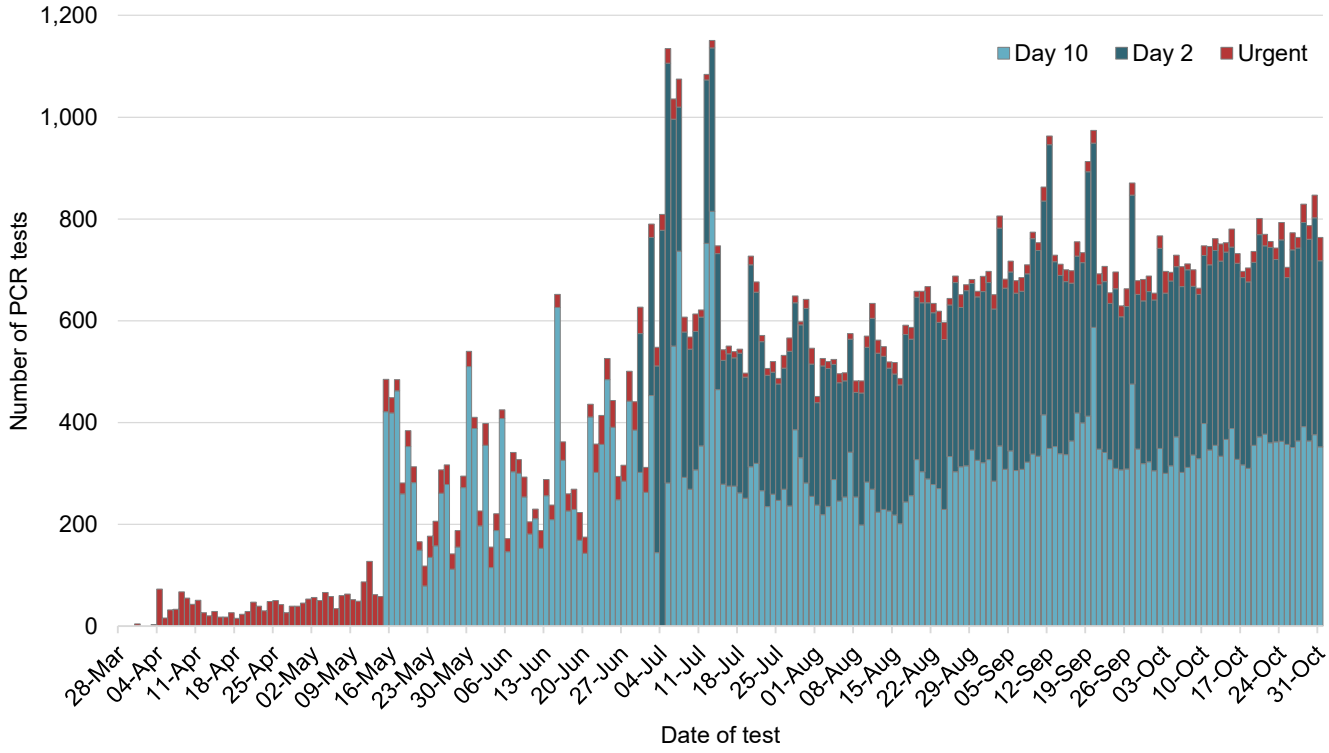
The date of the first positive test is used for cases who did not report symptoms.

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 35 overseas-acquired cases reported in the week ending 31 October, 10% less 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 11. COVID-19 testing in returned travellers in hotel quarantine, reported from 29 March to 31 October, NSW, 2020



Interpretation: In the week ending 31 October, there were 5,469 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 101,218 PCR tests have been conducted with 507 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 25 October 2020

