

Influenza Surveillance Weekly Report

Week 21: 21 to 27 May 2018

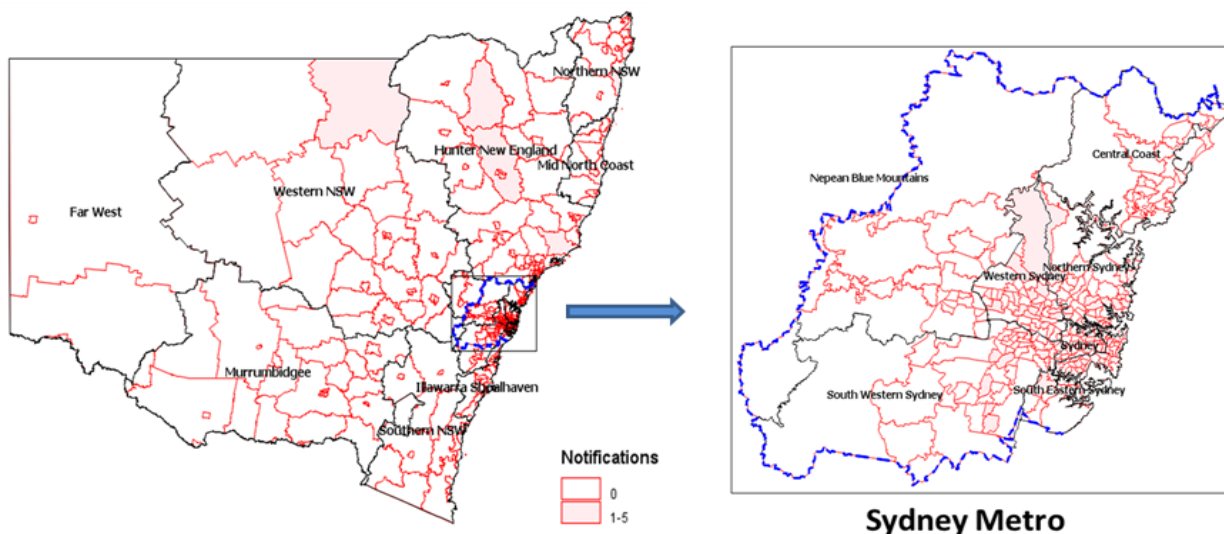
Key Points

- ▶ Influenza activity continued to be low across all NSW local health districts.
- ▶ Respiratory presentations to NSW emergency departments increased but remained low.
- ▶ Influenza continued to circulate at inter-seasonal levels; influenza A strains predominated.

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	6	▶	344	▶	13%
Far West	0	▶	44	▶	11%
Hunter New England	3	▶	849	▶	13%
Illawarra Shoalhaven	7	▶	332	▲	13%
Mid North Coast	0	▶	275	▶	15%
Murrumbidgee	1	▶	259	▶	13%
Nepean Blue Mountains	3	▶	269	▶	14%
Northern NSW	4	▶	254	▶	12%
Northern Sydney	14	▶	490	▶	12%
South Eastern Sydney	5	▶	659	▶	11%
South Western Sydney	8	▶	784	▶	14%
Southern NSW	3	▶	74	▶	11%
Sydney	6	▶	388	▶	12%
Western NSW	1	▶	213	▶	13%
Western Sydney	30	▶	750	▶	16%
New South Wales	82	▶	5984	▶	13%

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



Summary for this reporting week:

- ▶ [Hospital surveillance](#) – ILI presentations to EDs remain below the seasonal threshold
- ▶ [Laboratory surveillance](#) – the influenza laboratory test positive rate was lower (1.3%)
Influenza A strains were more common, particularly A(H1N1)
- ▶ [Community surveillance](#) – influenza activity still low across all LHDs
- ▶ [National surveillance](#) – low influenza activity nationally

Hospital Surveillance

NSW emergency department (ED) presentations for respiratory illness

Source: PHREDSS⁴

For the week ending 27 May 2018:

- The daily index of increase for *influenza-like illness* (ILI)⁵ presentations across NSW increased to 4.3 (up from 2.8 last week) but remains well below the seasonal threshold of 15.
- Presentations for *All respiratory illness, fever and unspecified infections* increased but remained within the usual range for this time of year (Figure 1, Table 1). Some of the increase is due to an increase in *bronchiolitis* presentations which were above the usual range for this time of year (Figure 1, Table 1).
- The proportion of *All respiratory illness, fever and unspecified infections* presentations to all unplanned ED presentations was low at 13.1 per 100 presentations and steady (Figure 2).
- There was a small increase in presentations for *All respiratory illness, fever and unspecified infections* this week in Illawarra Shoalhaven LHD. However, the low number of influenza notifications in this area suggests this is unrelated to influenza activity.
- ILI presentations resulting in admission decreased but were slightly above the usual range for this time of year (Figure 3, Table 1).
- ED presentations and admissions for *pneumonia*⁶ both increased but were within the usual range for this time of year (Table 1).
- *Pneumonia* and ILI presentations requiring admission to critical care increased but were within the usual range for this time of year (Table 1).

