COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 40, ENDING 3 OCTOBER 2020

Published 8 October 2020

SUMMARY FOR THE WEEK ENDING 3 OCTOBER

- There was one COVID-19 past infection reported in NSW this week. Extensive epidemiological and laboratory investigations suggest that the case was locally acquired many weeks ago from an unknown source.
- Testing decreased for the sixth consecutive week (down 20%) with the largest decrease in testing evident in school-aged children.
- The NSW Sewage Surveillance Program reported four SARS-CoV-2 detections from 58 sewage samples. These samples were taken from sewage treatment plants in Liverpool, Malabar, North Richmond and West Camden.
    - Detections from the catchment areas of the North Richmond and West Camden sewage treatment plants were not associated with previously reported cases (since 3 October there has been one case reported who resides in the West Camden sewage treatment plant catchment area).
    - Finding traces of the virus in sewage samples could mean there were recently recovered cases or undiagnosed cases in the area.
    - People who live or work in the surrounding areas, including the Hawkesbury and South Western Sydney areas, have been urged to get tested if symptoms present.
- Respiratory syncytial virus (RSV) detections have steadily increased since August. This usually reflects an increase in respiratory symptoms among children. Numbers for RSV are currently within range for the time of year.
- While there has been no recent community transmission of COVID-19 it is important to remain vigilant. To help stop the spread of COVID-19:
    - If you are unwell, get tested and isolate as soon as symptoms develop (even mild symptoms). If new symptoms develop, even within a day of a negative test result, it is important to re-test without delay and continue to self-isolate.
    - Wash your hands regularly. Take hand sanitiser with you when you go out.
    - Keep your distance. Leave 1.5 metres between yourself and others. Wear a mask on public transport, in rideshares and taxis, while shopping, in places of worship and other places where you can't physically distance. When taking taxis or rideshares, commuters should sit in the back and wear a mask.

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

Everyone has an important role to play to prevent the spread of COVID-19. For the public health response to be effective, members of the community, laboratories, clinicians and public health staff all have to play their part.

The sooner we can diagnose cases, the faster we can identify other people who may have been infected, and the better we can limit the spread of infection across our community.

The roles we all play are outlined below.

Everyone

- Seek medical attention and get tested quickly every time you develop respiratory symptoms (even if mild) or unexplained fever.
- Stay at home to avoid spreading infection to others as soon as you:
    - develop symptoms and until you are told that you do not have COVID-19 and you are well
    - are told that you are a close contact of a COVID-19 case and until your quarantine period has ended (even if you test negative before then).
- Follow the advice given in public health alerts regarding the need to self-isolate and seek testing if you attended a location at a time where a cluster has been identified.

People who are diagnosed with COVID-19

- Provide information to public health staff at the time of interview on the locations visited and people you have been in contact with in your **incubation period** and while infectious.
- Stay at home until you are told your isolation period has ended.

Clinicians

- Promote COVID-19 testing amongst symptomatic people to ensure a COVID-19 diagnosis as close as possible to the time symptoms start.
- Encourage testing in people without symptoms when advised to do so for public health purposes.
- Support cases to self-isolate until their isolation period has ended.
- Be vigilant in the use of personal protective equipment.

Laboratories

- Notify NSW Health of new diagnoses promptly so public health staff can interview cases and identify people potentially infected by a case (close contacts).

Public health staff

- Interview cases as quickly as possible after diagnosis and collect information from cases to detect new clusters and enable contact tracing.
- Quarantine close contacts as quickly as possible.

SECTION 2: HOW IS THE OUTBREAK TRACKING IN NSW?

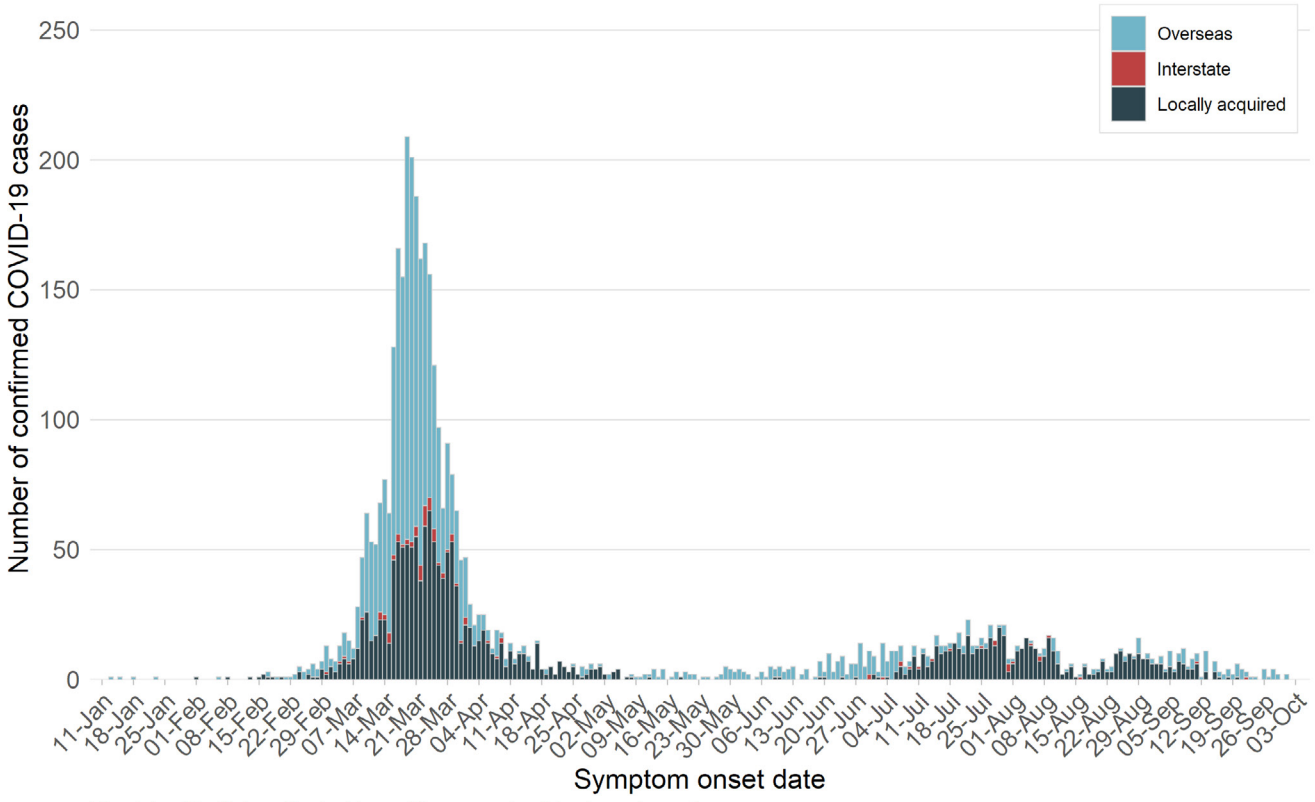
Table 1. COVID-19 cases and tests reported in NSW, up to 3 October 2020

	Week ending 3 Oct	Week ending 26 Sep	% change	Total to 3 Oct
Number of cases	17	18	↓6%	4,046
Overseas acquired	15	16	↓6%	2,157
Interstate acquired	1	0	-	91
Locally acquired	1*	2	↓50%	1,798
Number of deaths	0	0	-	55
Number of tests	67,744	84,448	↓22%	2,748,965

Note: The case numbers reported for previous weeks is based on the most up to date information from public health investigations.
*Past infection – likely acquired in early August.

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: Most cases of COVID-19 infections diagnosed in the last two weeks in NSW have been overseas acquired.

How many NSW cases were infected in Victoria?

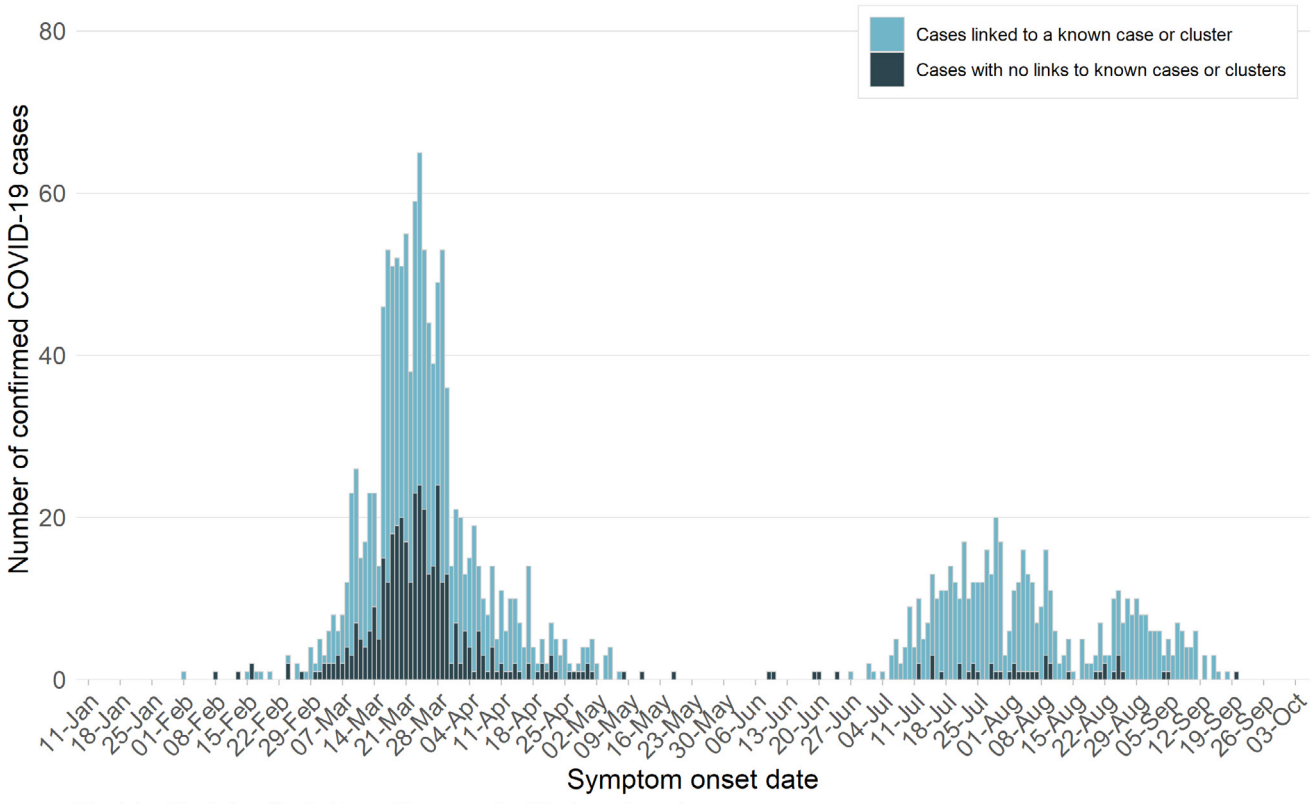
In response to the continued community transmission in Victoria, border measures were introduced to limit the spread of infection into NSW. From 8 July, under the Public Health (COVID-19 Border Control) Order 2020, a person who has been in Victoria within the last 14 days must not travel to NSW without a permit. The Order was last updated on 28 September. Recent changes included expansions to the border region and changes to permitted activities.

