COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 39, ENDING 26 SEPTEMBER 2020

Published 30 September 2020

SUMMARY FOR THE WEEK ENDING 26 SEPTEMBER

- There were two locally-acquired COVID-19 cases reported in NSW this week (down 83%). One of the two cases reported this week had an unknown source, while the other was part of a known cluster. No new clusters were reported.
- Both cases had symptoms at diagnosis: one was in isolation within one day of symptoms, and the other case entered isolation three days after onset of illness.
- There were 14 locally-acquired cases reported in the last two weeks. Most were reported in residents of South Western Sydney (36%, 5/14) and Sydney Eastern Sydney (29%, 4/14) LHDs.
- The NSW Sewage Surveillance Program detected SARS-CoV-2 virus in three of 43 sewage samples. These samples were taken from Bondi, Malabar and North Head and are expected given the presence of known COVID-19 cases in the sewerage catchment areas.
- Testing decreased for the fifth consecutive week (down 17%), though overall testing rates remain reasonably high.
- It is essential that people continue to 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.
- Wear a mask on public transport, ride share, taxis, shopping, 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

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 within 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.

Indicators of effective prevention measure for COVID-19 in NSW

There were two locally acquired cases reported in the last week both reported symptoms at diagnosis. Of the two cases, one sought testing within one day of developing symptoms. The other case entered isolation within 3 days of their onset of illness. It is important that people seek testing immediately if mild symptoms develop.

The time taken to notify cases remains stable with 100% of new cases in the week ending 26 September notified to NSW Health within one day of swab collection. Public health staff are responding quickly, with all cases interviewed within one day of notification.

SECTION 2: HOW IS THE OUTBREAK TRACKING IN NSW?

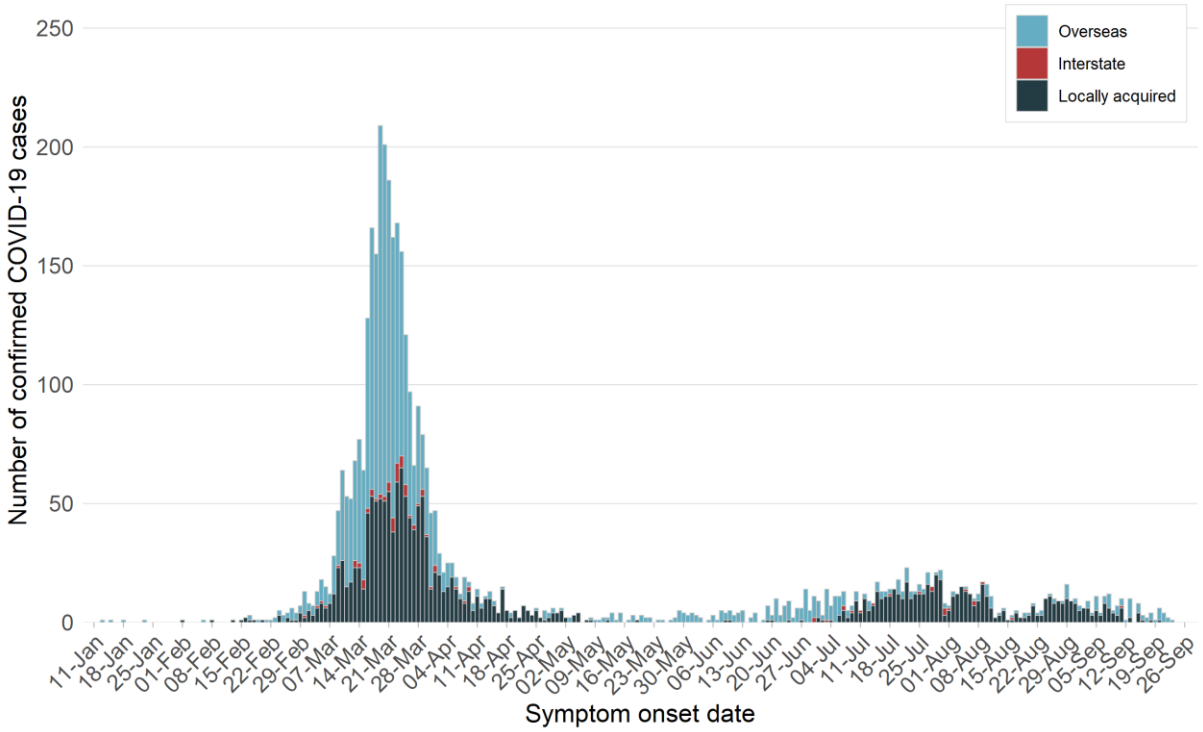
Table 1. COVID-19 cases and tests reported in NSW, up to 26 September 2020

	Week ending 26 Sep	Week ending 19 Sep	% change	Total to 26 Sep
Number of cases	18	34	↓ 47%	4,029
Overseas acquired	16	21	↓ 24%	2,142
Interstate acquired	0	1	-	90
Locally acquired	2	12	↓ 83%	1,797
Number of deaths	0	1	-	55
Number of tests	84,372	101,770	↓ 17%	2,681,082

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



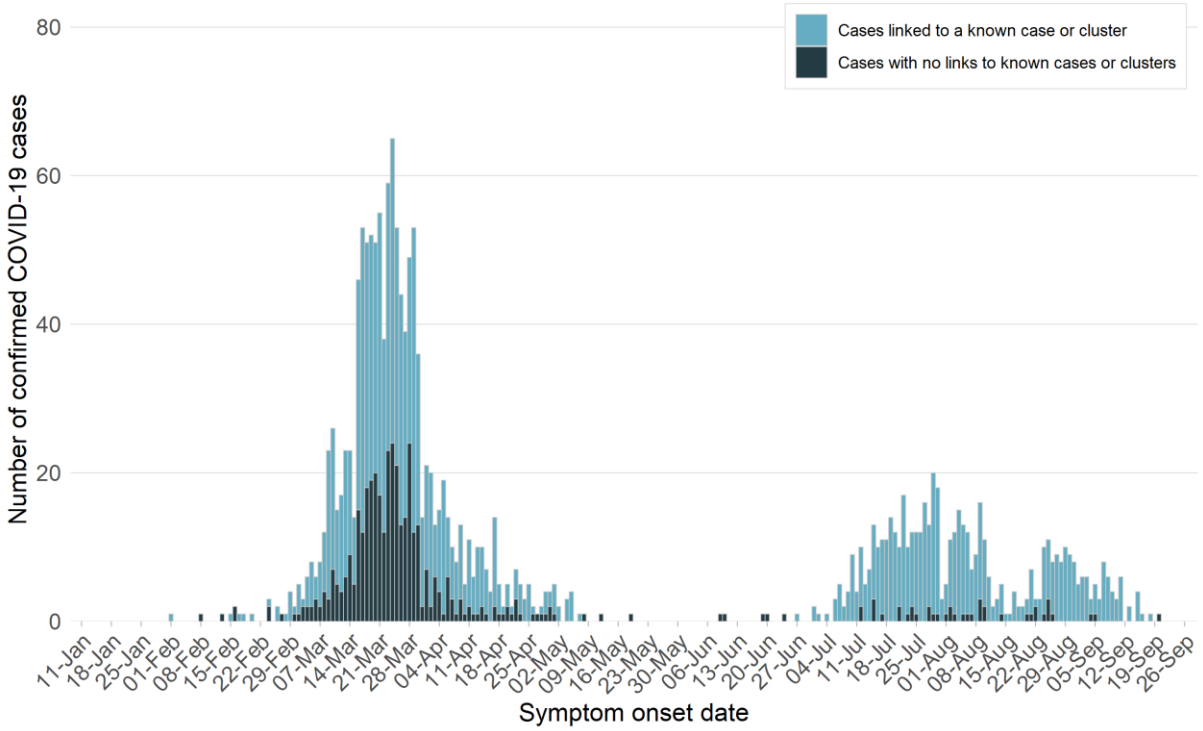
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: 27% of COVID-19 infections diagnosed in the last two weeks in NSW have been **locally acquired**. The number of new cases diagnosed in NSW decreased significantly following a peak in mid-March. An increase in overseas-acquired cases during June was largely due to a program of screening all overseas travellers two and 10 days after arrival in NSW. An increase in locally-acquired cases was reported from early July. These early cases were linked to the outbreak in Victoria.