Figure 1: Total weekly counts of ED visits for *All respiratory illness, fever and unspecified infections*, all ages, from 1 January – 27 May, 2018 (black line), compared with the 5 previous years (coloured lines).

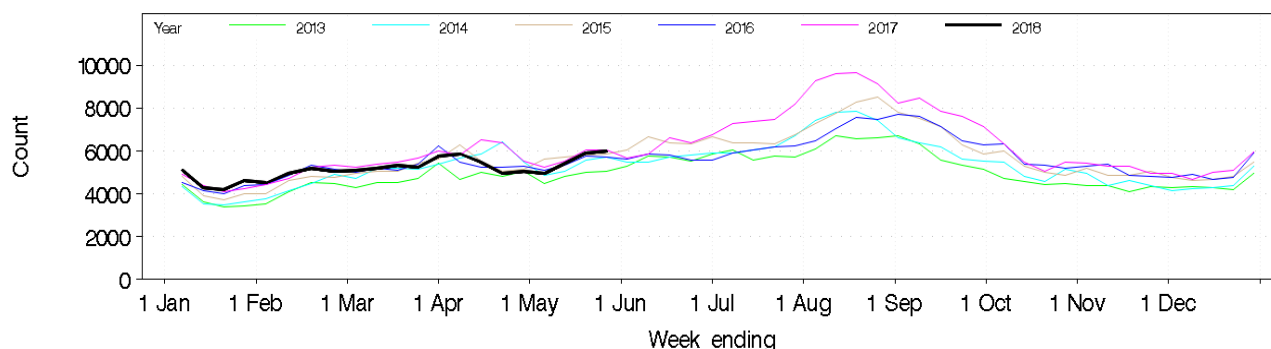


Figure 2: Total weekly counts of ED visits for *All respiratory illness, fever and unspecified infections*, all ages, as a rate per 100 ED visits, from 1 January – 27 May, 2018 (black line), compared with the range of season rate curves for the 5 previous years (white zone) aligned to the PHREDSS season start in 2017 (week 26).

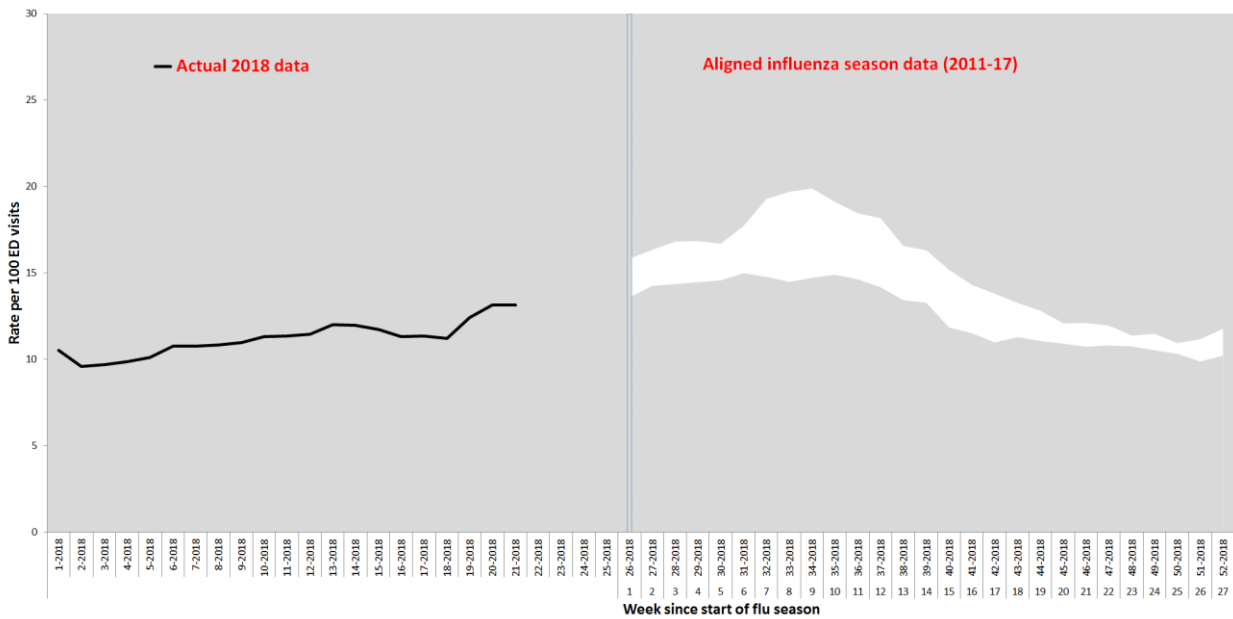


Figure 3: Total weekly counts of ED visits for *influenza-like-illness* that were admitted, all ages, from 1 January – 27 May, 2018 (black line), compared with the 5 previous years (coloured lines).

