

NSW Health Influenza Surveillance Report

Week 23: 6 to 12 June 2016

Summary:

- **The influenza season is likely to commence in the next few weeks.**
- **Influenza activity is increasing but continues to be generally low in most parts of NSW. Influenza A(H3N2) and influenza A(H1N1) strains are circulating at similar levels.**

In this reporting week:

- [Hospital Surveillance](#) – the rate of influenza like illness (ILI) presentations to selected emergency departments increased and is approaching the trigger level for the flu season.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza increased but remained relatively low at 5.3%.
- [Community surveillance](#) – influenza notifications continue to increase in a number of Sydney local health districts. Data collected from General Practice surveillance systems showed higher levels of ILI activity. One new influenza outbreak was reported in a residential care facility.
- [National and international influenza surveillance](#) – no new national reports have been issued but activity is increasing in a number of states. Influenza activity is increasing in other regions in the Southern Hemisphere.
- [Recommended composition of 2016 influenza vaccines](#) – the World Health Organization (WHO) has provided recommendations for the 2016 southern hemisphere winter influenza season including two strain changes.

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

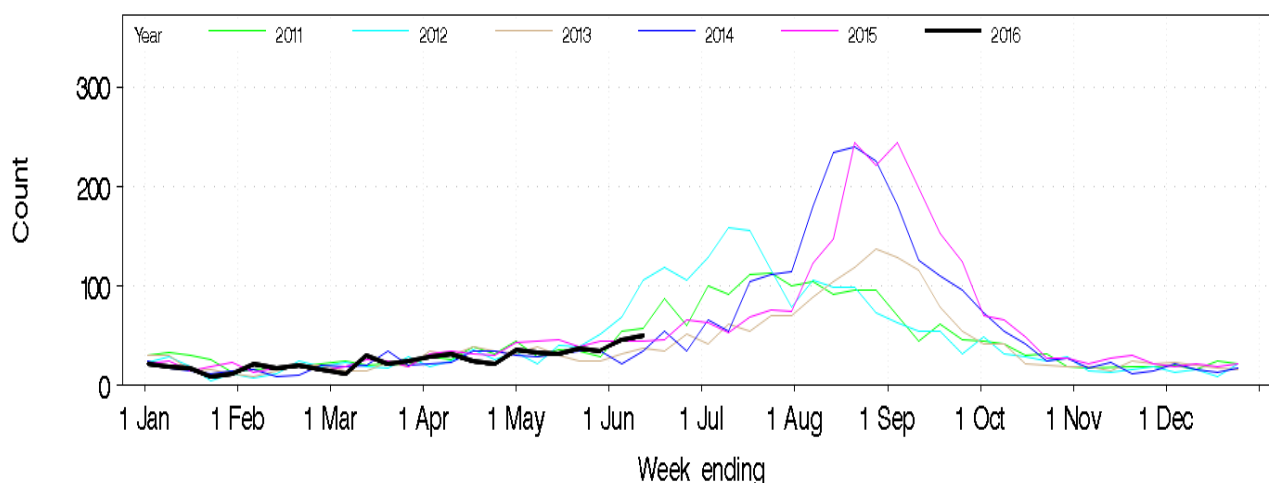
NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

For the week ending 12 June 2016:

- ILI presentations [2] increased this week and are expected to increase further over the coming weeks (Figure 1 and Table 1). Activity is within the usual range of activity seen in recent years. Presentations were particularly elevated at Wagga Wagga Base Hospital (Table 1).
- The index of increase for ILI presentations was 13.1 on 12 June, an increase on the previous week (11.5) but still just below the seasonal threshold of 15.
- The proportion of ILI presentations to all ED presentations remained relatively low at 1.2 per 1000 presentations but higher than the previous week (0.8).
- ED presentations for pneumonia [3] increased but were within the usual range for this time of year (Figure 2).
- Pneumonia or ILI presentations which resulted in admission decreased and were within the usual range for this time of year. Admissions to critical care increased but were within the usual range for this time of year (Figure 3 and Table 1).
- Bronchiolitis presentations increased this week. Presentations were within the usual range for this time of year (Figure 4). Presentations were elevated throughout April and May and likely peaked in the week ending 22 May.
- The category combining all respiratory, fever and unspecified infection presentations increased and were within the usual range for this time of year (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 12 June 2016 (black line), compared with each of the 5 previous years (coloured lines).



