

COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 35, ENDING 29 AUGUST 2020

Published 2 September 2020

SUMMARY FOR THE WEEK ENDING 29 AUGUST

- The number of locally-acquired COVID-19 cases in NSW increased this week – almost double the number reported in the previous week.
- Most locally-acquired cases reported this week were linked to known cases or clusters (86%, 44/51).
- More than half of cases reported this week were tested within two days of symptom onset.
- Of the 211 locally-acquired cases reported in the last four weeks, most were reported in residents of South Western Sydney (43% 91/211) and Western Sydney (26%, 55/211) LHDs.
- Investigations to date have been unable to link seven cases reported this week with known cases or clusters. In the past four weeks, 57% of cases with an unknown source were reported in residents of South Western Sydney LHD.
- Overall testing rates have decreased this week (down 8%) and were lower across all LHDs.
- All people are reminded of the need to **isolate and seek testing as soon as any symptoms develop**, to limit spread to other people.

In Focus – Symptom profile for COVID-19 in NSW: 1 January to 29 August 2020

- Most cases reported in NSW to date have reported a mild respiratory illness at diagnosis.
- More severe respiratory symptoms such as shortness of breath, pneumonia, and acute respiratory distress were reported in older people.
- The most common symptoms reported in children included runny nose, cough, fever, sore throat, and gastro-intestinal symptoms.
- Cough was the most common symptom reported without any other symptom, followed by sore throat.

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.

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 in the past two weeks

Measure	Week of reporting	
	Week ending 29 August	Week ending 22 August
Number of cases with symptoms at diagnosis	82% (42/51)	75% (18/24)
Proportion of cases in isolation at least 48 hours before symptoms	17% (7/42)	33% (6/18)
Proportion tested (swabbed) within:		
• 1 day of symptom onset	40% (14/35)	17% (2/12)
• 2 days of symptom onset	63% (22/35)	25% (3/12)
• 3 days of symptom onset	91% (32/35)	33% (4/12)
Proportion tested more than 3 days after symptom onset	9% (3/35)	67% (8/12)
Proportion who entered isolation within:		
• 1 day of symptom onset	46% (16/35)	17% (2/12)
• 2 days of symptom onset	63% (22/35)	25% (3/12)
• 3 days of symptom onset	86% (30/35)	33% (4/12)
Proportion who entered isolation more than 3 days after symptom onset	14% (5/35)	67% (8/12)
Number of tests conducted	156,287	170,547
Proportion notified to NSW Health by the laboratory within:		
• 1 day of swab collection	94% (48/51)	79% (19/24)
• 2 days of swab collection	98% (50/51)	100% (24/24)
• 3 days of swab collection	98% (50/51)	100% (24/24)
Proportion notified to NSW Health by the laboratory more than 3 days after the swab collection	2% (1/51)	0% (0/24)
Proportion of locally-acquired cases interviewed by public health staff within 1 day of notification to NSW Health	100% (51/51)	100% (24/24)
Proportion of close contacts (identified by the case) contacted by public health within 48 hours of case notification	100%	100%

Interpretation: Of 42 symptomatic cases reported in the last week, seven were in isolation at the time of diagnosis and for at least 48 hours before developing symptoms and are not represented in the time to test and time to isolation analysis above. Of the remaining 35 cases, more than half (63%) sought testing and isolated within two days of developing symptoms. Over 80% of these cases had begun isolation within three days of their onset of illness.

Despite the high volume of testing, the time taken to notify cases remains stable with most new cases in the week ending 29 August notified to NSW Health within two days of swab collection. One case was notified more than three days after the swab collection, however, NSW Health was notified of a preliminary result so public health action was undertaken prior to confirmation of the final diagnosis. Public health staff are responding quickly, with all cases interviewed within one day of notification.

SECTION 2: HOW IS THE OUTBREAK TRACKING IN NSW?

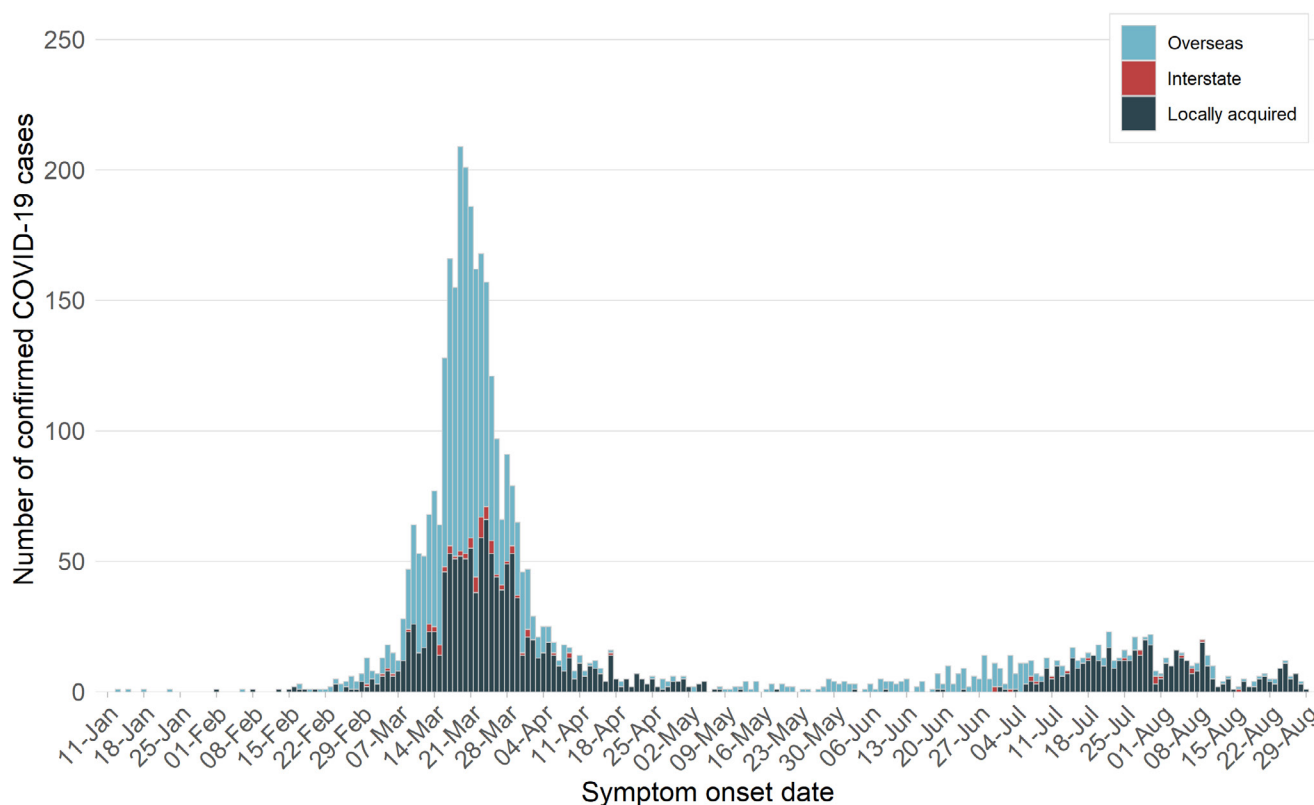
Table 1. COVID-19 cases and tests reported in NSW, up to 29 August 2020

	Week ending 29 August	Week ending 22 August	% change	Total to 29 August
Number of cases	59	32	↑ 84%	3,855
Overseas acquired	8	7	↑ 14%	2,069
Interstate acquired	0	1	↓ 100%	89
Locally acquired	51	24	↑ 113%	1,697
Number of deaths	0	0		54
Number of tests	156,287	170,547	↓ 8%	2,180,528

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



Interpretation: 82% 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 days and 10 days after arrival in NSW.

How many NSW cases were infected in Victoria?

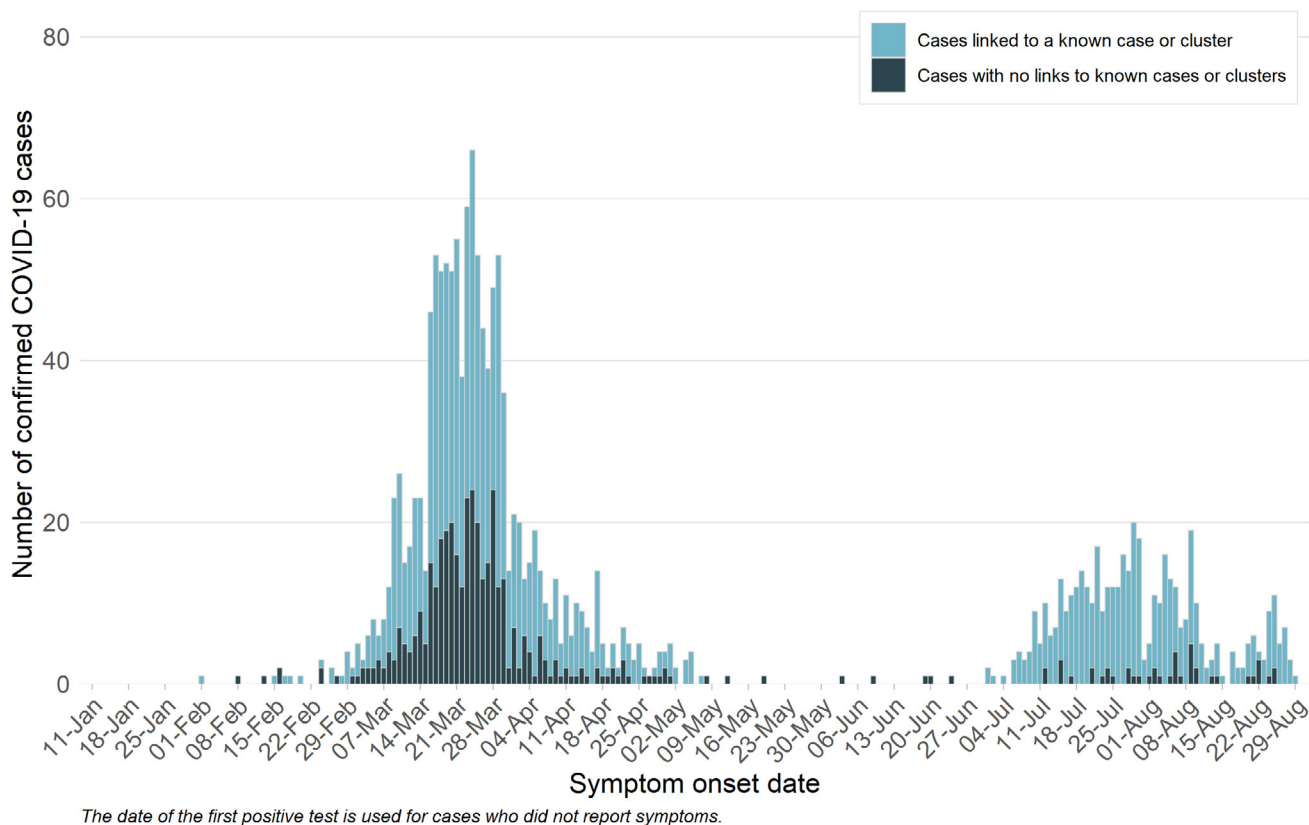
In response to the continued community transmission in Victoria, border measures have been introduced to limit the spread of infection into NSW. From 8 July, under the Public Health (COVID-19 Border Control) Order 2020, a person who has been in Victoria within the last 14 days must not travel to NSW. This was updated on 22 July to further restrict travel to NSW from Victoria and redefine border zone residents. Exceptions are only given in very limited circumstances and those authorised to enter NSW from Victoria must self-isolate for 14 days from arrival in NSW.