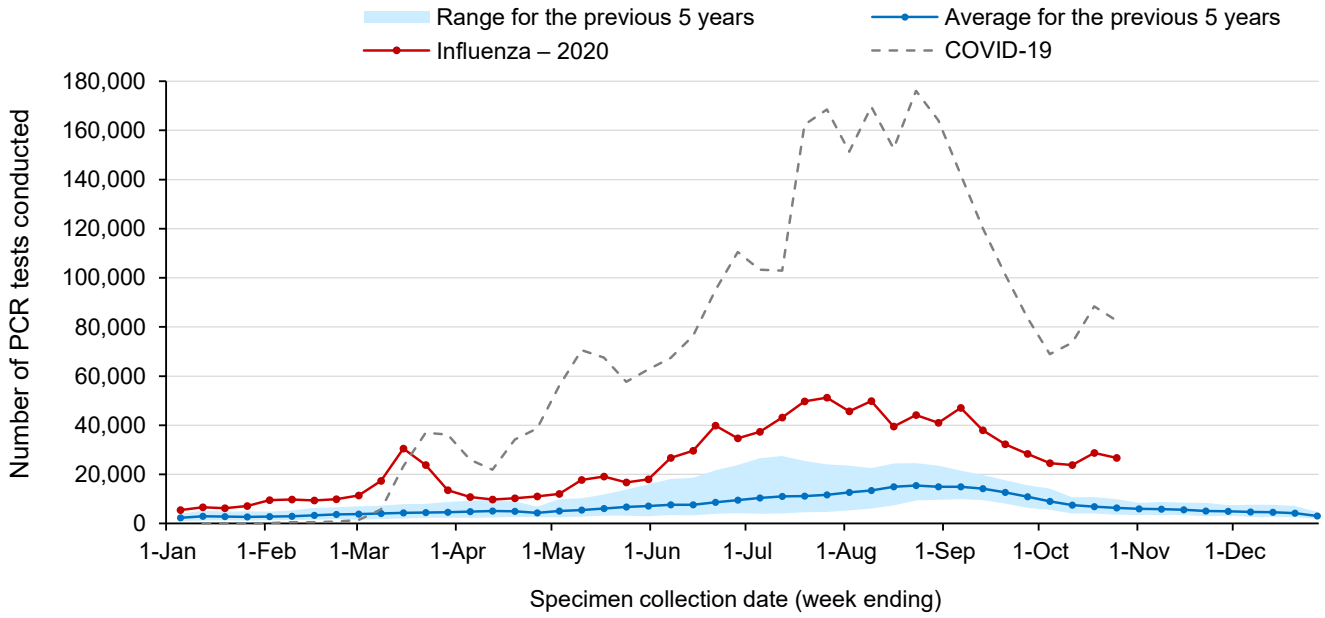
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted;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

The most recent data available is for testing carried out to 25 October. A total of 1,068,450 influenza tests have been performed at participating laboratories to 25 October, with 26,740 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 12. Testing for influenza and COVID-19 by week, to 25 October 2020