[1] NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance system. Centre for Epidemiology and Evidence, NSW Ministry of Health. Comparisons are made with data for the preceding five years. Recent counts are subject to change. Data from 60 NSW emergency departments are included representing approximately 82% of ED visits in the 2014-15 financial year. The coverage of rural EDs is lower than metropolitan 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 pneumonia, from January – 12 June 2016 (black line), compared with each of the 5 previous years (coloured lines).

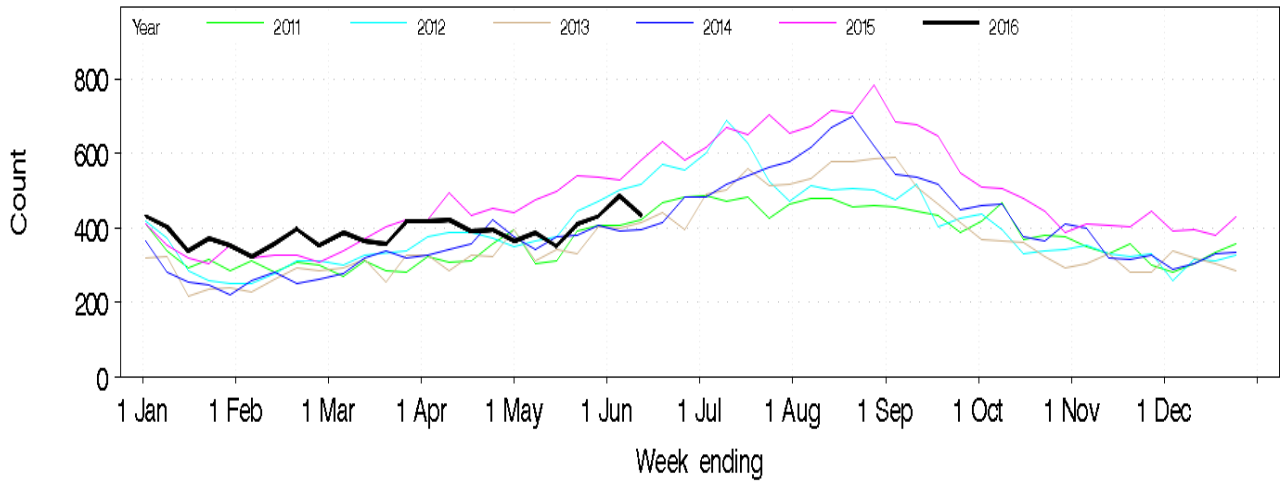


Figure 3: Total weekly counts of ED presentations for pneumonia or influenza-like illness and admitted to a critical care ward, from January – 12 June 2016 (black line), compared with each of the 5 previous years (coloured lines).