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



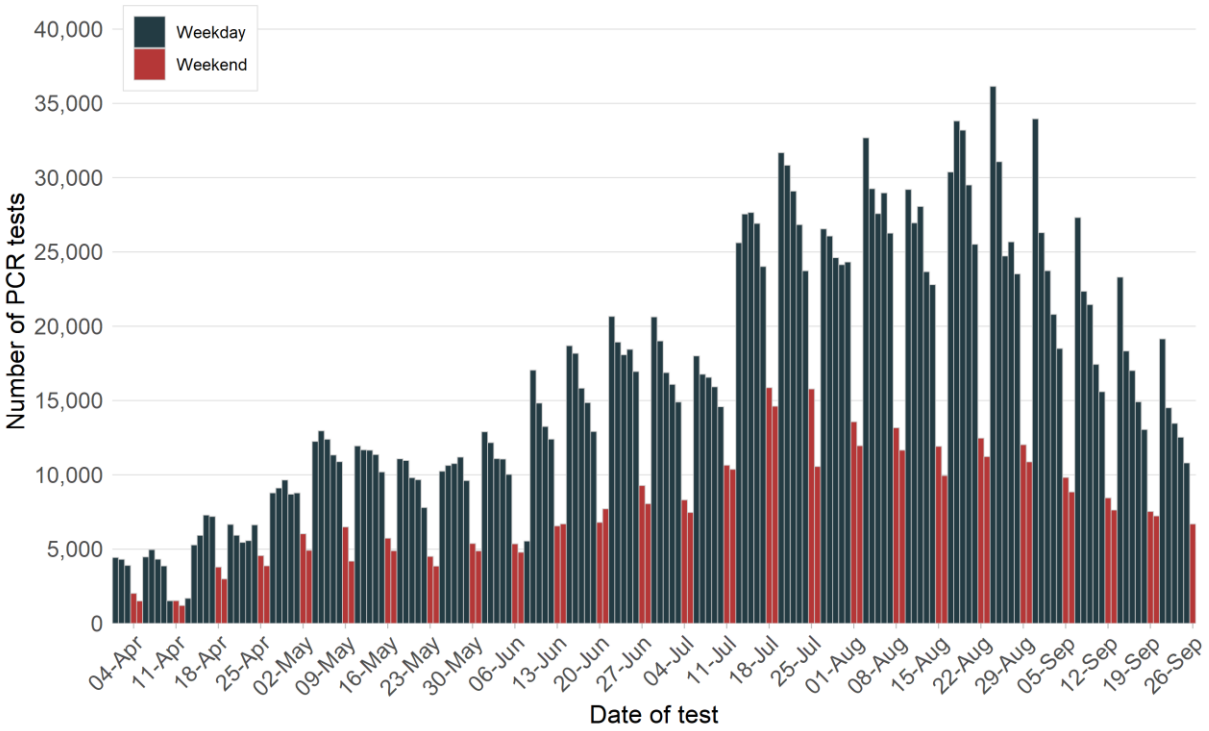
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Of the locally-acquired cases with an onset in the last four weeks, 96% (78/81) 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.

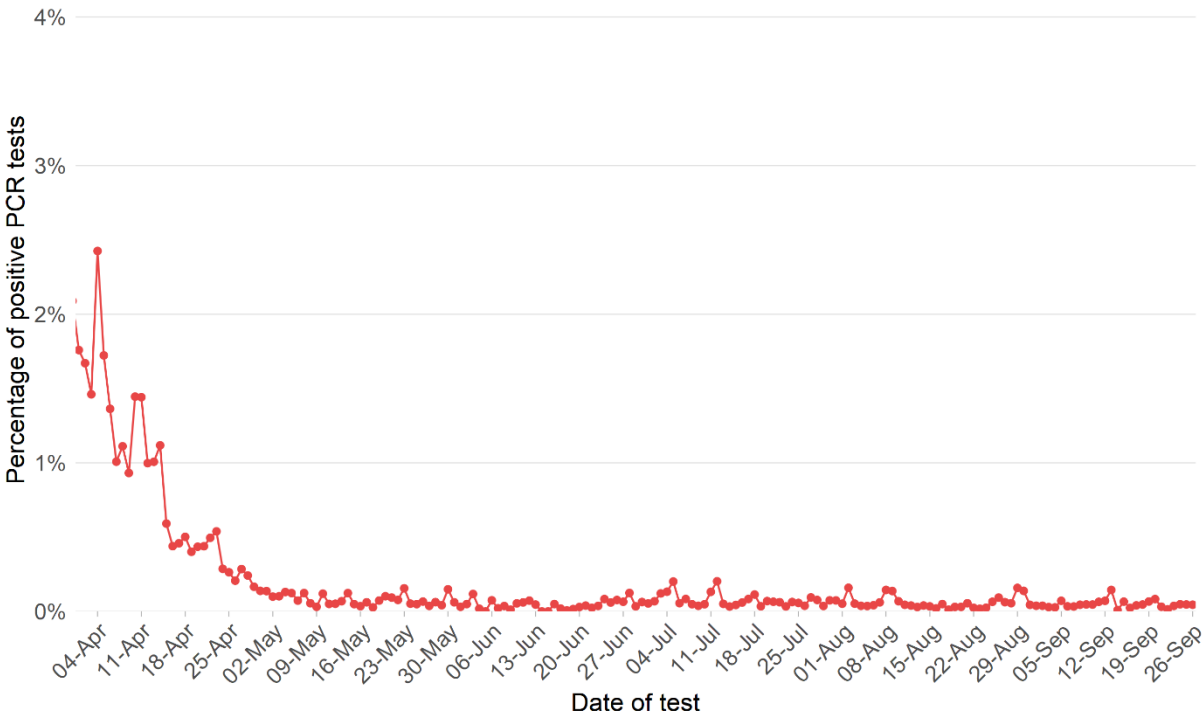
Interpretation: Early in the outbreak the focus of testing was on returned travellers and close contacts of confirmed cases, whereas now testing is recommended for anyone with even mild respiratory symptoms or unexplained fever.

A 17% decrease in testing was reported in the week ending 26 September compared with the previous week – the fifth consecutive weekly decrease. The number of tests reported in the last week is similar to the average recorded throughout June. On average, 10 tests were conducted per 1,000 people in NSW for the week ending 26 September. This compares with an average of 13 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

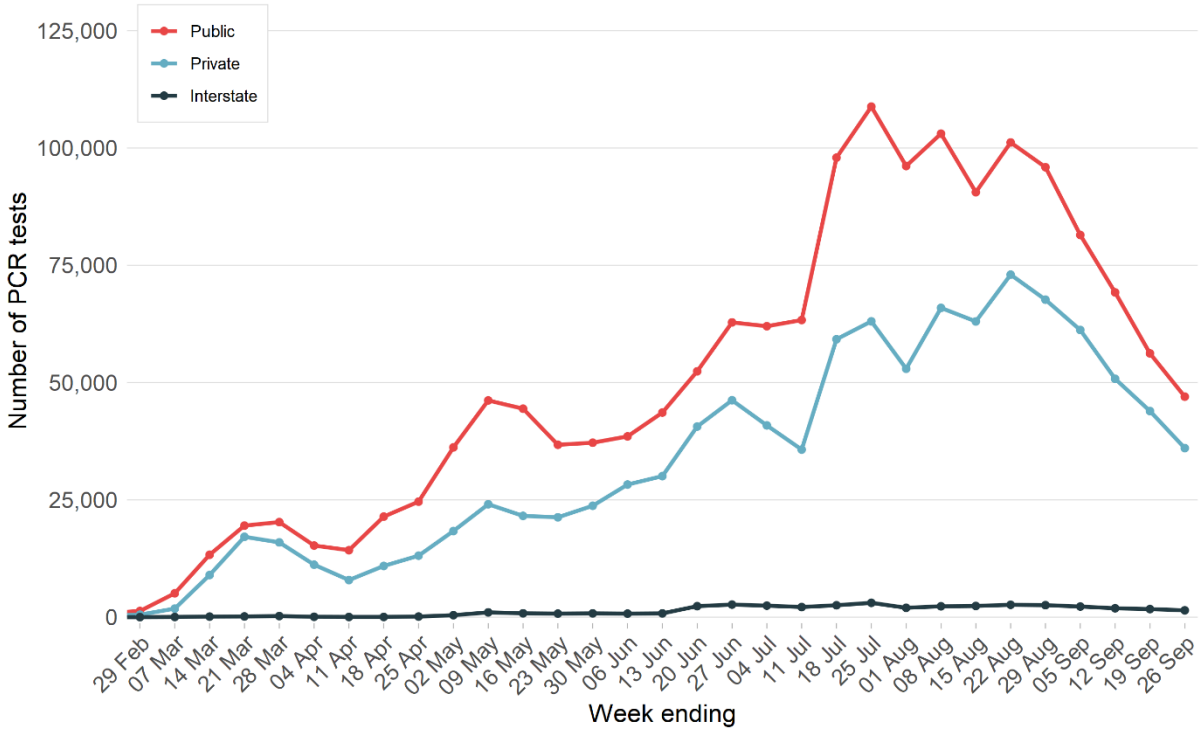


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

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 26 September, testing in both public and private facilities decreased compared to the previous week. Approximately 56% 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, 30 August to 26 September 2020

Locally-acquired cases	Week ending				
	26 Sep	19 Sep	12 Sep	05 Sep	Total
Cases who are linked to a known case or cluster	1	12	33	50	**96**
Cases with no links to other cases or clusters	1	0	1	3	**5**
Total	**2**	**12**	**34**	**53**	**101**

Interpretation: The majority (95%) of cases in the four weeks ending 26 September were linked to known cases or clusters. The last case with an unknown source was reported on 23 September.

Table 3. Locally-acquired COVID-19 cases by LHD of residence, by week, 30 August to 26 September 2020

Local Health District	Week ending				Total	Days since last case
	26 Sep	19 Sep	12 Sep	5 Sep		
Central Coast	0	0	0	1	**1**	26
Illawarra Shoalhaven	0	0	0	1	**1**	22
Nepean Blue Mountains	0	3	4	0	**7**	11
Northern Sydney	0	1	3	10	**14**	11
South Eastern Sydney	1	3	9	16	**29**	6
South Western Sydney	1	4	1	8	**14**	3
Sydney	0	1	8	4	**13**	13
Western Sydney	0	0	8	12	**20**	15
Far West	0	0	0	0	**0**	177
Hunter New England	0	0	0	0	**0**	51
Mid North Coast	0	0	0	0	**0**	158
Murrumbidgee	0	0	1	0	**1**	19
Northern NSW	0	0	0	0	**0**	63
Southern NSW	0	0	0	0	**0**	47
Western NSW	0	0	0	1	**1**	25
Total	**2**	**12**	**34**	**53**	**101**	

Interpretation: The majority of locally-acquired cases reported in the two weeks up to 26 September were residents of South Western Sydney LHD (36%, 5/14) and South Eastern Sydney (29%, 4/14) 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.