In the week ending 3 October, one case newly diagnosed with COVID-19 acquired their infection in Victoria. This case entered hotel quarantine upon arrival in NSW and was diagnosed as part of routine screening.

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



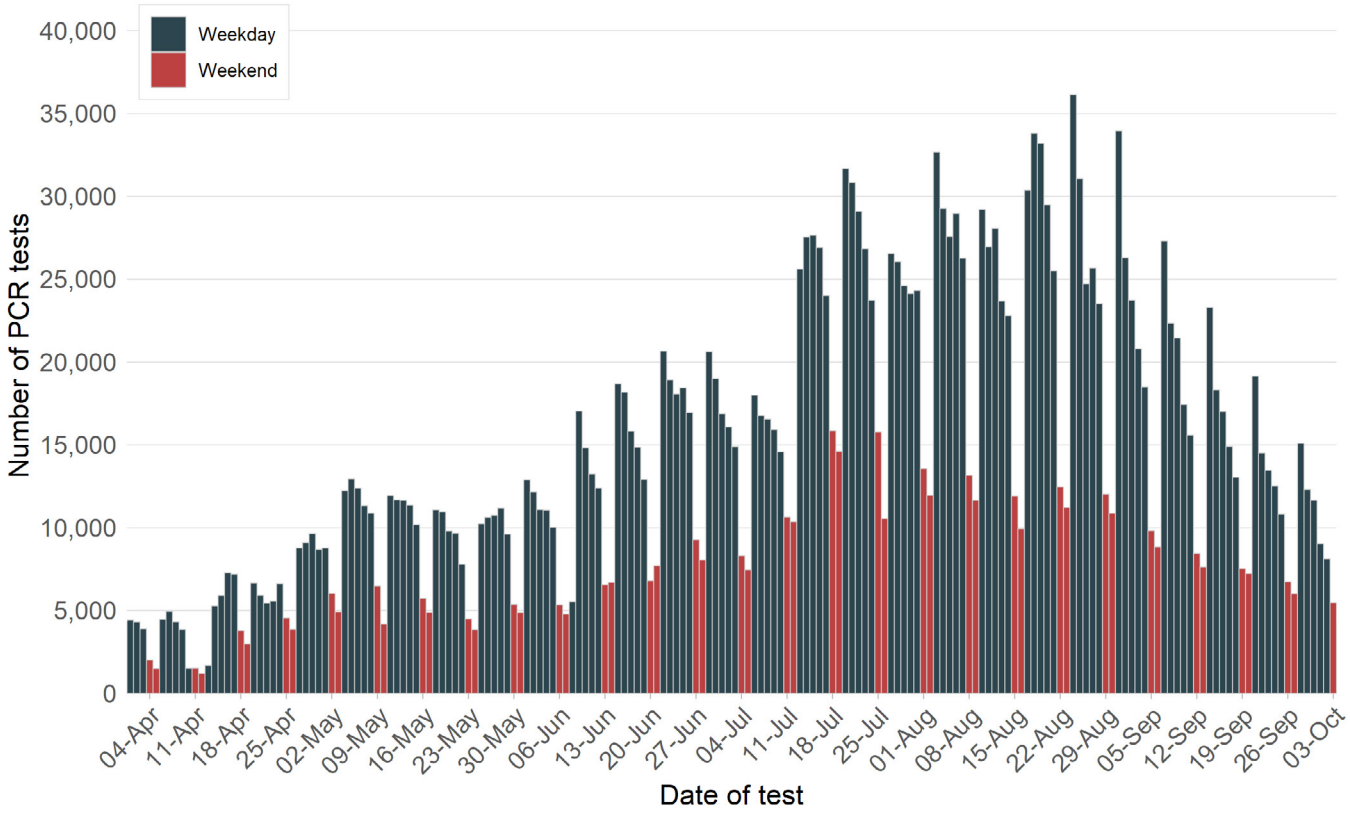
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Of the locally-acquired cases with an onset in the last four weeks, 97% (38/39) 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.

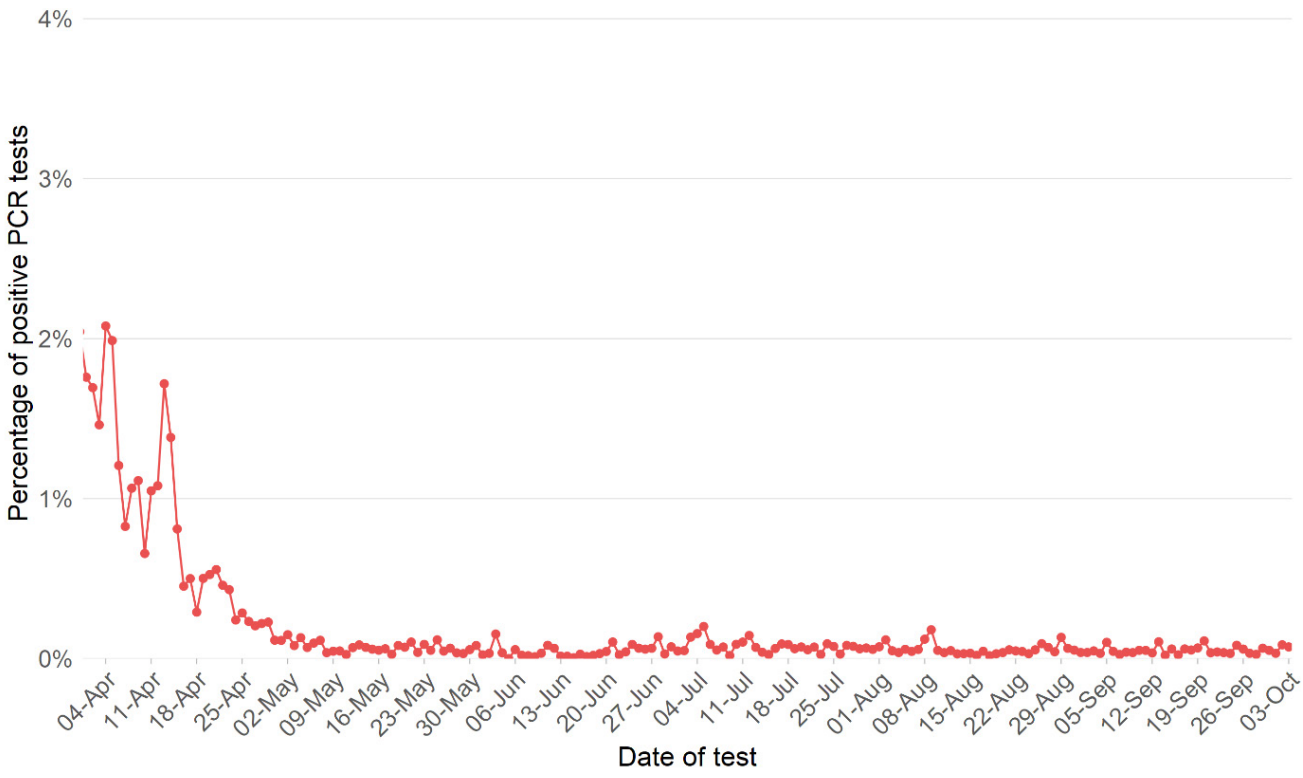
Interpretation: Early in the outbreak the focus of testing was on returned travellers and close contacts of confirmed cases, whereas now testing is recommended for anyone with even mild respiratory symptoms or unexplained fever.

A 20% decrease in testing was reported in the week ending 3 October compared with the previous week – the sixth consecutive weekly decrease. The number of tests reported in the last week is similar to the average recorded for mid to late May. An average of 1.2 tests were conducted per 1,000 people in NSW each day in the week ending 3 October, compared to a daily average of 1.5 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

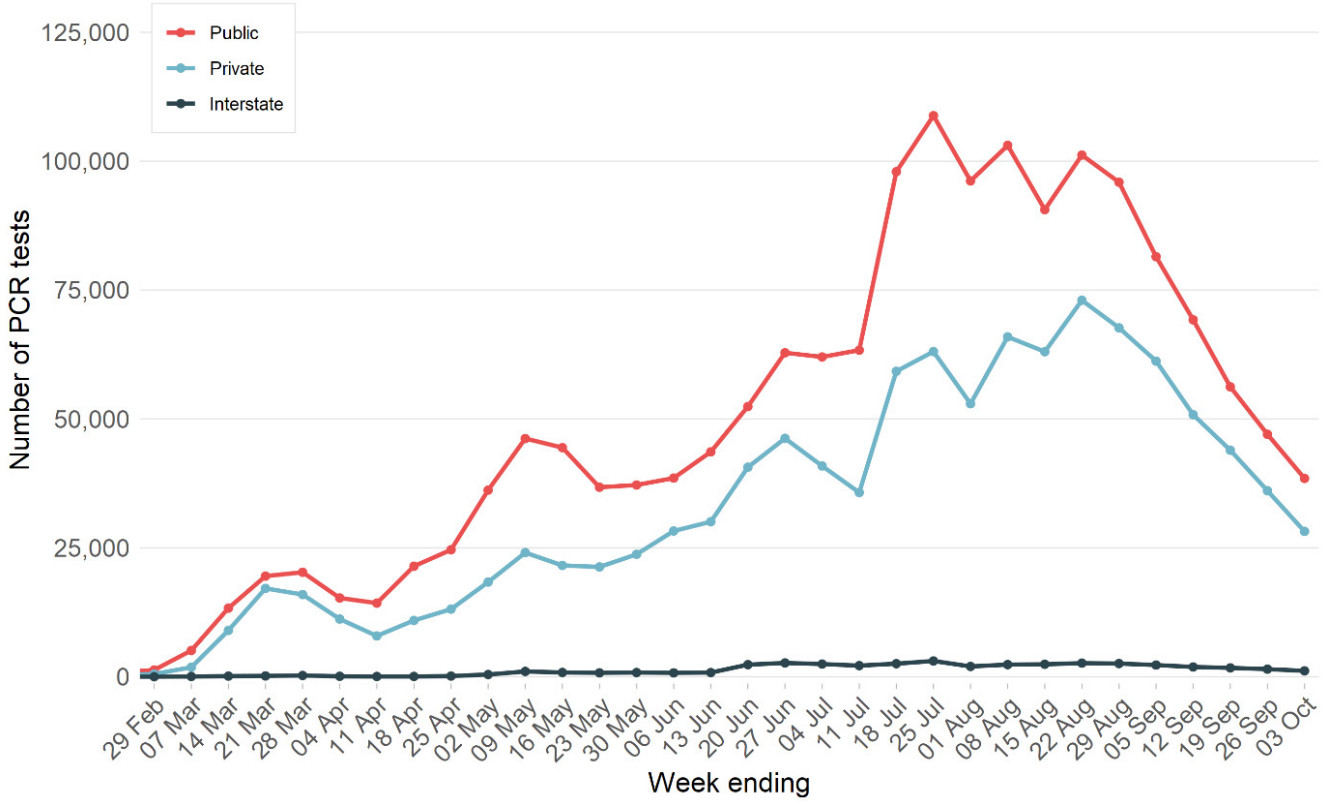


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

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



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

Interpretation: In the week ending 3 October, testing in both public and private facilities decreased compared to the previous week. Approximately 57% 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, 6 September to 3 October 2020

Locally-acquired cases	Week ending				Total
	3 Oct	26 Sep	19 Sep	12 Sep	
Cases who are linked to a known case or cluster	0	1	12	33	**46**
Cases with no links to other cases or clusters	1*	1	0	1	**3**
Total	**1***	**2**	**12**	**34**	**49**

*Past infection – likely acquired in early August.

