Australian Respiratory Surveillance Report

Report 17, 2024

## Key messages

This report presents a national epidemiological update for coronavirus disease 2019 (COVID-19), influenza and respiratory syncytial virus (RSV) with a focus on the current reporting period (18 November to 15 December 2024) and earlier severity reporting periods (up to 1 December 2024).

**Activity:** Respiratory illness activity (self-reported new fever and cough symptoms) in the community is currently lower than activity observed in the same month in previous years. General practice consultation rates for respiratory illnesses (new fever and cough symptoms) monitored through sentinel surveillance sites decreased in the last month and remains similar to consultation rates observed in the same period in previous years. Nationally, COVID-19 activity has continued to increase over the past month, although this trend is not consistent across all states and territories with some jurisdictions reporting a decrease in notifications. Influenza activity has decreased considerably since July 2024, with activity now at interseasonal levels. RSV activity has been decreasing since late May 2024.

**Severity:** The number of patients hospitalised with COVID-19 monitored through sentinel hospital-based surveillance has remained relatively stable over the last few months. The number of patients hospitalised with influenza and RSV monitored through sentinel hospital-based surveillance have been decreasing overall, since reaching a peak in April 2024 and July 2024, respectively. The proportion of those patients with a severe acute respiratory infection who were admitted directly to an intensive care, monitored through sentinel hospital-based surveillance, has remained low and stable in 2024. Nationally, the number of patients admitted to sentinel intensive care surveillance sites with a severe acute respiratory infection has remained relatively low and stable over the last month. Patients with COVID-19 accounted for most severe acute respiratory infection admissions at sentinel intensive care surveillance sites this year.

**At-risk populations:** In the year to date, most deaths in patients admitted to sentinel intensive care sites with a severe acute respiratory infection occurred in those aged 60 years or over. In the year to date, age-specific mortality rates for cases have been highest among those aged 70 years or over.

**Impact:** Fewer people reported taking time off work due to respiratory illness (self-reported new fever and cough symptoms) last month, compared with the previous month. Nationally, the number of COVID-19 cases in intensive care increased this month. Similarly, the average number of intensive care staff unavailable due to COVID-19 illness or exposure has increased this month.

**Genomic surveillance and virology:** The Omicron BA.2.86 sublineage, JN.1, remains the dominant circulating sub-lineage (which includes the KP, JN.1.17, and JN.1.8 sub-sub-lineages). The KP.3 sub-sub-lineage is the most common JN.1 sub-lineage in AusTrakka. There has been an increasing proportion of the recombinant lineage XEC sequenced recently. This lineage has attracted recent attention due to its estimated growth rate. This year, influenza A has accounted for most influenza notifications nationally.

**Vaccine coverage, effectiveness and match:** Australian studies suggest that in 2024, vaccinated individuals are roughly 60% less likely to attend general practice or be hospitalised with influenza than unvaccinated people. COVID-19 and RSV vaccination data will be included in future iterations of the Australian Respiratory Surveillance Report.

## Introduction

This Australian Respiratory Surveillance Report was prepared by Gizem Bilgin, Anna Rafferty, Caitlin Trenorden, and Aaliya Ibrahim on behalf of the interim Australian Centre for Disease Control. We thank the staff and participants from the surveillance systems who contribute data for acute respiratory illness surveillance across Australia.

The Australian Respiratory Surveillance Reports present a national overview of acute respiratory infections in Australia, drawing information from several different surveillance systems. Our surveillance systems help us to understand the distribution of acute respiratory illness activity in the community, the severity of disease, which populations might be at risk of severe disease, and the impact of acute respiratory illness on the community and health system in Australia. Surveillance indicators presented in this report are based on the [Australian National Surveillance Plan for COVID-19, Influenza, and RSV](https://www.health.gov.au/resources/publications/australian-national-disease-surveillance-plan-for-covid-19-influenza-and-rsv).

A summary of data considerations for this Australian Respiratory Surveillance Report are provided below. Please refer to the [Technical Supplement – Australian Respiratory Surveillance Report](https://www.health.gov.au/resources/publications/technical-supplement-australian-respiratory-surveillance-report) for further detail on our surveillance sources and data considerations, including the considerable impact of the COVID-19 pandemic on acute respiratory infection surveillance in Australia.

### Data considerations

* Due to the dynamic nature of the surveillance systems used in this report, surveillance data are considered preliminary and subject to change as updates are received, with the most recent weeks considered particularly incomplete. Data in this report may vary from data reported in other national reports and reports by states and territories. Data in this report are presented by *International Organization for Standardization (ISO) 8601* weeks, where the week ends on a Sunday.
* In Australia, states and territories report notified cases to the **National Notifiable Diseases Surveillance System (NNDSS)** based on the [Australian national surveillance case definitions](https://www.health.gov.au/resources/collections/cdna-surveillance-case-definitions). From 1 July 2024, only laboratory-confirmed COVID-19 cases are notified to the NNDSS and included in this report (except where specified otherwise). NNDSS data are analysed and reported based on diagnosis date, which is the true onset date of a case if known, otherwise it is the earliest of the specimen date, the notification date, or the notification received date. NNDSS data for this report were extracted on 18 December 2024.
* To account for the lag in collection and provision of severity data from some surveillance systems, and for the time delay between illness onset and the development of severe disease outcomes, cases with an admission date or a diagnosis date in the last two weeks are excluded from severity analyses, which includes analyses of hospitalisations, intensive care admissions and deaths. As such, the severity reporting periods are two weeks behind the end of the current reporting period. For this report, severity reporting includes data up to 1 December 2024.
* While every care has been taken in preparing this report, the Australian Government Department of Health and Aged Care does not accept liability for any injury or loss or damage arising from the use of, or reliance upon, the content of the report or Technical Supplement. For further information about this report please refer to the [Technical Supplement – Australian Respiratory Surveillance Report](https://www.health.gov.au/resources/publications/technical-supplement-australian-respiratory-surveillance-report) or contact [respiratory.surveillance@health.gov.au](mailto:respiratory.surveillance@health.gov.au).

## 1. Activity

Activity measures the capacity of the circulating respiratory viruses to spread from person to person and may be measured indirectly through systems that monitor acute respiratory illnesses and more directly through systems that monitor cases.

### 1.1 Community-based surveillance

#### FluTracking

* Sustained symptoms of respiratory illness and test positivity reported in community surveys indicate that respiratory viruses continue to circulate in the community, albeit at lower prevalence than reported during winter.
* This reporting period (18 November to 15 December 2024), fewer FluTracking participants reported new fever and cough symptoms (1.2%), than in the previous month (1.4%) (Figure 1).
* This reporting period, a larger proportion of FluTracking participants with new fever and cough symptoms used a rapid antigen test (RAT) (70.6%; 779/1,104) compared with a polymerase chain reaction (PCR) (15.1%; 167/1,104) to test for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
  + Self-reported SARS-CoV-2 RAT positivity was higher this month (43.0%; 335/779) than in the previous month (35.6%; 375/1,053); self-reported SARS-CoV-2 PCR positivity was also higher this month (23.4%; 39/167) than in the previous month (15.6%; 40/256).
* This reporting period, 21.5% (237/1,104) of FluTracking participants with new fever and cough symptoms used a PCR test to test for influenza.
  + Self-reported influenza PCR positivity was higher this month (13.5%; 32/237), than in the previous month (10.7%; 36/338).
* In the year to date, new fever and cough symptoms in FluTracking participants has fluctuated, peaking at 2.6% in late June 2024 (Figure 1).

**Figure 1: Age standardised percentage of FluTracking participants reporting new fever and cough symptoms compared with the five-year mean by year and week of report\*, Australia, 2017 to 15 December 2024**

Figure 1: Age standardised percentage of FluTracking participants reporting new fever and cough symptoms compared with the five-year mean by year and week of report, Australia, 2017 to 15 December 2024 

A line graph comparing weekly age standardised percentage of FluTracking participants reporting new fever and cough from 1 January 2017 up to 15 December 2024 compared with the mean notifications each week for the interrupted five-year range 2017–2019, 2022 and 2023. The reporting of new fever and cough symptoms was higher in the first quarter of 2024 compared the corresponding weeks of 2023, ranging from 1.1–1.7%. Following a few weeks of decline in activity, the reporting of new fever and cough symptoms increased sharply from late April 2024. The age standardised rate of fever and cough reached an apparent peak at approximately 2.6% of survey respondents in the week ending 30 June 2024, compared with 1.7% same time last year. The age standardised rate of fever and cough has been declining since June 2024 (with some week-on-week increases observed). In the reporting month (18 November to 15 December 2024) the age standardised rate of new fever and cough has remained stable, and is slightly below to the rates observed during the same period in 2023.  

\* FluTracking has expanded the reporting period from 2020 onwards due to COVID-19. As such, five-year historical comparisons are not available for data reported before May and after October for any year before 2020. The years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. As such, the five-year mean includes the years 2017 to 2019 and 2022 to 2023. Please refer to the Technical Supplement for interpretation of the five-year mean and for notes on impact of COVID-19 on FluTracking data.

#### Australian Sentinel Practice Research Network (ASPREN)

* Sentinel general practice surveillance suggests medical attendance for respiratory illness is decreasing this month, though a variety of respiratory pathogens continue to circulate in the community, with rhinovirus and SARS-CoV-2 being the most common.
* This reporting period (18 November to 15 December 2024), there were fewer general practice consultations for new fever and cough symptoms (3.0 per 1,000 consultations) than in the previous month (3.8 per 1,000 consultations) (Figure 2).
  + Of those who presented with new fever and cough symptoms, 66.3% (57/86) tested positive for a respiratory pathogen. Rhinovirus (38.6%; 22/57) was the most commonly detected, followed by SARS-CoV-2 (19.3%; 11/57), human metapneumovirus (14.0%; 8/57), and parainfluenza type-3 (7.0%; 4/57).
* In the year to date, general practice consultations for new fever and cough symptoms have fluctuated, peaking at 13.4 per 1,000 consultations in early August 2024 (Figure 2).
* In the year to date, 67.6% (1,819/2,690) of people attending general practice for new fever and cough symptoms have then tested positive for a respiratory pathogen. Rhinovirus (30.8%; 560/1,819) was the most commonly detected, followed by influenza (21.9%; 399/1,819), SARS-CoV-2 (11.8%; 214/1,819), RSV (8.1%; 148/1,819), and human metapneumovirus (7.8%; 142/1,819).