Table 4. Locally-acquired COVID-19 cases with no identified links to known cases or clusters by LHD of residence, by week, 30 August to 26 September 2020

Local Health District	Week ending				Total
	26 Sep	19 Sep	12 Sep	5 Sep	
Northern Sydney	0	0	0	1	**1**
South Eastern Sydney	0	0	1	0	**1**
South Western Sydney	1	0	0	1	**2**
Western NSW	0	0	0	1	**1**
Total	**1**	**0**	**1**	**3**	**5**

Interpretation: One case reported in the week ending 26 September had no links to known cases however, evidence suggests that the case may be linked to the Liverpool cluster and investigations are ongoing.

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 are currently five previously reported clusters that are have had cases reported in the last four weeks across metropolitan NSW. The primary exposure locations for these clusters include Concord Hospital, St Paul's Catholic College, City Tattersalls gym, Eastern Suburbs Legion Club and Liverpool Hospital. In the week ending 26 September there was one case linked to Concord Hospital and one further case that lives in a residential home setting that has no identified links to a case or cluster.

Concord Hospital cluster

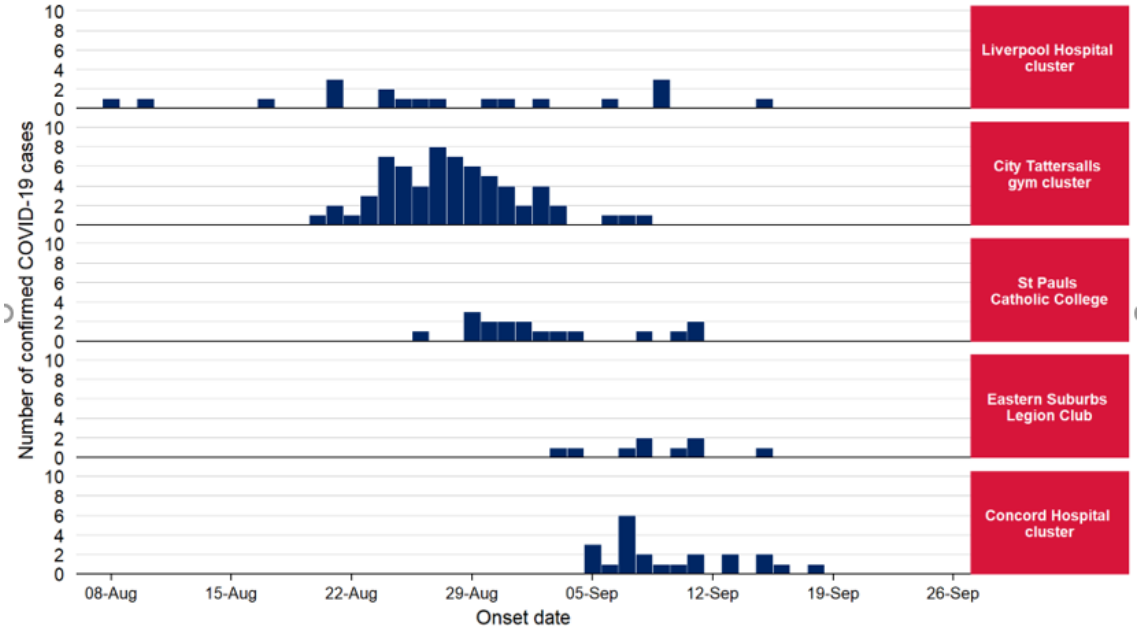
On 5 September, Sydney Public Health Unit was notified of a healthcare worker who worked in the Concord and Liverpool Emergency Departments whilst infectious. A further three cases were reported to the NSW Health on 6 September: two associated with Concord Hospital (a healthcare worker and a visitor) and a healthcare worker at Liverpool Hospital. Since 6 September, there have been an additional 19 cases across four exposure locations – including a hotel in Parramatta and a school in the Blue Mountains. In the week ending 26 September there was one case linked to this cluster; a household contact of a previously reported case who works at Concord Hospital.

Table 5. Cases linked to Concord Hospital cluster by setting of exposure

Setting of exposure	Exposure site	Exposure site Local area	No. cases	Total cases
Primary exposure location				
Healthcare	Concord Hospital	Concord	9	10
	Liverpool Hospital	Liverpool	1	
Secondary exposure locations				
Bar/Club	Hotel	Parramatta	1	1
Tertiary exposure location				
Educational facility	K-12 school	Blue Mountains	1	1
Onward transmission in a residential home				
Household contacts	Own home		9	10
Non-household contacts	Own home/house of a friend		1	
Total				**22**

Interpretation: 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 linked to the cluster, including seven at Concord Hospital and one at Liverpool Hospital. There were ten cases exposed in residential settings who were from six separate households.

Figure 6. COVID-19 cases by cluster and onset date in the last two months, NSW, 2020



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

Previously reported active clusters with no new cases identified this week

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.

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 (11%, 7/65) 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.

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.

Liverpool Hospital

The last case associated with this cluster was notified on 19 September. 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.

Table 6. Previously reported clusters with no new cases identified in the week ending 26 September 2020

Date cluster first identified	Cluster	Cases linked in the week ending 19 Sep	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

*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 of COVID-19 cases in healthcare workers in the last week.

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

Healthcare setting	Week ending				
	26 Sep	19 Sep	12 Sep	5 Sep	Total
NSW public health setting	0	3	7	0	10
Private health setting	0	0	0	2	2
Total	**0**	**3**	**7**	**2**	**12**

Interpretation: Most 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 health care.

No cases in Aboriginal people were reported in the week ending 26 September. In total, 45 Aboriginal people have been diagnosed with COVID-19, representing 1% of all cases in NSW.

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 12 September 2020, with Aboriginal status ascertained for approximately 90% of all COVID-19 test records.

Pregnant women

One case in a pregnant woman was reported in the week ending 26 September. The woman acquired her infection overseas and was in hotel quarantine at the time of diagnosis. As people 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% of the deaths were in overseas-acquired cases.

Table 9. 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	58	0%
5-11 years	0	67	0%
12-17 years	0	116	0%
18-29 years	0	919	0%
30-49 years	0	1,222	0%
50-59 years	1	573	0.2%
60-69 years	4	560	0.7%
70-79 years	14	355	3.9%
80+ years	36	159	22.6%
Total	**55**	**4,029**	**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.

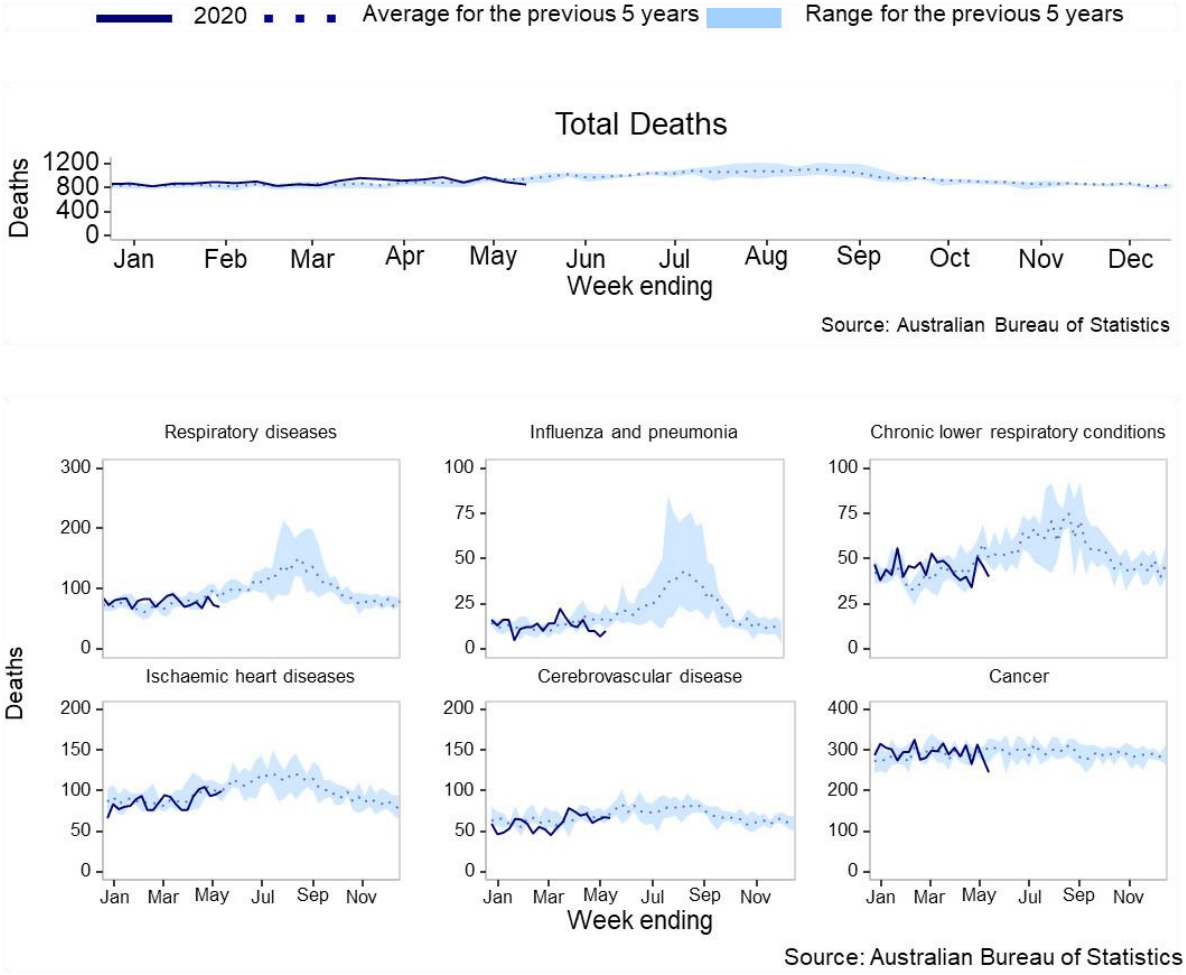
Internationally it is estimated that 3.1% of COVID-19 cases are reported to have died as a result of their infection.[2] Countries such as Italy, the United Kingdom and Spain have reported higher mortality rates (12.0%, 10.7% and 4.8%), while NSW reports similar rates to South Korea (1.7%) and New Zealand (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 May 2020 (https://www.abs.gov.au/ausstats/abs@.nsf/mf/3303.0.55.004) and provides monthly data for NSW-registered deaths to NSW Health around three months after the close of the month. The reported counts are doctor-certified deaths and excludes those referred to a coroner, such as suicides, accidents and assaults. In Australia, approximately 86-89% of deaths are certified by a doctor. Deaths from any cause are seasonal, increasing in winter and decreasing in summer.