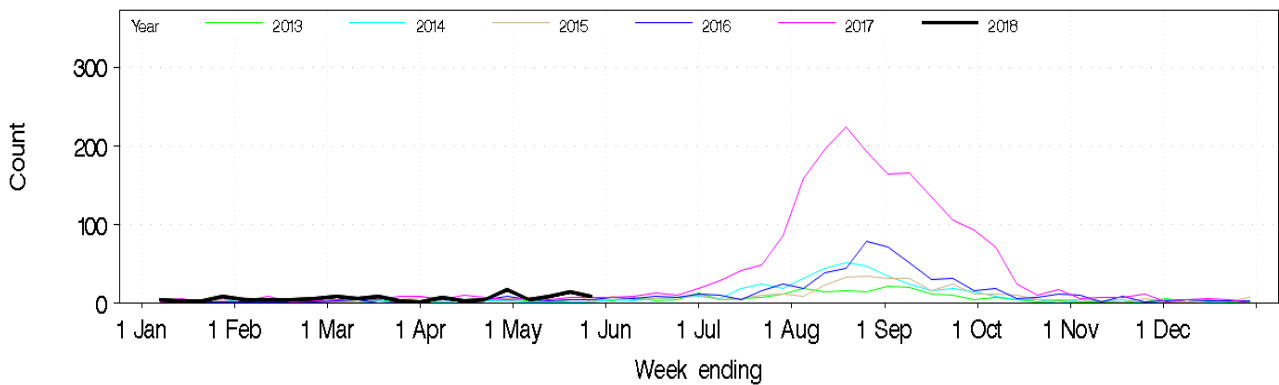


Figure 4: Total weekly counts of ED visits for *bronchiolitis*, all ages, from 1 January – 27 May, 2018 (black line), compared with the 5 previous years (coloured lines).

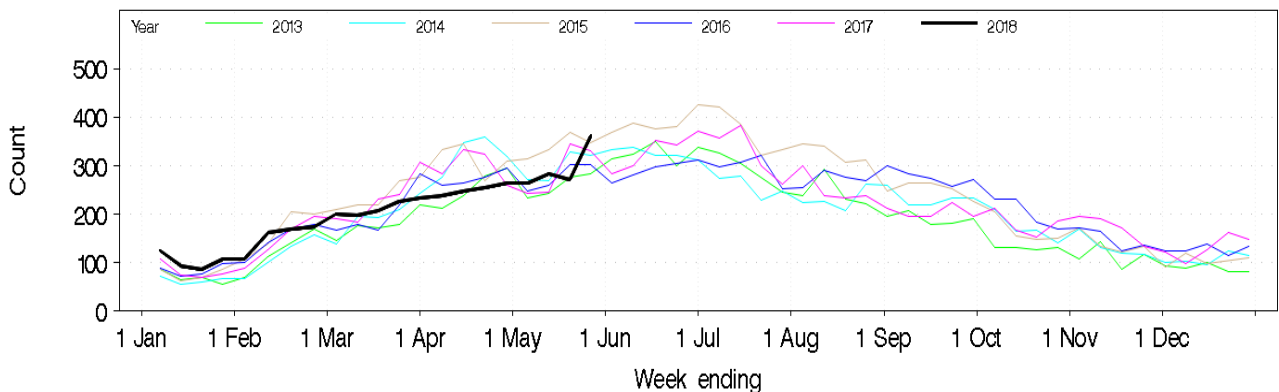


Table 1: Weekly emergency department respiratory illness summary, week ending 27 May 2018.

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)	Increased (49)	Above (24-43)			The NSW daily index of increase for ILI presentations was 4.3.
	ILI admissions	Decreased (9)	Above (1-7)			
	Pneumonia	Increased (446)	Within (365-524)			
	Pneumonia admissions	Increased (336)	Within (274-357)			
	Pneumonia and ILI critical care admissions	Increased (28)	Within (19-35)			
	Asthma	Steady (594)	Within (576-672)			
	Bronchiolitis	Increased (361)	Above (282-347)			Bronchiolitis is a disease of infants.
	All respiratory illness, fever and unspecified infections	Increased (5,973)	Within (5,051-6,048)			
Ambulance	Breathing problems	Decreased (2,017)	Above (1,614-1,956)	65+ years (1129)		

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)

