

NSW Health Influenza Surveillance Report

Week 25: 19 to 25 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 3-6 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 11.1%.
- [Community surveillance](#) – influenza notifications increased in metropolitan local health districts (LHD). General Practice ILI activity increased. Two aged care facilities reported respiratory outbreaks.
- [National and international influenza surveillance](#) – influenza activity is variable across Australia; increasing in some regions, while low and stable in others.
- [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 25 June 2017:

- ILI presentations [2] increased again this week but were within the usual range for this time of year (Figure 1 and Table 1).
- As of 25 June 2017, the daily index of increase for ILI presentations across NSW was 15.9. The index of increase first exceeded the ED seasonal threshold of 15 on 23 June.
- The proportion of ILI presentations to all ED presentations was still relatively low at 1.4 per 1000 presentations, but higher than the previous week (1.1).
- ED presentations for pneumonia [3] increased but remained within the usual range for this time of year (Table 1.)
- ILI presentations resulting in admission decreased and were within the usual range for this time of year overall (Figure 2 and Table 1), but significantly elevated at Calvary Mater Hospital.
- Admissions for pneumonia increased and were within the usual range for this time of year overall (Table 1). Pneumonia and ILI presentations requiring admission to critical care also increased and were above the usual range, particularly at Campbelltown Hospital (Table 1).
- Bronchiolitis presentations increased but were within the usual range for this time of year (Figure 3 and Table 1). Presentations were significantly elevated at Broken Hill Base Hospital.

Figure 1: Total weekly counts of ED visits for influenza-like illness, all ages, from 1 January – 25 June, 2017 (black line), compared with each of the 5 previous years (coloured lines).

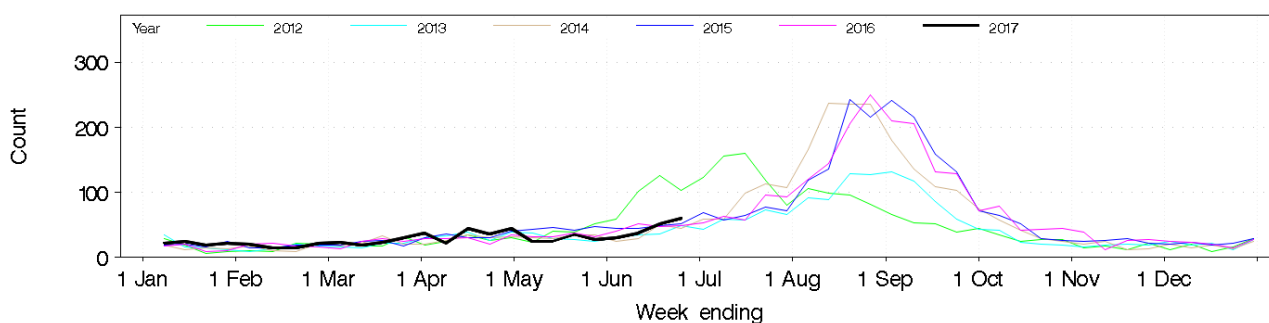
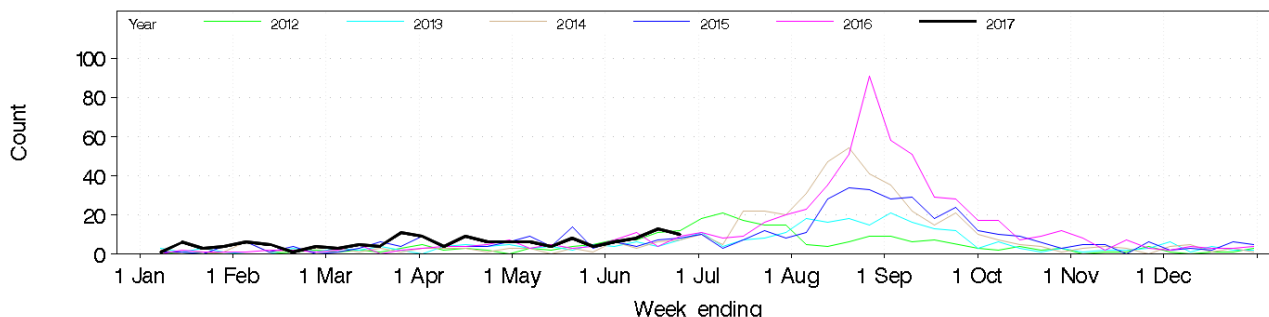


Figure 2: Total weekly counts of ED presentations for influenza-like-illness that were admitted, all ages, from 1 January – 25 June 2017 (black line), compared with each of the 5 previous years (coloured lines).



