

NSW Health Influenza Surveillance Report

Week 24: 12 to 18 June, 2017

Summary:

- Influenza activity is continuing to increase, consistent with the flu season.
- The impact of influenza on the health sector is increasing.
- The peak of influenza activity is likely to be in the next 4-7 weeks.
- Influenza B strains are circulating at slightly higher levels than influenza A strains.

In this reporting week:

- [Hospital Surveillance](#) – influenza like illness (ILI) presentations to selected emergency departments continued to increase and is close to the seasonal threshold.
- [Laboratory surveillance](#) – the total number of influenza isolations increased this week with the proportion of respiratory samples positive for influenza higher at 9.7%.
- [Community surveillance](#) – influenza notifications increased in metropolitan local health districts (LHD). General Practice ILI activity remained steady. Two aged care facilities reported influenza A outbreaks.
- [National and international influenza surveillance](#) – influenza activity has increased slightly in the last month, but remains at inter-seasonal levels across Australia.
- [Recommended composition of 2017 influenza vaccines](#) – the 2017 Australian influenza vaccines cover two A and two B strains, including one A strain change from the 2016 influenza vaccines.

About this report:

Health Protection NSW collects and analyses surveillance data on influenza and other respiratory viruses. Surveillance reports are produced weekly commencing in May, and continuing until the end of the influenza season. Monthly reports are produced throughout the rest of the year.

The influenza surveillance reports include data from a range of surveillance systems and sources concerned with Emergency Department illness surveillance, laboratory (virological) surveillance, and community illness surveillance. Pneumonia and influenza mortality data are also monitored and reported upon periodically.

For further information on influenza see the [NSW Health Influenza website](#).

1. Hospital Surveillance

NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

For the week ending 18 June 2017:

- ILI presentations [2] increased this week but were within the usual range for this time of year (Figure 1 and Table 1).
- The index of increase for ILI presentations was higher 12.7 on 18 June, just below the seasonal threshold of 15. The proportion of ILI presentations to all ED presentations was still relatively low at 1.1 per 1000 presentations, but higher than the previous week (0.9).
- ED presentations for pneumonia [3] decreased but were within the usual range for this time of year (Table 1.)
- ILI presentations which resulted in admission increased and were above the usual range for this time of year (Figure 2 and Table 1). Admissions were significantly elevated at Sydney's Royal Prince Alfred Hospital.
- Admissions for pneumonia decreased and were within the usual range for this time of year overall (Table 1). Pneumonia and ILI presentations which resulted in admission to critical care decreased and were within the usual range for this time of year (Table 1).
- Bronchiolitis presentations this week increased but were within the usual range for this time of year (Figure 3 and Table 1). Presentations were significantly elevated at Lithgow Health Services and Albury Base Hospital.

Figure 1: Total weekly counts of ED visits for influenza-like illness, all ages, from 1 January – 18 June, 2017 (black line), compared with each of the 5 previous years (coloured lines).