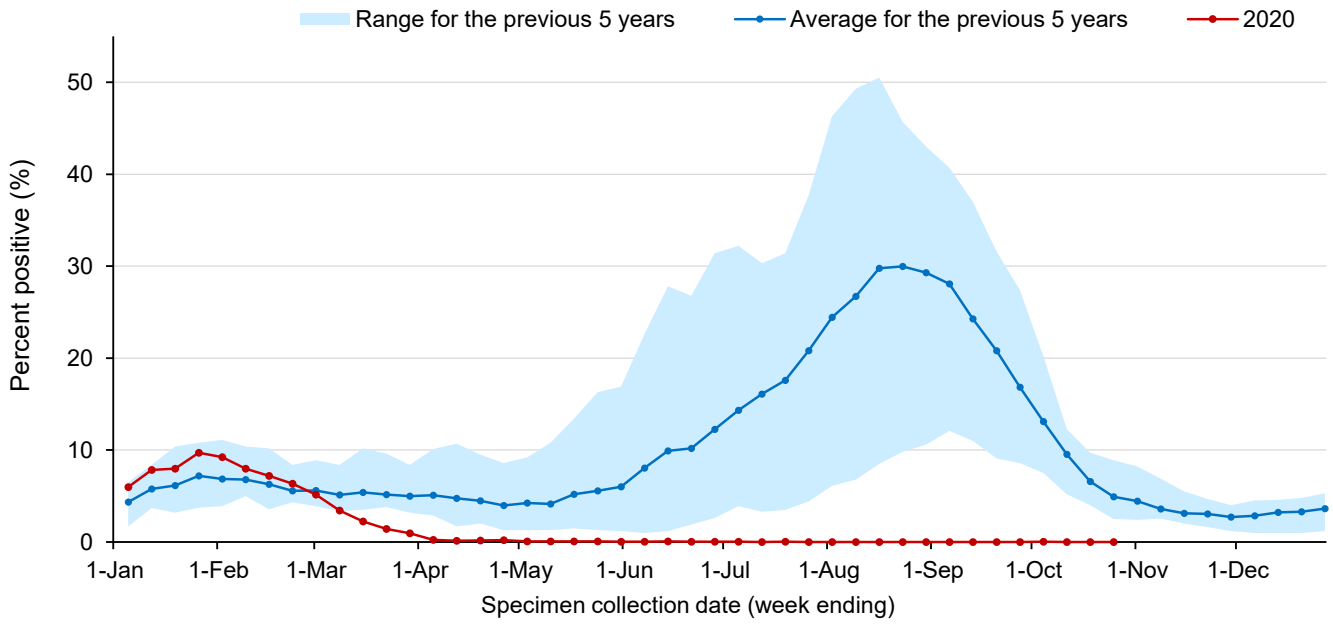


Interpretation: In every week this year, the number of influenza tests performed has exceeded the previous five-year average.

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.

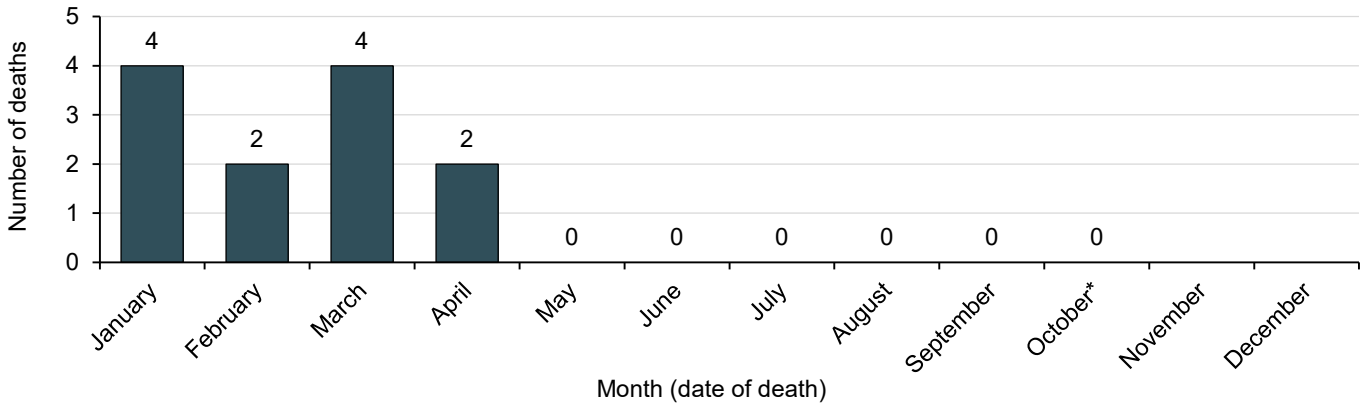
Figure 13. Proportion of tests positive for influenza, to 25 October 2020



Interpretation: In the week ending 25 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 14. Laboratory-confirmed influenza deaths by month of death, to 25 October 2020



Note: *month to date.

