

NSW Health Influenza Surveillance Report

Week 26: 26 June to 2 July, 2017

Summary:

- Influenza activity has increased and is likely to continue to rise throughout July.
- The impact of influenza on the health sector is steadily increasing.
- Influenza A and B strains are circulating at similar levels.

In this reporting week:

- [Hospital surveillance](#) – influenza-like illness (ILI) presentations to selected emergency departments continued to increase.
- [Laboratory surveillance](#) – the total number of influenza isolations increased again this week with the proportion of respiratory samples positive for influenza higher at 15.5%.
- [Community surveillance](#) – influenza notifications increased in metropolitan local health districts (LHD). General Practice ILI activity decreased slightly. Four aged care facilities reported respiratory outbreaks.
- [National and international influenza surveillance](#) – influenza activity is increasing in most of the southern and central regions of Australia. Activity is sporadic and stable in northern parts of the country.
- [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 2 July 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 2 July 2017, the daily index of increase for ILI presentations across NSW was 17.0. 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, the same as the previous week.
- ED presentations for pneumonia [3] increased but remained within the usual range for this time of year (Table 1.)
- ILI presentations resulting in admission increased but were within the usual range for this time of year overall (Figure 2 and Table 1).
- 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 decreased and were below the usual range for this time of year (Table 1).
- Bronchiolitis presentations decreased and were within the usual range for this time of year (Figure 3 and Table 1).

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

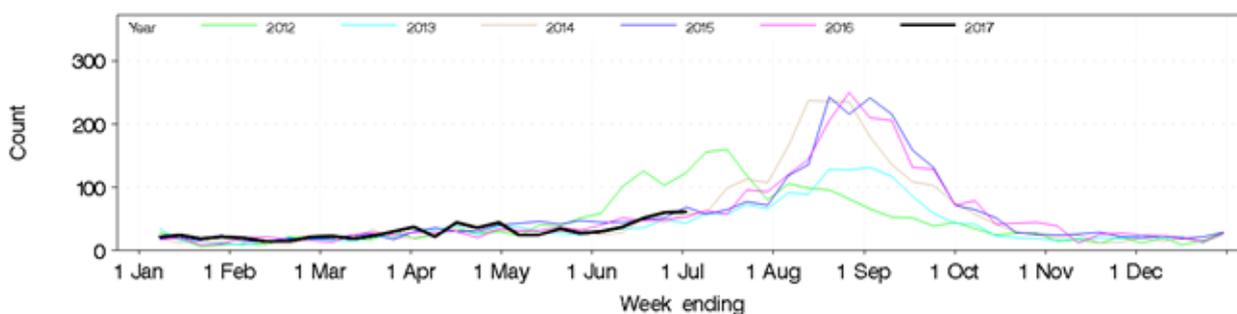
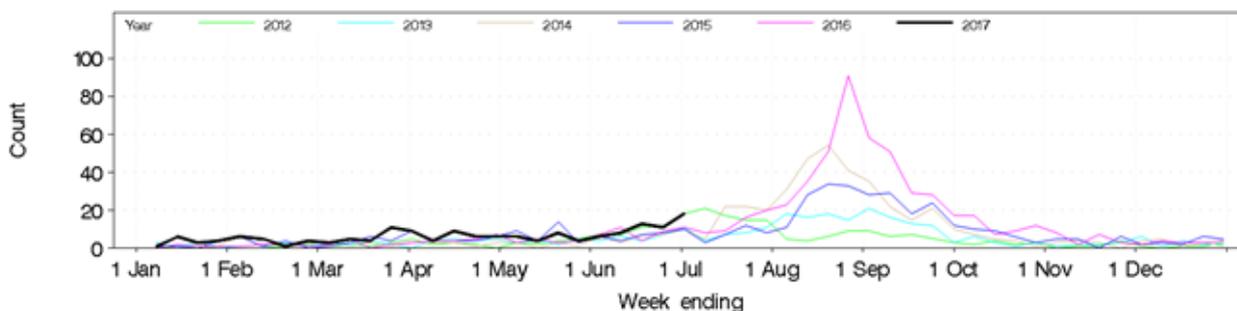


Figure 2: Total weekly counts of ED presentations for influenza-like-illness that were admitted, all ages, from 1 January – 2 July 2017 (black line), compared with each of the 5 previous years (coloured lines).