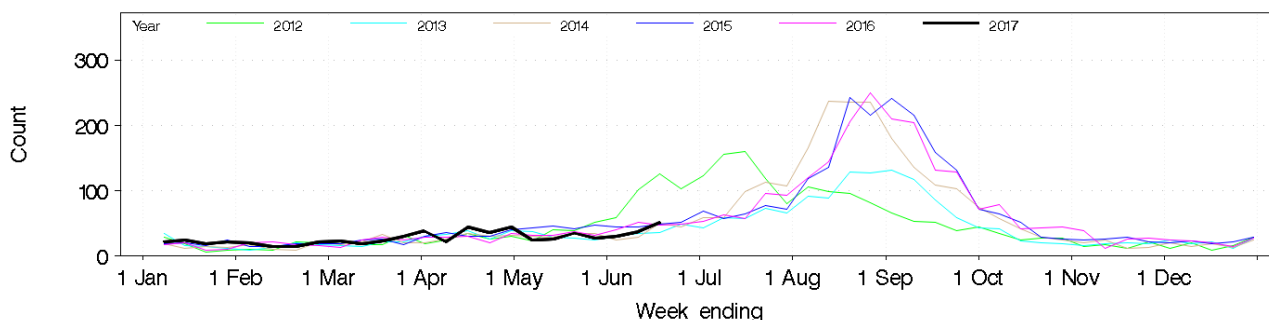
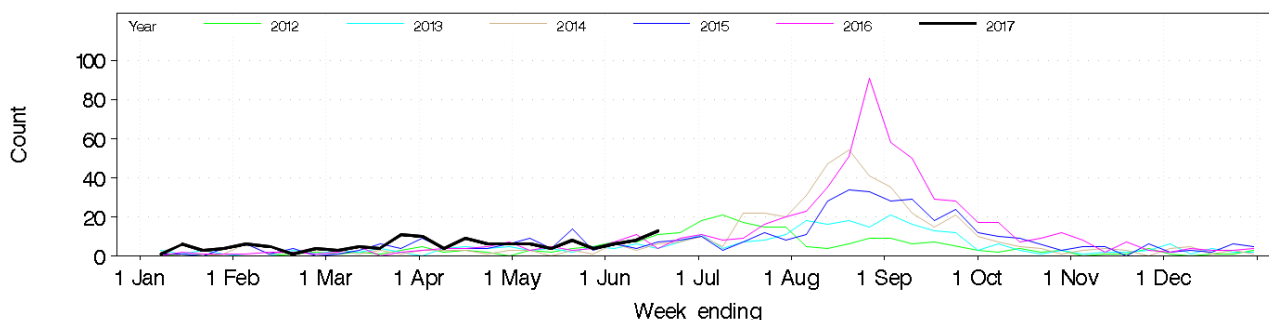


Figure 2: Total weekly counts of ED presentations for influenza-like-illness that were admitted, all ages, from 1 January – 18 June 2017 (black line), compared with each of the 5 previous years (coloured lines).



¹ 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. Recent counts are subject to change. Data from 60 NSW emergency departments are included. The coverage of rural EDs is lower than metropolitan EDs. Data shown represent unplanned presentations to hospital EDs.

² 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.

³ 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'.

Figure 3 Total weekly counts of ED presentations for bronchiolitis, all ages, from 1 January – 18 June, 2017 (black line), compared with each of the 5 previous years (coloured lines).

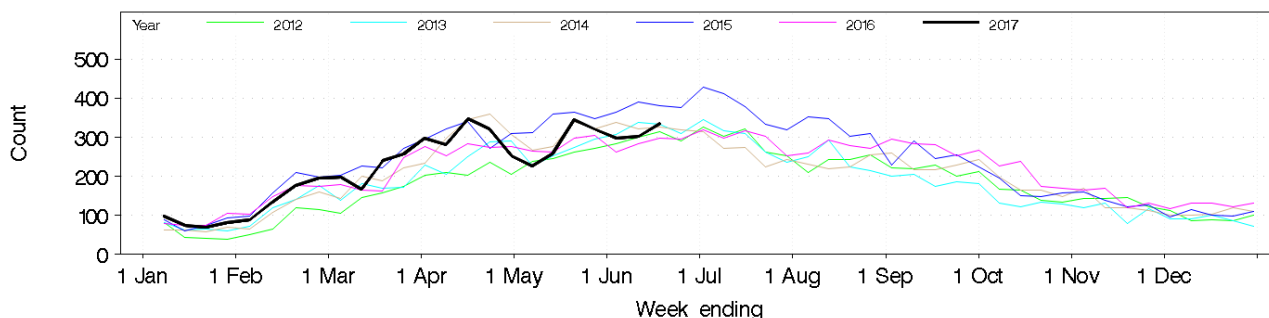


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 18 June 2017. Includes data from 60 NSW EDs and the NSW Ambulance Division.