**Figure 2: Rate of new fever and cough symptoms per 1,000 consultations per week with ASPREN sentinel general practitioners and nurse practitioners compared with the five-year mean by year and week of consultation\*†, Australia, 2017 to 15 December 2024**

Figure 2: Rate of new fever and cough symptoms per 1,000 consultations per week with ASPREN sentinel general practitioners and nurse practitioners compared with the five-year mean by year and week of consultation, Australia, 2017 to 15 December 2024 

A line graph comparing the rate of new fever and cough symptoms per 1,000 consultations per week with ASPREN sentinel general practitioners and nurse practitioners from 1 January 2017 up to 15 December 2024 compared with the interrupted five-year range of 2017–2019, 2022 and 2023. In the year to date, the rate of new fever and cough symptoms per 1,000 consultations per week followed an increasing trend from January to August 2024. The rate peaked in the week ending 4 August 2024 at approximately 13 per 1,000 consultations, exceeding the rate for the corresponding weeks in all years except 2017. Since then, the rate of new fever and cough symptoms per 1,000 consultations per week has been decreasing (with some week-on-week increases observed). In the year to date, the rate of new fever and cough symptoms per 1,000 consultations per week in 2024 has been consistently higher than the interrupted five-year mean. In the reporting month (18 November to 15 December 2024), the rate of new fever and cough symptoms per 1,000 consultations per week has decreased week-on-week and has remained above the five-year mean. 

\* The years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. As such, the five-year mean includes the years 2017 to 2019 and 2022 to 2023. Please refer to the Technical Supplement for interpretation of the five-year mean.  
† Please refer to the Technical Supplement for notes on impact of COVID-19 on ASPREN data.

### 1.2 Case-based surveillance

#### NNDSS

* Nationally, COVID-19 activity has continued to increase over the past month, although some jurisdictions have reported decreases in notifications. This new wave of transmission follows a similar trend to the 2023-24 summer period and disrupts a decreasing trend since early June 2024 when activity last peaked (Figure 3B).
* Nationally, influenza activity has decreased considerably since July 2024, and influenza activity has now returned to interseasonal levels. The peak of influenza activity in each jurisdiction varied across Australia, generally occurring between May and early August 2024.
* Nationally, RSV activity has remained low and stable across November, following a decreasing trend since late May 2024. As with influenza, the peak in RSV activity was not consistent across all jurisdictions. Some jurisdictions reached a peak in April 2024, while other jurisdictions did not reach a peak until July or August 2024.

**Table 1: Notifications to the NNDSS and notification rate per 100,000 population by disease, five-year age group, and jurisdiction\*†, Australia, 1 January to 15 December 2024**

|  | **COVID-19** | | | **Influenza** | | | **RSV** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Reporting period (n)** | **Year to date (n)** | **Year to  date (rate)** | **Reporting period (n)** | **Year to date (n)** | **Year to date (rate)** | **Reporting period (n)** | **Year to date (n)** | **Year to date (rate)** |
| **Age group (years)** | | | | | | | | | |
| 0–4 | 1,887 | 23,156 | 1,527.4 | 540 | 48,531 | 3,201.2 | 2,162 | 84,821 | 5,595.0 |
| 5–9 | 652 | 7,030 | 436.5 | 736 | 52,181 | 3,240.3 | 470 | 14,621 | 907.9 |
| 10–14 | 727 | 7,410 | 447.1 | 530 | 33,768 | 2,037.4 | 258 | 7,485 | 451.6 |
| 15–19 | 1,004 | 9,095 | 565.3 | 328 | 22,602 | 1,404.9 | 118 | 3,963 | 246.3 |
| 20–24 | 852 | 9,668 | 558.2 | 256 | 17,408 | 1,005.1 | 110 | 2,856 | 164.9 |
| 25–29 | 962 | 12,124 | 630.9 | 290 | 19,571 | 1,018.4 | 126 | 3,240 | 168.6 |
| 30–34 | 1,252 | 14,596 | 736.2 | 341 | 21,741 | 1,096.6 | 123 | 4,180 | 210.8 |
| 35–39 | 1,266 | 15,849 | 817.9 | 412 | 23,683 | 1,222.1 | 127 | 4,230 | 218.3 |
| 40–44 | 1,303 | 15,337 | 861.5 | 376 | 21,290 | 1,195.9 | 113 | 3,629 | 203.9 |
| 45–49 | 1,191 | 14,058 | 870.9 | 286 | 16,389 | 1,015.3 | 118 | 3,533 | 218.9 |
| 50–54 | 1,343 | 14,981 | 891.6 | 331 | 15,469 | 920.6 | 174 | 4,431 | 263.7 |
| 55–59 | 1,191 | 14,415 | 946.1 | 305 | 13,422 | 880.9 | 162 | 4,321 | 283.6 |
| 60–64 | 1,242 | 15,421 | 1,016.7 | 258 | 13,005 | 857.5 | 194 | 5,030 | 331.6 |
| 65–69 | 1,390 | 16,315 | 1,229.5 | 226 | 10,554 | 795.4 | 173 | 4,899 | 369.2 |
| 70+ | 7,623 | 97,958 | 3,032.8 | 728 | 31,980 | 990.1 | 727 | 21,273 | 658.6 |
| **Jurisdiction** | | | | | | | | | |
| ACT | 275 | 4,565 | 977.9 | 33 | 4,779 | 1,023.8 | 29 | 2,708 | 580.1 |
| NSW | 8,650 | 124,160 | 1,488.8 | 1,787 | 160,277 | 1,921.9 | 1,782 | 72,417 | 868.4 |
| NT | 211 | 2,684 | 1,063.1 | 36 | 3,287 | 1,301.9 | 151 | 1,662 | 658.3 |
| Qld | 6,642 | 66,219 | 1,212.9 | 1,035 | 78,979 | 1,446.7 | 2,164 | 41,201 | 754.7 |
| SA | 1,216 | 18,035 | 974.0 | 584 | 22,537 | 1,217.1 | 191 | 12,056 | 651.1 |
| Tas | 549 | 4,869 | 850.1 | 67 | 3,991 | 696.8 | 115 | 2,846 | 496.9 |
| Vic | 5,003 | 51,713 | 759.1 | 1,965 | 70,995 | 1,042.1 | 520 | 30,473 | 447.3 |
| WA | 1,362 | 15,460 | 537.1 | 437 | 16,780 | 582.9 | 203 | 9,167 | 318.5 |
| **Total** | **23,908** | **287,705** | **1,080.0** | **5,944** | **361,625** | **1,357.5** | **5,155** | **172,530** | **647.7** |

\* Rate per 100,000 population for the given time period. Population data are based on the Australian Bureau of Statistics (ABS) Estimated Resident Population (ERP) as at June 2023.  
† Total includes cases with missing age.

* This year to date, COVID-19 notifications showed an increasing trend starting in late March, reaching a peak in early June 2024. From June to August, COVID-19 notifications declined, but there has been an increasing trend again since mid-October 2024 (Figure 3).
* In the year to date, there have been fewer laboratory-confirmed COVID-19 notifications than in the same period in 2023; however, this trend should be interpreted with caution due to a reduction in case ascertainment and reporting in all jurisdictions (Figure 3).
* In the year to date, COVID-19 notification rates have been highest in people aged 70 years or over years, followed by children aged 0–4 years (Table 1).
  + The trend for older age groups is likely to be a reflection of higher case ascertainment due to targeted testing strategies in place for populations at-risk of severe disease and who live in a high-risk setting, such as a residential aged care facility.
* This reporting period, COVID-19 notification rates have increased in New South Wales, Queensland, and the Northern Territory compared with the previous month (Figure 4). There has been a decrease in notifications from the Australian Capital Territory, Tasmania, and Victoria. Notification rates from South Australia and Western Australia appear stable.

**Figure 3: COVID-19 cases notified to the NNDSS showing (A) laboratory-confirmed and probable cases in all pandemic years 2020–2024 and (B) laboratory-confirmed cases in recent pandemic years 2023 and 2024 by year and week of diagnosis, Australia, 1 January 2020 to 15 December 2024**

Figure 3: COVID-19 cases notified to the NNDSS showing (A) all pandemic years 2020–2024 and (B) recent pandemic years 2023 and 2024 by year and week of diagnosis, Australia, 1 January 2020 to 15 December 2024 

A line graph showing all laboratory-confirmed and probable COVID-19 cases notified to the NNDSS in Australia, by year and week of diagnosis, from 1 January 2020 to 15 December 2024. The chart’s date range encompasses the extent of the COVID-19 pandemic to date in Australia. Between 1 January 2020 and week 50 of 2021, the number of COVID-19 cases remained below 60,000 per week. COVID-19 cases notified to the NNDSS increased substantially at the end of 2021, signalling the start of the first Omicron wave. Four Omicron ‘waves’ occurred in 2022. The first Omicron wave occurred from mid-December 2021 to February 2022, with a peak of approximately 600,000 cases per week observed in January 2022. In the second Omicron wave, there was a primary peak in early April 2022 of approximately 400,000 cases per week and a secondary peak of 350,000 cases per week in late May 2022. The third Omicron wave occurred in early July 2022, with a peak of approximately 320,000 cases per week observed in late July 2022. The fourth Omicron wave commenced in late October 2022, with a peak of approximately 110,000 cases per week observed in mid-December 2022. In 2023, a further two Omicron ‘waves’ occurred. The fifth Omicron wave commenced in early March 2023 and lead to a peak of approximately 40,000 cases per week in mid-May 2023. The most recent sixth Omicron wave commenced in mid-August 2023. COVID-19 cases notified to the NNDSS have been consistently lower across 2024 to date than for the corresponding weeks of 2023. A five-year mean is not yet available for COVID-19 notifications. Figure 3: COVID-19 cases notified to the NNDSS showing (A) all pandemic years 2020–2024 and (B) recent pandemic years 2023 and 2024 by year and week of diagnosis, Australia, 1 January 2020 to 15 December 2024 
A second line graph (3B) showing laboratory-confirmed COVID-19 cases notified to the NNDSS in Australia, by selected years (the whole year of 2023, and 1 January to 15 December 2024) and week of diagnosis. The chart’s date range encompasses the end of the fourth Omicron wave, the fifth Omicron wave and the sixth Omicron wave to date in Australia. In 2023, there was approximately 15,500 confirmed cases per week in the first week of January. There was a secondary peak of approximately 11,000 confirmed cases per week in third week of May 2023 (fifth Omicron wave), followed by a steady reduction in reported cases through June and July, ebbing to an apparent plateau in case numbers of approximately 3,000 cases per week across August and September 2023, before rising from the second week of October until mid-November (sixth Omicron wave). In 2024, there was a steady decline of cases from approximately 9,000 cases per week at the beginning of January to approximately 4,000 cases per week until April 2024. From early May 2024, the number of COVID-19 cases have increased steadily, reaching an apparent peak of 11,000 cases per week in the week ending 2 June 2024. Case numbers slowly declined from June 2024, and then remained stable at approximately 3,700 cases per week across September and October 2024. Since the week ending 6 October 2024 to date, national COVID-19 case numbers have increased slightly week-on-week. 