Interpretation: The majority (94%) of cases in the four weeks ending 3 October were linked to known cases or clusters. The last case with an unknown source was reported on 30 September, however, following extensive public health investigation evidence suggests that the case was likely infected many weeks prior to their diagnosis.

Table 3. Locally-acquired COVID-19 cases by LHD of residence, 6 September to 3 October 2020

Local Health District	Week ending				Total	Days since last case
	3 Oct	26 Sep	19 Sep	12 Sep		
Central Coast	0	0	0	0	**0**	**33**
Illawarra Shoalhaven	0	0	0	0	**0**	**29**
Nepean Blue Mountains	0	0	3	4	**7**	**18**
Northern Sydney	0	0	1	3	**4**	**18**
South Eastern Sydney	0	1	3	9	**13**	**13**
South Western Sydney	1*	1	4	1	**7**	**3**
Sydney	0	0	1	8	**9**	**20**
Western Sydney	0	0	0	8	**8**	**22**
Far West	0	0	0	0	**0**	**184**
Hunter New England	0	0	0	0	**0**	**58**
Mid North Coast	0	0	0	0	**0**	**165**
Murrumbidgee	0	0	0	1	**1**	**26**
Northern NSW	0	0	0	0	**0**	**70**
Southern NSW	0	0	0	0	**0**	**54**
Western NSW	0	0	0	0	**0**	**32**
Total	**1***	**2**	**12**	**34**	**49**	

*Past infection – likely acquired in early August.

Interpretation: Two of the three locally-acquired cases reported in the two weeks up to 3 October were residents of South Western Sydney LHD.

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.

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

There were no cases reported in the last week who were linked to recent clusters.

Previously reported active clusters with no new cases identified this week

Liverpool Hospital

The last case associated with this cluster was notified on 19 September in a patient who attended Liverpool Hospital Emergency Department. Excluding the source, a healthcare worker who was exposed in a household setting, there are 19 cases linked to this cluster: six healthcare workers, three patients, one hospital visitor, and nine people were exposed in home settings.

City Tattersalls gym

The last case associated with this cluster was notified on 15 September in a close contact of a previous case associated with a workplace in the CBD. Almost a third (29%, 19/65) of transmission within this cluster occurred in a gym setting and one-tenth of cases (11%, 7/65) were acquired in an office-type workplace setting. Excluding the source, who is unlinked to any known case or cluster, there are 65 people linked to this cluster.

St Paul's Catholic College, Greystanes

The last cases of COVID-19 associated with this cluster were notified on 12 September in two household contacts of a case that attended a cafe in South Western Sydney. A thorough public health investigation has not been able to identify the source of the cluster. Excluding the source, who is unlinked to any known cases or clusters, there are 17 cases linked to this cluster.

Eastern Suburbs Legion Club

The last case associated with this cluster was notified on 16 September. There are nine cases linked to this cluster: six cases were exposed at the club and three in household settings. The source for this cluster is currently unknown, however genome sequencing of virus from cases suggests the outbreak was likely seeded by the City Tattersalls outbreak.

Concord Hospital

The last case associated with this cluster was notified on 20 September in a household contact of a staff member at Concord Hospital. In total, there are 22 cases (excluding the source who was a healthcare worker at both hospitals) linked to this cluster. There are eight healthcare workers, including seven at Concord Hospital and one at Liverpool Hospital. There were 10 cases exposed in residential settings who were from six separate households.

Table 4. Previously reported clusters with no new cases identified in the week ending 3 October 2020

Date cluster first identified	Cluster	Cases linked in the week ending 3 Oct	Date of last case
30 Aug	St Paul's Catholic College	0	12 Sep
25 Aug	City Tattersalls gym	0	15 Sep
8 Sep	Eastern Suburbs Legion Club	0	16 Sep
10 Aug	Liverpool Hospital*	0	19 Sep
6 Sep	Concord Hospital	0	20 Sep

* The Liverpool Hospital cluster in the table above is distinct to the Concord Hospital cluster, which includes one healthcare worker who was infected at Liverpool Hospital.

SECTION 5: COVID-19 IN SPECIFIC POPULATIONS

COVID-19 in healthcare workers

The following describes infections of COVID-19 in healthcare workers (HCWs) 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.

Since 1 August 2020, there have been 18 HCWs who were potentially infected in healthcare settings. There were no new COVID-19 cases in healthcare workers in the last week.

Table 5. Potential healthcare-acquired infections for HCWs by healthcare setting in the past four weeks

Healthcare setting	Week ending				Total
	3 Oct	26 Sep	19 Sep	12 Sep	
NSW public health setting	0	0	3	7	**10**
Private health setting	0	0	0	0	**0**
Total	**0**	**0**	**3**	**7**	**10**

Interpretation: 100% (10/10) of the potentially healthcare-acquired cases in the last four weeks were reported in NSW public health settings associated with current clusters.

Clusters in healthcare settings

Of the 18 potentially healthcare-acquired infections in HCWs reported since 1 August, 16 were associated with four clusters in healthcare settings: two from Hornsby Hospital, six from Liverpool Hospital Dialysis Unit, one from Liverpool Hospital Emergency Department, and seven from Concord Hospital. Recent cases in HCWs potentially acquired in healthcare settings have been associated with clusters in South Western Sydney and Sydney LHDs.

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 3 October. In total, 45 Aboriginal people have been diagnosed with COVID-19, representing 1% of all cases in NSW.

Pregnant women

No cases in pregnant women were reported in the week ending 3 October. 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, 1.4% 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 6. 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	61	0%
5-11 years	0	67	0%
12-17 years	0	116	0%
18-29 years	0	922	0%
30-49 years	0	1227	0%
50-59 years	1	578	0.2%
60-69 years	4	560	0.7%
70-79 years	14	356	3.9%
80+ years	36	159	22.6%
Total	**55**	**4046**	**1.4%**

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.

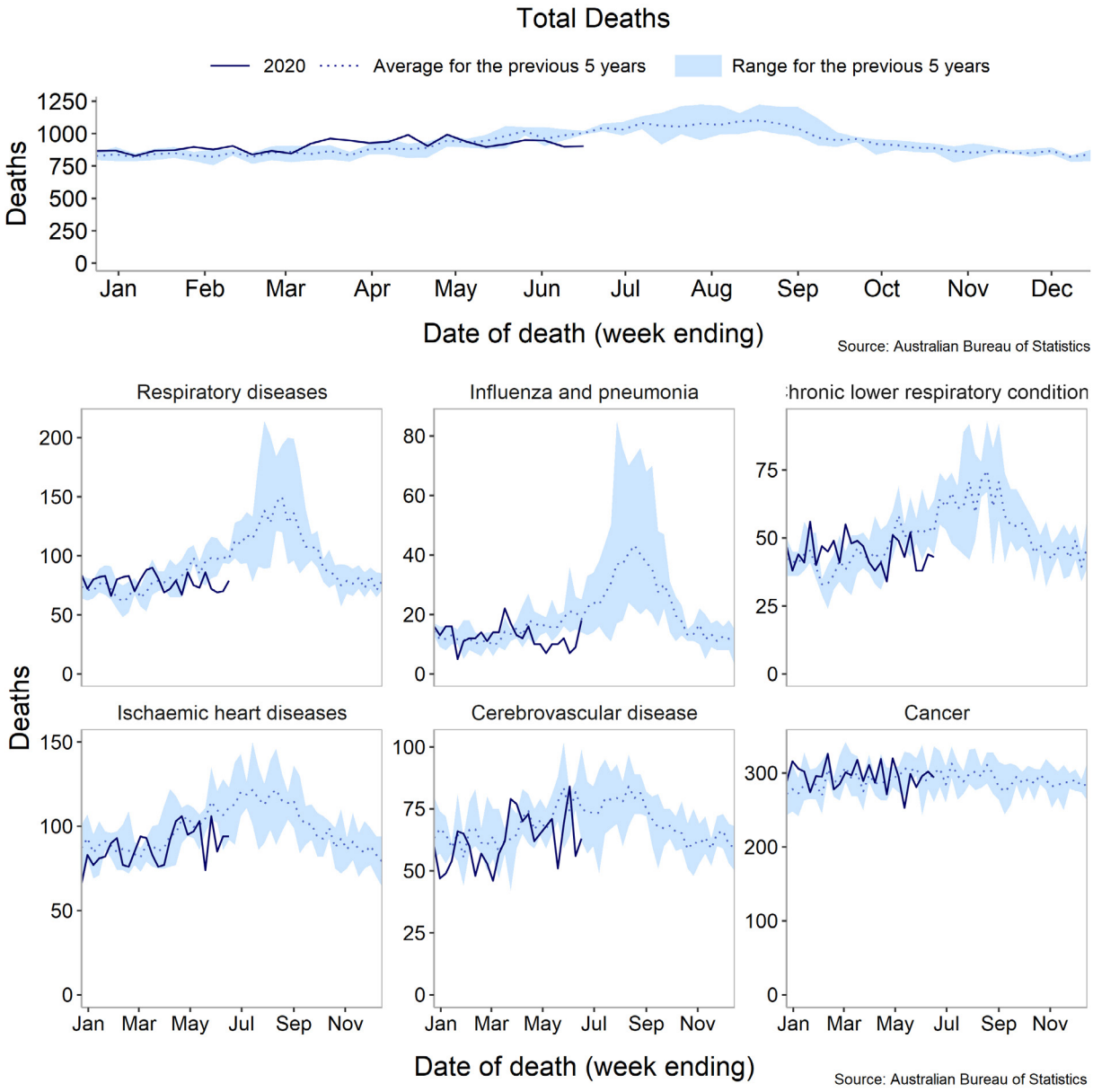
Internationally it is estimated that 3.1% of COVID-19 cases are reported to have died as a result of their infection.[2] Countries such as Italy, the United Kingdom and Spain have reported higher mortality rates (12.0%, 10.7% and 4.8%), while NSW reports similar rates to South Korea (1.7%) and New Zealand (1.7%). Mortality rates are heavily influenced by the testing criteria, with lower rates of COVID-19-related deaths reported in countries where testing is recommended for all cases, including those with mild illness.

