

NSW Health Influenza Surveillance Report

Week 28 Ending 13 July 2014

Summary:

For the week ending 13 July 2014, influenza activity continued to increase across NSW and it is currently at a moderate seasonal level.

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations increased and was well above the season threshold. ILI and pneumonia admissions to critical care wards eased this week, but remain elevated.
- [Laboratory surveillance](#) – Influenza activity increased further this week and is at moderate levels. Influenza was the most commonly identified respiratory virus circulating, with the influenza A(H3N2) strain predominating.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking indicated increasing ILI activity in NSW.
- [Hospitalisations surveillance \(FluCAN\)](#) – five new confirmed influenza admissions were reported.
- [National and International influenza surveillance](#) – the influenza season has commenced nationally, although most other jurisdictions are seeing the influenza A(H1N1)pdm predominating. No new human cases of infection with the avian influenza A(H7N9) strain from China; otherwise low influenza activity worldwide.

About this report:

Health Protection NSW collects and analyses surveillance data on influenza and related respiratory pathogens, and produces regular surveillance reports for the community and health professionals. Surveillance reports are produced weekly reports 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](#).

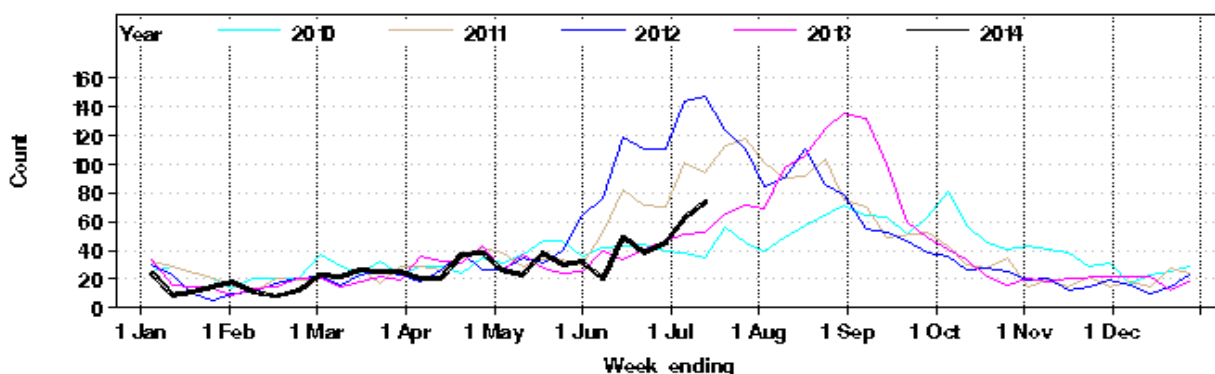
1. Emergency Department (ED) Surveillance ¹

Presentations for influenza-like illness (ILI) and other respiratory illness

The ED surveillance system uses a statistic called the 'index of increase' to indicate when presentations are increasing at a statistically significant rate. It accumulates the difference between the previous day's count of presentations and the average for that weekday over the previous 12 months. An index of increase value of 15 is considered an important signal for the start of the influenza season in NSW as it suggests influenza is circulating widely in the community.