In the week ending 29 August, no cases newly diagnosed with COVID-19 acquired their infection 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 focussed 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

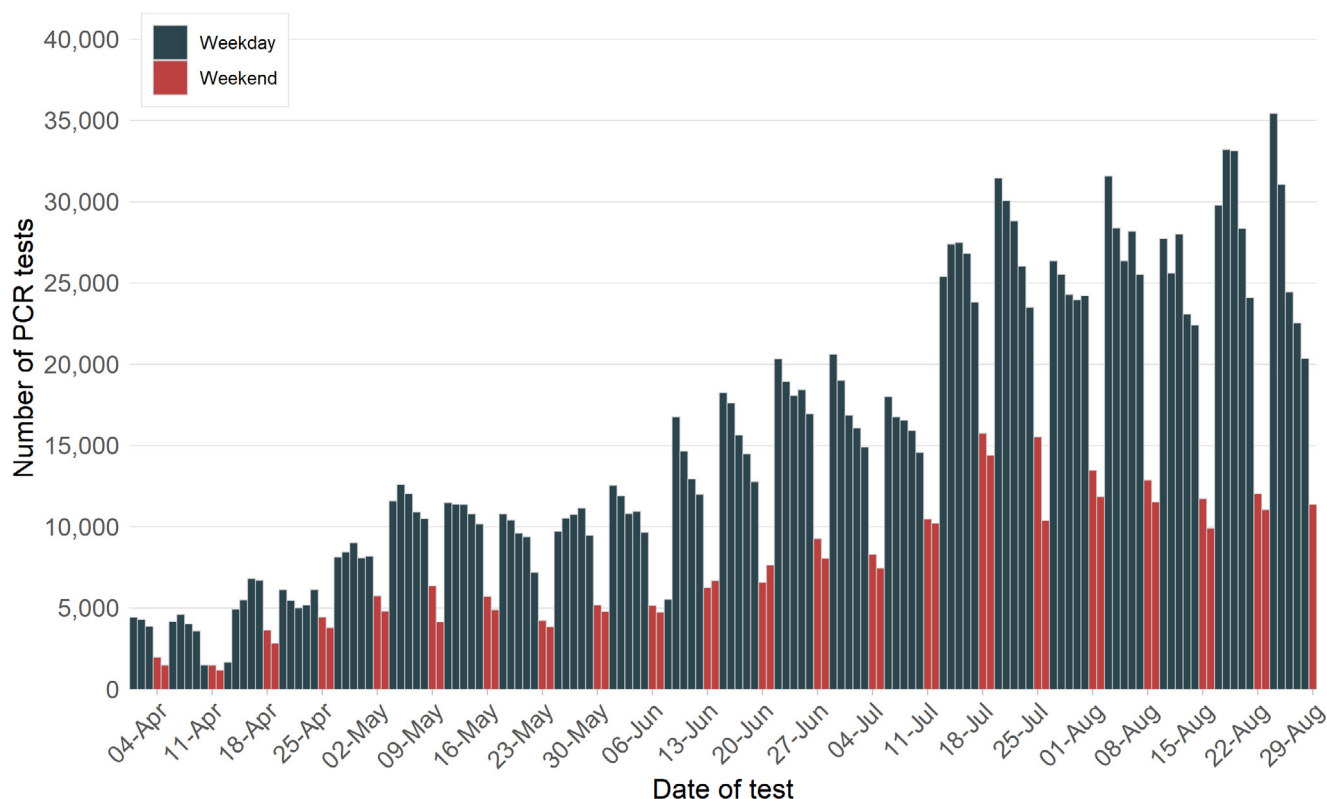


Interpretation: Of the locally-acquired cases with an onset in the last four weeks, 86% (158/184) were linked to known cases or clusters.

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

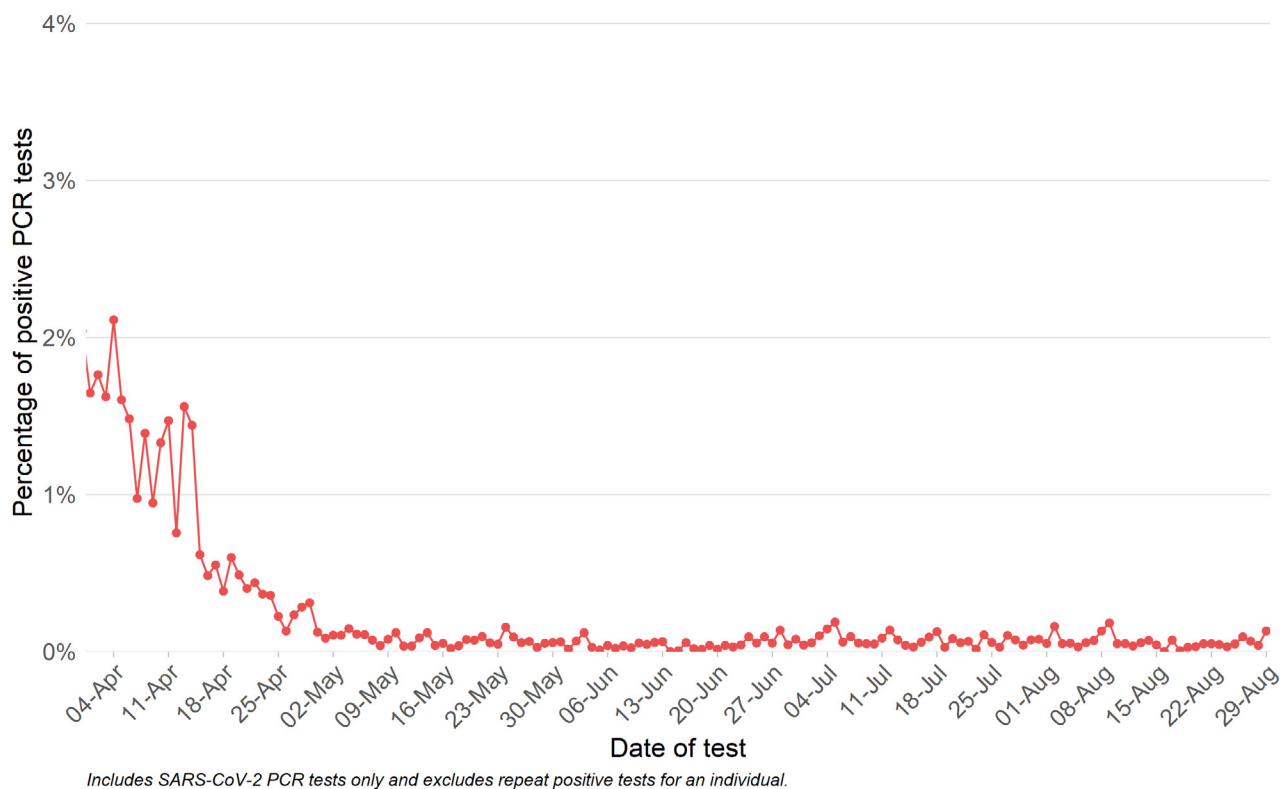


Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

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. An 8% decrease in testing was reported in the week ending 29 August compared with the previous week. The trend of considerably higher testing in July and August compared to previous months continues, with the highest number of tests on a day recorded on 24 August with 35,436. An average of 2.8 tests were conducted per 1,000 people in NSW each day in the week ending 29 August, compared to a daily average of 3.0 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.

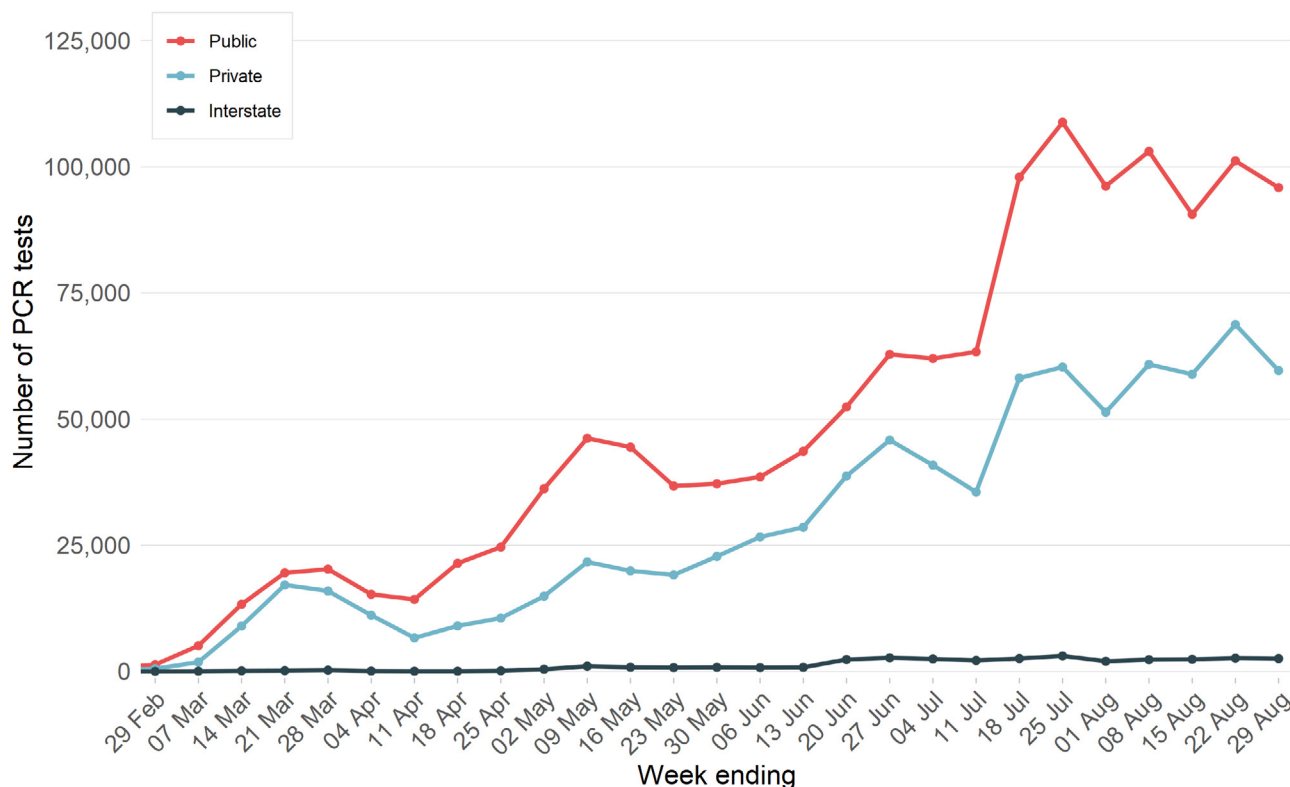
Figure 4. Proportion of PCR tests positive for COVID-19, NSW, 2020



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 29 August, testing in both public and private facilities decreased compared to the previous week. Approximately 60% 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 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, 2 August to 29 August 2020

Locally-acquired cases	Week ending				Total
	29 August	22 August	15 August	8 August	
Cases who are linked to a known case or cluster	44	19	57	63	183
Cases with no links to other cases or clusters	7	5	12	4	28
Total	51	24	69	67	211

Interpretation: The majority (87%) of cases in the four weeks ending 29 August were linked to known cases or clusters.

Table 3. Locally-acquired COVID-19 cases by LHD of residence, 2 August to 29 August 2020

Local Health District	Week ending				Total
	29 August	22 August	15 August	8 August	
Central Coast	1	0	0	0	1
Far West	0	0	0	0	0
Hunter New England	0	0	0	3	3
Illawarra Shoalhaven	0	0	0	0	0
Mid North Coast	0	0	0	0	0
Murrumbidgee	0	0	0	0	0
Nepean Blue Mountains	0	0	1	0	1
Northern NSW	0	0	0	0	0
Northern Sydney	10	1	5	4	20
South Eastern Sydney	15	0	3	4	22
South Western Sydney	9	13	33	36	91
Southern NSW	0	0	3	0	3
Sydney	6	2	0	7	15
Western NSW	0	0	0	0	0
Western Sydney	10	8	24	13	55
Total	51	24	69	67	211

Interpretation: The majority of locally-acquired cases reported in the four weeks up to 29 August have been residents of South Western Sydney LHD (43%, 91/211) and Western Sydney LHD (26%, 55/211).

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 and week of onset, 2 August to 29 August 2020

Local Health District	Week ending				Total
	29 August	22 August	15 August	8 August	
Central Coast	0	0	0	0	0
Far West	0	0	0	0	0
Hunter New England	0	0	0	1	1
Illawarra Shoalhaven	0	0	0	0	0
Mid North Coast	0	0	0	0	0
Murrumbidgee	0	0	0	0	0
Nepean Blue Mountains	0	0	0	0	0
Northern NSW	0	0	0	0	0
Northern Sydney	0	0	0	0	0
South Eastern Sydney	0	0	0	0	0
South Western Sydney	3	4	8	1	16
Southern NSW	0	0	0	0	0
Sydney	0	1	0	1	2
Western NSW	0	0	0	0	0
Western Sydney	4	0	4	1	9
Total	7	5	12	4	28

Interpretation: Extensive public health investigations were unable to identify a source of infection for seven cases in the week ending 29 August. Over the past four weeks, 57% (16/28) of cases with an unknown source were reported in South Western Sydney LHD.