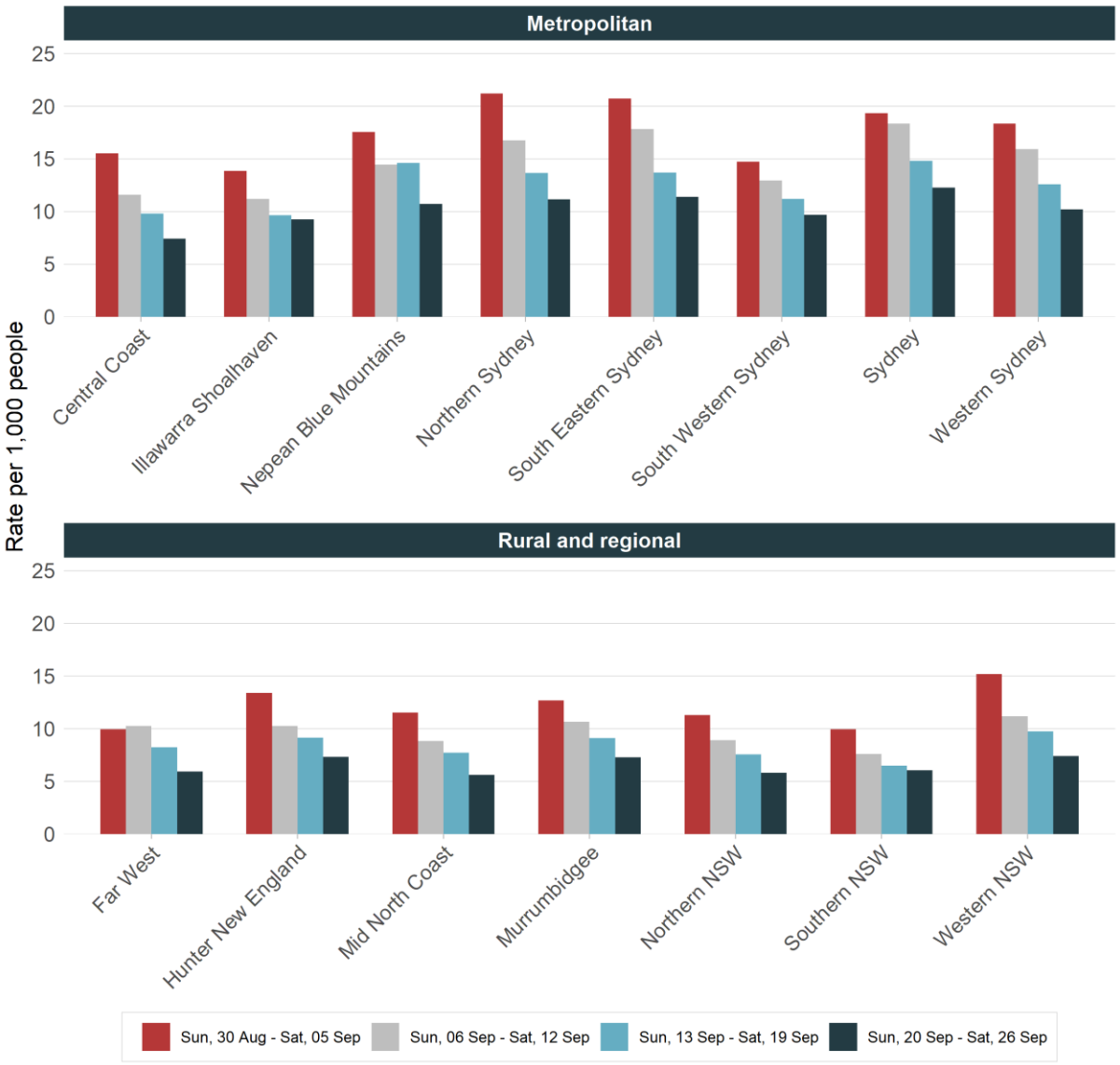
Figure 7. Deaths from any cause in NSW from January to 26 May 2020



Interpretation: When compared with previous years, there have been fewer deaths due to respiratory diseases, and in particular pneumonia, 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 8. Rates of COVID-19 testing by LHD of residence and week

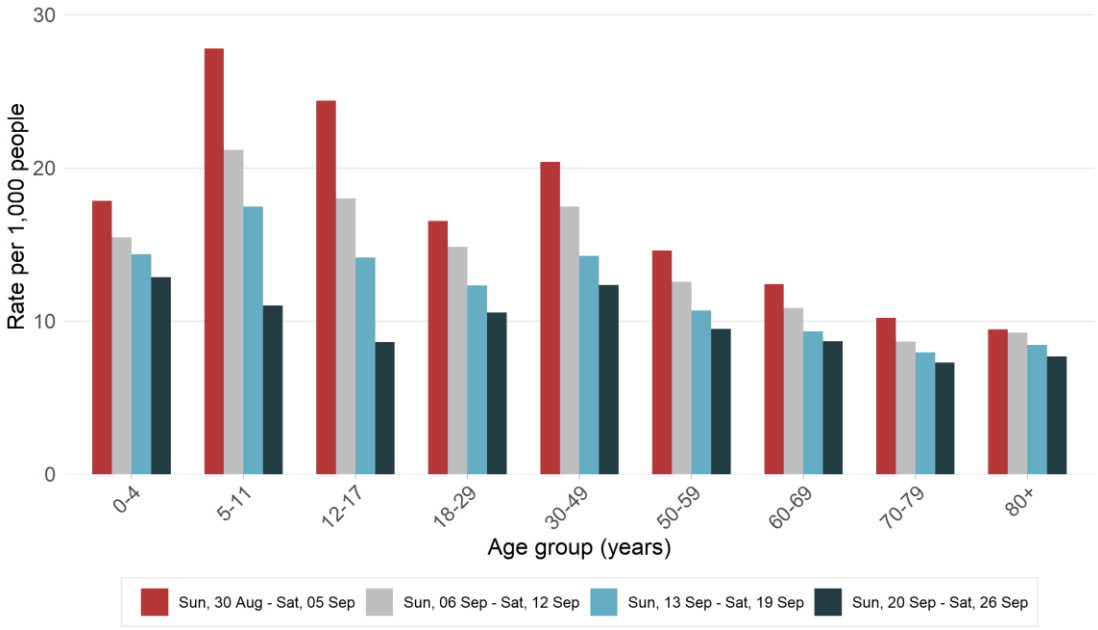


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 26 September (10 per 1,000) were lower compared to the previous week (13 per 1,000). Testing rates decreased in all LHDs.

Testing by age group

Figure 9. Rates of COVID-19 testing by age group and week

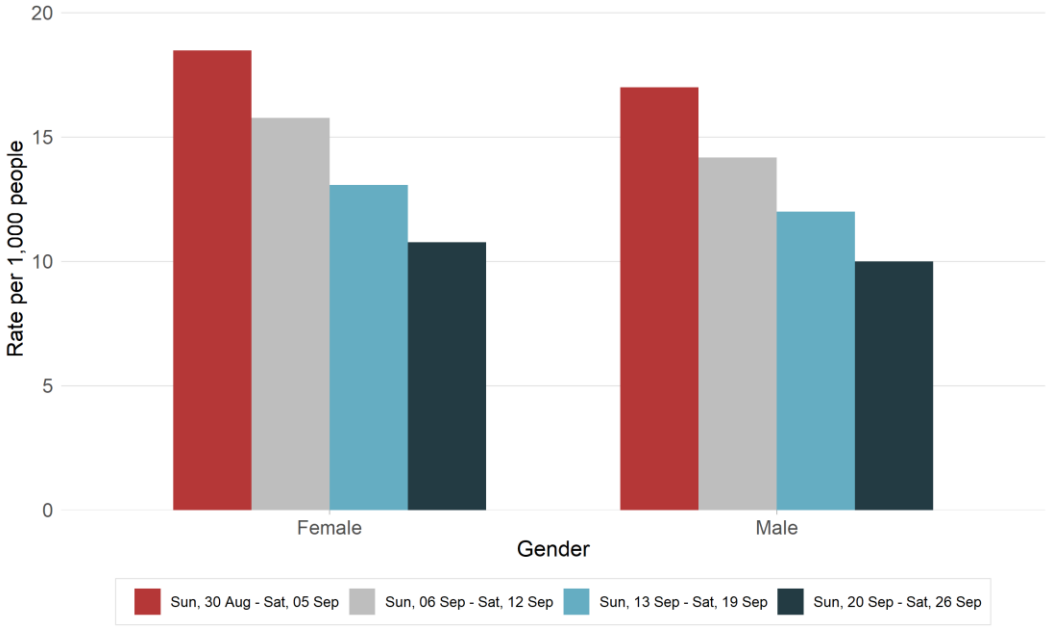


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates decreased in all age groups for the week ending 26 September. The greatest decrease in testing rates was for primary and high school-aged children.