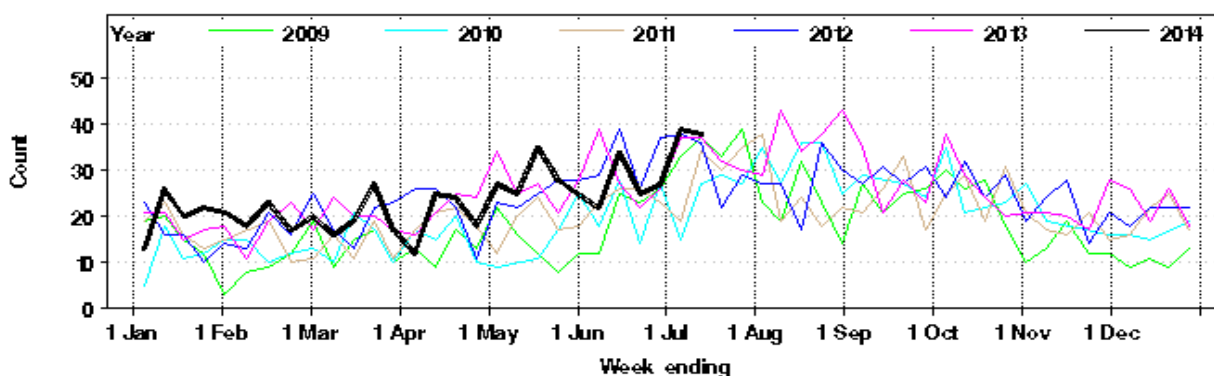
- On the 13 July 2014, the index of increase* for influenza-like illness presentations was 26.4, after crossing the threshold of 15 on Tuesday 1 July 2014.
- This week the total number of ILI presentations continues to increase, although, ILI presentations as a proportion of all ED presentations remained relatively low at 1.9 cases per 1000 presentations (Figure 1 and Table 1). This was within the normal range for this time of year.
- Combined ILI and pneumonia admissions to critical care wards eased this week but remain high and were at the upper end of the normal range for this time of year (Figure 2 and Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 13 July 2014 (black line), compared with each of the 4 previous years (coloured lines).*



* Note: Excludes 2009 data to better enable comparison of 2014 data with data from previous non-pandemic years.

Figure 2: Total weekly counts of ED visits for pneumonia and ILI admitted to a critical care ward, from January – 13 July 2014 (black line), compared with each of the 5 previous years (coloured lines).



¹ Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) is managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change.

Table 1: Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW EDs and the Sydney Ambulance Division. *

Data source	Diagnosis or problem category	Trend since last week	Overall comparison with usual range for time of year	Statistically significant age groups (if any)	Statistically significant local increase (if any)	Action other than this report (if any)	Comment
ED presentations, 59 NSW hospitals	Influenza like illness (ILI)	Increased	Usual				
	Pneumonia	Increased	Usual				
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Increased	Usual				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Steady	Usual				
	Asthma	Increased	Usual				
Ambulance calls, Sydney region	Breathing problems	Decreased	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.

2. Laboratory Surveillance

For the week ending 13 July 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories² which tested positive for influenza A increased further and is at moderate levels; influenza B activity was largely unchanged (Table 2 and Figure 4).

Overall, a total of 2184 tests for respiratory viruses were reported with 387 specimens (17.7%) testing positive for influenza viruses. These testing results suggest that influenza A (H3) is circulating at higher levels than influenza A (H1N1) and B viruses (Table 2).

Influenza is now the leading respiratory virus identified by laboratories this week; respiratory syncytial virus (RSV) activity continues to decline although it still remains elevated. Rhinovirus identifications also remained high (Table 2).

