

Influenza Surveillance Weekly Report

Week 31: 30 July to 5 August 2018

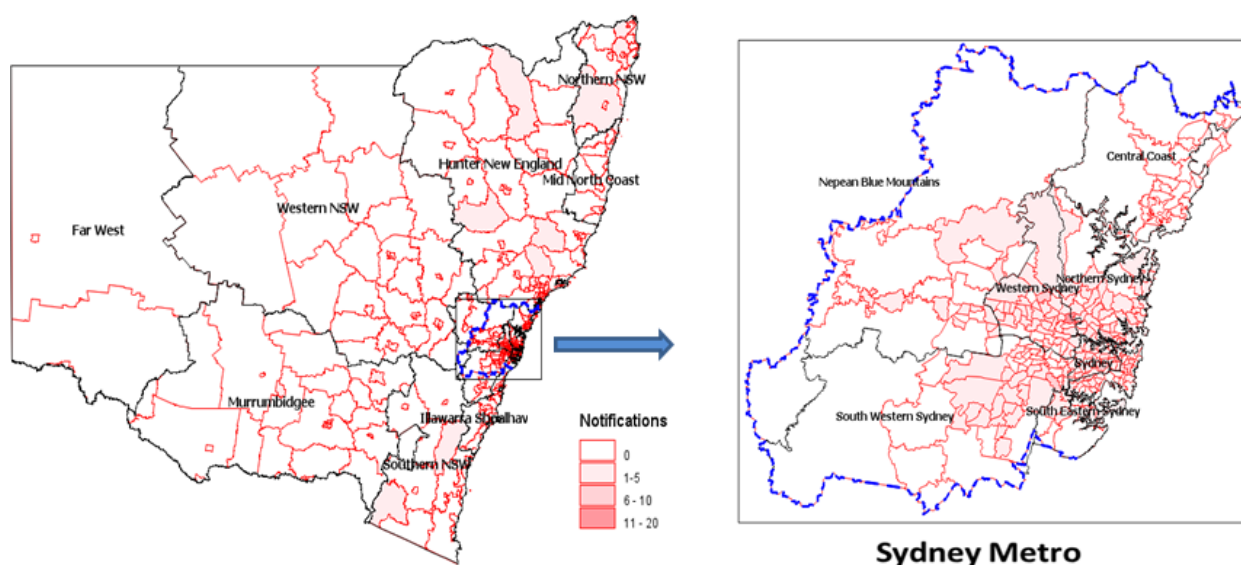
Key Points

- ▶ The winter influenza season has started but activity is still low compared to previous seasons
- ▶ Influenza activity is increasing in some NSW local health districts (LHD) but remains low in most western and southern areas; the influenza A(H1N1) strain is predominating
- ▶ Respiratory presentations to NSW emergency departments were slightly lower in most categories.

Activity compared to the previous week – NSW local health districts

| Local Health District | Confirmed Influenza | | NSW Emergency Departments (60) All Respiratory/Fever/Unspecified infections | | |
|-----------------------|---------------------|--------------------|--|--------------------|--|
| | Cases | Trend ¹ | Presentations | Trend ¹ | % of LHD ED presentations ² |
| Central Coast | 3 | ▶ | 317 | ▶ | 12% |
| Far West | 0 | ▶ | 41 | ▶ | 10% |
| Hunter New England | 43 | ▶ | 862 | ▶ | 13% |
| Illawarra Shoalhaven | 19 | ▶ | 389 | ▶ | 11% |
| Mid North Coast | 6 | ▶ | 256 | ▶ | 13% |
| Murrumbidgee | 4 | ▶ | 294 | ▶ | 15% |
| Nepean Blue Mountains | 27 | ▶ | 244 | ▶ | 12% |
| Northern NSW | 10 | ▶ | 295 | ▶ | 14% |
| Northern Sydney | 64 | ▲ | 472 | ▶ | 11% |
| South Eastern Sydney | 51 | ▶ | 761 | ▶ | 13% |
| South Western Sydney | 48 | ▶ | 795 | ▶ | 15% |
| Southern NSW | 6 | ▶ | 84 | ▶ | 12% |
| Sydney | 34 | ▶ | 391 | ▶ | 12% |
| Western NSW | 6 | ▶ | 230 | ▶ | 13% |
| Western Sydney | 103 | ▶ | 722 | ▲ | 17% |
| New South Wales | 426 | ▲ | 6153 | ▶ | 13% |

Confirmed influenza by NSW local health district and local area (SA2)³



Summary for this reporting week:

- ▶ [Hospital surveillance](#) – pneumonia presentations to EDs and admissions trended downwards; ILI presentations to ED decreased but admissions increased
- ▶ [Laboratory surveillance](#) – the influenza laboratory test positive rate was higher at 5.7%, and has now crossed the seasonal threshold; influenza A remains more common, especially the A(H1N1) strain
- ▶ [Community surveillance](#) – influenza activity is increasing slowly in some LHDs and remains highest in Western Sydney LHD
- ▶ [National surveillance](#) – influenza activity remained low nationally

Hospital Surveillance

NSW emergency department (ED) presentations for respiratory illness

Source: PHREDSS⁴

For the week ending 5 August 2018:

- The daily index of increase for *influenza-like illness* (ILI)⁵ presentations across NSW was 21.9 on 5 August, slightly higher than the previous week (20.4). The index of increase exceeded the ED ILI seasonal threshold of 15 for the first time on 16 July.
- Presentations for *All respiratory illness, fever and unspecified infections* decreased but remained within the usual range for this time of year (Figure 1, Table 1). The proportion of these presentations to all unplanned ED presentations was slightly lower at 13.3 per 100 presentations and was below the seasonal range (Figure 2).
- ILI presentations resulting in admission increased but were within the usual range for this time of year (Figure 3, Table 1).
- ED presentations and admissions for *pneumonia*⁶ both decreased this week, and were within their usual range for this time of year (Table 1).
- *Pneumonia and ILI* presentations requiring admission to critical care decreased and were below the usual range for this time of year (Table 1).
- ED presentations for *bronchiolitis* decreased further and are now within the usual range for this time of year (Figure 4, Table 1).

Figure 1: Total weekly counts of ED visits for *All respiratory illness, fever and unspecified infections*, all ages, from 1 January – 5 August, 2018 (black line), compared with the 5 previous years (coloured lines).

