Australian Respiratory Surveillance Report

Viral Respiratory Diseases Epidemiology and Surveillance Section

Report 13, 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 (9 September to 22 September 2024) and earlier severity reporting periods (up to 8 September 2024).

**Activity:** In recent weeks, respiratory illness activity (self-reported new fever and cough symptoms) in the community has decreased and is currently similar to the levels of activity observed in the same period in previous years. General practice consultation rates for respiratory illnesses (new fever and cough symptoms) monitored through sentinel surveillance sites have decreased in the last fortnight but remain slightly higher than consultation rates observed in previous years. Nationally, COVID-19 activity has been decreasing since early June 2024, and RSV activity has been decreasing since late May 2024. Since early September 2024, influenza activity has been decreasing across all jurisdictions.

**Severity:** The number of patients hospitalised with COVID-19 and influenza monitored through sentinel hospital-based surveillance has been decreasing since reaching apparent peaks in May 2024 and July 2024, respectively. Whereas the number of patients hospitalised with RSV monitored through sentinel hospital-based surveillance peaked in April 2024 and have been decreasing since. The proportion of those patients with a severe acute respiratory infection (SARI) 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 influenza, and RSV has been decreasing in recent weeks, while the number of patients with COVID-19 admitted to sentinel intensive care surveillance sites has been increasing since mid-August 2024. Patients with COVID-19 have accounted for the majority of all SARI admissions at sentinel intensive care surveillance sites this year.

**At-risk populations:** For patients admitted with a SARI to sentinel intensive care sites, the largest proportion of in-hospital mortality has been in those aged 60 years or over. Nationally, this year, age-specific mortality rates for COVID-19, influenza and RSV cases have been highest among those aged 70 years or over.

**Impact:** The proportion of people taking time off work due to respiratory illness (self-reported new fever and cough symptoms) decreased last fortnight, compared with the previous fortnight. Nationally, the mean number of COVID-19 cases in intensive care this fortnight decreased compared with the previous fortnight. Similarly, the average number of intensive care staff unavailable due to COVID-19 illness or exposure has declined over the past two weeks.

**Genomic surveillance and virology:** Nationally, 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 represents the most common JN.1 sub-lineage in AusTrakka, followed KP.2, JN.1.18 and JN.1.7. There has been an increasing proportion of the recombinant lineage XEC sequenced recently. This year, influenza A has accounted for most influenza notifications nationally.

**Vaccine coverage, effectiveness and match:** It is too early to assess influenza vaccine effectiveness for the 2024 influenza season. 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 Jenna Hassall, Gizem Bilgin, Anna Rafferty, Elham Sadeqzadeh and Caitlin Trenorden 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 were extracted on 25 September 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 current reporting period. For this report, severity reporting includes data up to 8 September 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

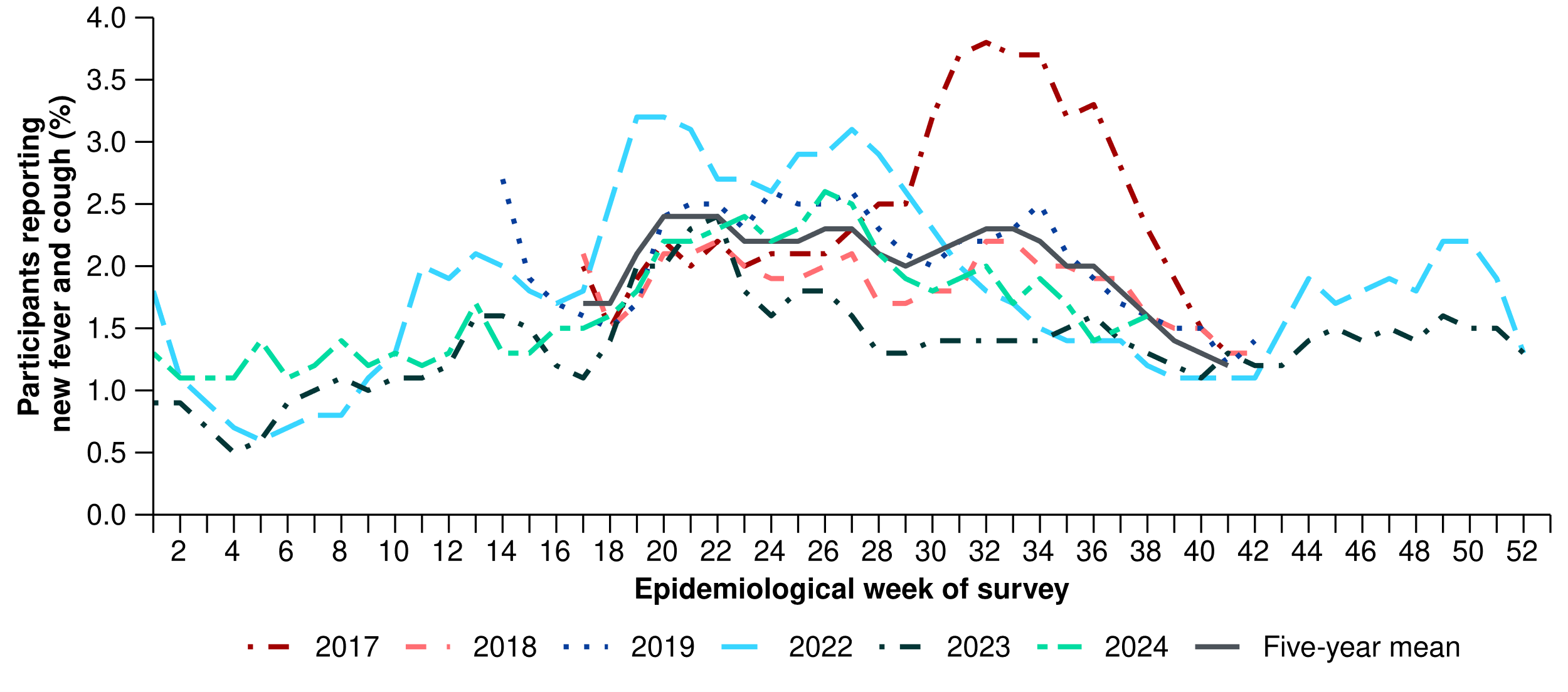
Activity measures the capacity of the circulating respiratory viruses to spread from person to person and may be measured indirectly through systems that monitor acute respiratory illnesses and more directly through systems that monitor cases.

### 1.1 Community-based surveillance

#### FluTracking

* This fortnight (9 September to 22 September 2024), the mean incidence of new fever and cough among FluTracking participants was 1.6%, an increase compared with the mean incidence of 1.5% in the previous fortnight (Figure 1).
* In the year to date, the incidence of new fever and cough symptoms reported to FluTracking has fluctuated, peaking at 2.6% in late June 2024 (Figure 1).
* This fortnight, 12.8% (122/951) of FluTracking participants who reported new fever and cough symptoms reported testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) with a polymerase chain reaction (PCR) test and 56.0% (533/951) reported testing with a rapid antigen test (RAT).
  + This fortnight, the self-reported percent positivity among participants with new fever and cough symptoms remained unchanged for SARS-CoV-2 PCR tests (9.0%; 11/122), but increased for RATs (25.0%; 133/533) compared with the previous fortnight (9.0% [14/156] and 22.8% [143/627] respectively).
* This fortnight, 18.8% (179/951) of FluTracking participants with new fever and cough symptoms reported testing for influenza with a PCR test.
  + This fortnight, the self-reported percent positivity among participants with new fever and cough symptoms increased slightly for influenza PCR tests (16.8%; 30/179), compared with the previous fortnight (16.3%; 35/215).

**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 22 September 2024**

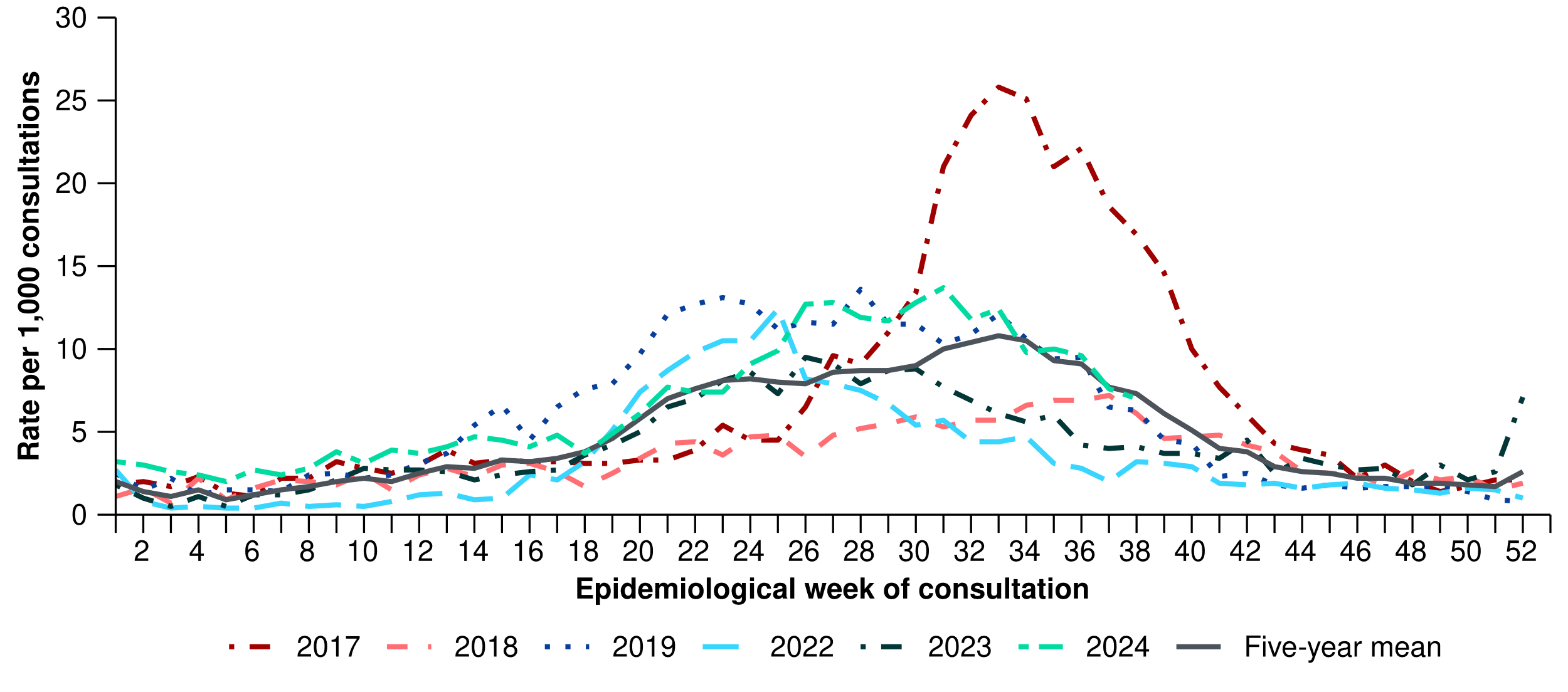


\* FluTracking has expanded the reporting period from 2020 onwards due to COVID-19. As such, five-year historical comparisons are not available for data reported before May and after October for any year before 2020. The years 2020 and 2021 are excluded when comparing the current season to historical 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)

* This fortnight (9 September to 22 September 2024), a mean rate of 7.3 per 1,000 consultations per fortnight due to new fever and cough symptoms were reported by ASPREN sentinel general practitioners and nurse practitioners. This is a decrease compared with 9.8 per 1,000 consultations in the previous fortnight (Figure 2).
* This fortnight, 66.0% (68/103) of people who presented with new fever and cough symptoms tested positive for a respiratory pathogen. Among those positive for a respiratory pathogen, the most common respiratory pathogen reported was rhinovirus (35.3%; 24/68). Other respiratory pathogens detected included parainfluenza type-3 (16.2%; 11/68), human metapneumovirus (13.2%; 9/68), and influenza (7.4%; 5/68).
* In the year to date, 67.4% (1,495/2,219) of people who presented with new fever and cough symptoms tested positive for a respiratory pathogen. Among those positive for a respiratory pathogen, the most common respiratory pathogen reported has been rhinovirus (29.8%; 446/1,495). Other respiratory pathogens detected included influenza (24.4%; 365/1,495), SARS-CoV-2 (11.5%; 172/1,495), RSV (9.5%; 142/1,495), *mycoplasma pneumoniae* (6.5%; 97/1,495) and human metapneumovirus (5.6%; 84/1,495).