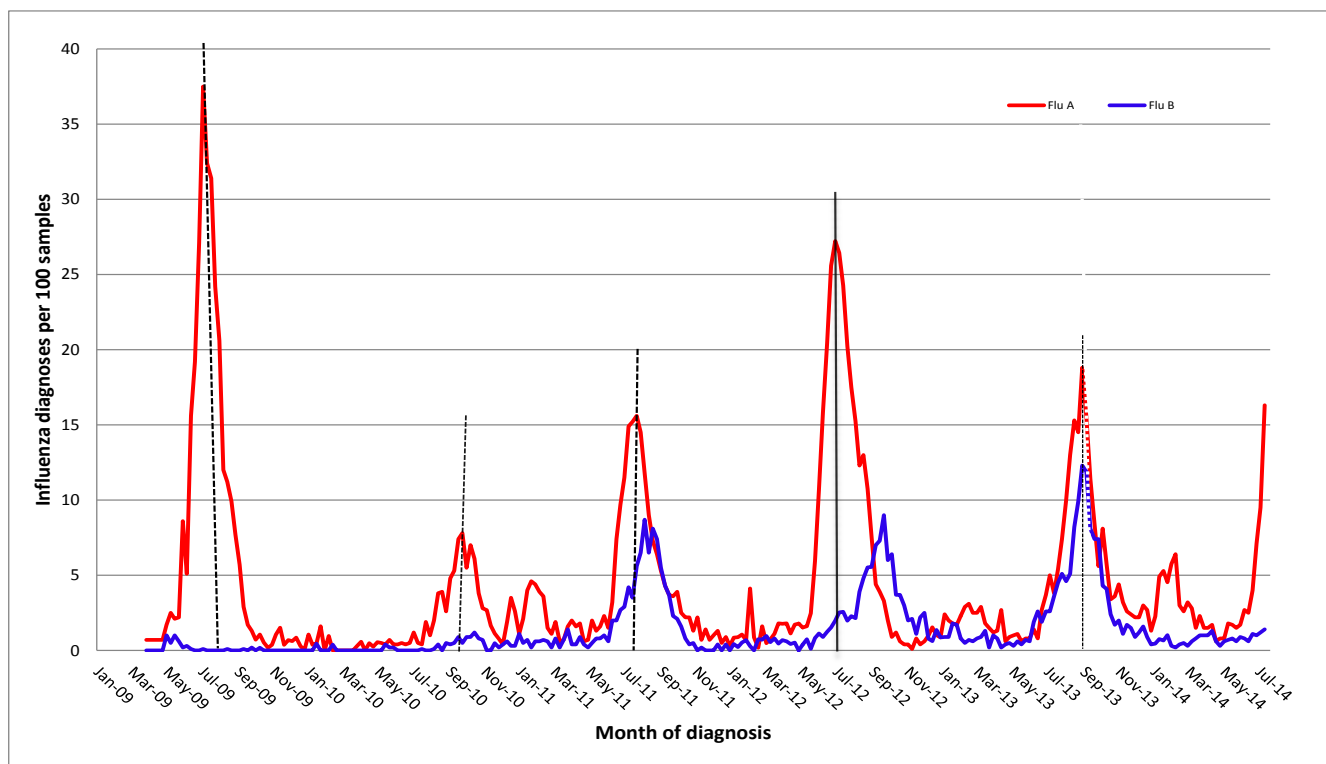
Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 13 July 2014.

Month ending	Total Tests	TEST RESULTS *															
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	Entero	HMPV		
		Total	(%)	H3N2 **	(%A) **	H1N1 pdm09	(%A)	A (Not typed)	(%A)							Total	(%)
02/02/2014*	3541	163	(4.6%)	36	(22.1%)	31	(19.0%)	96	(58.9%)	23	(0.6%)	98	123	90	339	12	32
02/03/2014	3413	127	(3.7%)	19	(15.0%)	39	(30.7%)	69	(54.3%)	12	(0.4%)	56	79	149	362	7	23
30/03/2014	4843	95	(2.0%)	11	(11.6%)	36	(37.9%)	49	(51.6%)	41	(0.8%)	97	135	387	549	22	37
27/04/2014	5360	64	(1.2%)	3	(4.7%)	15	(23.4%)	47	(73.4%)	45	(0.8%)	103	177	753	535	30	50
01/06/2014*	7383	112	(1.5%)	8	(7.1%)	17	(15.2%)	87	(77.7%)	48	(0.7%)	115	159	1011	659	21	83
29/06/2014	6572	280	(4.3%)	90	(32.1%)	33	(11.8%)	156	(55.7%)	58	(0.9%)	102	88	792	560	39	92
Week ending																	
06/07/2014	1876	175	(9.3%)	65	(37.1%)	31	(17.7%)	83	(47.4%)	23	(1.2%)	28	25	162	154	2	35
13/07/2014	2184	356	(16.3%)	113	(31.7%)	45	(12.6%)	198	(55.6%)	31	(1.4%)	38	23	192	169	4	44

Note: * Five week reporting period. ** Subset of influenza A positive tests. Not all influenza A samples are typed; samples that test negative for A(H1N1)pdm09 are assumed to be A(H3N2). *** HMPV = Human metapneumovirus

² **Source:** Participating sentinel laboratories include the following: 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 & Pathology West - Nepean [no data from Oct 2010 to June 2011], Douglas Hanley Moir Pathology, VDRLab [data from 5 March 2010], Laverty Pathology [data from 1 April 2010 to February 2011], SydPath (St Vincent's) Pathology [data from Nov 2010], Medlab, and Laverty [data from September 2013].