Among the 28 cases with an unknown source there were five family groups (total of 14 cases) who had similar onsets, suggesting a common exposure. This indicates that there were at least 19 transmission events not linked to a known case or cluster in the last four weeks.

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. Information on all cases with no obvious source of infection is compared to identify new clusters. Cases are also asked to report all the locations visited and people with whom they have been in contact within their infectious period (two days prior to symptom onset until the time of isolation). Close contacts are quarantined to limit the spread of infection to others and encouraged to seek testing.

Cases in community settings

In order to describe settings of transmission in the community, we report the groups of cases who were infected at each location and subsequent cases in contacts of households or other residential settings. Of the 44 people diagnosed with COVID-19 who were linked to known cases or clusters in the week ending 29 August, 41 were exposed in public settings or exposed to one of these cases in a residential setting. A further three cases with links to known cases (not associated with clusters) were reported as contacts who were exposed in their own home or the home of a friend. There were seven cases not linked to a known case or cluster, including four that are under investigation.

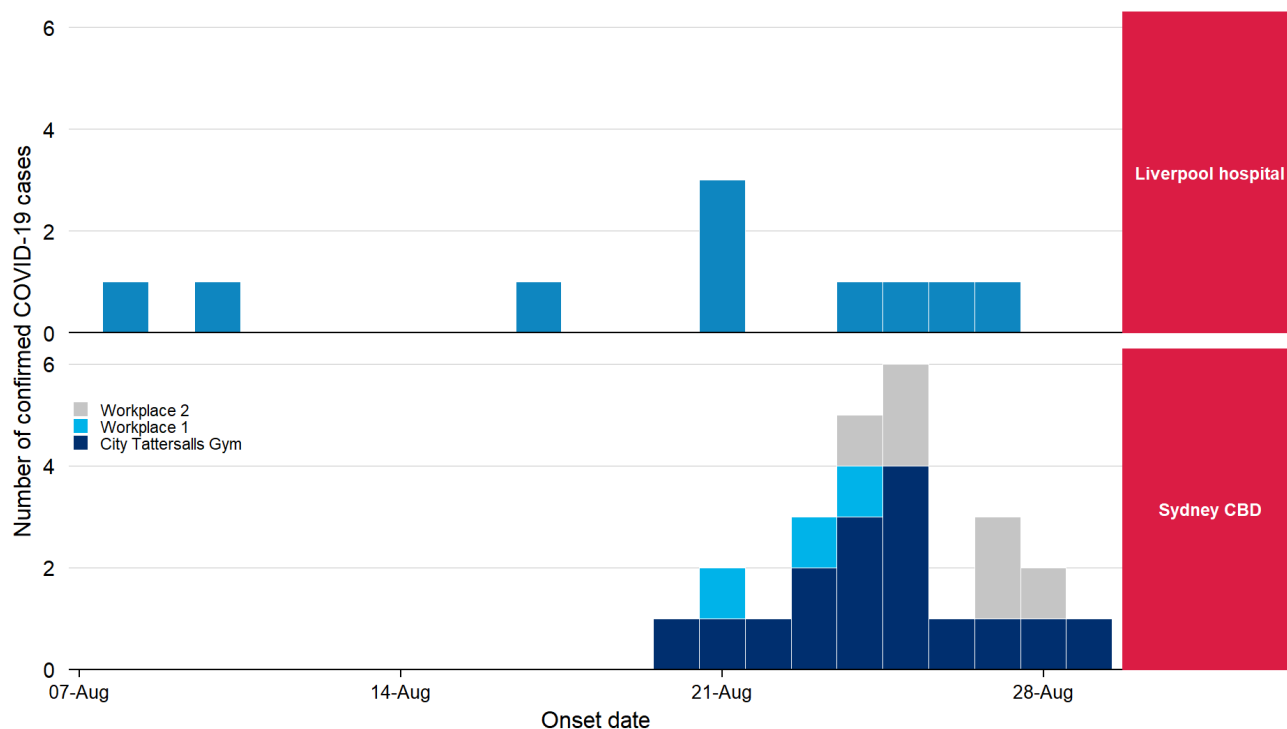
Clusters with no ongoing public health risk

There have been no new cases linked to the Crossroads cluster since 1 August. There have now been two incubation periods that have passed since the last case and there is no ongoing public health risk. This cluster is now closed.

Table 5. COVID-19 community clusters, 1 July to 29 August 2020

Date cluster first identified	Cluster	Cases reported in the week ending 29 August	Date of last case	Source of cluster
17 July	Thai Rock Restaurant Wetherill Park and linked clusters	0	11 August	Source not identified
18 July	Batemans Bay club	0	10 August	Source not identified
24 July	Bankstown area funeral services and linked clusters	0	21 August	Source not identified
27 July	Thai Rock Restaurant Potts Point and linked clusters	0	21 August	Thai Rock Wetherill Park case
2 August	Tangara School and associated cases	0	21 August	Household contact of a case with unknown source
3 August	Our Lady of Mercy School in Western Sydney	1	24 August	Source not identified
5 August	Smithfield club	0	15 August	Source not identified
9 August	Lidcombe club	0	13 August	Source not identified
10 August	Liverpool Hospital	7	27 August	Contact of a case with known source
18 August	Sydney quarantine hotel	0	18 August	Contact of a case in hotel quarantine
25 August	City CBD	33	29 August	Under investigation
	Total	41		

Figure 6. COVID-19 cases by cluster and onset date, NSW, 2020.



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

City CBD cluster

On 25 August South Eastern Sydney Public Health Unit was notified of two cases of COVID-19 in eastern suburbs residents. While there were no initial links between the two people, further investigations, including of new cases notified in the subsequent days, revealed they belonged to a new cluster of infections related to City Tattersalls gym on Pitt Street in Sydney. People attending City Tattersalls gym unknowingly spread the infection to other workplaces, businesses, homes and on public transport. Infectious people linked to the cluster, prior to their onset of symptoms, attended Double Bay Public School and Ryde High School, resulting in the quarantining of some students and staff. Whole genome sequencing has revealed that the outbreak is related to cases from the Bankstown funerals cluster, however at this stage the individual that introduced the infection to City Tattersalls has not been identified. City Tattersalls gym remains closed.

On 25 August, NSW Health issued a public health alert asking people who had attended City Tattersalls gym and workplaces on George Street to be alert for symptoms, and if anyone developed symptoms to get tested and self-isolate immediately. In the following days, as more locations linked to this cluster emerged, multiple public health alerts were issued advising people to monitor for symptoms and for close contacts to self-isolate and get tested.

As of 29 August, there are eight exposure locations that have been linked to this cluster. A total of 34 cases (including the source case) are associated with this cluster. Twenty-six cases are linked to public settings and seven cases are household contacts.

Table 6. Clusters linked to CBD cluster

Setting of exposure	Type of contact		Total
	Cases at location	Household	
City Tattersalls gym	13	4	17
Workplace 1 – Sydney CBD	2	1	3
Dance studio	3	0	3
Gym, Zetland	2	0	2
Art school, Waverley	1	0	1
Bus X39, CBD to Clovelly Rd	1	0	1
Workplace 2 – Sydney CBD	3	2	5
Hair salon	1	0	1
Total	26	7	33

Liverpool Hospital

On 10 August South Western Sydney Public Health Unit was notified of a case in a healthcare worker that worked at Liverpool Hospital. The source of infection was a previously known case from a known cluster. A public health investigation identified that the staff member had worked two days whilst infectious. All close contacts were advised to isolate and get tested immediately. In the week ending 29 August there were an additional seven cases reported, including two healthcare workers from Liverpool Hospital, three household contacts of a Liverpool Hospital staff member, and two household contacts of a patient at Liverpool Hospital. Including the source there are 11 cases linked to this cluster, including five healthcare workers, one patient and five people exposed in home settings.

Table 7. Clusters linked to Liverpool Hospital

Setting of exposure	Type of contact			Total
	Cases at location	Household	Other home setting	
Liverpool Hospital	5	3	2	10

Our Lady of Mercy School in Western Sydney

On 8 August a case of COVID-19 was notified in a student that attends a school in Parramatta. Close contacts at the school were identified and asked to quarantine, and the school was planned to be non-operational on 10 and 11 August. On 10 August, two further cases were reported in students from the school. Following the third case all staff and students were considered close contacts and were asked to have a test for COVID-19, regardless of symptoms. In this reporting week there was an additional case in a student. Public health investigations have revealed that this student had an old infection that was likely acquired at a similar time to other cases at the school. The school reopened on Monday 24 August.

SECTION 5: COVID-19 IN SPECIFIC POPULATIONS

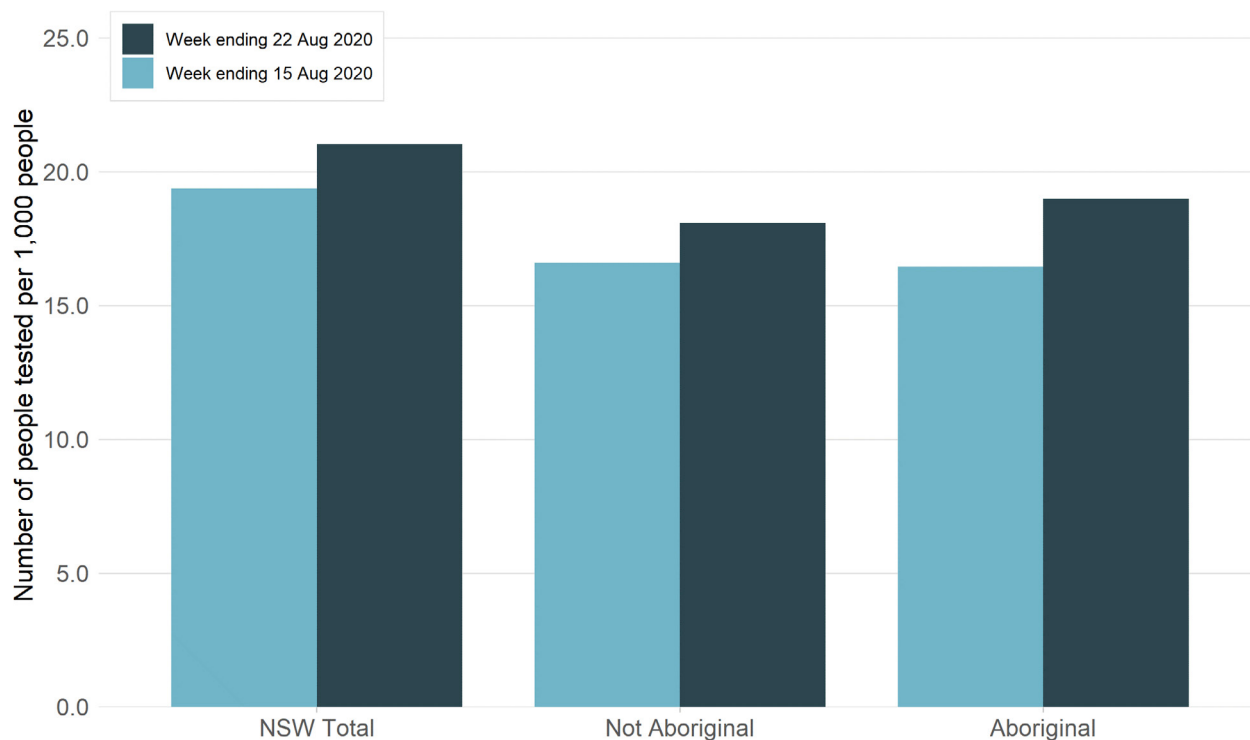
Aboriginal people

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 Aboriginal cases were notified in the week ending 29 August. In total, 41 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 22 August 2020, with Aboriginal status ascertained for approximately 90% of all COVID-19 test records.

Figure 7. Testing Rate per 1,000 by Aboriginality and week, NSW



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

Interpretation: Testing rates increased in the week ending 22 August compared with the previous week for Aboriginal and non-Aboriginal people.

Pregnant women

No cases in pregnant women were reported in the week ending 29 August. 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 (54 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 one-quarter of the deaths were in overseas-acquired cases.

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

Age group	Number of deaths	Proportion
0-4 years	0	0%
5-11 years	0	0%
12-17 years	0	0%
18-29 years	0	0%
30-49 years	0	0%
50-59 years	1	2%
60-69 years	4	7%
70-79 years	13	24%
80+ years	36	67%
Total	54	100%

Internationally it is estimated that 3.4% 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 (13.3%, 12.5% and 6.6%), while NSW reports similar rates to South Korea (1.6%) and New Zealand (1.6%). 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.