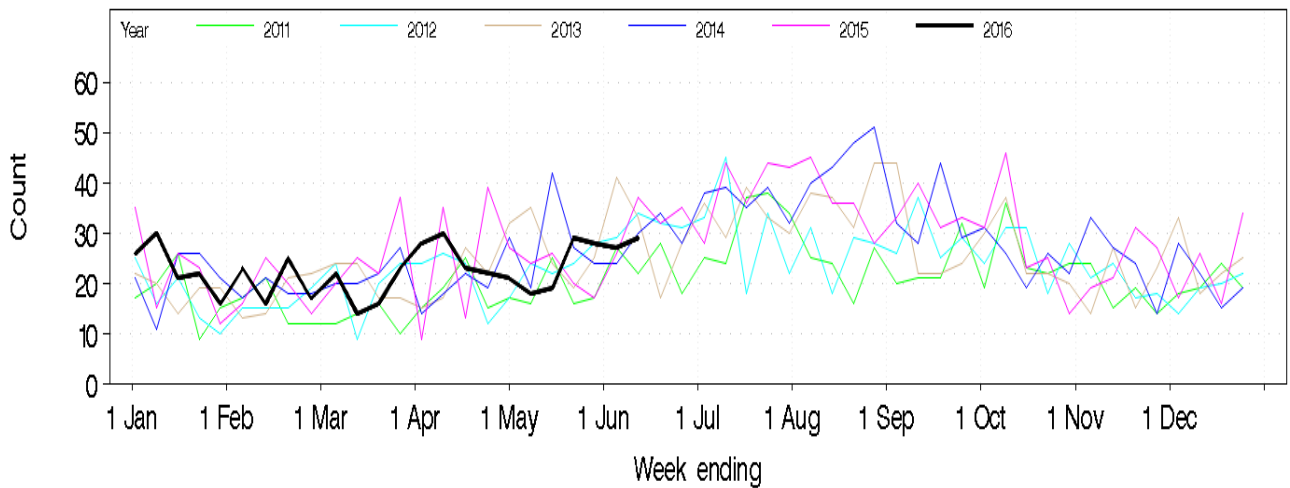


Figure 4: Total weekly counts of ED presentations for bronchiolitis, from January – 12 June 2016 (black line), compared with the 5 previous years (coloured lines).

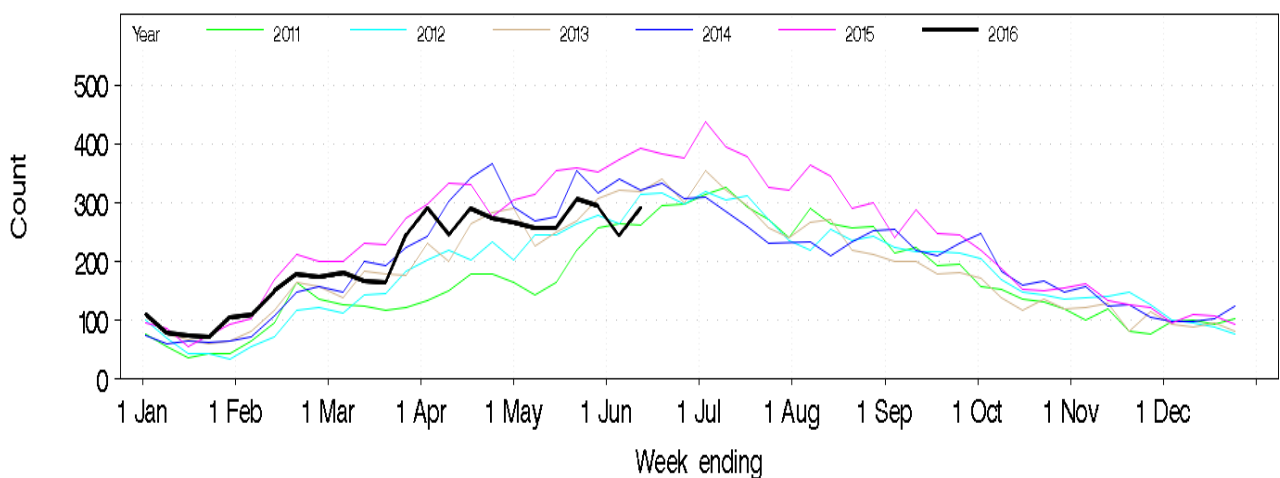


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 12 June 2016. Includes data from 60 NSW EDs and the NSW Ambulance Division. *

Data source	Diagnosis or problem category	Trend since last week	Comparison with usual range for time of year*	Statistically significant age groups (if any)	Statistically significant local increase (if any)	Statistically significant severity indicators (if any)	Comment
ED presentations, 60 NSW hospitals	Influenza-like illness (ILI)	Increased	Usual		Wagga Wagga Base Hospital		Daily index of increase = 13.1
	Pneumonia	Decreased	Usual				
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Asthma	Decreased	Usual				
	Bronchiolitis	Increased	Usual				Bronchiolitis is a disease of infants. Daily index of increase = 31.9
	Breathing problems	Increased	Top of usual range	0-4 years	Children's Hospital at Westmead		
	All respiratory illness, fever and unspecified infections	Increased	Usual				

* **Notes on Table 1:** Statistically significant increases are shown in bold. Recent activity counts are subject to change. This is a routine general report for information on respiratory activity and is additional to public health situation reports that advise of unusual increases in activity in particular provisional ED diagnosis groupings or Ambulance problem categories.