Figure 4: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2009 to 13 July 2014, New South Wales.



Note: Laboratory surveillance data is provided by laboratories on a weekly basis and includes point-of-care tests as of 10 August 2012. Serological diagnoses are not included.

Laboratory-confirmed influenza outbreaks in residential care facilities and other settings

There were two respiratory outbreaks in residential care facilities and one in a hospital reported this week associated with influenza A (H3).

In the year to date (up to week ending 13 July), there have been nine laboratory confirmed influenza A outbreaks in institutions reported to NSW Public Health Units (Table 3). All but one outbreak occurred in an aged care facility. At least 96 residents were reported to have had ILI symptoms and eight required hospitalisation. Five deaths in residents linked to the outbreaks have been reported, all of whom were noted to have other significant co-morbidities.

Table 3. Reported influenza outbreaks in NSW institutions, 2006 to July 2014.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014*
No. of outbreaks	2	25	9	1	2	4	39	12	9

Note: * Year to date.

Reports of influenza outbreaks in aged care facilities were uncommon from 2009 to 2011. This is thought to be as a result of the higher levels of sero-protection observed in people in older age-groups against the influenza A(H1N1)pdm09 strain which predominated in these years.

Influenza outbreak reports increased dramatically in 2012 when the influenza A(H3N2) strain predominated. Both strains of influenza A and an influenza B strain circulated during 2013. As influenza A(H3N2) is currently the dominant strain in NSW, people in older age-groups, including residents of aged care facilities, will be at higher risk of infection.

3. Community Illness Surveillance

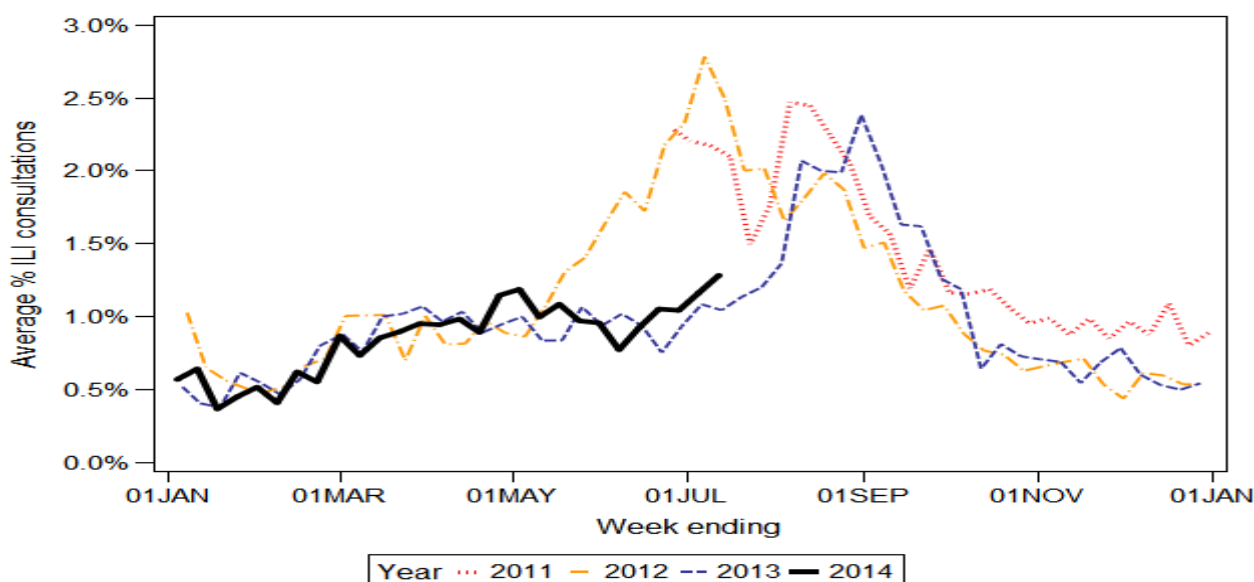
Electronic General Practice Surveillance (eGPS)

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 it is not representative of all practices within the participating LHDs or across NSW.