**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 22 September 2024**



\* 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 been decreasing since early June 2024, and RSV activity has been decreasing since late May 2024. Since early September 2024, influenza activity has been decreasing across all jurisdictions. Across late May and June 2024, all jurisdictions experienced apparent peaks in COVID-19 activity. In 2024, New South Wales and the Northern Territory experienced earlier seasonal peaks in influenza notifications compared with other jurisdictions. The apparent peak for RSV notifications occurred the latest for Western Australia compared with other jurisdictions in 2024.

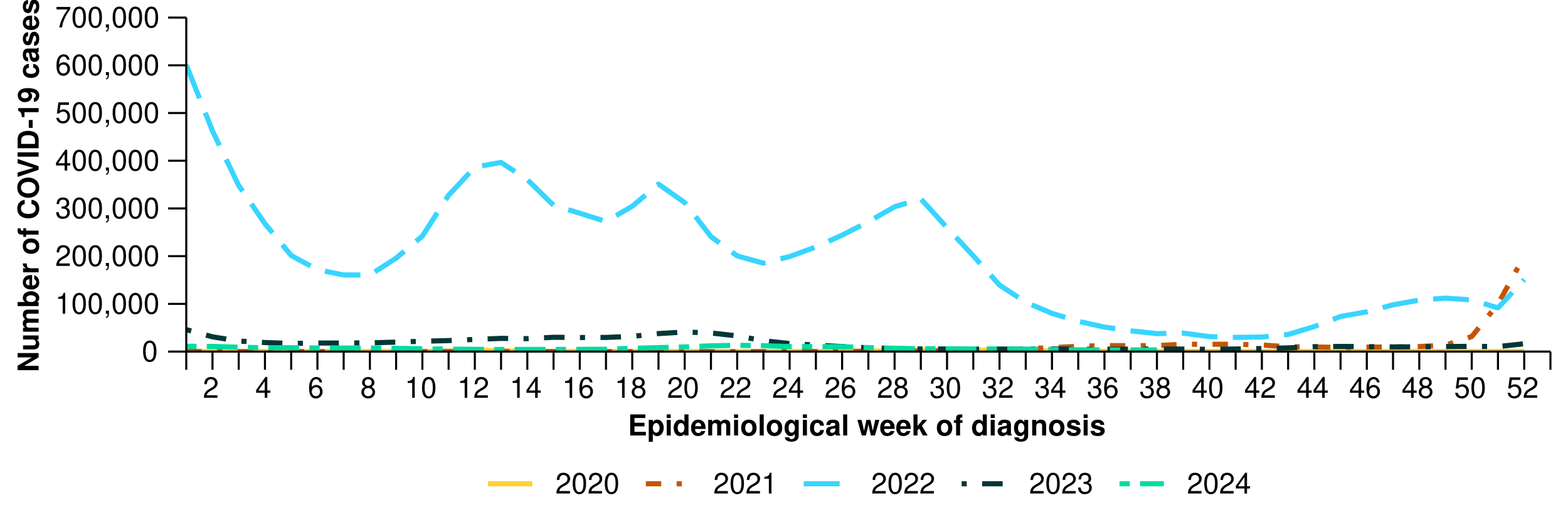
**Table 1: Notifications to the NNDSS and notification rate per 100,000 population by disease, five-year age group, and jurisdiction\*†, Australia, 1 January to 22 September 2024**

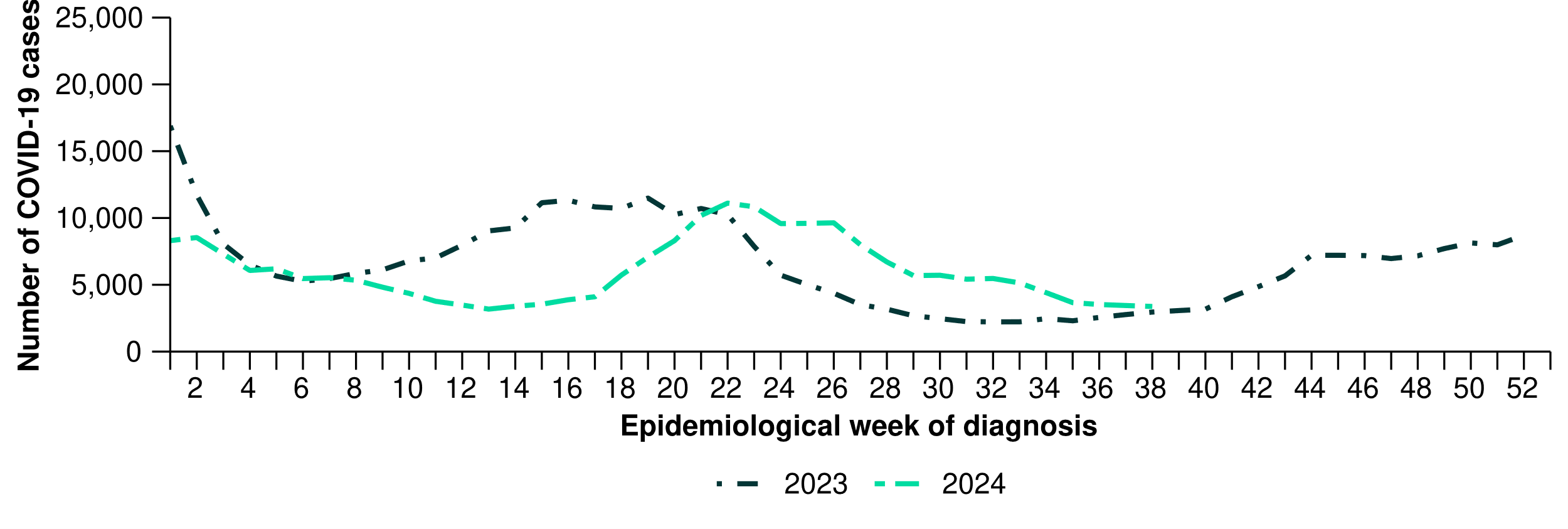
|  | **COVID-19** | | | | **Influenza** | | | | | **RSV** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Reporting fortnight (n)** | | **Year to date (n)** | **Year to  date (rate)** | **Reporting fortnight (n)** | | **Year to date (n)** | **Year to date (rate)** | | **Reporting fortnight (n)** | | **Year to date (n)** | | **Year to date (rate)** | |
| **Age group (years)** | | | | | | | | | | | | | | | | |
| 0–4 | 531 | | 18,609 | 1,227.5 | 1,097 | | 46,556 | 3,071.0 | | 1,625 | | 78,508 | | 5,178.6 | |
| 5–9 | 173 | | 5,400 | 335.3 | 1,082 | | 49,854 | 3,095.8 | | 508 | | 13,321 | | 827.2 | |
| 10–14 | 211 | | 5,589 | 337.2 | 759 | | 32,125 | 1,938.3 | | 332 | | 6,711 | | 404.9 | |
| 15–19 | 230 | | 6,703 | 416.6 | 498 | | 21,309 | 1,324.5 | | 135 | | 3,555 | | 221.0 | |
| 20–24 | 245 | | 7,595 | 438.5 | 419 | | 16,431 | 948.7 | | 92 | | 2,571 | | 148.4 | |
| 25–29 | 276 | | 9,734 | 506.5 | 484 | | 18,556 | 965.6 | | 94 | | 2,937 | | 152.8 | |
| 30–34 | 379 | | 11,650 | 587.6 | 478 | | 20,536 | 1,035.8 | | 92 | | 3,800 | | 191.7 | |
| 35–39 | 404 | | 12,687 | 654.7 | 526 | | 22,363 | 1,154.0 | | 119 | | 3,852 | | 198.8 | |
| 40–44 | 390 | | 12,176 | 684.0 | 475 | | 20,041 | 1,125.8 | | 94 | | 3,285 | | 184.5 | |
| 45–49 | 360 | | 11,106 | 688.0 | 357 | | 15,384 | 953.0 | | 97 | | 3,150 | | 195.1 | |
| 50–54 | 362 | | 11,841 | 704.7 | 332 | | 14,457 | 860.4 | | 150 | | 3,933 | | 234.1 | |
| 55–59 | 358 | | 11,545 | 757.7 | 328 | | 12,464 | 818.1 | | 106 | | 3,830 | | 251.4 | |
| 60–64 | 371 | | 12,386 | 816.6 | 331 | | 12,071 | 795.9 | | 147 | | 4,456 | | 293.8 | |
| 65–69 | 377 | | 13,006 | 980.1 | 293 | | 9,771 | 736.3 | | 143 | | 4,346 | | 327.5 | |
| 70+ | 2,150 | | 79,671 | 2,466.6 | 876 | | 29,399 | 910.2 | | 675 | | 18,697 | | 578.9 | |
| **Jurisdiction** | | | | | | | | | | | | | | | |
| ACT | 85 | 3,778 | | 809.3 | 111 | 4,488 | | | 961.4 | | 25 | 2,576 | 551.8 | |
| NSW | 3,342 | 101,695 | | 1,219.5 | 1,821 | 154,287 | | | 1,850.1 | | 1,451 | 67,014 | 803.6 | |
| NT | 33 | 2,255 | | 893.2 | 139 | 3,085 | | | 1,221.9 | | 18 | 1,358 | 537.9 | |
| Qld | 1,233 | 53,237 | | 975.1 | 2,248 | 75,539 | | | 1,383.6 | | 1,176 | 35,784 | 655.5 | |
| SA | 346 | 14,879 | | 803.5 | 1,027 | 20,086 | | | 1,084.7 | | 525 | 11,075 | 598.1 | |
| Tas | 61 | 3,608 | | 629.9 | 101 | 3,600 | | | 628.5 | | 139 | 2,360 | 412.0 | |
| Vic | 1,470 | 38,160 | | 560.1 | 1,970 | 65,516 | | | 961.7 | | 481 | 28,797 | 422.7 | |
| WA | 254 | 12,268 | | 426.2 | 919 | 14,750 | | | 512.4 | | 594 | 8,009 | 278.2 | |
| **Total** | **6,824** | **229,880** | | **863.0** | **8,336** | **341,351** | | | **1,281.4** | | **4,409** | **156,973** | **589.3** | |

\* 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.