Testing by gender

Figure 10. 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 26 September 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 43 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 locations in NSW including Perisher, Newcastle, Byron Bay, Blue Mountains and Metropolitan Sydney sites. All detections to date, with the exception of Perisher, were in areas of known COVID-19 cases.

In the week ending 26 September 2020, three of 43 sewage samples detected SARS-CoV-2. These samples were taken from Bondi, North Head and Malabar. These wastewater treatment sites serve over 3 million people including Sydney city and quarantine hotels, and northern and western suburbs.

Table 10. Locations with positive SARS-CoV-2 detections in sewerage samples, 12 July to 26 September 2020

			12 Jul	19 Jul	26 Jul	2 Aug	9 Aug	16 Aug	23 Aug	30 Aug	6 Sep	13 Sep	20 Sep
			Week										
Pop.	Location	LHD	29	30	31	32	33	34	35	36	37	38	39
60, 514	Blue Mountains (Winmalee)	NBMLHD											
318,810	Bondi	S&SESLHD											
233,176	Cronulla	SESLHD											
	Malabar 1	S&SES&SWSLHD											
1,857,740	Malabar 2	S&SES&SWSLHD											
1,341,986	North Head	NS&WSLHD											
110,114	Penrith	NBMLHD											
163,374	Quakers Hill	WSLHD											
119,309	Rouse Hill	WSLHD											
73,686	Shellharbour	ISHLHD											
163,147	St Marys	NBM&WSLHD											
196,488	Wollongong	ISHLHD											
147,500	Gosford-Kinkumber	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
	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
	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											
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											

Pop.	Location	LHD	12 Jul (29)	19 Jul (30)	26 Jul (31)	2 Aug (32)	9 Aug (33)	16 Aug (34)	23 Aug (35)	30 Aug (36)	6 Sep (37)	13 Sep (38)	20 Sep (39)
			Week										
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

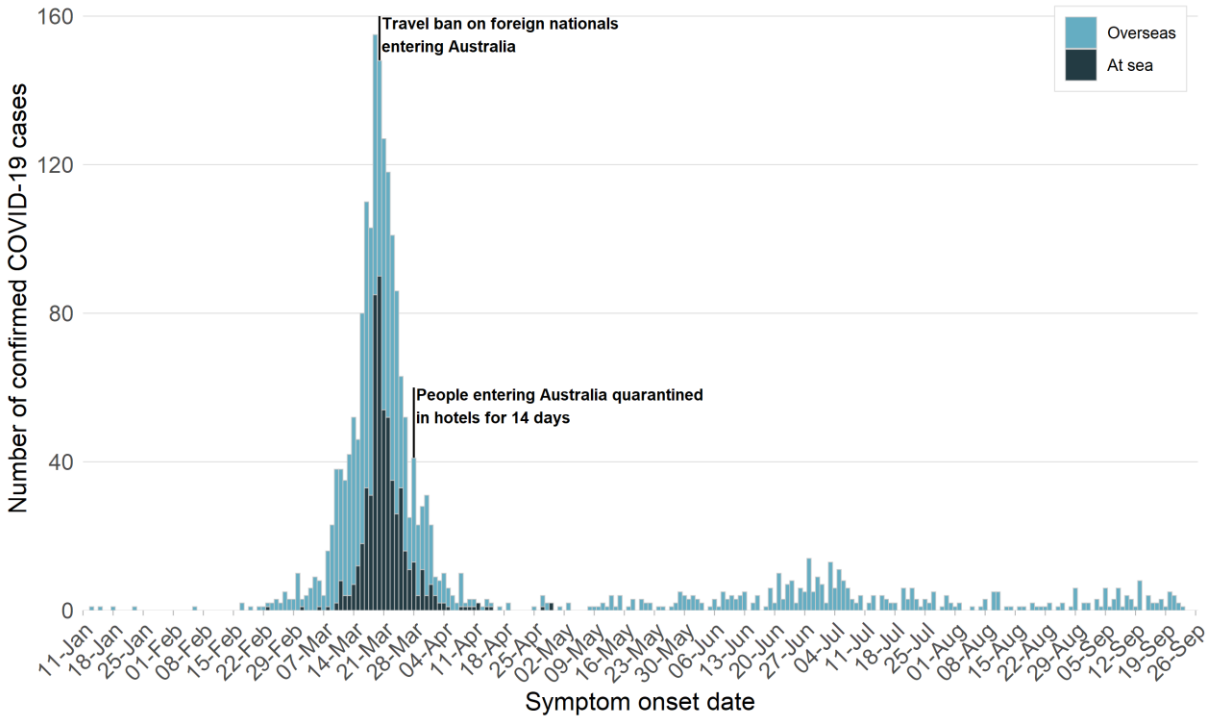
Interpretation: In the last four weeks there were four locations that detected SARS-CoV-2. These results aligned with known cases in those areas in recent weeks.

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



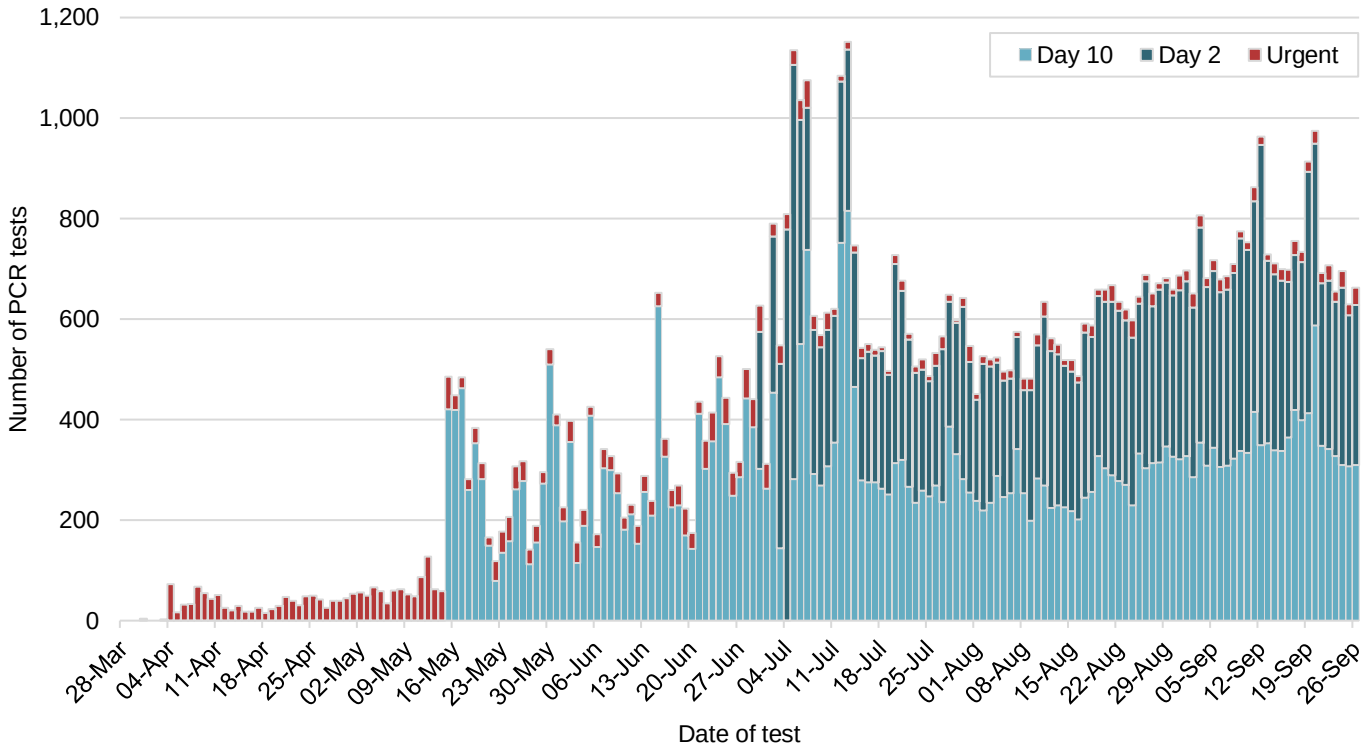
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: The daily number of new cases in returned travellers has decreased markedly since March in line with travel restrictions. There were 16 overseas-acquired cases reported in the week ending 26 September, 24% lower 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 12. COVID-19 testing in returned travellers in hotel quarantine, reported from 28 March to 26 September, NSW, 2020



Interpretation: In the week ending 26 September, there were 5,016 tests conducted through the hotel quarantine screening programs. Of these, 16% were screening tests for domestic travellers from Victoria. Since screening began on 28 March, a total of 75,236 PCR tests have been conducted and 392 COVID-19 cases have been detected.