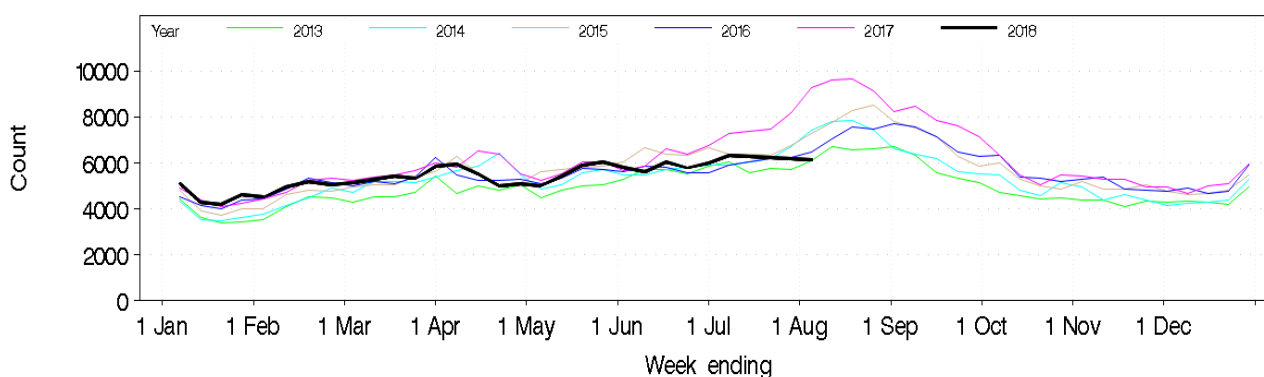


Figure 2: Total weekly counts of ED visits for *All respiratory illness, fever and unspecified infections*, all ages, as a rate per 100 ED visits, from 1 January – 5 August, 2018 (black line), compared with the range of season rate curves for the 5 previous years (white zone) aligned to the PHREDSS season start in 2018 (week 29).

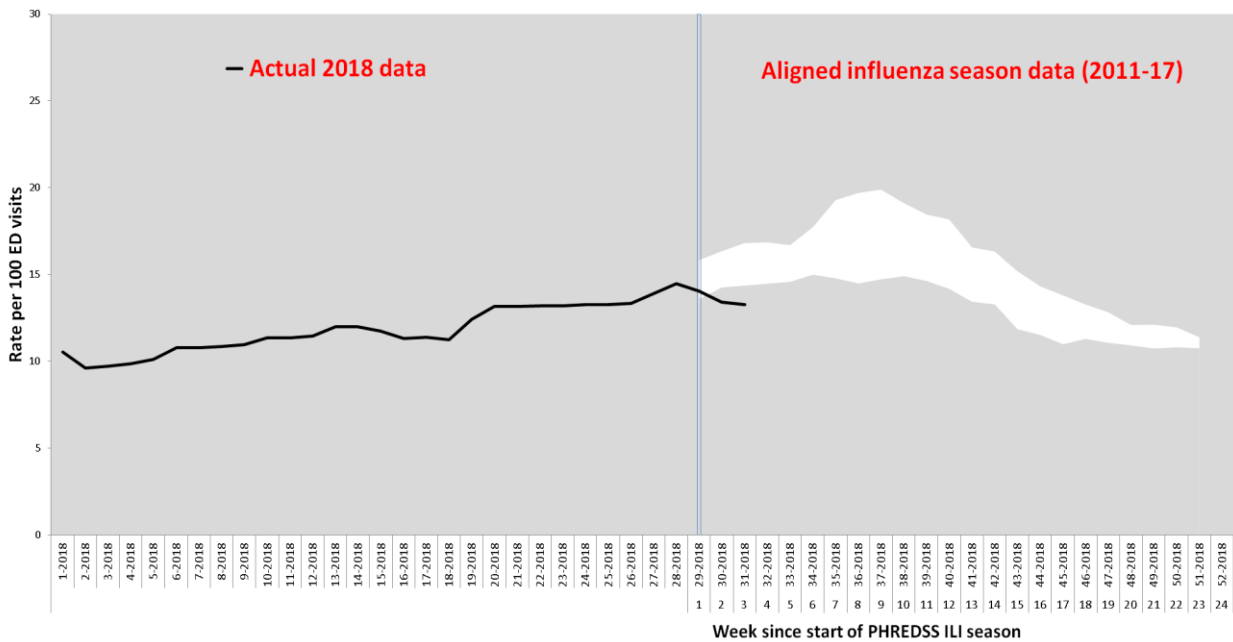


Figure 3: Total weekly counts of ED visits for *influenza-like-illness* that were admitted, all ages, from 1 January – 5 August, 2018 (black line), compared with the 5 previous years (coloured lines).

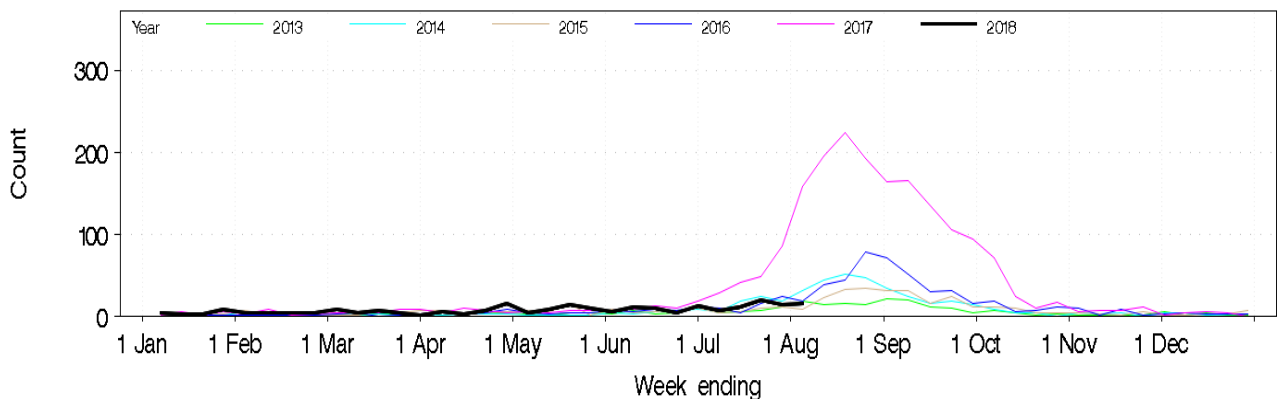


Figure 4: Total weekly counts of ED visits for *bronchiolitis*, all ages, from 1 January – 5 August, 2018 (black line), compared with the 5 previous years (coloured lines).