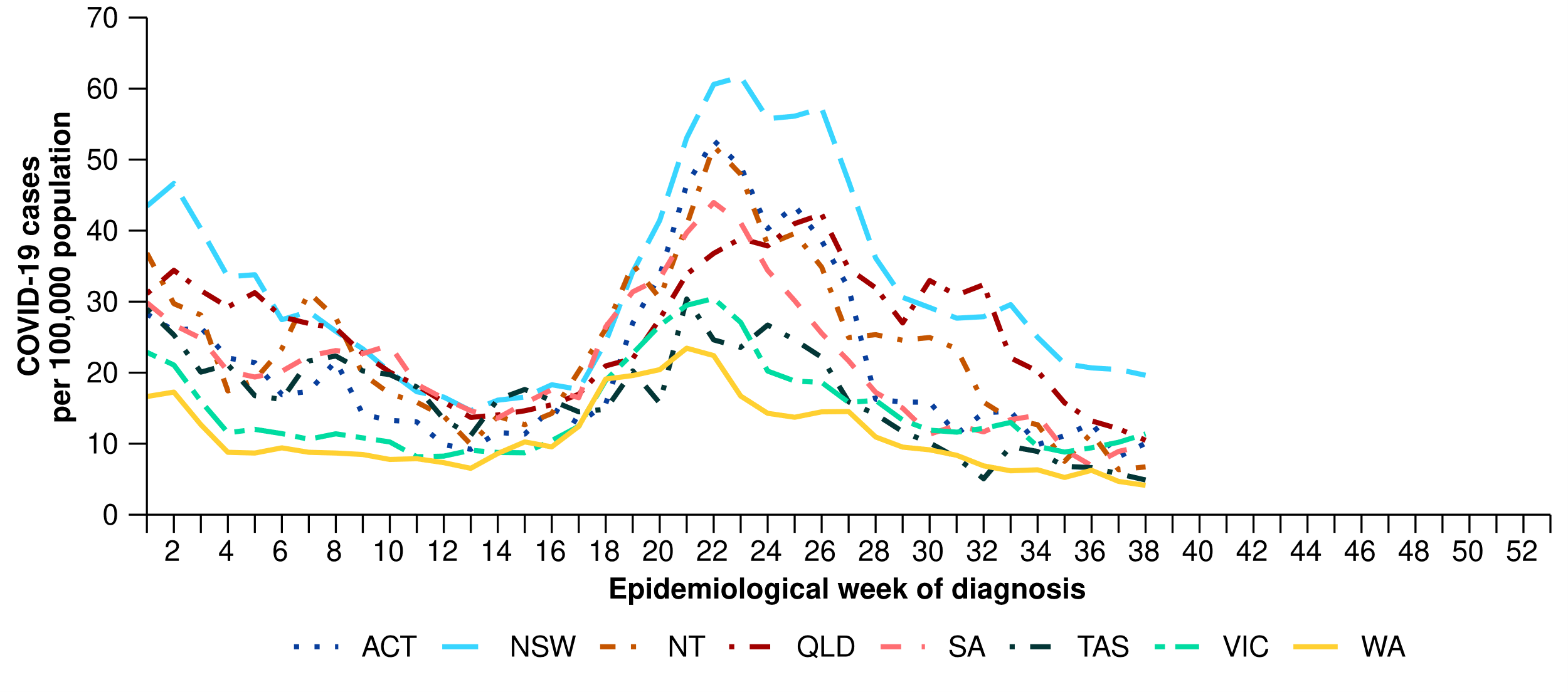
* This year to date, COVID-19 notifications followed a decreasing trend from January through to mid-April before increasing to an apparent peak in early June 2024. COVID-19 notifications have been decreasing since June and notifications have plateaued in recent weeks (Figure 3).
* In the year to date, there have been 229,880 COVID-19 notifications reported to the NNDSS. This is lower than the number of laboratory-confirmed notifications 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 fortnight, COVID-19 notification rates have continued to decrease or plateau across most jurisdictions compared with the previous fortnight, except in South Australia and Victoria where a slight increase in COVID-19 notification rates was observed compared with the previous fortnight (Figure 4).

**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 22 September 2024**





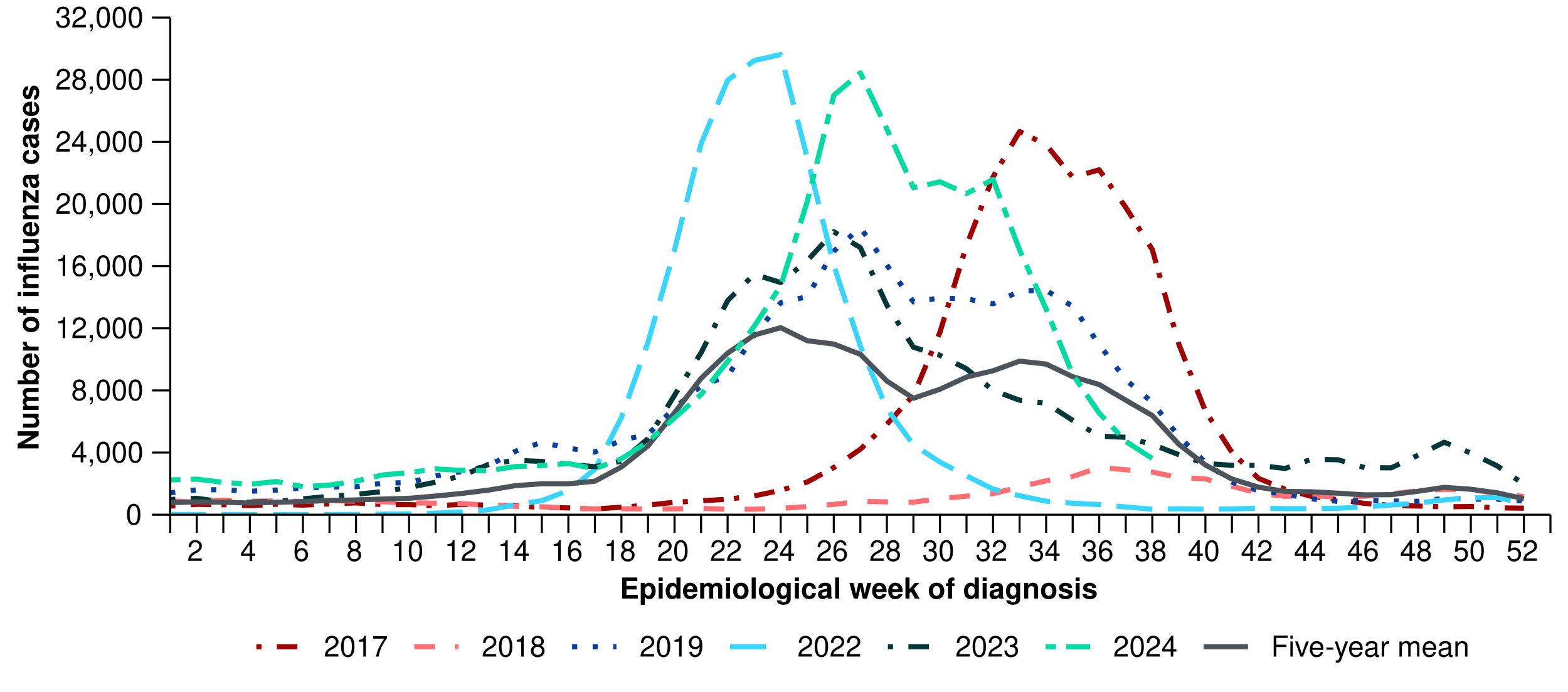
**Figure 4: Notification rates per 100,000 population for COVID-19 cases notified to the NNDSS\* by state or territory and week of diagnosis, Australia, 1 January to 22 September 2024**



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

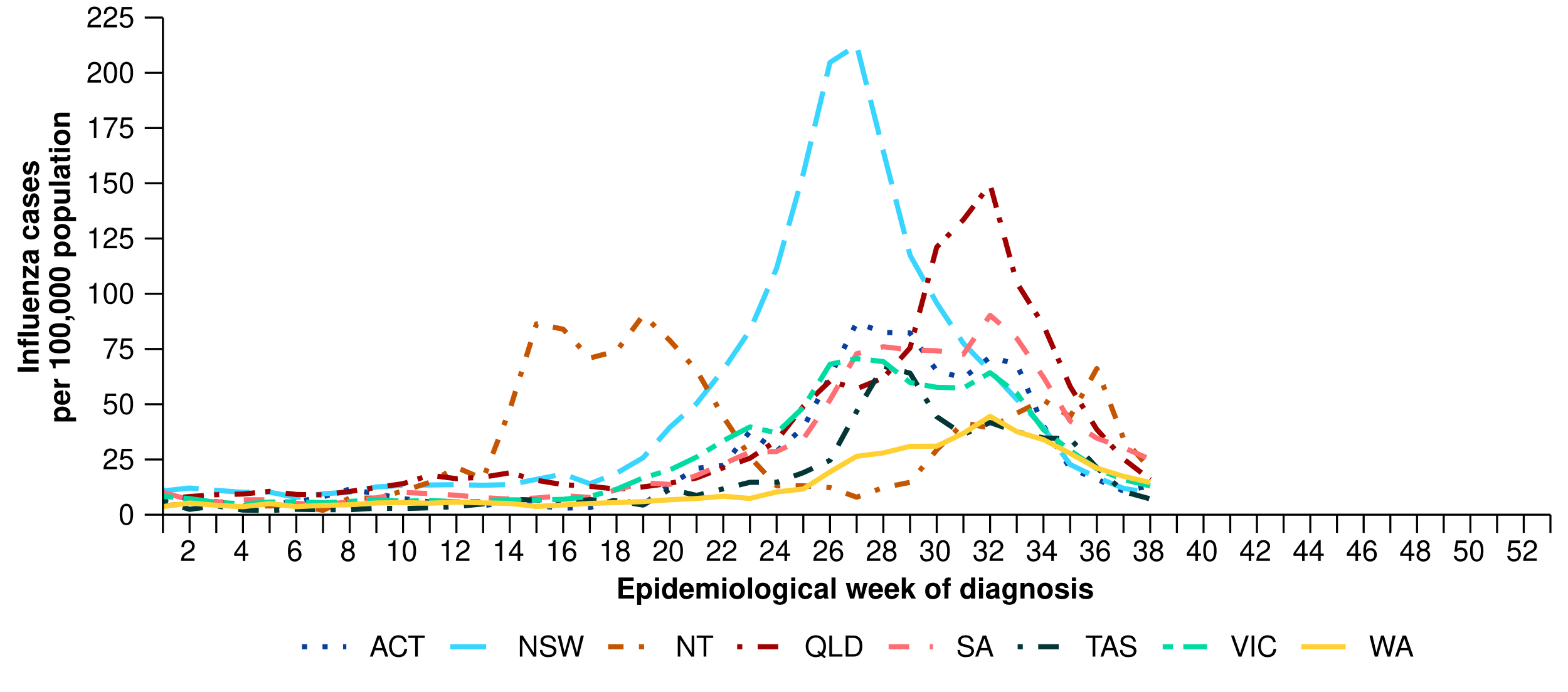
* Nationally, influenza notifications rose steeply from late April to an apparent peak in early July 2024; since that time notifications have continued to decrease. This trend, however, has not been consistent with the timing of peaks in notifications varying across jurisdictions (Figure 5).
* In the year to date, there have been 341,351 influenza notifications reported to the NNDSS, which is higher than the number of notifications in the same period in all other years and the five-year mean (Figure 5).
  + The higher number of influenza notifications observed during the most recent interseasonal period (typically November to the following March) may have been due to an increase in influenza circulation in the community. However, it may also have been influenced by changes in health-seeking behaviour, such as increased laboratory testing for viral respiratory infections, associated with increases in COVID-19 activity observed in many jurisdictions from late 2023 into early 2024.
* In the year to date, influenza notification rates have been highest in children aged 5–9 years, followed closely by people children 0–4 years (Table 1).
* In this fortnight, influenza notification rates appear to be decreasing across all jurisdictions compared with the previous fortnight (Figure 6).

**Figure 5: Influenza cases notified to the NNDSS and five-year mean\* by year and week of diagnosis, Australia, 2017 to 22 September 2024**



\* 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.