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 – 25 June, 2017 (black line), compared with each of the 5 previous years (coloured lines).

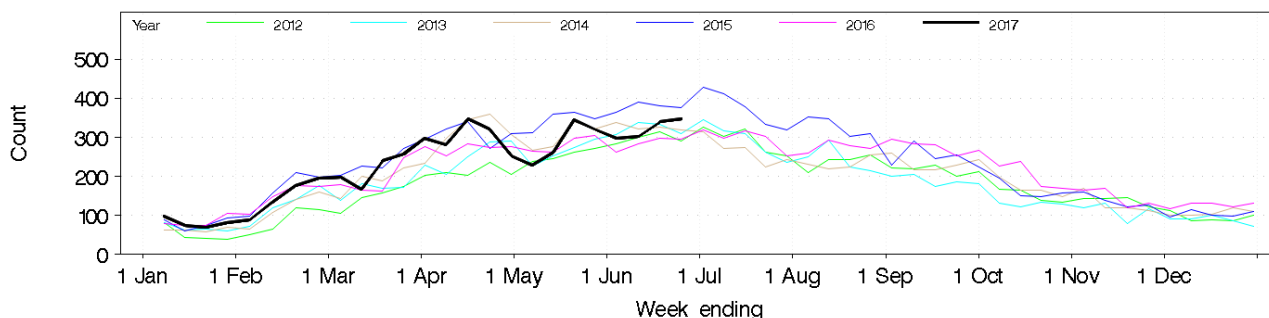


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 25 June 2017. Includes data from 60 NSW EDs and the NSW Ambulance Division.

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 = 15.9
	ILI admissions	Decreased	Usual		Calvary Mater Newcastle		
	Pneumonia	Increased	Usual				
	Pneumonia admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Increased	Above		Campbelltown Hospital		
	Asthma	Steady	Usual		Fairfield Hospital		
	Bronchiolitis	Increased	Usual		Broken Hill Base Hospital		Daily index of increase = 34.0 Bronchiolitis is a disease of infants.
	Breathing problems	Decreased	Above				
	All respiratory illness, fever and unspecified infections	Decreased	Usual				

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.

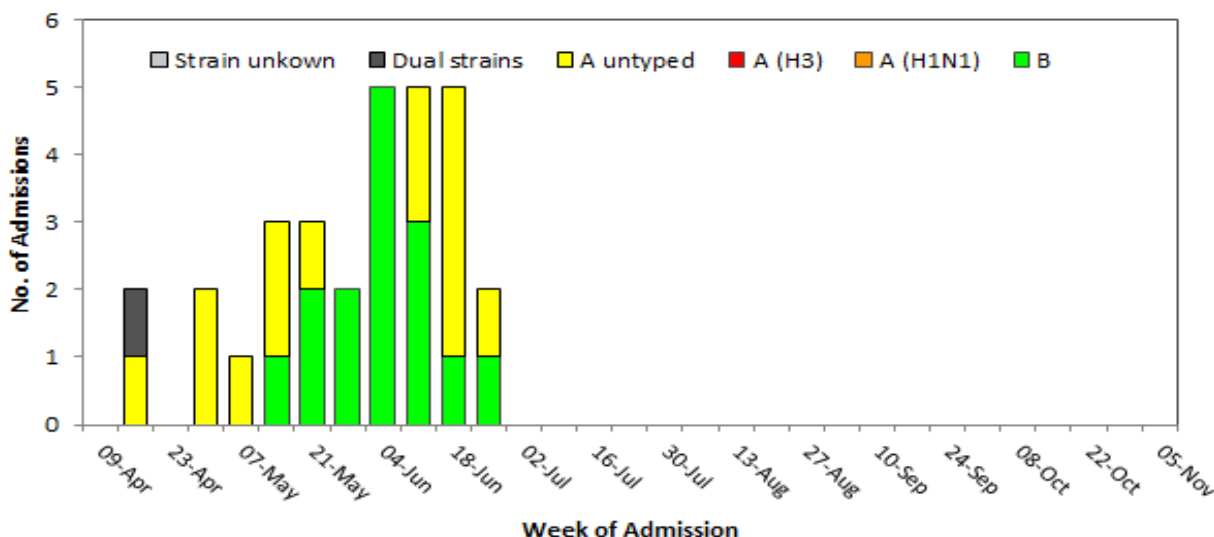
In NSW, three hospitals participate in providing weekly FluCAN data: Westmead Hospital, John Hunter Hospital and the Children’s Hospital at Westmead.