- In week 28 there were surveillance reports received from 15 sentinel practices in NSW.
- The average rate for patient consultations was 1.3% (range 0.0 – 3.2%) (Figure 5). This is higher than the rate in the previous week and is similar to the ILI activity seen at this time in 2013.

Figure 5. Average rate of influenza-like –presentations to sentinel general practices, by week of consultation 2011-14



The Australian Sentinel Practices Research Network (ASPREN)

ASPREN is a network of sentinel general practitioners (GPs) run through the RACGP and the University of Adelaide that has collected de-identified information on influenza like illness and other conditions seen in general practice since 1991. GPs participating 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 28 there were 19 ASPREN reports received from NSW GPs. The overall consultation rate for ILI has decreased slightly to 6.6%, but is within the usual range seen for this time of year.

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

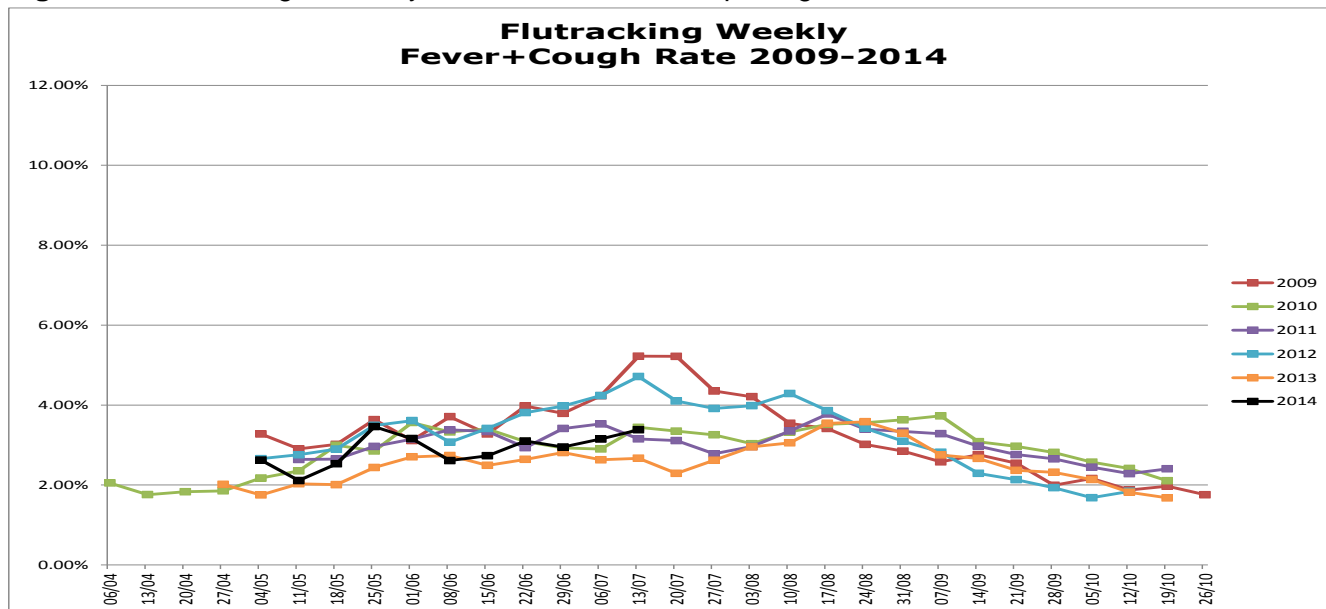
FluTracking.net

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 28 FluTracking received reports for 5500 people in NSW. Fever and cough reports increased slightly compared to the previous week at 3.4% of respondents, and was within the usual range for this time of year (Figure 6). Overall, 1.8% of respondents reported fever, cough and absence from normal duties.

Figure 6: FluTracking – Weekly influenza like illness reporting rate, NSW, 2009 – 2014.



