

NSW Health Influenza Surveillance Report

Week 29: 17 to 23 July, 2017

Summary:

- **Seasonal influenza activity continues to rise steadily after an early start. Influenza activity is likely to remain high for the next few weeks**
- **Influenza A strains are predominating, particularly the A(H3N2) strain.**

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 31.4%. Influenza A strains were predominant.
- [Community surveillance](#) – influenza notifications increased in metropolitan local health districts (LHD). General Practice ILI activity increased slightly. Thirty-four institutions, including twenty-nine aged care facilities, reported influenza outbreaks.
- [National and international influenza surveillance](#) – influenza activity is increasing in the majority of Australian jurisdictions, while remaining stable and sporadic in the rural south and northern regions of Western Australia, the Northern Territory and the tropical region of Queensland.
- [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

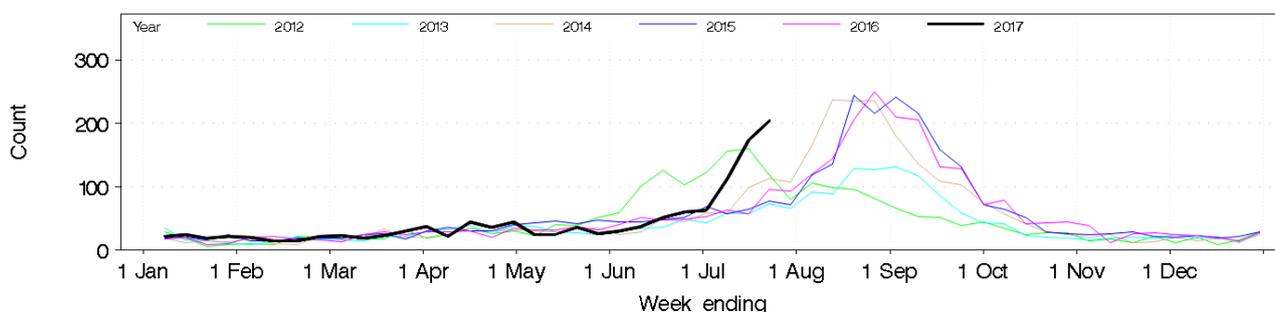
NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

For the week ending 23 July 2017:

- ILI presentations [2] continued to increase this week. Presentations were above normal for this time of year but similar to this stage of previous influenza seasons. Presentations were significantly elevated in young children and older age groups, and in some districts (Figure 1 and Table 1).
- ILI presentations resulting in admission increased and remained above the usual range, particularly in people aged 35 years and over, and in South Eastern Sydney LHD (Figure 2 and Table 1).
- As of 23 July 2017, the daily index of increase for ILI presentations across NSW was higher at 55.7. 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 high at 4.6 per 1000 presentations, and higher than the previous week (3.9 per 1000).
- ED presentations for pneumonia [3] increased and were above the usual range for this time of year, particularly in people aged 65 years and over (Figure 3 and Table 1.)
- Admissions for pneumonia this week increased further and were above the usual range for this time of year overall (Table 1). Pneumonia and ILI presentations requiring admission to critical care decreased and were within the usual range for this time of year (Table 1).
- Bronchiolitis presentations decreased but were within the usual range (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, all ages, from 1 January – 23 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 2: Total weekly counts of ED presentations for influenza-like-illness that were admitted, all ages, from 1 January – 23 July 2017 (black line), compared with each of the 5 previous years (coloured lines).

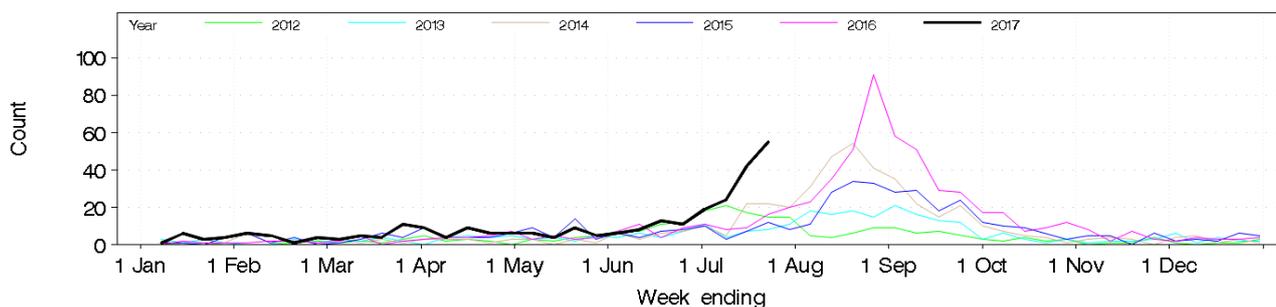


Figure 3 Total weekly counts of ED presentations for pneumonia, all ages, from 1 January – 23 July, 2017 (black line), compared with each of the 5 previous years (coloured lines).