During week 25 there were 2 influenza admissions in NSW sentinel hospitals (Figure 4); 1 due to influenza A and 1 due to influenza B.

Since 1 April 2017, there have been 30 hospital admissions reported for influenza; 14 due to influenza A, 15 due to influenza B and 1 with a co-infection (Figure 4). Of these admissions, 20 were paediatric cases (<16 years of age) and 10 were in adults.

Of the 30 cases, 2 cases have been admitted to a critical care ward.

Figure 4: FluCAN – Number of confirmed influenza hospital admissions in NSW, 9 April – 25 June, 2017.



2. Laboratory Surveillance

For the week ending 25 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, 11.4% of tests for respiratory viruses were positive for influenza, higher from the 9.7% 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 25 June 2017.

Month ending	Total Tests	TEST RESULTS															
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	HMPV **	Entero		
		Total	(%)	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
25/06/2017	6682	355	(5.3%)	29	(8.2%)	19	(5.4%)	307	(86.5%)	409	(6.1%)	250	195	811	1430	108	146

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, Laverty Pathology, Medlab, SydPath, VDRLab

Figure 5: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 25 June 2017.

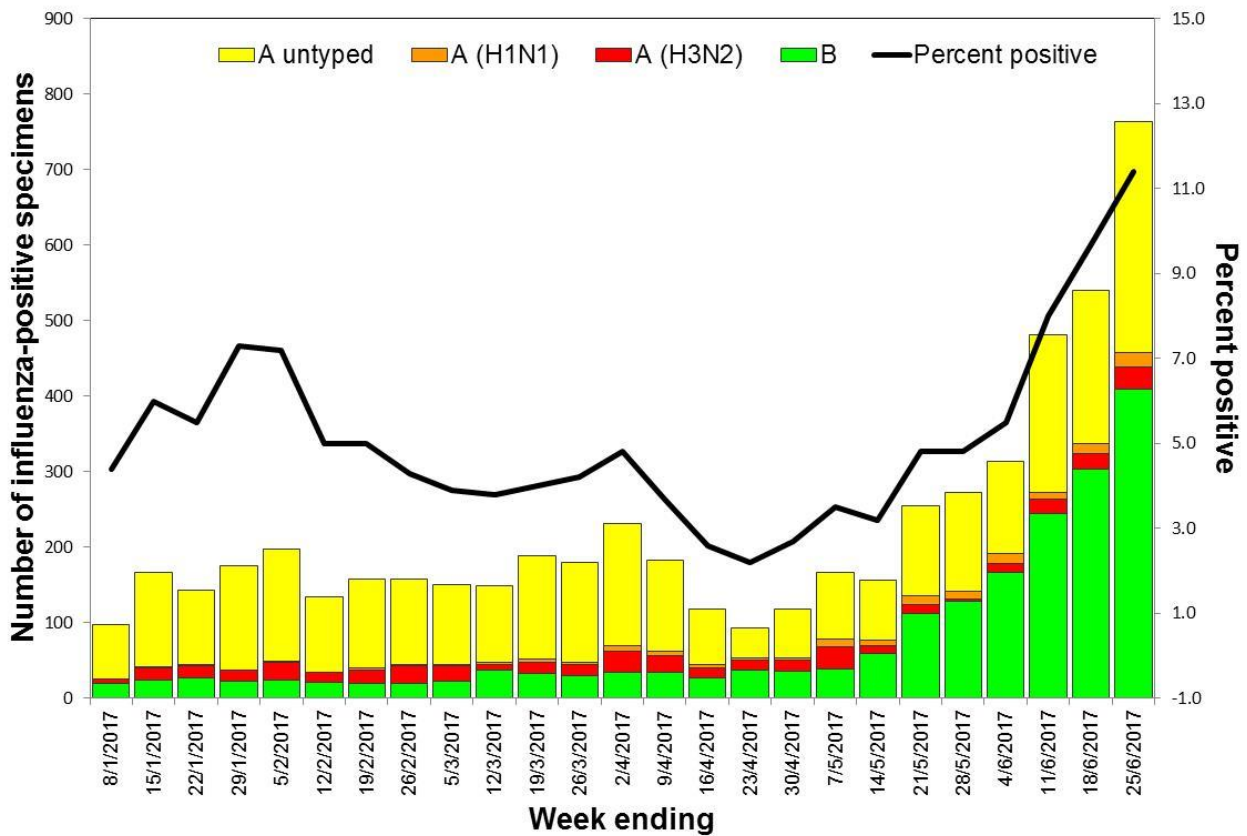
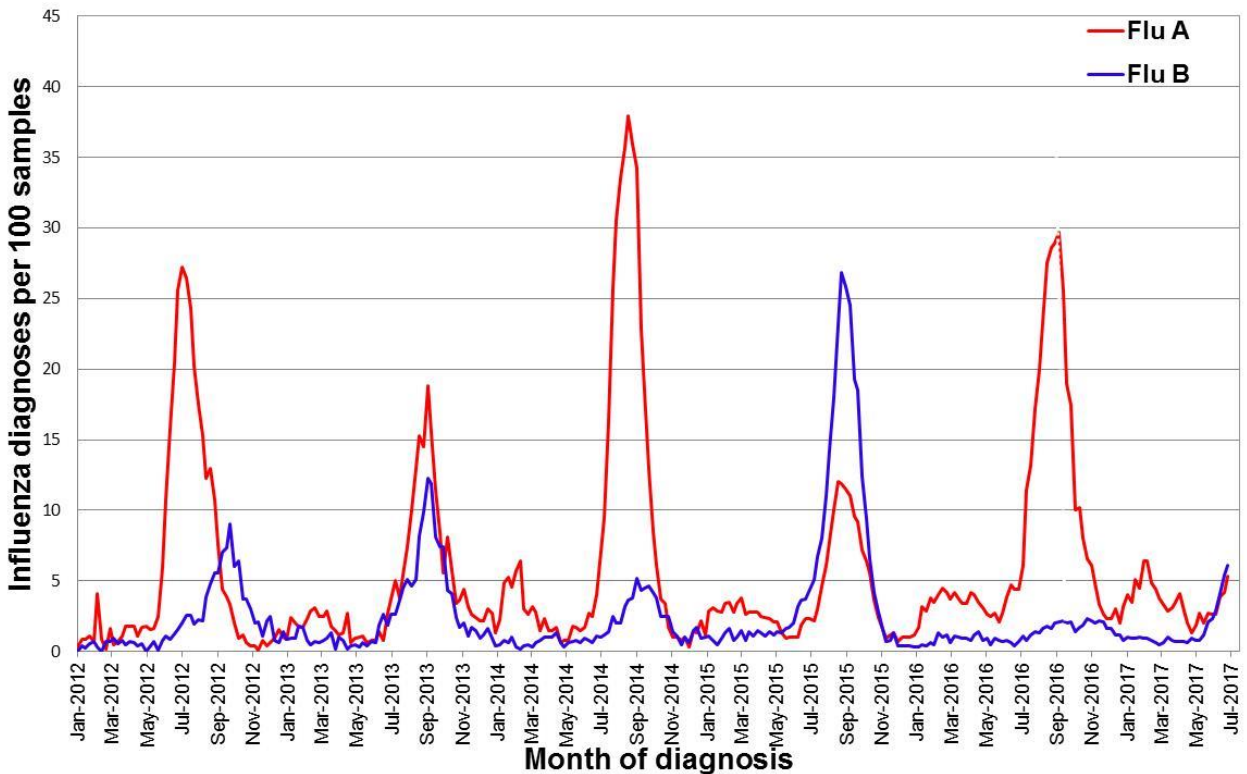