FluCAN (The Influenza Complications Alert Network)

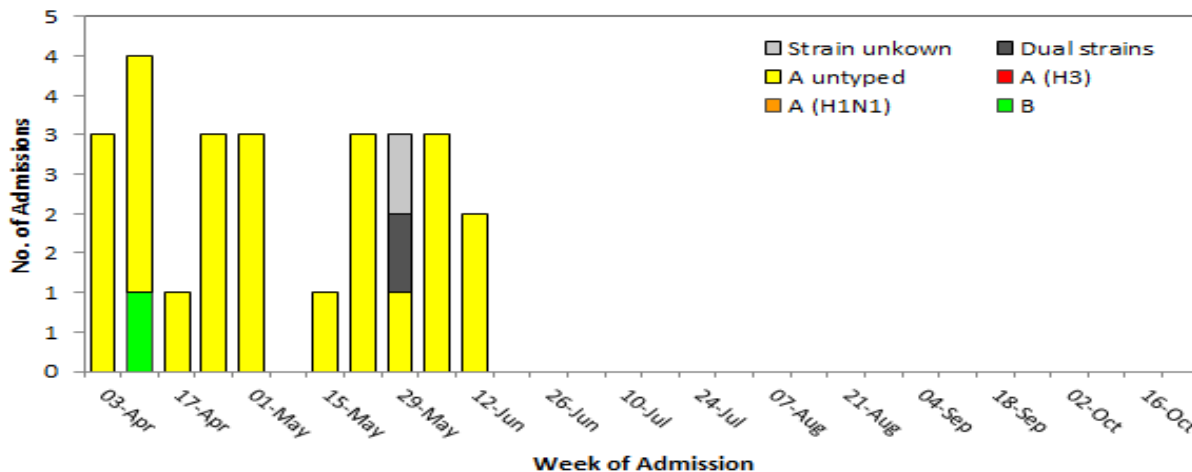
In 2009, the [FluCAN](#) surveillance system was created to be a rapid alert system for severe respiratory illness requiring hospitalisation. Data is provided on patients admitted with influenza confirmed by polymerase chain reaction (PCR) testing.

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

Due to delays in data completeness, FluCAN data is only presented up to the previous week.

- During week 23 there were three influenza admissions in NSW sentinel hospitals (Figure 5).
- Since 1 April 2015, there have been 27 hospital admissions reported for influenza; 24 with influenza A, one with influenza B, one with influenza A and B and one unknown (Figure 5).
- Of these admissions, 11 were paediatric (<16 years of age) cases and 16 were in adults. One child was admitted to ICU/HDU.

Figure 5: FluCAN – weekly number of confirmed influenza hospital admissions in NSW, 3 April – 12 June 2016.



2. Laboratory Surveillance

For the week ending 12 June 2016 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 and the start of the influenza season should begin within the next few weeks.

A total of 4,490 tests for respiratory viruses were reported this week with 5.3% testing positive for influenza viruses, up from 4.5% in the previous week. Both influenza A(H1N1) and influenza A(H3) strains are circulating at similar levels. Influenza B activity remains at low levels (Figure 6 and 7).

Rhinoviruses and respiratory syncytial virus (RSV) were the leading respiratory viruses reported, with other viruses circulating at usual levels for this time of year (Table 2).