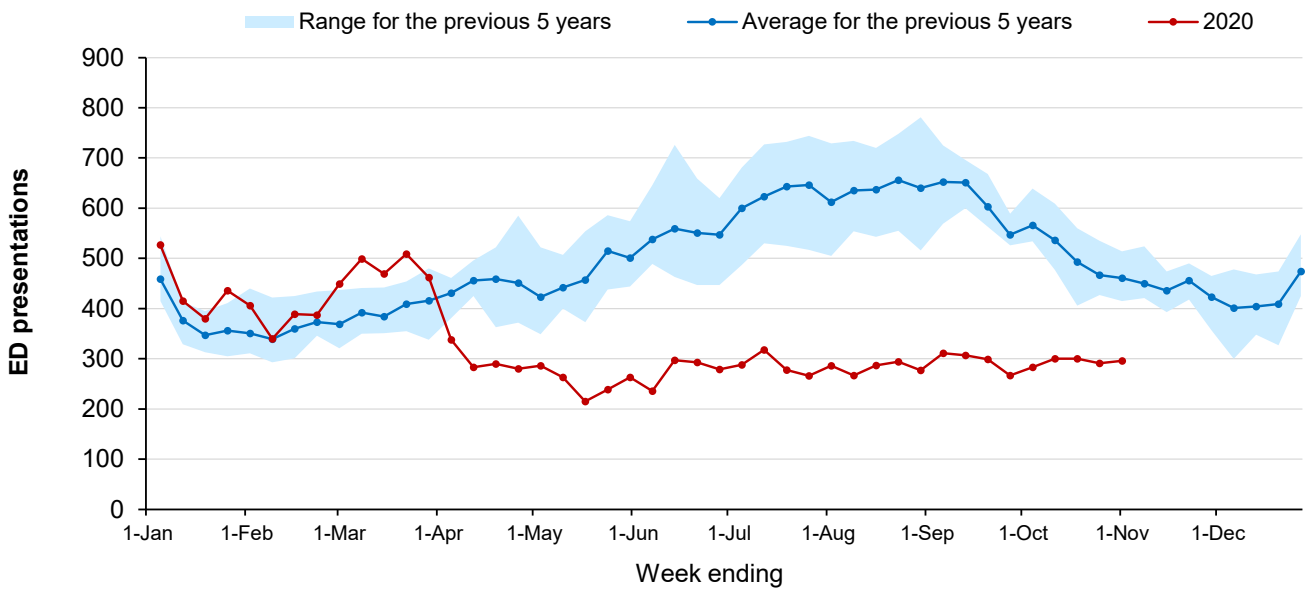
Interpretation: No influenza deaths have been reported in NSW since April 2020. The number of influenza-related deaths identified via coroner's reports and death registrations from 1 January to 25 October 2020 is lower than the same period last year (12 deaths in 2020 compared with 314 in 2019).[2] Two-thirds 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 respiratory infections 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 15. Emergency Department pneumonia presentations in NSW by week, to 1 November 2020

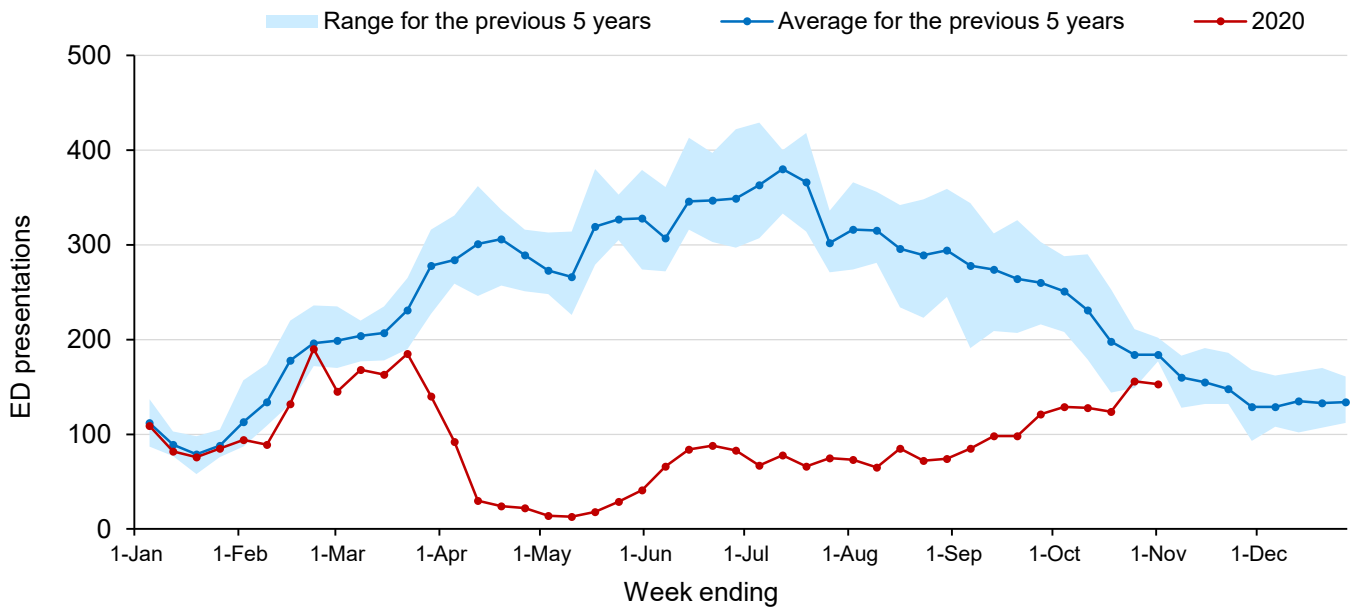


Interpretation: Pneumonia presentations include people with diagnoses of viral, bacterial, atypical or unspecified pneumonia, and Legionnaires' disease, but excludes 'pneumonia with influenza' and provides an indicator of more severe respiratory conditions.