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2012 to 25 June 2017, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 25 June there were 721 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 453 notifications in the previous week.

Notifications remained highest in Sydney metropolitan LHDs. Population rates remained low in the south and inland parts of the state, but continue to increase in Northern NSW and most Sydney metropolitan LHDs (Table 3).

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

Local Health District	Week ending 25 Jun 2017		Average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	28	8.11	5	1.38
Far West	0	0	1	3.27
Hunter New England	41	4.41	23	2.5
Illawarra Shoalhaven	7	1.71	7	1.77
Mid North Coast	6	2.7	6	2.47
Murrumbidgee	8	3.3	2	0.83
Nepean Blue Mountains	36	9.36	12	3.12
Northern NSW	42	13.7	20	6.44
Northern Sydney	135	14.75	73	7.98
South Eastern Sydney	75	8.08	60	6.41
South Western Sydney	50	5.05	38	3.86
Southern NSW	1	0.47	1	0.58
Sydney	85	12.98	36	5.46
Western NSW	8	2.86	3	1.16
Western Sydney	199	20.52	75	7.73

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 respiratory outbreaks reported this week in a residential care facilities; one was attributed to influenza A, while laboratory testing for the other outbreak is pending (Table 4).

In the year to date there have been 18 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): 17 have been due to influenza A and one was due to influenza B.

So far this year all reported outbreaks have been from aged care facilities; at least 246 residents were reported to have had ILI symptoms and 25 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 25 June 2017.