Data source	Diagnosis or problem category	Trend since last week	Comparison with usual range*	Statistically elevated age groups	Statistically significant locations	Significant elevated severity indicators**	Comment
ED presentations, 60 NSW hospitals	Influenza-like illness (ILI)	Increased	Usual				Daily index of increase = 12.7
	ILI admissions	Increased	Above		Royal Prince Alfred Hospital		
	Pneumonia	Decreased	Usual				
	Pneumonia admissions	Decreased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Asthma	Decreased	Below				
	Bronchiolitis	Increased	Usual		Lithgow Health Services Albury Base Hospital		Daily index of increase = 33.2 Bronchiolitis is a disease of infants.
	Breathing problems	Increased	Above	Under 5 years	Central Coast LHD	Admissions	
	All respiratory illness, fever and unspecified infections	Increased	Usual		Hunter New England LHD		

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.

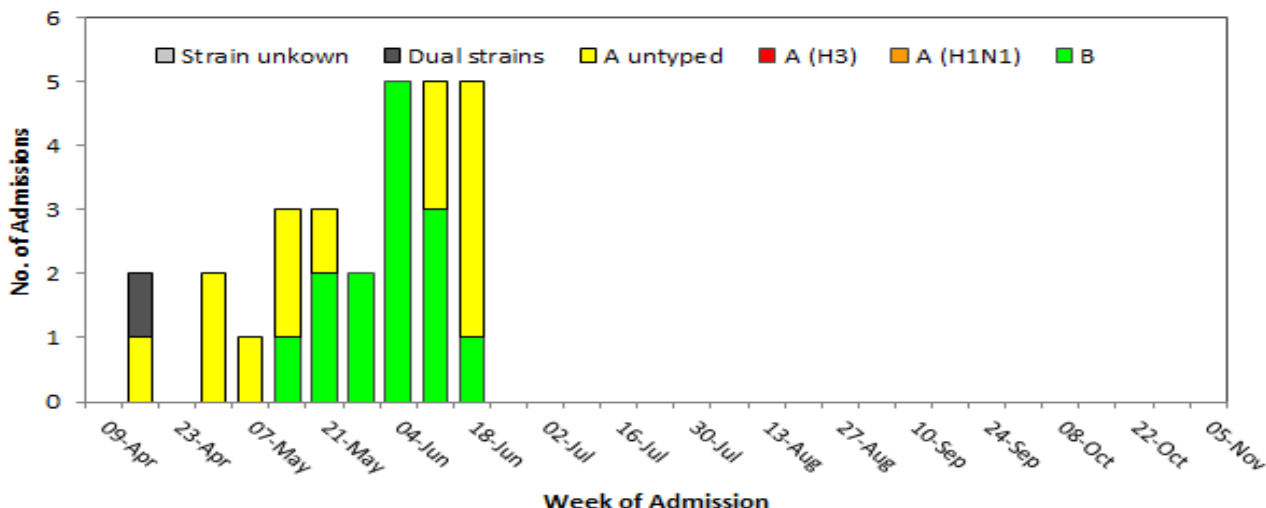
In NSW, three hospitals participate in providing weekly FluCAN data: Westmead Hospital, John Hunter Hospital and the Children’s Hospital at Westmead.

During week 24 there were 5 influenza admissions in NSW sentinel hospitals (Figure 4); 4 due to influenza A and 1 due to influenza B.

Since 1 April 2017, there have been 28 hospital admissions reported for influenza; 13 due to influenza A, 14 due to influenza B and 1 with a co-infection (Figure 4). Of these admissions, 19 were paediatric cases (<16 years of age) and 9 were in adults.

Of the 28 cases two cases have been admitted to a critical care ward.

Figure 4: FluCAN – Number of confirmed influenza hospital admissions in NSW, 9 April – 18 June, 2017.



2. Laboratory Surveillance

For the week ending 18 June 2017 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [4] which tested positive for influenza A or influenza B continued to increase (Table 2, Figure 5).

Overall, 9.7% of tests for respiratory viruses were positive for influenza, higher from the 8.0% influenza-positive rate of the previous week (Figure 5). Influenza B strains were circulating at slightly higher levels than influenza A strains (Figure 6).

Rhinovirus was the leading respiratory virus reported, with other viruses circulating at usual levels for this time of year (Table 2).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 18 June 2017.