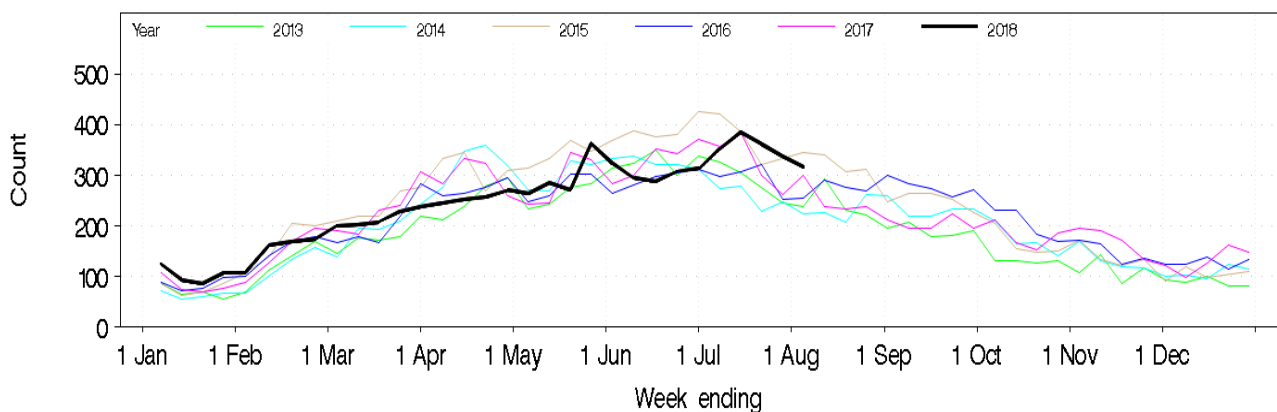


Table 1: Weekly emergency department respiratory illness summary, week ending 5 August 2018.

| Data source | Diagnosis or problem category | Trend since last week | Comparison with usual range* | Significantly elevated age groups | Significant elevated severity indicators** | Comment |
|--------------------------------------|---|-----------------------|------------------------------|-----------------------------------|--|--|
| ED presentations 60 NSW hospitals | Influenza-like illness (ILI) | Decreased (69) | Below (86-544) | | | The NSW daily index of increase for ILI presentations was 21.9 on 29 July. |
| | ILI admissions | Increased (16) | Within (9-159) | | | |
| | Pneumonia | Decreased (541) | Within (496-723) | | | |
| | Pneumonia admissions | Decreased (403) | Within (391-549) | | | |
| | Pneumonia and ILI critical care admissions | Decreased (32) | Below (35-58) | | | |
| | Asthma | Increased (372) | Below (481-559) | | | |
| | Bronchiolitis | Decreased (316) | Within (223-346) | | | Bronchiolitis is a disease of infants. |
| | All respiratory illness, fever and unspecified infections | Decreased (6,138) | Within (6,084-9,258) | | | |
| Ambulance | Breathing problems | Decreased (2,088) | Within (1,909–2,765) | | | |

Notes:*The usual range is the range of weekly counts for the same week in the previous five years for ED presentations and for ambulance Triple (000) calls.

Key for trend since last week: Non-bold and green=decreased or steady; Non-bold and orange=increased

Key for comparison with usual range: Non-bold and green =usual range; Non-bold and orange=above usual range, but not significantly above five-year mean; **Bold and yellow**=within usual range, but significantly above five-year mean;

Bold and red = above the usual range and significantly above five-year mean (ED).

Counts are statistically significant (shown in bold) if they are at least five standard deviations above the five-year mean.

The 'daily index of increase' is statistically significant above a threshold of 15. LHD = Local Health District.

**Severity indicators include: Admission or admission to a critical care ward (CCW); Triage category 1; Ambulance arrival and Death in ED.

FluCAN (The Influenza Complications Alert Network)

In 2009, the [FluCAN](#) surveillance system was created to be a rapid alert system for severe respiratory illness requiring hospitalisation. Data is provided on patients admitted with influenza confirmed by polymerase chain reaction (PCR) testing.

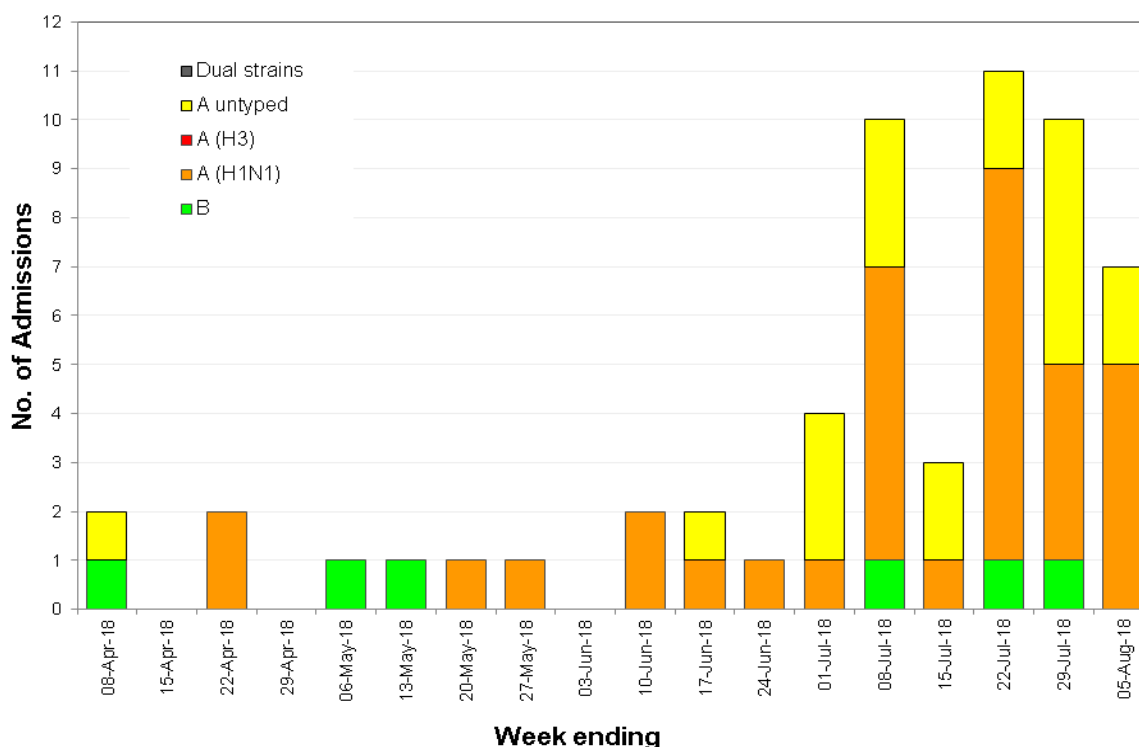
In NSW, three hospitals participate in providing weekly FluCAN data: Westmead Hospital, John Hunter Hospital and the Children's Hospital at Westmead.