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

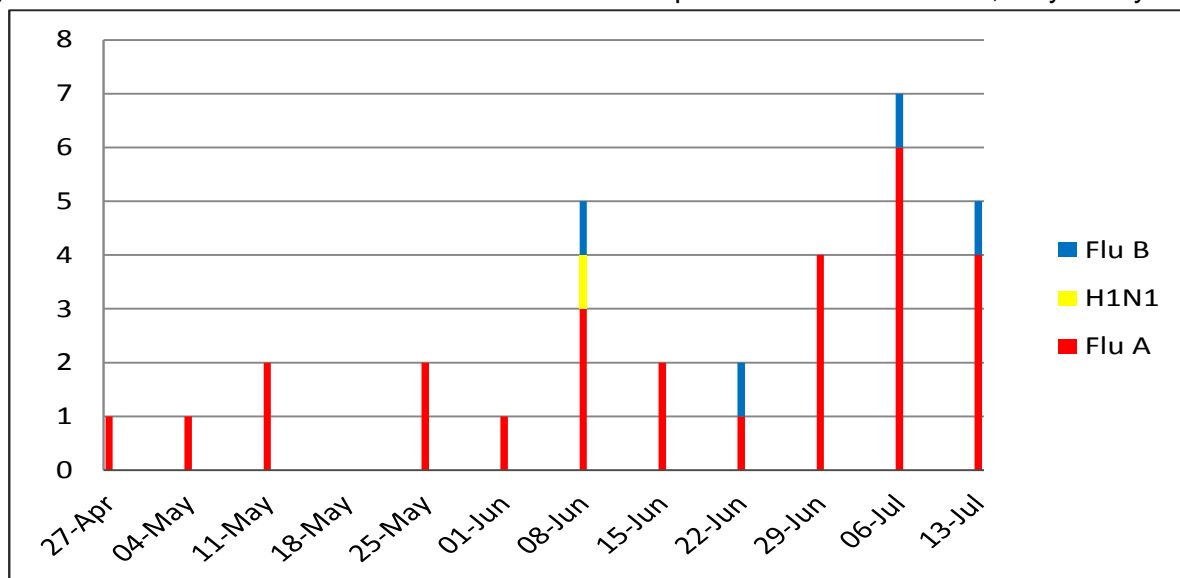
FluCAN (The Influenza Complications Alert Network)

In 2009, [A Rapid Alert System for Severe Respiratory Illness: The FluCAN Surveillance system](#) was created with the involvement and support of the Thoracic Society of Australia and New Zealand and funding from the NHMRC. The aim of FluCAN was to establish and maintain a real-time sentinel hospital surveillance system for acute respiratory disease requiring hospitalisation, which could provide a reliable and timely source of information that could be used to inform public health policy.

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

- In week 28 there were five confirmed influenza admissions reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 32 hospital admissions reported for influenza: 28 with influenza A and three with influenza 4 (Figure 7).
- Of these admissions, 29 were paediatric (<16 years of age) case and five were in adults. Two of the cases were admitted to an ICU.

Figure 7: FluCAN –Number of confirmed influenza hospital admissions in NSW, May – July 2014.



4. National and International Influenza Surveillance

Australian Influenza Activity Update (week ending 4 July 2014)

Nationally influenza activity has started to increase, with almost all jurisdictions reporting increased activity indicating that the 2014 influenza season has begun.

- The 2014 seasonal rise in notifications appears to have started in mid-June 2014.
- As at 4 July 2014, there have been 8,757 cases of laboratory confirmed influenza reported, with 1,440 notifications occurring during the most recent fortnight.
- Nationally influenza A is the predominant influenza virus type. Of those viruses where subtyping data are available, A(H1N1)pdm09 is most common. This trend is consistent across all jurisdictions, except in New South Wales where influenza A(H3N2) is circulating at higher levels.
- The rate of influenza associated hospitalisations has started to increase over the past fortnight, with around 12% of cases admitted directly to ICU. The majority of hospital admissions have been associated influenza A infections and the median age of cases is 46 years.
- There is no indication of the potential severity of the season.
- Influenza virus strains currently circulating within Australia are similar to the strains included in the 2014 vaccine.