**Figure 4: Notification rates per 100,000 population for COVID-19 cases notified to the NNDSS\* by state or territory and week of diagnosis, Australia, 1 January to 15 December 2024**

Figure 4: Notification rates per 100,000 population for COVID-19 cases notified to the NNDSS by state or territory and week of diagnosis, Australia, 1 January to 15 December 2024 

A line graph showing the notification rates per 100,000 population for COVID-19 cases notified to the NNDSS, by state or territory in Australia with diagnosis dates from 1 January to 15 December 2024. Following a decreasing trend since the beginning of 2024, COVID-19 notification rates per 100,000 population in most jurisdictions have rapidly increased since late April 2024 to an apparent peak across June 2024. In the year to date, COVID-19 notification rates in New South Wales reached an apparent peak at approximately 60 notifications per 100,000 per week in the week ending 2 June 2024. Whereas in the year to date for Western Australia, COVID-19 notification rates reached an apparent peak at approximately 22 notifications per 100,000 population per week in the week ending 26 May 2024. From early June to mid-September 2024, COVID-19 notification rates across all jurisdictions decreased, though some week-on-week increases were observed, particularly in Queensland. This month, COVID-19 notification rates have increased in New South Wales, Queensland, and the Northern Territory compared with the previous month. There has been a decrease in notifications from the Australian Capital Territory, Tasmania, and Victoria. Notification rates from South Australia and Western Australia appear stable. 

\* Rate per 100,000 population for the given time period. Population data are based on the ABS ERP as at June 2023.

* This year to date, there was an increase in influenza notifications from late April to a peak in early July 2024. Influenza notifications have now returned to interseasonal levels (Figure 5). The timing of peaks in influenza notifications has varied across jurisdictions, occurring between May and early August 2024; however, the Northern Territory experienced peaks in April and May 2024, followed by a smaller peak in early September 2024 (Figure 6).
* In the year to date, there have been more influenza notifications than in the same period in 2023 and the five-year mean (Figure 5).
* In the year to date, influenza notification rates have been highest in children aged 5–9 years, followed closely by children aged 0–4 years (Table 1).
* This reporting period, influenza notification rates have continued to decrease or plateau across all jurisdictions, compared with the previous month (Figure 6).

**Figure 5: Influenza cases notified to the NNDSS and five-year mean\* by year and week of diagnosis, Australia, 2017 to 15 December 2024**

Figure 5: Influenza cases notified to the NNDSS and five-year mean by year and week of diagnosis, Australia, 1 January 2017 to 15 December 2024 

A line graph showing influenza cases notified to the NNDSS in Australia, by year and week of diagnosis, from 1 January 2017 to 15 December 2024, with the mean number of notifications each week for the interrupted five-year range 2017–2019, 2022 and 2023. The influenza season timing varied across the included years. In 2017, influenza circulated at high levels throughout the season and had a prolonged peak between late July to late August, at approximately 25,000 influenza cases per week. The influenza season in 2018 was mild, with peak influenza notifications in September not exceeding 4,000 notifications per week. In 2019, the influenza season commenced much earlier than in 2017, with a peak in late June at approximately 18,000 influenza cases per week. In 2022, the influenza season commenced much earlier than in previously depicted years with a peak in mid-June at approximately 30,000 influenza notifications, but with case numbers rapidly falling following the peak. The influenza season in 2023 was milder than 2022, with peak influenza notifications not exceeding 18,000 notifications per week, but the season was longer, with case notifications taking longer to decrease than in previous seasons. From January to late August 2024, influenza cases notified to the NNDSS were consistently higher than for the corresponding weeks of the interrupted five-year mean. In the year to date, the number of influenza notifications increased steeply and reached an apparent peak of approximately 28,500 per week in the week ending 7 July 2024. Influenza cases decreased slightly, then plateaued across mid-July to mid-August 2024, then steeply declined. Since the week ending 13 October 2024 to date, case numbers have remained stable at approximately 2,000 notifications per week. Note, the years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. 

\* The years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. As such, the five-year mean includes the years 2017 to 2019 and 2022 to 2023. Please refer to the Technical Supplement for interpretation of the five-year mean.

**Figure 6: Notification rates per 100,000 population for influenza cases notified to the NNDSS\* by state or territory and week of diagnosis, Australia, 1 January to 15 December 2024**

Figure 6: Notification rates per 100,000 population for influenza cases notified to the NNDSS by state and territory and week of diagnosis, Australia, 1 January to 15 December 2024 

A line graph showing the notification rates per 100,000 population for influenza cases notified to the NNDSS, by state or territory in Australia, with diagnosis dates from 1 January to 15 December 2024. In 2024, the Northern Territory experienced an earlier peak in notifications compared to other jurisdictions. Influenza notification rates in the Northern Territory rapidly increasing from approximately 10 notifications per 100,000 population per week in the week ending 3 March 2024 to approximately 85 notifications per 100,000 population per week in the week ending 12 May 2024. Influenza notification rates in the Northern Territory then declined rapidly to approximately 11 notifications per 100,000 population in the week ending 14 July 2024. In most other jurisdictions, influenza notifications rose from late April to an apparent peak in July 2024. Notifications in New South Wales rose more rapidly leading to an earlier and higher peak than observed in other jurisdictions. In New South Wales, influenza notifications rapidly increased in late April from approximately 10 notifications per 100,000 population in week ending 28 April 2024 to approximately 215 notifications per 100,000 population in the week ending 7 July 2024, followed by a rapid decline. Influenza notifications have returned to interseasonal levels across all jurisdictions since the week ending 6 October 2024. 

\* Rate per 100,000 population for the given time period. Population data are based on the ABS ERP as at June 2023.

* This year to date, notifications of RSV increased from January through to a peak in late May 2024, after which notifications have followed a decreasing trend (Figure 7). This trend in RSV notifications was not consistent across jurisdictions. Some jurisdictions (the Northern Territory) reached a peak in April 2024, while other jurisdictions (South Australia, Tasmania and Western Australia) did not reach a peak until either July or August 2024 (Figure 8).
* In the year to date, the number of RSV notifications is almost 1.4 times higher than the number of notifications in the same period in 2023 (Figure 7).
* In the year to date, RSV notification rates have been highest in children aged 0–4 years, followed by children aged 5–9 years (Table 1).
* This reporting period, RSV notification rates have remained low and stable across most jurisdictions compared to the previous month, except in the Northern Territory and Queensland where increases in RSV notifications have been observed (Figure 8).

**Figure 7: RSV cases notified to the NNDSS by year and week of diagnosis\*, Australia, 2023 to 15 December 2024**

Figure 7: RSV cases notified to the NNDSS by year and week of diagnosis, Australia, 2023 to 15 December 2024 

A line graph showing RSV cases notified to the NNDSS by year and week of diagnosis in Australia, from 1 January 2023 to 15 December 2024. In 2023, RSV cases increased from mid-February and reached a peak in June at approximately 5,000 RSV cases per week. Following the peak, RSV notifications fell steadily across June to October 2023. In the week ending 7 January 2024, approximately 1,000 RSV notifications were notified to the NNDSS. Since then, RSV notifications have been steadily increasing and remain consistently higher across 2024 to date than the corresponding weeks of 2023. Following the apparent peak in the week ending 26 May 2024 at 7,300 RSV cases per week, an overall decreasing trend has been observed. In the current reporting month, RSV cases have plateaued, returning to approximately 1,000 RSV cases per week, similar to the number of cases reported in the same period in 2023.  

**Figure 8: Notification rates per 100,000 population for RSV cases notified to the NNDSS\* by state or territory and week of diagnosis, Australia, 1 January to 15 December 2024**

Figure 8: Notification rates per 100,000 population for RSV cases notified to the NNDSS by state or territory and week of diagnosis, Australia, 1 January to 15 December 2024 

A line graph showing the notification rates per 100,000 population for RSV cases notified to the NNDSS, by state or territory in Australia, with diagnosis dates from 1 January to 15 December 2024. Notification rates for RSV followed an increasing trend in most jurisdictions at the start of 2024, with a delayed increase observed in Western Australia. Following a peak in mid-April 2024, RSV notification rates in the Northern Territory declined substantially from approximately 35 RSV notifications per 100,000 population per week to six RSV notifications per 100,000 population per week in the week ending 16 June 2024. Likewise, RSV notification rates in the Australian Capital Territory increased considerably from approximately eight RSV notifications per 100,000 population per week in the week ending 10 March 2024 to an apparent peak of approximately 48 RSV notifications per 100,000 population per week in the week ending 19 May 2024. Since the week ending 5 May 2024, RSV notifications in South Australia have increased considerably to an apparent peak in the week ending 14 July 2024 at approximately 47 RSV notifications per 100,000 population per week. Recent slight week-on-week increases have been observed in Queensland, the Northern Territory, New South Wales and South Australia.  

\* Rate per 100,000 population for the given time period. Population data are based on the ABS ERP as at June 2023.

## 2. Severity

The severity of acute respiratory infections is measured as those who are hospitalised, admitted to intensive care, or have died. Measuring and understanding severity quantifies the most significant health impacts of circulating respiratory viruses.