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 16. Emergency Department bronchiolitis presentations in NSW by week, to 1 November 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.

APPENDIX A: COVID-19 PCR TESTS IN NSW

Local Health District	Local Government Area	Week ending				Total	
		31 October		24 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]	2733	7.8	2706	7.7	113755	322.4
Far West	Balranald	15	6.4	23	9.8	455	194.6
	Broken Hill	88	5.0	70	4.0	4474	256.0
	Central Darling	3	1.6	20	10.9	339	184.3
	Wentworth	60	8.5	69	9.8	2027	287.4
	LHD Total[2]	166	5.5	182	6.0	7295	242.0
Hunter New England	Armidale Regional	223	7.3	200	6.5	8805	286.1
	Cessnock	222	3.7	254	4.2	14431	240.6
	Dungog	50	5.3	42	4.5	2203	233.8
	Glen Innes Severn	27	3.0	28	3.2	1699	191.5
	Gunnedah	54	4.3	47	3.7	2999	236.5
	Gwydir	12	2.2	20	3.7	639	119.4
	Inverell	51	3.0	49	2.9	3870	229.1
	Lake Macquarie	1630	7.9	1621	7.9	76944	373.7
	Liverpool Plains	37	4.7	24	3.0	1933	244.6
	Maitland	708	8.3	618	7.3	35292	414.4
	Mid-Coast	335	3.6	372	4.0	20830	222.0
	Moree Plains	28	2.1	38	2.9	2753	207.6
	Muswellbrook	60	3.7	49	3.0	4164	254.3
	Narrabri	35	2.7	35	2.7	2529	192.5
	Newcastle	1408	8.5	1439	8.7	76588	462.6
	Port Stephens	414	5.6	449	6.1	26187	356.4
	Singleton	153	6.5	144	6.1	8545	364.2
	Tamworth Regional	360	5.8	398	6.4	20132	321.9
	Tenterfield	11	1.7	12	1.8	995	150.9
	Upper Hunter Shire	62	4.4	60	4.2	3711	261.7
	Uralla	27	4.5	31	5.2	1136	189.0
	Walcha	17	5.4	11	3.5	806	257.2
	LHD Total[2]	5920	6.2	5939	6.2	316934	332.8
Illawarra Shoalhaven	Kiama	181	7.7	201	8.6	8402	359.3
	Shellharbour	604	8.3	783	10.7	26292	359.0
	Shoalhaven	689	6.5	731	6.9	29901	283.0
	Wollongong	2002	9.2	1809	8.3	70080	321.3
	LHD Total[2]	3476	8.3	3524	8.4	134675	321.0
Mid North Coast	Bellingen	78	6.0	64	4.9	3157	242.9
	Coffs Harbour	395	5.1	413	5.3	17859	231.1
	Kempsey	144	4.8	174	5.9	8046	270.5
	Nambucca	81	4.1	87	4.4	4341	219.2
	Port Macquarie-Hastings	454	5.4	429	5.1	22670	268.2
	LHD Total[2]	1152	5.1	1167	5.2	56073	248.5