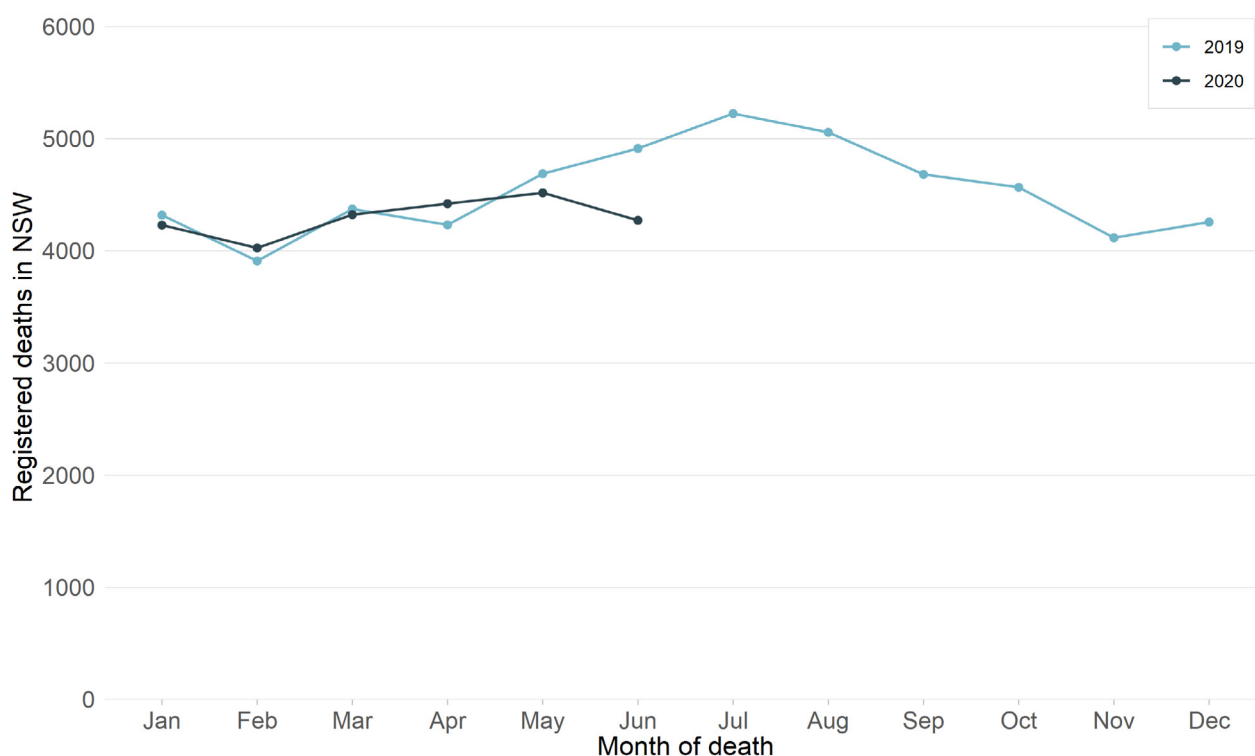
² WHO Coronavirus disease (COVID-19) Weekly Epidemiological Update – 31 August 2020
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>

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

NSW Health receives notifications of all deaths notified to the NSW Registry of Births Deaths and Marriages. Deaths from any cause are seasonal, increasing in winter and decreasing in summer. On average, there is a delay of about 14 days for a death to be registered and notified to NSW Health, and deaths referred to a coroner may take longer to register.

Of deaths registered in each month of January to April 2020, 95% were registered within 6-7 weeks, and almost all (99% of deaths) were registered within 10-14 weeks. To ensure reasonable completeness of mortality data, monthly deaths are reported seven weeks after the end of the month.

Figure 8. Deaths from any cause registered in NSW from January 2019 to June 2020

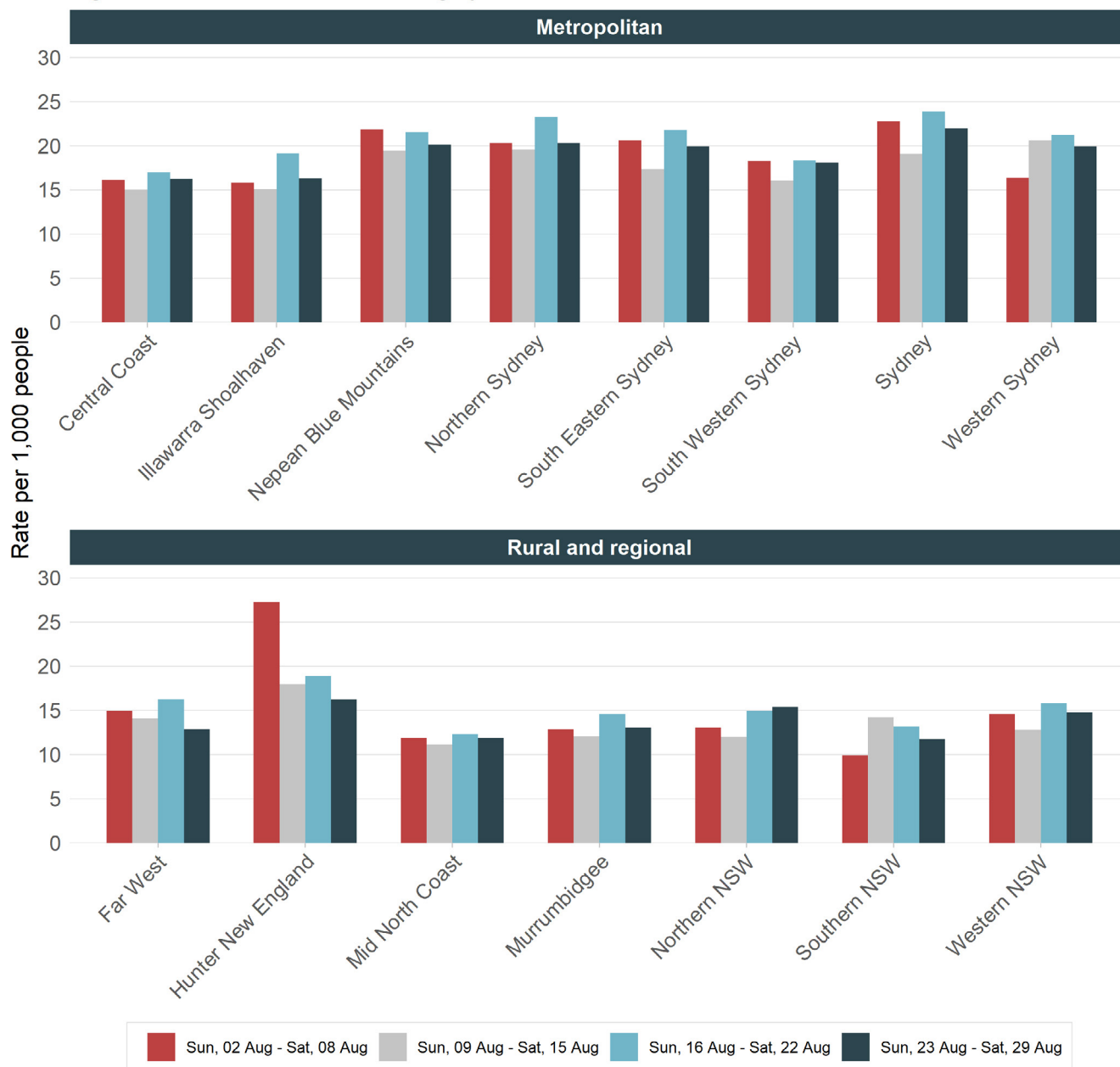


Based on deaths registered in NSW up to 26 August, 2020

Interpretation: When compared to the same period in 2019, the numbers of registered deaths were lower in May and June. While there is a lag in notification of deaths, there is no indication to date that the COVID-19 pandemic in NSW is causing an overall increase in mortality from any cause.

SECTION 7: COVID-19 TESTING IN NSW

Figure 9. Rates of COVID-19 testing by LHD of residence and week

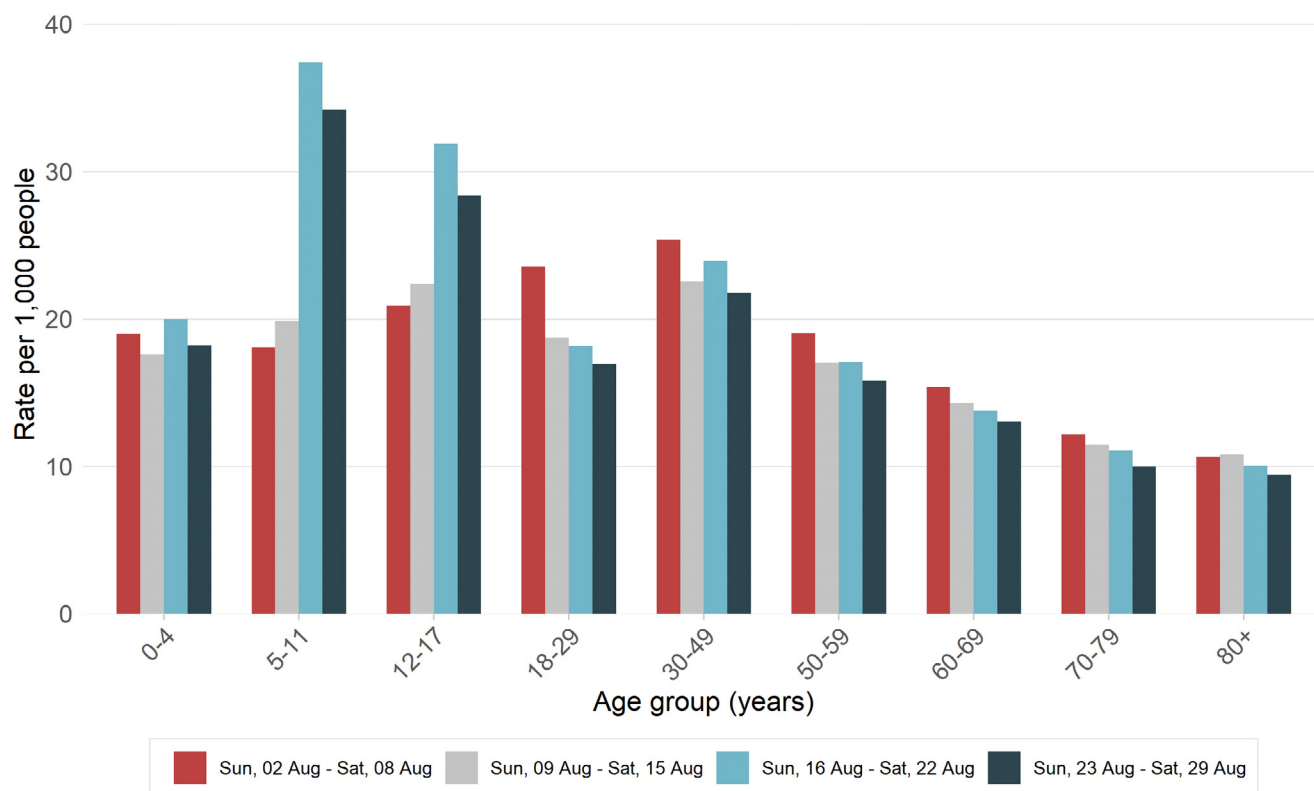


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 29 August were lower compared to the previous week (19 per 1,000 vs 21 per 1,000). Testing rates decreased in almost all LHDs.