### 2.1 Hospital-based surveillance

#### Influenza Complications Alert Network (FluCAN)

* Sentinel hospital surveillance shows the proportion of patients with severe acute respiratory infections has remained low and stable this month. The duration of hospital stay varies only slightly between illnesses.
* In this severity reporting period (4 November to 1 December 2024), fewer patients were admitted to a sentinel hospital with a severe acute respiratory infection (n = 424), than in the previous month (n = 484). This reporting period, 3.3% (14/424) of patients were admitted directly to an intensive care in a sentinel hospital with a severe acute respiratory infection (Figure 9).
* In the year to date for severity reporting (1 January to 1 December 2024), 5.8% (697/11,927) of patients have been admitted directly to an intensive care in a sentinel hospital with a severe acute respiratory infection (Figure 9).
  + Among patients with COVID-19, 6.0% (300/5,009) have been admitted directly to an intensive care in a sentinel hospital (Figure 9) and their median length of stay in hospital was 3 days (interquartile range [IQR]: 2–7 days). This excludes one patient with COVID-19 with a missing admission location.
  + Among patients with influenza, 6.4% (274/4,286) have been admitted directly to an intensive care in a sentinel hospital (Figure 9) and their median length of stay in hospital was 2 days (IQR: 1–4 days).
  + Among patients with RSV, 4.7% (123/2,632) have been admitted directly to an intensive care in a sentinel hospital (Figure 9) and their median length of stay in hospital was 2 days (IQR: 1–4 days).
* Since influenza surveillance commenced on 1 April 2024 to date for severity reporting, 96.8% (4,148/4,286) of patients admitted to sentinel hospitals with influenza have been admitted with influenza A and 3.2% (137/4,286) with influenza B.
  + Most hospital admissions have been with influenza A(Unsubtyped) (80.4%; 3,336/4,148), followed by influenza A(H3N2) (11.9%; 492/4,148) and influenza A(H1N1) (7.7%; 320/4,148).

**Figure 9: Number of patients admitted with a severe acute respiratory infection to FluCAN sentinel hospitals by disease, admission location and week of admission\*†‡, Australia, 1 January to 1 December 2024**

Figure 9: Number of patients admitted with a severe acute respiratory infection to FluCAN sentinel hospitals by disease, admission location, and week of admission*†, Australia, 1 January to 1 December 2024  

A set of three stacked bar charts, one for each disease (COVID-19, influenza and RSV), showing the number of severe acute respiratory illness patients admitted to FluCAN sentinel hospitals, by admission location (general ward and intensive care) and week of admission, with admission dates from 1 January to 1 December 2024. The y-axis scale is different for each disease relative to the number of admissions. In 2024 to date for FluCAN severity reporting, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals peaked in week ending 26 May 2024 at approximately 200 patients per week, following an increasing trend in weekly admission numbers from late April 2024. Since the apparent peak, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals have followed an overall decreasing trend, though week-on-week increases have been observed. The number of COVID-19 patients admitted directly to FluCAN sentinel hospitals intensive care have remained low in the year to date and current 28-day severity reporting period (4 November to 1 December 2024), not exceeding at around ten admissions directly to intensive care per week. When surveillance for influenza commenced on 1 April 2024, approximately 65 patients per week were admitted with influenza to FluCAN sentinel hospitals. In late April to early May 2024, the number of patients admitted with influenza to FluCAN sentinel hospitals steadily increased, reaching an apparent peak in week ending 14 July 2024 at approximately 300 patients per week. The number of influenza patients admitted directly to FluCAN sentinel hospitals intensive care have remained low in the year to date and current 28-day severity reporting period (4 November to 1 December 2024), not exceeding ten admissions directly to intensive care per week. When surveillance for RSV commenced on 1 April 2024, approximately 85 patients per week were admitted with RSV to FluCAN sentinel hospitals. In the week ending 28 April 2024, the number of patients admitted with RSV to FluCAN sentinel hospitals reached an apparent peak at approximately 135 patients per week.  Since the apparent peak, the number of patients admitted with RSV per week has fluctuated but generally remained below 80 patients per week. The number of RSV patients admitted directly to FluCAN sentinel intensive cares have remained low in the year to date and current 28-day severity reporting period, not exceeding five admissions directly to intensive care per week. 

Note: Surveillance for influenza and RSV commenced in sentinel hospitals on 1 April 2024.  
\* Axis varies between disease groups.  
† This excludes one patient with a severe acute respiratory infection admitted to sentinel hospitals with a missing admission location.  
‡ Admission location reflects the initial admission ward; some patients may be initially admitted to general ward then later admitted to an intensive care and this is not reflected here.

#### Short Period Incidence Study of Severe Acute Respiratory Infection (SPRINT-SARI) Australia

* Sentinel intensive care surveillance shows the number of patients with severe acute respiratory infections has remained low and stable this month. The duration of intensive care and hospital stay varies slightly between illnesses.
* In this severity reporting period (4 November to 1 December 2024), fewer patients have been admitted to a sentinel intensive care with a severe acute respiratory infection (n=111), than in the previous month (n=160) (Figure 10).
* Among patients admitted to a sentinel intensive care with a severe acute respiratory infection in the year to date for severity reporting (1 January to 1 December 2024):
  + 35.9% (1,118/3,112) had SARS-CoV-2
  + 23.3% (724/3,112) had influenza
  + 13.3% (415/3,112) had RSV
  + 29.4% (914/3,112) had other respiratory pathogens including parainfluenza and rhinovirus.
* Some patients (2.9%; 90/3,112) had co-infections of multiple respiratory pathogens; therefore, the sum of pathogen-specific totals above may not equal the total number of patients.
* In the year to date for severity reporting, patients with a severe acute respiratory infection had a median length of mechanical ventilation of 4 days (IQR: 1–8 days), a median length of stay in intensive care of 3 days (IQR: 2–6 days), and a median length of stay in hospital of 7 days (IQR: 4–14 days).
* In the year to date for severity reporting, most patients admitted to a sentinel intensive care with a severe acute respiratory infection have been discharged home (69.8%; 2,171/3,112). Unfortunately, 11.2% (349/3,112) of patients admitted to a sentinel intensive care with a severe acute respiratory infection have died in hospital.
  + Note, deaths in patients admitted to a sentinel intensive care with a severe acute respiratory infection may not necessarily represent a death due to the severe acute respiratory infection.

**Figure 10: Number of patients admitted with severe acute respiratory infections to a SPRINT-SARI sentinel intensive care by disease\*† and week of admission, Australia, 1 January to 1 December 2024**

Figure 10: Number of severe acute respiratory illness patients admitted to a SPRINT-SARI sentinel intensive care by disease and week of admission, Australia, 1 January to 1 December 2024 

A set of three bar charts, one for each disease (COVID-19, influenza and RSV) showing the number of severe acute respiratory illness patients admitted to participating SPRINT-SARI intensive care by week of admission, with admission dates from 1 January to 1 December 2024. The y-axis (left) is different for each disease relative to the number of admissions. In the year to date, patients with COVID-19 accounted for the greatest proportion of severe acute respiratory illness admissions to a SPRINT-SARI sentinel intensive care. The number of patients admitted to SPRINT-SARI intensive care with COVID-19 declined steadily from a peak of 58 patients per week at the start of 2024 until late March. From early April 2024, the number of patients admitted with COVID-19 began increasing, reaching an apparent peak of 58 patients in the week ending 9 June 2024. From mid-June to late July the numbers of patients admitted with COVID-19 followed a decreasing trend (with some week-on-week increases observed). Since late July, the number of patients admitted with COVID-19 per week have remained low and stabilise, fluctuating from week to week but not exceeding 20 patients per week. From the beginning of 2024, the number of patients admitted with influenza to a SPRINT-SARI sentinel intensive care was relatively stable with less than 10 patients per week until late April. From late April 2024, the number of patients admitted with influenza increased steadily to a peak of 50 patients per week in the week ending 30 June 2024. Since late June 2024, there has been an overall decreasing trend in the number of patients admitted with influenza per week, though some week-on-week increases have been observed. In the severity reporting month, the number of patients admitted with influenza has remained low (with some week-on-week increases observed). with less than three patients admitted per week. From the beginning of 2024, the number of patients with RSV admitted to a SPRINT-SARI sentinel intensive care increased steadily until reaching a peak of 18 patients per week in the week ending 3 March 2024. Since mid-March, the number of patients admitted with RSV has fluctuated but generally remained below 15 patients per week. Since mid-August 2024, the number of patients admitted with RSV per week have remained low and stable, fluctuating from week to week but not exceeding five patients per week. In the current 28-day severity reporting period (4 November to 1 December 2024): an average of 10 patients with COVID-19; three patients with influenza; and one patient with RSV were admitted to SPRINT-SARI intensive care each week. 

\* Axis varies between disease groups.  
† Includes 13 patients with viral co-infection of SARS-CoV-2/influenza/RSV in the year to date for severity reporting.

**Table 2: Outcomes for patients admitted with a severe acute respiratory infection(s) to a SPRINT-SARI sentinel intensive care by disease\*†‡, Australia, 1 January to 1 December 2024**