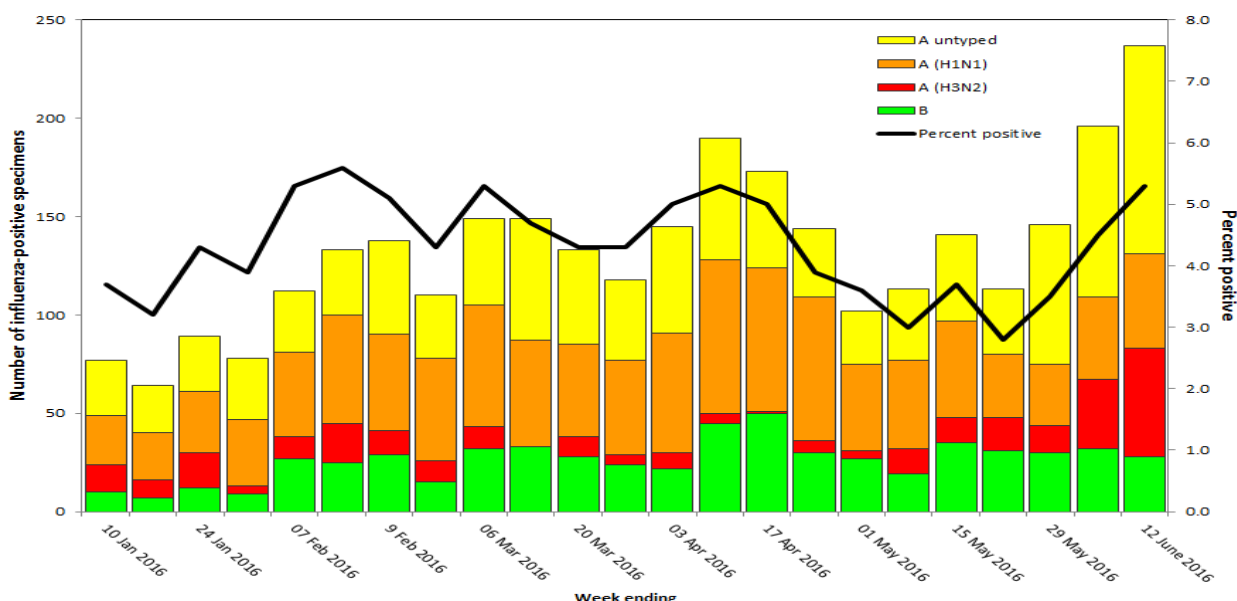
Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 12 June, 2016.

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 (%)	Total (%A)	Total (%A)	Total (%)	Total (%)	Total (%)	Total (%)									
31/01/2016	8079	270 (3.3%)	45 (16.7%)	114 (42.2%)	111 (41.1%)	38 (0.5%)	202	179	202	941	73	96			
28/02/2016	9810	397 (4.0%)	54 (13.6%)	199 (50.1%)	144 (36.3%)	96 (1.0%)	208	244	323	1484	80	150			
03/04/2016*	14699	555 (3.8%)	32 (5.8%)	271 (48.8%)	248 (44.7%)	138 (0.9%)	282	412	937	1862	68	188			
01/05/2016	13614	457 (3.4%)	16 (3.5%)	268 (58.6%)	173 (37.9%)	152 (1.1%)	271	371	1189	1470	71	128			
29/05/2016	15760	398 (2.5%)	57 (14.3%)	157 (39.4%)	184 (46.2%)	115 (0.7%)	350	358	1488	2211	111	138			
Week ending															
05/06/2016	4372	164 (3.8%)	35 (21.3%)	42 (25.6%)	87 (53.0%)	32 (0.7%)	140	117	444	648	43	93			
12/06/2016	4490	209 (4.7%)	55 (26.3%)	48 (23.0%)	106 (50.7%)	28 (0.6%)	154	113	509	600	39	81			

Notes:

* Five-week reporting period. ** Human metapneumovirus

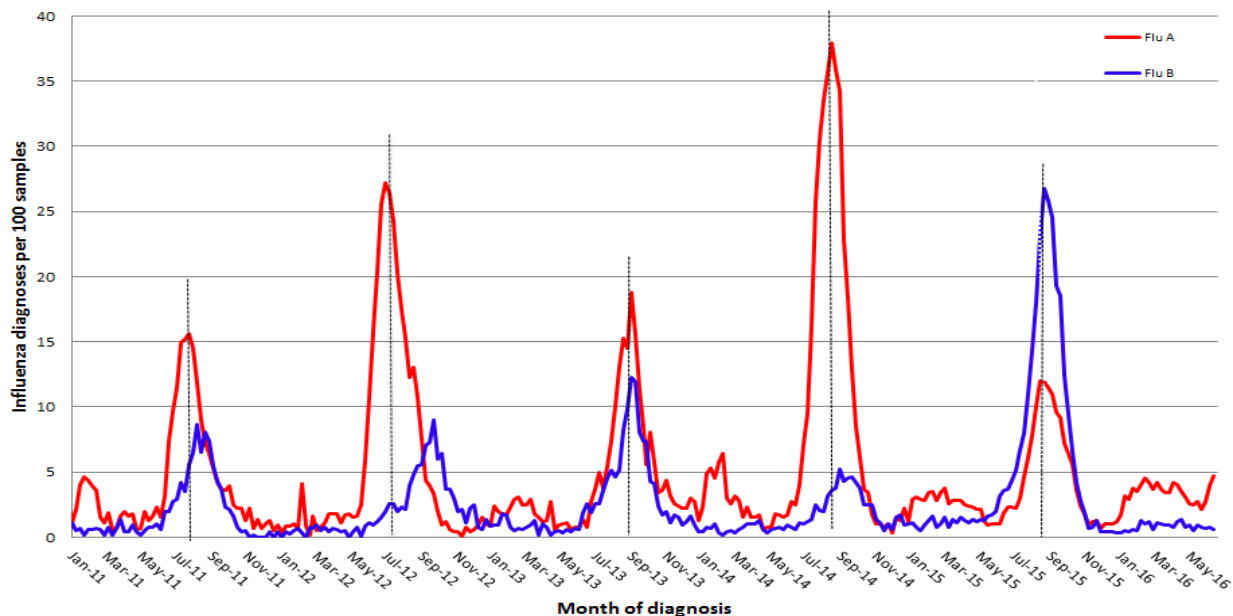
Figure 6: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 12 June 2016.



[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: South Eastern Area Laboratory Services, The Children's Hospital at Westmead, Sydney South West Pathology Service, Pacific Laboratory Medicine Service, Royal Prince Alfred Hospital, Hunter Area Pathology Service, Pathology West (Westmead & Nepean), Douglas Hanley Moir Pathology, VDRLab, Laverty Pathology, SydPath (St Vincent's), Medlab, and Laverty. HAPS data not included for week 41 2015.

Figure 7: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2010 – 12 June 2016, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 12 June there were 215 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 164 notifications in the previous week.

Rates were highest in Northern Sydney and Western Sydney (Table 3). Compared to the previous week, notifications increased across all Sydney metropolitan areas.

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

Local Health District	Week ending 12 Jun 2016		Weekly average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	1	0.3	4	1.04
Hunter New England	5	0.55	6	0.65
Illawarra Shoalhaven	3	0.74	3	0.62
Mid North Coast	4	1.84	2	0.92
Murrumbidgee	0	0	3	1.26
Nepean Blue Mountains	13	3.47	11	3
Northern NSW	4	1.33	4	1.44
Northern Sydney	51	5.62	29	3.17
South Eastern Sydney	30	3.32	16	1.77
South Western Sydney	20	2.07	15	1.53
Southern NSW	3	1.44	1	0.48
Sydney	24	3.82	19	3.02
Western NSW	7	2.52	1	0.36
Western Sydney	50	5.28	29	3.09

Notes: * All data are preliminary and may change as more notifications are received. Excludes notifications based on serology.

Influenza outbreaks in institutions

There was one new influenza outbreak reported this week in a residential care facility (Table 4).

In the year to date there have been nine laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): eight have been due to influenza A and 1 was combined A and B. At least 64 residents were reported to have had ILI symptoms and 13 required hospitalisation. Nine 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 influenza A(H3N2) strains than from the influenza A(H1N1) strain. The influenza A(H3N2) strain predominated in 2012 and 2014. 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 12 June 2016.

Year	2010	2011	2012	2013	2014	2015	2016*
No. of outbreaks	2	4	39	12	120	103	9

Notes: * Year to date.