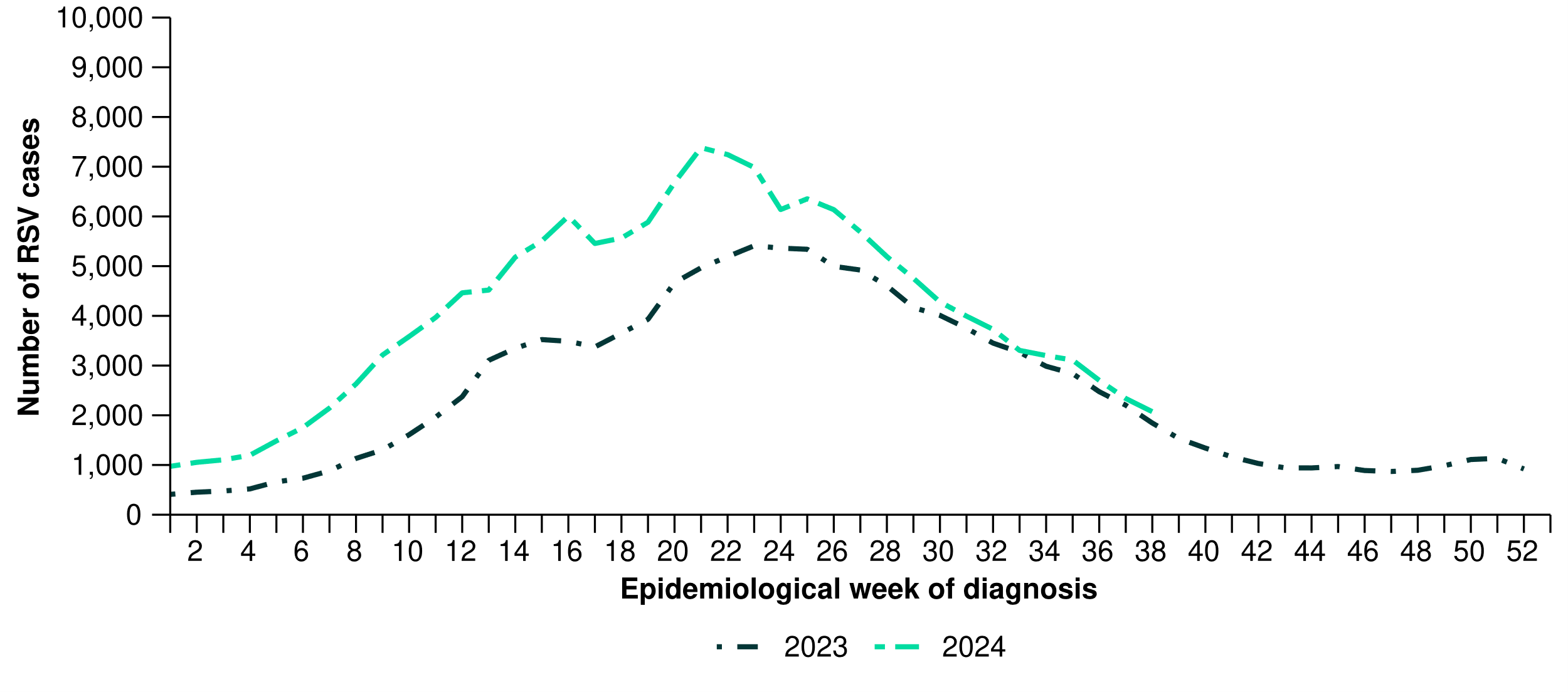
**Figure 6: Notification rates per 100,000 population for influenza cases notified to the NNDSS\* by state or territory and week of diagnosis, Australia, 1 January to 22 September 2024**



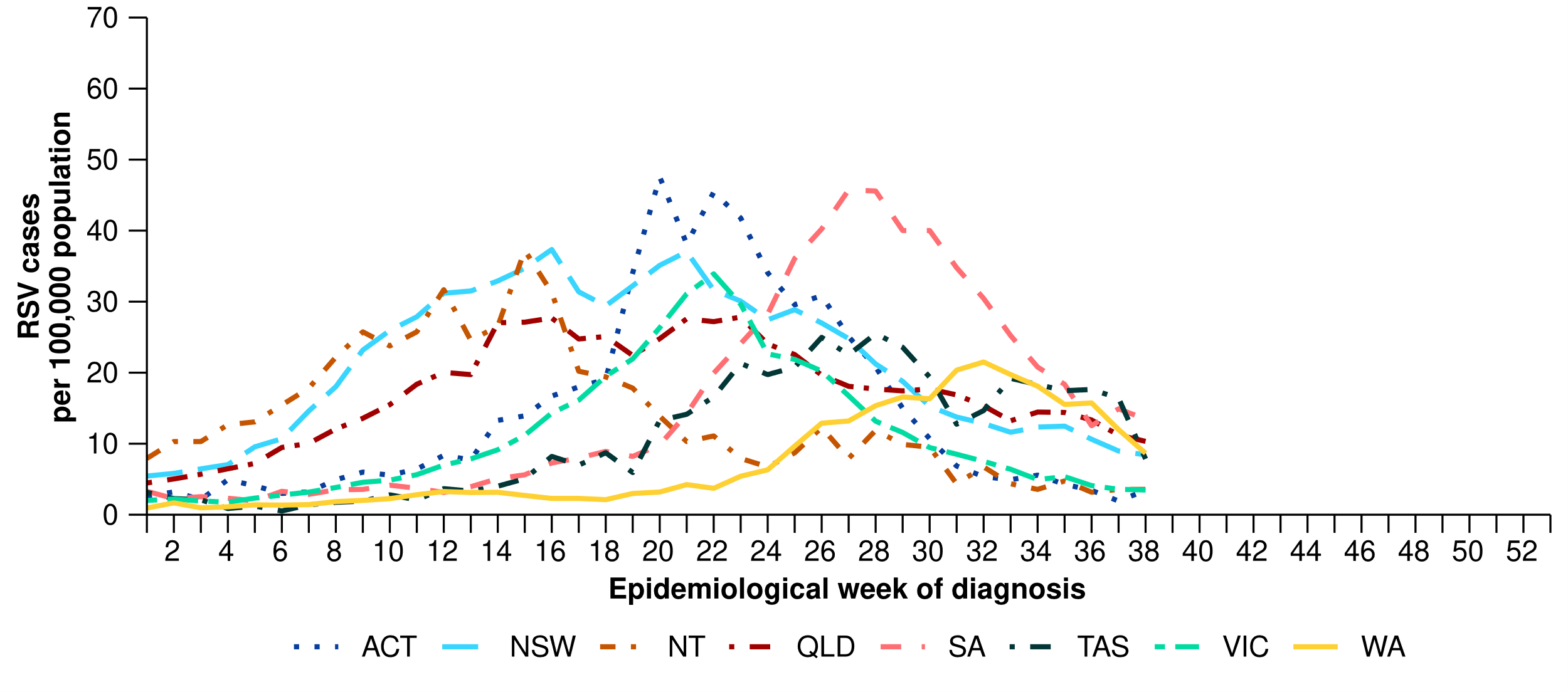
\* Rate per 100,000 population for the given time period. Population data are based on the ABS ERP as at June 2023.

* This year to date, RSV notifications increased from January through to an apparent peak in late May 2024, after which notifications have followed a decreasing trend (Figure 7).
* In the year to date, there have been 156,973 RSV notifications reported to the NNDSS, which is almost 1.5 times the number of RSV notifications in the same period in 2023 (Figure 7).
  + The higher number of RSV notifications observed during the period January to March 2024 may have been due to an increase in RSV circulation in the community. However, it may also have been influenced by changes in health-seeking behaviour, such as increased laboratory testing for viral respiratory infections, associated with increases in COVID-19 activity observed in many jurisdictions from late 2023 into early 2024. Note, RSV notifications are not available nationally for historical comparisons prior to January 2023.
* 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 fortnight, RSV notification rates appear to be decreasing or plateauing across all jurisdictions compared with the previous fortnight (Figure 8).

**Figure 7: RSV cases notified to the NNDSS by year and week of diagnosis\*, Australia, 2023 to 22 September 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 22 September 2024**



\* 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

In interpreting data from hospital-based sentinel systems, it is important to note these data reflect the sickest patients with severe acute respiratory infections who are hospitalised or admitted to intensive care; data are therefore not generalisable to all cases or patients in hospital.

#### Influenza Complications Alert Network (FluCAN)

* In this fortnight for FluCAN severity reporting (26 August to 8 September 2024), there were 392 patients admitted with a severe acute respiratory infection (SARI) to FluCAN sentinel hospitals, of whom 5.4% (21/392) were admitted directly to intensive care (Figure 9).
* In the year to date for FluCAN severity reporting (1 January to 8 September 2024), 6.2% (556/9,012) of patients admitted with a SARI to FluCAN sentinel hospitals have been admitted directly to intensive care (Figure 9).
* In the year to date for FluCAN severity reporting, 6.6% (257/3,900) of patients admitted with COVID-19 to FluCAN sentinel hospitals have been admitted directly to intensive care (Figure 9). This excludes one patient with COVID-19 admitted to FluCAN sentinel hospitals with a missing admission location.
  + For patients admitted with COVID-19 to FluCAN sentinel hospitals, the median length of stay in hospital was 3 days (interquartile range [IQR]: 2–7 days).
* Since influenza surveillance commenced on 1 April 2024 to date for FluCAN severity reporting, 6.3% (234/3,709) of patients admitted with influenza to FluCAN sentinel hospitals have been admitted directly to intensive care (Figure 9).
  + For patients admitted with influenza to FluCAN sentinel hospitals, the median length of stay in hospital was 2 days (IQR: 1–4 days).
* Since RSV surveillance commenced on 1 April 2024 to date for FluCAN severity reporting, 4.6% (65/1,403) of patients admitted with RSV to FluCAN sentinel hospitals have been admitted directly to intensive care (Figure 9).
  + For patients admitted with RSV to FluCAN sentinel hospitals, the median length of stay in hospital was 2 days (IQR: 1–4 days).

\* 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, cases with a diagnosis date in the last two weeks are excluded from severity analyses which include analyses of hospitalisations, intensive care admissions and deaths. For this reason, the severity reporting periods are two weeks behind the current reporting period.

**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 8 September 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 8 September 2024. The y-axis 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 19 May 2024 at approximately 190 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 intensive cares have remained low in the year to date and current 14-day severity reporting period (26 August to 8 September 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 intensive cares have remained low in the year to date and current 14-day severity reporting period, 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 early April 2024, the number of patients admitted with RSV to FluCAN sentinel hospitals reached an apparent peak at approximately 100 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 14-day severity reporting period, not exceeding five admissions directly to intensive care per week.

\* Axis varies between disease groups.  
† Excludes one patient with a severe acute respiratory infection admitted to FluCAN 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

This section will be updated every four weeks; therefore, reporting periods presented here may not align with other sections of the report. Note, intensive care includes intensive care units and high dependency units that are managed by an intensive care team.