SECTION 9: OTHER RESPIRATORY INFECTIONS IN NSW

Influenza and other respiratory virus cases and tests reported in NSW, up to 20 September 2020

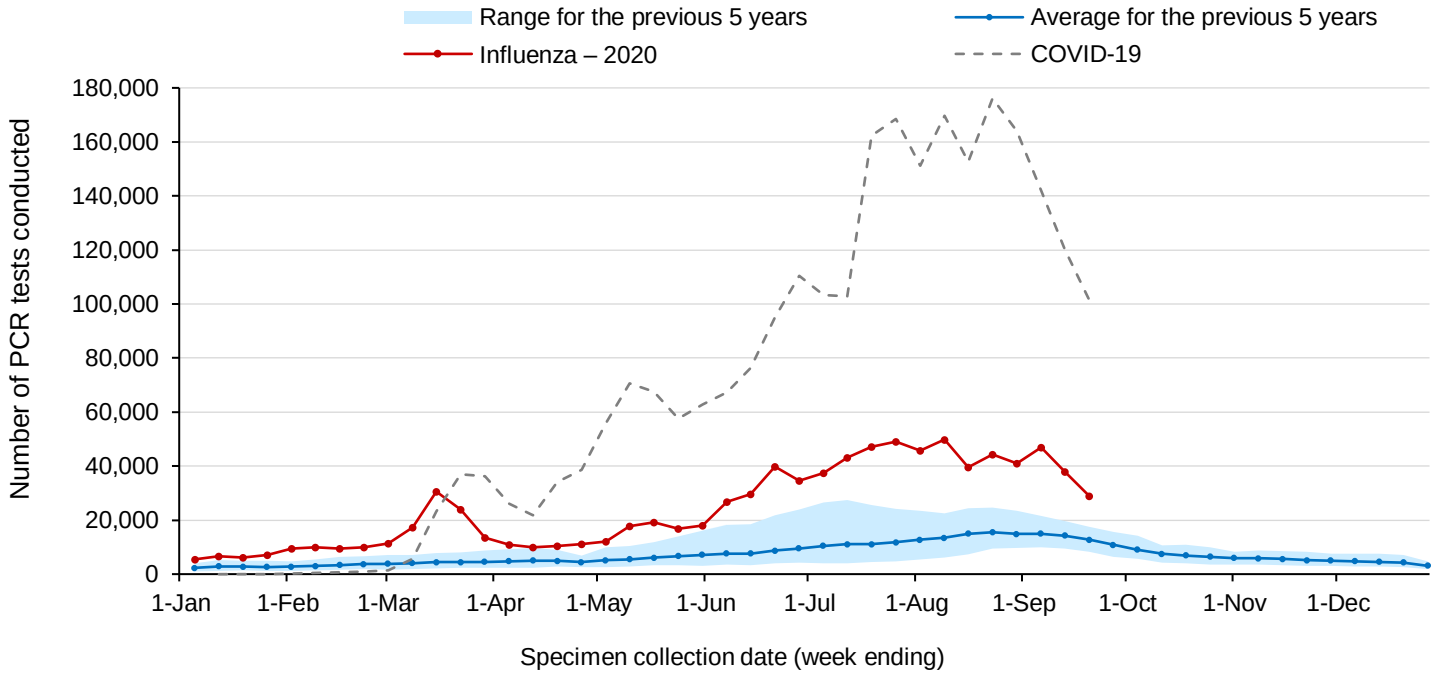
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted;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

The most recent data available is for testing carried out to 20 September. A total of 928,287 influenza tests have been performed at participating laboratories to 20 September, with 29,007 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 13. Testing for influenza and COVID-19 by week, to 20 September 2020

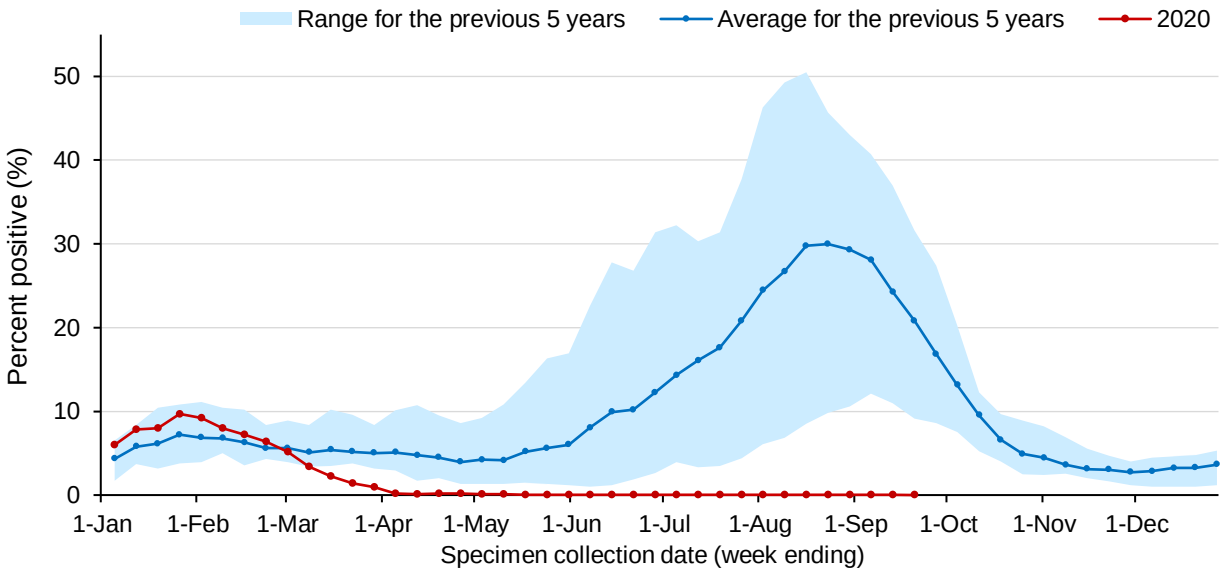


Interpretation: In every week this year, the number of influenza tests performed has exceeded the previous five-year average.

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.

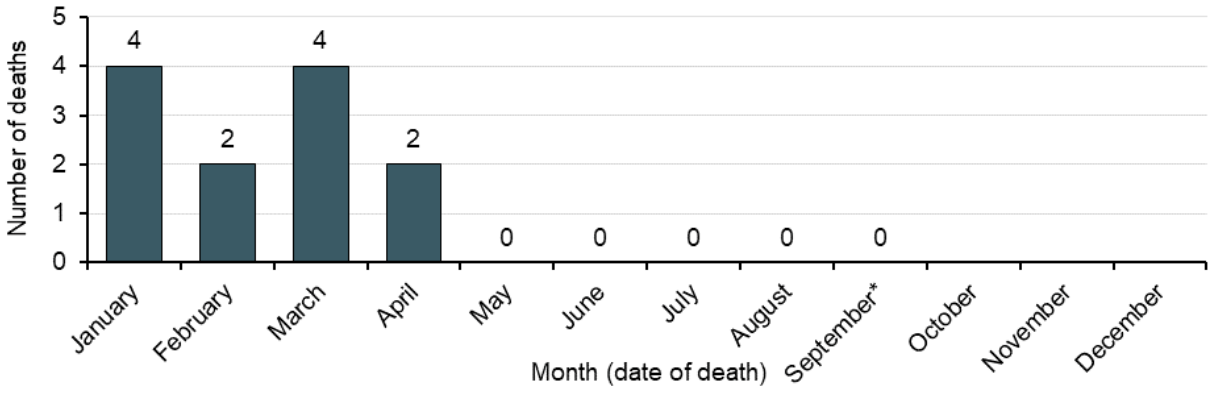
Figure 14. Proportion of tests positive for influenza, to 20 September 2020



Interpretation: In the week ending 20 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 15. Laboratory-confirmed influenza deaths by month of death, to 20 September 2020



Interpretation: No influenza deaths were reported in the week ending 20 September. The number of influenza-related deaths identified via Coroner's reports and death registrations from 1 January to 20 September 2020 is lower than the same period last year (12 deaths in 2020 compared with 258 in 2019).[3] Two-thirds of the deaths were in people aged 65 years and over.

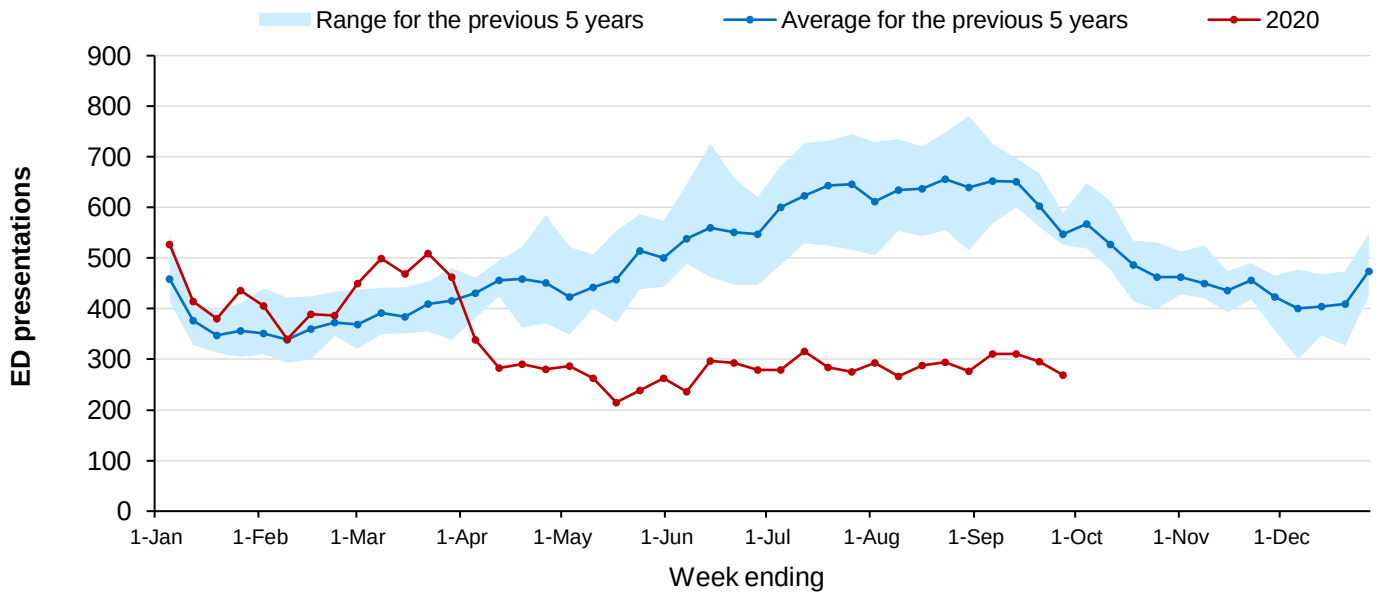
[3] Includes deaths in people with laboratory-confirmed influenza.