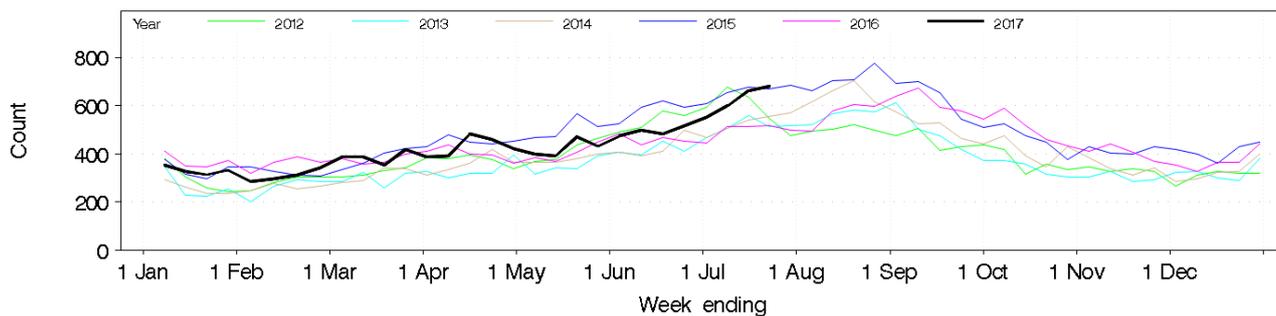


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 23 July 2017. Includes data from 60 NSW EDs and the NSW Ambulance Division. [4]

Data source	Diagnosis or problem category	Trend since last week	Comparison with usual range*	Statistically elevated age groups	Statistically significant locations (LHDs)	Significant elevated severity indicators**	Comment
ED presentations, 60 NSW hospitals	Influenza-like illness (ILI)	Increased (204)	Above (73-118)	35-64 years (63) 65+ years (31) <5 years (19)	Central Coast (14), Illawarra Shoalhaven (23), Northern Sydney (20), Western Sydney (37)		Daily index of increase = 55.7
	ILI admissions	Increased (55)	Above (8-22)	65+ years (20) 35-64 years (18)	South Eastern Sydney (11)		
	Pneumonia	Increased (682)	Above (515-671)	65+ years (372)			
	Pneumonia admissions	Increased (494)	Above (397-468)				
	Pneumonia and ILI critical care admissions	Decreased (40)	Usual (31-41)				
	Asthma	Decreased (432)	Usual (395-477)				
	Bronchiolitis	Decreased (270)	Usual (244-344)				
	All respiratory illness, fever and unspecified infections	Increased (7,401)	Above (5,699-6,433)	65+ years (1,939) 35-64 years (1,414) 17-34 years (989) <5 years (2,320)	South Western Sydney (974), Nepean Blue Mountains (349), Western Sydney (916), Illawarra Shoalhaven (433), Northern Sydney (626), Sydney (515), Hunter New England (1,043)	Admitted (2,375)	

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.