Testing by age group

Figure 10. Rates of COVID-19 testing by age group and week

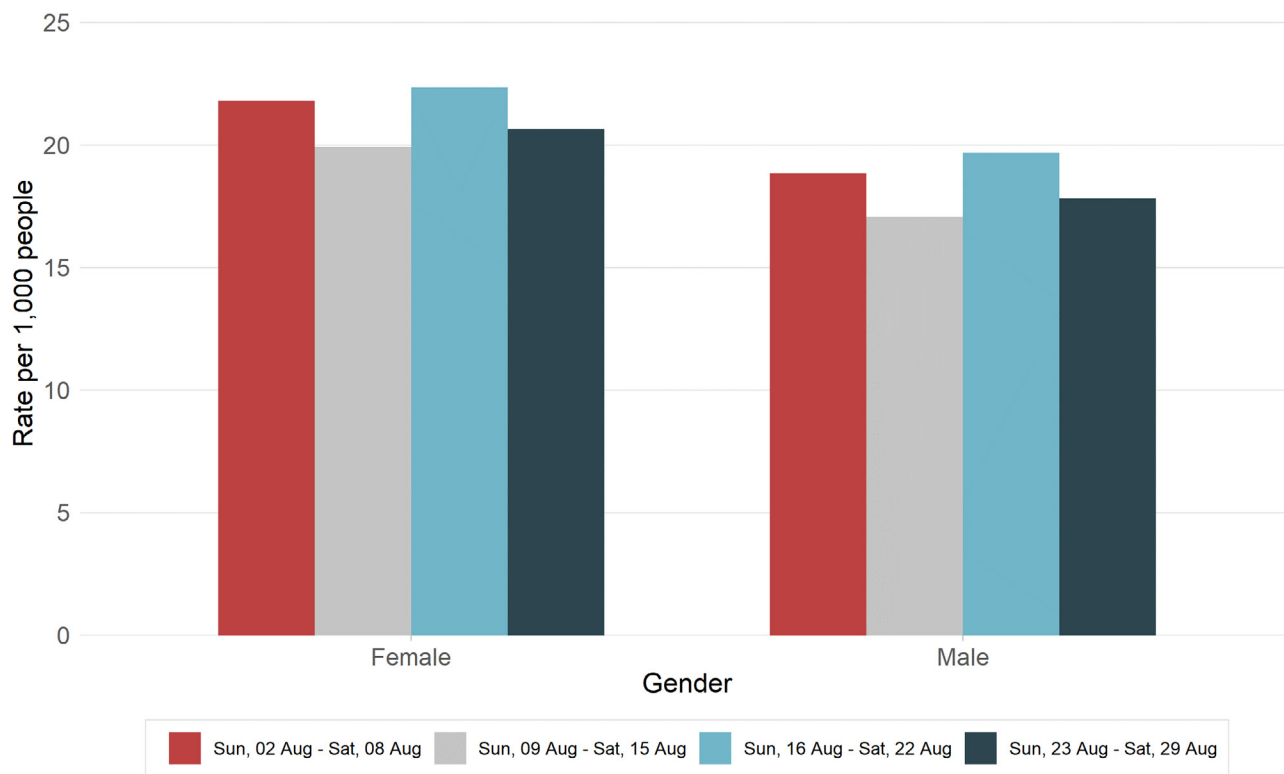


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: Testing rates decreased in all age groups for the week ending 29 August. However, testing in primary and high school-aged children remains significantly higher compared to those in other groups.

Testing by gender

Figure 11. Rates of COVID-19 testing by gender and week



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

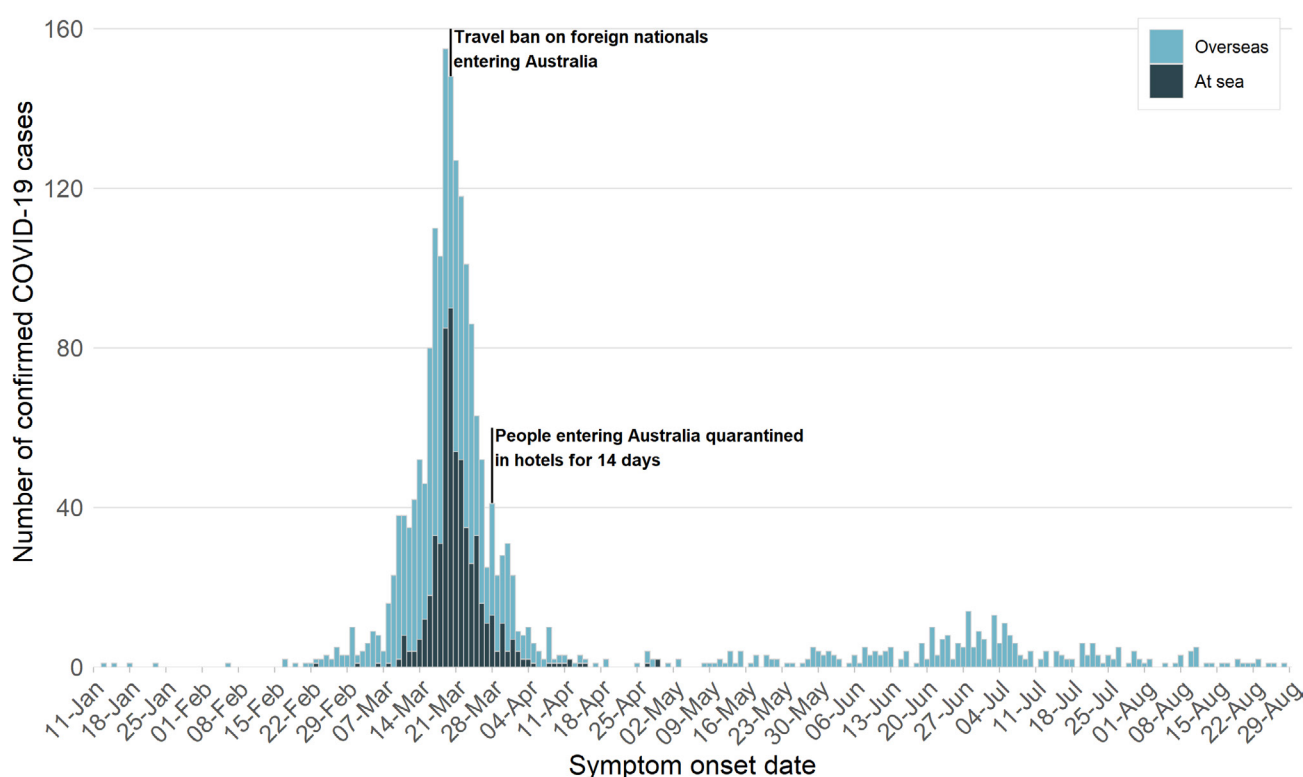
Interpretation: Testing rates are consistently higher in females compared with males. In both groups, rates increased in the week ending 29 August compared with the previous week.

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



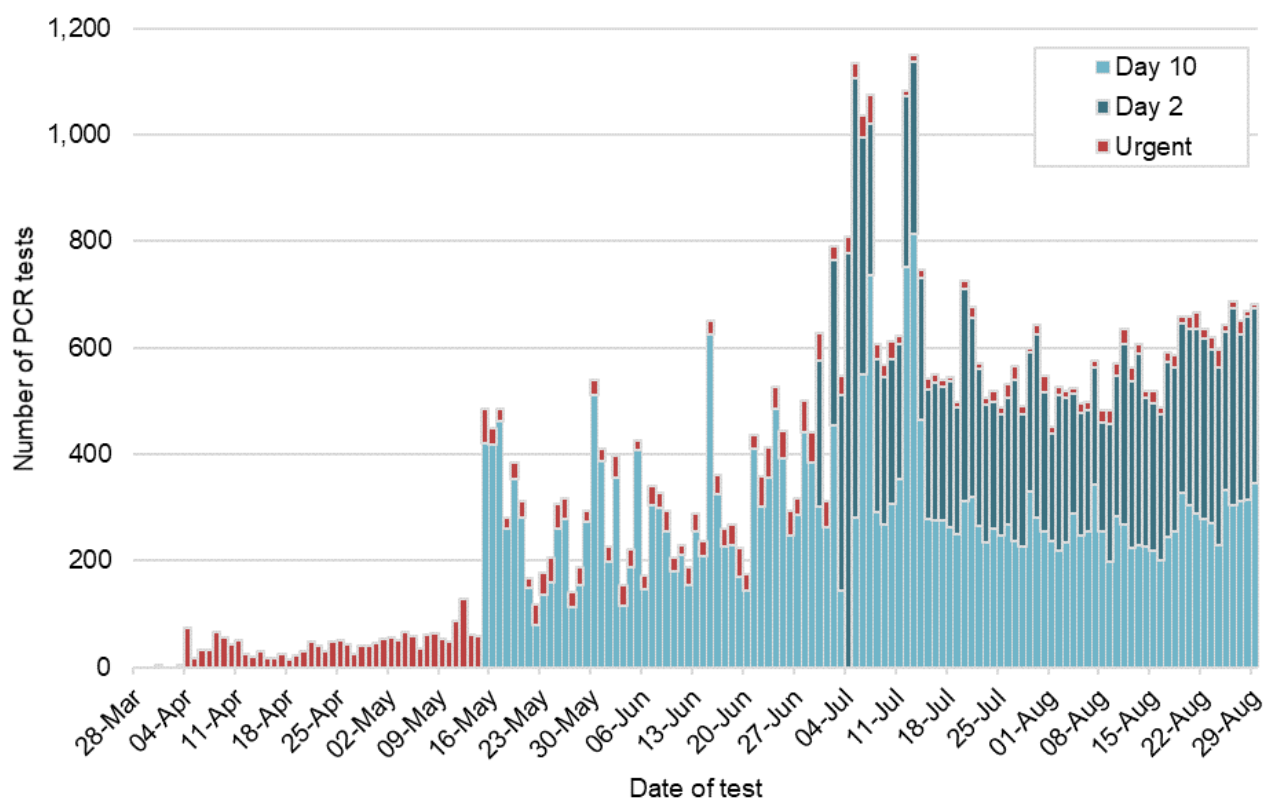
The date of the first positive test is used for cases who did not report symptoms.

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 eight overseas-acquired cases reported in the week ending 29 August, 14% more than the previous week.

Hotel quarantine

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

Figure 13. COVID-19 testing in returned travellers in hotel quarantine, reported from 28 March to 29 August, NSW, 2020



Interpretation: There were 4,550 tests conducted through the hotel quarantine screening programs in the week ending 29 August. Since screening began on 28 March, a total of 50,006 PCR tests have been conducted and 326 COVID-19 cases have been detected.

Airport screening

Health screening of returning travellers was introduced for people returning from particular countries early in the outbreak but was expanded to all returning travellers on 21 March 2020. As part of the health screening passengers are asked to complete a questionnaire about their health upon arrival into Sydney International Airport. People with symptoms are assessed by an onsite health team and tested for COVID-19.

During the week ending 29 August, a total of 3,717 people were screened at Sydney International Airport and 34 were referred for testing. Since screening began on 2 February, a total of 119,656 people have been screened, with 1,296 referred for onsite health assessment and testing.

SECTION 9: OTHER RESPIRATORY INFECTIONS IN NSW

Influenza and other respiratory virus cases and tests reported in NSW, up to 23 August 2020

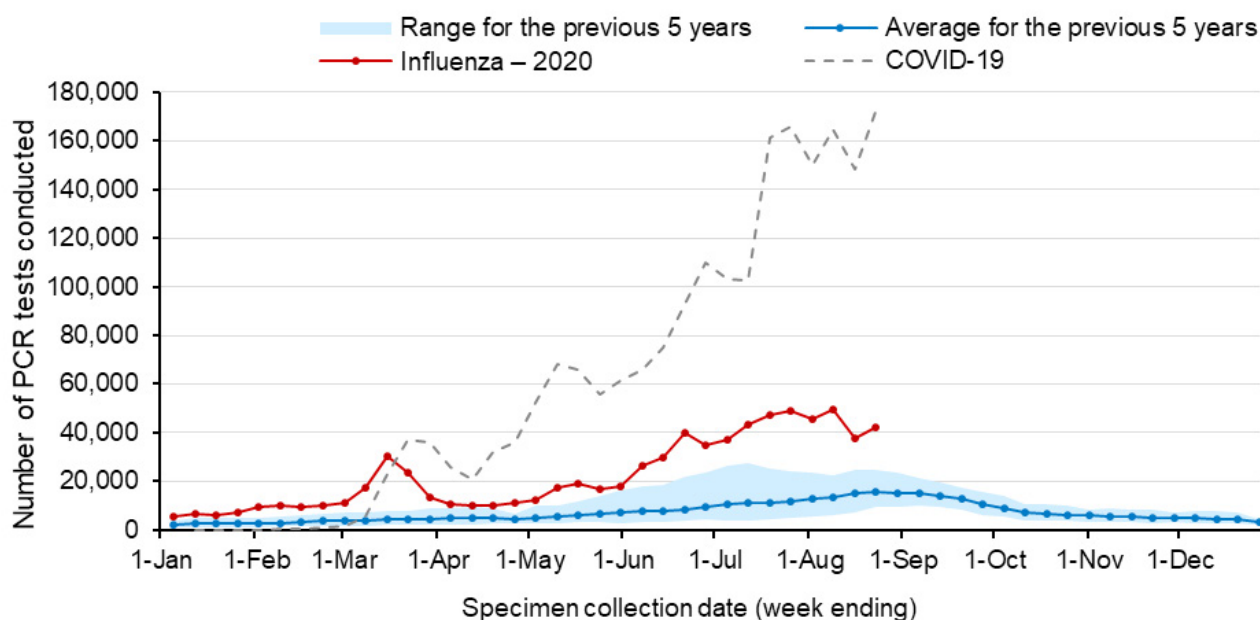
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted;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