Local Health District	Local Government Area	Week ending				Total	
		31 October		24 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Murrumbidgee	Albury	645	11.9	609	11.2	15106	277.9
	Berrigan	36	4.1	67	7.7	1813	207.2
	Bland	26	4.4	24	4.0	1383	231.6
	Carrathool	4	1.4	12	4.3	293	104.7
	Coolamon	15	3.5	20	4.6	1085	249.9
	Cootamundra-Gundagai Regional	60	5.3	74	6.6	2568	228.6
	Edward River	89	9.8	69	7.6	2368	260.7
	Federation	120	9.7	97	7.8	2514	202.1
	Greater Hume Shire	94	8.7	92	8.6	2801	260.2
	Griffith	160	5.9	167	6.2	7484	276.9
	Hay	15	5.1	14	4.8	474	160.7
	Hilltops	116	6.2	134	7.2	4566	244.1
	Junee	22	3.3	28	4.2	1115	166.8
	Lachlan[1]	12	2.0	19	3.1	860	141.6
	Leeton	48	4.2	54	4.7	2266	198.0
	Lockhart	8	2.4	18	5.5	705	214.6
	Murray River	26	2.2	20	1.7	732	60.4
	Murrumbidgee	17	4.3	18	4.6	708	180.8
	Narrandera	28	4.8	21	3.6	990	167.8
	Snowy Valleys	63	4.4	73	5.0	3847	265.7
	Temora	29	4.6	17	2.7	1154	183.0
	Wagga Wagga	553	8.5	635	9.7	21932	336.1
	LHD Total[2]	2176	7.3	2269	7.6	76187	255.6
Nepean Blue Mountains	Blue Mountains	1009	12.8	876	11.1	37130	469.3
	Hawkesbury	664	9.9	607	9.0	26432	392.8
	Lithgow	144	6.7	152	7.0	5710	264.3
	Penrith	2274	10.7	2175	10.2	93709	440.0
	LHD Total[2]	4063	10.4	3779	9.7	161652	413.4
Northern NSW	Ballina	245	5.5	244	5.5	12502	280.1
	Byron	275	7.8	253	7.2	11572	329.9
	Clarence Valley	197	3.8	195	3.8	9944	192.5
	Kyogle	46	5.2	43	4.9	1571	178.6
	Lismore	291	6.7	310	7.1	12951	296.4
	Richmond Valley	111	4.7	122	5.2	6062	258.3
	Tenterfield	11	1.7	12	1.8	995	150.9
	Tweed	442	4.6	473	4.9	21528	221.9
	LHD Total[2]	1610	5.2	1642	5.3	76375	246.1

Local Health District	Local Government Area	Week ending				Total	
		31 October		24 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Northern Sydney	Hornsby	1384	9.1	1288	8.5	50524	332.3
	Hunters Hill	305	20.4	294	19.6	11952	797.9
	Ku-ring-gai	1885	14.8	1681	13.2	62385	490.6
	Lane Cove	827	20.6	859	21.4	32725	815.0
	Mosman	337	10.9	281	9.1	12673	409.1
	North Sydney	607	8.1	582	7.8	24066	320.8
	Northern Beaches	2973	10.9	2663	9.7	101896	372.6
	Parramatta[1]	2393	9.3	2204	8.6	77698	302.1
	Ryde	1252	9.5	1276	9.7	45901	349.7
	Willoughby	781	9.6	673	8.3	24638	303.5
	LHD Total[2]	10813	11.3	10019	10.5	381429	399.0
South Eastern Sydney	Bayside	1735	9.7	1729	9.7	53076	297.5
	Georges River	1354	8.5	1382	8.7	46286	290.3
	Randwick	2093	13.5	2126	13.7	73453	471.9
	Sutherland Shire	2655	11.5	2648	11.5	98313	426.3
	Sydney[1]	3398	13.8	3733	15.2	112434	456.4
	Waverley	1201	16.2	1047	14.1	41903	564.0
	Woollahra	1031	17.4	825	13.9	34323	578.0
	LHD Total[2]	11559	12.1	11555	12.1	388098	404.7
South Western Sydney	Camden	2088	20.6	3002	29.6	56885	560.8
	Campbelltown	2576	15.1	2516	14.7	75671	442.7
	Canterbury-Bankstown[1]	3181	8.4	3681	9.7	121553	321.6
	Fairfield	1495	7.1	1086	5.1	62560	295.5
	Liverpool	3259	14.3	2224	9.8	93582	411.2
	Wingecarribee	575	11.2	509	10.0	21141	413.4
	Wollondilly	509	9.6	470	8.8	16440	309.3
	LHD Total[2]	12046	11.6	11361	10.9	387021	372.7
Southern NSW	Bega Valley	187	5.4	149	4.3	8275	240.0
	Eurobodalla	240	6.2	224	5.8	13769	357.9
	Goulburn Mulwaree	224	7.2	248	8.0	8765	281.5
	Queanbeyan-Palerang Regional	308	5.0	288	4.7	12169	199.2
	Snowy Monaro Regional	120	5.8	110	5.3	5308	255.3
	Upper Lachlan Shire	42	5.2	53	6.6	1877	232.9
	Yass Valley	34	2.0	73	4.3	2968	173.7
	LHD Total[2]	1155	5.3	1145	5.3	53158	244.9
Sydney	Burwood	275	6.8	287	7.1	9897	243.7
	Canada Bay	1066	11.1	997	10.4	40544	422.0
	Canterbury-Bankstown[1]	3181	8.4	3681	9.7	121553	321.6
	Inner West	2516	12.5	2443	12.2	96903	482.6
	Strathfield	579	12.3	524	11.2	18491	394.1
	Sydney[1]	3398	13.8	3733	15.2	112434	456.4
	LHD Total[2]	7931	11.4	8282	11.9	297007	426.3