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 (%)A	Total (%)										
29/01/2017	9981	489 (4.9%)	53 (10.8%)	4 (0.8%)	432 (88.3%)	92 (0.9%)	374	433	323	1462	236	131			
26/02/2017	12273	564 (4.6%)	78 (13.8%)	7 (1.2%)	479 (84.9%)	83 (0.7%)	430	458	719	2772	170	248			
02/04/2017*	21161	724 (3.4%)	83 (11.5%)	16 (2.2%)	625 (86.3%)	158 (0.7%)	684	1000	1830	5427	290	530			
30/04/2017	18089	377 (2.1%)	63 (16.7%)	15 (4.0%)	299 (79.3%)	135 (0.7%)	588	901	2600	4202	231	468			
04/06/2017*	26372	657 (2.5%)	67 (10.2%)	52 (7.9%)	538 (81.9%)	506 (1.9%)	1037	852	3275	6859	299	503			
Week ending															
11/06/2017	5999	236 (3.9%)	18 (7.6%)	10 (4.2%)	208 (88.1%)	245 (4.1%)	244	171	735	1469	86	96			
18/06/2017	5583	236 (4.2%)	20 (8.5%)	13 (5.5%)	203 (86.0%)	304 (5.4%)	257	143	722	1390	87	97			

Notes: * Five-week reporting period. ** Human metapneumovirus

⁴ 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, Laverly Pathology, Medlab, SydPath, VDRLab

Figure 5: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 18 June 2017.