[2] WHO Coronavirus disease (COVID-19) Weekly Epidemiological Update – 21 September 2020
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

How many people have died in NSW from any cause of death?

The Australian Bureau of Statistics (ABS) has published Provisional Mortality Statistics for all of Australia for January to June 2020 (https://www.abs.gov.au/ausstats/abs@.nsf/mf/3303.0.55.004) and provides data for NSW-registered deaths to NSW Health on a monthly basis around three months after the close of the month. The reported counts are only doctor-certified deaths, which include the majority of deaths registered. This report excludes deaths referred to a coroner, such as suicides, accidents and assaults. Deaths from any cause are seasonal, increasing in winter and decreasing in summer.

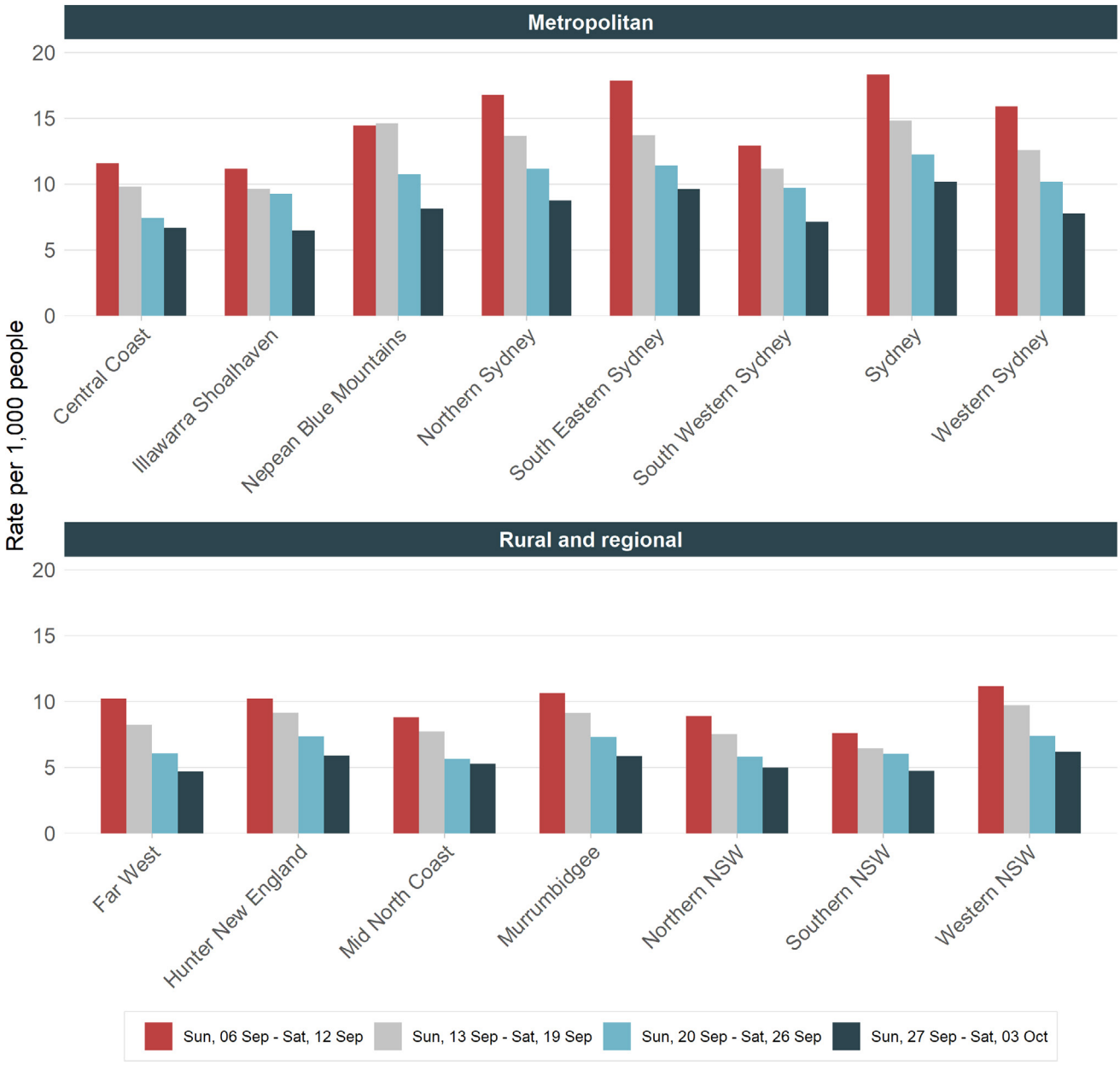
Figure 6. Deaths from any cause in NSW from January to 30 June 2020



Interpretation: When compared with previous years, there have been fewer deaths due to respiratory diseases to date in 2020. This is likely to be due, at least in part, to the physical distancing and hand hygiene measures that have been put in place to help control the pandemic. These measures have reduced transmission of many infectious diseases that are transmitted person-to-person. The patterns of deaths from heart attack, stroke and cancer are similar to previous years.

SECTION 7: COVID-19 TESTING IN NSW

Figure 7. Rates of COVID-19 testing by LHD of residence and week

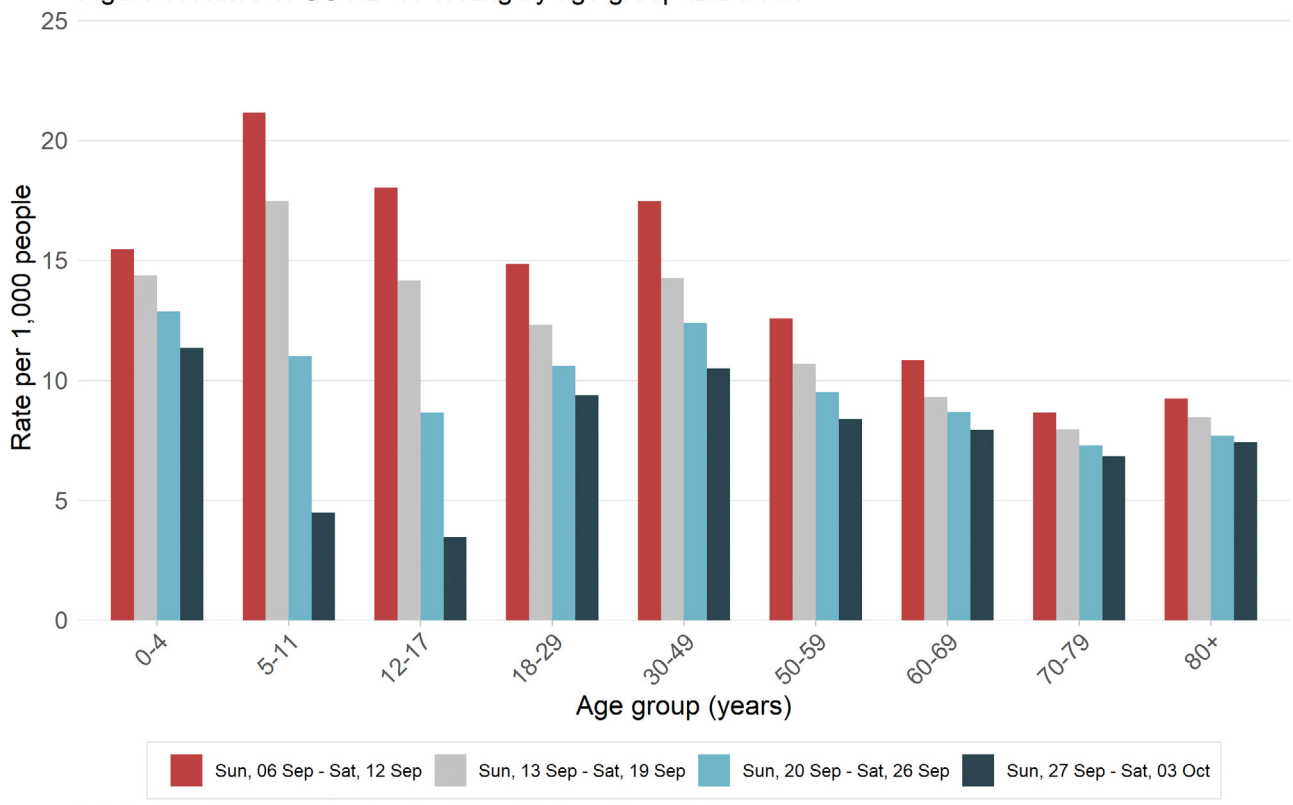


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 3 October were lower compared to the previous week (8 per 1,000 vs 10 per 1,000). Testing rates decreased across NSW, with the greatest drop in metropolitan LHDs.