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

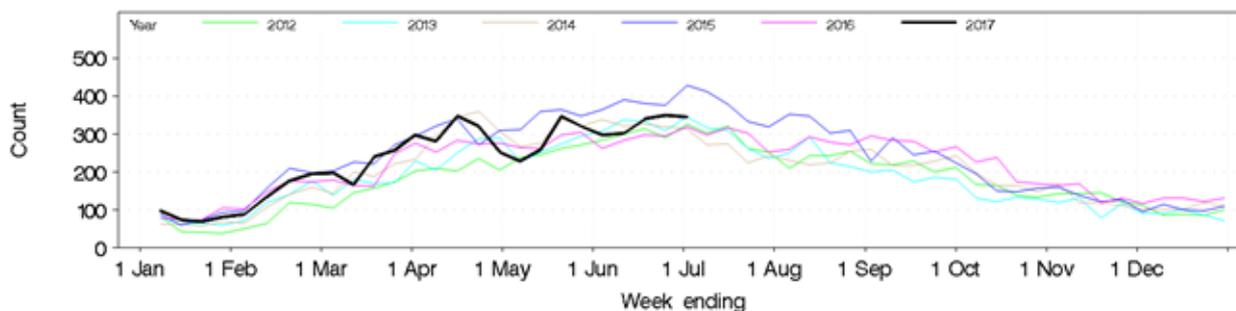


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 2 July 2017. Includes data from 60 NSW EDs and the NSW Ambulance Division.⁴

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 (61)	Usual (43-123)				Daily index of increase = 17.0
	ILI admissions	Increased (18)	Usual (10-18)				
	Pneumonia	Increased (540)	Usual (445-610)				
	Pneumonia admissions	Increased (396)	Usual (335-442)				
	Pneumonia and ILI critical care admissions	Decreased (23)	Below (28-33)				
	Asthma	Decreased (494)	Usual (462-573)				
	Bronchiolitis	Decrease (345)	Usual (313-429)				
	Breathing problems	Increased (603)	Above (418-512)	< 5yrs (179)		Admitted (311)	
	All respiratory illness, fever and unspecified infections	Increased (6,624)	Usual (5,566-6,856)	5- 16yrs (949) 65+yrs (1480)	The Tweed Hospital (160)		

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 26 there were 6 influenza admissions in NSW sentinel hospitals (Figure 4); 4 due to influenza A and 2 due to influenza B. Since 1 April 2017, there have been 40 hospital admissions reported for influenza; 20 due to influenza A, 19 due to influenza B and 1 with a co-infection

⁴ **Notes:***The usual range is the range of weekly counts for the same week in the previous five years for ED presentations, and the previous four years for ambulance Triple (000) calls.

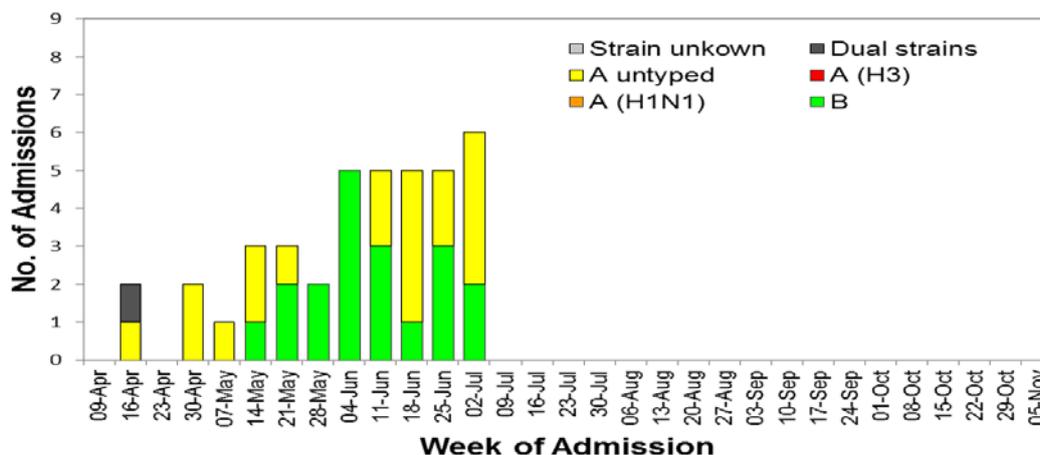
Key for trend since last week: Non-bold and green=decreased or steady; Non-bold and orange=increased

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) or four-year mean (Ambulance). Counts are statistically significant (shown in **bold**) if they are at least five standard deviations above the five-year mean for ED presentations or four-year mean for ambulance calls. The ‘daily index of increase’ is statistically significant above a threshold of 15.