In the week ending 5 August there were seven new influenza admissions to NSW sentinel hospitals (Figure 5).

Since 1 April 2018, there have been 58 hospital admissions reported for influenza; 52 due to influenza A (including 33 A (H1N1)) and six due to influenza B (Figure 5). Of these admissions, 38 were paediatric cases (<16 years of age) and 20 were in adults. Five cases (all children) were admitted to a critical care ward.

Sadly, one admitted child, aged under five years and unvaccinated, died from their influenza A infection in the week ending 8 July. This was the first child reported to have died from influenza in NSW this year.

Figure 5: FluCAN – Confirmed influenza hospital admissions in NSW, 1 April to 5 August 2018.



Laboratory Surveillance

In the week ending 5 August the number and proportion of respiratory specimens reported by NSW sentinel laboratories⁷ which tested positive for influenza were still low although crossed the 5% threshold which marks the beginning of the season (Table 2, Figure 6). Influenza A activity continues to slowly trend upwards.

Overall, 5.7% of tests for respiratory viruses were positive for influenza (Figure 6), higher than the previous week (4.4%) and slightly above the winter seasonal threshold (5%). Influenza A(H1N1) remains the dominant circulating strain (Table 2, Figures 6-7).

Other respiratory viruses showed declines in reports, including Rhinovirus and RSV (Table 2).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 5 August 2018.

| Month ending | Total Tests | TEST RESULTS | | | | | | | | | | | | | | | |
|--------------------|-------------|--------------|--------|-------|---------|------------|---------|---------------|---------|-------------|--------|-------|------------------|-------|-------|---------|--------|
| | | Influenza A | | | | | | | | Influenza B | | Adeno | Parainf 1, 2 & 3 | RSV | Rhino | HMPV ** | Entero |
| | | Total | | H3N2 | | H1N1 pdm09 | | A (Not typed) | | Total | | | | | | | |
| | | Total | (%) | Total | (%A) | Total | (%A) | Total | (%A) | Total | (%) | Total | Total | Total | Total | Total | Total |
| 28/01/2018 | 12819 | 483 | (3.8%) | 26 | (5.4%) | 38 | (7.9%) | 414 | (85.7%) | 507 | (4.0%) | 404 | 599 | 492 | 1601 | 325 | 196 |
| 25/02/2018 | 14540 | 531 | (3.7%) | 46 | (8.7%) | 36 | (6.8%) | 447 | (84.2%) | 503 | (3.5%) | 374 | 552 | 846 | 2498 | 221 | 284 |
| 01/04/2018* | 22518 | 524 | (2.3%) | 53 | (10.1%) | 52 | (9.9%) | 419 | (80.0%) | 424 | (1.9%) | 703 | 1057 | 2022 | 4775 | 306 | 485 |
| 29/04/2018 | 19888 | 247 | (1.2%) | 22 | (8.9%) | 36 | (14.6%) | 189 | (76.5%) | 147 | (0.7%) | 640 | 869 | 2669 | 3634 | 277 | 415 |
| 27/05/2018 | 24227 | 232 | (1.0%) | 20 | (8.6%) | 32 | (13.8%) | 180 | (77.6%) | 89 | (0.4%) | 696 | 843 | 3030 | 5389 | 262 | 445 |
| 01/07/2018* | 33785 | 482 | (1.4%) | 9 | (1.9%) | 43 | (8.9%) | 430 | (89.2%) | 72 | (0.2%) | 1157 | 971 | 3789 | 8809 | 574 | 647 |
| 29/07/2018 | 31992 | 1126 | (3.5%) | 9 | (0.8%) | 146 | (13.0%) | 971 | (86.2%) | 83 | (0.3%) | 1268 | 913 | 3633 | 5947 | 1101 | 587 |
| Week ending | | | | | | | | | | | | | | | | | |
| 05/08/2018 | 8551 | 436 | (5.1%) | 7 | (1.6%) | 41 | (9.4%) | 388 | (89.0%) | 48 | (0.6%) | 351 | 226 | 781 | 962 | 350 | 105 |

Notes:

* Five-week reporting period. ** Human metapneumovirus

Figure 6: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 5 August 2018.