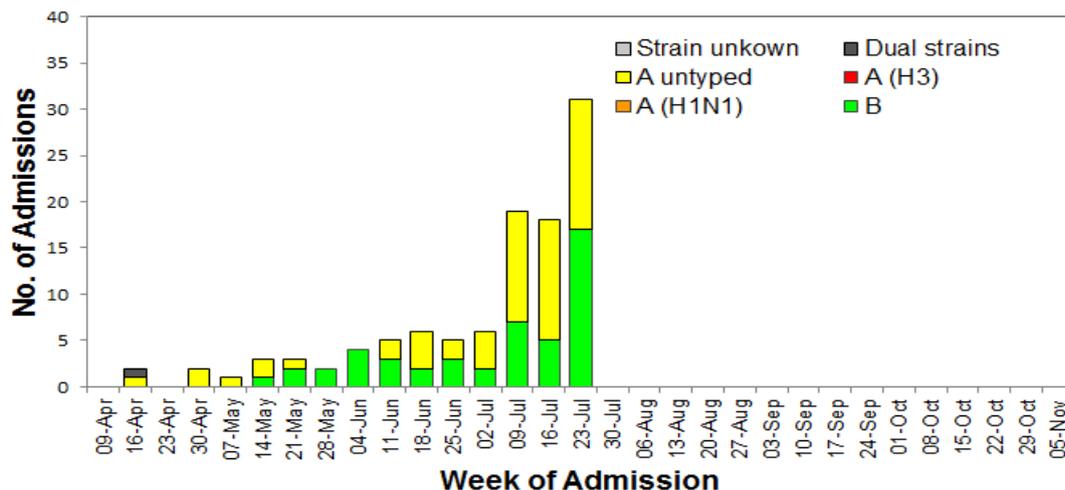
During week 29 there were 31 influenza admissions in NSW sentinel hospitals (Figure 4); 14 due to influenza A and 17 due to influenza B (all predominantly in children). Since 1 April 2017, there have been 107 hospital admissions reported for influenza; 58 due to influenza A, 48 due to influenza B and 1 with a co-infection (Figure 4). Of these admissions, 62 were paediatric cases (<16 years of age) and 45 were in adults. Of the 107 cases, 10 cases have been admitted to a critical care ward.

⁴ **Notes. 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 for ED presentations. The 'daily index of increase' is statistically significant above a threshold of 15. LHD = Local Health District.

* The usual range is the range of weekly counts for the same week in the previous five years for ED presentations. Note that comparisons are not adjusted for the start of the season. Cells with small counts are not reported.

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

Figure 4: FluCAN – Number of confirmed influenza hospital admissions in NSW, 9 April – 23 July, 2017.



2. Laboratory Surveillance

For the week ending 23 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, 31.3% of tests for respiratory viruses were positive for influenza, higher than the 25.4% rate of the previous week (Figure 5). In 2016, the influenza positive rate at the peak of the season was 31.7%. Influenza A strains are now predominant, particularly A(H3N2) (Table 2, Figure 6).

Influenza was the leading respiratory virus reported. Rhinovirus and 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 23 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 (%)	Total (%)	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			
02/07/2017	25565	1407 (5.5%)	104 (7.4%)	73 (5.2%)	1230 (87.4%)	1530 (6.0%)	1058	734	3291	5794	441	490			
Week ending															
09/07/2017	8283	1070 (12.9%)	64 (6.0%)	35 (3.3%)	976 (91.2%)	662 (8.0%)	366	246	994	1482	160	142			
16/07/2017	9499	1585 (16.7%)	160 (10.1%)	43 (2.7%)	1382 (87.2%)	831 (8.7%)	427	236	1042	1485	178	150			
23/07/2017	11488	2445 (21.3%)	240 (9.8%)	95 (3.9%)	2110 (86.3%)	1157 (10.1%)	438	211	989	1383	202	163			

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, 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 23 July 2017.