Local Health District	Local Government Area	Week ending				Total	
		31 October		24 October			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Western NSW	Bathurst Regional	579	13.3	1033	23.7	15187	348.2
	Blayney	69	9.4	83	11.3	2478	335.8
	Bogan	6	2.3	17	6.6	532	206.2
	Bourke	7	2.7	16	6.2	417	161.0
	Brewarrina	3	1.9	1	0.6	275	170.7
	Cabonne	72	5.3	68	5.0	2497	183.2
	Cobar	28	6.0	19	4.1	775	166.4
	Coonamble	9	2.3	8	2.0	779	196.8
	Cowra	72	5.7	107	8.4	2730	214.2
	Dubbo Regional	452	8.4	414	7.7	14568	271.2
	Forbes	65	6.6	38	3.8	1767	178.4
	Gilgandra	13	3.1	15	3.5	785	185.2
	Lachlan[1]	12	2.0	19	3.1	860	141.6
	Mid-Western Regional	186	7.4	192	7.6	6593	261.1
	Narromine	34	5.2	17	2.6	1365	209.5
	Oberon	44	8.1	33	6.1	1385	256.0
	Orange	417	9.8	476	11.2	15991	376.7
	Parkes	68	4.6	56	3.8	3445	232.2
	Walgett	14	2.4	17	2.9	1352	227.1
	Warren	18	6.7	26	9.6	1061	393.4
	Warrumbungle Shire	38	4.1	58	6.3	2251	242.6
	Weddin	16	4.4	16	4.4	691	191.3
	LHD Total[2]	2220	7.8	2724	9.6	77532	272.0
Western Sydney	Blacktown	3952	10.6	3621	9.7	138052	368.7
	Cumberland	2241	9.3	2154	8.9	81963	339.4
	Parramatta[1]	2393	9.3	2204	8.6	77698	302.1
	The Hills Shire	2542	14.3	2511	14.1	84042	472.2
	LHD Total[2]	10747	10.2	10135	9.6	369797	351.0
NSW Total[3]		**84,860**	**10.5**	**83,523**	**10.3**	**3,081,225**	**380.9**

[1]Local Government Area (LGA) spans multiple Local Health Districts.
[2]Local Health District total counts and rates includes tests for LHD residents only. Murrumbidgee includes Albury LGA residents.
[3]NSW 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 25 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.

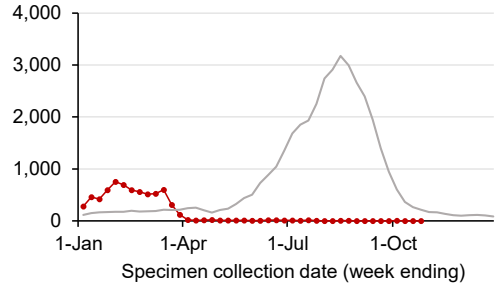
Specimen collection date	Total PCR tests conducted	Influenza A		Influenza B		Adeno-virus	Para-influenza	RSV	Rhinovirus	HMPV	Enterovirus
		No.	%Pos.	No.	%Pos.						
1 Jan—25 Oct 2020											
Total	1,068,450	6,623	0.62%	952	0.09%	7,642	9,083	8,235	123,618	2,077	4,778
Month ending											
3 February*	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	23,875	0	0.00%	0	0.00%	163	7	473	912	11	84
18 October	28,720	2	0.01%	0	0.00%	192	23	640	1,035	11	116
25 October	26,740	1	0.00%	0	0.00%	175	13	772	1,060	4	156

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

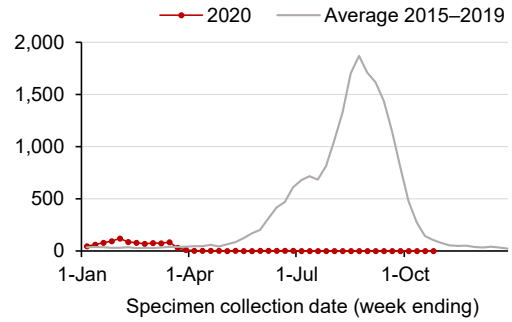
APPENDIX C: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 25 OCTOBER 2020

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.