|  | **COVID-19** | | **Influenza** | | **RSV** | | **Other** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Severity reporting period   (n=40)** | **Year to date for severity reporting   (n=1,118)** | **Severity reporting period   (n=13)** | **Year to date for severity reporting   (n=724)** | **Severity reporting period   (n=5)** | **Year to date for severity reporting   (n=415)** | **Severity reporting period   (n=51)** | **Year to date for severity reporting   (n=914)** |
| **Received invasive mechanical ventilation** | | | | | | | | |
| Number (%) | 7  (17.5%) | 364  (32.6%) | 4  (30.8%) | 280  (38.7%) | 2  (40.0%) | 99  (23.9%) | 10  (19.6%) | 247  (27.0%) |
| **Duration of invasive mechanical ventilation (days)** | | | | | | | | |
| Median [IQR] | 0.4  [0.2–3.2] | 2.8  [0.9–7.9] | 2.1  [0.0–4.3] | 5.2  [1.8–10.5] | 3.9  [2.1–5.8] | 3.8  [1.7–7.2] | 3.6  [3.1–5.8] | 3.6  [1.5–6.6] |
| **Length of intensive care stay (days)** | | | | | | | | |
| Median [IQR] | 2.4  [1.3–4.1] | 3.0  [1.7–5.7] | 2.9  [1.5–4.1] | 3.7  [2.0–7.6] | 4.0  [2.0–10.0] | 2.7  [1.6–4.8] | 3.1  [1.6–4.8] | 2.7  [1.4–5.6] |
| **Length of hospital stay (days)** | | | | | | | | |
| Median [IQR] | 5.6  [3.5–7.0] | 8.5  [4.6–16.5] | 5.1  [4.4–6.8] | 8.3  [4.7–15.6] | 4.8  [2.4–12.4] | 6.0  [3.6–11.8] | 5.1  [2.5–8.6] | 5.8  [3.0–12.1] |
| **Patient outcome** | | | | | | | | |
| Ongoing care in intensive care | 7  (17.5%) | 17  (1.5%) | 4  (30.8%) | 13  (1.8%) | 2  (40.0%) | 45  (10.8%) | 13  (25.5%) | 80  (8.8%) |
| Ongoing care in hospital ward\* | 7  (17.5%) | 25  (2.2%) | – | 5  (0.7%) | – | 2  (0.5%) | 4  (7.8%) | 11  (1.2%) |
| Transfer to other hospital or facility | 4  (10.0%) | 102  (9.1%) | 3  (23.1%) | 59  (8.1%) | – | 29  (7.0%) | 3  (5.9%) | 51  (5.6%) |
| Transfer to rehabilitation | 1  (2.5%) | 81  (7.2%) | – | 38  (5.2%) | 1  (20.0%) | 9  (2.2%) | 1  (2.0%) | 25  (2.7%) |
| Discharged home | 18  (45.0%) | 704  (63.0%) | 4  (30.8%) | 522  (72.1%) | 1  (20.0%) | 304  (73.3%) | 25  (49.0%) | 678  (74.2%) |
| Died – intensive care† | 3  (7.5%) | 115  (10.3%) | 2  (15.4%) | 67  (9.3%) | 1  (20.0%) | 18  (4.3%) | 5  (9.8%) | 48  (5.3%) |
| Died – hospital ward† | – | 65  (5.8%) | – | 18  (2.5%) | – | 6  (1.4%) | – | 20  (2.2%) |
| Missing‡ | – | 9  (0.8%) | – | 2  (0.3%) | – | 2  (0.5%) | – | 1  (0.1%) |

Note: Includes two patients with viral co-infection of multiple pathogens in the 28-day severity reporting period and 49 patients with viral co-infection of multiple pathogens in the year to date for severity reporting. For patients whom are still receiving treatment in intensive care data may not be complete; therefore, data are not included in the duration of ventilation or length of intensive care stay.  
\* Patients who have been admitted in intensive care/hospital wards with no discharge information for less than 90 days have been assumed to have ongoing care in the hospital.  
† Death may not necessarily represent a death due to the disease.  
‡ Patients who have no outcome entered or have been admitted to intensive care/hospital wards for more than 90 days with no discharge information have been treated as missing.

### 2.2 Case-based surveillance

#### NNDSS

* In the year to date for severity reporting (1 January to 1 December 2024), mortality rates for COVID-19, influenza and RSV associated deaths in cases notified to the NNDSS have been highest in those aged 70 years or over (Table 3).

**Table 3: Notifications of deaths to the NNDSS and mortality rates per 100,000 population by disease and ten-year age groups\*†‡, Australia, 1 January to 1 December 2024**

|  | **COVID-19** | | **Influenza** | | **RSV** | |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Year to date (n)** | **Year to date (rate)** | **Year to date (n)** | **Year to date (rate)** | **Year to date (n)** | **Year to date (rate)** |
| **Age group (years)** | | | | | | |
| 0–9 | – | – | 7 | 0.2 | – | – |
| 10–19 | – | – | – | – | – | – |
| 20–29 | – | – | – | – | – | – |
| 30–39 | 8 | 0.2 | – | – | – | – |
| 40–49 | 20 | 0.6 | 13 | 0.4 | – | – |
| 50–59 | 60 | 1.9 | 26 | 0.8 | 8 | 0.2 |
| 60–69 | 158 | 5.6 | 53 | 1.9 | 14 | 0.5 |
| 70+ | 1,981 | 61.3 | 392 | 12.1 | 140 | 4.3 |
| **Total** | **2,232** | **8.4** | **500** | **1.9** | **170** | **0.6** |

Note: To reduce the risk of re-identification, primary cell suppression has been applied to rates calculated from underlying count of < 5.  
\* Rate per 100,000 population for the given time period. Population data are based on the ABS ERP as at June 2023.  
† Notified deaths are reported based on diagnosis date not date of death, as date of death data are not collected for influenza or RSV in the NNDSS. Death may not necessarily represent a death due to the disease and notified deaths are likely to be an underrepresentation of the true mortality associated with COVID-19, influenza and RSV. In addition, notified deaths may not be representative of deaths in each jurisdiction as data is sourced in different ways by state and territories based on their local surveillance system capabilities, definitions, priorities, and needs. For more detail, please refer to reports and data considerations published by individual jurisdictions, or the [Technical Supplement – Australian Respiratory Surveillance Report](https://www.health.gov.au/resources/publications/technical-supplement-australian-respiratory-surveillance-report).  
‡ Total may include cases with missing age.

## 3. At-risk populations

At-risk populations are people who may be more susceptible to infection with circulating respiratory viruses and/or who may be more likely to experience severe disease associated with their infection.

### 3.1 Hospital-based surveillance

#### FluCAN

Children (16 years or younger) are over-represented in FluCAN to provide enhanced surveillance of this at-risk population. Consequently, the age distribution in FluCAN may not reflect the age distribution of hospital admissions nationally. Therefore, children (≤16 years) and adults (>16 years) admitted to a sentinel hospital are reported separately, though all age groups are shown together in figures.

* In the year to date for severity reporting (1 January to 1 December 2024), 1,447 children have been admitted to sentinel hospitals with COVID-19 (Figure 11). The median age at admission was one year (IQR: 0–4 years) and 6.5% (94/1,447) of admissions were among Aboriginal and Torres Strait Islander people.
* In the year to date for severity reporting, 3,562 adults have been admitted to sentinel hospitals with COVID-19 (Figure 11). The median age at admission was 76 years (IQR: 64–84 years) and 3.6% (130/3,562) of admissions were among Aboriginal and Torres Strait Islander people.

**Figure 11: Number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals by age group, year and week of admission\*, Australia, 2020 to 1 December 2024**

Figure 11: Number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals by age group, year and week of admission, Australia, 2020 to 1 December 2024  

A set of five annual stacked bar charts, one for each year of 2020 to 2024, showing the number of COVID-19 patients admitted to FluCAN sentinel hospitals each week by age group (< 6 months, 6 months to 4 years, 5–16 years, 17–64 years and 65+ years). The charts date range encompasses the entire COVID-19 pandemic to date for severity reporting (1 December 2024). The y-axis scale (left) is different for each year relative to the number of admissions. In 2020, there were low numbers of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals, and patients aged 17–64 years and 65 years or over accounted for the majority of admissions with COVID-19 to FluCAN sentinel hospitals. In 2020, there were two peaks in admissions; the first occurred in late March 2020 with approximately 40 admissions with COVID-19 per week and the second in late August 2020, again with approximately 40 admissions with COVID-19 per week. There was a prolonged period of little to no admissions with COVID-19 to FluCAN sentinel hospitals from late October 2020 to July 2021. From July 2021, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals steadily increased to a peak of 250 admissions with COVID-19 in mid-September 2021. In 2021, those aged 17–64 years accounted for the greatest proportion of admissions with COVID-19 to FluCAN sentinel hospitals. In 2022, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals peaked in mid-January 2022 at more than 500 admissions per week, with the 65 years or over age group accounting for the highest proportion of admissions. From mid-April 2022, an increasing proportion of paediatric patients (those aged < 6 months, 6 months to 4 years and 5–16 years) were observed, though the weekly proportion of admissions with COVID-19 to FluCAN sentinel hospitals in these age groups remained lower than the corresponding weekly proportion observed in those aged 65 years or over. In 2023, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals peaked in early January at over 200 admissions per week, with the greatest proportion of admissions in those aged 65 years or over. Since the beginning of 2024, the number of admissions per week has followed an overall decreasing trend until the end of March, at approximately 40 admissions per week. The number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals then increased from approximately 80 admissions per week in early April to an apparent peak of 200 admissions per week in the week ending 26 May 2024. From the apparent peak in late May to late September 2024, the number of patients admitted with confirmed COVID-19 to FluCAN sentinel hospitals have followed an overall decreasing trend, though week-on-week increases have been observed. From the week ending3 November 2024, the number of patients admitted with COVID-19 to FluCAN sentinel hospitals has been decreasing. In 2024, approximately half of the admissions with confirmed COVID-19 to FluCAN sentinel hospitals have been in those aged 65 years or over. 

\* Axis varies between years.

* Since influenza surveillance for severity reporting commenced on 1 April 2024 to date (1 December 2024), 2,223 children have been admitted to sentinel hospitals with influenza (Figure 12). The median age at admission was four years (IQR: 1–7 years) and 7.6% (170/2,223) of admissions were among Aboriginal and Torres Strait Islander people.
* Since influenza surveillance commenced for severity reporting on 1 April 2024 to date, 2,063 adults have been admitted to sentinel hospitals with influenza (Figure 12). The median age at admission was 63 years (IQR: 47–77 years) and 11.4% (236/2,063) of admissions were among Aboriginal and Torres Strait Islander people.