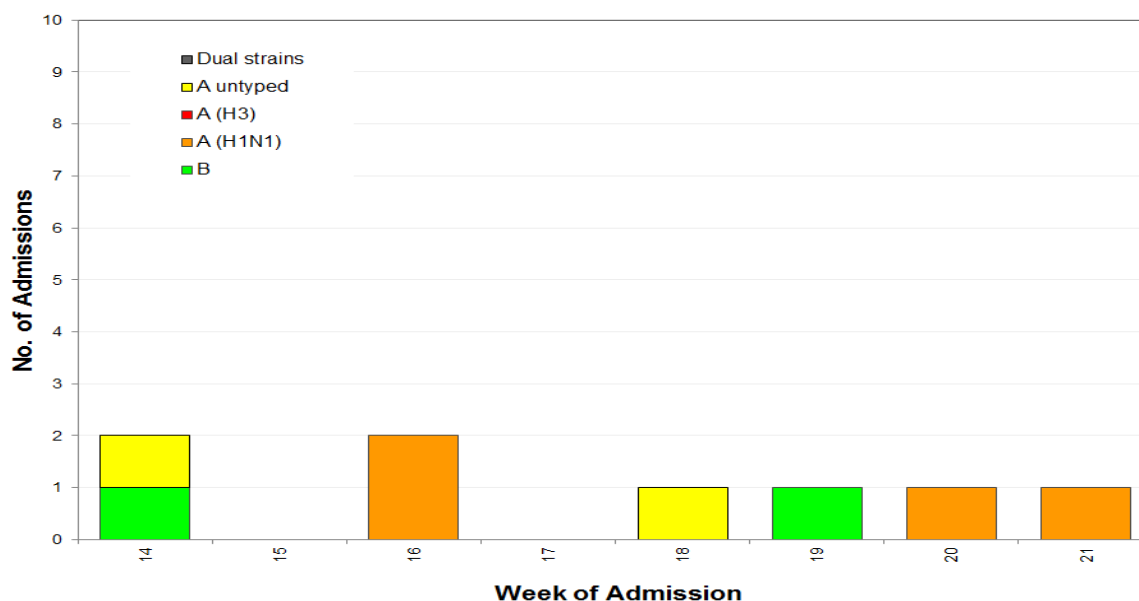
In 2009, the [FluCAN](#) surveillance system was created to be a rapid alert system for severe respiratory illness requiring hospitalisation. Data is provided on patients admitted with influenza confirmed by polymerase chain reaction (PCR) testing.

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

During week 21 there was one influenza A (H1N1) admission in a NSW sentinel hospital (Figure 5).

Since 1 April 2018, there have been seven hospital admissions reported for influenza; six due to influenza A (including four A (H1N1)) and two due to influenza B (Figure 5). Of these admissions, six were paediatric cases (<16 years of age) and two were in adults. One of the cases was admitted to a critical care ward.

Figure 5: FluCAN – Confirmed influenza hospital admissions in NSW, 1 April – 27 May, 2018.



Laboratory Surveillance

For the week ending 27 May 2018 the number and proportion of respiratory specimens reported by NSW sentinel laboratories ⁷ which tested positive for influenza A or influenza B was still low (Table 2, Figure 6).

Overall, 1.3% of tests for respiratory viruses were positive for influenza (Figure 6), lower than the previous week (1.5%) and still well below the seasonal threshold (5%). Influenza A strains remained more common than B strains, particularly the A(H1N1) subtype (Table 2, Figures 6-7).

Rhinovirus was again the most common respiratory virus identified, followed by respiratory syncytial virus (RSV) which is a common cause of bronchiolitis in infants (Table 2).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 27 May 2018.

Month ending	Total Tests	TEST RESULTS													
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	HMPV **	Enterovirus
		Total	H3N2	H1N1 pdm09	A (Not typed)	Total	Total								
		Total (%)	Total (%A)	Total (%A)	Total (%A)	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%)	35 (6.6%)	448 (84.4%)	503 (3.5%)	374	552	846	2498	221	284			
01/04/2018*	22518	524 (2.3%)	52 (9.9%)	49 (9.4%)	423 (80.7%)	424 (1.9%)	703	1057	2022	4775	306	485			
29/04/2018	19888	247 (1.2%)	22 (8.9%)	35 (14.2%)	190 (76.9%)	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			
Week ending															
06/05/2018	5278	47 (0.9%)	4 (8.5%)	2 (4.3%)	41 (87.2%)	21 (0.4%)	174	222	691	902	72	95			
13/05/2018	5666	50 (0.9%)	5 (10.0%)	3 (6.0%)	42 (84.0%)	22 (0.4%)	155	212	780	1114	71	109			
20/05/2018	6326	67 (1.1%)	4 (6.0%)	10 (14.9%)	53 (79.1%)	26 (0.4%)	186	222	766	1483	67	125			
27/05/2018	6957	68 (1.0%)	7 (10.3%)	17 (25.0%)	44 (64.7%)	20 (0.3%)	181	187	793	1890	52	116			