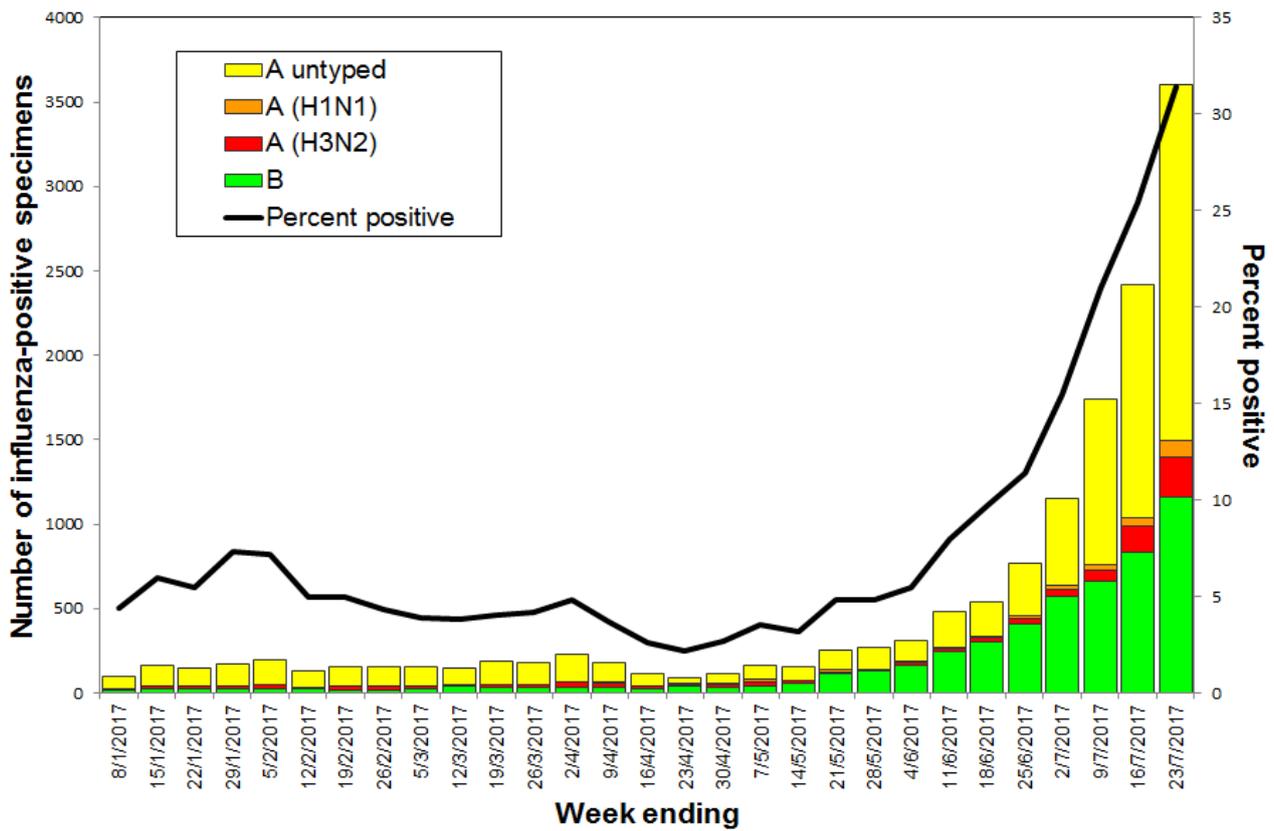
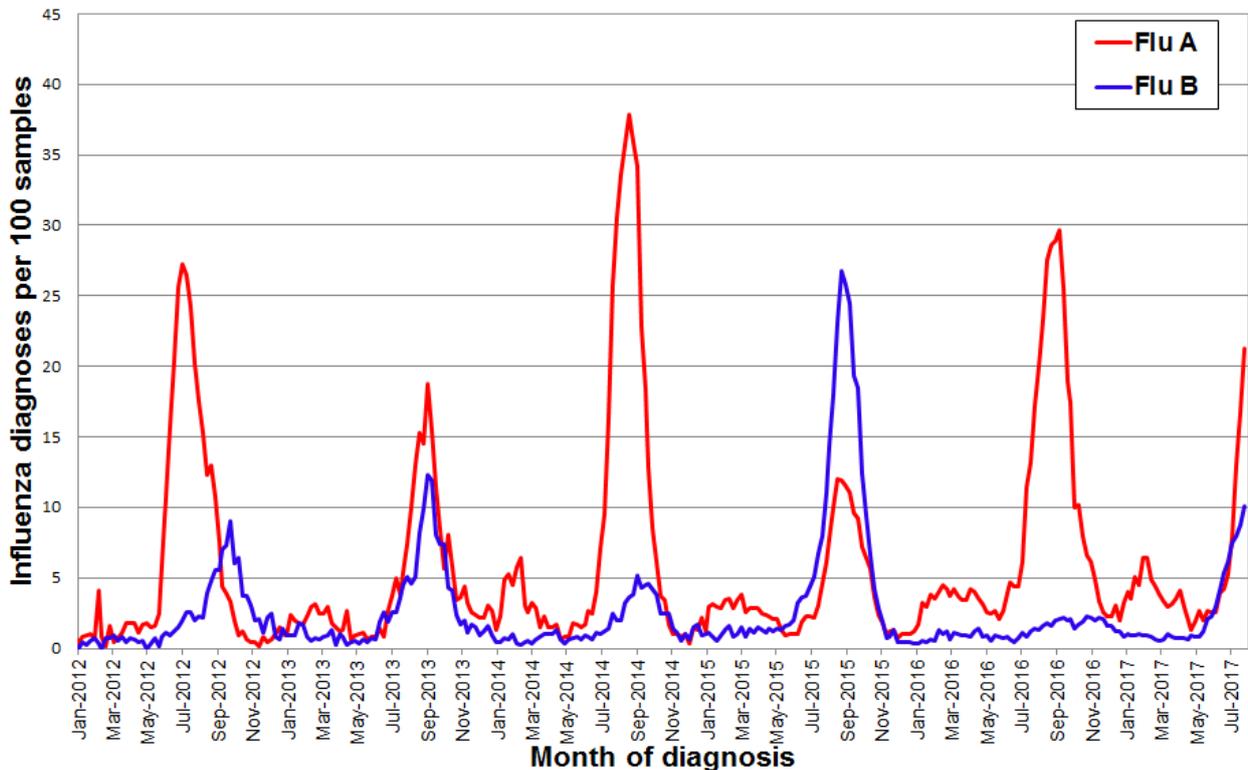