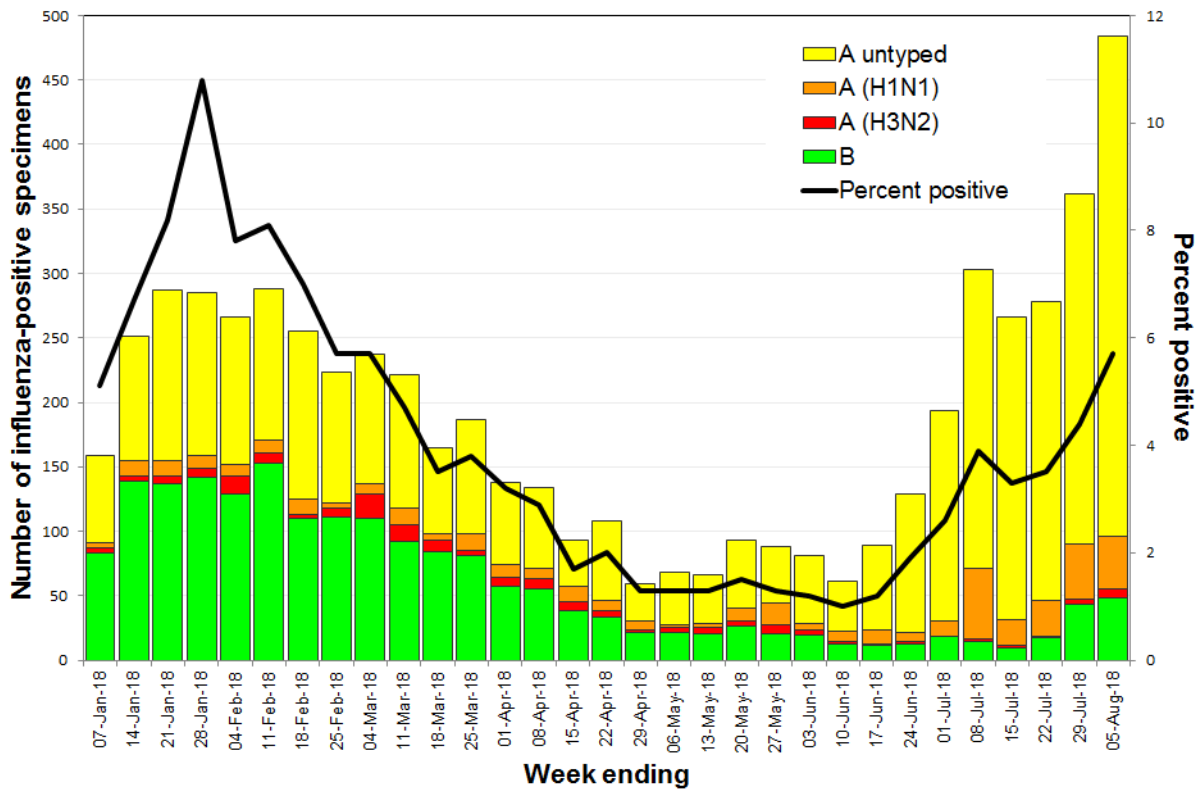
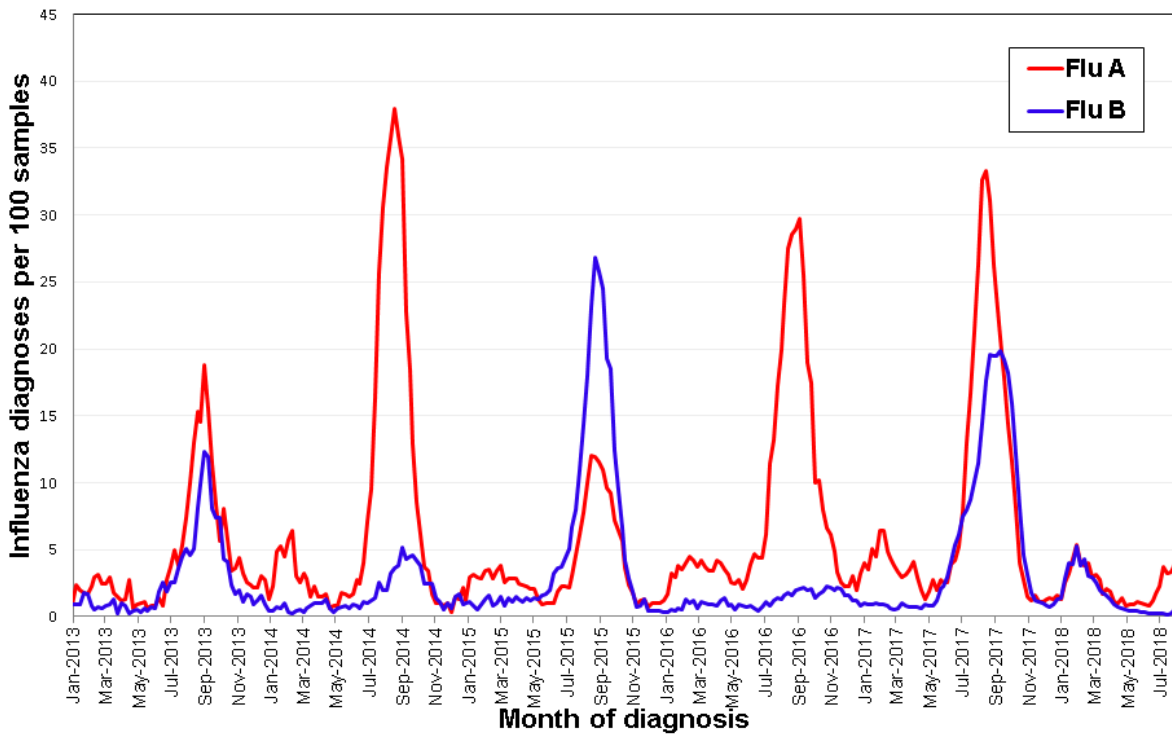


Figure 7: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2013 to 5 August 2018, New South Wales.



Influenza notifications by Local Health District (LHD)

In the week ending 5 August there were 426 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 365 notifications reported in the previous week but much lower than the 6449 notifications for the same period in 2017.

Influenza notification rates remained stable across most NSW LHDs (Table 3). Notifications slightly increased in a number of Sydney metropolitan LHDs. Notifications for Western Sydney LHD were well above all other LHDs as was its notification per population rate.

Table 3: Weekly notifications of laboratory-confirmed influenza by Local Health District.

| Local Health District | Week ending 05 Aug 2018 | | Week ending 29 Jul 2018 | |
|-----------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|
| | Number of notifications | Rate per 100 000 population | Number of notifications | Rate per 100 000 population |
| Central Coast | 3 | 0.86 | 2 | 0.57 |
| Far West | 0 | 0 | 0 | 0 |
| Hunter New England | 43 | 4.58 | 51 | 5.43 |
| Illawarra Shoalhaven | 19 | 4.61 | 19 | 4.61 |
| Mid North Coast | 6 | 2.67 | 3 | 1.33 |
| Murrumbidgee | 4 | 1.65 | 7 | 2.88 |
| Nepean Blue Mountains | 27 | 6.92 | 21 | 5.38 |
| Northern NSW | 10 | 3.23 | 5 | 1.62 |
| Northern Sydney | 64 | 6.92 | 48 | 5.19 |
| South Eastern Sydney | 51 | 5.42 | 50 | 5.31 |
| South Western Sydney | 48 | 4.76 | 35 | 3.47 |
| Southern NSW | 6 | 2.76 | 1 | 0.46 |
| Sydney | 34 | 5.08 | 22 | 3.29 |
| Western NSW | 8 | 2.85 | 5 | 1.78 |
| Western Sydney | 103 | 10.35 | 96 | 9.65 |

Notes: * All data are preliminary and may change as more notifications are received. Excludes notifications based on serology. For further information see the [influenza notifications data page](#).

Influenza outbreaks in institutions

There were five respiratory outbreaks in institutions reported this week; two were due to influenza A, one was another respiratory pathogen and there are two with results still pending.

In the year to date there have been 16 laboratory-confirmed influenza outbreaks in institutions reported to NSW public health units, including 14 in residential care facilities (Table 4, Figure 8). Ten of the outbreaks have been due to influenza A and six were due to influenza B.

