

COVID-19 WEEKLY SURVEILLANCE IN NSW

EPIDEMIOLOGICAL WEEK 49, ENDING 5 DECEMBER 2020

Published 9 December 2020

SUMMARY FOR THE WEEK ENDING 5 DECEMBER

- There was one locally-acquired case reported in a person who worked at a Sydney quarantine hotel. This was the first locally-acquired case with a recent infection in 26 days.
- Testing numbers have decreased compared to the previous week (down 11%).
- The NSW Sewage Surveillance Program reported two detections of SARS-CoV-2 fragments. These samples were taken from the Bondi and Riverstone treatment plants. The detection in Riverstone is not associated with recently diagnosed cases in the area.
- Emergency Department visits for bronchiolitis and pneumonia in children aged 0–4 years have increased since October and remain above average for this time of year. Respiratory syncytial virus (RSV) detections remain high and have been above seasonal average since early October.
- To reduce the spread of COVID-19, it is important to test anyone with **respiratory symptoms, pneumonia and other respiratory syndromes, loss of sense of smell or taste, or unexplained fever** regardless of alternative diagnoses.

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SECTION 1: HOW IS THE OUTBREAK TRACKING IN NSW?

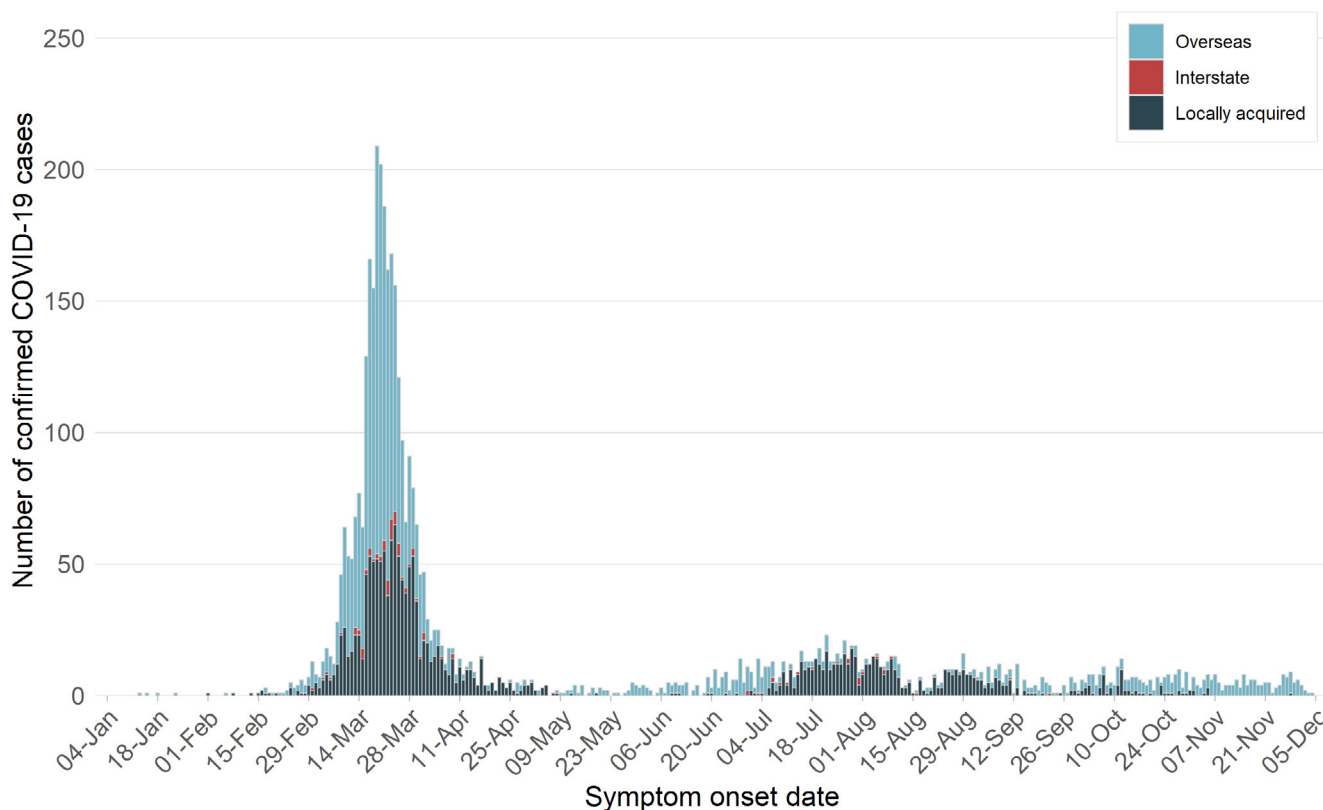
Table 1. COVID-19 cases and tests reported in NSW, up to 5 December 2020

	Week ending 5 Dec	Week ending 28 Nov	% change	Total to 5 Dec
Number of cases	40	32	↑ 25%	4,421
Overseas acquired	39	32	↑ 22%	2,460
Interstate acquired	0	0	-	90
Locally acquired	1	0	-	1,871
No links to other cases or clusters	1	0	-	434
Number of deaths	0	0	-	55
Number of tests	72,104	80,985	↓ 11%	3,547,922

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



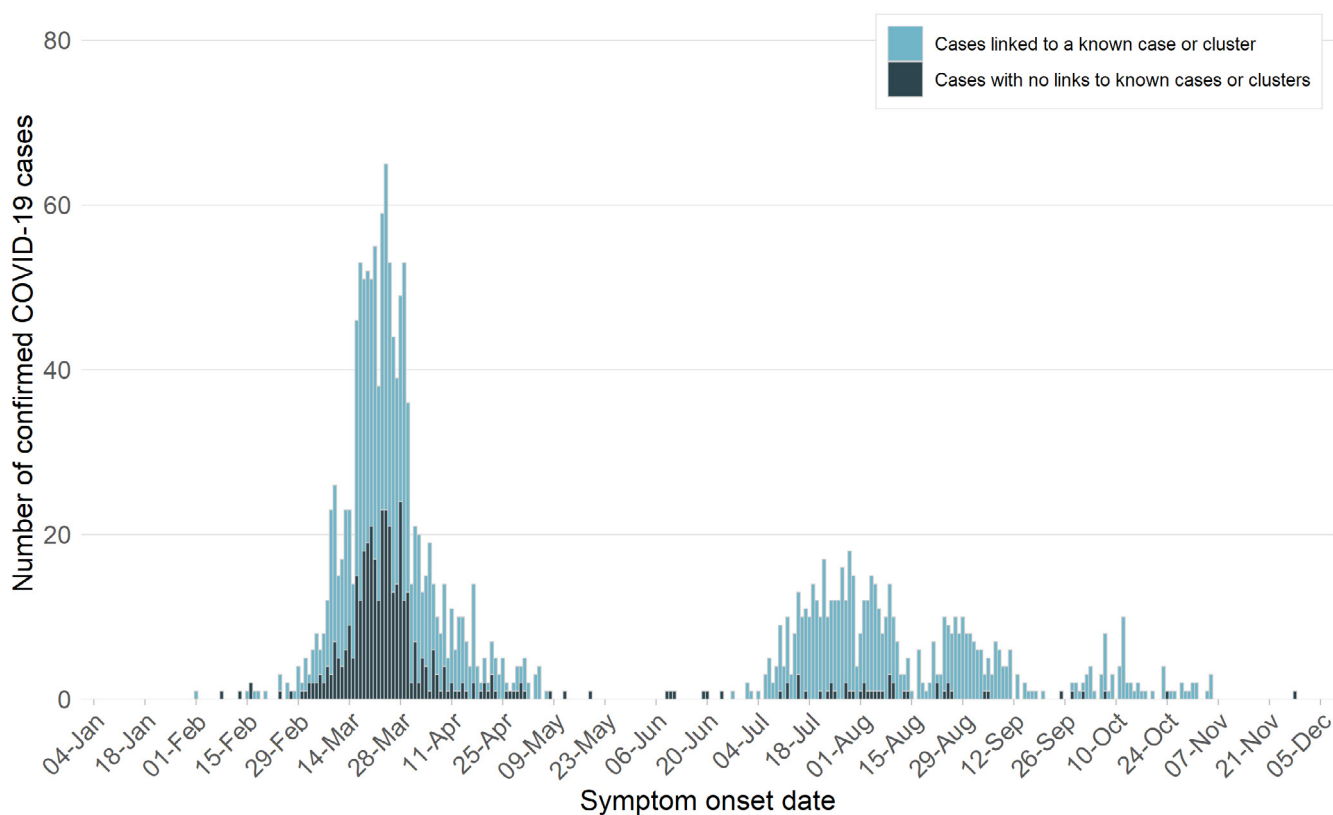
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: Except for one locally-acquired case, all recent COVID-19 cases in NSW with an **onset of symptoms** in the last two weeks have been overseas acquired.

How much local transmission is occurring in NSW?

Public health efforts are focused on contact tracing to limit further spread in the community, and identifying the source of infection for every case. 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.

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: There was one locally-acquired case with an onset of symptoms in the last four weeks.

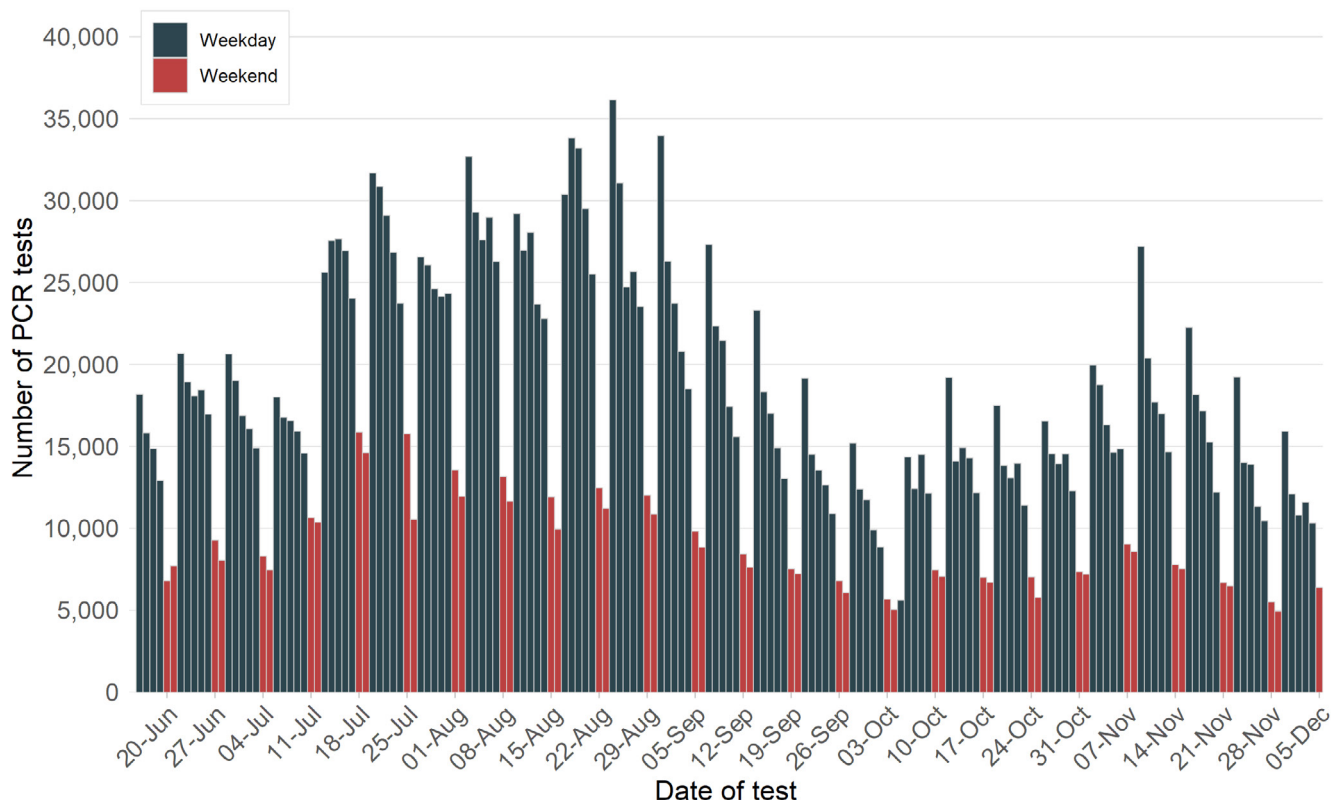
A thorough public health investigation revealed that this case likely acquired their infection whilst working at a Sydney quarantine hotel. Whole genome sequencing of a sample taken from the case indicates that the genomic strain does not match recent local cases in NSW, Victoria or South Australia. Preliminary results do not match any returned travellers that were staying at the hotel and investigations into possible transmission from flight crew who were self-isolating are ongoing. Extensive contact tracing is also underway to identify other potential sources within the hotel and onward transmission amongst close contacts.