LHD = Local Health District. **Severity indicators include: Admission to a ward or critical care service; Triage category 1; Ambulance arrival and Death in ED.

(Figure 4). Of these admissions, 28 were paediatric cases (<16 years of age) and 12 were in adults. Of the 40 cases, 2 cases have been admitted to a critical care ward.

Figure 4: FluCAN – Number of confirmed influenza hospital admissions in NSW, 9 April – 2 July, 2017.



2. Laboratory Surveillance

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

Overall, 15.5% of tests for respiratory viruses were positive for influenza, higher than the 11.4% rate of the previous week (Figure 5). Influenza A and B strains were circulating at similar levels (Figure 6).

Rhinovirus was the leading respiratory virus reported. Respiratory syncytial virus (RSV) activity remains higher than usual for this time of year (Table 2).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 2 July 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 (%)									
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			
2/07/2017	25565	1407 (5.5%)	104 (7.4%)	73 (5.2%)	1230 (87.4%)	1530 (6.0%)	1058	734	3291	5794	441	490			
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			
2/07/2017	7301	580 (7.9%)	37 (6.4%)	31 (5.3%)	512 (88.3%)	572 (7.8%)	307	225	1023	1505	160	151			

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

⁵ 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 2 July 2017.

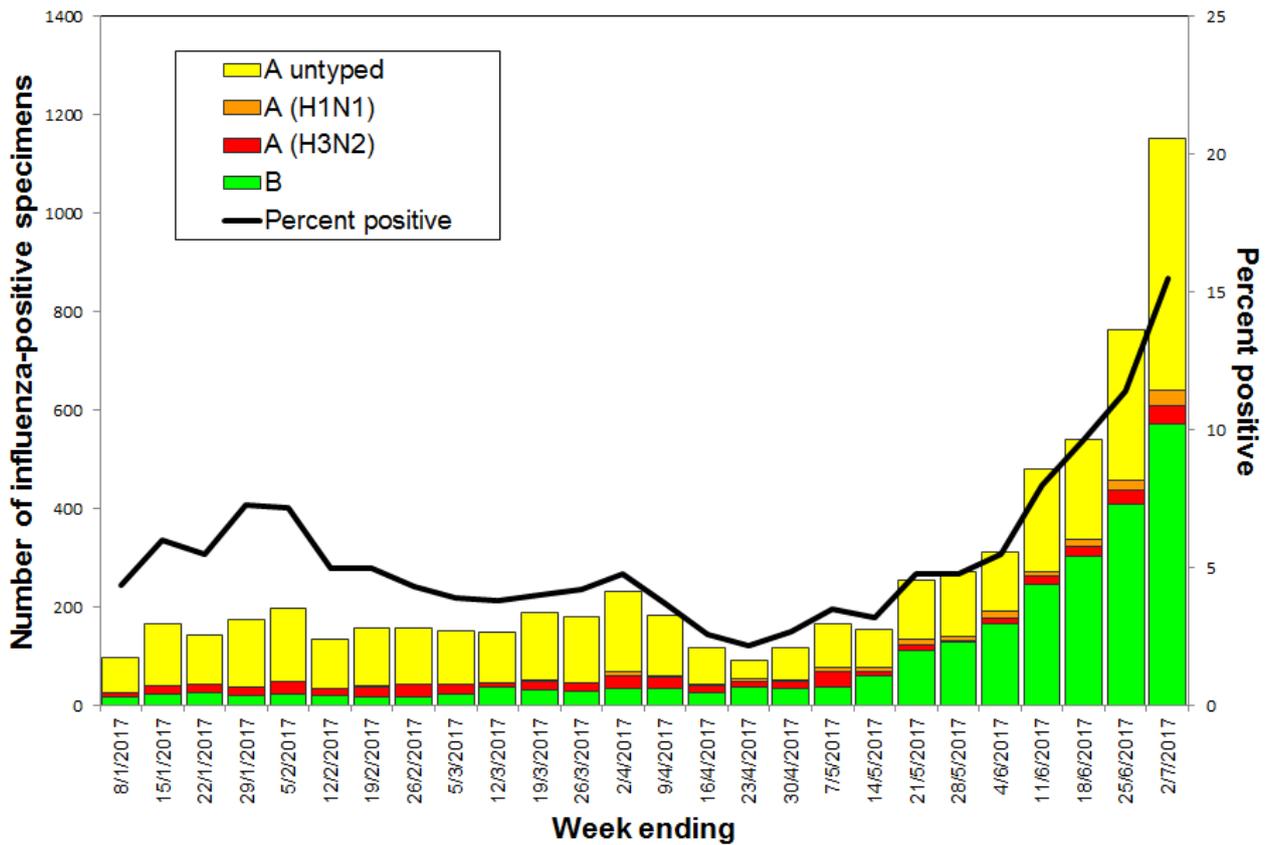
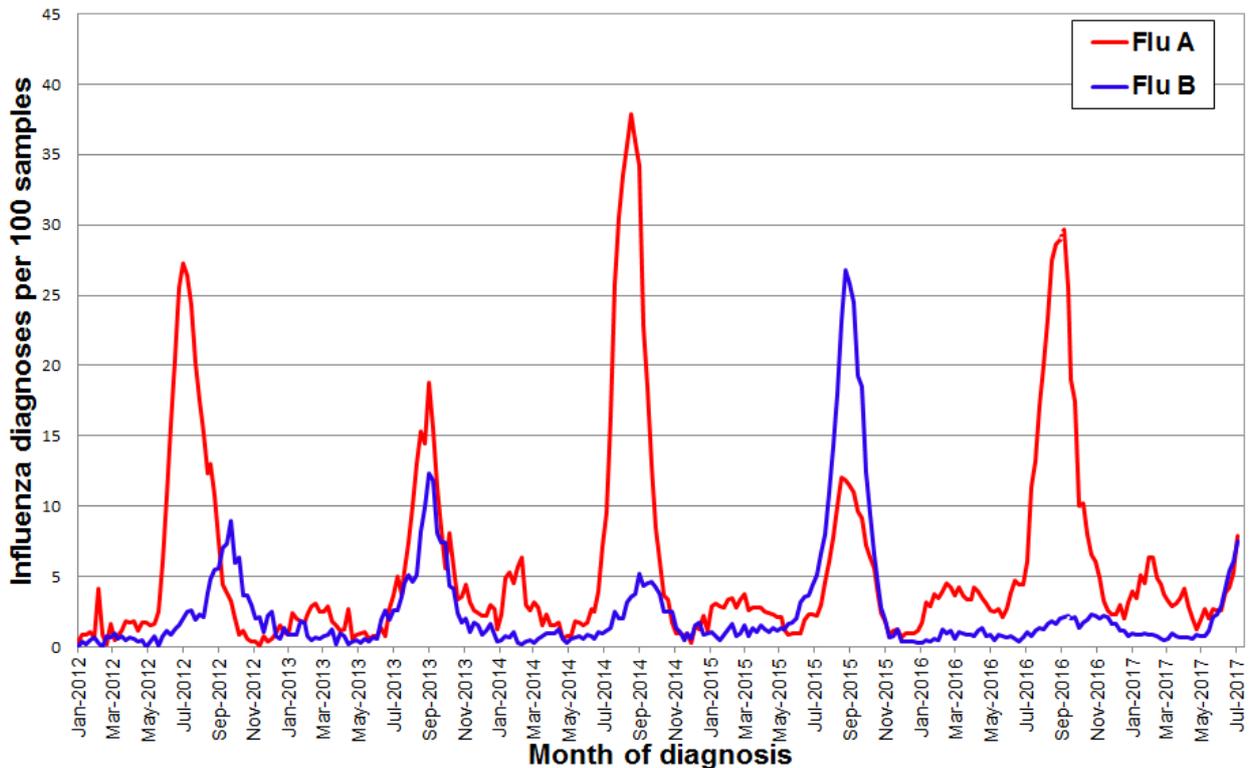


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2012 to 2 July 2017, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 2 July there were 946 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 721 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, while rates continued 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 02 Jul 2017		Average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	46	13.32	10	2.9
Far West	0	0	1	3.27
Hunter New England	77	8.28	31	3.28
Illawarra Shoalhaven	21	5.14	8	1.84
Mid North Coast	10	4.5	5	2.25
Murrumbidgee	11	4.54	4	1.79
Nepean Blue Mountains	58	15.07	20	5.13
Northern NSW	59	19.25	29	9.3
Northern Sydney	189	20.65	94	10.3
South Eastern Sydney	112	12.07	68	7.3
South Western Sydney	67	6.77	46	4.67
Southern NSW	5	2.34	1	0.47
Sydney	92	14.05	54	8.21
Western NSW	14	5.01	5	1.79
Western Sydney	185	19.07	112	11.52

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 four respiratory outbreaks reported this week in residential care facilities; three were due to influenza A and the other was influenza B (Table 4).