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2012 to 23 July 2017, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 23 July there were 3282 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than in the previous week (2127).

Notifications remained highest in Sydney metropolitan LHDs. Population attack rates remained lower in the south and inland parts of the state although increasing (Table 3). Rates were highest in urban LHDs, particularly Western Sydney, Nepean Blue Mountains and Northern Sydney.

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

Local Health District	Week ending 23 Jul 2017		Average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	69	19.98	47	13.68
Far West	1	3.27	1	3.27
Hunter New England	293	31.51	101	10.86
Illawarra Shoalhaven	154	37.68	40	9.66
Mid North Coast	34	15.29	16	7.08
Murrumbidgee	46	19	14	5.88
Nepean Blue Mountains	248	64.45	91	23.52
Northern NSW	71	23.16	66	21.53
Northern Sydney	516	56.38	230	25.07
South Eastern Sydney	409	44.08	149	16.09
South Western Sydney	382	38.58	128	12.88
Southern NSW	36	16.82	13	5.84
Sydney	230	35.13	113	17.3
Western NSW	67	23.97	19	6.62
Western Sydney	726	74.85	316	32.53

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

Influenza outbreaks in institutions

There were 34 influenza outbreaks reported this week in institutions; 29 of these were in residential care facilities, two were outbreaks in hospital wards and three in were in mental health/intellectually disabled facilities. A total of 26 outbreaks were due to influenza A alone, five were due to influenza B and three involved both influenza A and B strains (Table 4).

In the year to date there have been 77 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): 63 have been due to influenza A, 8 were due to influenza B and 6 involved both influenza A and B strains. In outbreaks affecting aged care facilities, at least 916 residents were reported to have had ILI symptoms and 87 required hospitalisation. Thirty-four deaths in residents linked to these outbreaks have been reported, all of whom were noted to have other significant co-morbidities.

People in older age-groups are at higher risk of infection from the influenza A(H3N2) strain than the influenza A(H1N1) strain. The influenza A(H3N2) strain also predominated in 2012, 2014 and 2016. In 2015, influenza B was the predominant strain, and was also associated with an increase in influenza outbreaks in institutions, particularly residential aged care facilities (Table 4).

Table 4: Reported influenza outbreaks in NSW institutions, January 2010 to 23 July 2017.

Year	2010	2011	2012	2013	2014	2015	2016	2017*
No. of outbreaks	2	4	39	12	120	103	279	77

Notes: * Year to date. All data are preliminary and subject to change.

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 29 there were 50 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 2.2%, higher than the previous week (1.6%). For further information see the [ASPREN](#) website.