* In the most recent 28-day period for SPRINT-SARI severity reporting (12 August to 8 September 2024), there were 152 patients admitted with a SARI to a SPRINT-SARI sentinel intensive care, of which the highest proportion were admitted with influenza (Figure 10).
* In the year to date for SPRINT-SARI severity reporting (1 January to 8 September 2024), there have been 2,093 patients admitted with a SARI to a SPRINT-SARI sentinel intensive care (Figure 10). This includes:
  + 43.3% (906/2,093) patients with SARS-CoV-2
  + 26.2% (549/2,093) patients with influenza
  + 11.5% (241/2,093) patients with RSV
  + 21.0% (439/2,093) patients with other respiratory pathogens including parainfluenza and rhinovirus.
* Approximately 2.0% (42/2,093) of patients had co-infections of multiple pathogens; therefore, the sum of pathogen-specific totals above may not equal the total number of patients.
* In the year to date for SPRINT-SARI severity reporting, for all patients admitted with a SARI to a SPRINT-SARI sentinel intensive care, the median duration of mechanical ventilation was 3.5 days (IQR: 1.4–7.7 days), the median length of stay in intensive care was 3.1 days (IQR: 1.7–5.7 days), and the median length of stay in hospital was 8.5 days (IQR: 5.0–15.8 days).
* In the year to date for SPRINT-SARI severity reporting, most patients admitted with a SARI (70.0%; 1,464/2,093) have been discharged home, 7.8% (163/2,093) died in intensive care and 3.7% (77/2,093) died within a general hospital ward after intensive care admission, with an overall in-hospital mortality rate of 11.5% (240/2,093) for all patients admitted with a SARI to a SPRINT-SARI sentinel intensive care.
  + Note, deaths in patients admitted with a SARI to a SPRINT-SARI sentinel intensive care may not necessarily represent a death due to SARI.

**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 8 September 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 8 September 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 the start of 2024 until late March. From early April to early June, the number of patients admitted with COVID-19 have steadily increased, with some week-on-week decreases observed. In early June, the number of patients admitted with COVID-19 reached an apparent peak of 60 patients per week. From mid-June to mid-August the numbers of patients admitted with COVID-19 followed a decreasing trend, since late August the number of patients admitted with COVID-19 have begun to increase. The number of patients admitted with influenza to a SPRINT-SARI sentinel intensive care have remained relatively stable with less than 10 patients per week from the beginning of 2024 until late April. The number of patients admitted with influenza increased from late April to an apparent peak of 50 patients per week in late June. Since late June 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. The number of patients with RSV admitted to a SPRINT-SARI sentinel intensive care has followed a general increasing trend from the start of 2024 until early March 2024. An apparent peak in the number of patients with RSV admitted to a SPRINT-SARI sentinel intensive care occurred in early March, with over 15 patients admitted with RSV per week. Since mid-March, the number of patients admitted with RSV has fluctuated but generally remained below 10 patients per week. Since mid-May 2024, there has been an overall decreasing trend in the number of RSV cases per week, though some week-on-week increases have been observed. In the current 28-day severity reporting period (12 August to 8 September 2024): an average of 12 patients with COVID-19; 14 patients with influenza; and two patients with RSV were admitted to SPRINT-SARI intensive care each week.

\* Axis varies between disease groups.  
† Includes 12 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 8 September 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | COVID-19 | | Influenza | | RSV | | Other | |
|  | **Severity reporting period (n=50)** | **Year to date  for severity reporting  (n=906)** | **Severity reporting period (n=54)** | **Year to date  for severity reporting  (n=549)** | **Severity reporting period (n=9)** | **Year to date  for severity reporting  (n=241)** | **Severity reporting period (n=40)** | **Year to date  for severity reporting  (n=439)** |
| **Received invasive mechanical ventilation** | | | | | | | | |
| Number (%) | 13  (26.0%) | 280  (30.9%) | 19  (35.2%) | 197  (35.9%) | 1  (11.1%) | 60  (24.9%) | 6  (15.0%) | 136  (31.0%) |
| **Duration of invasive mechanical ventilation (days)** | | | | | | | | |
| Median [IQR] | 1.6  [0.9–4.6] | 2.5 [1.0–7.2] | 2.3 [1.5–5.8] | 5.1 [1.8–9.8] | – | 4.0 [2.2–6.2] | 4.4  [3.3–4.8] | 4.0  [1.8–6.8] |
| **Length of intensive care stay (days)** | | | | | | | | |
| Median [IQR] | 2.7  [1.2–3.9] | 2.9  [1.7–5.2] | 2.9  [1.6–4.6] | 3.6  [2.0–6.6] | 2.6  [1.5–3.6] | 2.8  [1.6–4.8] | 2.4  [1.0–4.0] | 2.8  [1.6–5.6] |
| **Length of hospital stay (days)** | | | | | | | | |
| Median [IQR] | 8.1  [5.3–11] | 9.4  [5.2–18] | 7.0  [4.8–11] | 8.6  [5.2–15] | 6.2  [4.9–7.1] | 7.0  [4.5–13] | 6.5  [3.6–9.3] | 7.5  [4.0–14] |
| **Patient outcome** | | | | | | | | |
| Ongoing care in intensive care | 13 (26.0%) | 29  (3.2%) | 10 (18.5%) | 20  (3.6%) | 3  (33.3%) | 7  (2.9%) | 8  (20.0%) | 14  (3.2%) |
| Ongoing care in hospital ward\* | 7  (14.0%) | 23  (2.5%) | 7  (13.0%) | 18  (3.3%) | 2  (22.2%) | 4  (1.7%) | 2  (5.0%) | 7  (1.6%) |
| Transfer to other hospital or facility | 2  (4.0%) | 77  (8.5%) | 7  (13.0%) | 40  (7.3%) | 1  (11.1%) | 15  (6.2%) | 0  (0%) | 27  (6.2%) |
| Transfer to rehabilitation | 2  (4.0%) | 61  (6.7%) | 2  (3.7%) | 21  (3.8%) | 0  (0%) | 3  (1.2%) | 1  (2.5%) | 15  (3.4%) |
| Discharge home | 20 (40.0%) | 573 (63.2%) | 25 (46.3%) | 391 (71.2%) | 2  (22.2%) | 194 (80.5%) | 25 (62.5%) | 340 (77.4%) |
| Death† – intensive care† | 3  (6.0%) | 85  (9.4%) | 3  (5.6%) | 46  (8.4%) | 1  (11.1%) | 13  (5.4%) | 1  (2.5%) | 24  (5.5%) |
| Death† – hospital ward† | 3  (6.0%) | 50  (5.5%) | 0  (0%) | 12  (2.2%) | 0  (0%) | 4  (1.7%) | 3  (7.5%) | 11  (2.5%) |
| Missing‡ | 0  (0%) | 8  (0.9%) | 0  (0%) | 1  (0.2%) | 0  (0%) | 1  (0.4%) | 0  (0%) | 1  (0.2%) |

Note: Includes one patient with viral co-infection of multiple pathogens in the 28-day severity reporting period and 42 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

The number of deaths associated with COVID-19, influenza or RSV reported to the NNDSS is based on data reported to the NNDSS by states and territories. The completeness of information on deaths in the NNDSS varies, as data are sourced in different ways by state and territories based on their local surveillance system capabilities, definitions, priorities, and needs. Therefore, the number of deaths associated with COVID-19, influenza or RSV reported to the NNDSS are likely to be an underestimate and do not represent the true mortality associated with these diseases. In the NNDSS, death notifications may not necessarily represent a death due to the disease and public health follow-up is not a requirement to determine the outcome of disease. 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).

* In the year to date for severity reporting (1 January to 8 September 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 8 September 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 | – | – | 8 | 0.3 | – | – |
| 10–19 | – | – | – | – | – | – |
| 20–29 | – | – | – | – | – | – |
| 30–39 | 8 | 0.2 | – | – | – | – |
| 40–49 | 16 | 0.5 | 11 | 0.3 | – | – |
| 50–59 | 45 | 1.4 | 21 | 0.7 | 8 | 0.2 |
| 60–69 | 125 | 4.4 | 43 | 1.5 | 10 | 0.4 |
| 70+ | 1,584 | 49.0 | 318 | 9.8 | 111 | 3.4 |
| **Total** | **1,782** | **6.7** | **409** | **1.5** | **136** | **0.5** |

Note: To reduce the risk of re-identification, primary cell suppression has been applied to cells with a 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.  
‡ 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

In interpreting data from hospital-based sentinel systems, it is important to note these data reflect the sickest patients with severe acute respiratory infections who are hospitalised or admitted to intensive care; data are therefore not generalisable to all cases or patients in hospital.

#### FluCAN

There are a higher proportional number of paediatric hospitals that contribute to the FluCAN dataset. Hospital admissions in children 16 years of age or less are over-represented to provide enhanced surveillance on this at-risk population. For this reason, paediatric (16 years of age or less) and adult (> 16 years of age) patients in the FluCAN dataset are reported on separately, though all age groups are displayed together in figures. Please note, the age distribution of hospital admissions in the FluCAN sentinel surveillance system may not reflect the age distribution of admissions nationally.

* In the year to date for FluCAN severity reporting (1 January to 8 September 2024), there have been 1,188 paediatric patients admitted with COVID-19 to FluCAN sentinel hospitals (Figure 11). The median age at admission was 1 years (IQR: 0–4 years) and 6.9% (82/1,188) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of paediatric patients admitted with COVID-19 to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 5–16 years.
* In the year to date for FluCAN severity reporting, there have been 2,713 adult patients admitted with COVID-19 to FluCAN sentinel hospitals (Figure 11). The median age at admission was 75 years (IQR: 63–84 years) and 3.6% (99/2,713) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of adult patients admitted with COVID-19 to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 65 years and over.

\* 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, cases with a diagnosis date in the last two weeks are excluded from severity analyses which include analyses of hospitalisations, intensive care admissions and deaths. For this reason, the severity reporting periods are two weeks behind the current reporting period.

**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 8 September 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 (8 September 2024). The y-axis (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. Since the apparent peak in late May 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. 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 commenced on 1 April 2024 to date for FluCAN severity reporting (8 September 2024), there have been 1,972 paediatric patients admitted with influenza to FluCAN sentinel hospitals (Figure 12). The median age at admission was 4 years (IQR: 1–7 years) and 7.7% (151/1,972) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of paediatric patients with influenza admitted to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 5–16 years.
* Since influenza surveillance commenced on 1 April 2024 to date for FluCAN severity reporting, there have been 1,737 adult patients admitted with influenza to FluCAN sentinel hospitals (Figure 12). The median age at admission was 63 years (IQR: 47–77 years) and 11.0% (191/1,737) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of adult patients with influenza admitted to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 17–64 years.