**Figure 12: Number of patients admitted with confirmed influenza to FluCAN sentinel hospitals by age group, year and week of admission\*†, from April to October, 2017 to 1 December 2024**

Figure 12: Number of patients admitted with confirmed influenza to FluCAN sentinel hospitals by age group*, year, and week of admission†‡, from April to October, 2017 to 1 December 2024 

A set of six annual stacked bar charts, one for each year of 2017–2019 and 2022–2024, showing the number of influenza patients admitted to FluCAN sentinel hospitals each week by age group (< 6 months, 6 months to 4 years, 5–16 years, 17–64 years and 65+ years), for the years 2017–2019 and 2022 to 2024 year to date for severity reporting (1 December 2024). The y-axis scale (left) is different for each year relative to the number of admissions. The number of patients admitted with confirmed influenza to FluCAN sentinel hospitals varies across the years. In 2017, the number of influenza patients admitted to FluCAN sentinel hospitals gradually increased from early July and reached a peak in early September with approximately 400 admissions per week. Following the peak, the number of weekly admissions gradually declined until the end of the influenza season in late-October. Patients aged 65 years or over accounted for approximately half of the admissions with influenza to FluCAN sentinel hospitals. In 2018, the influenza season was milder. The number of weekly FluCAN sentinel hospital admissions remained low and stable from the start of seasonal surveillance to early July. Peak admissions occurred in mid-September with approximately 80 admissions with influenza per week, with the greatest proportion of admissions in those aged 17–64 years. In 2019, the influenza season was more prolonged but slightly milder than in 2017. When seasonal influenza surveillance commenced on 1 April 2019, the number of FluCAN sentinel hospital admissions with influenza ranged between 150 and 200 per week and reached a peak in early July with approximately 300 admissions per week. Following the peak, the number of weekly admissions gradually declined until the end of the influenza season. In 2022, the number of weekly FluCAN sentinel hospital influenza admissions increased sharply several weeks after seasonal influenza surveillance commenced on 1 April. The number of weekly admissions reached a peak in mid-May with approximately 300 admissions per week. There was a period of little to no admissions with influenza to FluCAN sentinel hospitals from early September to late-October. In 2022, patients aged less than 17 years accounted for the greatest proportion of admissions with influenza to FluCAN sentinel hospitals. In 2023, the number of patients admitted with influenza to FluCAN sentinel hospitals peaked in early July at over 300 admissions per week, with the greatest proportion of admissions in those aged 5–16 years. In 2024, the number of weekly FluCAN sentinel hospital influenza admissions gradually increased from early April at approximately 60 admissions per week to an apparent peak of 300 admissions per week in the week ending 14 July 2024, with increasing proportion of admissions in those aged 5–16 years and 6 months to 4 years. From late July 2024, the number of patients admitted with confirmed influenza to FluCAN sentinel hospitals have followed an overall decreasing trend, though week-on-week increases have been observed. In 2024, approximately half of the admissions with confirmed influenza to FluCAN sentinel hospitals have been in those aged 6 months to 4 years and 5–16 years of aged. Note, the years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. 

\* Axis varies between years.  
† The years 2020 and 2021 are excluded when comparing the current season to historical periods when influenza virus has circulated without public health restrictions. Please refer to the Technical Supplement for further detail.

* Since RSV surveillance commenced for severity reporting on 1 April 2024 to date (1 December 2024), 2,180 children have been admitted to sentinel hospitals with RSV (Figure 13). The median age at admission was one year (IQR: 0–2 years) and 6.6% (144/2,180) of admissions were among Aboriginal and Torres Strait Islander people.
* Since RSV surveillance commenced for severity reporting on 1 April 2024 to date, 452 adults have been admitted to sentinel hospitals with RSV (Figure 13). The median age at admission was 72 years (IQR: 57–82.25 years) and 11.9% (54/452) of admissions were among Aboriginal and Torres Strait Islander people.

**Figure 13: Number of patients admitted with confirmed RSV to FluCAN sentinel hospitals by age group, year and week of admission, Australia, 1 April to 1 December 2024**

Figure 13: Number of patients admitted with confirmed RSV to FluCAN sentinel hospitals by age group*, year and week of admission, Australia, 1 January to 1 December 2024 

A bar chart showing the number of RSV patients admitted to FluCAN sentinel hospitals each week by age group (< 6 months, 6 months to 4 years, 5–16 years, 17–64 years and 65+ years), with admission dates between 1 April and 1 December 2024. In 2024, the number of patients admitted with RSV to FluCAN sentinel hospitals reached an apparent peak in the week ending 28 April 2024 at approximately 120 patients per week. Since the apparent peak in April, the number of patients per week has fluctuated with intermittent peaks throughout winter, though generally not exceeding 80 RSV patients per week. In the current severity reporting period for FluCAN (4 November to 1 December 2024), the number of patients admitted with confirmed RSV to FluCAN sentinel hospitals averaged at approximately 20 per week. The majority of patients admitted with RSV have been in children 6 months to 4 years of age, followed by children <6 months of age.  

#### 

#### Paediatric Active Enhanced Disease Surveillance (PAEDS)

* Since 1 January 2020 to date for severity reporting (1 December 2024), there have been 205 cases of possible, probable, or confirmed paediatric inflammatory multisystem syndrome – temporally associated with SARS-CoV-2 (PIMS-TS) admitted to sentinel hospitals.
  + There have been no PIMS-TS associated deaths to date for severity reporting.
  + The highest proportion of PIMS-TS cases occurred in 2022 (64.4%; 132/205), followed by 2021 (14.6%; 30/205).
* In the year to date for severity reporting, there have been 15 PIMS-TS cases reported, with the last PIMS-TS case reported in November 2024.
* Most PIMS-TS cases have been aged 5 to < 12 years (52.2%; 107/205) or 6 months to < 5 years (27.8%; 57/205). Approximately 5.4% (11/205) of PIMS-TS cases occurred among Aboriginal and Torres Strait Islander people.

#### SPRINT-SARI Australia

* In this severity reporting period (4 November to 1 December 2024), the median age of patients admitted to a sentinel intensive care with a severe acute respiratory infection was 60 years (IQR: 32–73 years) years and 8.1% (9/111) of patients were among Aboriginal and Torres Strait Islander people.
* In the year to date for severity reporting (1 January to 1 December 2024), the median age of patients admitted to a sentinel intensive care with a severe acute respiratory infection was 54 years (IQR: 16–70 years) and 7.1% (221/3,112) of patients have been among Aboriginal and Torres Strait Islander people.
* In the year to date for severity reporting, 11.2% (349/3,112) of patients admitted to a sentinel intensive care with a severe acute respiratory infection died in hospital. Most deaths were in patients aged 60 years or over (73.1%; 255/349) (Figure 14).

**Figure 14: Number of patients admitted with severe acute respiratory infections to a SPRINT-SARI sentinel intensive care by age group, sex and outcome\*†‡, Australia, 1 January to 1 December 2024** Figure 14: Number of severe acute respiratory illness patients admitted to a SPRINT-SARI sentinel intensive care by age group, sex and outcome, Australia, 1 January to 1 December 2024  

A pyramid chart showing the number of severe acute respiratory illness patients admitted to a SPRINT-SARI sentinel intensive care by ten-year age group in years (0–9, 10–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70–79, 80–89, 90+), sex, and patient outcome (ongoing ICU care, discharged from ICU or died) in the year to date for SPRINT-SARI severity report (1 January to 1 December 2024). Of the 3,112patients with a severe acute respiratory illness admitted to SPRINT-SARI sentinel intensive care, 45.7% (1,424/3,112) have been females and 54.3% (1,688/3,112) have been males. Note, if data are missing or a patient does not identify as either female or male, the sum of gender-specific totals above may not equal the total number of patients. Admissions to SPRINT-SARI intensive care units have been observed across all age groups, with the highest proportions among females aged 60–69 years and males aged 70-79 years. In the year to date, there have been 311 patients with severe acute respiratory illness admitted to a SPRINT-SARI sentinel intensive care who died in hospital. The majority were among patients aged 60 years or over.  

\* The age and sex distribution of severe acute respiratory infection intensive care admissions in the SPRINT-SARI Australia sentinel surveillance system may not reflect the age or sex distribution of all patients admitted with a severe acute respiratory infection nationally. In addition, if data are missing or a patient does not identify as either female or male, the sum of gender-specific totals above may not equal the total number of patients.  
† Ongoing care reflects the need for ongoing care in intensive care. Where a patient has been discharged from intensive care, the patient may still be receiving ongoing care in a hospital.  
‡ Death may not necessarily represent a death due to the disease.

### 3.2 Case-based surveillance

#### NNDSS

The ascertainment of Indigenous status in the NNDSS for influenza and RSV, and more recently for COVID-19, is insufficient for accurate epidemiological assessments or meaningful interpretation. This is due to a number of factors, including: most laboratory notifications do not include Indigenous status, case follow-ups are not routinely conducted and are not a requirement of notification, and data linkage systems that have been used to help capture Indigenous status for COVID-19 cases have not been extended for COVID-19 in the post emergency climate, and have not been comprehensively extended to influenza or RSV cases. Therefore, data are not currently analysed by Indigenous status.

## 4. Impact

Impact measures how circulating respiratory viruses adversely affect the community and the healthcare system.

### 4.1 Community-based surveillance

#### FluTracking

* This reporting period (18 November to 15 December 2024), fewer FluTracking participants reported taking three or more days off work or normal duties due to fever and cough symptoms (48.8%; 539/1,104), than in the previous month (51.0%; 670/1,313).

### 4.2 Hospital-based surveillance

#### Critical Health Resource Information System (CHRIS)

* This reporting period (18 November to 15 December 2024), there have been more COVID-19 cases in intensive care across Australia than in the previous month (Figure 15).
* This reporting period, there have been more intensive care staff unavailable to work due to COVID-19 exposure or illness across Australia than in the previous month (Figure 15).

**Figure 15: Mean number of COVID-19 cases in intensive care and the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS by week of report\*†, Australia, 1 January to 15 December 2024** Figure 15: Mean number of COVID-19 cases in intensive care and the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS by week of report, Australia, 1 January to 15 December 2024 

A stacked bar chart showing the mean number of ventilated and non-ventilated COVID-19 cases in intensive care reported to CHRIS by week of report from 1 January to 15 December 2024. A line graph plotted on the same axis (left) shows the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness by week of report to CHRIS, from 1 January to 15 December 2024. In the beginning of 2024, there was a fluctuating trend in the mean number of COVID-19 cases in intensive care per week, from approximately 65 COVID-19 cases in intensive care in the week ending 7 January 2024 to approximately 30 COVID-19 cases in intensive care in the week ending 3 March 2024. The mean number of COVID-19 cases in intensive care per week increased rapidly from mid-May to an apparent peak in the mean number of COVID-19 cases in intensive care per week at approximately 85 COVID-19 cases in the week ending 30 June 2024. The mean number of COVID-19 cases in intensive care per week has been decreasing since late June, with a gradual increasing trend starting from the week ending 29 September 2024, with some week-on-week decreases observed. In the current reporting period (18 November to 15 December 2024), the mean number of ventilated COVID-19 cases in intensive care increased to an average of five COVID-19 cases each week, and the number of non-ventilated COVID-19 cases in intensive care remained at an average of 20 COVID-19 cases in intensive care each week. Non-ventilated COVID-19 cases account for the majority of cases in intensive care and reported to CHRIS. In 2024, the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS each week has followed a similar fluctuating trend. The mean number of intensive care staff unavailable to work decreased from January until early March 2024. From early to mid-March 2024, an overall increasing trend in the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS each week has been observed, reaching an apparent peak in of approximately 100 staff unavailable in the week ending 2 June 2024. Since early June, the mean number of staff unavailable has decreased slightly. From mid-October there has been an increasing trend of staff unavailable to work, though some week-on-week decreases have been observed. In the current reporting period (18 November to 15 December 2024), the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS has increased to a mean of approximately 70 intensive care staff unavailable to work each week. 