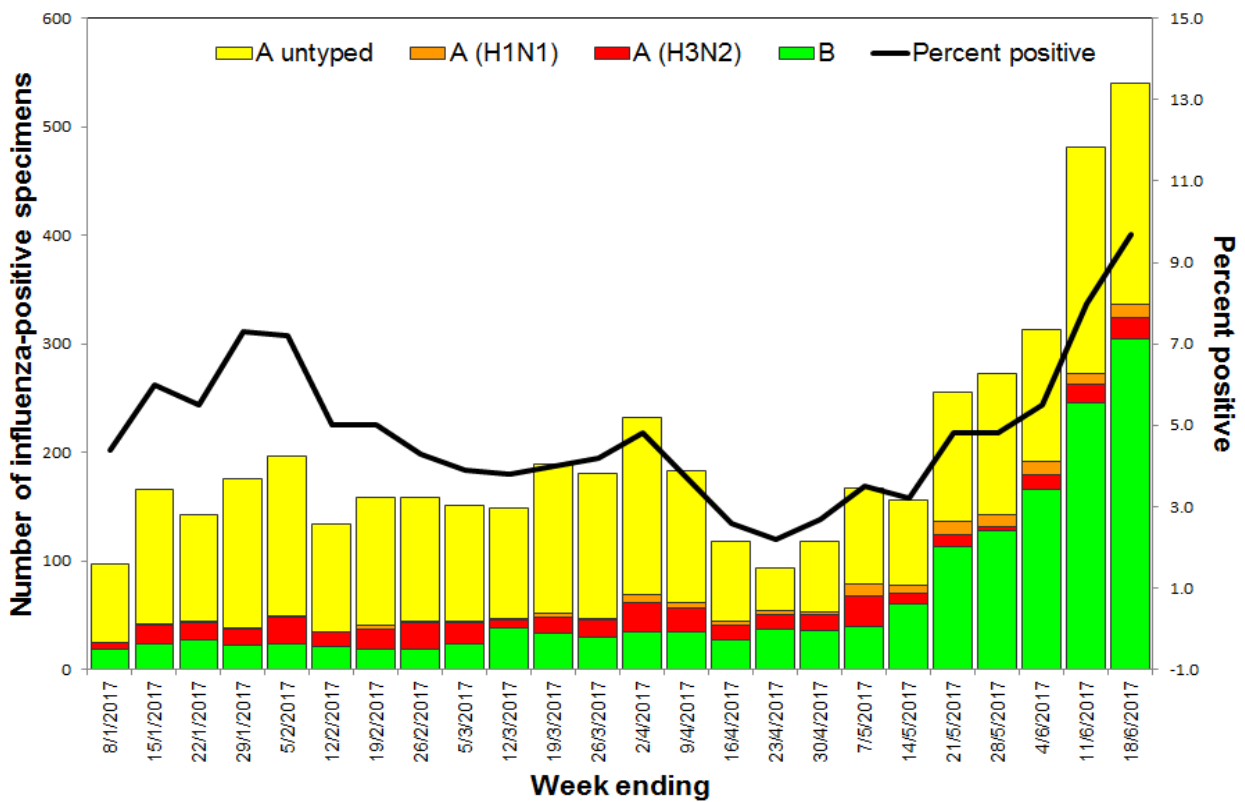
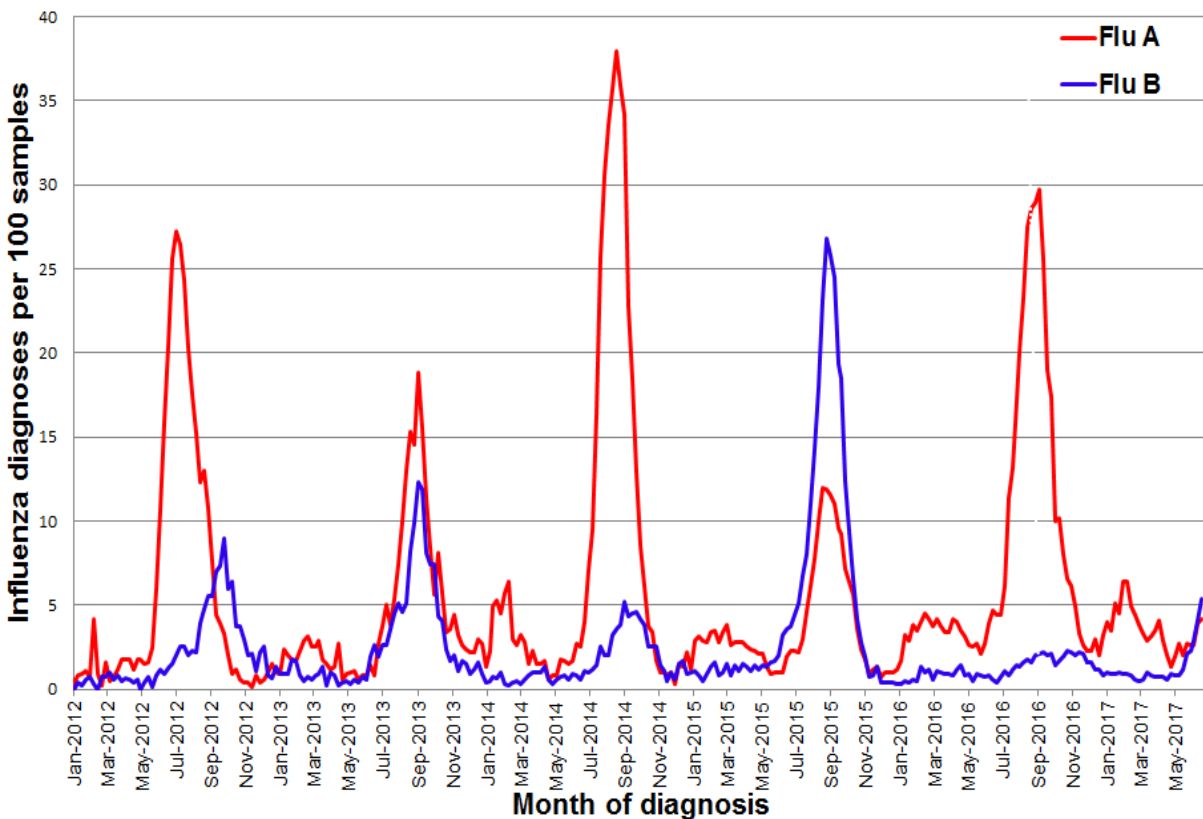


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2012 to 18 June 2017, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 18 June there were 453 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 404 notifications in the previous week.

Notifications remained highest in Sydney metropolitan LHDs and Hunter New England LHD. Population rates remained low in most regions, but were further increased in Northern NSW and some Sydney metropolitan LHDs (Table 3).