SECTION 2: COVID-19 TESTING IN NSW

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



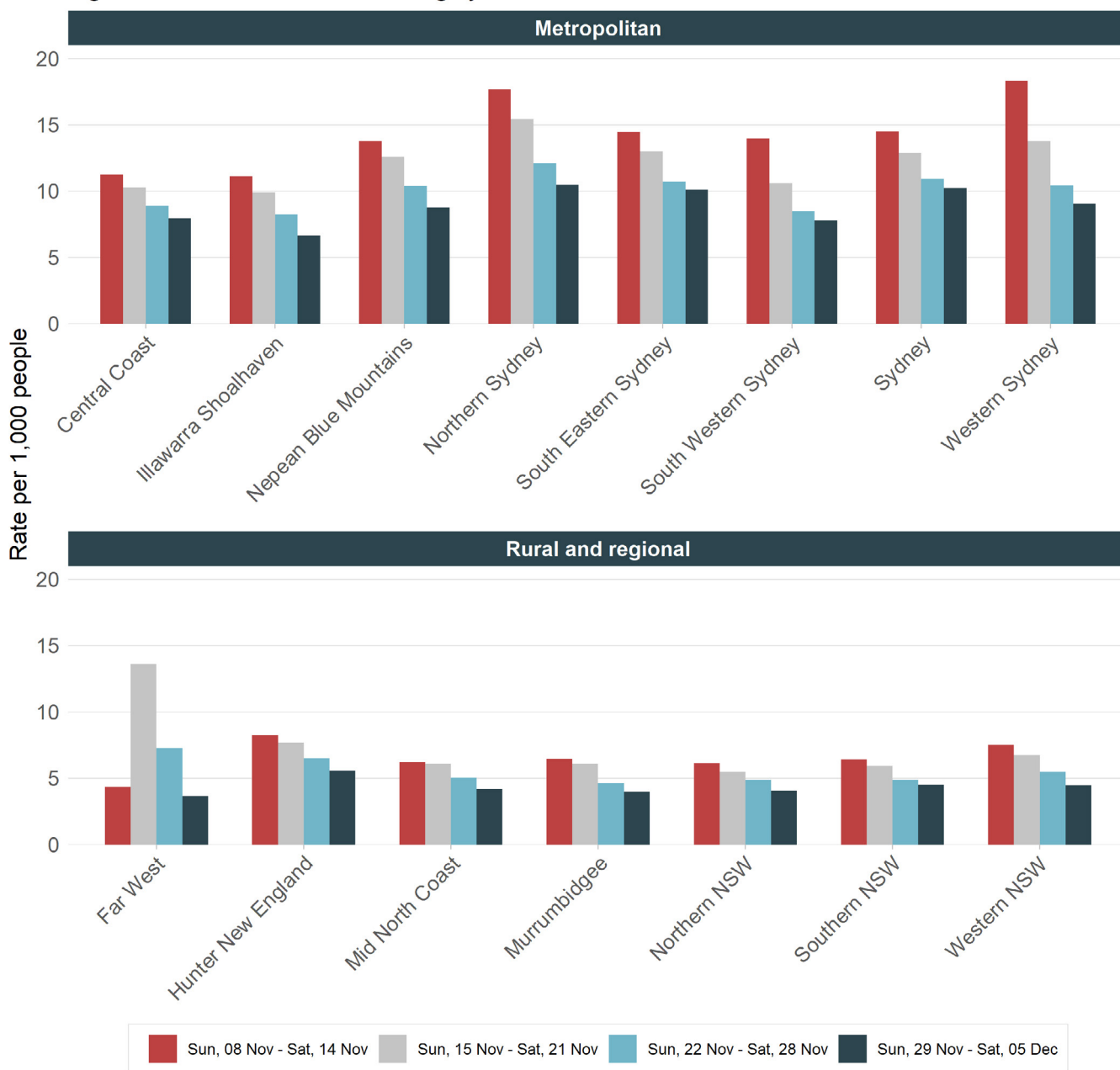
Includes SARS-CoV-2 PCR tests only and excludes repeat positive tests for an individual.

Interpretation: Testing is recommended for anyone with respiratory symptoms, loss of sense of smell or taste, or unexplained fever. In the week ending 5 December, testing rates decreased for the third consecutive week. An average of 1.3 tests were conducted per 1,000 people in NSW each day in the week ending 5 December, compared to a daily average of 1.4 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.

Testing by Local Health District

Figure 4. Rates of COVID-19 testing by LHD of residence and week

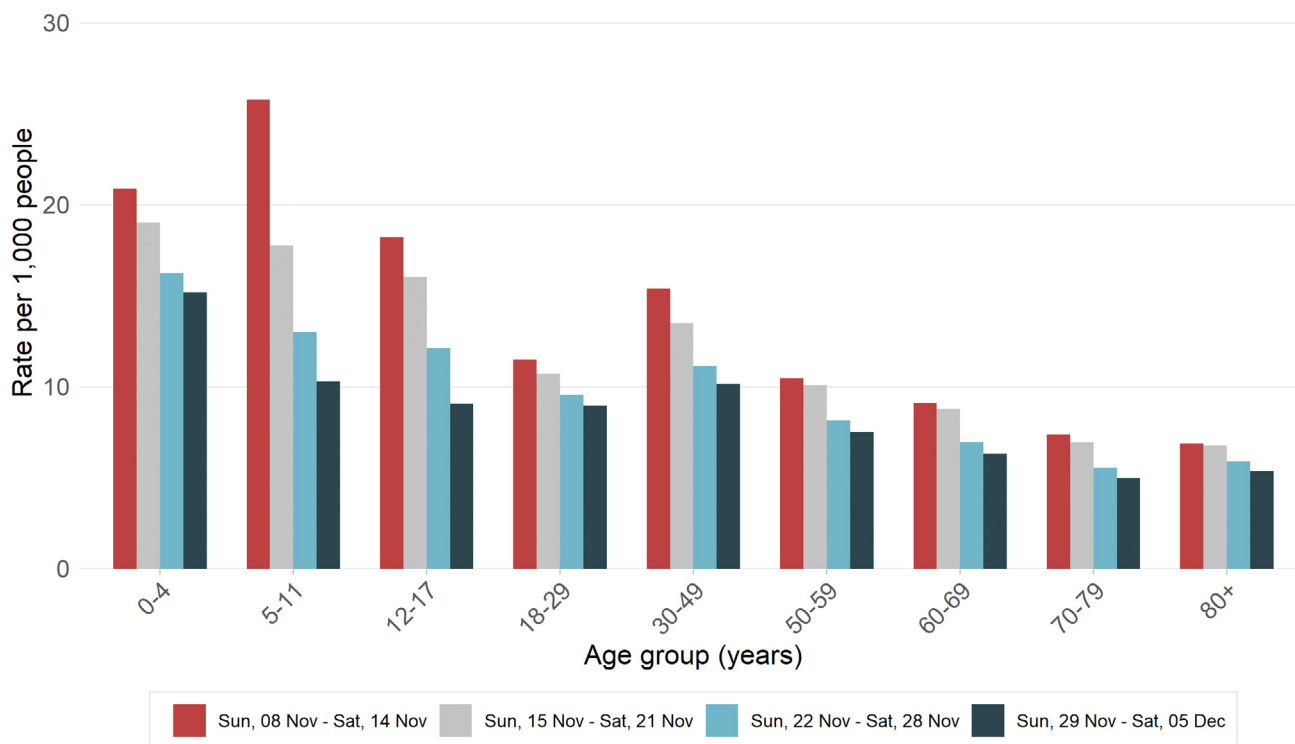


Includes SARS-CoV-2 PCR tests only and excludes notifications with missing postcode of residence.

Interpretation: Statewide testing rates in the week ending 5 December were lower compared to the previous week (9 per 1,000 vs 10 per 1,000). Testing decreased across all LHDs.

Testing by age group

Figure 5. Rates of COVID-19 testing by age group and week

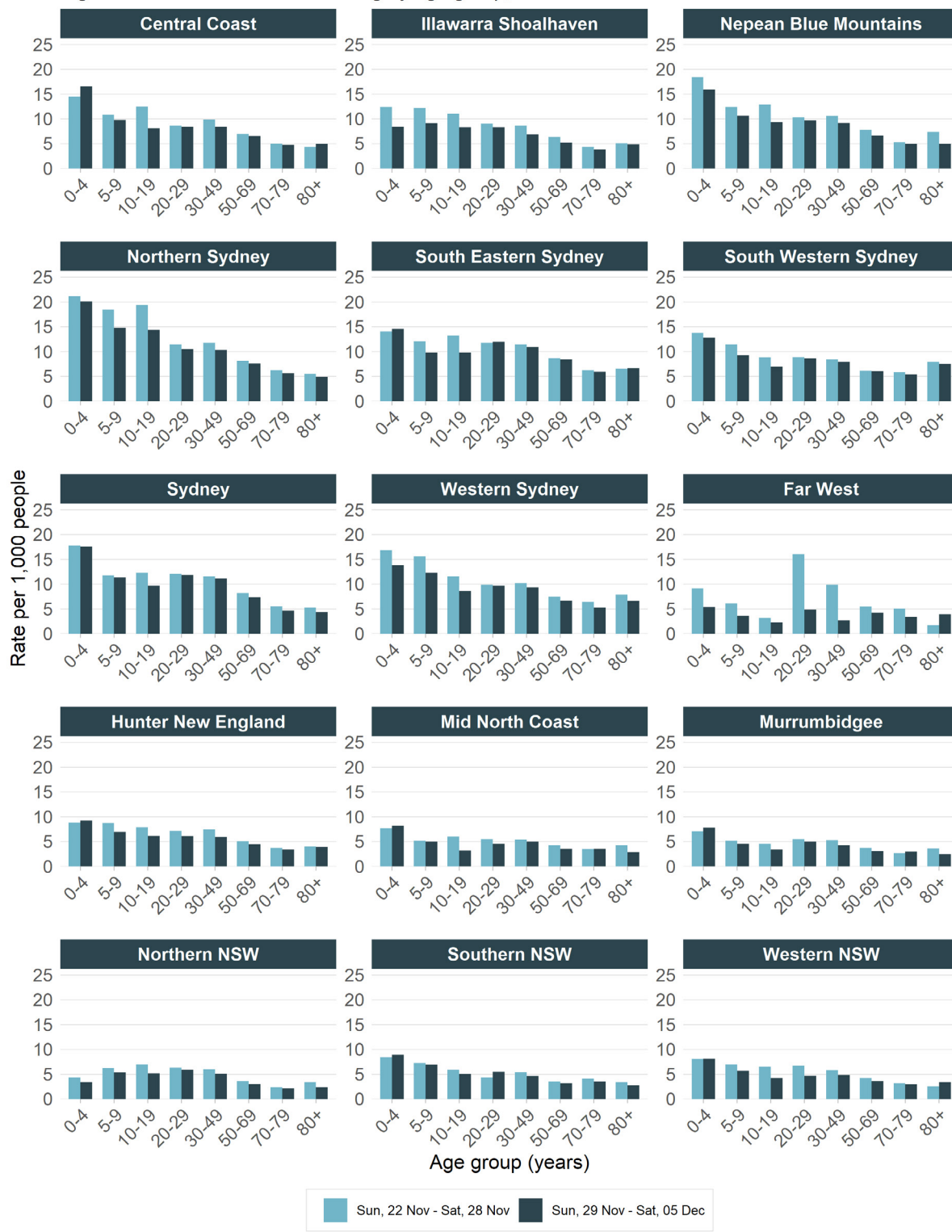


Includes SARS-CoV-2 PCR tests only and excludes notifications with age missing.

Interpretation: For the week ending 5 December, testing rates decreased across all age groups for the fourth consecutive week. Rates remain higher in young children aged 0–4 years compared to older age groups. The largest decrease in testing compared to previous weeks was seen in school-aged children (5–17 years).

Testing by LHD and age group

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



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

Interpretation: Testing rates have decreased or remained stable for all age groups across all LHDs for the week ending 5 December. In the last two weeks, high testing rates in children aged 0–4 have been mainly driven by testing in Northern Sydney, Sydney, Central Coast and Nepean Blue Mountains LHDs.

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

Information from locally-acquired 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.

This section summarises cases based on the date the case was reported to NSW Health.

Table 2. Locally-acquired COVID-19 cases in NSW, by notification week and source of infection, 8 November to 5 December 2020

Locally-acquired cases	Week ending				Total
	5 Dec	28 Nov	21 Nov	14 Nov	
Cases who are linked to a known case or cluster	0	0	0	1*	1
Cases with no links to other cases or clusters	1	0	0	0	1
Total	1	0	0	1*	2

*Includes a past infection – a PCR negative IgG positive case, likely infected in October.

Interpretation: There was one locally-acquired case with no links to a case or cluster notified in the week ending 5 December. The genomic strain of the virus relating to the case does not match any recent cases in the community or interstate and is unlikely to have been previously circulating in the community. The last reported case linked to a known case was reported on 13 November in a person with a past infection, likely acquired earlier in October.