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 27 May 2018

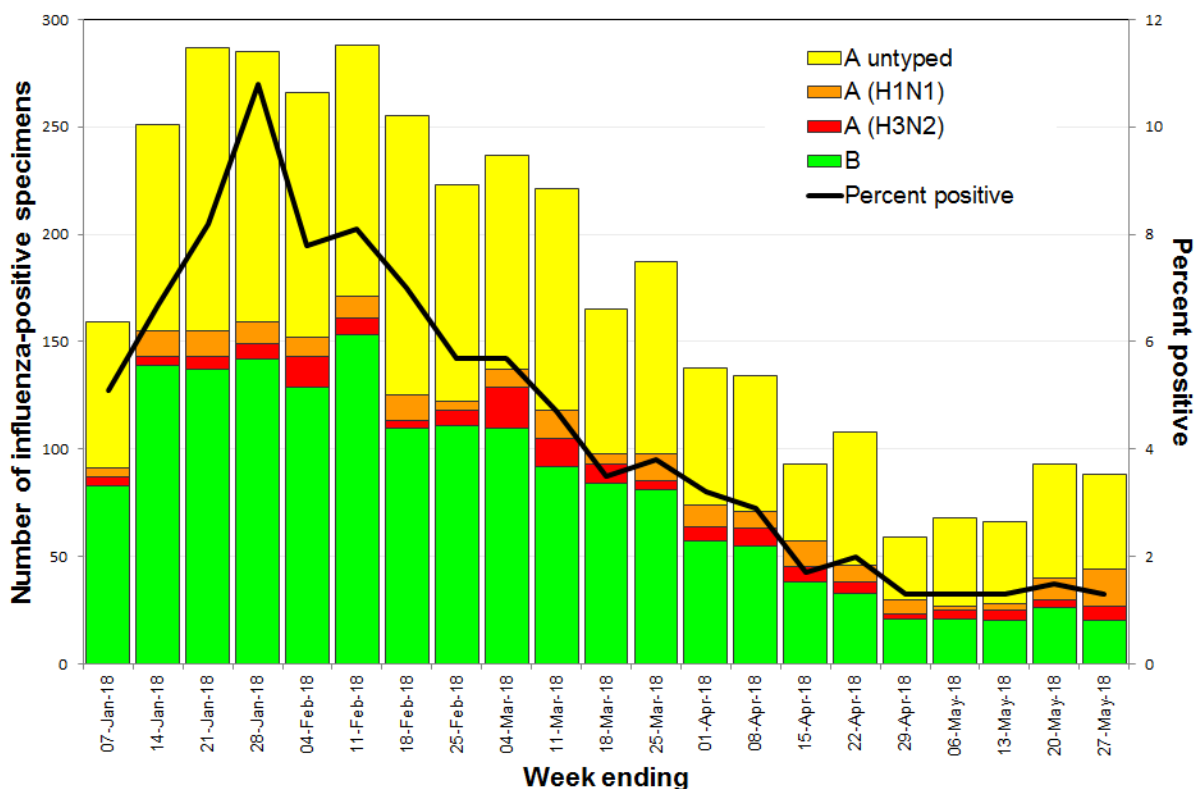
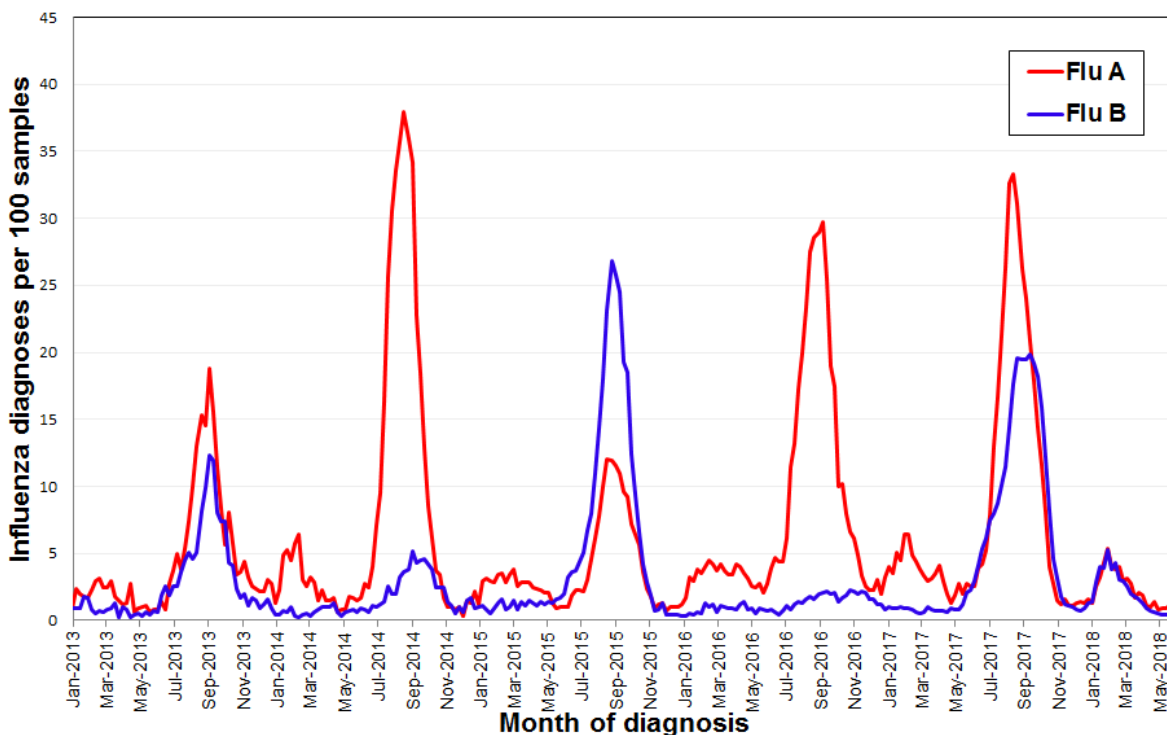


Figure 7: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2013 to 27 May 2018, New South Wales.