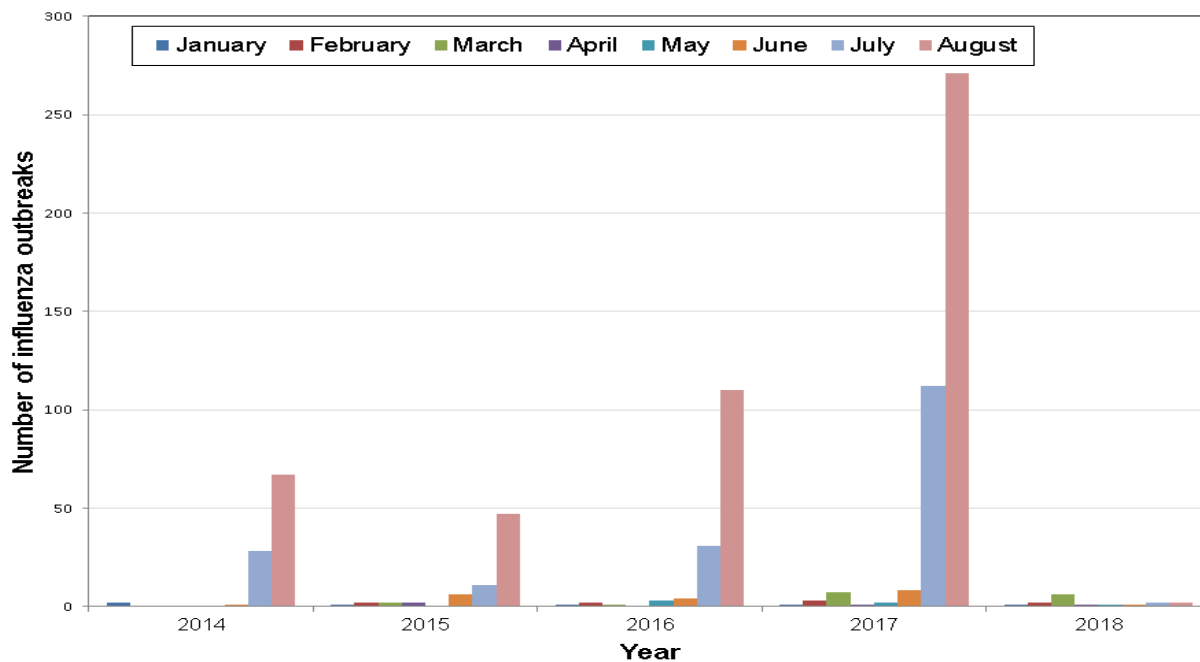
In the 14 influenza outbreaks affecting residential care facilities, at least 99 residents were reported to have had ILI symptoms and 13 required hospitalisation. Overall, there have been two deaths in residents reported which were linked to these outbreaks, both of whom were noted to have other significant co-morbidities.

Table 4: Reported influenza outbreaks in NSW institutions, January 2011 to August 2018.

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018* |
|------------------|------|------|------|------|------|------|------|-------|
| No. of outbreaks | 4 | 39 | 12 | 120 | 103 | 279 | 588 | 16 |

Notes: * Year to date.

Figure 8: Reported influenza outbreaks in NSW residential care facilities by month, 2014 to August 2018.



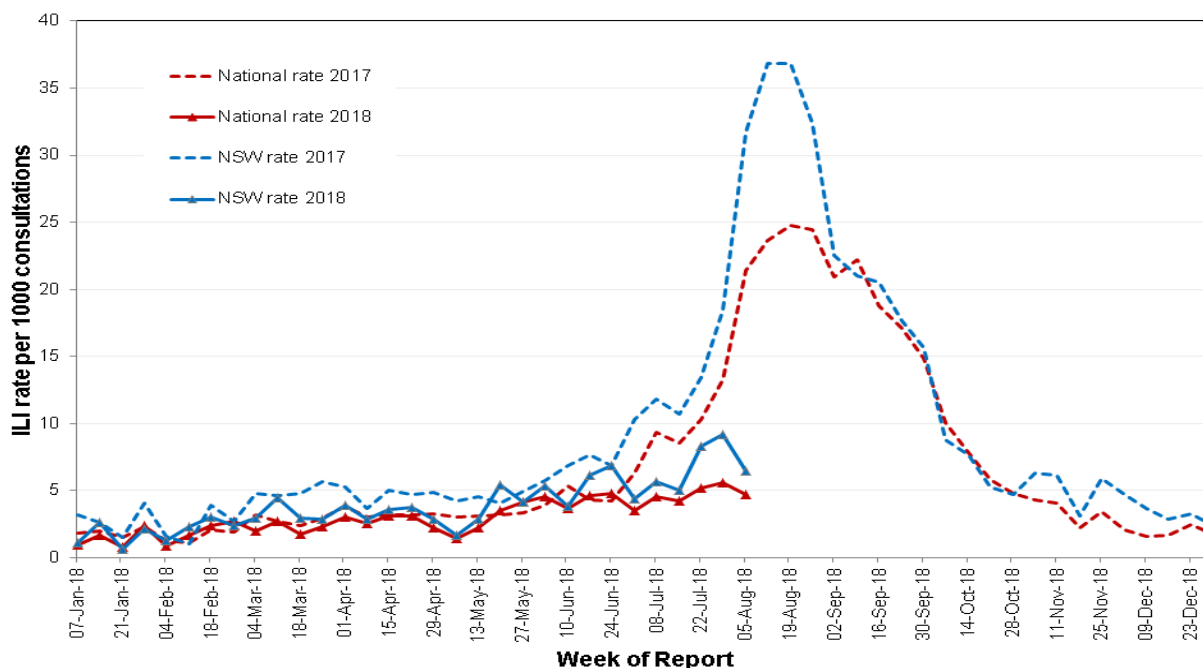
The Australian Sentinel Practices Research Network (ASPREN)

ASPREN is a network of sentinel general practitioners (GPs) run through the Royal Australian College of General Practitioners and the University of Adelaide which has collected de-identified information on influenza-like illness (ILI) and other conditions seen in general practice since 1991.

Participating GPs in the program report on the proportion of patients presenting with an ILI. The number of GPs participating on a weekly basis may vary.

In the week ending 5 August there were ASPREN reports received from 78 NSW GPs. The reported consultation rate for ILI per 1000 consultations was 6.47 (Figure 9), lower than the previous week (9.22, revised). For further information see the [ASPREN website](#).

Figure 9: ASPREN – NSW and National GP weekly ILI rates per 1000 consultations – 2018 to the week ending 5 August, compared to 2017 weekly rates.