Table 3. Locally-acquired COVID-19 cases by LHD of residence and week reported, 8 November to 5 December 2020

Local Health District	Week ending				Total	Days since last case reported
	5 Dec	28 Nov	21 Nov	14 Nov		
Central Coast	0	0	0	0	0	96
Illawarra Shoalhaven	0	0	0	0	0	92
Nepean Blue Mountains	0	0	0	0	0	81
Northern Sydney	0	0	0	0	0	53
South Eastern Sydney	0	0	0	0	0	52
South Western Sydney	1	0	0	0	1	3
Sydney	0	0	0	0	0	52
Western Sydney	0	0	0	1*	1*	22
Far West	0	0	0	0	0	247
Hunter New England	0	0	0	0	0	121
Mid North Coast	0	0	0	0	0	228
Murrumbidgee	0	0	0	0	0	89
Northern NSW	0	0	0	0	0	133
Southern NSW	0	0	0	0	0	47
Western NSW	0	0	0	0	0	95
Total	1	0	0	1*	2	3

*Includes a past infection – a PCR negative IgG positive case, likely infected in October.

Interpretation: There was one locally-acquired case reported in the week ending 5 December. This case was a resident of South Western Sydney LHD.

SECTION 4: CURRENT COVID-19 CLUSTERS IN NSW

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

Cases in community settings

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

Clusters with no ongoing public health risk

There have been no new cases associated with the Hoxton Park and private health clinic cluster for more than four weeks. At least two incubation periods have passed since the last notified case in each cluster and there is no ongoing public health risk. There are currently no active clusters across NSW.

SECTION 5: COVID-19 IN SPECIFIC POPULATIONS

COVID-19 in healthcare workers

There have been no new COVID-19 cases in healthcare workers (HCWs) reported for the last four weeks. The last case of COVID-19 reported in a HCW was notified on 13 October.

Healthcare workers 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 HCWs to identify ongoing risks in healthcare settings.

In total, there have been 37 cases of COVID-19 in HCWs since 1 August. Of these, 23 HCWs were potentially infected in healthcare settings. A further seven cases were household contacts of a known case, four were exposed in community settings, and for three cases the source of infection is unknown.

Clusters associated with healthcare-acquired infections in HCWs

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

Aboriginal people

Aboriginal and Torres Strait Islander communities are recognised as a priority group due to key drivers of increased risk of transmission and severity of COVID-19 which include mobility, remoteness, barriers to access including institutional racism and mistrust of mainstream health services, crowded and inadequate housing, and burden of disease.

No cases in Aboriginal people were reported in the week ending 5 December. In total, 45 Aboriginal people have been diagnosed with COVID-19, representing 1% of all cases in NSW. The last case of COVID-19 in an Aboriginal person was reported on 6 September.

Pregnant women

There was one overseas-acquired case in a pregnant woman reported in the week ending 5 December. In total, 35 pregnant women have been diagnosed with COVID-19 in NSW. As those who test negative are not interviewed, testing rates among pregnant women are not available.

SECTION 6: DEATHS

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

In total, 1.2% of cases (55 people) have died as a result of COVID-19 infection, most of whom were 70 years of age or older, including 28 residents of aged care facilities with known COVID-19 outbreaks. Approximately 22% (12/55) of the deaths were in overseas-acquired cases.

Table 4. Deaths as a result of COVID-19, by age group, NSW, 2020

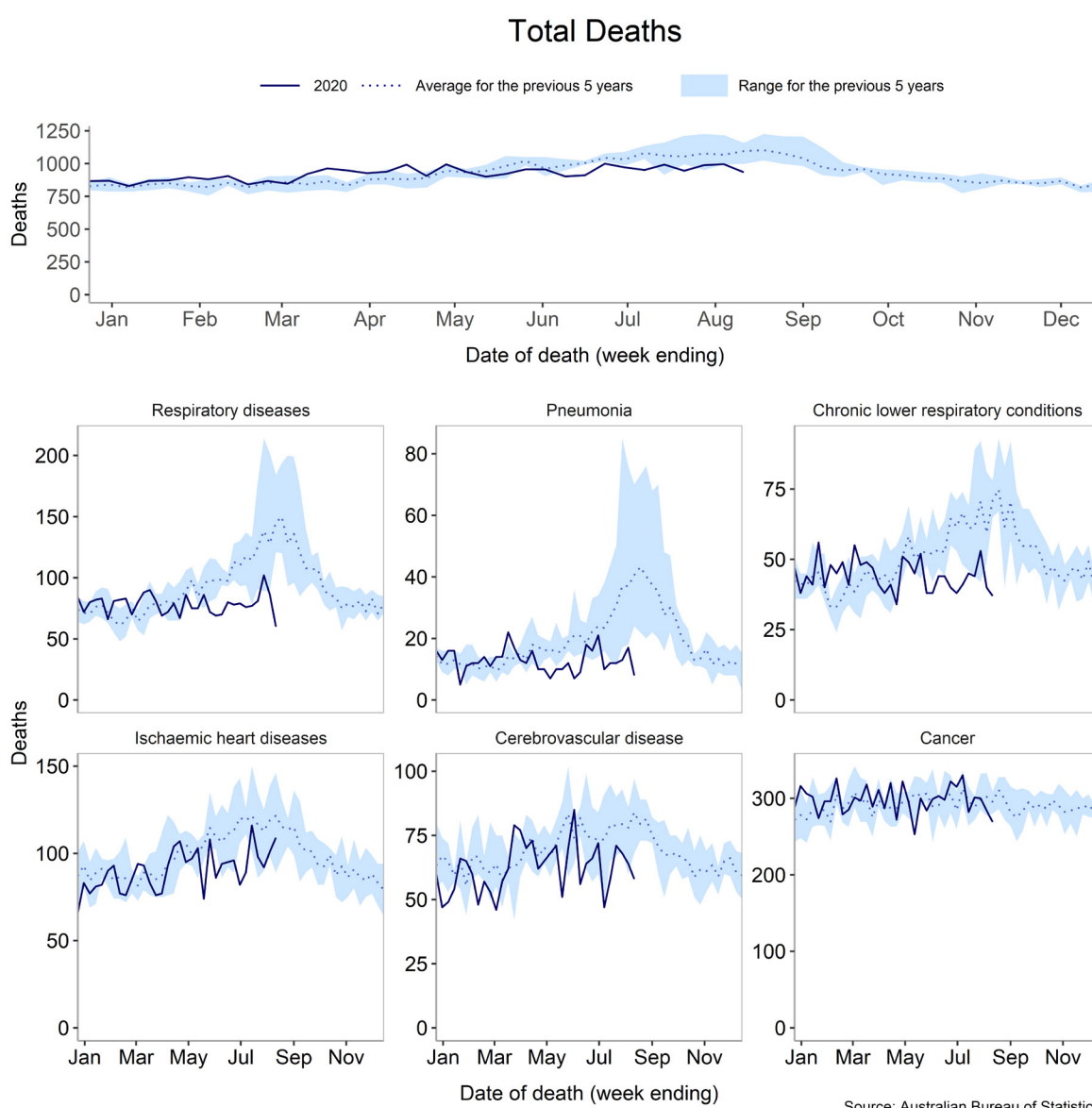
Age group	Number of deaths	Number of cases	Case fatality rate
0-4 years	0	91	0%
5-11 years	0	83	0%
12-17 years	0	128	0%
18-29 years	0	1004	0%
30-49 years	0	1387	0%
50-59 years	1	619	0.2%
60-69 years	4	586	0.7%
70-79 years	14	364	3.8%
80+ years	36	159	22.6%
Total	55	4421	1.2%

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 in NSW.

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 August 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 25 August 2020



Interpretation: There have been fewer deaths this year due to respiratory diseases, in particular pneumonia, compared with previous years. This is likely partly attributable to international travel restrictions, 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: NSW SEWAGE SURVEILLANCE PROGRAM

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

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

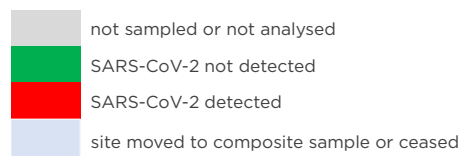
In the week ending 5 December, 77 sewage samples were tested for fragments of SARS-CoV-2. There were two detections in samples taken from the Bondi and Riverstone treatment plants. The table below shows results for previous weeks from various sites across NSW.

Table 5. Locations with positive SARS-CoV-2 detections in sewage samples since September for the week ending 5 December 2020

Pop.	Sewage treatment plant	LHD	3	10	17	24	31	7	14	21	28	5
			Oct	Oct	Oct	Oct	Oct	Nov	Nov	Nov	Nov	Dec
			Week									
			40	41	42	43	44	45	46	47	48	49
60,514	Blue Mountains (Winmalee)	NBMLHD										
4,681	North Richmond	NBMLHD										
13,052	Richmond	NBMLHD										
110,114	Penrith	NBMLHD										
12,000	Lithgow	NBMLHD										
19,000	South Windsor	NBMLHD										
8,000	McGraths Hill	NBMLHD										
69,245	Warriewood	NSLHD										
1,241	Brooklyn	NSLHD										
31,924	Hornsby Heights	NSLHD										
57,933	West Hornsby	NSLHD										
318,810	Bondi	S&SESLHD										
233,176	Cronulla	SESLHD										
1,857,740	Malabar 1	S&SES&SWSLHD										
	Malabar 2	S&SES&SWSLHD										
181,005	Liverpool	SWSLHD										
98,743	West Camden	SWSLHD										
6,882	Wallacia	SWSLHD										
14,600	Picton	SWSLHD										
161,200	Glenfield	SWSLHD										
1,341,986	North Head	NS&WSLHD										
26,997	Castle Hill Cattai	WSLHD										
	Castle Hill Glenhaven	WSLHD										
163,374	Quakers Hill	WSLHD										

			3 Oct	10 Oct	17 Oct	24 Oct	31 Oct	7 Nov	14 Nov	21 Nov	28 Nov	5 Dec
			Week									
Pop.	Sewage treatment plant	LHD	40	41	42	43	44	45	46	47	48	49
119,309	Rouse Hill	WSLHD										
37,061	Riverstone	WSLHD										
163,147	St Marys	NBM&WSLHD										
73,686	Shellharbour	ISHLHD										
196,488	Wollongong	ISHLHD										
Regional sites												
14,700	Bowral	SWSLHD										
14,000	Mittagong	SWSLHD										
9,000	Moss Vale	SWSLHD										
1,000	Berrima	SWSLHD										
2,000	Bundanoon	SWSLHD										
900	Robertson	SWSLHD										
16,068	Bombo	ISHLHD										
32,000	Ulladulla	ISHLHD										
11,000	Culburra Beach	ISHLHD										
147,500	Gosford-Kincumber	CCLHD										
-	Wyong-Toukley	CCLHD										
	Bateau Bay	CCLHD										
	Woy Woy	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										
	Albury composite	M&SLHD										
51,750	Albury Kremer St	M&SLHD										
	Albury Waterview	M&SLHD										
22,419	Goulburn	M&SLHD										
21,000	Batemans Bay	M&SLHD										
18,000	Moruya	M&SLHD										
17,000	Narooma	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										
	Wagga Wagga composite	M&SLHD										
	Wagga Wagga - inlet 1	M&SLHD										
50,000	Wagga Wagga - inlet 2	M&SLHD										
	Wagga Wagga - Koorringal STP	M&SLHD										
2,050	Bourke	W&FWLHD										
36,603	Bathurst	W&FWLHD										

			3 Oct	10 Oct	17 Oct	24 Oct	31 Oct	7 Nov	14 Nov	21 Nov	28 Nov	5 Dec
			Week									
Pop.	Sewage treatment plant	LHD	40	41	42	43	44	45	46	47	48	49
19,000	Broken Hill	W&FWLHD	■	■	■	■	■	■	■	■	■	■
500	Dareton	W&FWLHD	■	■	■	■	■	■	■	■	■	■
11,600	Parkes	W&FWLHD	■	■	■	■	■	■	■	■	■	■
37,000	Dubbo	W&FWLHD	■	■	■	■	■	■	■	■	■	■
24,000	Armidale	HNELHD	■	■	■	■	■	■	■	■	■	■
45,000	Tamworth	HNELHD	■	■	■	■	■	■	■	■	■	■
10,000	Moree	HNELHD	■	■	■	■	■	■	■	■	■	■
12,000	Forster	HNELHD	■	■	■	■	■	■	■	■	■	■
225,834	Hunter - Burwood Beach	HNELHD	■	■	■	■	■	■	■	■	■	■
60,000	Hunter - Shortland	HNELHD	■	■	■	■	■	■	■	■	■	■
115,000	Hunter - Belmont	HNELHD	■	■	■	■	■	■	■	■	■	■
60,000	Hunter - Morpeth	HNELHD	■	■	■	■	■	■	■	■	■	■
58,300	Hunter - Boulder Bay	HNELHD	■	■	■	■	■	■	■	■	■	■
35,000	Hunter - Raymond Terrace	HNELHD	■	■	■	■	■	■	■	■	■	■
2,500	Hunter - Karuah	HNELHD	■	■	■	■	■	■	■	■	■	■
18,958	Byron Bay - Ocean Shores	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
(both plants total)	Byron Bay	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
31,104	Ballina	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
72,000	Tweed - Kingscliff	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
(Tweed District)	Tweed - Hastings Point	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
12,250	North Grafton	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
6,300	South Grafton	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
6,500	Yamba	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
54,370	Port Macquarie	N&MNCLHD	■	■	■	■	■	■	■	■	■	■
50,000	Coffs Harbour	N&MNCLHD	■	■	■	■	■	■	■	■	■	■