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

Local Health District	Week ending 18 Jun 2017		Average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	6	1.74	4	1.09
Far West	0	0	1	3.27
Hunter New England	32	3.44	19	2.02
Illawarra Shoalhaven	5	1.22	7	1.77
Mid North Coast	1	0.45	7	3.26
Murrumbidgee	3	1.24	2	0.69
Nepean Blue Mountains	16	4.16	10	2.6
Northern NSW	30	9.79	14	4.65
Northern Sydney	96	10.49	63	6.86
South Eastern Sydney	75	8.08	47	5.09
South Western Sydney	29	2.93	32	3.26
Southern NSW	1	0.47	1	0.58
Sydney	64	9.77	23	3.44
Western NSW	4	1.43	4	1.43
Western Sydney	91	9.38	60	6.16

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 two influenza A outbreaks reported this week in a residential care facilities (Table 4).

In the year to date there have been 17 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): 16 have been due to influenza A and one was due to influenza B. At least 249 residents were reported to have had ILI symptoms and 23 required hospitalisation. Fourteen deaths in residents linked to these outbreaks have been reported, all of whom were noted to have other significant co-morbidities.

Table 4: Reported influenza outbreaks in NSW institutions, January 2010 to 18 June 2017.

Year	2010	2011	2012	2013	2014	2015	2016	2017*
No. of outbreaks	2	4	39	12	120	103	279	17

Notes: * Year to date.

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 24 there were 32 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 2.3%, lower than the previous week (2.8%).

For further information please see the [ASPREN](#) website.

FluTracking.net

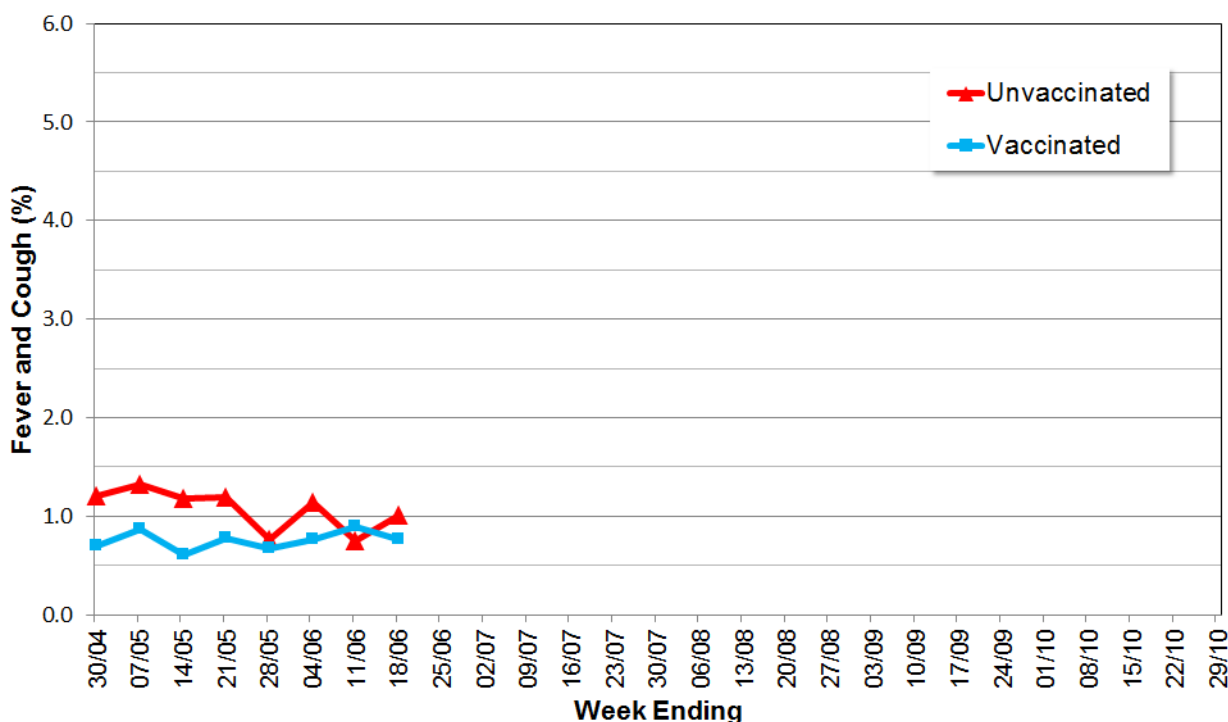
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