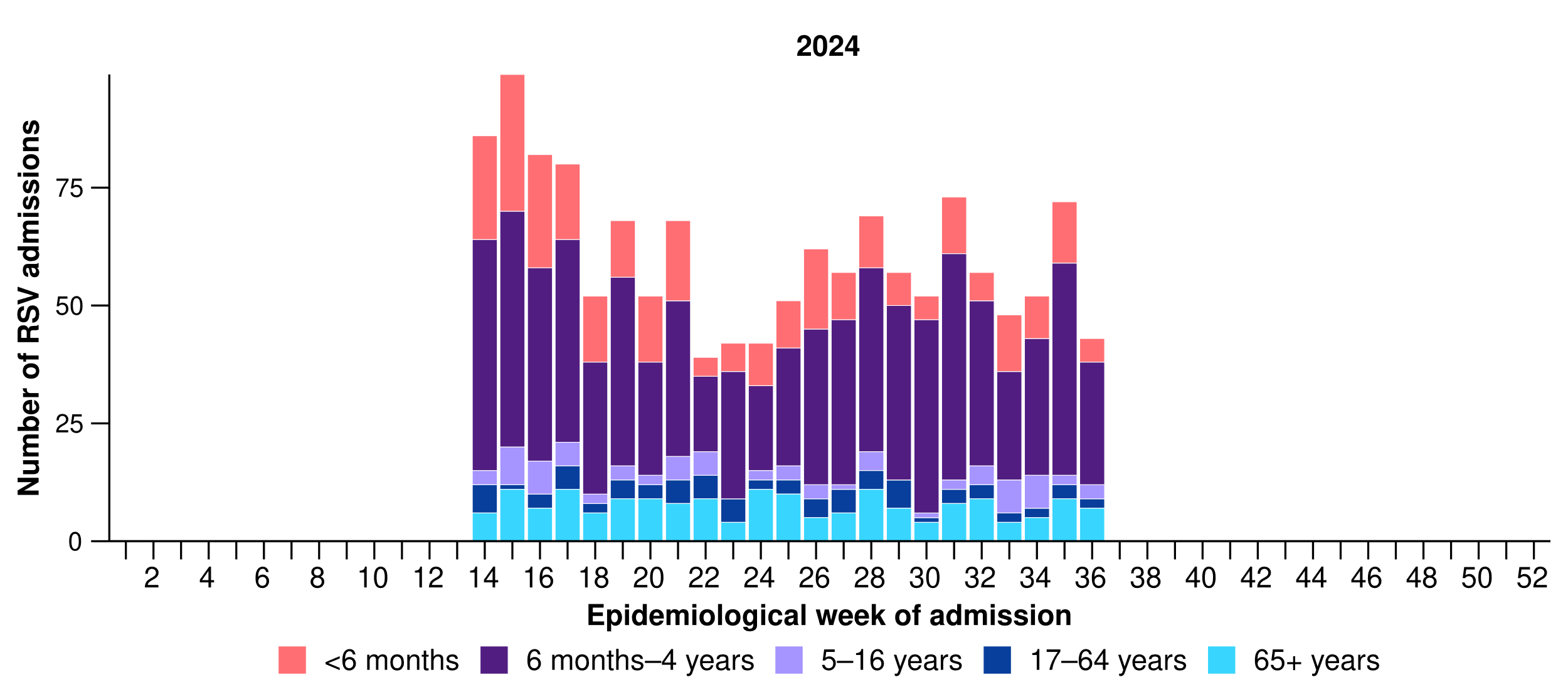
**Figure 12: Number of patients admitted with confirmed influenza to FluCAN sentinel hospitals by age group, year and week of admission\*†, from April to October, 2017 to 8 September 2024**

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 (8 September 2024). The y-axis (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. 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 on 1 April 2024 to date for FluCAN severity reporting (8 September 2024), there have been 1,148 paediatric patients admitted with RSV to FluCAN sentinel hospitals (Figure 13). The median age at admission was 1 years (IQR: 0–2 years) and 5.8% (67/1,148) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of paediatric patients with RSV admitted to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 6 months–4 years.
* Since RSV surveillance commenced on 1 April 2024 to date for FluCAN severity reporting, there have been 255 adult patients admitted with RSV to FluCAN sentinel hospitals (Figure 13). The median age at admission was 73 years (IQR: 60–83 years) and 5.5% (14/255) of admissions were among Aboriginal and Torres Strait Islander people.
  + The highest proportion of adult patients with RSV admitted to FluCAN sentinel hospitals with a direct admission to intensive care has been in those aged 65 years and over.

**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 8 September 2024**



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

This section will be updated every four weeks; therefore, reporting periods presented here may not align with other sections of the report.

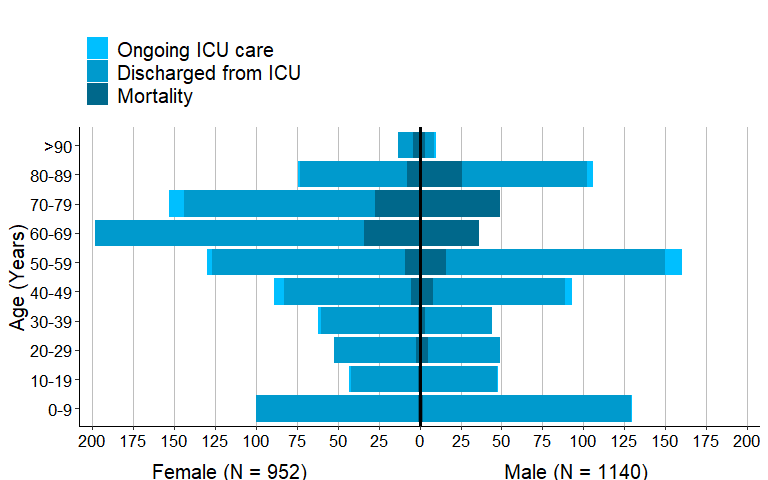
* Since the start of the COVID-19 pandemic to date for PAEDS severity reporting (1 January 2020 to 8 September 2024), there have been 203 cases of possible, probable, or confirmed paediatric inflammatory multisystem syndrome – temporally associated with SARS-CoV-2 (PIMS-TS) admitted to PAEDS sentinel hospitals. To date for severity reporting, there have been no PIMS-TS associated deaths.
* Since the start of the COVID-19 pandemic to date for PAEDS severity reporting, the highest proportion of PIMS-TS cases occurred in 2022 (65.0%; 132/203), followed by 2021 (14.8%; 30/203). In the year to date for PAEDS severity reporting there have been 13 PIMS-TS cases reported, with the last PIMS-TS case reported in August 2024.
* The majority of PIMS-TS cases have occurred in those aged 5 to < 12 years (52.7%; 107/203), followed by those aged 6 months to < 5 years (27.6%; 56/203). Approximately 5.4% (11/203) of PIMS-TS cases occurred among Aboriginal and Torres Strait Islander people.

#### SPRINT-SARI Australia

This section will be updated every four weeks; therefore, reporting periods presented here may not align with other sections of the report. Note, intensive care includes intensive care units and high dependency units that are managed by an intensive care team.

* In this 28-day period for SPRINT-SARI severity reporting (12 August to 8 September 2024), there have been 152 patients admitted with a SARI to a SPRINT-SARI sentinel intensive care. The median age at admission was 61 years (IQR: 44–73 years) and 5.3% (8/152) of patients admitted with a SARI were among Aboriginal and Torres Strait Islander people.
* In the year to date for SPRINT-SARI severity reporting (1 January to 8 September 2024), there have been 2,093 patients admitted with a SARI to a SPRINT-SARI sentinel intensive care. The median age at admission was 60 years (IQR: 37–72 years) and 54.5% (1,140/2,093) of patients admitted with a SARI have been male. Of the patients admitted with a SARI to a SPRINT-SARI sentinel intensive care, 6.8% (142/2,093) have been among Aboriginal and Torres Strait Islander people.
* In the year to date for SPRINT-SARI severity reporting, there have been 240 patients admitted with a SARI to a SPRINT-SARI sentinel intensive care who died in hospital. The majority of deaths were in patients aged 60 years or over: 29.2% (70/240) were aged 60–69 years, 31.7% (76/240) were aged 70–79 years, 14.2% (34/240) were aged 80–89 years, and 2.9% (7/240) were aged 90 years or over (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 8 September 2024**



\* The age and sex distribution of severe acute respiratory infection (SARI) 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 SARI 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 ward.  
‡ 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, remains 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. For this reason, 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 fortnight (9 September to 22 September 2024), 45.6% (434/951) of FluTracking participants reported taking three or more days off work or normal duties due to fever and cough symptoms, a slight decrease compared with 46.4% (504/1,087) in the previous fortnight.

### 4.2 Hospital-based surveillance

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

Note, intensive care includes intensive care units and high dependency units that are managed by the intensive care team.

* As of 23 September 2024, 0.88% (16/1,810) of total staffed intensive care beds were occupied by COVID-19 patients.
* This fortnight (9 September to 22 September 2024), the mean number of COVID-19 cases in intensive care across Australia has decreased compared with the previous fortnight (Figure 15). This fortnight, the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness across Australia has decreased compared with the previous fortnight (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 22 September 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 22 September 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 22 September 2024. Since the beginning of 2024, there has been 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 early June 2024 to approximately 80 COVID-19 cases in intensive care per week. There was 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. In the current reporting period (9 September to 22 September 2024), the mean number of ventilated COVID-19 cases in intensive decreased to an average of 6 COVID-19 cases each week, while the number of non-ventilated COVID-19 cases in intensive care decreased to an average of 15 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. 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 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. Following a rapid increase in the lead up to the apparent peak in the week ending 2 June 2024, the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness reported to CHRIS has declined to a mean of 57 intensive care staff unavailable to work each week in the current reporting period (9 September to 22 September 2024).

\* 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 fortnight, the mean number of COVID-19 cases in intensive care has decreased or remained stable across jurisdictions apart from Victoria and Western Australia, where a slight increase was observed compared with the previous fortnight (Figure 16).
* This fortnight, the mean number of intensive care staff unavailable to work due to COVID-19 exposure or illness has remained stable or decreased across most jurisdictions, except Queensland, where staff unavailability has increased compared to the previous fortnight (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 22 September 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 22 September 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 22 September 2024. The y-axis (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 22 COVID-19 cases in intensive care per week), followed by Victoria (approximately 10 COVID-19 cases in intensive care per week) and Queensland (approximately 9 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 (9 September to 22 September 2024), the mean number of COVID-19 cases decreased or remained stable across most jurisdictions, except for Victoria and Western Australia, where there was a slight increase in the number of intensive care admissions compared with the last fortnight. 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 (9 September to 22 September 2024), the number of intensive care staff unavailable per week has remained stable or decreased across some jurisdictions, except Queensland, where an increase was observed compared with the last fortnight.

\* 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

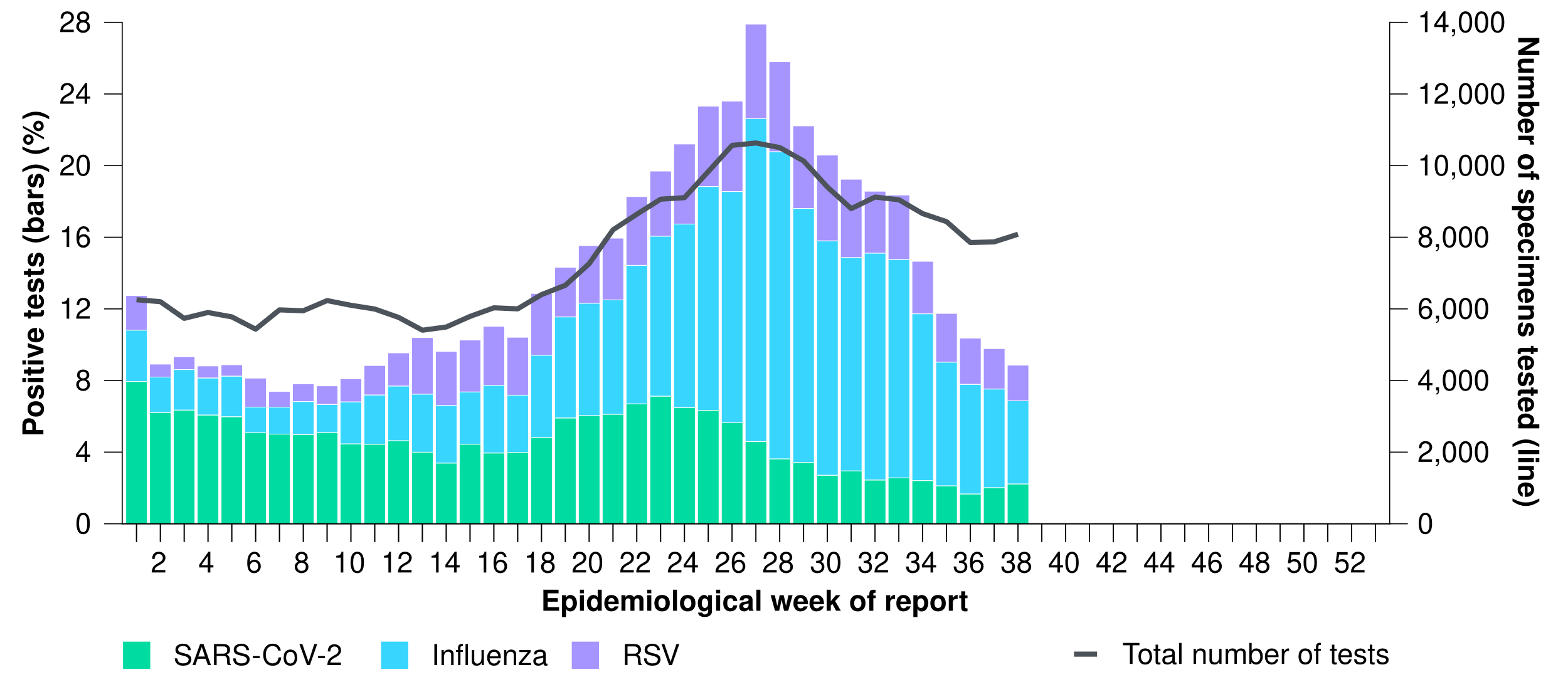
### 5.1 Laboratory-based surveillance

#### Sentinel laboratories, including National Influenza Centres

This fortnight sentinel laboratories data was unavailable from Victoria.