Testing by age group

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

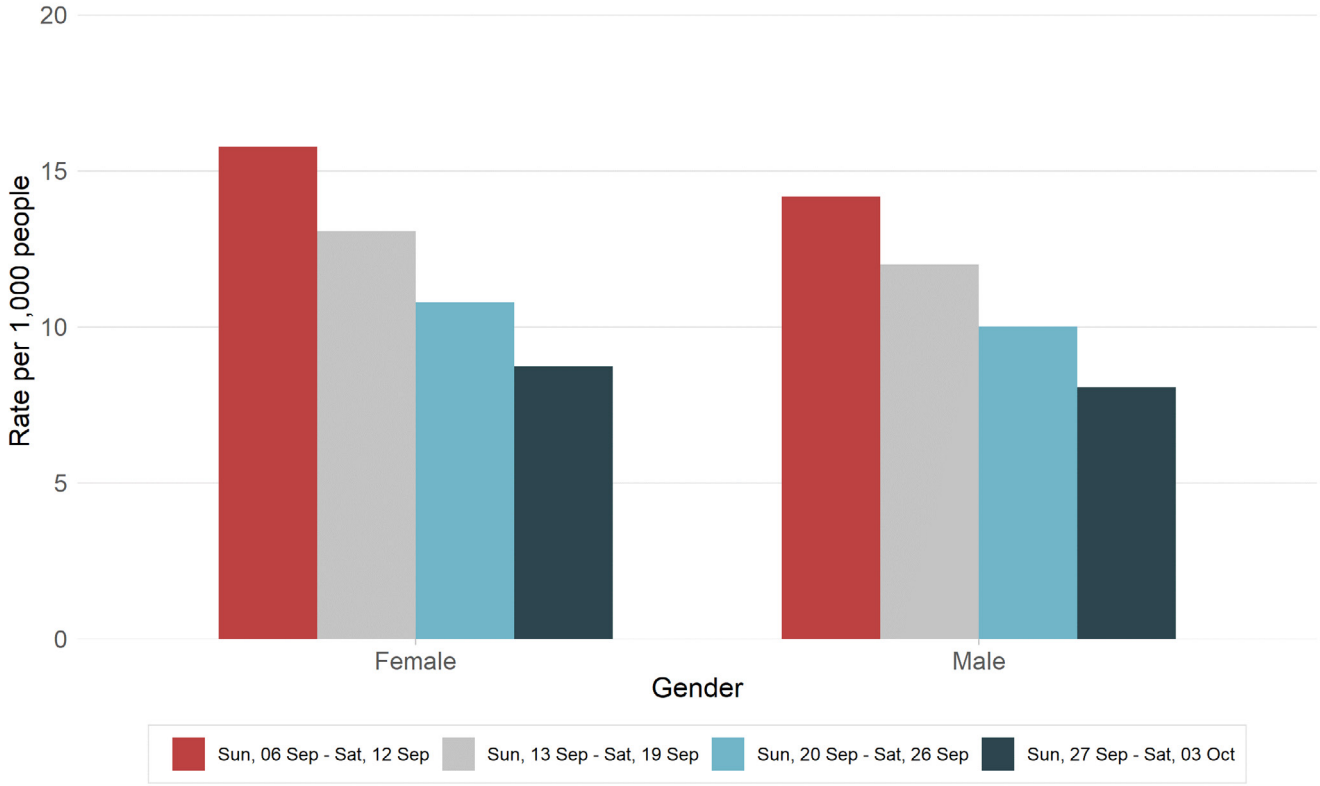


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates decreased in all age groups for the week ending 3 October. The greatest decrease in testing rates was for primary and high school-aged children and was consistent across all LHDs.

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. In both groups, rates decreased in the week ending 3 October compared with 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 64 sewage treatment plant locations across NSW. Testing sewage can help to 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.

To date there have been detections of the virus fragments in samples from multiple sewage treatment plants in NSW including Perisher, Newcastle, Byron Bay, Blue Mountains and Metropolitan Sydney sites.

In the week ending 3 October 2020 (Week 40), there were four detections of SARS-CoV-2. These samples were taken from sewage treatment plants in Liverpool, Malabar, North Richmond and West Camden. The population served by these catchments is over 2 million people and includes the south western parts of Sydney. The table below shows results for previous weeks from various sites across NSW.

Table 7. Locations with positive SARS-CoV-2 detections in sewerage samples, week ending 18 July to 3 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
			Week											
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
60, 514	Blue Mountains (Winmalee)	NBMLHD												
4,681	North Richmond	NBMLHD												
13,052	Richmond	NBMLHD												
318,810	Bondi	S&SESLHD												
69,245	Warriewood	NSLHD												
1,241	Brooklyn	NSLHD												
31,924	Hornsby Heights	NSLHD												
57,933	West Hornsby	NSLHD												
233,176	Cronulla	SESLHD												
1,857,740	Malabar 1	S&SES& SWSLHD												
	Malabar 2	S&SES& SWSLHD												
181,005	Liverpool	SWSLHD												
69,245	West Camden	SWSLHD												
6,882	Wallacia	SWSLHD												
14,600	Picton	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
			Week											
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
161,200	Glenfield	SWSLHD												
1,341,986	North Head	NS&WSLHD												
110,114	Penrith	NBMLHD												
26,997	Castle Hill Cattai	WSLHD												
	Castle Hill Glenhaven													
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												
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
	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
	Wagga Wagga - inlet 1	M&SLHD												
	Wagga Wagga - inlet 2	M&SLHD												
	Wagga Wagga - Kooringal STP	M&SLHD												
2,050	Bourke	W&FWLHD												
19,000	Broken Hill	W&FWLHD												
500	Dareton	W&FWLHD												
11,600	Parkes	W&FWLHD												

			18 Jul	25 Jul	1 Aug	8 Aug	15 Aug	22 Aug	29 Aug	5 Sep	12 Sep	19 Sep	26 Sep	3 Oct
			Week											
Pop.	**Sewage treatment plant**	**LHD**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
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
c composite of the separate influent samples

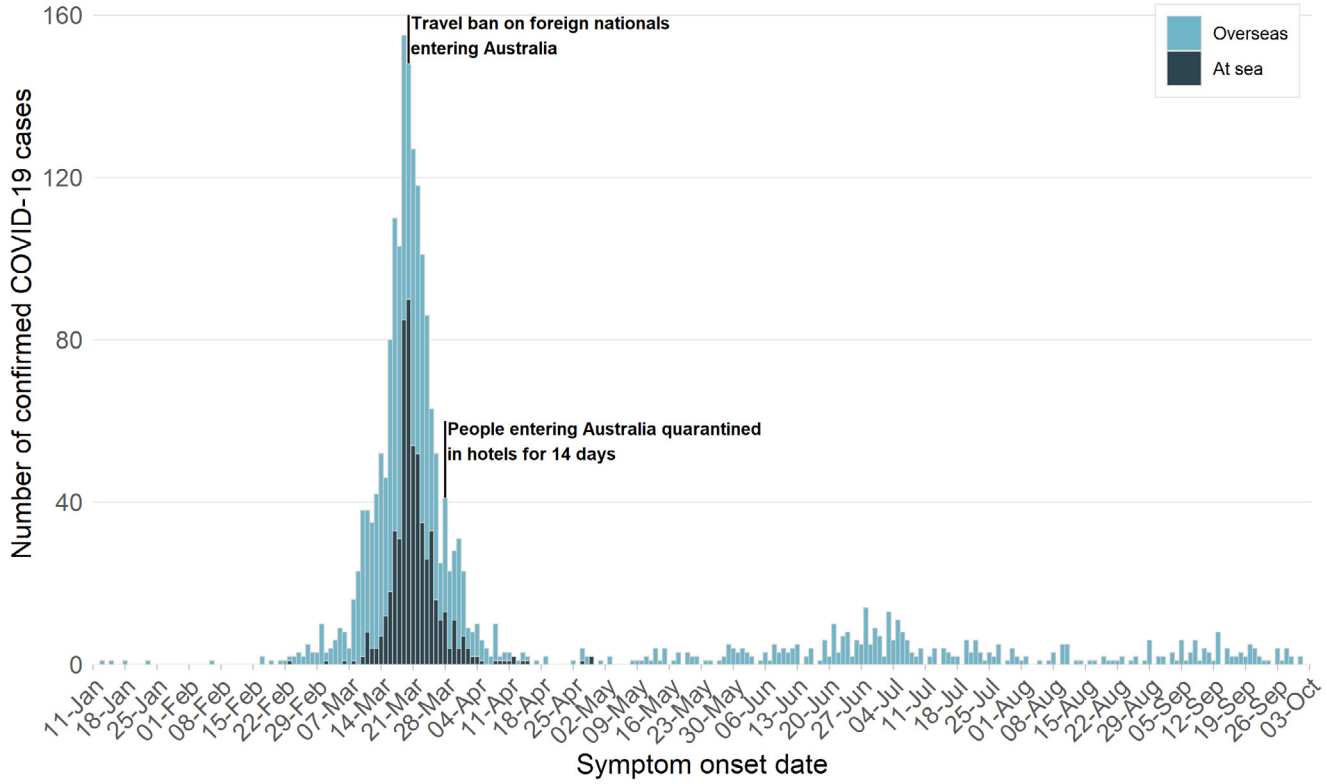
Interpretation: In the last week there were four detections of SARS-CoV-2. Two detections from the catchment areas of the North Richmond and West Camden sewage treatment plants were not associated with previously reported cases (since 3 October there has been one case reported who resides in the West Camden sewage treatment plant catchment area). However, finding traces of the virus in sewage samples could mean there were recently recovered cases or undiagnosed cases in the area. People who live or work in the surrounding areas, including the Hawkesbury and South Western Sydney areas, have been urged to get tested if symptoms present.

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



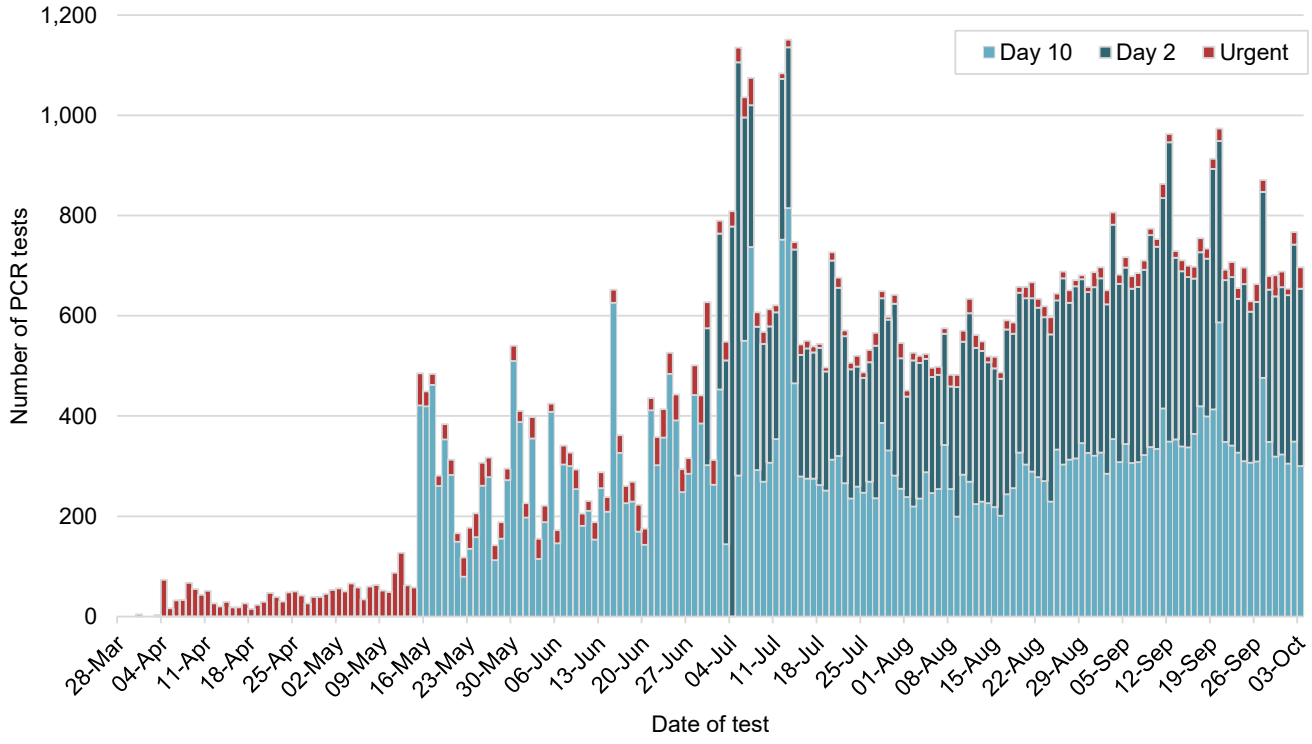
The date of the first positive test is used for cases who did not report symptoms.