Electronic General Practice Surveillance (eGPS)

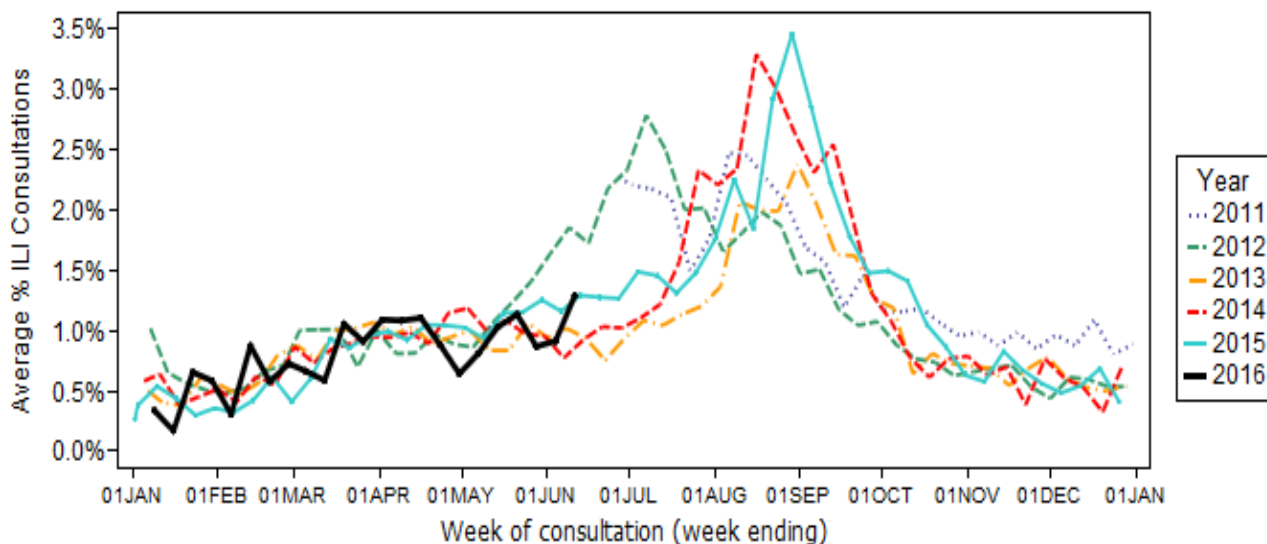
eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an indicator of influenza activity. Consultations for ILI are identified each week by an automatic search of electronic records for validated combinations of ILI terms rather than diagnosis codes.

Data generated from eGPS should be interpreted with caution as they are not representative of all practices within the participating LHDs or across NSW.

In Week 23:

- There were four surveillance reports received from eGPS sentinel practices in NSW; no reports were received from South Eastern Sydney and Illawarra Shoalhaven this week.
- The average rate of ILI patient consultations increased to 1.3% (range 0.5 – 2.7%), higher than the previous week (0.9) and within the usual range seen for this time of year (Figure 8).

Figure 8. Average rate of influenza-like presentations to sentinel general practices by week of consultation 2011-2016 (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 23 there were 38 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderately high at 4.0%, a rise from the previous week (3.3%).