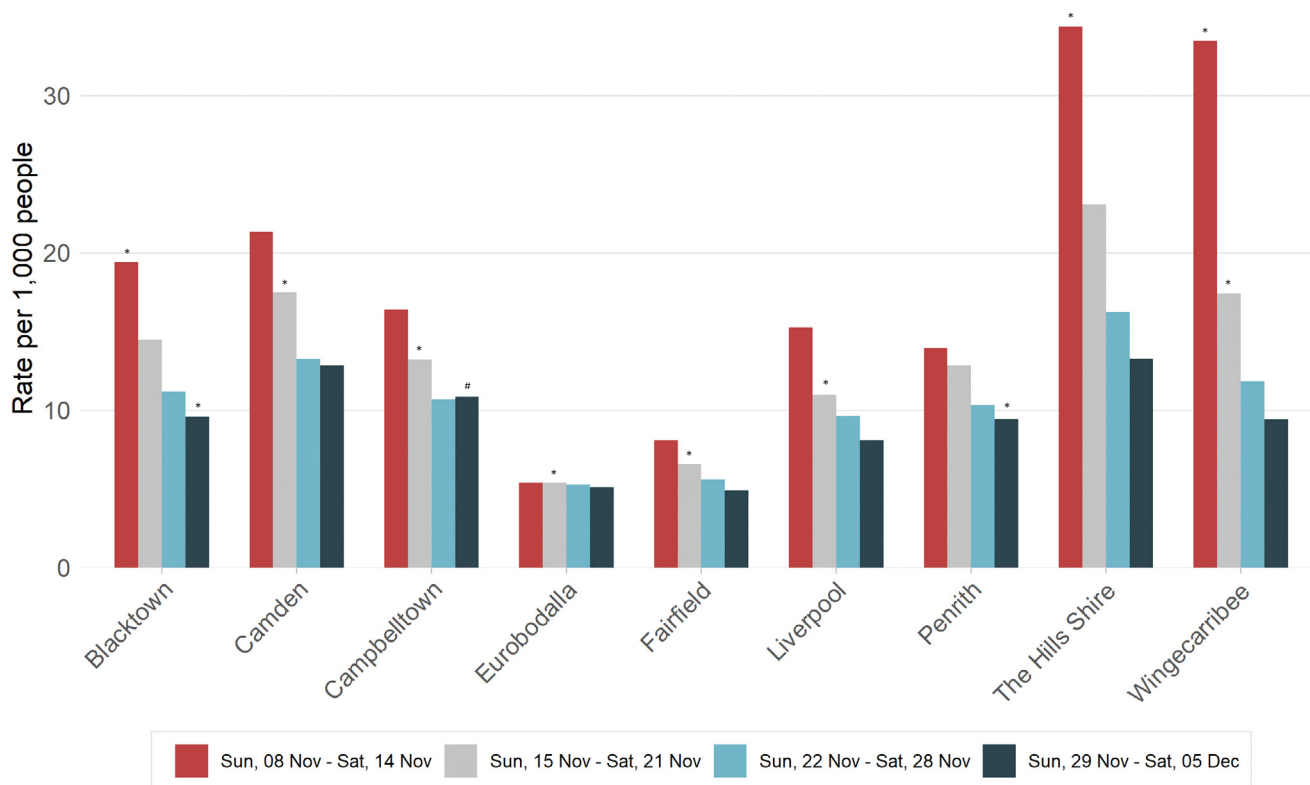
c composite of the separate influent samples
 l result from another laboratory
 n results from network sites

Interpretation: In the last week, there were two detections of SARS-CoV-2 from the Bondi and Riverstone plants. The detection in Riverstone is not associated with recently diagnosed cases in the area. Subsequent testing did not detect SARS-CoV-2 in the community residing in the Riverstone catchment or in surrounding areas. The Bondi plant has had positive detections for three consecutive weeks and serves Sydney city, including quarantine hotels.

Testing rates in areas associated with new cases or sewage detections

Public health alerts are routinely issued in relation to reported cases in the community and detections of SARS-CoV-2 in sewage. The following figure demonstrates the impact of messages on testing rates in areas with recent cases or detections of virus fragments in sewage.

Figure 8. COVID-19 testing by LGA with recent SARS-CoV-2 sewage detections or cases



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

*Case reported or sewage detection.

#Locally-acquired case reported this week (see Section 1).

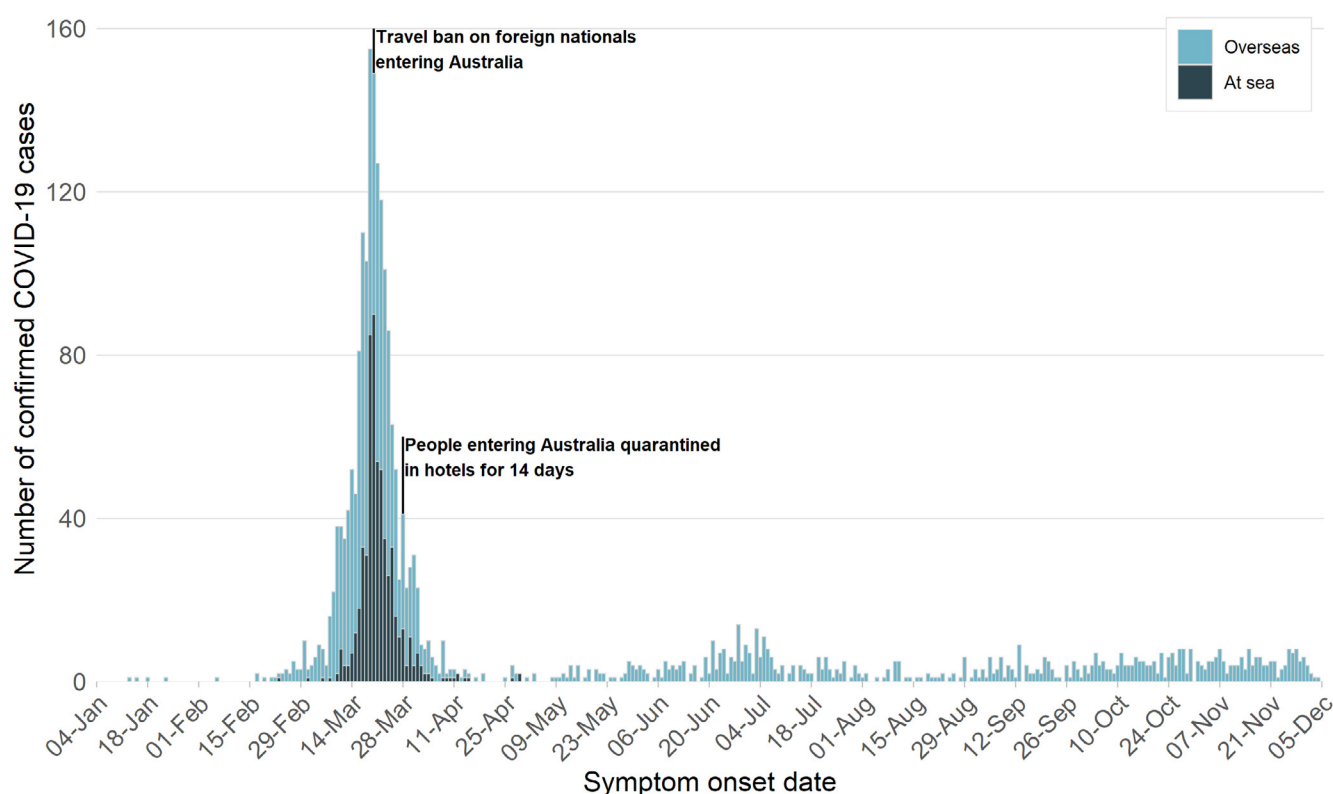
Interpretation: A sewage detection in Riverstone last week prompted a health alert to promote testing across Blacktown, The Hills Shire and Penrith LGAs. Testing rates across NSW have decreased in recent weeks. Testing rates have decreased to a lesser extent in areas with recent cases or SARS-CoV-2 sewage detections.

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



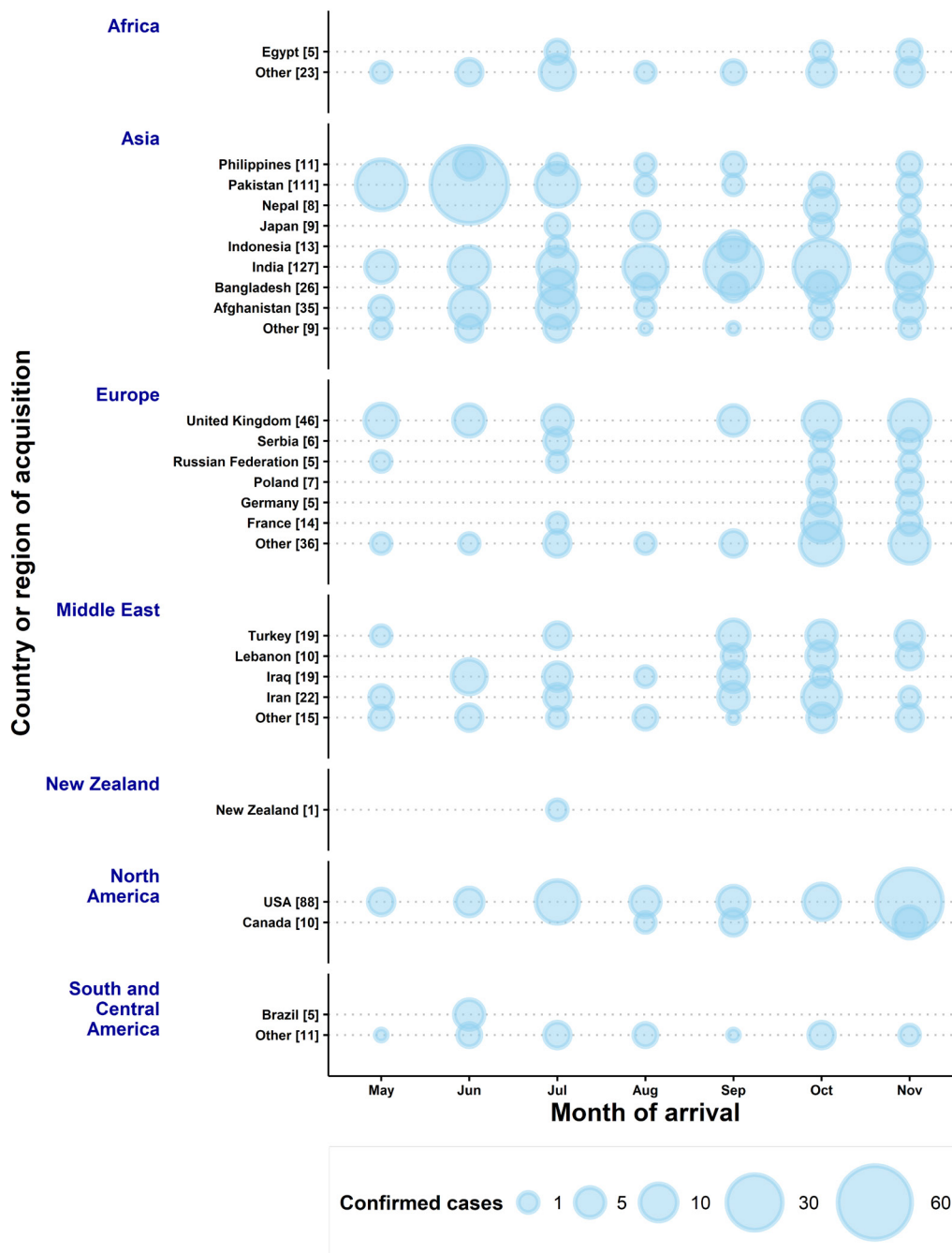
The date of the first positive test is used for cases who did not report symptoms.

Interpretation: The number of new cases in returned travellers has decreased markedly since March in line with travel restrictions and declined further again since mid-July. There were 39 overseas-acquired cases reported in the week ending 5 December, 22% more than the previous week.