Influenza notifications by Local Health District (LHD)

In the week ending 27 May there were 82 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, lower than the 91 notifications reported in the previous week.

Influenza notification rates were low and stable across all NSW LHDs with the exception of Western Sydney LHD where the rate remained slightly higher (Table 3).

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

Local Health District	Week ending 27 May 2018		Week ending 20 May 2018	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	0	0	6	1.72
Far West	0	0	0	0
Hunter New England	10	1.07	3	0.32
Illawarra Shoalhaven	3	0.73	7	1.7
Mid North Coast	1	0.44	0	0
Murrumbidgee	0	0	1	0.41
Nepean Blue Mountains	1	0.26	3	0.77
Northern NSW	3	0.97	4	1.29
Northern Sydney	6	0.65	14	1.51
South Eastern Sydney	5	0.53	5	0.53
South Western Sydney	12	1.19	8	0.79
Southern NSW	0	0	3	1.38
Sydney	11	1.64	6	0.9
Western NSW	4	1.43	1	0.36
Western Sydney	26	2.61	30	3.01

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 no respiratory outbreaks in institutions reported this week.

In the year to date there have been 11 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units, including ten in residential care facilities (Table 4, Figure 8). Six of the outbreaks have been due to influenza A and five were due to influenza B.

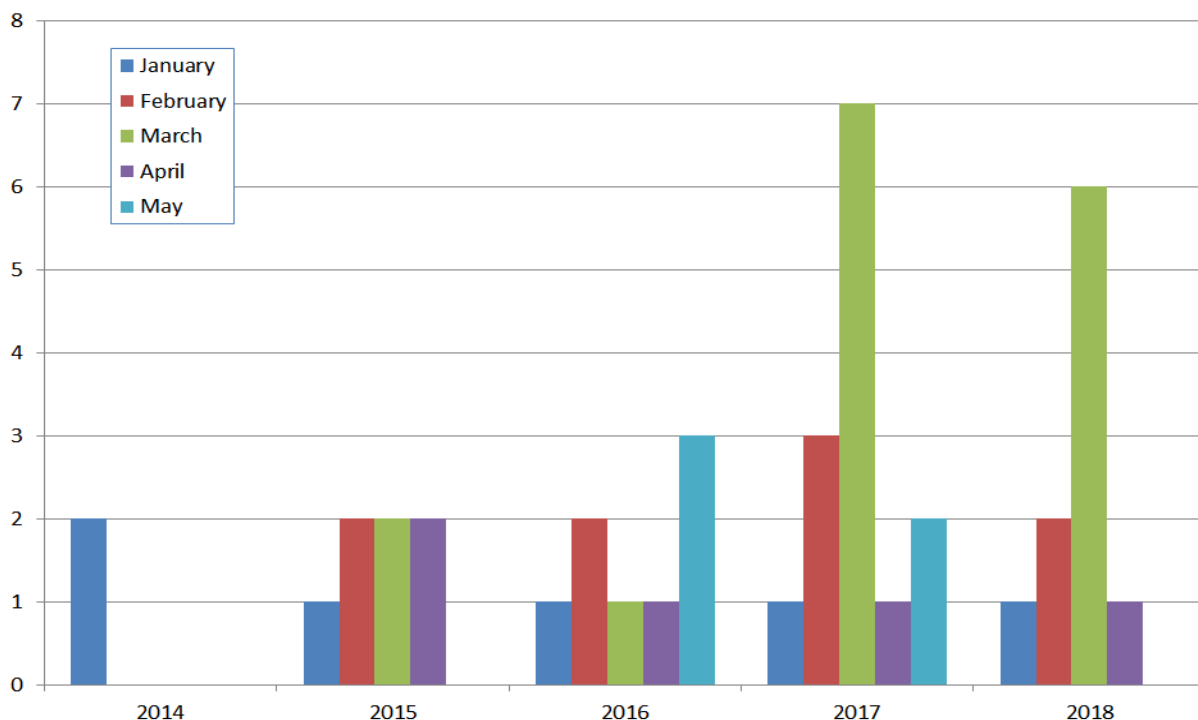
In the ten influenza outbreaks affecting residential care facilities, at least 70 residents were reported to have had ILI symptoms and 13 required hospitalisation. Overall, there have been two deaths in residents reported which were linked to these outbreaks, both of whom were noted to have other significant co-morbidities.

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

Year	2011	2012	2013	2014	2015	2016	2017	2018*
No. of outbreaks	4	39	12	120	103	279	588	11

Notes: * Year to date.