Year	2010	2011	2012	2013	2014	2015	2016	2017*
No. of outbreaks	2	4	39	12	120	103	279	18

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 25 there were 39 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 3.6%, higher than the previous week (2.3%). However, 15/28 presentations for ILI were from one practice.

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

FluTracking.net

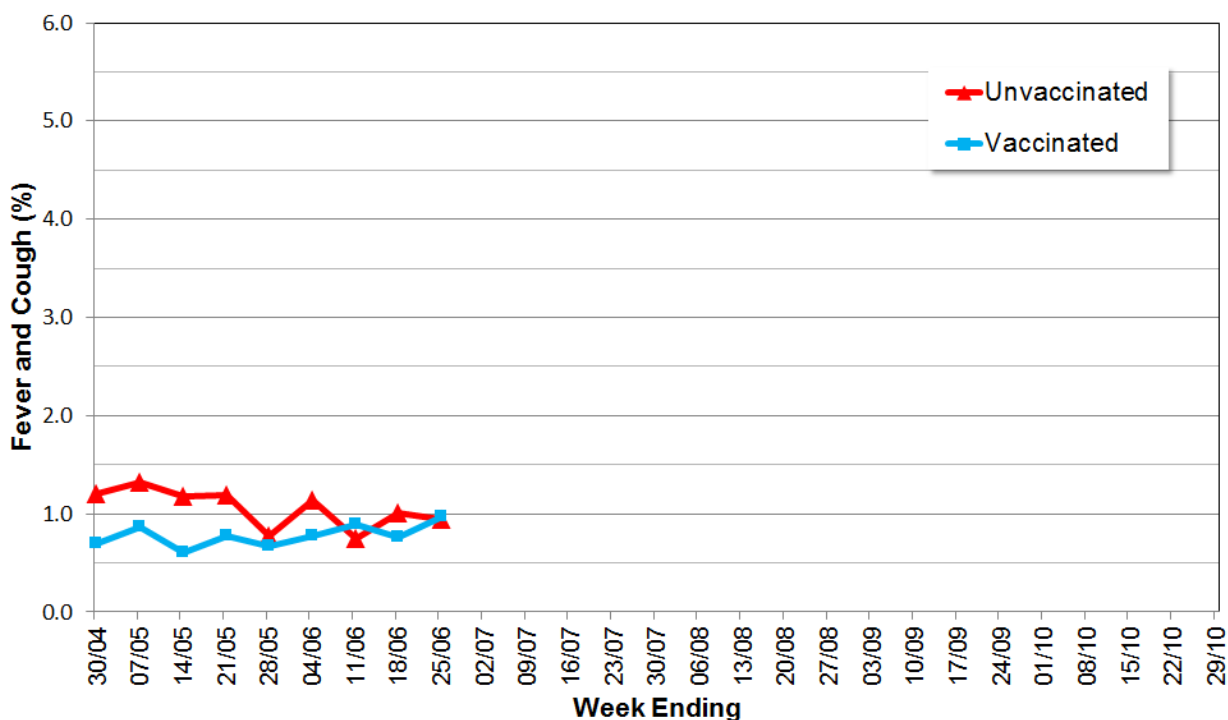
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

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

In week 25 FluTracking received reports for 7,831 people in NSW with the following results:

- 1.9% of respondents reported fever and cough, similar to the previous week (1.8%). Of these, 1.0% reported being vaccinated (Figure 7).
- 1.0% of respondents reported fever, cough and absence from normal duties, the same rate as the previous week.

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.2*, with data up to 9 June 2017, influenza activity is variable across Australia; increasing in some regions, while low and stable in others.

Of note:

- Respiratory viruses other than influenza are more commonly causing influenza-like illness presentations to sentinel general practitioners, with rhinovirus detected most frequently in the past fortnight.
- Detections of influenza B viruses have increased in recent weeks, consistent with the predominance of influenza B viruses worldwide currently.
- 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 26 June 2017](#) provides data up to 11 June. WHO reports that in the temperate zone of the southern hemisphere, influenza activity continued to increase and was above seasonal threshold levels in South America but remained low in general in Oceania.

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Worldwide, influenza A(H3N2) and B viruses co-circulated.

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, and made recommendations for the composition of influenza vaccines for use in the 2017 Southern Hemisphere influenza.

In Australia, all influenza vaccines included in the National Immunisation Program are quadrivalent influenza vaccines using the following composition:

- 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)
- a B/Phuket/3073/2013-like virus.

Of note, there has been replacement of the influenza A(H1N1) component of the vaccine. The A/California/7/2009 (H1N1)pdm09-like virus component has been replaced 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.

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.](#)