\* Mean number of ventilated and non-ventilated COVID-19 cases in intensive care includes only active COVID-19 cases (those in isolation) and does not include cleared COVID-19 cases.  
† Intensive care staff include both medical and nursing staff.

* This reporting period, COVID-19 cases in intensive care have increased in Victoria, and Queensland, and remained stable in other jurisdictions compared with the previous month (Figure 16).
* This reporting period, the number of unavailable intensive care staff have increased in Victoria, Queensland, and South Australia, and remained stable in other jurisdictions compared with the previous month (Figure 16).

**Figure 16: Mean number of COVID-19 cases in intensive care and the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS by jurisdiction and week of report\*†‡, Australia, 1 January to 15 December 2024**

Figure 16: Mean number of COVID-19 cases in intensive care and the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS by jurisdiction and week of report, Australia, 1 January to 15 December 2024 

A set of eight stacked bar charts, one for each Australian state or territory, showing the mean number of ventilated and non-ventilated COVID-19 cases in intensive care reported to CHRIS by week of report from 1 January to 15 December 2024. A line graph plotted on the same axis (left) shows the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness by week of report to CHRIS, from 1 January to 15 December 2024. The y-axis scale (left) is different for each state or territory relative to the number of intensive care admissions. Since the beginning of 2024, the highest number of mean COVID-19 cases in intensive care have been observed in New South Wales (approximately 21 COVID-19 cases in intensive care per week), followed by Victoria (approximately 10 COVID-19 cases in intensive care per week) and Queensland (approximately 8 COVID-19 cases in intensive care per week). Since the beginning of 2024, the mean number of ventilated COVID-19 cases has remained low and stable across each jurisdiction, compared with the number of non-ventilated COVID-19 cases. In the current reporting period (18 November to 15 December 2024), the mean number of COVID-19 cases in intensive care have remained stable across jurisdictions apart from in Victoria and Queensland where an increase was observed, compared with the previous month. Since the beginning of 2024, the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS has fluctuated across all jurisdictions. The highest number of intensive care staff unavailable to work due to COVID-19 exposure or illness have been observed in Victoria (approximately 27 staff unavailable per week), followed by Queensland (approximately 10 staff unavailable per week) and Western Australia (approximately 8 staff unavailable per week). In the current reporting period (18 November to 15 December 2024), the number of intensive care staff unavailable per week has remained stable or increased across most jurisdictions, compared with the previous reporting period. 

\* Axis varies between jurisdictions.  
† Mean number of ventilated and non-ventilated COVID-19 cases in intensive care includes only active COVID-19 cases (those in isolation) and does not include cleared COVID-19 cases.  
‡ Intensive care staff include both medical and nursing staff.

## 5. Genomic surveillance and virology

### 5.1 Laboratory-based surveillance

#### Sentinel laboratories, including National Influenza Centres

* This reporting period (18 November to 15 December 2024), there was no change in SARS-CoV-2 positivity across sentinel laboratories (4.4%; 1,144/26,101), compared with the previous month (4.4%; 1,211/27,748) (Figure 17).
* This reporting period, influenza positivity decreased across sentinel laboratories (1.7%; 533/31,951), compared with the previous month (1.8%; 592/33,774) (Figure 17).
* This reporting period, RSV positivity decreased across sentinel laboratories (0.9%; 226/26,101), compared with the previous month (1.0%; 274/27,748) (Figure 17).
* This reporting period, the most commonly detected respiratory viruses were adenovirus (Victoria), coronavirus (Victoria), parainfluenza virus (Victoria), picornavirus (Victoria), rhinovirus (New South Wales, South Australia, and Tasmania), and SARS-CoV-2 (Victoria, and Western Australia).
* In the year to date, positivity across sentinel laboratories has been:
  + 4.3% (15,808/367,207) for SARS-CoV-2
  + 6.4% (28,140/436,933) for influenza
  + 2.7% (9,810/367,207) for RSV.

**Figure 17: Total number of specimens tested by sentinel laboratories and proportion of positive sentinel laboratory tests by pathogen and week of report\*†, 1 January to 15 December 2024**

Figure 17: Total number of specimens tested by sentinel laboratories and proportion of positive sentinel laboratory tests by pathogen and week of report, 1 January to 15 December 2024 

A stacked bar chart showing the weekly proportion of sentinel laboratory tests positive for SARS-CoV-2, influenza, or RSV by week of report, from 1 January to 15 December 2024. A line graph plotted on the secondary (right) axis shows the total number of specimens tested, by week of report, from 1 January to 15 December 2024. The weekly proportion of positive tests has remained above 7.0% since the start of 2024. Since the beginning of 2024, the weekly proportion of SARS-CoV-2 positive tests followed a decreasing trend until early April 2024, from approximately 8.0% positivity per week at the start of the year to approximately 3.5% positivity per week in the week ending 7 April 2024. Following a steady increase in SARS-CoV-2 positivity per week between mid-April to early June 2024, SARS-CoV-2 positivity decreased to approximately 2.0% in early-September, and has since been increasing to approximately 4.4% in the most recent reporting month. The weekly proportion of influenza positive tests has followed a gradual increasing trend since mid-February 2024. Influenza test positivity increased from approximately 2.0% in the fortnight ending 14 January 2024 to almost 11.1% in the week ending 25 August 2024. Only 1.8% of samples tested were positive for influenza in this month. The weekly proportion of RSV positive tests has followed an increasing trend since mid-February 2024, with test positivity decreasing slightly to approximately 0.9% in the last four weeks. The total number of specimens tested gradually increased since late March 2024 at approximately 5,300 tests per week to approximately 14,000 tests per week in the week ending 7 July 2024. The number of test specimens has been approximately 6,500 tests per week in the most recent month. 

\* Number of specimens tested excludes data from Western Australia as testing denominator data are different for the three pathogens in Western Australia.  
† A small minority of total samples from Victoria are tested only by respiratory panel (influenza, parainfluenza, adenovirus, human metapneumovirus, seasonal coronaviruses, RSV, and some picornaviruses) but not for SARS-CoV-2. These minority samples include only forensic materials; all other samples are tested by respiratory panel and SARS-CoV-2 assay.

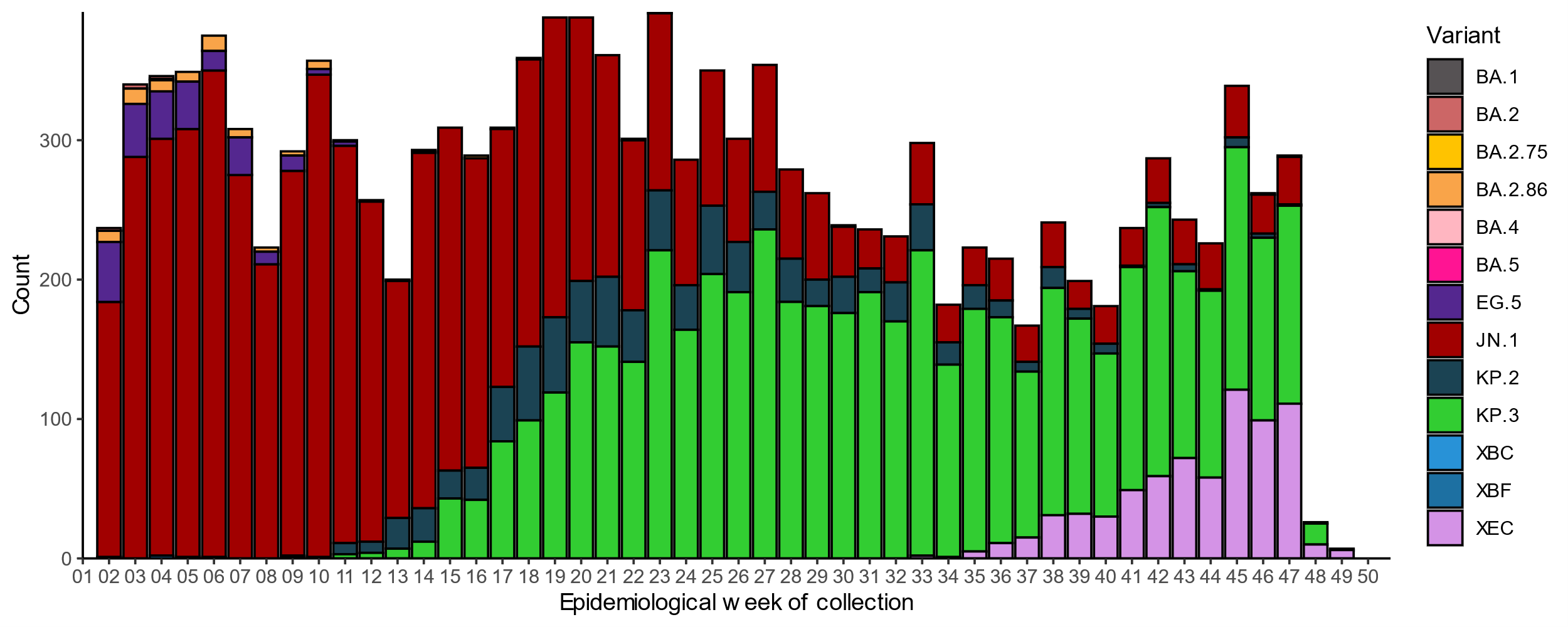
#### AusTrakka

Data on SARS-CoV-2 genomics should be interpreted with caution as SARS-CoV-2 sequencing strategies have changed significantly, and the representativeness of sequences uploaded to AusTrakka may be limited by the different sample referral pathways for each jurisdiction and a significant reduction in sequencing across the country. Sequences are reported based on date of sample collection, not date of sequencing.