Country of acquisition of COVID-19 for overseas travellers

The following figure displays the countries and regions with the greatest numbers of international travellers diagnosed with COVID-19 in NSW.

Figure 10. Overseas-acquired COVID-19 cases by country of acquisition and arrival month, reported from May to November, NSW, 2020



Interpretation: Since May, the majority of international travellers diagnosed in NSW were likely infected in Asia or North America. The pattern seen in COVID-positive travellers over time reflects the evolving nature of the pandemic in those areas.

In the last four weeks, there have been 146 COVID-positive travellers who have arrived in NSW. The table below lists the top 10 countries of acquisition for these travellers.

Table 6. Top 10 countries of acquisition for overseas travellers that have tested positive in the last four weeks (8 November–5 December)

Country of acquisition of COVID-19	Number (%) of cases in the last four weeks
United States	43 (31%)
India	15 (10%)
United Kingdom, Channel Islands and Isle of Man	14 (10%)
Canada	7 (5%)
Afghanistan	6 (4%)
Indonesia	6 (4%)
Bangladesh	4 (3%)
Poland	4 (3%)
Turkey	4 (3%)
Lebanon	3 (2%)
Other	38 (26%)
Total	146 (100%)

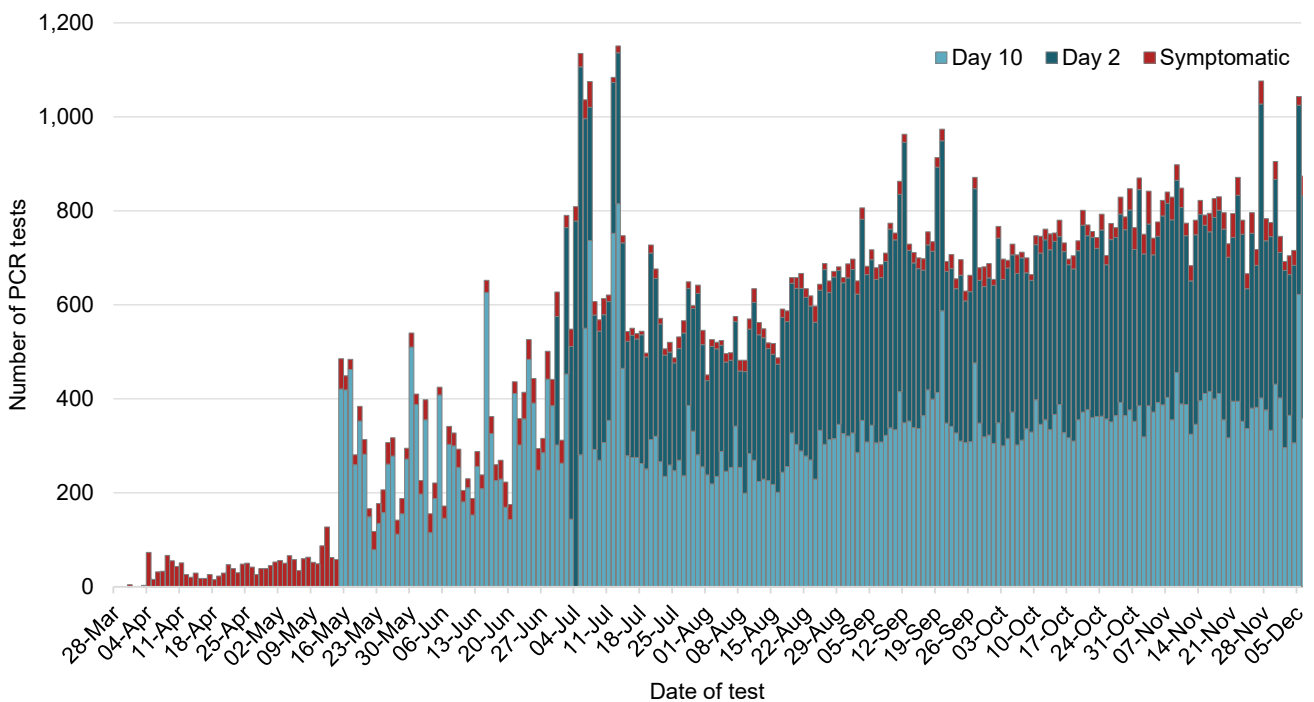
Interpretation: In the last four weeks, travelers infected in the United States accounted for the largest number of overseas-acquired infections (45, 31%), followed by travellers likely infected in India (15, 10%), and the United Kingdom (14, 10%).

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. Testing is also carried out on individuals that became symptomatic in addition to the two mandatory tests.

Since hotel quarantine began on 29 March, a total of 129,327 PCR tests have been conducted with 632 overseas-acquired cases and four interstate-acquired COVID-19 cases detected while in hotel quarantine. In the last four weeks, 10,604 returned travellers received a day two swab in hotel quarantine, and 2.7% (285) had symptoms at the time of screening. In the same time period, 10,812 returned travellers received a day 10 swab, and 1.3% (135) had symptoms at the time of screening.

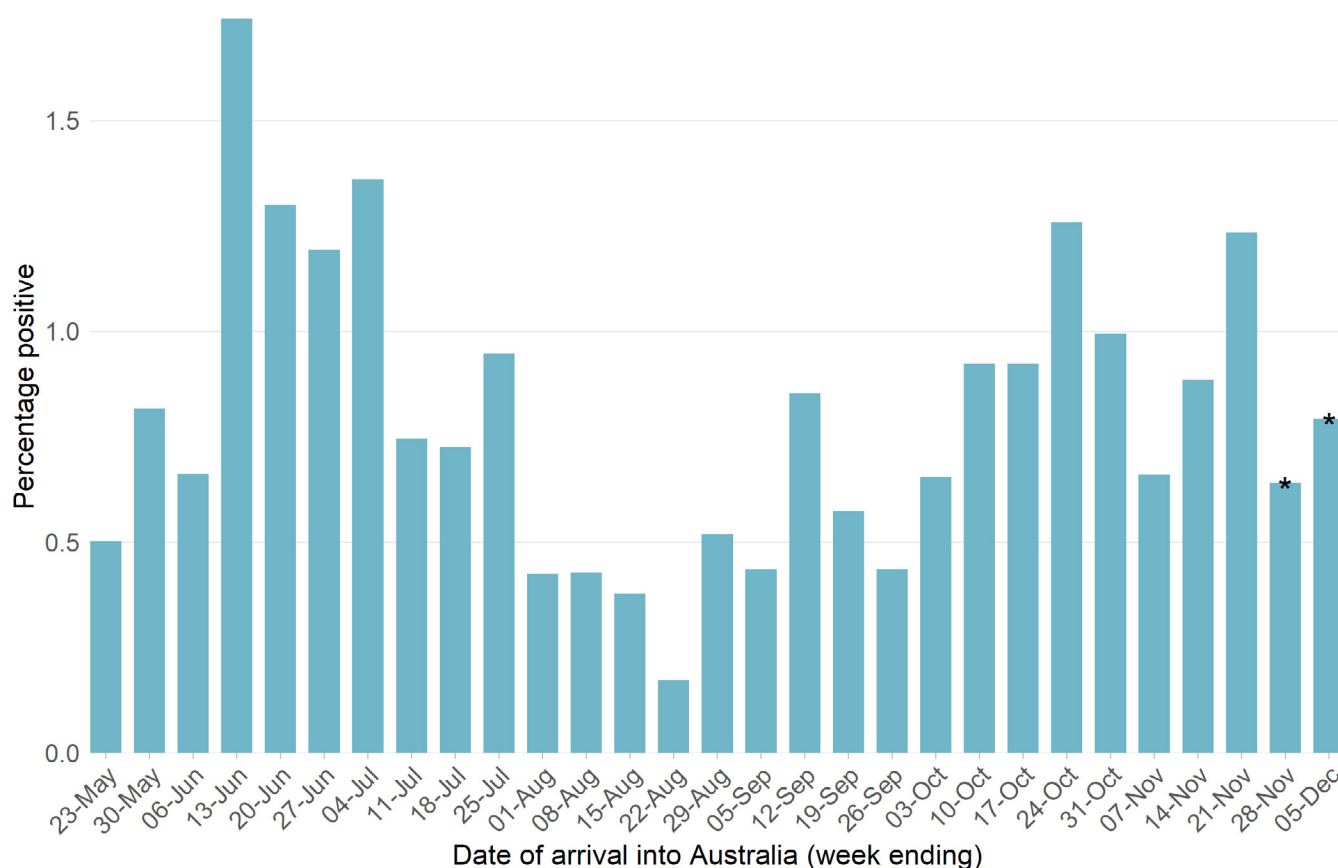
Figure 11. COVID-19 testing in returned travellers in hotel quarantine, reported from 29 March to 5 December, NSW, 2020



Interpretation: In the week ending 5 December, there were 5,581 tests conducted through the hotel quarantine screening programs.

The graph below shows the proportion positive of international travellers who were diagnosed with COVID-19 during their stay in hotel quarantine in NSW. Percentages are reported by week of arrival in Australia.

Figure 12. COVID-19 percentage positive in returned travellers in hotel quarantine by week of arrival in Australia, reported from week ending 23 May to week ending 5 December, NSW, 2020



Interpretation: In most weeks since May 2020, less than 1% of returned travellers have tested positive during their stay in hotel quarantine. Data is likely incomplete for returned travellers who have arrived within the last two weeks as they are still in hotel quarantine.

SECTION 9: OTHER RESPIRATORY INFECTIONS IN NSW

Influenza and other respiratory virus cases and tests reported in NSW, up to 29 November 2020

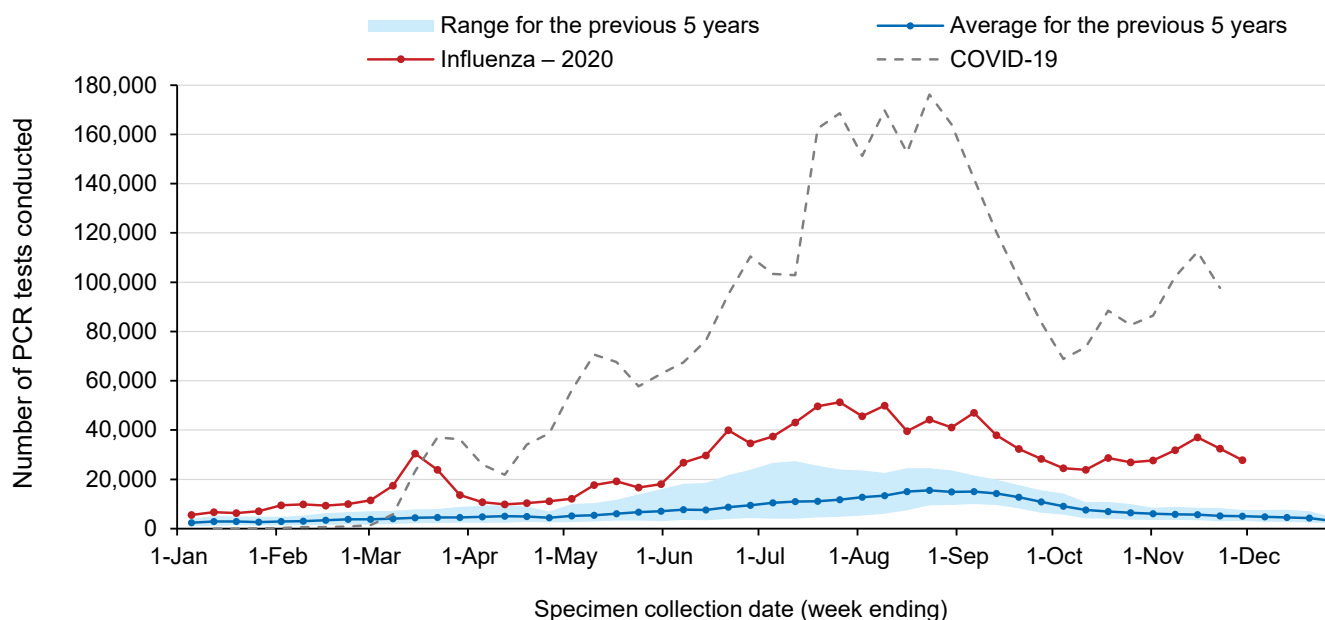
In NSW, routine surveillance for influenza and other respiratory viruses is conducted through sentinel laboratories. The number of all PCR tests (positive and negative) are provided to NSW Health by participating laboratories each week. Testing counts reflect the number of influenza PCR tests conducted;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

The most recent data available is for testing carried out to 29 November. A total of 1,225,426 influenza tests have been performed at participating laboratories to 29 November, with 27,804 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 29 November 2020