* This fortnight (9 September to 22 September 2024), 2.1% (339/15,955) of samples tested for SARS-CoV-2 across sentinel laboratories have been positive for SARS-CoV-2, a slight increase in positivity compared with the previous fortnight (1.9%; 310/16,288) (Figure 17).
* This fortnight, 5.8% (1,132/19,532) of the samples tested for influenza across sentinel laboratories have been positive for influenza, a decrease in positivity compared with the previous fortnight (7.4%; 1,491/20,063) (Figure 17).
* This fortnight, 2.1% (339/15,955) of the samples tested for RSV across sentinel laboratories have been positive for RSV, a decrease in positivity compared with the previous fortnight (2.7%; 433/16,288) (Figure 17).
* This fortnight, the most commonly detected respiratory viruses were rhinovirus (New South Wales, South Australia, and Tasmania), and influenza A (Western Australia).
* In the year to date, 4.5% (12,799/284,312) of samples tested for SARS-CoV-2 have been positive for SARS-CoV-2, 7.6% (25,442/335,206) of samples tested for influenza have been positive for influenza and 3.1% (8,759/284,312) of samples tested for RSV have been positive for RSV (Figure 17).

**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 22 September 2024**



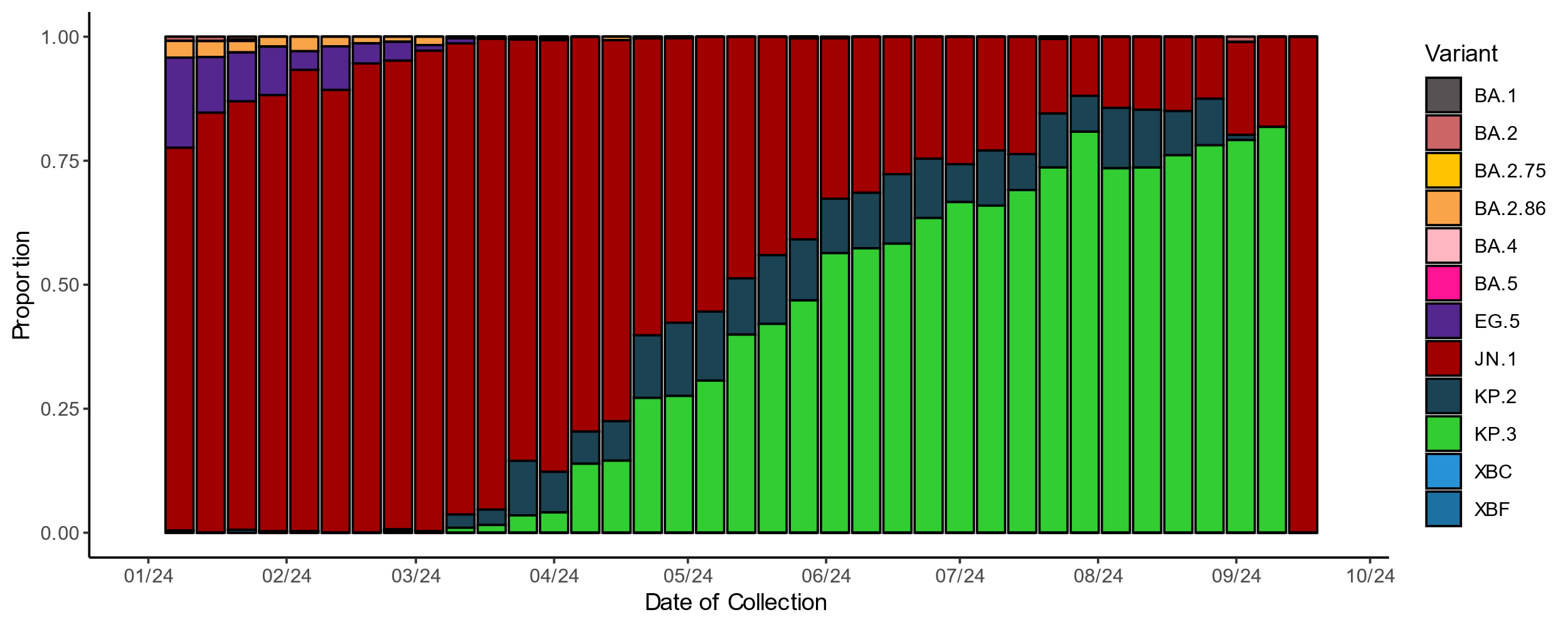
\* Number of specimens tested excludes data from Western Australia as testing denominator data are different for the three pathogens in Western Australia.  
† A small minority of total samples from Victoria are tested only by respiratory panel (influenza, parainfluenza, adenovirus, human metapneumovirus, 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.

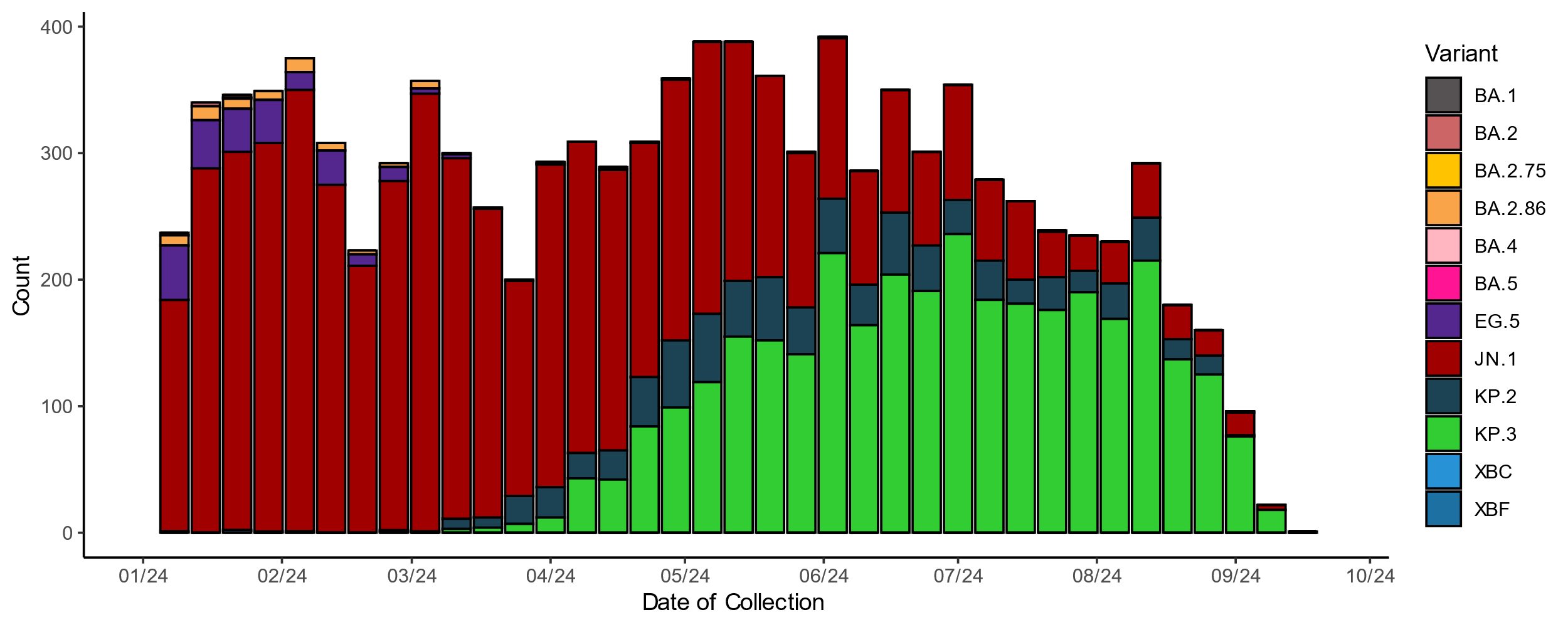
#### AusTrakka

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. Due to the small number of sequences received and some delays in provision of data to AusTrakka, this section will be updated every four weeks; therefore, reporting periods presented here may not align with other sections of the report.

* As of 23 September 2024, jurisdictions that have samples with dates of collection during the past 28 days New South Wales, Queensland, South Australia, Tasmania and Western Australia, with the most recent collection date 15 September 2024.
* As of 23 September 2024, 329 sequences have been uploaded to AusTrakka with dates of collection within the past 28-day period (26 August to 22 September 2024). All 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. There were no BA.1, BA.3, BA.4, BA.5 or other BA.2 sub-sub-lineage sequences identified in the past 28 days (Figure 18).
* Of the 329 sequences collected in the past 28 days, 91.5% (301/329) were BA.2 sub-lineages, specifically from the sub-sub-lineages JN.1 (BA.2.86.1.1), including from KP.2 (17/301) and KP.3 (236/301). The remaining 8.5% (28/329) were recombinant or recombinant sub-lineages. The recombinant lineages included XEC, a recombinant between KS.1.1 (JN.1.13.1.1.1) and KP.3.3.
* JN.1 and associated sub-lineages continue to dominant the variants identified in AusTrakka with a very low 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:
  + No new VUMs have been designated since the last reporting period; however, two new VUMs were designated by the WHO in June: LB.1 and KP.3.1.1. There is limited evidence to suggest LB.1 and KP.3.1.1 may exhibit higher infectivity and greater immune evasion than KP.2 and KP.3.
  + A total of 149 sequences of LB.1 are identified in AusTrakka, with 15 sequences identified in the past 28 days.
  + A total of 463 sequences of KP.3.1.1 are identified in AusTrakka, with 119 sequences identified in the past 28 days.
  + The proportion of JN.1 sequences has been consistent (91.5%; 301/329) in the past 28 days, compared with the previous 28-day period.
  + As of 23 September 2024, the WHO has not designated the recombinant lineage XEC an official VUM or VOI; however, the recombinant lineage XEC has attracted recent attention due to its estimated growth rate. A total of 23 XEC lineages have been identified in AusTrakka, including 16 collected in past 28 days.