The most recent data available is for testing carried out to 23 August. A total of 769,721 influenza tests have been performed at participating laboratories to 23 August, with 42,232 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 14. Testing for influenza and COVID-19 by week, to 23 August 2020

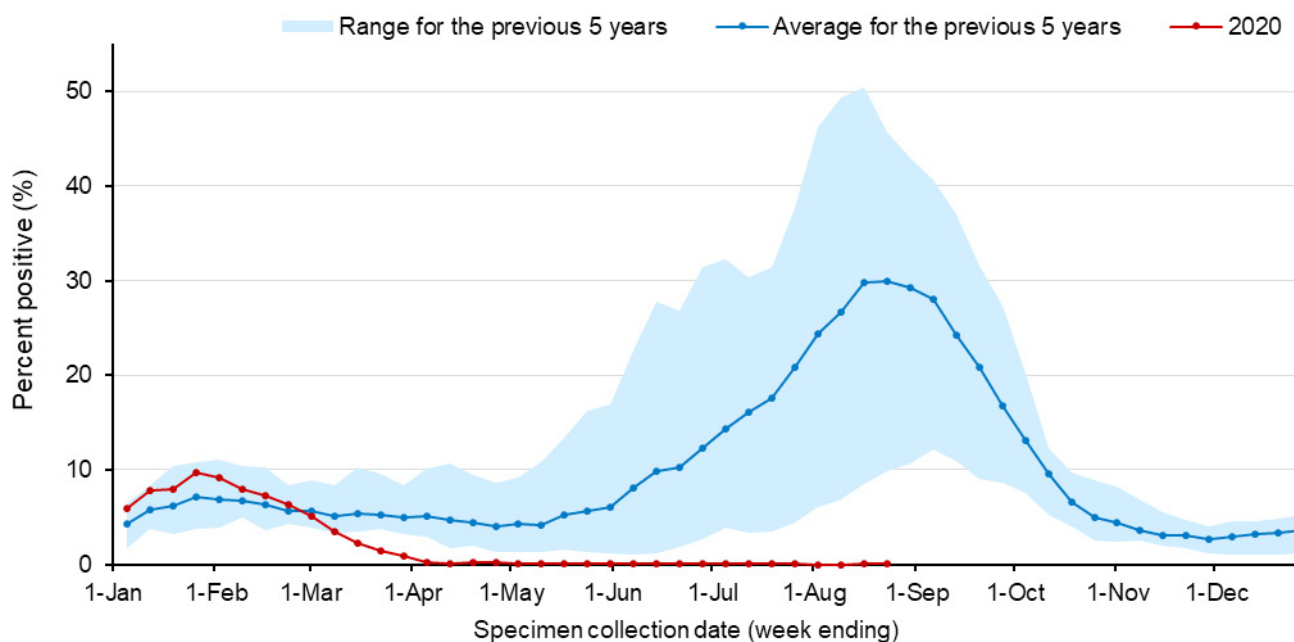


Interpretation: The number of influenza tests performed has exceeded the previous five-year average every week this year.

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.

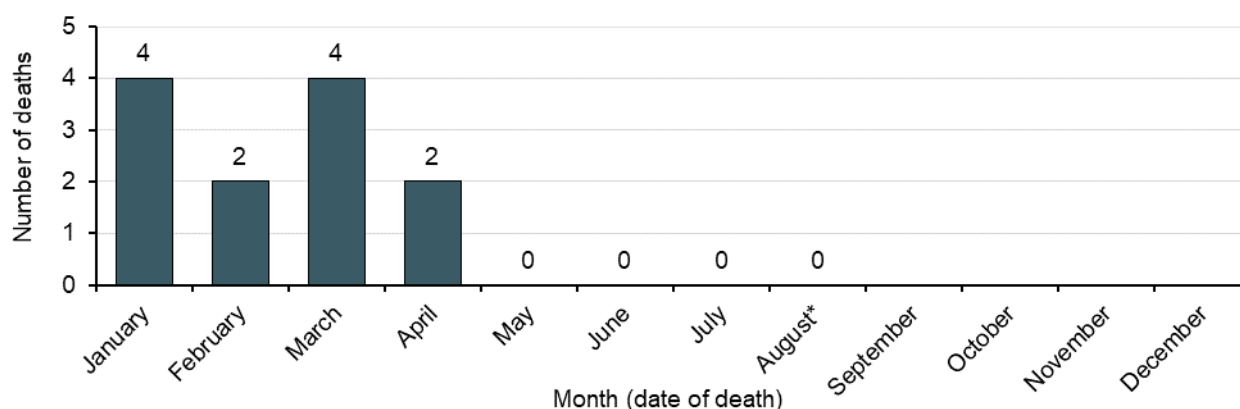
Figure 15. Proportion of tests positive for influenza, to 23 August 2020



Interpretation: The percent of influenza tests that were positive in the week ending 23 August continues to be very low (less than 0.1%), indicating limited influenza transmission in the community.

How many people have died as a result of influenza?

Figure 16. Laboratory-confirmed influenza deaths by month of death, to 23 August 2020



Interpretation: No influenza deaths were reported in the week ending 23 August. The number of influenza-related deaths identified via Coroner's reports and death registrations from 1 January to 23 August 2020 is lower than the same period last year (12 deaths in 2020 compared with 188 in 2019).³ Two-thirds of the deaths were in people aged 65 years and over.

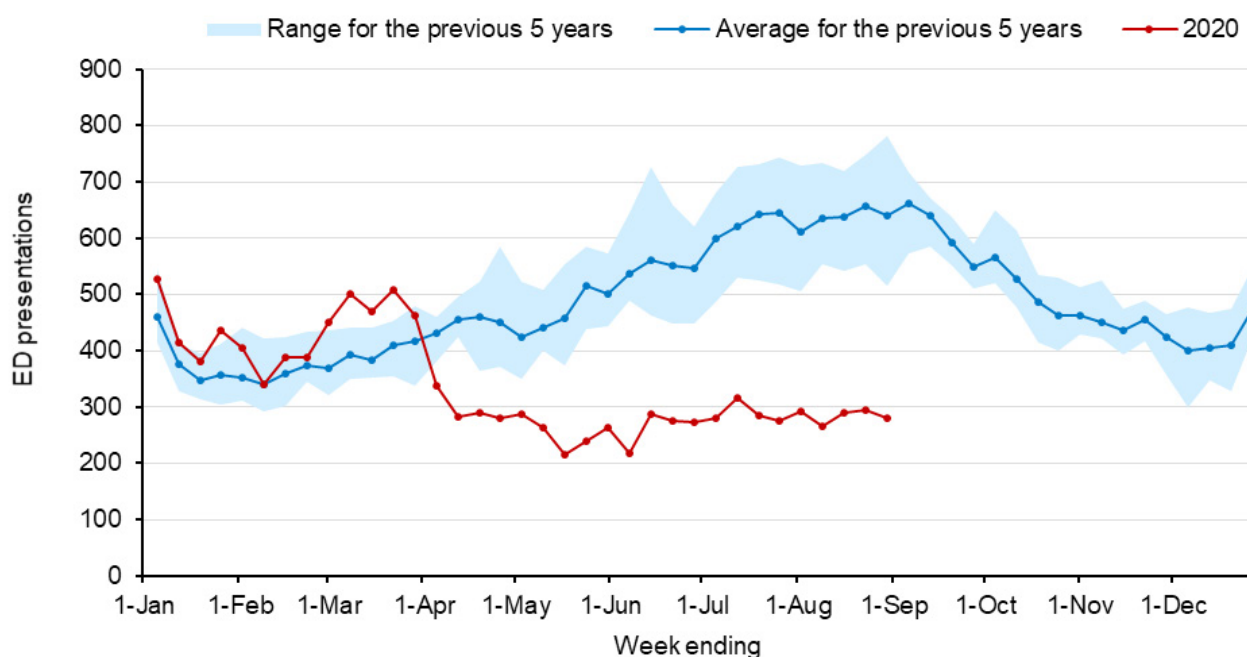
³ Includes deaths in people with laboratory-confirmed influenza.

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 17. Emergency Department pneumonia presentations in NSW by week, to 30 August 2020



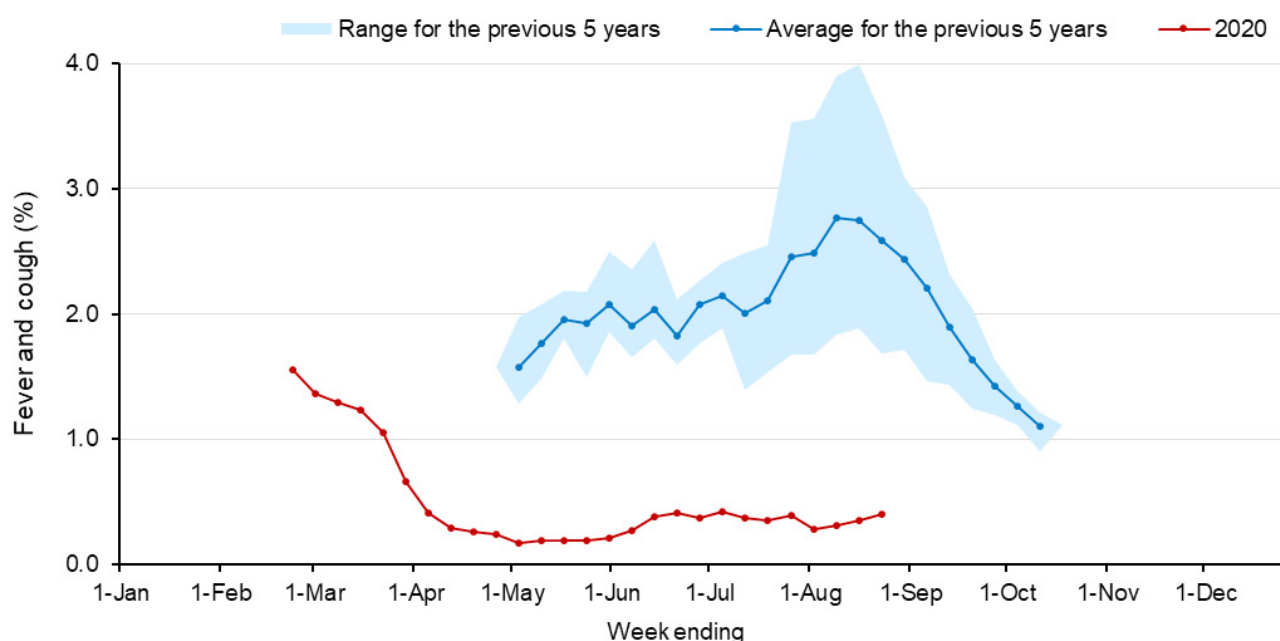
Interpretation: Pneumonia presentations decreased from the end of March and have continued to remain well below the usual range for this time of year.

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 18. Proportion of FluTracker participants in NSW reporting influenza-like illness, to 23 August 2020



Interpretation: In NSW in the week ending 23 August, of the 23,769 people surveyed, 95 people (0.4%) reported flu-like symptoms. The proportion of people reporting symptoms remains well below the usual range for this time of year.