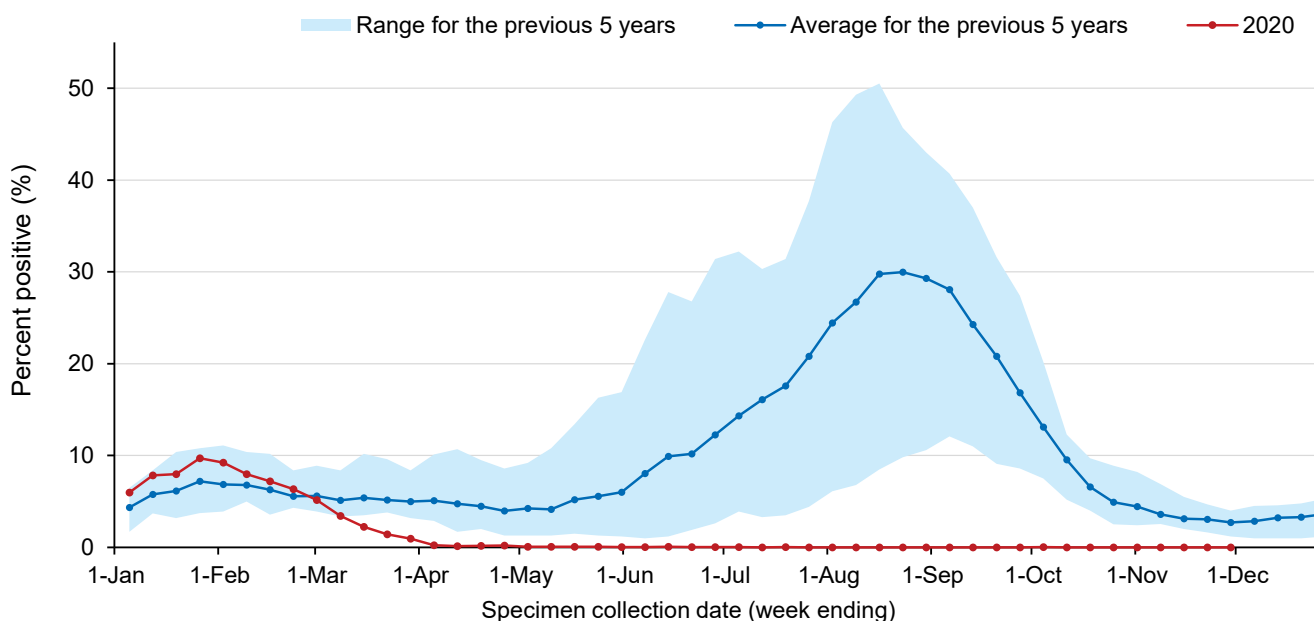


Interpretation: In every week this year, the number of influenza tests performed has exceeded the previous five-year average.

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.

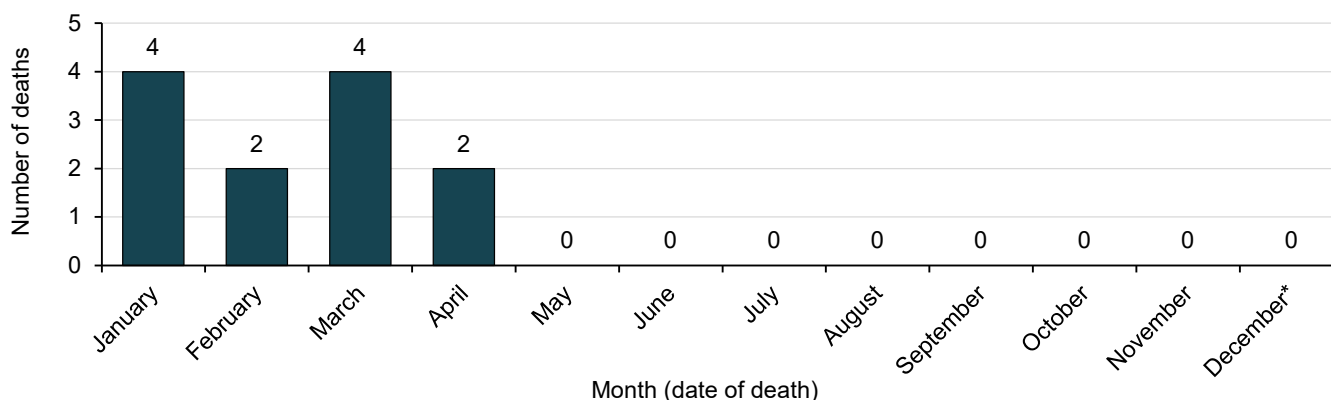
Figure 14. Proportion of tests positive for influenza, to 29 November 2020



Interpretation: In the week ending 29 November, the percent of influenza tests that were positive continued to be very low (<0.01%), indicating limited influenza transmission in the community. Since early March, this percentage has remained far lower than the usual range for the time of year.

How many people have died as a result of influenza?

Figure 15. Laboratory-confirmed influenza deaths by month of death, to 29 November 2020



Note: *month to date.

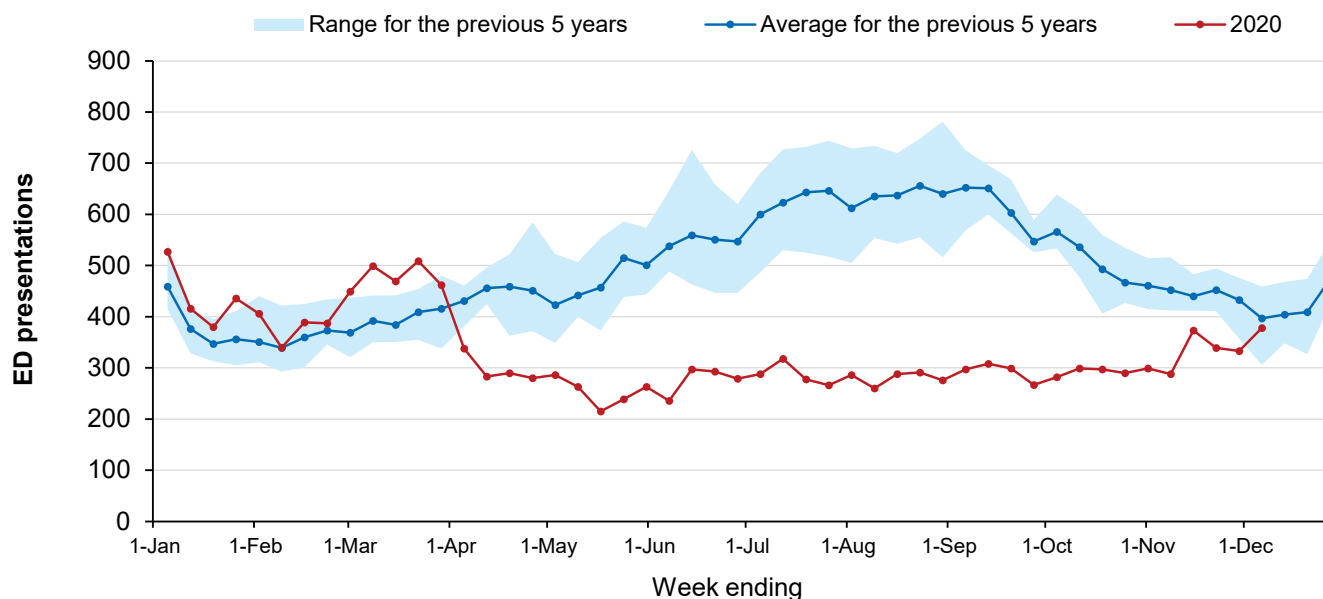
Interpretation: No influenza deaths have been reported in NSW since April 2020. The number of influenza-related deaths identified via coroner’s reports and death registrations from 1 January to 29 November 2020 is lower than the same period last year (12 deaths in 2020 compared with 330 in 2019).² Two-thirds of the deaths were in people aged 65 years and over.

² Includes deaths in people with laboratory-confirmed influenza.

How are emergency department presentations for respiratory infections tracking?

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

Figure 16. Emergency Department pneumonia presentations in NSW by week, to 6 December 2020



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

In the week ending 6 December, pneumonia presentations increased and are within the seasonal range for the first time since April.

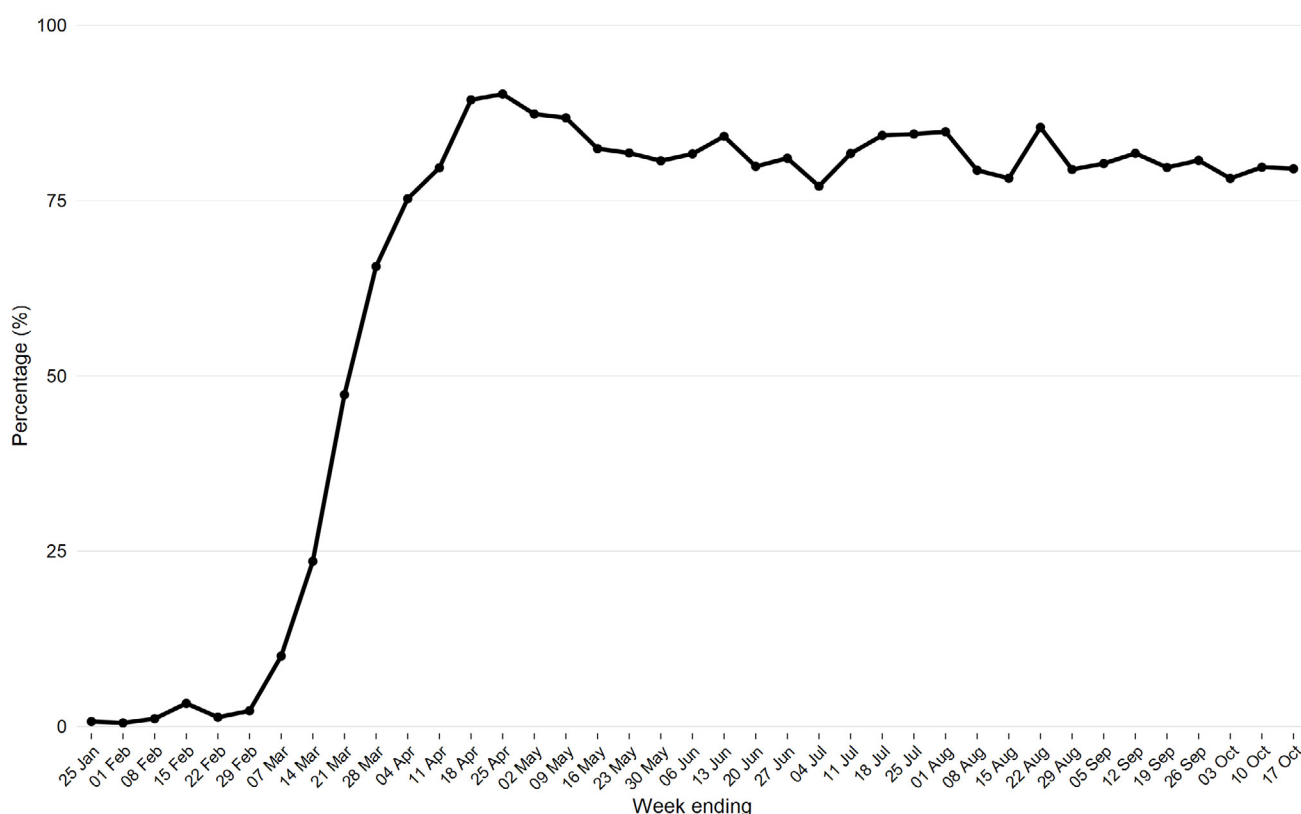
³ NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance (PHREDSS) system, CEE, NSW Ministry of Health. Comparisons are made with data for the preceding five years. Includes unplanned presentations to 67 NSW emergency departments (accounts for 87% of total public ED activity).

Are all people diagnosed with pneumonia in a NSW Emergency Department tested for COVID-19?

COVID-19 testing is recommended for everyone with respiratory symptoms. To understand the testing rates among patients presenting to an Emergency Department (ED) with pneumonia, COVID-19 testing data was linked to the Emergency Department Data Collection (EDDC) which contains data on all unplanned presentations to NSW EDs. Pneumonia presentations were recorded as having been tested for COVID-19 if testing occurred on the same date or one day either side of the ED presentation. As there is a delay in receipt of data to the EDDC, complete data on pneumonia presentations was limited to the week ending 17 October.

The figure below shows the percentage of ED presentations for pneumonia that were tested for COVID-19. Pneumonia presentations are defined using the NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance (PHREDSS) system definitions. This included diagnoses of viral, bacterial, atypical or unspecified pneumonia, and Legionnaires' disease, but excluded diagnoses of pneumonia with influenza.