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

In week 24 FluTracking received reports for 8,034 people in NSW with the following results:

- 1.8% of respondents reported fever and cough, similar to the previous week (1.7%). Of these, 0.8% reported being vaccinated (Figure 7).
- 1.0% of respondents reported fever, cough and absence from normal duties, higher than the previous week (0.9%).

Figure 7: FluTracking – Percent of NSW participants reporting fever and cough by vaccination status.



Notes: From 2016, if a participant reported influenza-like illness symptoms for more than one consecutive week, only the first reported week of symptoms is included. Participants are not considered vaccinated until two or more weeks has elapsed since their recorded time of vaccination

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

4. National and International Influenza Surveillance

National Influenza Surveillance

In the *Australian Surveillance Report No.1*, with data up to 26 May 2017, influenza activity has increased slightly in the last month, but remains at inter-seasonal levels across Australia.

Of note:

- Detections of influenza B viruses have increased in recent weeks, consistent with the predominance of influenza B viruses worldwide currently.
- Respiratory viruses other than influenza are more commonly causing influenza-like illness presentations to sentinel general practitioners, with rhinovirus and respiratory syncytial virus (RSV) detected most frequently.
- There is no indication of the potential severity of the 2017 season at this time.
- To date, the seasonal influenza vaccines appear to be a good match for circulating virus strains.

Follow the link for the [Australian Influenza Surveillance Reports](#) which provide the latest information on national influenza activity.

Global Influenza Update

The latest [WHO global update on 12 June 2017](#) provides data up to 28 May. WHO reports that in the temperate zone of the southern hemisphere, influenza activity started to increase slowly but remained low in general. Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Worldwide, influenza B viruses were predominant.

Follow the link for the [WHO influenza surveillance reports](#).

Avian Influenza Update

WHO publishes monthly updated risk assessments of human infections with avian influenza viruses at [Influenza at the human-animal interface](#). These reports provide updated information on human cases of infection with H5 and H7 clade viruses and outbreaks among animals.

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.

For H7N9, WHO has noted current evidence suggests that this virus has not acquired the ability of sustained transmission among humans but it is possible that limited human-to-human transmission may have occurred where there was unprotected close contact with symptomatic human cases.

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](#).

5. Composition of 2017 Australian influenza vaccines

The WHO Consultation on the Composition of Influenza Vaccines for the 2017 Southern Hemisphere was held in Geneva on 26-28 September 2016. Following the Consultation, WHO announced its recommendations for the composition of trivalent vaccine for use in the 2017 Southern Hemisphere influenza season as follows:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus (Victoria lineage)

WHO also recommended that quadrivalent vaccines containing two influenza B viruses and should contain the above three viruses and a B/Phuket/3073/2013-like virus.

Of note, there has been replacement of the A/California/7/2009 (H1N1)pdm09-like virus component with an A/Michigan/45/2015 (H1N1)pdm09-like virus in the vaccine recommendations, the first time the recommended A(H1N1) strain has changed since 2010.

All influenza vaccination included in the Australian National Immunisation Influenza Program in 2017 are quadrivalent vaccines.

More details about the most recent influenza vaccine recommendations can be found at: http://www.who.int/influenza/vaccines/virus/recommendations/2017_south/en/.

The WHO consultation on the composition of influenza vaccines for the Northern Hemisphere 2017-18 influenza season was held in February 2017. The recommended composition was unchanged from the composition recommended for the 2017 Southern Hemisphere vaccines. Information about the Northern Hemisphere vaccine recommendations can be found at: [WHO | Recommended composition of influenza virus vaccines for use in the 2017-2018 northern hemisphere influenza season.](#)