In the year to date there have been 22 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): 20 have been due to influenza A and two were due to influenza B.

So far this year all reported outbreaks have been from aged care facilities; at least 266 residents were reported to have had ILI symptoms and 27 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 2 July 2017.

Year	2010	2011	2012	2013	2014	2015	2016	2017*
No. of outbreaks	2	4	39	12	120	103	279	22

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 26 there were 43 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 2.3%, lower than the previous week (3.6%). For further information please see the [ASPREN](#) website.

FluTracking.net

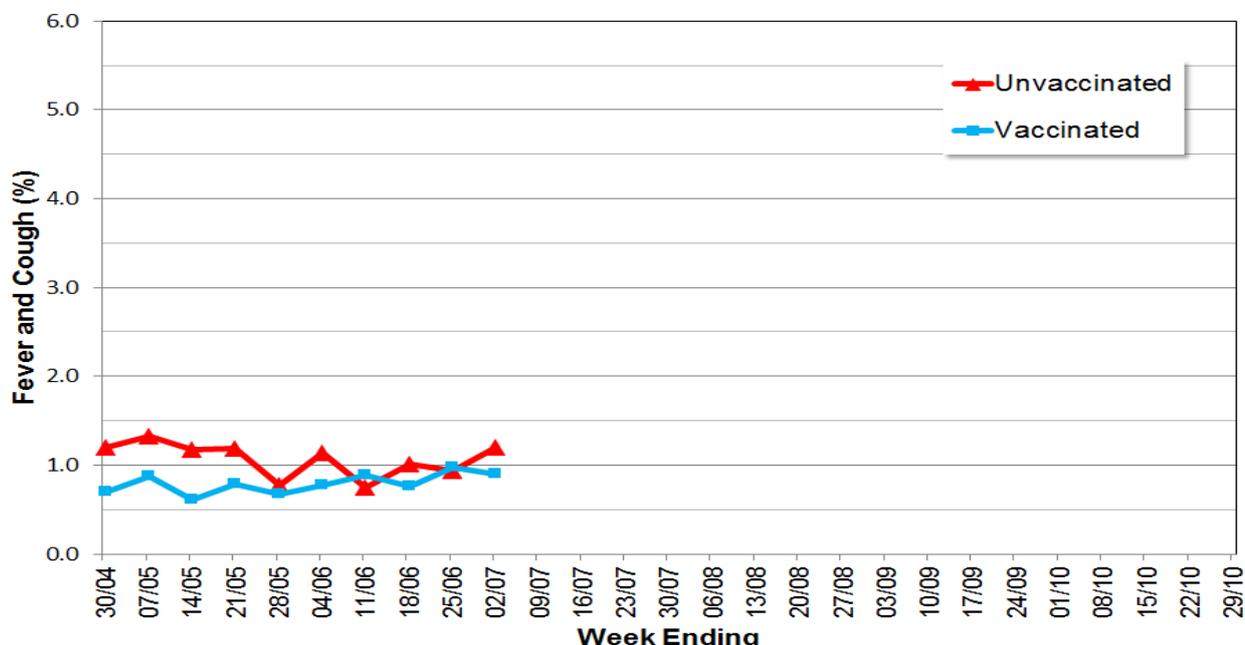
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

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

In week 26 FluTracking received reports for 7,557 people in NSW with the following results:

- 2.1% of respondents reported fever and cough, higher than the previous week (1.9%). Of these, 0.9% reported being vaccinated (Figure 7).
- 1.2% of respondents reported fever, cough and absence from normal duties, higher than the previous week (1.0%).

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.3*, with data up to 23 June 2017, influenza activity was reported to be increasing in most of the southern and central regions of Australia, while activity was sporadic and stable in the northern regions of the country.

Of note:

- While testing for influenza has increased over the reporting fortnight, respiratory viruses other than influenza, in particular rhinovirus, were most commonly detected by sentinel laboratories.
- Nationally, notifications of laboratory confirmed influenza B viruses have continued to increase over the reporting fortnight; however influenza A(H1N1)pdm09 and influenza A(H3N2) are also co-circulating in some parts of the country.
- Influenza-like illness (ILI) in the community was low and relatively stable this reporting fortnight, while ILI presentations to sentinel GPs were also low, but increasing.
- To date, 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 and have 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.](#)