FluTracking.net

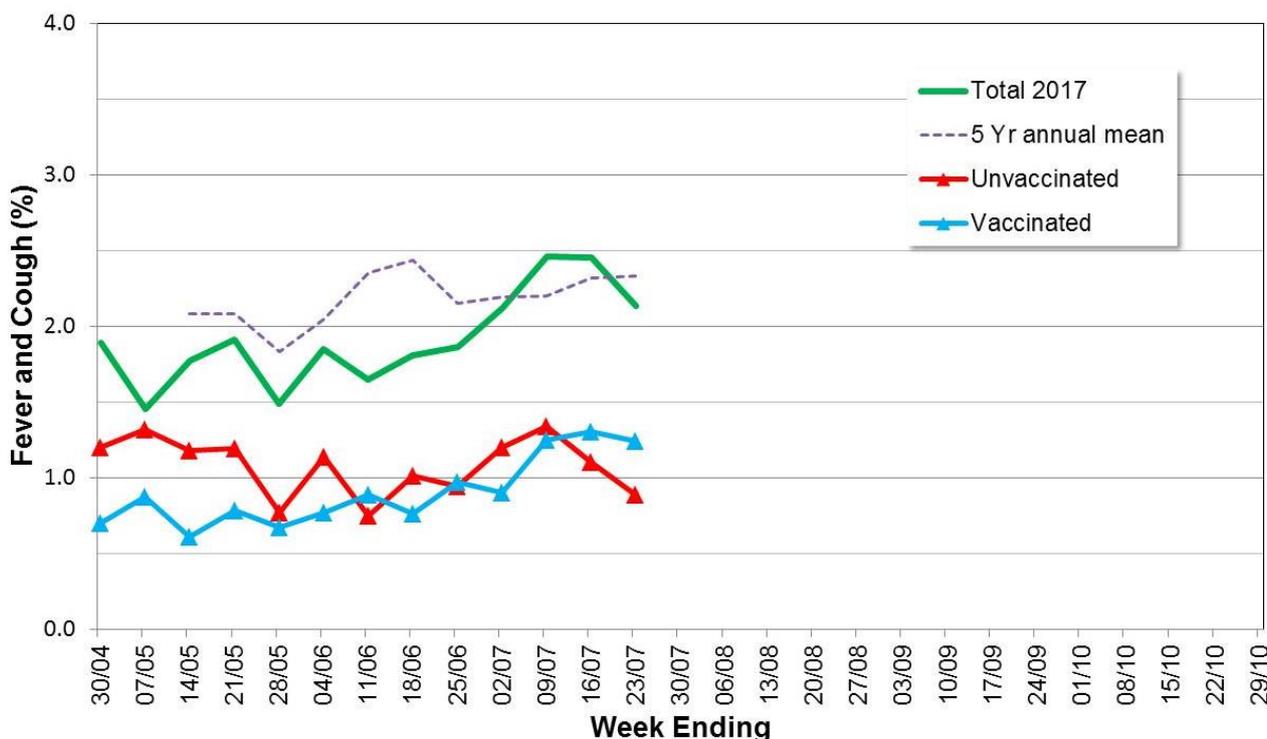
FluTracking.net is an online health surveillance system to detect epidemics of influenza. It is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

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

In week 29 FluTracking received reports for 7,999 people in NSW with the following results:

- 2.1% of respondents reported fever and cough, lower than the previous week (2.4%). Of these, 1.2% reported being vaccinated (Figure 7).
- 1.3% of respondents reported fever, cough and absence from normal duties, lower than the previous week (1.4%).

Figure 7: FluTracking – Percent of NSW participants reporting fever and cough by vaccination status, 2017 and 5 Year annual mean.



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 have elapsed since their recorded time of vaccination.

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

4. National and International Influenza Surveillance

National Influenza Surveillance

In the *Australian Surveillance Report No.4*, with data up to 7 July 2017, influenza activity is reported to be increasing in the majority of Australian jurisdictions, while remaining stable and sporadic in the rural south and northern regions of Western Australia, the Northern Territory and the tropical region of Queensland.

Of note:

- Positive test results for influenza have increased significantly over the reporting fortnight, particularly in Victoria. Respiratory viruses other than influenza, in particular rhinovirus and RSV, were most commonly detected by sentinel laboratories.
- Nationally, notifications of laboratory confirmed influenza B viruses have continued to increase over the reporting fortnight; however the proportion of total notifications has decreased. 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 increased slightly but remained low this reporting fortnight, while ILI presentations to sentinel GPs increased significantly.
- To date, the seasonal influenza vaccines appear to be a good match for circulating virus strains.

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

Global Influenza Update

The latest [WHO global update on 24 July 2017](#) provides data up to 9 July. WHO reports that in the temperate zone of the southern hemisphere, high levels of influenza activity continued to be reported. A few countries in Central America, the Caribbean and South East Asia also reported increased influenza activity. Influenza activity in the temperate zone of the northern hemisphere was reported at low levels. Worldwide, influenza A(H3N2) and B viruses co-circulated.

For further information see 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.](#)