**Figure 18: Omicron sub-lineage\*^ sequences in AusTrakka by sample collection date, showing (A) proportions and (B) count per week^†, Australia, 1 January to 22 September 2024**



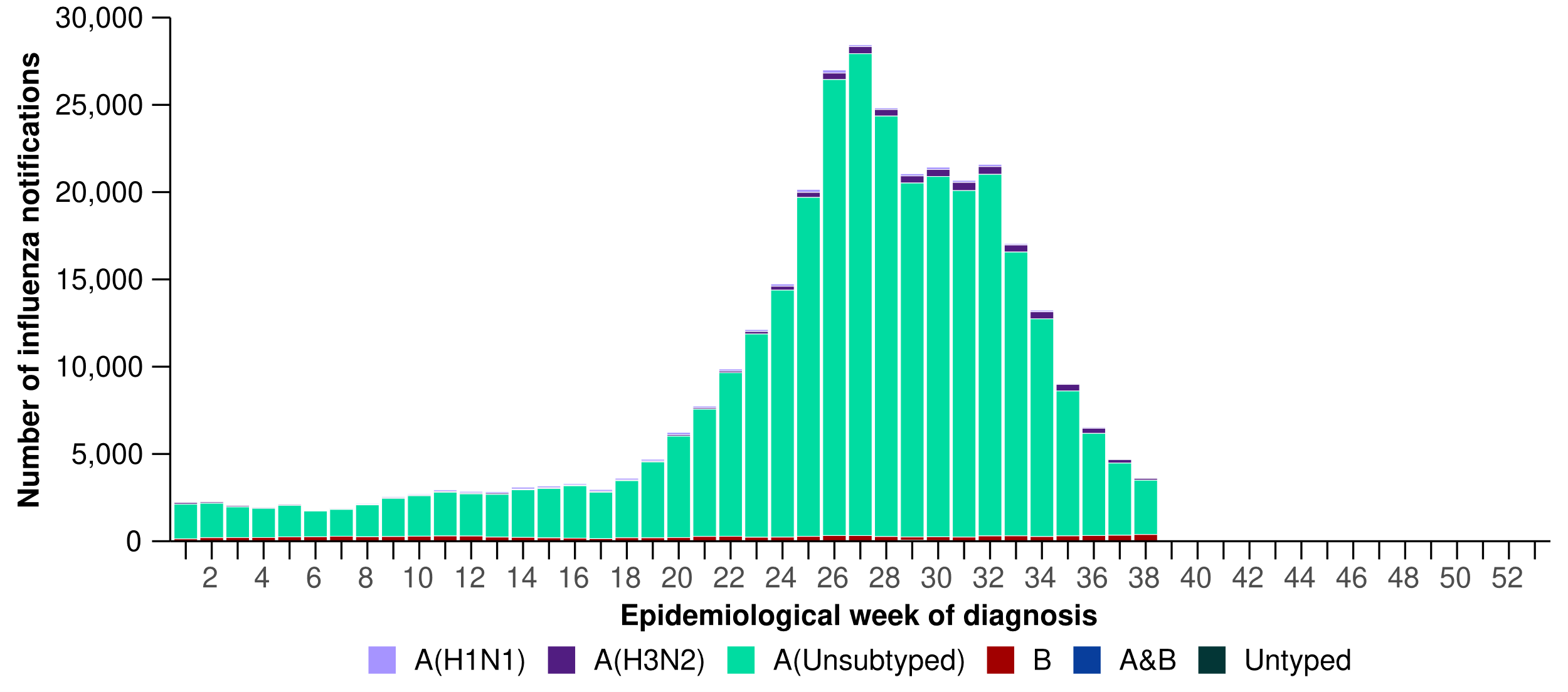


\* Some sub-sublineages are shown alongside their parent lineage, but not included in the parent lineage totals. For instance, KP.2 and KP.3 are sub-sub lineages of JN.1, so the total of JN.1 sequences will be higher than shown in the corresponding colour alone, and should include the KP.2 and KP.3 totals.   
^ 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.

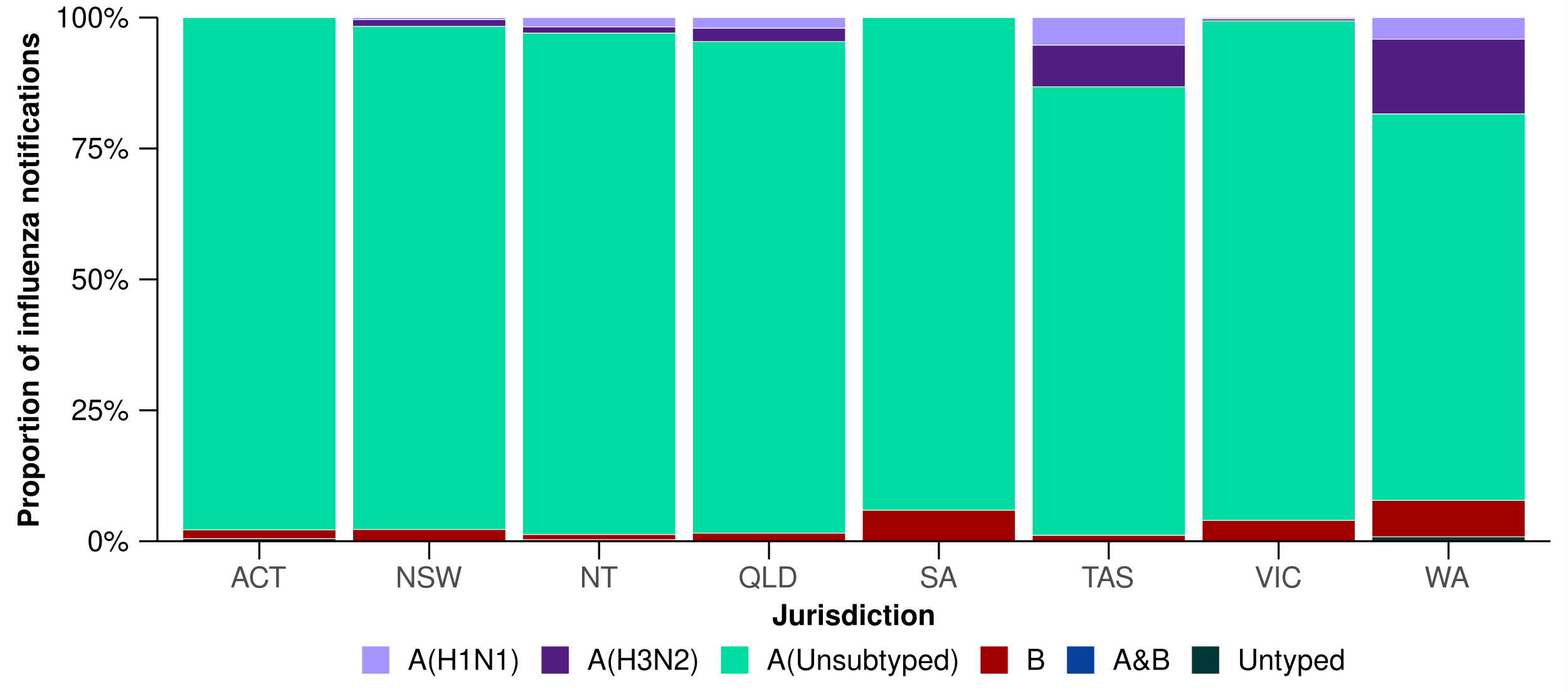
#### NNDSS

* This fortnight (9 September to 22 September 2024), of the 8,336 influenza notifications reported to the NNDSS: 86.9% (7,248/8,336) were influenza A(Unsubtyped), 8.6% (720/8,336) were influenza B, 3.6% (303/8,336) were influenza A(H3N2), and 0.7% (58/8,336) were influenza A(H1N1). Four notifications were 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 22 September 2024**



**Figure 20: Proportion of influenza notifications to the NNDSS by subtype and jurisdiction\*, Australia, 1 January to 22 September 2024**



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

* In the year to date, the WHOCC has characterised 2,929 influenza viruses, of which 48.2% (1,412/2,929) have been influenza A(H1N1), 47.4% (1,388/2,929) have been influenza A(H3N2), and 4.4% (129/2,929) have been influenza B/Victoria (Table 4).
* In the year to date, there have been no influenza B/Yamagata viruses characterised by the WHOCC (Table 4).
* Of the influenza A(H1N1)pdm09 samples tested for neuraminidase inhibitor resistance 0.94% (8/849) demonstrated reduced inhibition to Oseltamivir. Of the influenza A(H3N2) samples tested for neuraminidase inhibitor resistance, 0.13% (1/793) demonstrated reduced inhibition to Oseltamivir. None of the influenza B/Victoria samples tested for neuraminidase inhibitor resistance demonstrated reduced inhibition to Oseltamivir or 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 22 September 2024**

| **Strain** | **ACT** | **NSW** | **NT** | **Qld** | **SA** | **Tas** | **Vic** | **WA** | **Total** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A(H1N1) | 83 | 231 | 335 | 55 | 42 | 103 | 471 | 92 | **1,412** |
| A(H3N2) | 77 | 253 | 390 | 55 | 47 | 46 | 420 | 100 | **1,388** |
| B/Victoria lineage | 13 | 4 | 9 | 5 | 10 | 3 | 53 | 32 | **129** |
| B/Yamagata lineage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Total** | **173** | **488** | **734** | **115** | **99** | **152** | **944** | **224** | **2,929** |

\*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.

#### FluCAN

* Since influenza surveillance commenced on 1 April 2024 to date for FluCAN severity reporting (8 September 2024), 97.9% (3,631/3,709) of patients admitted with influenza to FluCAN sentinel hospitals have been due to influenza A and 2.1% (77/3,709) have been due to influenza B.
  + Of the hospital admissions due to influenza A: 86.6% (3,146/3,631) were A(Unsubtyped), 7.4% (268/3,631) were A(H3N2), and 6.0% (217/3,631) were A(H1N1).
* Since influenza surveillance commenced on 1 April 2024 to date for FluCAN severity reporting, of the 234 patients who have been admitted directly to intensive care in a FluCAN sentinel hospital with influenza, 99.6% (233/234) have been due to influenza A and 0.4% (1/234) have been due to influenza B.
  + Of the intensive care admissions due to influenza A: 79.1% (185/233) were A(Unsubtyped), 11.5% (27/233) were A(H3N2) and 9.0% (21/233) were A(H1N1).

## 6. Vaccine coverage, effectiveness and match

In the present 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 of the Australian Respiratory Surveillance Report. 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.

### 6.1 Vaccine coverage

* Data on vaccine coverage is currently unavailable.

### 6.2 Vaccine effectiveness

* It is too early to assess vaccine effectiveness for the 2024 influenza season.

### 6.3 Vaccine match

#### WHOCC for Reference and Research on Influenza

* In the year to date, of the 2,929 samples referred to the WHOCC, 98.7% (1,393/1,412) of influenza A(H1N1) isolates, 91.4% (1,269/1,388) of influenza A(H3N2) isolates and 100% (129/129) of influenza B/Victoria isolates have been antigenically similar to the corresponding vaccine components.

#### Australian Influenza Vaccines Composition 2024

* All 2024 southern hemisphere [seasonal influenza vaccinations](https://www.health.gov.au/resources/publications/atagi-statement-on-the-administration-of-seasonal-influenza-vaccines-in-2024) registered for use in Australia are quadrivalent influenza vaccines.
* The influenza virus strains included in egg-based quadrivalent influenza vaccines in Australia in 2024 are:
  + A/Victoria/4897/2022 (H1N1)pdm09-like virus
  + A/Thailand/8/2022 (H3N2)-like virus
  + B/Austria/1359417/2021 (B/Victoria lineage)-like virus
  + B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.
* The influenza virus strains included in cell-based quadrivalent influenza vaccines in Australia in 2024 are:
  + A/Wisconsin/67/2022 (H1N1)pdm09-like virus
  + A/Massachusetts/18/2022 (H3N2)-like virus
  + B/Austria/1359417/2021 (B/Victoria lineage)-like virus
  + B/Phuket/3073/2013 (B/Yamagata lineage)-like virus.