* There were 337 sequences uploaded to AusTrakka with dates of collection in the past 28 days (18 November to 15 December 2024). These sequences were from New South Wales, Queensland, South Australia, Tasmania, and Western Australia, with the most recent collection date 6 December 2024.
* All 337 sequences were assigned to the BA.2.86 sub-lineage within B.1.1.529 (Omicron) or recombinants consisting of one or more Omicron sub-lineages (Figure 18). In the past 28 days:
  + 57.9% (195/337) of sequences were from the sub-sub-lineages JN.1 (BA.2.86.1.1), including from KP.2 (1/195) and KP.3 (158/195)
  + 42.1% (142/337) of sequences were recombinant or recombinant sub-lineages, including XEC, a recombinant between KS.1.1 (JN.1.13.1.1.1) and KP.3.3
  + There were no BA.1, BA.3, BA.4, BA.5 or other BA.2 sub-sub-lineage sequences.
* JN.1 and associated sub-lineages continue to dominate the variants identified in AusTrakka with a growing proportion of recombinant sequences seen each month (Figure 18).
* The World Health Organization (WHO) have identified certain sub-sub-lineages and recombinants as variants under monitoring (VUM) or variants of interest (VOI) because of their epidemiological, pathological, or immunological features of concern. A select number of designated VUM or VOI are highlighted below due to their relevance in the Australian context:
  + Recombinant lineage XEC has been designated as a VUM as of 24 September 2024. This lineage has attracted recent attention due to its estimated growth rate. A total of 712 XEC lineages have been identified in AusTrakka, including 127 collected in past 28 days.
  + A total of 271 sequences of LB.1 are identified in AusTrakka, with nine sequences identified in the past 28 days.
  + A total of 1,740 sequences of KP.3.1.1 have been identified in AusTrakka, with 137 sequences identified in the past 28 days.
  + The proportion of JN.1 sequences has decreased (57.6%; 194/337) in the past 28 days, compared with the previous 28-day period, with an increase in the proportion of recombinant lineages.

**Figure 18: Omicron sub-lineage\*^ sequences in AusTrakka by sample collection date, showing (A) proportions and (B) count per week^†, Australia, 1 January to 15 December 2024**

Figure 18: Omicron sub-lineage sequences in AusTrakka by sample collection date, showing (A) proportions and (B) count per week, Australia, 1 January 2023 to 15 December 2024  

Figure A, a 100% stacked bar chart, plots the proportions of SARS-CoV-2 sequences recorded in AusTrakka by lineage for each collection week from 1 January 2024 to 15 December 2024by sample collection date. The figure shows that the dominant sub-lineage sequences in this year to date have been JN.1, including variants under monitoring KP.2 and KP.3, and with smaller proportions of BA.2.86, EG.5, and XEC. Since the beginning of 2024, the proportion of JN.1 sequences has been increasing each week until approximately March when the proportions of KP.2 and KP.3 sequences began increasing in the AusTrakka dataset. Since June, KP.3 has been the dominant sub-sub-lineage sequenced. Since late August 2024, there has been an increasing proportion of the recombinant sub-lineage XEC sequenced by AusTrakka, with some week-on-week, decreases observed. In the 28-day reporting period (18 November to 15 December 2024), the sub-sub-lineage KP.3 has been the dominant sub-lineage sequenced, though the proportion of recombinant lineage XEC sequences were approximately equal to the proportion of KP.3 sub-sub-lineages in the week ending 10 November 2024. Some sub-sublineages are shown alongside their parent lineage, but not included in the parent lineage totals. For instance, KP.2 and KP.3 are sub-sub lineages of JN.1, so the total of JN.1 sequences will be higher than shown in the corresponding colour alone.  \* Some sub-sublineages are shown alongside their parent lineage, but not included in the parent lineage totals. For instance, KP.2 and KP.3 are sub-sub lineages of JN.1, so the total of JN.1 sequences will be higher than shown in the corresponding colour alone and should include the KP.2 and KP.3 totals.  
^ Sequences in AusTrakka aggregated by epidemiological week. Sequences are reported based on date of sample collection, not date of sequencing.  
† Proportions in Figure 18A may not be representative when sequence numbers are small; refer to Figure 18B. Data for earlier epidemiological weeks may change between reporting periods as sequences with older collection dates are uploaded. These numbers are not equivalent to number of cases, as there are many cases which may not be sequenced. Non-VOI and non-VUM Omicron sub-lineages have been collapsed into parent lineages BA.1, BA.2, BA.3, BA.4 and BA.5.

#### NNDSS

* This reporting period (18 November to 15 December 2024), most influenza notifications were influenza A(Unsubtyped) (72.0%; 4,277/5,944), followed by influenza B (24.4%; 1,448/5,944), influenza A(H1N1) (2.0%; 116/5,944), and influenza A(H3N2) (1.5%; 92/5,944). There was one notification with influenza A&B co-detection (Figure 19).
* In the year to date, influenza A has accounted for the majority of influenza notifications across all jurisdictions (Figure 20).

**Figure 19: Influenza notifications to the NNDSS by subtype and week of diagnosis, Australia, 1 January to 15 December 2024**

Figure 19: Proportion of influenza notifications to the NNDSS by subtype and week of diagnosis, Australia, 1 January to 15 December 2024 

A stacked bar chart shows the weekly proportion of influenza notifications to the NNDSS by subtype, with diagnosis dates from 1 January to 15 December 2024. Since the beginning of 2024, each week approximately 85–95% of influenza notifications to the NNDSS have been influenza A(Unsubtyped) and 5–15% have been influenza B. The remaining 5% of influenza notifications to the NNDSS have been a combination of influenza A(H1N1), influenza A(H3N2), untyped influenza, and A and B influenza co-detections. The total number of influenza notifications peaked at approximately 29,000 in the week ending 7 July 2024. In the current reporting month, the proportion of influenza A(Unsubtyped) has accounted for 72.0% of influenzas typed, followed by influenza B at 24.4%, influenza A(H1N1H3N2) at 2.0% and influenza A(H3N2) at 1.5% of the sequenced specimens. 

**Figure 20: Proportion of influenza notifications to the NNDSS by subtype and jurisdiction\*, Australia, 1 January to 15 December 2024**

Figure 20: Proportion of influenza notifications to the NNDSS by subtype and jurisdiction, Australia, 1 January to 15 December 2024 

A 100% stacked bar chart shows the relative proportion of influenza notifications to the NNDSS by subtype and state or territory of residence, from 1 January to 15 December 2024. In 2024 to date, the majority of influenza notifications reported to the NNDSS from all jurisdictions have been influenza A(Unsubtyped). In Tasmania and Western Australia influenza A(H3N2) and A(H1N1) are the main serotypes after influenza A(Unsubtyped), while in South Australia and Victoria influenza B was the main serotype after influenza A(Unsubtyped). 

#### World Health Organization Collaborating Centre (WHOCC) for Reference and Research on Influenza

* In the year to date, the WHOCC has characterised 3,142 influenza viruses (Table 4), of which:
  + 46.6% (1,465/3,142) have been influenza A(H1N1)
  + 48.8% (1,532/3,142) have been influenza A(H3N2)
  + 4.6% (145/3,142) have been influenza B/Victoria.
* In the year to date, there have been no influenza B/Yamagata viruses characterised by the WHOCC (Table 4).
* Of the influenza A(H1N1) samples tested for neuraminidase inhibitor resistance, 0.9% (10/1,065) demonstrated reduced inhibition to Oseltamivir. Of the influenza A(H3N2) samples tested for neuraminidase inhibitor resistance, 0.1% (1/1,157) demonstrated reduced inhibition to Oseltamivir.
* None of the samples tested demonstrated reduced inhibition to Zanamivir.

**Table 4: Australian influenza viruses typed by the WHOCC for Reference and Research on Influenza by haemagglutination inhibition assay and jurisdiction\*†, 1 January to 9 December 2024**

| **Strain** | **ACT** | **NSW** | **NT** | **Qld** | **SA** | **Tas** | **Vic** | **WA** | **Total** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A(H1N1) | 89 | 234 | 353 | 58 | 44 | 106 | 483 | 98 | **1,465** |
| A(H3N2) | 115 | 267 | 392 | 69 | 59 | 72 | 449 | 109 | **1,532** |
| B/Victoria lineage | 13 | 6 | 11 | 5 | 14 | 3 | 59 | 34 | **145** |
| B/Yamagata lineage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Total** | **217** | **507** | **756** | **132** | **117** | **181** | **991** | **241** | **3,142** |

\*Viruses tested by the WHOCC for Reference and Research on Influenza are not necessarily a random sample of all those in the community and early-year data may be based on limited samples received. There may be up to a month delay on reporting of samples.  
† Jurisdiction indicates the residential location for the individual tested, not the submitting laboratory.

## 6. Vaccine coverage, effectiveness and match

In this report, data reported on vaccine coverage, effectiveness and match relate to influenza vaccinations. COVID-19 and RSV vaccination data will be included in future iterations. Refer to the [Technical Supplement – Australian Respiratory Surveillance Report](https://www.health.gov.au/resources/publications/technical-supplement-australian-respiratory-surveillance-report) for further detail on relevant vaccine terminology and methodology.

### 6.1 Vaccine coverage

* Data on vaccine coverage is currently unavailable.

### 6.2 Vaccine effectiveness

#### ASPREN and FluCAN for the Global Influenza Vaccine Effectiveness (GIVE) Collaboration

* Vaccine effectiveness is the reduction in risk of influenza and its complications in those vaccinated, compared to those not vaccinated. Australian studies suggest that in 2024, vaccinated individuals are roughly 60% less likely to attend general practice or be hospitalised with influenza than unvaccinated people.
  + Estimated vaccine effectiveness against general practice attendance was 62% (95% Confidence Interval [CI]: 45%, 74%).
  + Estimated vaccine effectiveness against hospitalisation was 56% (95% CI: 48%, 63%).
  + Estimated vaccine effectiveness against both general practice attendance and hospitalisation with influenza was similar against influenza A(H1N1) and influenza A(H3N2).
  + Vaccine effectiveness was not able to be estimated against influenza B due to low circulation of influenza B during the 2024 season.
  + These figures are based on incomplete data and the final estimates for 2024 may differ.
* These estimates are on the higher end when compared to historical estimates. The higher vaccine effectiveness in 2024 is likely due to a good match between circulating and vaccine strains and an earlier season with less opportunity for immunological waning after vaccination.

### 6.3 Vaccine match

#### WHOCC for Reference and Research on Influenza

* In the year to date, 98.7% (1,446/1,465) of influenza A(H1N1) isolates, 87.6% (1,342/1,532) of influenza A(H3N2) isolates and 100% (145/145) of influenza B/Victoria isolates characterised by the WHOCC have been antigenically similar to the corresponding vaccine components.