For further information on the National Notifiable Disease Surveillance System, which includes laboratory-confirmed influenza reports, see:

<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-ozflu-2014.htm>

Avian influenza in Humans

Human infection with avian influenza A(H7N9) viruses: There were no new confirmed cases. As of 12 July 2014 a total of 451 human cases of avian influenza A(H7N9) have been confirmed in the Mainland, with 298 of these reported in 2014 [Source: Hong Kong Centre for Health Protection [Avian Influenza update](#)].

There remains no evidence of sustained human-to-human transmission and most cases are linked to exposure to poultry, particularly in live poultry markets.

Influenza activity worldwide

The World Health Organization (WHO) summary of global influenza activity as of 28 June noted the following:

Globally influenza activity remained low, with gradual increase of influenza activity in the southern hemisphere, however in Chile influenza activity was relatively high.

- In North America and Europe, overall influenza activity remained at inter-seasonal levels.
- In eastern Asia, influenza activity reached inter-seasonal levels in most countries with influenza A(H3N2) and influenza B virus predominating, although influenza activity was still slightly increasing in the south region of China, mainly due to influenza A(H3N2) viruses.
- In southern and south-eastern Asia, influenza activity continued to decline, except for Singapore that showed a sustained increase in influenza detection rates, even while the rate for influenza-like illness (ILI) activity and acute respiratory infections remained low.
- In northern Africa and western Asia, influenza activity remained low.
- In the southern hemisphere, influenza activity increased but was generally at a low level, except for Chile which showed influenza activity similar to last year's peak, with mainly influenza A(H3N2) detections. In South Africa the influenza detection rate increased mainly due to influenza A(H3N2).

WHO FluNet laboratory reporting during weeks 25 and 26 (15 June to 28 June 2014) noted:

- Of the 29 795 respiratory specimens tested, 2748 (6.9%) were positive for influenza viruses. Of these, 81% were typed as influenza A and 19% as influenza B.
- Of the sub-typed influenza A viruses, 13% were A(H1N1)pdm09 and 87% were A(H3N2).
- Of the characterized B viruses, 94% belonged to the B-Yamagata lineage and 6% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No 215](#).

Useful influenza surveillance links

- Follow the link for the [Australian Influenza Surveillance Reports](#) which provide the latest information on national influenza activity.
- Follow the link for the [World Health Organization Global Influenza Programme](#).
- Follow the link for Australia's [WHO Collaborating Centre for Reference and Research on Influenza](#), part of an international network of centres analysing influenza viruses currently circulating in the human population in different countries around the world. The centre also provides information on the [current vaccine recommendations](#) for influenza.

Composition of 2014 Australian influenza vaccines

The [Australian Influenza Vaccine Committee](#) (AIVC) met on 10 October 2013 and made recommendations for the influenza vaccine components for the Australian 2014 influenza season.

The 2014 trivalent influenza vaccines differ from the 2013 season trivalent vaccines as they contain two new strains. The H1N1 pandemic influenza virus strain, A(H1N1)pdm09, remains in the vaccine but the second influenza A strain and the influenza B strain are different from previous years.

The changes in the vaccine are based on changes in the expected circulating strains this year so it will be especially important for those who are at risk to be vaccinated.

The strains in the 2014 southern hemisphere trivalent seasonal influenza vaccines are:

- A (H1N1): an A/California/7/2009 (H1N1) - like virus, 15 µg HA per dose
- A (H3N2): an A/Texas/50/2012 (H3N2) - like virus *, 15 µg HA per dose
- B: a B/Massachusetts/2/2012 - like virus, 15 µg HA per dose

* A/Texas/50/2012 is an A(H3N2) virus adapted for growth in eggs but which is antigenically similar to the majority of recently circulating A(H3N2) viruses including A/Victoria/361/2001.

The 2014 Influenza vaccination campaign under the National Immunisation Programme was launched on 15 March 2014. Follow the link for more information on the 2014 campaign:

<http://www.immunise.health.gov.au/> .