FluTracking.net

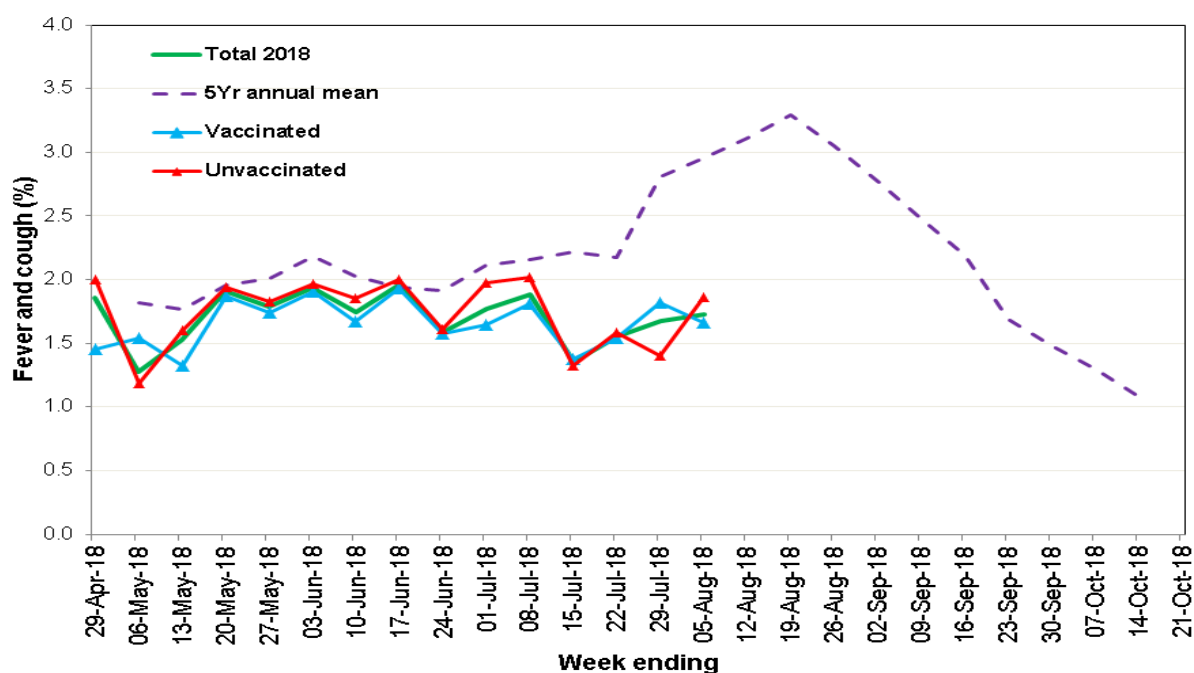
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

Participants complete a simple online weekly survey which is used to generate data on the rate of ILI symptoms in communities.

In the week ending 5 August FluTracking received reports for 11,450 people in NSW with the following results:

- 1.7% of respondents reported fever and cough, slightly higher than the previous week (1.6%) but well below the five year annual mean (2.9%) (Figure 10).
- Among respondents who reported having been vaccinated against influenza in 2018, 1.7% reported fever and cough, lower than the 1.9% rate among unvaccinated respondents (Figure 10).
- 1.0% of all respondents reported fever, cough and absence from normal duties, similar to the previous week (1.1 % revised).

Figure 10: FluTracking – Percent of NSW participants reporting fever and cough by vaccination status and week, 2018 to the week ending 5 August, compared to the 5 year mean.



Notes: Participants are not considered vaccinated until at least two weeks has elapsed since their recorded time of vaccination.

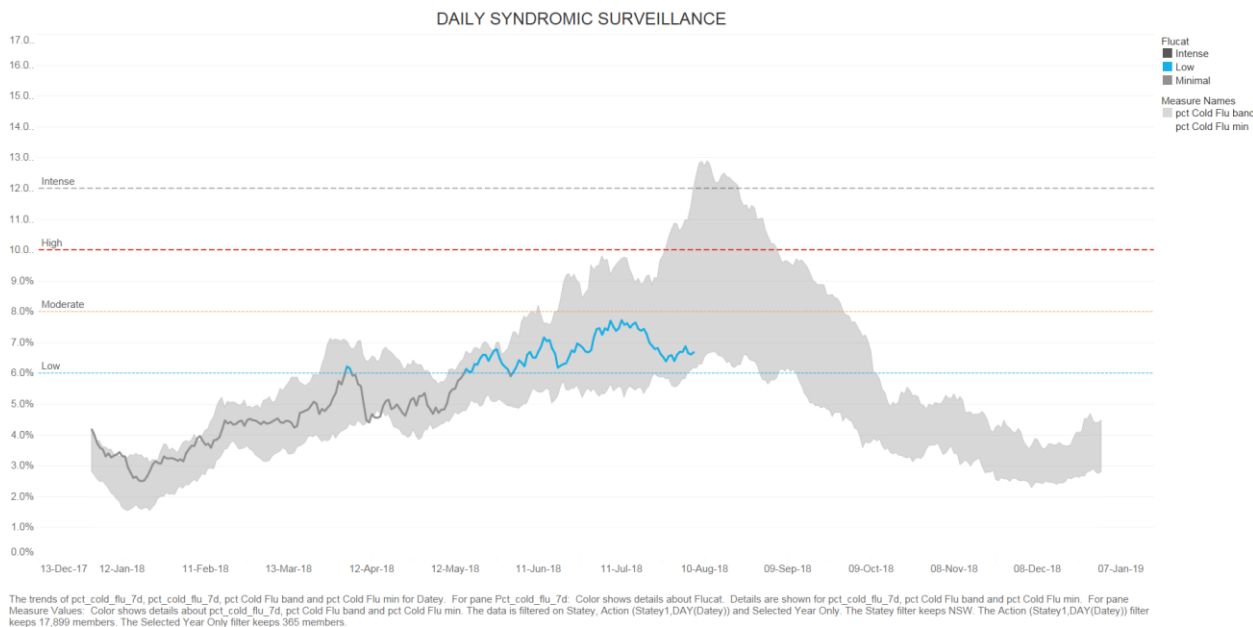
For further information on the project and how to participate please see the [FluTracking](#) website.

Healthdirect Australia

Healthdirect Australia was first introduced in 2007 and is a national, government-owned, not-for-profit organisation that delivers a range of telehealth and digital health services 24 hours a day, 7 days a week across Australia. Healthdirect Australia collects data based on calls to the Healthdirect helpline (1800 022 222). This data includes the number of callers who report symptoms consistent with influenza-like illness (ILI).