Figure 17. Percentage of Emergency Department pneumonia presentations tested for COVID-19, NSW, 2020

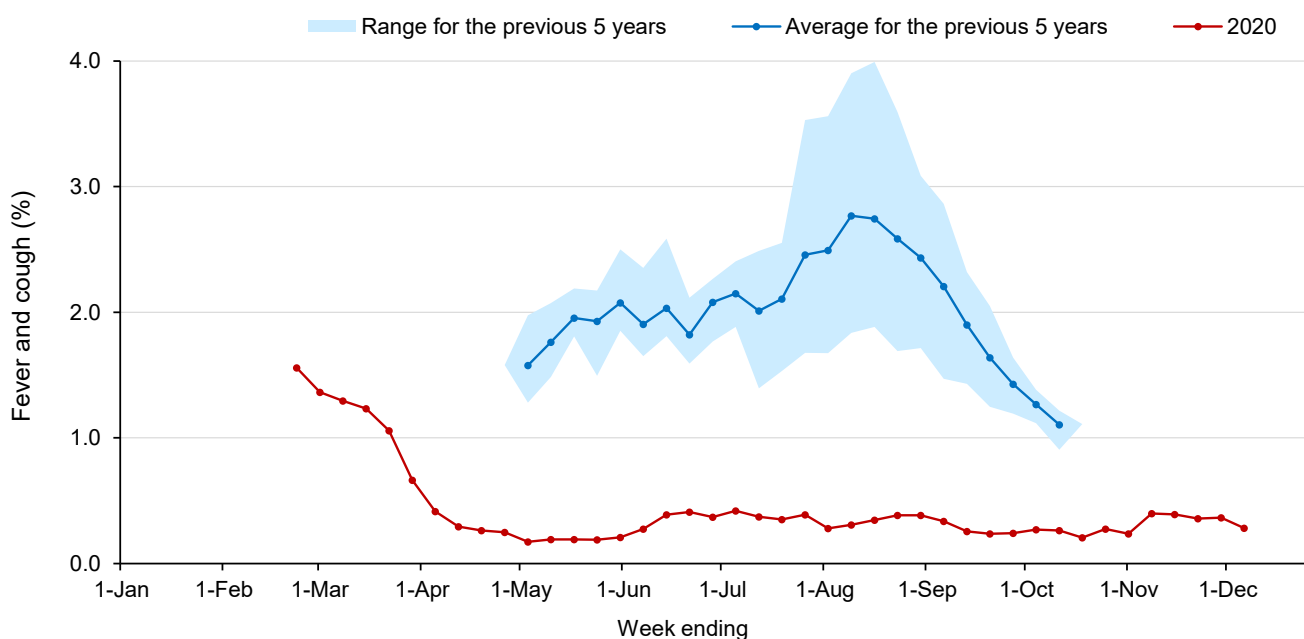


Interpretation: The percentage of ED pneumonia presentations that were tested for COVID-19 has remained steady and above 75% since May, with a peak of almost 90% of all pneumonia presentations tested during late April.

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 6 December 2020



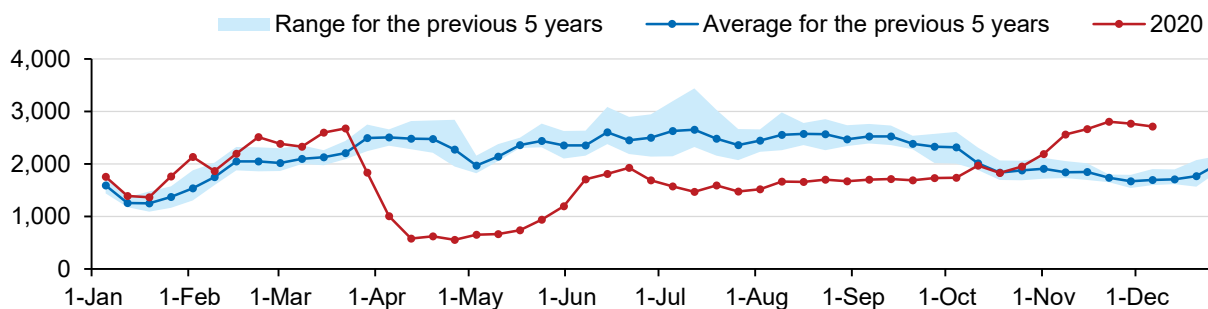
Interpretation: In NSW in the week ending 6 December of the 12,399 people surveyed, 35 people (0.28%) reported flu-like symptoms. The proportion of people reporting symptoms remains well below the usual range for this time of year.

Respiratory infections in children aged 0–4 years

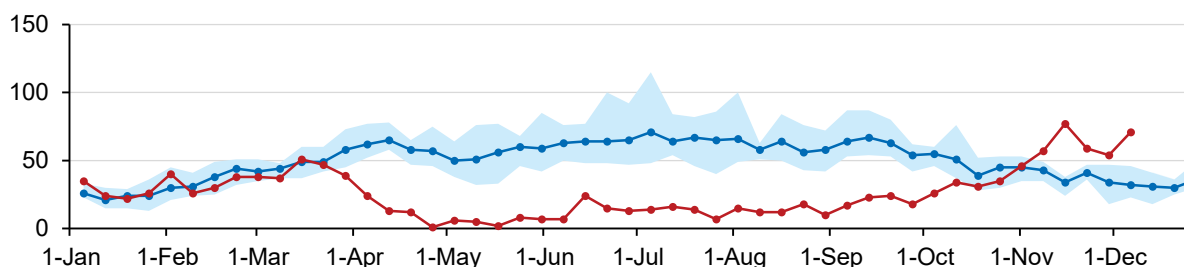
The figures below show weekly respiratory, pneumonia and bronchiolitis presentations to Emergency Departments in NSW for children under 5, using PHREDSS data. Also shown are weekly laboratory notifications for respiratory syncytial virus (RSV) from laboratory sentinel surveillance.

Figure 19. Emergency Department presentations in children 0–4 years, for all respiratory problems/fever and unspecified infection, pneumonia and bronchiolitis in NSW by week, to 6 December 2020

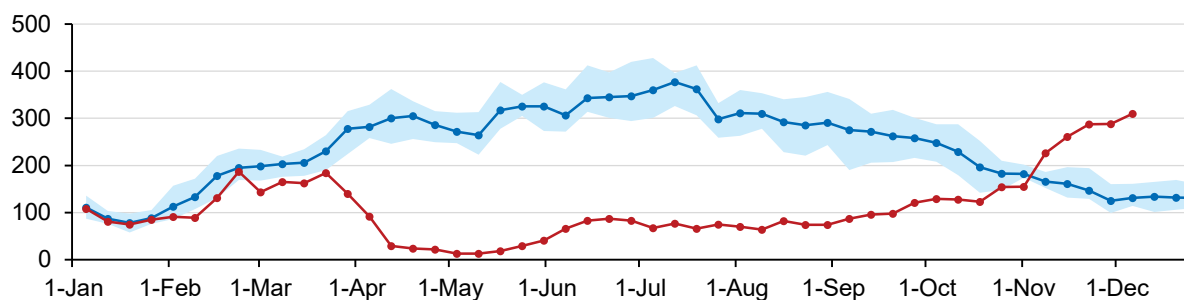
All respiratory problems/fever and unspecified infection - total



Pneumonia

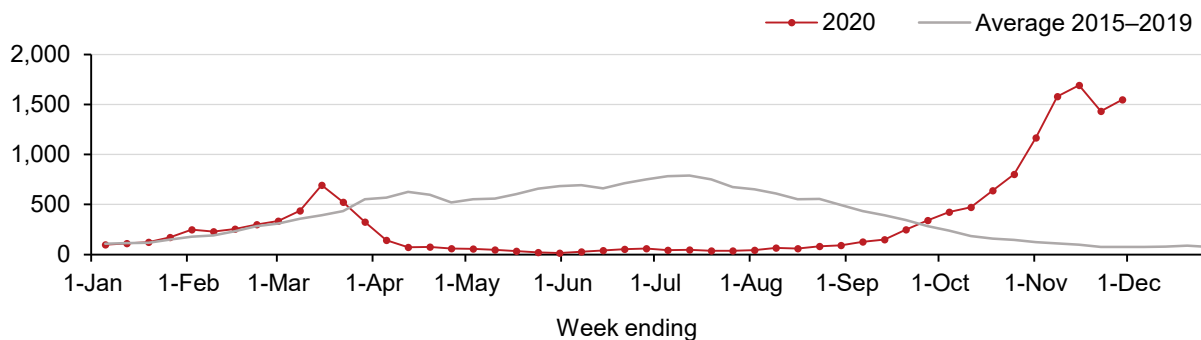


Bronchiolitis



Week ending

Figure 20. Number of positive PCR test results for all ages, for respiratory syncytial virus (RSV) at sentinel NSW laboratories, 1 January to 29 November 2020



Interpretation:

- Emergency presentations for any respiratory illness among those aged 0-4 years decreased slightly this week and have been above the seasonal range since early November.
- Pneumonia presentations increased this week in children aged 0-4 years and have been above the seasonal range since early November. For all age groups, pneumonia presentations are within the seasonal range for the first time since April.
- Bronchiolitis is a common disease of infants often caused by respiratory syncytial virus (RSV). In the week ending 6 December, bronchiolitis presentations increased and remain above the usual five-year average range for December.
- RSV detections increased this week and have been above the five-year mean since September. The steep increase in reported cases in recent weeks corresponds with a sharp increase in emergency presentations for bronchiolitis, which have been above the usual seasonal range since early November.

APPENDIX A: COVID-19 PCR TESTS IN NSW

Local Health District	Local Government Area	Week ending				Total	
		5 December		28 November		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	2805	8.0	3137	8.9	131085	371.5
Far West	Balranald	6	2.6	9	3.9	505	216.0
	Broken Hill	73	4.2	101	5.8	5212	298.2
	Central Darling	6	3.3	9	4.9	397	215.9
	Wentworth	26	3.7	101	14.3	2328	330.1
	LHD Total ²	111	3.7	220	7.3	8442	280.1
Hunter New England	Armidale Regional	140	4.6	148	4.8	9766	317.3
	Cessnock	207	3.5	247	4.1	15883	264.8
	Dungog	40	4.2	42	4.5	2467	261.8
	Glen Innes Severn	17	1.9	30	3.4	1817	204.8
	Gunnedah	47	3.7	39	3.1	3258	256.9
	Gwydir	6	1.1	8	1.5	701	131.0
	Inverell	46	2.7	67	4.0	4174	247.1
	Lake Macquarie	1550	7.5	1733	8.4	86571	420.5
	Liverpool Plains	14	1.8	31	3.9	2089	264.3
	Maitland	615	7.2	694	8.2	39427	462.9
	Mid-Coast	300	3.2	306	3.3	22572	240.6
	Moree Plains	32	2.4	54	4.1	3026	228.2
	Muswellbrook	69	4.2	75	4.6	4563	278.6
	Narrabri	23	1.8	26	2.0	2691	204.9
	Newcastle	1364	8.2	1648	10.0	85319	515.3
	Port Stephens	386	5.3	471	6.4	28545	388.5
	Singleton	120	5.1	157	6.7	9441	402.4
	Tamworth Regional	258	4.1	324	5.2	22034	352.3
	Tenterfield	12	1.8	12	1.8	1080	163.8
	Upper Hunter Shire	47	3.3	71	5.0	4066	286.7
Uralla	17	2.8	27	4.5	1254	208.6	
Walcha	4	1.3	9	2.9	900	287.2	
	LHD Total ²	5312	5.6	6216	6.5	351361	368.9
Illawarra Shoalhaven	Kiama	154	6.6	215	9.2	9609	410.9
	Shellharbour	528	7.2	681	9.3	29901	408.3
	Shoalhaven	523	5.0	680	6.4	33529	317.4
	Wollongong	1587	7.3	1888	8.7	80763	370.3
	LHD Total ²	2792	6.7	3464	8.3	153802	366.5
Mid North Coast	Bellingen	58	4.5	76	5.9	3611	277.9
	Coffs Harbour	306	4.0	327	4.2	19731	255.3
	Kempsey	140	4.7	160	5.4	8866	298.1
	Nambucca	81	4.1	101	5.1	4815	243.1
	Port Macquarie-Hastings	366	4.3	470	5.6	25189	298.0
	LHD Total ²	951	4.2	1134	5.0	62212	275.7