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 15 overseas-acquired cases reported in the week ending 3 October, 6% 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 3 October, NSW, 2020



Interpretation: In the week ending 3 October, there were 5,037 tests conducted through the hotel quarantine screening programs. Of these, 14% were screening tests for domestic travellers from Victoria. Since hotel quarantine began on 29 March, a total of 80,273 PCR tests have been conducted and 406 COVID-19 cases have been 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 27 September 2020

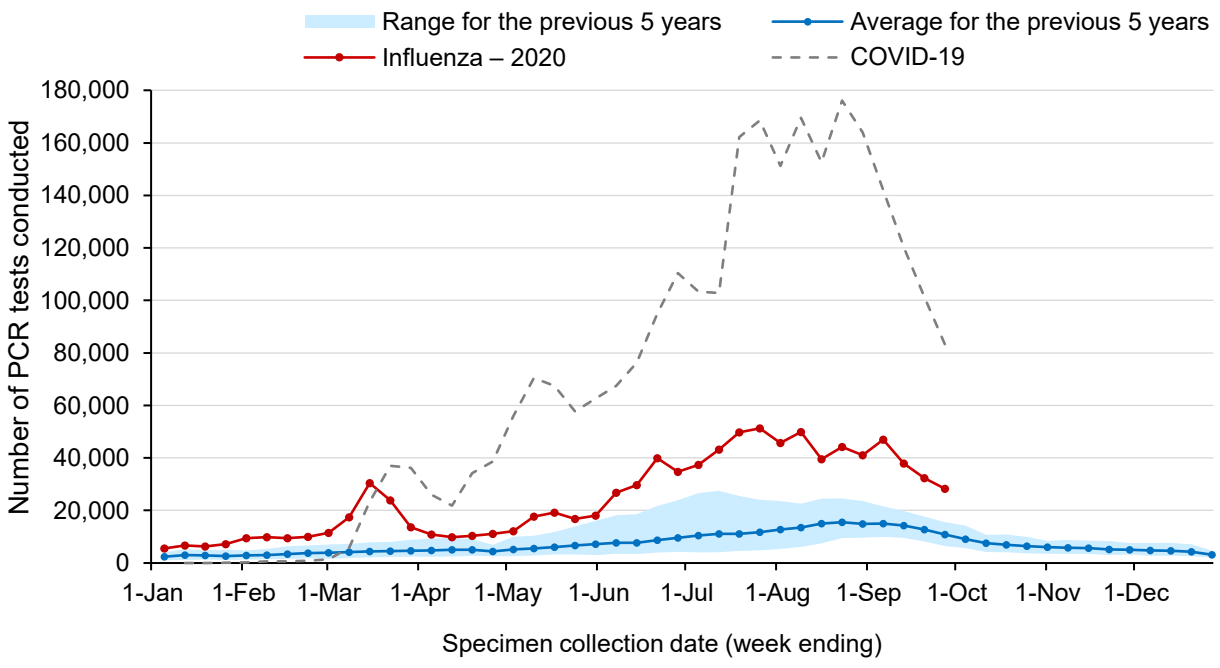
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted;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

The most recent data available is for testing carried out to 27 September. A total of 964,576 influenza tests have been performed at participating laboratories to 27 September, with 28,300 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 27 September 2020

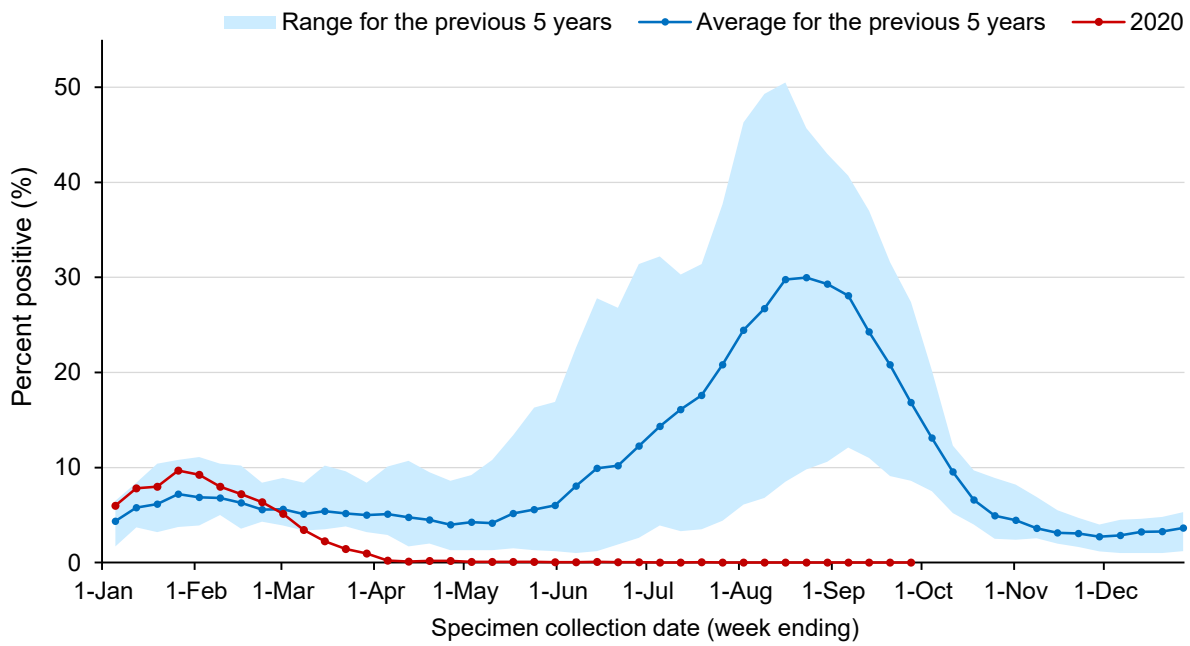


Interpretation: In every week this year, the number of influenza tests performed has exceeded the previous five-year average.

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.

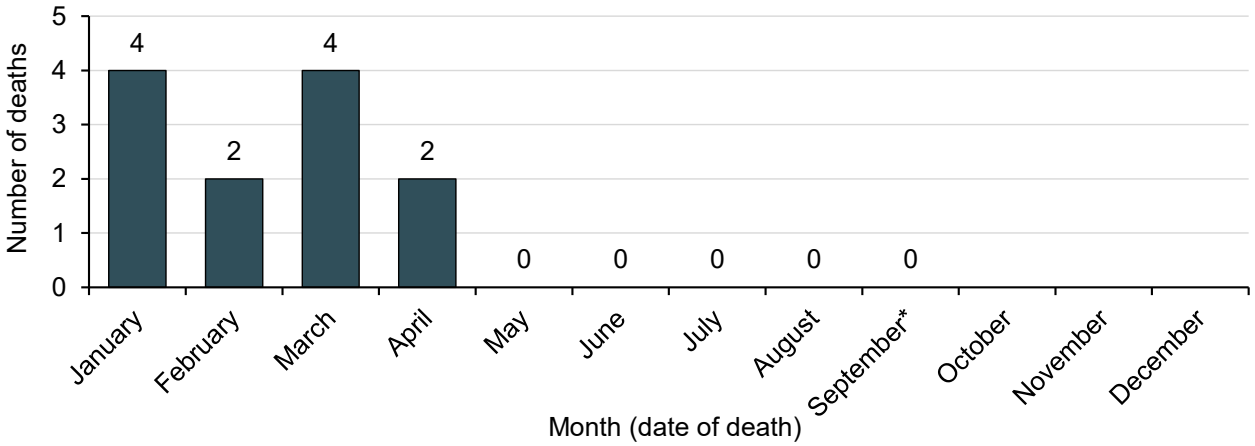
Figure 13. Proportion of tests positive for influenza, to 27 September 2020



Interpretation: In the week ending 27 September, the percent of influenza tests that were positive continued to be very low (less than 0.1%), 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 27 September 2020



Interpretation: No influenza deaths were reported in the week ending 27 September. The number of influenza-related deaths identified via Coroner's reports and death registrations from 1 January to 27 September 2020 is lower than the same period last year (12 deaths in 2020 compared with 281 in 2019).[3] Two-thirds of the deaths were in people aged 65 years and over.