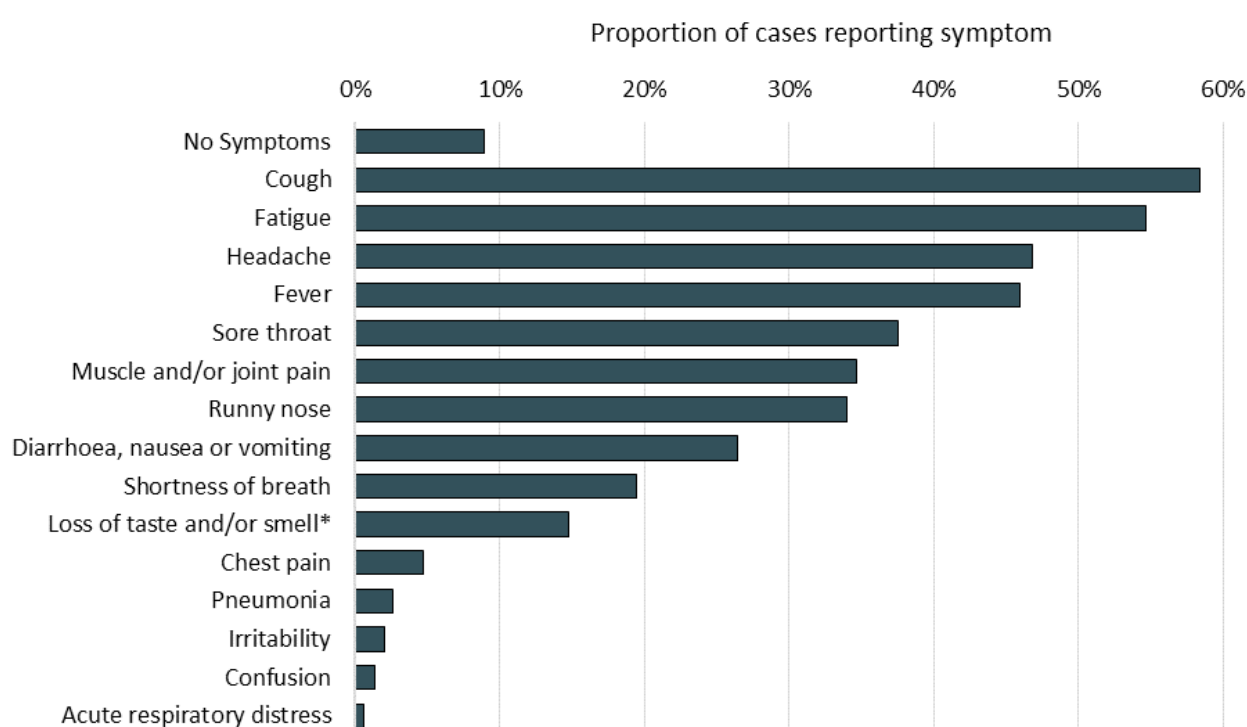
IN FOCUS

SYMPTOM PROFILE FOR COVID-19 IN NSW

Reporting period: 1 January to 29 August 2020

During the initial case interview the newly confirmed COVID-19 case is asked whether they are currently experiencing any symptoms. Since January 2020, 3,468 of the 3,855 (90%) confirmed COVID-19 cases have reported at least one symptom. There were 46 (1.2%) records which had no information on symptoms recorded.

Proportion of COVID-19 cases reporting symptom at initial case interview, as at 29 August 2020



* Loss of taste and smell was added to the standardised collection form from 9 May 2020 and may be under counted.

Interpretation: The symptoms reported by COVID-19 cases in NSW are consistent with a mild respiratory infection in the majority of cases. The principal symptoms reported in cases were cough (58%), fatigue (55%), headache (47%), fever (39%) and sore throat (37%).

More severe respiratory symptoms at diagnosis, including pneumonia, shortness of breath and/or acute respiratory disease (ARD) were reported in 20% of cases and in 56% of fatal cases.

Reporting period: 1 January to 29 August 2020

Difference in symptom profile by age group

Differences in reported symptoms may be influenced by a range of variables including age of the case and the surveillance strategies used. Many children may have their parent or guardian conduct the interview on their behalf and may not be able to articulate the range of symptoms they are currently experiencing.

Proportion of COVID-19 cases reporting symptom at initial case interview by age group, as at 29 August 2020

Symptoms	Age group at event								
	0-4	5-11	12-17	18-29	30-49	50-59	60-69	70-79	80+
No symptoms reported at interview	30%	29%	13%	9%	9%	7%	7%	7%	11%
Cough	38%	29%	44%	55%	54%	65%	66%	67%	66%
Fatigue	16%	17%	36%	52%	55%	61%	63%	60%	42%
Headache	8%	30%	43%	50%	50%	52%	49%	39%	17%
Fever	32%	22%	34%	43%	48%	51%	51%	45%	37%
Sore throat	8%	24%	41%	42%	37%	42%	37%	33%	21%
Muscle and/or joint pain	4%	5%	15%	30%	40%	41%	41%	32%	17%
Runny nose	34%	37%	43%	40%	34%	32%	31%	29%	19%
Diarrhoea, nausea or vomiting	26%	16%	15%	23%	25%	29%	33%	32%	24%
Shortness of breath	2%	3%	12%	17%	19%	22%	21%	23%	26%
Loss of taste and/or smell*	0%	3%	18%	20%	17%	14%	13%	6%	3%
Chest pain	0%	0%	3%	4%	5%	5%	5%	6%	3%
Pneumonia	0%	0%	0%	1%	2%	2%	5%	7%	6%
Irritability	8%	3%	1%	1%	2%	2%	2%	3%	3%
Confusion	2%	0%	1%	1%	1%	0%	2%	3%	5%
Acute respiratory distress	0%	0%	0%	0%	0%	0%	1%	3%	2%

*Loss of taste and smell was added to the standardised collection form from 9 May 2020 and may be under counted.

Interpretation: The symptom profile among adults was very consistent across ages 18–79. The more severe respiratory symptoms, such as shortness of breath, pneumonia and acute respiratory distress, were more prevalent in older people. Young children were more likely to report no symptoms at interview.

The main symptoms reported at diagnosis for each age group are:

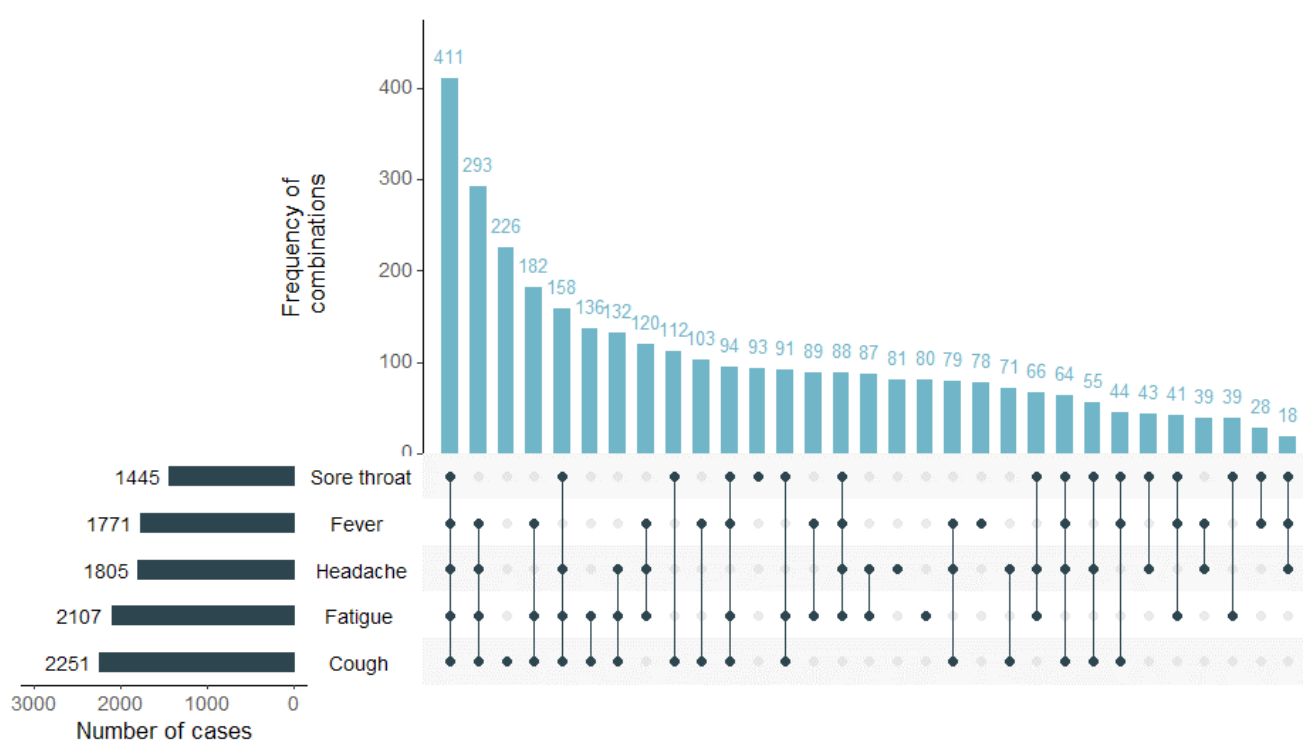
- Young children (0–4 years) — cough (38%), runny nose (34%), fever (32%) and diarrhoea and/or nausea and vomiting (26%).
- Primary school-aged children (5–11) — runny nose (37%), headache (30%), cough (29%), sore throat (24%) and fever (22%).
- High school-aged children (12–17) — cough (44%), headache (43%), runny nose (43%), sore throat (41%) and fatigue (36%).
- Adults between 18 and 79 had the same top five symptoms of cough, fatigue, headache, fever and sore throat, sometimes in varying order.
- Older adults (80+) — cough (66%), fatigue (42%), fever (37%), shortness of breath (26%) and diarrhoea and/or nausea and vomiting (24%).

Multiple symptoms

A typical symptom profile of a COVID-19 case includes the reporting of multiple symptoms.

The figure below shows the variation in combinations of symptoms observed in reported cases for the five most frequently observed symptoms (cough, fatigue, headache, fever and sore throat). The horizontal bars on the left show the number of cases reporting that symptom, either individually or in combination. The black circles and lines indicate particular combinations of the five symptoms, with the vertical green bars showing how many cases reported that combination.

Combinations of COVID-19 symptoms in confirmed cases as at 29 August 2020



Interpretation: The combination of the top five symptoms occurred more often than any other combination; 411 cases recorded all five at diagnosis. Cough is the most common symptom to be reported without any other symptom (283 cases), followed by sore throat (93 cases). Fatigue, headache and fever are more likely to be reported in combination with another symptom rather than individually.

APPENDIX A: COVID-19 PCR TESTS IN NSW

Local Health District	Local Government Area	Week ending				Total	
		29 August		22 August			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Central Coast	Central Coast / LHD Total²	5738	16.3	6011	17.0	83350	236.2
Far West	Balranald	21	9.0	42	18.0	301	128.7
	Broken Hill	252	14.4	341	19.5	3425	196.0
	Central Darling	19	10.3	8	4.4	239	130.0
	Wentworth	96	13.6	99	14.0	1394	197.7
	LHD Total²	388	12.9	490	16.3	5359	177.8
Hunter New England	Armidale Regional	463	15.0	470	15.3	6793	220.7
	Cessnock	802	13.4	970	16.2	11401	190.1
	Dungog	159	16.9	138	14.7	1673	177.5
	Glen Innes Severn	82	9.2	116	13.1	1371	154.6
	Gunnedah	148	11.7	139	11.0	1802	142.1
	Gwydir	40	7.5	27	5.0	456	85.2
	Inverell	226	13.4	192	11.4	3023	179.0
	Lake Macquarie	4051	19.7	4624	22.5	58222	282.8
	Liverpool Plains	124	15.7	138	17.5	1447	183.1
	Maitland	1963	23.1	2254	26.5	27781	326.2
	Mid-Coast	936	10.0	1115	11.9	15452	164.7
	Moree Plains	97	7.3	133	10.0	1930	145.5
	Muswellbrook	291	17.8	304	18.6	3289	200.8
	Narrabri	142	10.8	118	9.0	1848	140.7
	Newcastle	3268	19.7	3932	23.8	58874	355.6
	Port Stephens	873	11.9	1255	17.1	21134	287.6
	Singleton	432	18.4	619	26.4	6784	289.2
	Tamworth Regional	997	15.9	1031	16.5	14627	233.9
	Tenterfield	60	9.1	77	11.7	783	118.7
	Upper Hunter Shire	232	16.4	252	17.8	2917	205.7
	Uralla	52	8.7	81	13.5	849	141.2
	Walcha	23	7.3	48	15.3	521	166.2
		LHD Total²	15446	16.2	18007	18.9	242783
Illawarra Shoalhaven	Kiama	399	17.1	502	21.5	6203	265.2
	Shellharbour	1388	19.0	1448	19.8	19622	267.9
	Shoalhaven	1579	15.0	1904	18.0	22236	210.5
	Wollongong	3479	16.0	4184	19.2	51041	234.0
		LHD Total²	6845	16.3	8038	19.2	99102