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



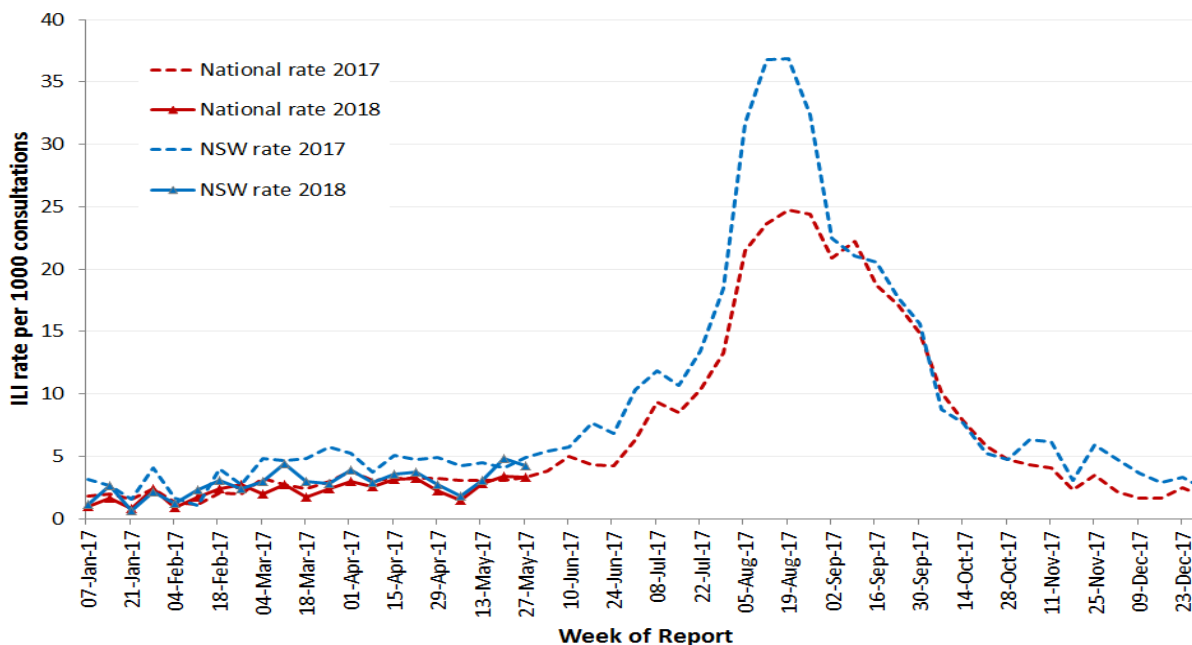
The Australian Sentinel Practices Research Network (ASPREN)

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 week 21 there were ASPREN reports received from 78 NSW GPs. The reported consultation rate for ILI per 1000 consultations was decreased at 4.23 (Figure 9), lower than for the previous week (4.78, revised) but still low overall. For further information see the [ASPREN website](#).

Figure 9: ASPREN – NSW and National GP ILI rates per 1000 consultations – 2018 to week 21, compared to 2017.



FluTracking.net

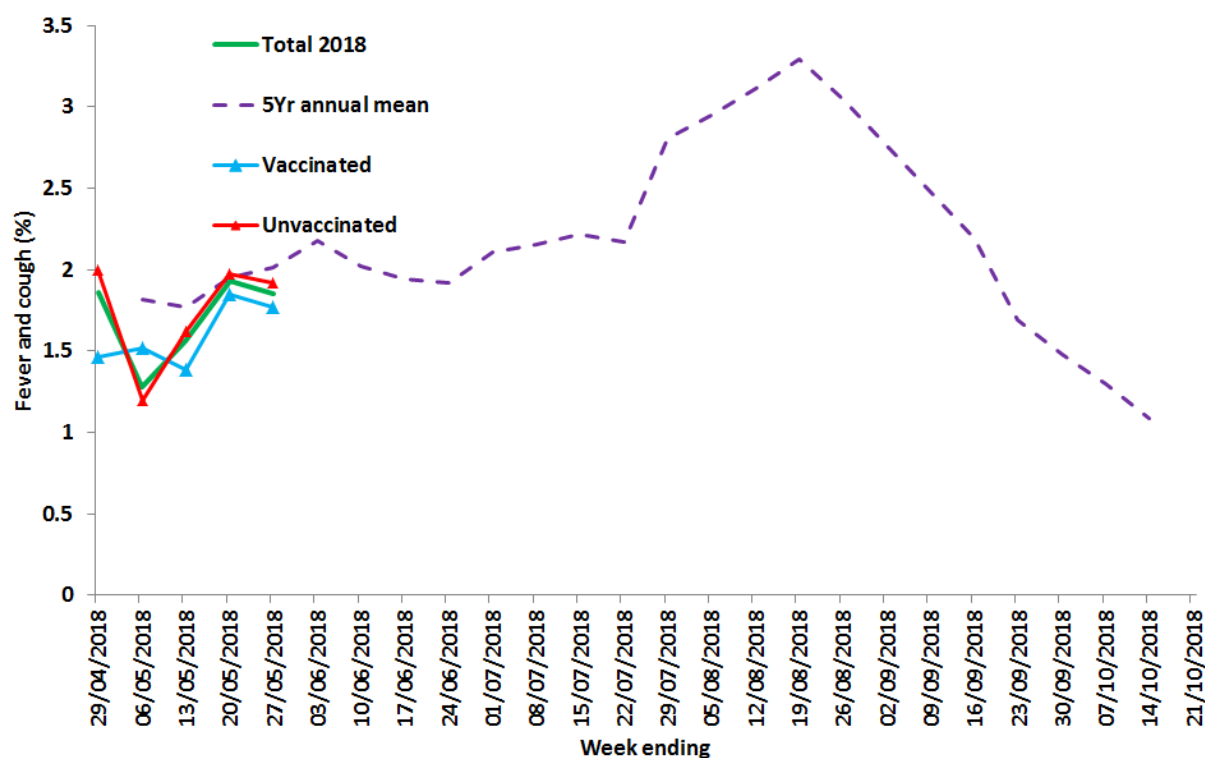
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