In the week ending 5 August the number of ILI-related calls to Healthdirect Australia for NSW decreased and remained in the low-moderate range of activity (Figure 11).

Figure 11: Healthdirect Australia – weekly ILI-related calls as a proportion of all calls for NSW, 2018 to the week ending 5 August compared to the weekly range between 2012 and 2017.



For further information see the [Healthdirect Australia](#) flu trends website.

National and International Influenza Surveillance

National Influenza Surveillance

The fortnightly *Australian Surveillance Report No.5*, with data up to 29 July 2018, noted the following:

- **Activity** – Influenza and influenza-like illness (ILI) activity are low and remain at inter-seasonal levels. Rhinovirus was the most common respiratory virus detected in patients presenting with ILI to sentinel general practices this fortnight.
- **Severity** – Due to low numbers and the instability of data early in the season, there is no indication of the potential severity of the 2018 season at this time.
- **Impact** – Currently, the impact of circulating influenza on society is low.
- **Virology** – This fortnight, the majority of confirmed influenza cases reported nationally were influenza A (86%).

For further information see the [Australian Influenza Surveillance Reports](#).

Global Influenza Update

The latest [WHO global update on 6 August 2018](#) provides data up to 22 July. In the temperate zones of the southern hemisphere, influenza activity remained elevated in South America and started to decrease in Southern Africa. Influenza activity remained below seasonal threshold in Australia and New Zealand and at inter-seasonal levels in most of temperate zone of the northern hemisphere. Influenza activity appeared to decrease in some countries of tropical America. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections. Follow the link for the [WHO influenza surveillance reports](#).

Influenza at the human-animal interface

WHO publishes regular updated risk assessments of human infections with avian and other non-seasonal influenza viruses at [Influenza at the human-animal interface](#), with the most recent report published on 28 May 2018. These reports provide information on human cases of infection with non-seasonal influenza viruses, such as H5 and H7 clade viruses, and outbreaks among animals.

Since the previous update, new human infections with avian or swine influenza viruses were reported. The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and the likelihood of sustained human-to-human transmission of these viruses remains low. Further human infections with viruses of animal origin are expected.

Other sources of information on avian influenza and the risk of human infection include:

- US CDC [Avian influenza](#)
- European CDC (ECDC) [Avian influenza](#)
- Public Health Agency of Canada [Avian influenza H7N9](#).

Composition of 2018 Australian influenza vaccines

The WHO Consultation on the Composition of Influenza Vaccines for the 2018 Southern Hemisphere was held in Melbourne on 25-27 September 2017.

Following the Consultation, WHO announced its recommendations for the composition of trivalent vaccines for use in the 2018 Southern Hemisphere influenza season, which includes changes in the influenza A(H3N2) component, as follows:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus
- an A/Singapore/INF1HM-16-0019/2016 (H3N2)-like virus ⁸
- a B/Phuket/3073/2013-like virus (Yamagata lineage)

It was recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a second B component as follows:

- a B/Brisbane/60/2008-like virus (Victoria lineage).⁹

The WHO consultation on the composition of influenza vaccines for the Northern Hemisphere 2018-19 influenza season was held in February 2018. WHO announced its recommendations for the composition of quadrivalent vaccines for use in the 2018-19 Northern Hemisphere influenza season, which includes changes in the influenza A(H3N2) and influenza B (Victoria lineage) components.

More details about the most recent influenza vaccine recommendations can be found at: <http://www.who.int/influenza/vaccines/virus/en/>.

Information for immunisation providers on the influenza vaccines available for use in Australia in 2018, including vaccines used as part of the National Immunisation Program can be found at: <https://beta.health.gov.au/resources/publications/atagi-advice-on-seasonal-influenza-vaccines-in-2018>.

Information on NSW seasonal influenza vaccination activities in 2018, including free vaccine for all children aged 6 months to less than 5 years can be found at: http://www.health.nsw.gov.au/immunisation/Pages/seasonal_flu_vaccination.aspx.

Report Notes:

¹ Notes for trend comparisons with the previous week:

| | | Trend in Cases | Trend in Presentations |
|---|-----------------|---------------------------------|---|
| ▶ | Stable | <10% change or <20 cases change | <10% change or <40 presentations change |
| ▼ | Decrease | 10% or greater decrease | 10% or greater decrease |
| ▲ | Increase | 10-20% increase | 10-20% increase |
| ▲ | Higher increase | >20% increase | >20% increase |

² *All Respiratory, fever and unspecified infections* presentations as a percentage of all unplanned emergency department presentations in participating hospitals in the local health district.

³ NSW Local Health Districts and SA2: Influenza notification maps use NSW Local Health District Boundaries and Australian Bureau of Statistics (ABS) statistical area level 2 (SA2) of place of residence of cases are shown. Note that place of residence is used as a surrogate for place of acquisition for cases; the infection may have been acquired while the person was in another area.

⁴ NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance system, CEE, NSW Ministry of Health. Comparisons are made with data for the preceding 5 years. Includes unplanned presentations to 60 NSW emergency departments, which accounted for 83% of all NSW ED presentations in the 2016/2017 financial year. The coverage is lower in rural EDs. Data is continuously updated.

⁵ The ED 'ILI' syndrome includes provisional diagnoses selected by a clinician of 'influenza-like illness' or 'influenza' (including 'pneumonia with influenza'), avian and other new influenza viruses.

⁶ The ED 'Pneumonia' syndrome includes provisional diagnoses selected by a clinician of 'viral, bacterial, atypical or unspecified pneumonia', 'SARS', or 'legionnaire's disease'. It excludes the diagnosis 'pneumonia with influenza'.

⁷ Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Point-of-care test results have been included since August 2012 but serological diagnoses are not included. Participating sentinel laboratories: Pathology North (Hunter, Royal North Shore Hospital), Pathology West (Nepean, Westmead), South Eastern Area Laboratory Services, Sydney South West Pathology Service (Liverpool, Royal Prince Alfred Hospital), The Children's Hospital at Westmead, Australian Clinical Labs, Douglas Hanly Moir Pathology, Laverty Pathology, Medlab, SydPath, VDRLab

⁸ This replaces A/Hong Kong/4801/2014 (H3N2)-like virus used in the 2017 seasonal influenza vaccines.

⁹ This B/Brisbane strain had been part of the WHO recommendations for 2017 southern hemisphere trivalent influenza vaccines but has been replaced by the B/Phuket strain for 2018 trivalent vaccines.