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

FluTracking.net

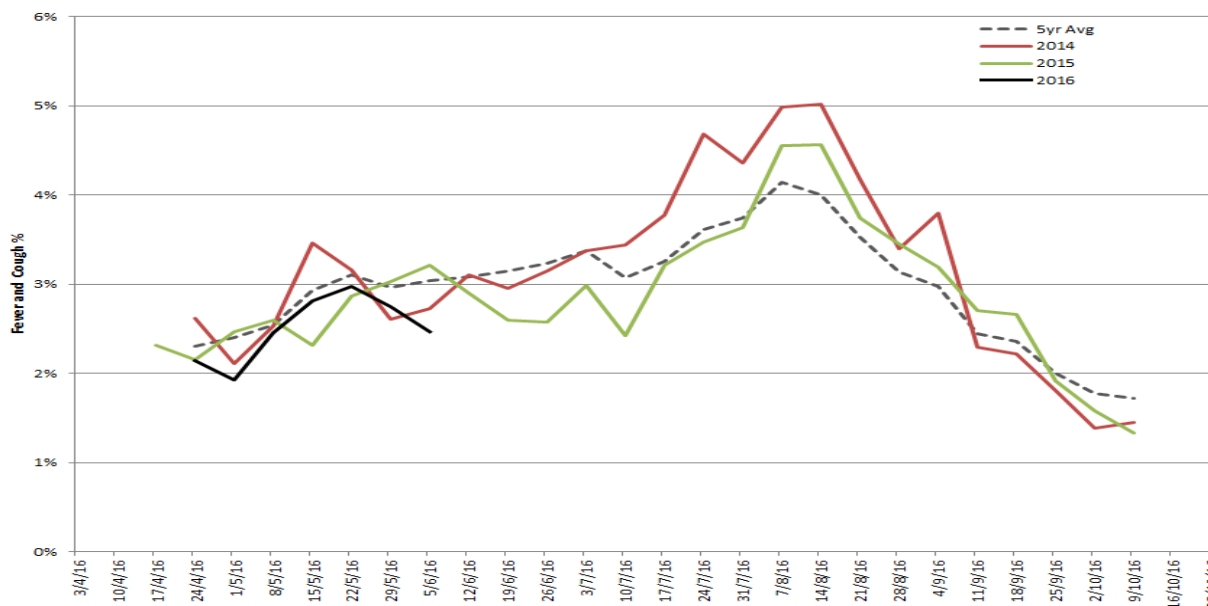
FluTracking.net is an online health surveillance system to detect epidemics of influenza.

FluTracking is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute. It involves participants from around Australia completing a simple online weekly survey which is used to generate data on the rate of ILI symptoms in communities.

In week 23 FluTracking received reports for 7051 people in NSW with the following results:

- 2.5% of respondents reported fever and cough, lower than the previous week (2.8%) (Figure 9).
- 1.5 % of respondents reported fever, cough and absence from normal duties, down from the previous week (data not shown).

Figure 9: FluTracking – weekly influenza-like illness reporting rate, NSW, 2011 – 2016.



For further information, including national estimates, please see the [FluTracking](#) website.

4. National and International Influenza Surveillance

National Influenza Surveillance

National influenza surveillance reports for this winter have not yet commenced. Many jurisdictions are reporting increased influenza activity but still at inter-seasonal levels. Influenza A strains have predominated but influenza B strains are also circulating.

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 13 June 2016](#) provides data up to 29 May. Influenza activity in the Northern Hemisphere continued to decrease.

Influenza activity in the temperate zone of the northern hemisphere continued to decrease to inter-seasonal levels. In temperate countries in the southern hemisphere, influenza activity started to increase in South America and South Africa, but remained low overall in most of Oceania. Follow the link for the [WHO influenza surveillance reports](#).

Avian Influenza Update:

Human infections with avian influenza viruses

The most recent WHO risk assessment of human infections with avian influenza viruses (see [Influenza at the human-animal interface](#)) was published on 9 May 2016. This report provides 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 2016 Australian influenza vaccines

The National Immunisation Program (NIP) uses quadrivalent influenza vaccines in 2016 for the first time. The four strains chosen are based on the recommendations of the WHO Consultation on the Composition of Influenza Vaccines for the 2016 Southern Hemisphere. Following the Consultation, WHO announced its recommendations for the composition of trivalent and quadrivalent vaccines for use in the 2016 influenza season (southern hemisphere winter).

For trivalent vaccines:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus (Victoria lineage).

For quadrivalent vaccines it was recommended that a second influenza B virus be added:

- a B/Phuket/3073/2013-like virus (Yamagata lineage).

Of note, the trivalent vaccine recommendations included strain changes for both the A(H3N2) and B components. The recommended A(H1N1) strain has remained unchanged since 2010. More details about the most recent influenza vaccine recommendations can be found at:

http://www.who.int/influenza/vaccines/virus/recommendations/2016_south/en/.