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 16. Emergency Department pneumonia presentations in NSW by week, to 26 September 2020



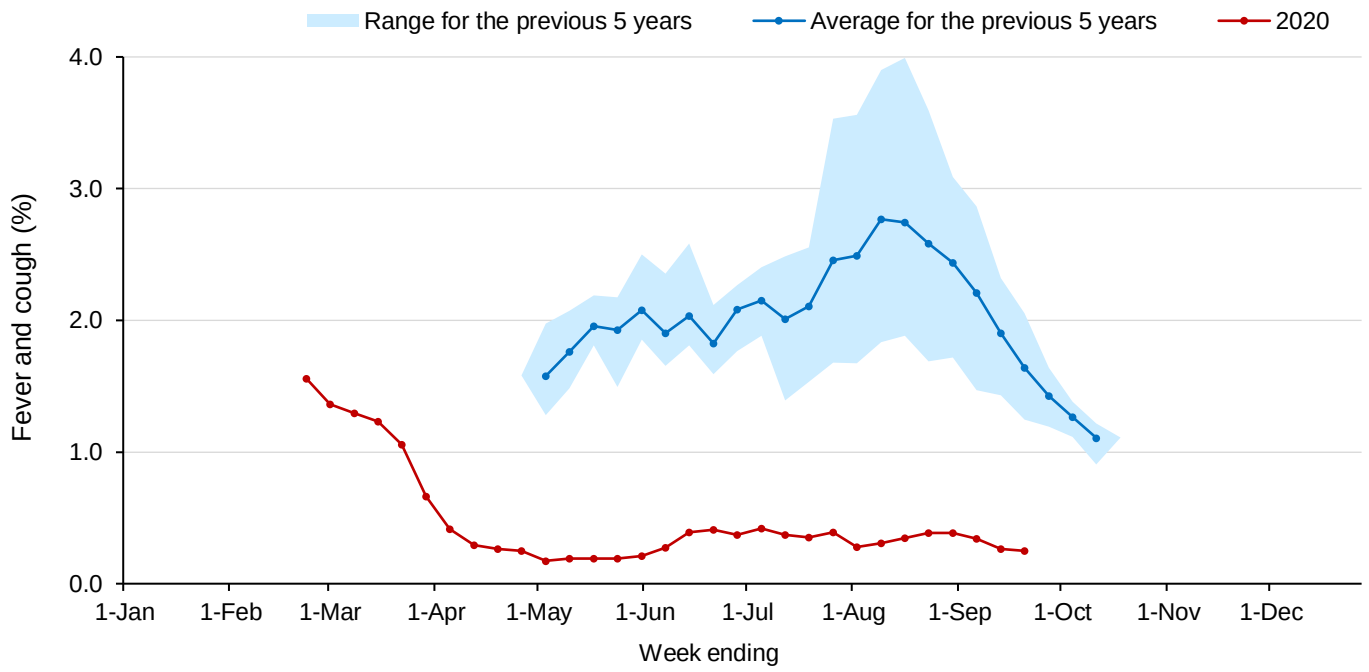
Interpretation: Pneumonia presentations decreased from the end of March and have continued to remain well below the usual range for this time of year.

[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 in the community have flu-like symptoms?

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 17. Proportion of FluTracker participants in NSW reporting influenza-like illness, to 20 September 2020



Interpretation: In NSW in the week ending 20 September, of the 23,132 people surveyed, 58 (0.25%) reported flu-like symptoms. The percentage 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	
		26 September		19 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]	2618	7.4	3461	9.8	100815	285.7
Far West	Balranald	13	5.6	14	6.0	378	161.7
	Broken Hill	91	5.2	145	8.3	4051	231.8
	Central Darling	5	2.7	12	6.5	295	160.4
	Wentworth	70	9.9	78	11.1	1697	240.6
	LHD Total[2]	179	5.9	249	8.3	6421	213.0
Hunter New England	Armidale Regional	204	6.6	220	7.2	7871	255.7
	Cessnock	279	4.7	378	6.3	13187	219.8
	Dungog	52	5.5	71	7.5	2002	212.5
	Glen Innes Severn	32	3.6	47	5.3	1561	176.0
	Gunnedah	76	6.0	103	8.1	2719	214.4
	Gwydir	24	4.5	22	4.1	567	105.9
	Inverell	85	5.0	128	7.6	3571	211.4
	Lake Macquarie	1819	8.8	2229	10.8	69179	336.0
	Liverpool Plains	45	5.7	53	6.7	1769	223.8
	Maitland	714	8.4	996	11.7	32099	376.9
	Mid-Coast	434	4.6	572	6.1	18994	202.4
	Moree Plains	56	4.2	55	4.2	2527	190.6
	Muswellbrook	83	5.1	119	7.3	3825	233.6
	Narrabri	50	3.8	77	5.9	2334	177.7
	Newcastle	1721	10.4	2051	12.4	69459	419.5
	Port Stephens	510	6.9	594	8.1	24134	328.4
	Singleton	165	7.0	220	9.4	7775	331.4
	Tamworth Regional	498	8.0	621	9.9	18202	291.0
	Tenterfield	27	4.1	36	5.5	926	140.4
	Upper Hunter Shire	67	4.7	102	7.2	3390	239.1
	Uralla	36	6.0	29	4.8	1014	168.7
	Walcha	18	5.7	21	6.7	746	238.0
	LHD Total[2]	6986	7.3	8736	9.2	287611	302.0
Illawarra Shoalhaven	Kiama	221	9.5	236	10.1	7487	320.2
	Shellharbour	678	9.3	713	9.7	23200	316.8
	Shoalhaven	1110	10.5	913	8.6	26679	252.5
	Wollongong	1882	8.6	2196	10.1	61601	282.4
	LHD Total[2]	3891	9.3	4058	9.7	118967	283.5
Mid North Coast	Bellingen	71	5.5	104	8.0	2807	216.0
	Coffs Harbour	436	5.6	534	6.9	15821	204.7
	Kempsey	192	6.5	280	9.4	7189	241.7
	Nambucca	89	4.5	109	5.5	3916	197.7

Local Health District	Local Government Area	Week ending				Total	
		26 September		19 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
	Port Macquarie-Hastings	479	5.7	718	8.5	20136	238.2
	LHD Total[2]	1267	5.6	1745	7.7	49869	221.0
Murrumbidgee	Albury	468	8.6	624	11.5	12373	227.6
	Berrigan	32	3.7	57	6.5	1462	167.1
	Bland	57	9.5	39	6.5	1233	206.5
	Carrathool	6	2.1	12	4.3	253	90.4
	Coolamon	26	6.0	54	12.4	982	226.2
	Cootamundra-Gundagai Regional	57	5.1	83	7.4	2250	200.3
	Edward River	64	7.1	63	6.9	2043	224.9
	Federation	68	5.5	82	6.6	2019	162.3
	Greater Hume Shire	67	6.2	101	9.4	2399	222.9
	Griffith	251	9.3	315	11.7	6602	244.3
	Hay	8	2.7	17	5.8	413	140.1
	Hilltops	134	7.2	190	10.2	3995	213.6
	Junee	42	6.3	32	4.8	1009	151.0
	Lachlan[1]	19	3.1	26	4.3	782	128.7
	Leeton	68	5.9	84	7.3	1993	174.1
	Lockhart	18	5.5	16	4.9	629	191.5
	Murray River	20	1.7	28	2.3	604	49.8
	Murrumbidgee	8	2.0	11	2.8	614	156.8
	Narrandera	27	4.6	35	5.9	872	147.8
	Snowy Valleys	82	5.7	108	7.5	3345	231.0
	Temora	39	6.2	22	3.5	1027	162.8
	Wagga Wagga	626	9.6	744	11.4	19046	291.9
	LHD Total[2]	2173	7.3	2721	9.1	65424	219.5
Nepean Blue Mountains	Blue Mountains	1200	15.2	1751	22.1	32673	413.0
	Hawkesbury	591	8.8	891	13.2	23226	345.1
	Lithgow	128	5.9	176	8.2	5117	236.8
	Penrith	2314	10.9	2945	13.8	82881	389.2
	LHD Total[2]	4205	10.8	5715	14.6	142726	365.0
Northern NSW	Ballina	285	6.4	343	7.7	11281	252.8
	Byron	304	8.7	410	11.7	10258	292.4
	Clarence Valley	246	4.8	301	5.8	8953	173.3
	Kyogle	37	4.2	58	6.6	1383	157.2
	Lismore	278	6.4	405	9.3	11658	266.8
	Richmond Valley	144	6.1	213	9.1	5491	234.0
	Tenterfield	27	4.1	36	5.5	926	140.4
	Tweed	506	5.2	607	6.3	19170	197.6
	LHD Total[2]	1807	5.8	2345	7.6	68424	220.5
Northern Sydney	Hornsby	1472	9.7	1772	11.7	44044	289.7
	Hunters Hill	360	24.0	457	30.5	10493	700.5