Local Health District	Local Government Area	Week ending				Total	
		29 August		22 August			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Mid North Coast	Bellingen	197	15.2	184	14.2	2368	182.2
	Coffs Harbour	1115	14.4	925	12.0	13265	171.7
	Kempsey	475	16.0	531	17.9	5939	199.7
	Nambucca	255	12.9	274	13.8	3270	165.1
	Port Macquarie-Hastings	644	7.6	871	10.3	14234	168.4
	LHD Total ²	2686	11.9	2785	12.3	39076	173.2
Murrumbidgee	Albury	948	17.4	787	14.5	9711	178.7
	Berrigan	72	8.2	94	10.7	1236	141.3
	Bland	74	12.4	90	15.1	989	165.6
	Carrathool	18	6.4	10	3.6	180	64.3
	Coolamon	63	14.5	66	15.2	797	183.6
	Cootamundra-Gundagai Regional	107	9.5	125	11.1	1864	165.9
	Edward River	111	12.2	142	15.6	1731	190.6
	Federation	124	10.0	135	10.9	1691	136.0
	Greater Hume Shire	181	16.8	213	19.8	1966	182.7
	Griffith	295	10.9	377	14.0	4926	182.3
	Hay	24	8.1	27	9.2	311	105.5
	Hilltops	197	10.5	203	10.9	2803	149.9
	Junee	43	6.4	59	8.8	769	115.1
	Lachlan ¹	36	5.9	80	13.2	628	103.4
	Leeton	152	13.3	151	13.2	1578	137.9
	Lockhart	25	7.6	48	14.6	530	161.3
	Murray River	40	3.3	56	4.6	477	39.4
	Murrumbidgee	34	8.7	39	10.0	498	127.1
	Narrandera	58	9.8	60	10.2	712	120.7
	Snowy Valleys	254	17.5	264	18.2	2768	191.2
	Temora	57	9.0	61	9.7	870	137.9
	Wagga Wagga	1016	15.6	1296	19.9	15393	235.9
	LHD Total ²	3900	13.1	4350	14.6	52034	174.6
	Nepean Blue Mountains	Blue Mountains	1742	22.0	1790	22.6	26689
Hawkesbury		1497	22.3	1442	21.4	19158	284.7
Lithgow		360	16.7	348	16.1	4351	201.4
Penrith		4311	20.2	4916	23.1	69690	327.2
LHD Total ²		7861	20.1	8429	21.6	118929	304.2

Local Health District	Local Government Area	Week ending				Total	
		29 August		22 August			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Northern NSW	Ballina	704	15.8	716	16.0	9743	218.3
	Byron	691	19.7	694	19.8	8520	242.9
	Clarence Valley	569	11.0	646	12.5	7618	147.5
	Kyogle	106	12.1	112	12.7	1149	130.6
	Lismore	992	22.7	901	20.6	9830	225.0
	Richmond Valley	395	16.8	377	16.1	4606	196.3
	Tenterfield	60	9.1	77	11.7	783	118.7
	Tweed	1312	13.5	1160	12.0	16256	167.6
	LHD Total ²	4781	15.4	4630	14.9	57915	186.6
Northern Sydney	Hornsby	2768	18.2	3489	23.0	35154	231.2
	Hunters Hill	710	47.4	657	43.9	8368	558.6
	Ku-ring-gai	2941	23.1	3907	30.7	40622	319.5
	Lane Cove	1471	36.6	1739	43.3	23307	580.4
	Mosman	705	22.8	681	22.0	9201	297.0
	North Sydney	1124	15.0	1223	16.3	17259	230.1
	Northern Beaches	5333	19.5	5723	20.9	72280	264.3
	Parramatta ¹	4098	15.9	5014	19.5	52087	202.5
	Ryde	2420	18.4	2475	18.9	30612	233.2
	Willoughby	1258	15.5	1415	17.4	16323	201.1
	LHD Total ²	19411	20.3	22235	23.3	262829	275.0
South Eastern Sydney	Bayside	2586	14.5	2985	16.7	35932	201.4
	Georges River	2433	15.3	2751	17.3	32092	201.2
	Randwick	3588	23.1	3896	25.0	49793	319.9
	Sutherland Shire	4784	20.7	5122	22.2	69207	300.1
	Sydney ¹	5721	23.2	6067	24.6	76688	311.3
	Waverley	1922	25.9	2168	29.2	29981	403.5
	Woollahra	1834	30.9	1748	29.4	24577	413.8
	LHD Total ²	19110	19.9	20877	21.8	267747	279.2
South Western Sydney	Camden	2875	28.3	2686	26.5	38374	378.3
	Campbelltown	3712	21.7	3736	21.9	52030	304.4
	Canterbury-Bankstown ¹	6176	16.3	7366	19.5	84682	224.1
	Fairfield	3027	14.3	3118	14.7	47207	223.0
	Liverpool	4264	18.7	4115	18.1	65885	289.5
	Wingecarribee	1138	22.3	1042	20.4	15846	309.9
	Wollondilly	739	13.9	636	12.0	11532	217.0
	LHD Total ²	18805	18.1	19055	18.4	274120	264.0

Local Health District	Local Government Area	Week ending				Total	
		29 August		22 August			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Southern NSW	Bega Valley	413	12.0	498	14.4	6377	185.0
	Eurobodalla	539	14.0	556	14.5	10629	276.3
	Goulburn Mulwaree	403	12.9	483	15.5	6493	208.6
	Queanbeyan-Palerang Regional	625	10.2	638	10.4	9080	148.6
	Snowy Monaro Regional	268	12.9	398	19.1	4002	192.5
	Upper Lachlan Shire	121	15.0	117	14.5	1410	175.0
	Yass Valley	175	10.2	172	10.1	2271	132.9
	LHD Total ²	2546	11.7	2862	13.2	40283	185.6
Sydney	Burwood	654	16.1	637	15.7	6815	167.8
	Canada Bay	2082	21.7	2405	25.0	28536	297.0
	Canterbury-Bankstown ¹	6176	16.3	7366	19.5	84682	224.1
	Inner West	4565	22.7	4999	24.9	70289	350.0
	Strathfield	1233	26.3	1198	25.5	12370	263.6
	Sydney ¹	5721	23.2	6067	24.6	76688	311.3
	LHD Total ²	15315	22.0	16630	23.9	209088	300.1
Western NSW	Bathurst Regional	806	18.5	866	19.9	9955	228.2
	Blayney	113	15.3	159	21.6	1769	239.7
	Bogan	35	13.6	17	6.6	403	156.2
	Bourke	31	12.0	27	10.4	317	122.4
	Brewarrina	5	3.1	10	6.2	224	139.0
	Cabonne	164	12.0	144	10.6	1786	131.0
	Cobar	24	5.2	33	7.1	487	104.6
	Coonamble	29	7.3	63	15.9	590	149.1
	Cowra	162	12.7	185	14.5	1990	156.2
	Dubbo Regional	748	13.9	911	17.0	10050	187.1
	Forbes	132	13.3	107	10.8	1145	115.6
	Gilgandra	64	15.1	60	14.2	591	139.4
	Lachlan ¹	36	5.9	80	13.2	628	103.4
	Mid-Western Regional	362	14.3	329	13.0	4762	188.6
	Narromine	95	14.6	93	14.3	995	152.7
	Oberon	153	28.3	66	12.2	1034	191.1
	Orange	754	17.8	868	20.5	11026	259.7
	Parkes	191	12.9	184	12.4	2118	142.8
	Walgett	67	11.3	70	11.8	1089	182.9
	Warren	59	21.9	78	28.9	752	278.8
	Warrumbungle Shire	156	16.8	163	17.6	1717	185.1
	Weddin	40	11.1	44	12.2	523	144.8
	LHD Total ²	4219	14.8	4510	15.8	53743	188.6

Local Health District	Local Government Area	Week ending				Total	
		29 August		22 August			
		No.	Tests per 1,000 population	No.	Tests per 1,000 population	No.	Tests per 1,000 population
Western Sydney	Blacktown	8301	22.2	7434	19.9	97124	259.4
	Cumberland	4253	17.6	5173	21.4	55510	229.8
	Parramatta ¹	4098	15.9	5014	19.5	52087	202.5
	The Hills Shire	4872	27.4	5450	30.6	57413	322.6
	LHD Total ²	20996	19.9	22328	21.2	254292	241.4
NSW Total ³		156,287	19.3	170,547	21.1	2,180,528	269.5

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

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

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

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

APPENDIX B: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 23 AUGUST 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—23 August 2020											
Total	769,721	6,607	0.86%	948	0.12%	5,437	8,991	4,966	104,172	1,975	4,020
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	<0.01%	1,146	89	209	29,706	79	427
Week ending											
9 August	49,835	1	<0.01%	0	-	291	12	65	3,682	4	69
16 August	37,799	4	0.01%	0	-	208	13	60	2,495	2	43
23 August	42,323	2	<0.01%	0	<0.01%	209	7	82	2,838	3	69

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

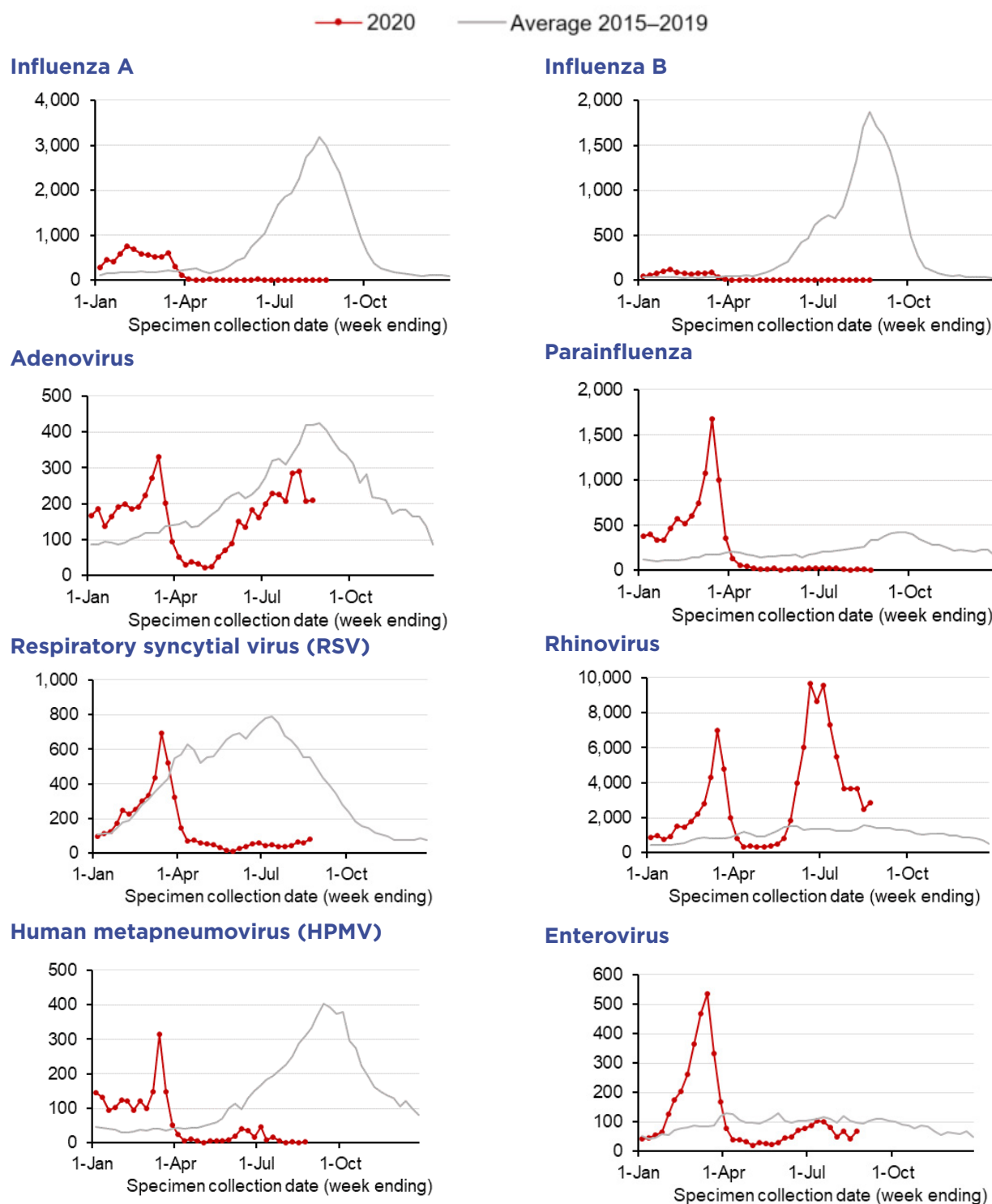
HMPV - Human metapneumovirus

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 23 AUGUST 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.



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

GLOSSARY

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

Dates used in COVID-19 reporting

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