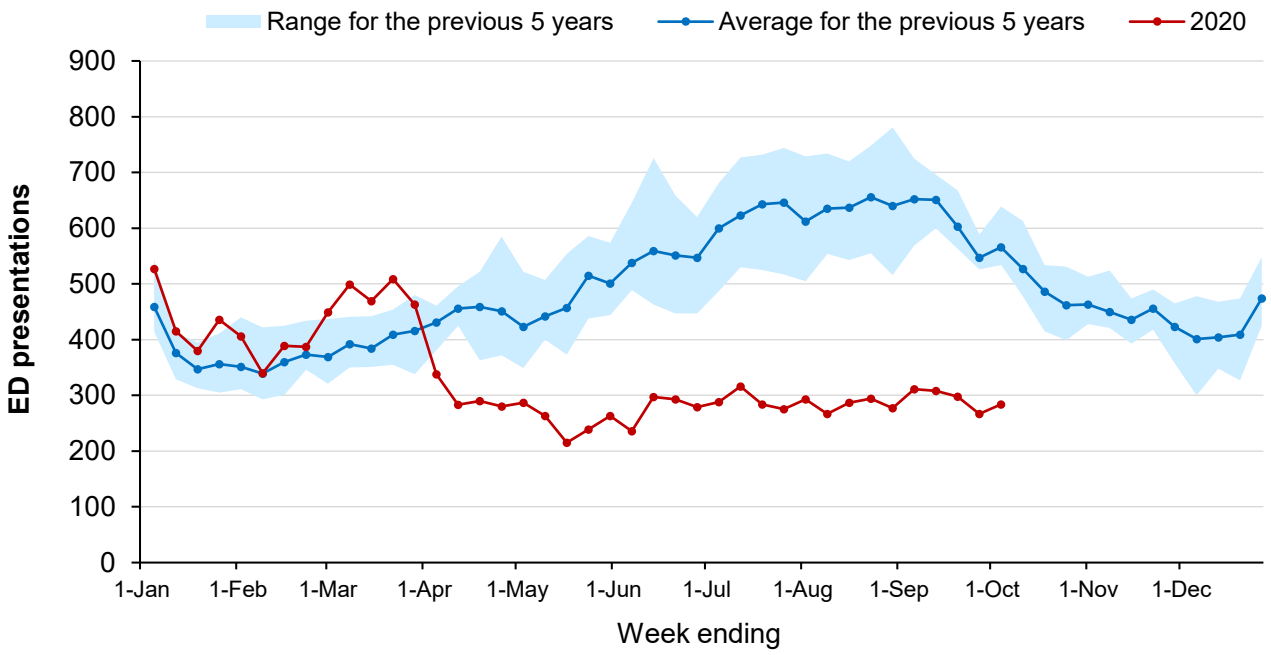
[3] Includes deaths in people with laboratory-confirmed influenza.

How are emergency department presentations for pneumonia tracking?

The figure below shows weekly pneumonia presentations to Emergency Departments in NSW. This includes presentations 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 using PHREDSS.[4]

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 4 October 2020



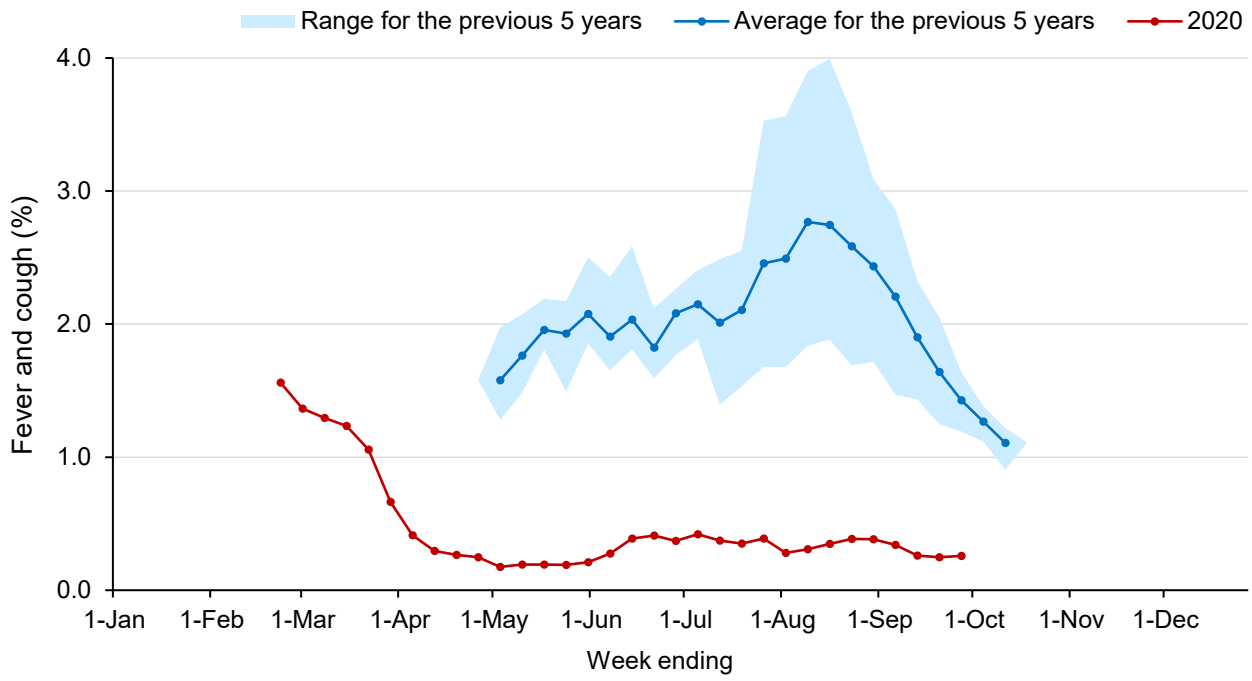
Interpretation: Pneumonia presentations decreased from the end of March and have continued to remain well below the usual range for this time of year.

[4] 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 5 years. Includes unplanned presentations to 67 NSW emergency departments (accounts for 87% of total public ED activity).

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 27 September 2020



Interpretation: In NSW in the week ending 27 September, of the 22,113 people surveyed, 57 people (0.26%) 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	
		3 October		26 September			
		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]	2353	6.7	2629	7.5	103178	292.4
Far West	Balranald	12	5.1	15	6.4	392	167.7
	Broken Hill	62	3.6	92	5.3	4142	237.0
	Central Darling	10	5.4	6	3.3	306	166.4
	Wentworth	54	7.7	70	9.9	1751	248.3
	LHD Total[2]	138	4.6	183	6.1	6591	218.7
Hunter New England	Armidale Regional	126	4.1	205	6.7	7998	259.9
	Cessnock	260	4.3	281	4.7	13450	224.2
	Dungog	27	2.9	52	5.5	2029	215.3
	Glen Innes Severn	33	3.7	32	3.6	1592	179.5
	Gunnedah	57	4.5	76	6.0	2776	218.9
	Gwydir	17	3.2	24	4.5	584	109.1
	Inverell	76	4.5	85	5.0	3648	216.0
	Lake Macquarie	1468	7.1	1822	8.9	70650	343.1
	Liverpool Plains	23	2.9	45	5.7	1792	226.8
	Maitland	586	6.9	715	8.4	32686	383.8
	Mid-Coast	367	3.9	434	4.6	19361	206.3
	Moree Plains	44	3.3	57	4.3	2595	195.7
	Muswellbrook	64	3.9	84	5.1	3890	237.5
	Narrabri	27	2.1	50	3.8	2362	179.8
	Newcastle	1429	8.6	1721	10.4	70892	428.2
	Port Stephens	382	5.2	511	7.0	24517	333.7
	Singleton	150	6.4	165	7.0	7925	337.8
	Tamworth Regional	361	5.8	499	8.0	18564	296.8
	Tenterfield	13	2.0	27	4.1	939	142.4
	Upper Hunter Shire	66	4.7	67	4.7	3456	243.7
	Uralla	19	3.2	36	6.0	1033	171.8
	Walcha	14	4.5	18	5.7	760	242.5
	LHD Total[2]	5606	5.9	6997	7.4	293255	307.9
Illawarra Shoalhaven	Kiama	162	6.9	221	9.5	7649	327.1
	Shellharbour	500	6.8	679	9.3	23703	323.7
	Shoalhaven	588	5.6	1112	10.5	27269	258.1
	Wollongong	1473	6.8	1884	8.6	63083	289.2
	LHD Total[2]	2723	6.5	3896	9.3	121704	290.0
Mid North Coast	Bellingen	71	5.5	71	5.5	2878	221.5
	Coffs Harbour	407	5.3	436	5.6	16228	210.0
	Kempsey	170	5.7	195	6.6	7362	247.5
	Nambucca	95	4.8	89	4.5	4011	202.5
	Port Macquarie-Hastings	453	5.4	479	5.7	20590	243.6
	LHD Total[2]	1196	5.3	1270	5.6	51069	226.3

Local Health District	Local Government Area	Week ending				Total	
		3 October		26 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Murrumbidgee	Albury	417	7.7	470	8.7	12792	235.4
	Berrigan	36	4.1	32	3.7	1498	171.2
	Bland	28	4.7	57	9.5	1261	211.2
	Carrathool	10	3.6	6	2.1	263	94.0
	Coolamon	19	4.4	26	6.0	1001	230.6
	Cootamundra-Gundagai Regional	53	4.7	58	5.2	2304	205.1
	Edward River	42	4.6	64	7.1	2085	229.5
	Federation	69	5.6	70	5.6	2090	168.1
	Greater Hume Shire	61	5.7	67	6.2	2460	228.5
	Griffith	189	7.0	251	9.3	6791	251.3
	Hay	7	2.4	8	2.7	420	142.4
	Hilltops	97	5.2	134	7.2	4092	218.8
	Junee	15	2.2	42	6.3	1024	153.2
	Lachlan[1]	11	1.8	21	3.5	795	130.9
	Leeton	55	4.8	68	5.9	2048	178.9
	Lockhart	16	4.9	18	5.5	645	196.4
	Murray River	13	1.1	20	1.7	617	50.9
	Murrumbidgee	21	5.4	8	2.0	635	162.1
	Narrandera	17	2.9	27	4.6	889	150.7
	Snowy Valleys	38	2.6	82	5.7	3383	233.7
	Temora	24	3.8	41	6.5	1053	167.0
	Wagga Wagga	502	7.7	626	9.6	19548	299.6
	LHD Total[2]	1734	5.8	2180	7.3	67165	225.3
Nepean Blue Mountains	Blue Mountains	815	10.3	1200	15.2	33488	423.3
	Hawkesbury	558	8.3	592	8.8	23786	353.5
	Lithgow	88	4.1	128	5.9	5205	240.9
	Penrith	1743	8.2	2314	10.9	84624	397.3
	LHD Total[2]	3176	8.1	4206	10.8	145904	373.2
Northern NSW	Ballina	272	6.1	285	6.4	11553	258.9
	Byron	269	7.7	304	8.7	10527	300.1
	Clarence Valley	201	3.9	247	4.8	9155	177.2
	Kyogle	31	3.5	37	4.2	1414	160.8
	Lismore	226	5.2	278	6.4	11884	272.0
	Richmond Valley	100	4.3	144	6.1	5591	238.3
	Tenterfield	13	2.0	27	4.1	939	142.4
	Tweed	453	4.7	506	5.2	19623	202.3
	LHD Total[2]	1555	5.0	1808	5.8	69980	225.5