Local Health District	Local Government Area	Week ending				Total	
		26 September		19 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
	Ku-ring-gai	1847	14.5	2267	17.8	54021	424.9
	Lane Cove	847	21.1	1074	26.8	28631	713.0
	Mosman	353	11.4	372	12.0	11149	359.9
	North Sydney	657	8.8	722	9.6	21009	280.0
	Northern Beaches	2758	10.1	3261	11.9	89168	326.0
	Parramatta[1]	2385	9.3	2999	11.7	65921	256.3
	Ryde	1326	10.1	1765	13.5	39227	298.8
	Willoughby	647	8.0	792	9.8	21215	261.3
	LHD Total[2]	10682	11.2	13062	13.7	331298	346.6
South Eastern Sydney	Bayside	1606	9.0	1918	10.8	45116	252.9
	Georges River	1295	8.1	1575	9.9	39707	249.0
	Randwick	1995	12.8	2634	16.9	63635	408.8
	Sutherland Shire	2601	11.3	3079	13.4	86259	374.1
	Sydney[1]	3610	14.7	3938	16.0	95170	386.3
	Waverley	1048	14.1	1365	18.4	36769	494.9
	Woollahra	933	15.7	1056	17.8	30008	505.3
	LHD Total[2]	10938	11.4	13161	13.7	334706	349.0
South Western Sydney	Camden	1468	14.5	1744	17.2	45980	453.3
	Campbelltown	2255	13.2	2366	13.8	64015	374.5
	Canterbury-Bankstown[1]	3434	9.1	3900	10.3	104313	276.0
	Fairfield	1282	6.1	1686	8.0	56340	266.1
	Liverpool	2401	10.6	2812	12.4	81382	357.6
	Wingecarribee	544	10.6	616	12.1	18602	363.8
	Wollondilly	418	7.9	497	9.4	14076	264.8
	LHD Total[2]	10088	9.7	11617	11.2	333399	321.0
Southern NSW	Bega Valley	201	5.8	236	6.9	7385	214.2
	Eurobodalla	267	6.9	314	8.2	12663	329.1
	Goulburn Mulwaree	229	7.4	263	8.5	7645	245.6
	Queanbeyan-Palerang Regional	347	5.7	315	5.2	10755	176.0
	Snowy Monaro Regional	153	7.4	140	6.7	4758	228.8
	Upper Lachlan Shire	46	5.7	61	7.6	1649	204.6
	Yass Valley	70	4.1	77	4.5	2711	158.7
	LHD Total[2]	1313	6.1	1407	6.5	47591	219.2
Sydney	Burwood	287	7.1	418	10.3	8537	210.2
	Canada Bay	1182	12.3	1581	16.5	35712	371.7
	Canterbury-Bankstown[1]	3434	9.1	3900	10.3	104313	276.0
	Inner West	2663	13.3	3213	16.0	84830	422.4
	Strathfield	598	12.7	764	16.3	15769	336.0
	Sydney[1]	3610	14.7	3938	16.0	95170	386.3
	LHD Total[2]	8555	12.3	10334	14.8	256962	368.8

Local Health District	Local Government Area	Week ending				Total	
		26 September		19 September			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Western NSW	Bathurst Regional	392	9.0	491	11.3	12545	287.6
	Blayney	50	6.8	91	12.3	2161	292.9
	Bogan	11	4.3	17	6.6	472	183.0
	Bourke	10	3.9	18	7.0	373	144.0
	Brewarrina	5	3.1	8	5.0	254	157.7
	Cabonne	69	5.1	91	6.7	2175	159.5
	Cobar	16	3.4	29	6.2	688	147.7
	Coonamble	16	4.0	32	8.1	705	178.1
	Cowra	72	5.7	82	6.4	2360	185.2
	Dubbo Regional	389	7.2	556	10.4	12592	234.4
	Forbes	45	4.5	71	7.2	1563	157.8
	Gilgandra	19	4.5	24	5.7	708	167.0
	Lachlan[1]	19	3.1	26	4.3	782	128.7
	Mid-Western Regional	210	8.3	236	9.4	5768	228.4
	Narromine	37	5.7	54	8.3	1242	190.6
	Oberon	36	6.7	33	6.1	1242	229.5
	Orange	499	11.8	628	14.8	13814	325.4
	Parkes	88	5.9	123	8.3	3137	211.4
	Walgett	25	4.2	37	6.2	1266	212.7
	Warren	35	13.0	36	13.4	973	360.8
	Warrumbungle Shire	54	5.8	67	7.2	2050	221.0
	Weddin	14	3.9	29	8.0	624	172.7
	LHD Total[2]	2106	7.4	2775	9.7	67261	236.0
Western Sydney	Blacktown	4024	10.8	4758	12.7	120183	321.0
	Cumberland	2341	9.7	2831	11.7	71166	294.7
	Parramatta[1]	2385	9.3	2999	11.7	65921	256.3
	The Hills Shire	2335	13.1	3139	17.6	72057	404.9
	LHD Total[2]	10741	10.2	13248	12.6	319342	303.1
NSW Total[3]		**84,372**	**10.4**	**101,770**	**12.6**	**2,681,082**	**331.4**

[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 20 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.

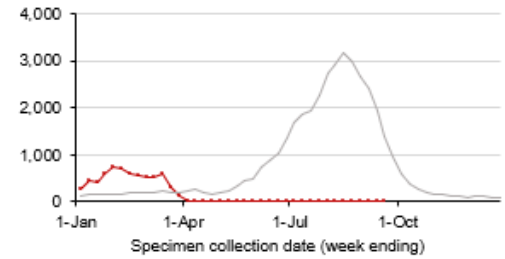
Specimen collection date	Total PCR tests conducted	Influenza A		Influenza B		Adeno-virus	Para-influenza	RSV	Rhino-virus	HMPV**	Entero-virus
		No.	%Pos.	No.	%Pos.						
1 Jan — 20 Sep 2020											
Total	928,287	6,613	0.71%	950	0.10%	6,533	9,024	5,595	115,419	2,029	4,237
Month ending											
3 February *	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 *	222,423	33	0.01%	1	0.00%	1,146	89	209	29,706	79	427
30 August	174,594	9	0.01%	2	0.00%	1,137	37	299	13,926	14	235
Week ending											
6 September	47,013	2	0.00%	1	0.00%	266	11	127	2,741	10	49
13 September	37,909	2	0.01%	0	0.00%	235	12	149	2,152	23	44
20 September	29,007	0	0.00%	0	0.00%	166	5	261	1,443	16	70

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

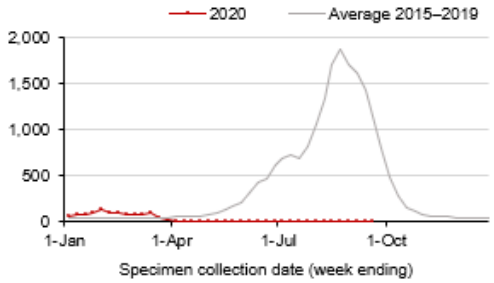
APPENDIX C: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 20 SEPTEMBER 2020

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.

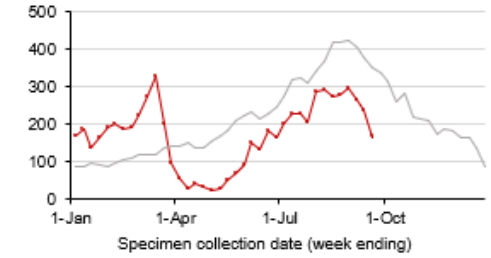
Influenza A



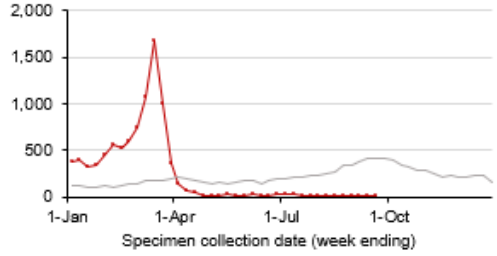
Influenza B



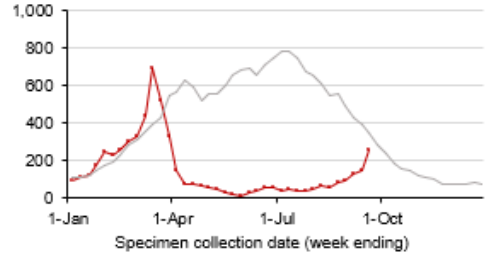
Adenovirus



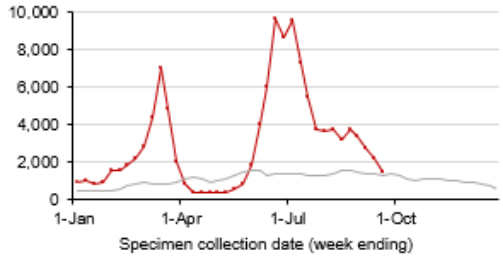
Parainfluenza



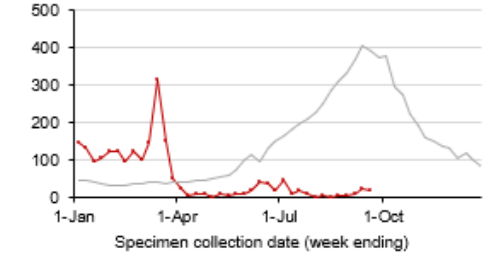
RSV



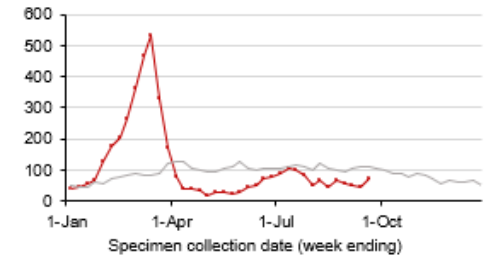
Rhinovirus



HMPV



Enterovirus



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

GLOSSARY

Term	Description
Case	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.
Health care 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.