Local Health District	Local Government Area	Week ending				Total	
		5 December		28 November		No.	Tests per 1,000 population
		No.	Tests per 1,000 population	No.	Tests per 1,000 population		
Murrumbidgee	Albury	244	4.5	279	5.1	16981	312.4
	Berrigan	10	1.1	18	2.1	1954	223.3
	Bland	27	4.5	14	2.3	1508	252.5
	Carrathool	1	0.4	5	1.8	333	119.0
	Coolamon	10	2.3	13	3.0	1200	276.4
	Cootamundra-Gundagai Regional	38	3.4	54	4.8	2854	254.0
	Edward River	22	2.4	33	3.6	2569	282.8
	Federation	35	2.8	36	2.9	2802	225.3
	Greater Hume Shire	35	3.3	31	2.9	3096	287.6
	Griffith	147	5.4	144	5.3	8348	308.9
	Hay	6	2.0	8	2.7	523	177.4
	Hilltops	63	3.4	88	4.7	5085	271.9
	Junee	28	4.2	33	4.9	1229	183.9
	Lachlan ¹	3	0.5	8	1.3	911	150.0
	Leeton	44	3.8	57	5.0	2568	224.4
	Lockhart	17	5.2	11	3.4	774	235.6
	Murray River	6	0.5	13	1.1	797	65.8
	Murrumbidgee	10	2.6	14	3.6	770	196.6
	Narrandera	9	1.5	20	3.4	1080	183.1
	Snowy Valleys	74	5.1	62	4.3	4194	289.7
	Temora	19	3.0	20	3.2	1260	199.8
Wagga Wagga	343	5.3	422	6.5	24271	371.9	
LHD Total ²	1190	4.0	1378	4.6	84504	283.5	
Nepean Blue Mountains	Blue Mountains	728	9.2	1018	12.9	42510	537.3
	Hawkesbury	618	9.2	720	10.7	30563	454.2
	Lithgow	105	4.9	142	6.6	6419	297.1
	Penrith	2019	9.5	2206	10.4	106390	499.5
	LHD Total ²	3438	8.8	4058	10.4	184390	471.6
Northern NSW	Ballina	168	3.8	210	4.7	13686	306.7
	Byron	284	8.1	296	8.4	13124	374.1
	Clarence Valley	182	3.5	189	3.7	11001	212.9
	Kyogle	22	2.5	35	4.0	1752	199.2
	Lismore	217	5.0	228	5.2	14385	329.2
	Richmond Valley	81	3.5	103	4.4	6596	281.1
	Tenterfield	12	1.8	12	1.8	1080	163.8
	Tweed	300	3.1	450	4.6	23757	244.9
LHD Total ²	1255	4.0	1512	4.9	84567	272.5	

Local Health District	Local Government Area	Week ending				Total	
		5 December		28 November		No.	Tests per 1,000 population
		No.	Tests per 1,000 population	No.	Tests per 1,000 population		
Northern Sydney	Hornsby	1384	9.1	1554	10.2	59667	392.4
	Hunters Hill	277	18.5	327	21.8	13787	920.4
	Ku-ring-gai	1660	13.1	2007	15.8	73966	581.7
	Lane Cove	774	19.3	973	24.2	38037	947.3
	Mosman	356	11.5	356	11.5	14832	478.8
	North Sydney	571	7.6	644	8.6	27787	370.4
	Northern Beaches	2689	9.8	3109	11.4	119582	437.2
	Parramatta ¹	2099	8.2	2312	9.0	91979	357.6
	Ryde	1147	8.7	1393	10.6	54029	411.6
	Willoughby	673	8.3	748	9.2	29079	358.2
	LHD Total ²	10028	10.5	11588	12.1	448476	469.2
South Eastern Sydney	Bayside	1360	7.6	1469	8.2	61598	345.3
	Georges River	1114	7.0	1280	8.0	53324	334.4
	Randwick	1721	11.1	1789	11.5	84014	539.8
	Sutherland Shire	2279	9.9	2495	10.8	113377	491.6
	Sydney ¹	3479	14.1	3379	13.7	130640	530.3
	Waverley	898	12.1	949	12.8	47438	638.5
	Woollahra	722	12.2	852	14.4	39178	659.7
	LHD Total ²	9696	10.1	10274	10.7	447191	466.3
South Western Sydney	Camden	1302	12.8	1345	13.3	65645	647.2
	Campbelltown	1860	10.9	1828	10.7	87233	510.3
	Canterbury-Bankstown ¹	2548	6.7	2758	7.3	137965	365.1
	Fairfield	1040	4.9	1187	5.6	69730	329.4
	Liverpool	1850	8.1	2193	9.6	107542	472.5
	Wingecarribee	482	9.4	606	11.9	26685	521.9
	Wollondilly	350	6.6	377	7.1	18854	354.7
	LHD Total ²	8075	7.8	8811	8.5	444449	428.0
Southern NSW	Bega Valley	178	5.2	164	4.8	9215	267.3
	Eurobodalla	197	5.1	203	5.3	14822	385.3
	Goulburn Mulwaree	187	6.0	214	6.9	10040	322.5
	Queanbeyan-Palerang Regional	225	3.7	275	4.5	13696	224.2
	Snowy Monaro Regional	110	5.3	104	5.0	5904	283.9
	Upper Lachlan Shire	36	4.5	47	5.8	2124	263.6
	Yass Valley	49	2.9	55	3.2	3267	191.2
	LHD Total ²	983	4.5	1062	4.9	59097	272.3

Local Health District	Local Government Area	Week ending				Total	
		5 December		28 November		No.	Tests per 1,000 population
		No.	Tests per 1,000 population	No.	Tests per 1,000 population		
Sydney	Burwood	257	6.3	271	6.7	11418	281.2
	Canada Bay	941	9.8	1019	10.6	46482	483.8
	Canterbury-Bankstown ¹	2548	6.7	2758	7.3	137965	365.1
	Inner West	2236	11.1	2472	12.3	110682	551.2
	Strathfield	500	10.7	455	9.7	21316	454.3
	Sydney ¹	3479	14.1	3379	13.7	130640	530.3
	LHD Total ²	7144	10.3	7615	10.9	339961	487.9
Western NSW	Bathurst Regional	250	5.7	328	7.5	17196	394.2
	Blayney	45	6.1	47	6.4	2775	376.1
	Bogan	7	2.7	9	3.5	585	226.7
	Bourke	4	1.5	7	2.7	453	174.9
	Brewarrina	4	2.5	4	2.5	295	183.1
	Cabonne	35	2.6	43	3.2	2756	202.1
	Cobar	21	4.5	15	3.2	908	194.9
	Coonamble	13	3.3	12	3.0	833	210.5
	Cowra	56	4.4	69	5.4	3061	240.2
	Dubbo Regional	225	4.2	271	5.0	16306	303.5
	Forbes	16	1.6	35	3.5	1937	195.5
	Gilgandra	9	2.1	9	2.1	855	201.7
	Lachlan ¹	3	0.5	8	1.3	911	150.0
	Mid-Western Regional	130	5.2	161	6.4	7401	293.1
	Narromine	17	2.6	30	4.6	1536	235.7
	Oberon	23	4.3	33	6.1	1580	292.0
	Orange	305	7.2	367	8.7	17936	422.5
	Parkes	51	3.4	45	3.0	3744	252.3
	Walgett	5	0.8	11	1.9	1480	248.6
	Warren	16	5.9	15	5.6	1163	431.2
	Warrumbungle Shire	28	3.0	31	3.3	2449	264.0
Weddin	20	5.5	13	3.6	752	208.1	
LHD Total ²	1281	4.5	1562	5.5	86642	304.0	
Western Sydney	Blacktown	3596	9.6	4187	11.2	163250	436.0
	Cumberland	1920	8.0	2031	8.4	94081	389.5
	Parramatta ¹	2099	8.2	2312	9.0	91979	357.6
	The Hills Shire	2365	13.3	2889	16.2	103095	579.3
	LHD Total ²	9542	9.1	10995	10.4	437766	415.6
NSW Total³		72,104	8.9	80,985	10.0	3,547,922	438.6

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 29 NOVEMBER 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—29 Nov 2020											
Total	1,225,426	6,629	0.54%	955	0.08%	8,555	9,129	15,687	133,266	2,284	5,879
Month ending											
3 February*	34,953	2,508	7.18%	401	1.15%	846	1,900	752	5,036	599	335
1 March	40,575	2,363	5.82%	315	0.78%	798	2,435	1,118	8,245	437	1,007
29 March	85,238	1,549	1.82%	200	0.23%	898	4,117	1,977	18,088	664	1,502
3 May*	54,128	70	0.13%	13	0.02%	175	273	410	2,250	48	210
31 May	71,525	35	0.05%	6	0.01%	237	62	115	3,511	27	112
28 June	130,922	42	0.03%	11	0.01%	629	83	178	28,321	112	246
2 August*	227,152	34	0.01%	2	0.00%	1,251	89	209	31,589	79	427
30 August	174,594	9	0.01%	2	0.00%	1,137	37	299	13,926	14	235
27 September	145,489	6	0.00%	1	0.00%	938	35	866	8,416	61	259
1 November*	131,686	7	0.01%	1	0.00%	894	56	3,508	5,632	51	662
29 November	129,164	6	0.00%	3	0.00%	752	42	6,255	8,252	192	884
Week ending											
8 November	31,883	1	0.00%	2	0.01%	146	3	1,580	2,034	26	318
15 November	37,010	3	0.01%	0	0.00%	204	7	1,693	2,523	49	253
22 November	32,467	2	0.01%	0	0.00%	224	12	1,433	1,927	31	154
29 November	27,804	0	0.00%	1	0.00%	178	20	1,549	1,768	86	159

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

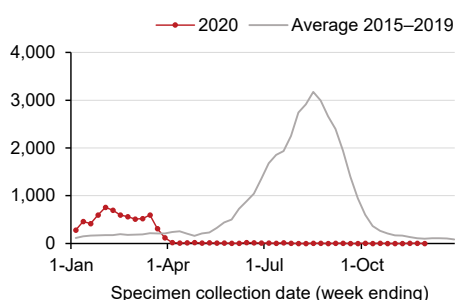
RSV - Respiratory syncytial virus

*Five-week period

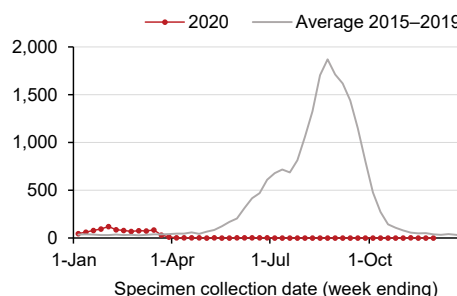
APPENDIX C: NUMBER OF POSITIVE PCR TEST RESULTS FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES AT SENTINEL NSW LABORATORIES, 1 JANUARY TO 29 NOVEMBER 2020

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

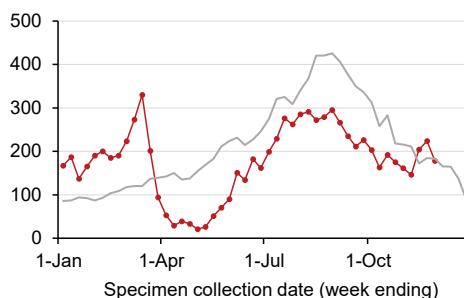
Influenza A



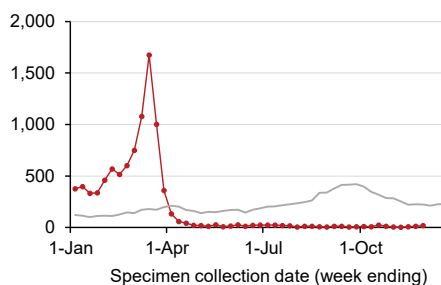
Influenza B



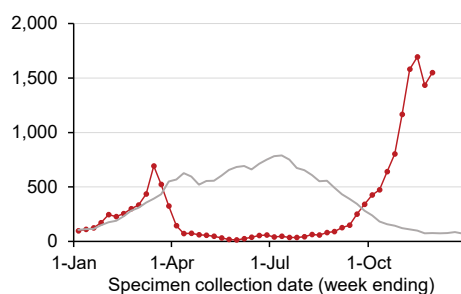
Adenovirus



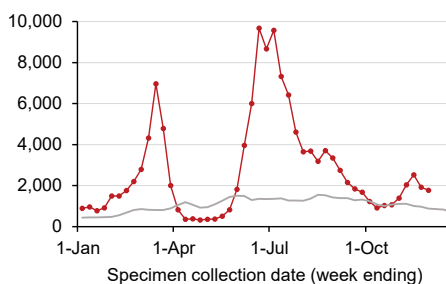
Parainfluenza



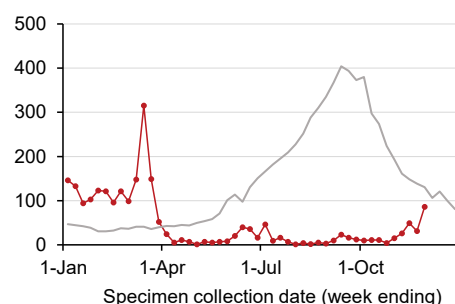
Respiratory syncytial virus (RSV)



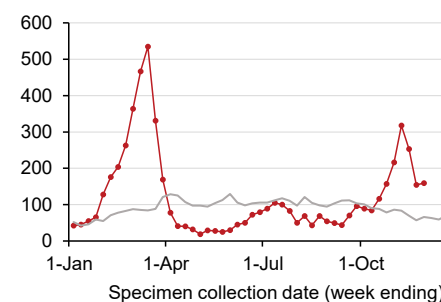
Rhinovirus



Human metapneumovirus (HMPV)



Enterovirus



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

GLOSSARY

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

Dates used in COVID-19 reporting

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