Local Health District	Local Government Area	Week ending				Total	
		3 October		26 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Northern Sydney	Hornsby	1080	7.1	1472	9.7	45125	296.8
	Hunters Hill	224	15.0	360	24.0	10717	715.4
	Ku-ring-gai	1309	10.3	1848	14.5	55330	435.2
	Lane Cove	737	18.4	849	21.1	29368	731.4
	Mosman	280	9.0	353	11.4	11430	368.9
	North Sydney	529	7.1	656	8.7	21537	287.1
	Northern Beaches	2260	8.3	2759	10.1	91428	334.3
	Parramatta[1]	1845	7.2	2385	9.3	67768	263.5
	Ryde	1016	7.7	1327	10.1	40244	306.6
	Willoughby	575	7.1	647	8.0	21790	268.4
	LHD Total[2]	8338	8.7	10686	11.2	339638	355.3
South Eastern Sydney	Bayside	1259	7.1	1606	9.0	46378	260.0
	Georges River	1101	6.9	1295	8.1	40819	256.0
	Randwick	1750	11.2	1995	12.8	65381	420.1
	Sutherland Shire	2097	9.1	2602	11.3	88367	383.2
	Sydney[1]	3063	12.4	3611	14.7	98237	398.8
	Waverley	877	11.8	1049	14.1	37660	506.9
	Woollahra	743	12.5	933	15.7	30765	518.0
	LHD Total[2]	9071	9.5	10941	11.4	343830	358.5
South Western Sydney	Camden	1138	11.2	1468	14.5	47118	464.5
	Campbelltown	1578	9.2	2256	13.2	65596	383.7
	Canterbury-Bankstown[1]	2595	6.9	3433	9.1	106907	282.9
	Fairfield	1021	4.8	1282	6.1	57363	271.0
	Liverpool	1704	7.5	2403	10.6	83086	365.1
	Wingecarribee	384	7.5	544	10.6	18985	371.3
	Wollondilly	284	5.3	418	7.9	14360	270.2
	LHD Total[2]	7336	7.1	10092	9.7	340741	328.1
Southern NSW	Bega Valley	154	4.5	201	5.8	7539	218.7
	Eurobodalla	223	5.8	267	6.9	12886	334.9
	Goulburn Mulwaree	186	6.0	229	7.4	7831	251.5
	Queanbeyan-Palerang Regional	264	4.3	348	5.7	11020	180.4
	Snowy Monaro Regional	117	5.6	153	7.4	4875	234.4
	Upper Lachlan Shire	41	5.1	46	5.7	1690	209.7
	Yass Valley	44	2.6	70	4.1	2755	161.2
	LHD Total[2]	1031	4.8	1314	6.1	48623	224.0

Local Health District	Local Government Area	Week ending				Total	
		3 October		26 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Sydney	Burwood	245	6.0	287	7.1	8782	216.2
	Canada Bay	875	9.1	1182	12.3	36587	380.8
	Canterbury-Bankstown[1]	2595	6.9	3433	9.1	106907	282.9
	Inner West	2311	11.5	2663	13.3	87141	434.0
	Strathfield	494	10.5	598	12.7	16263	346.6
	Sydney[1]	3063	12.4	3611	14.7	98237	398.8
	LHD Total[2]	7086	10.2	8553	12.3	264045	379.0
Western NSW	Bathurst Regional	346	7.9	392	9.0	12891	295.5
	Blayney	77	10.4	50	6.8	2238	303.3
	Bogan	11	4.3	11	4.3	483	187.2
	Bourke	5	1.9	10	3.9	378	146.0
	Brewarrina	4	2.5	5	3.1	258	160.2
	Cabonne	45	3.3	69	5.1	2220	162.8
	Cobar	9	1.9	16	3.4	697	149.6
	Coonamble	13	3.3	16	4.0	718	181.4
	Cowra	64	5.0	72	5.7	2424	190.2
	Dubbo Regional	359	6.7	389	7.2	12951	241.1
	Forbes	35	3.5	45	4.5	1598	161.3
	Gilgandra	17	4.0	19	4.5	725	171.0
	Lachlan[1]	11	1.8	21	3.5	795	130.9
	Mid-Western Regional	140	5.5	210	8.3	5908	234.0
	Narromine	23	3.5	37	5.7	1265	194.1
	Oberon	23	4.3	36	6.7	1265	233.8
	Orange	432	10.2	499	11.8	14246	335.6
	Parkes	74	5.0	88	5.9	3211	216.4
	Walgett	12	2.0	25	4.2	1279	214.9
	Warren	21	7.8	35	13.0	994	368.6
	Warrumbungle Shire	28	3.0	54	5.8	2078	224.0
	Weddin	10	2.8	14	3.9	634	175.5
	LHD Total[2]	1755	6.2	2108	7.4	69019	242.2
Western Sydney	Blacktown	2922	7.8	4023	10.7	123102	328.8
	Cumberland	1746	7.2	2342	9.7	72913	301.9
	Parramatta[1]	1845	7.2	2385	9.3	67768	263.5
	The Hills Shire	1813	10.2	2335	13.1	73869	415.1
	LHD Total[2]	8056	7.7	10741	10.2	327397	310.8
NSW Total[3]		**67,744**	**8.4**	**84,448**	**10.4**	**2,748,965**	**339.8**

[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 27 SEPTEMBER 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.

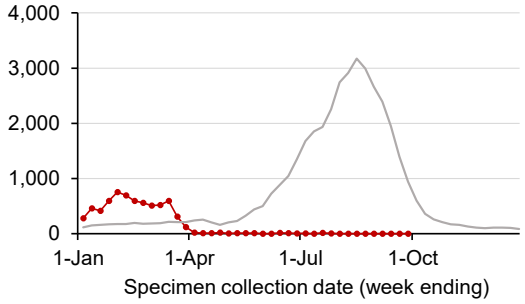
Specimen collection date	Total PCR tests conducted	Influenza A		Influenza B		Adeno-virus	Para-influenza	RSV	Rhinovirus	HMPV	Enterovirus
		No.	%Pos.	No.	%Pos.						
1 Jan—27 Sep 2020											
Total	964,576	6,616	0.69%	951	0.10%	6,909	9,031	5,924	119,382	2,041	4,333
Month ending											
3 February*	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	<0.01%	1,251	89	209	31,589	79	427
30 August	174,594	9	0.01%	2	<0.01%	1,137	37	299	13,926	14	235
Week ending											
6 September	47,013	2	<0.01%	1	<0.01%	266	11	127	2,741	10	49
13 September	37,909	2	0.01%	0	-	235	12	149	2,152	23	44
20 September	32,267	1	<0.01%	0	-	211	5	250	1,844	16	70
27 September	28,300	1	<0.01%	0	-	226	7	340	1,679	12	96

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

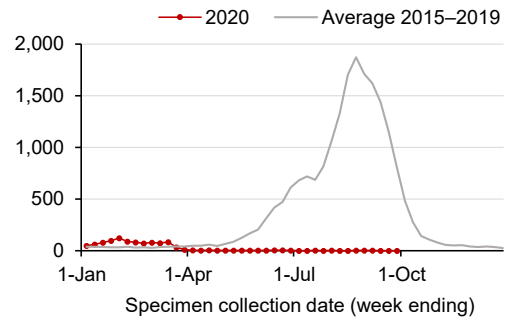
APPENDIX C: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 27 SEPTEMBER 2020

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.

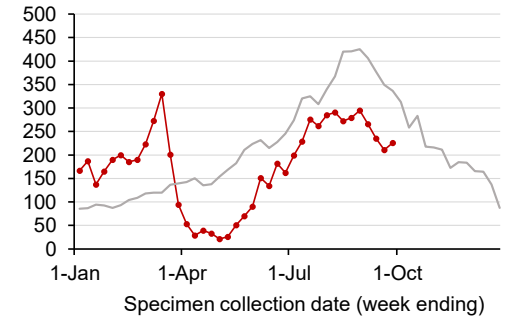
Influenza A



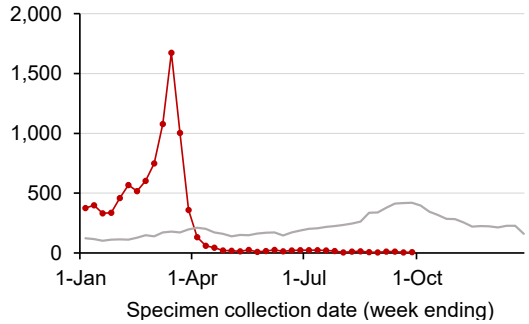
Influenza B



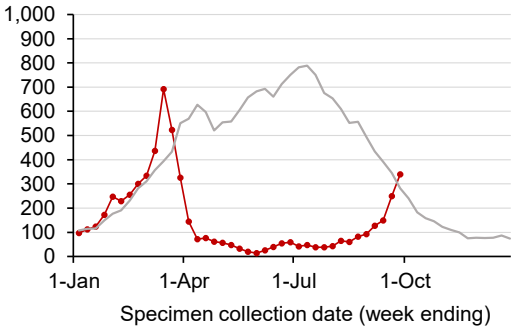
Adenovirus



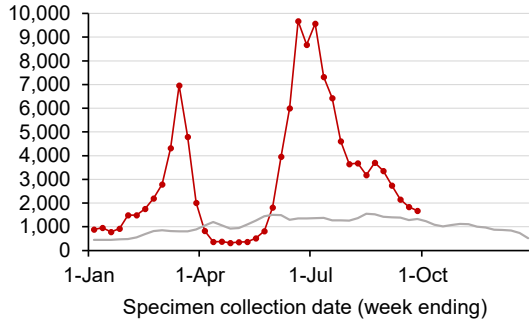
Parainfluenza



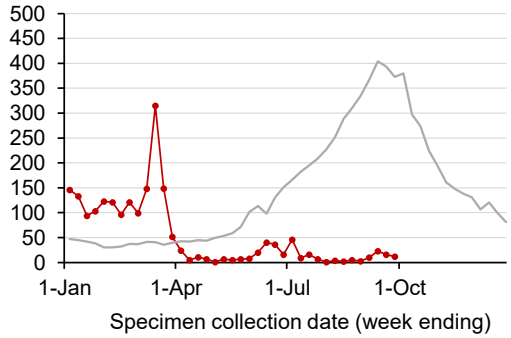
Respiratory syncytial virus (RSV)



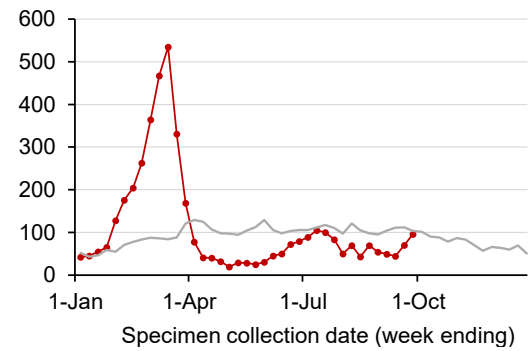
Rhinovirus



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.
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.