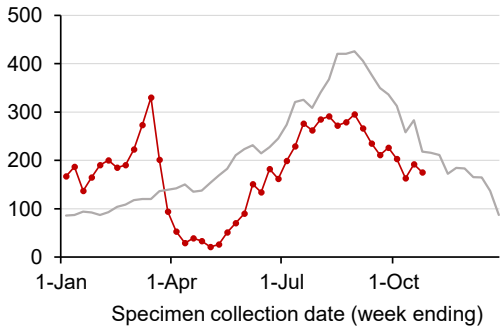
Influenza A



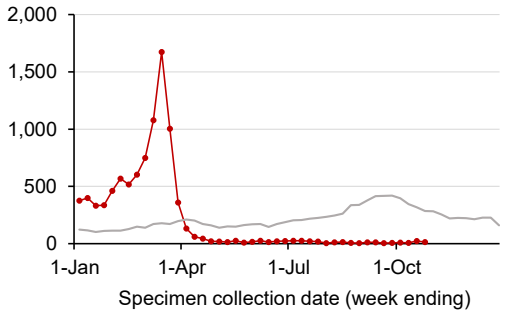
Influenza B



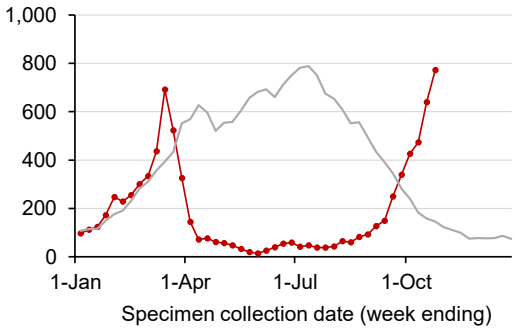
Adenovirus



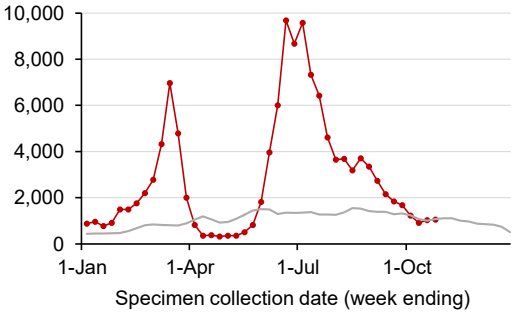
Parainfluenza



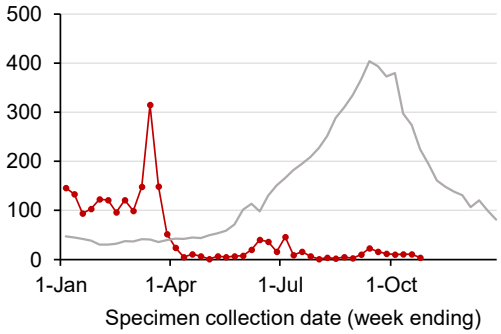
Respiratory syncytial virus (RSV)



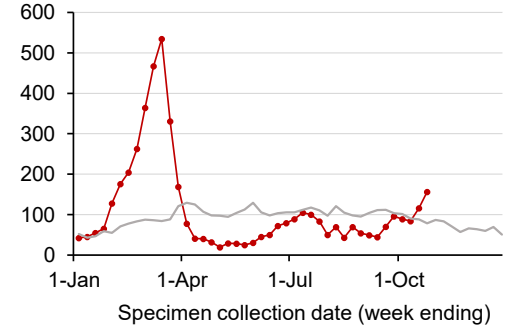
Rhinovirus



Human metapneumovirus (HPMV)



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	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). Case counts include: - 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	This date is provided to NSW Health by the laboratory. Laboratories prioritise notification of positive results to allow prompt public health action. 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. 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.