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

In week 21 FluTracking received reports for 11,409 people in NSW with the following results:

- 1.8% of respondents reported fever and cough, similar to the previous week (1.9%) and lower than the five year annual mean (2.0%) (Figure 10).
- Among respondents who reported being vaccinated for influenza in 2018, 1.8% reported fever and cough compared to the 1.9% rate reported among unvaccinated respondents (Figure 10).
- 1.1% of respondents reported fever, cough and absence from normal duties, lower than the previous week (1.2%).

Figure 10: FluTracking – Percent of NSW participants reporting fever and cough by vaccination status.



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

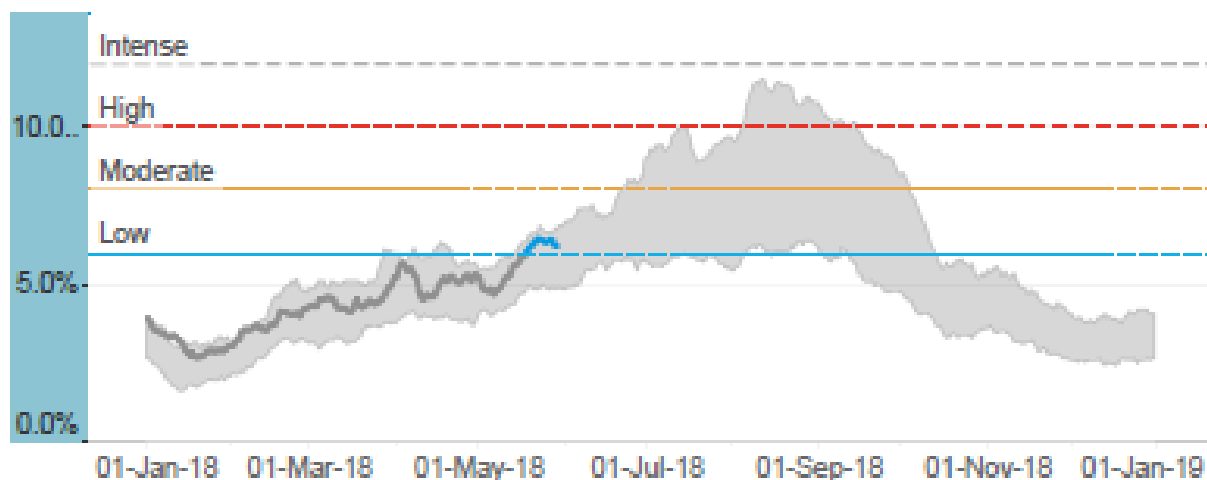
For further information on the project and how to participate please see the [FluTracking](#) website.

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 week 21 the number of ILI-related calls to Healthdirect Australia for NSW decreased but remained in the low-medium range of activity (Figure 11).

Figure 11: Healthdirect Australia – ILI-related calls as a proportion of all calls for NSW, 2018 to week 21, compared to the weekly minimum and maximum range between 2012 and 2017.



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

National and International Influenza Surveillance

National Influenza Surveillance

Although national influenza surveillance reports are not produced at this time of year, most jurisdictions are reporting low influenza activity. Total national reports of laboratory-confirmed influenza in April were similar or lower than for April 2017.

For further information on the National Notifiable Disease Surveillance System, which includes laboratory-confirmed influenza reports, see: <http://www9.health.gov.au/cda/source/cda-index.cfm>.

Global Influenza Update

The latest [WHO global update on 28 May 2018](#) provides data up to 13 May. Influenza activity returned to inter-seasonal levels in most of the countries in the temperate zone of the northern hemisphere. Activity increased in some countries in tropical America. In the temperate zone of the southern hemisphere, influenza activity increased but remained below the seasonal thresholds in most countries. Worldwide, seasonal influenza subtypes A and B accounted for approximately the same proportion of influenza 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 2 March 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 influenza A(H7N4), A(H7N9) and A(H9N2) viruses were reported. The overall risk assessment for these viruses remains unchanged. Whenever avian influenza viruses are circulating in poultry, sporadic infections and small clusters of human cases are possible in people exposed to infected poultry or contaminated environments, therefore sporadic human cases would not be unexpected.

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 quadrivalent 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/INFIHM-16-0019/2016 (H3N2)-like virus ⁸
- a B/Phuket/3073/2013-like virus (Yamagata lineage)
- 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/>.

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.