

NSW Health Influenza Surveillance Report

Week 31 Ending 3 August 2014

Summary:

For the week ending 3 August 2014, influenza activity although eased in the emergency departments, laboratory notifications continued to increase further and is at high levels across NSW.

- [Emergency Department surveillance](#) – ILI presentations to EDs eased this week and remain high. ILI and pneumonia admissions to critical care wards decreased this week but were above the usual range.
- [Laboratory surveillance](#) – Influenza activity increased further this week and was well above the usual range for this time of year, with the influenza A(H3N2) strain predominating. There was continued reporting of laboratory-confirmed influenza outbreaks in aged care facilities.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking indicated increasing ILI activity in NSW.
- [Hospitalisations surveillance \(FluCAN\)](#) – twelve new confirmed influenza admissions were reported.
- [National and International influenza surveillance](#) – the influenza season has commenced nationally; unlike NSW, the influenza A(H1N1)pdm strain is the predominant strain in most jurisdictions. Generally 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](#).

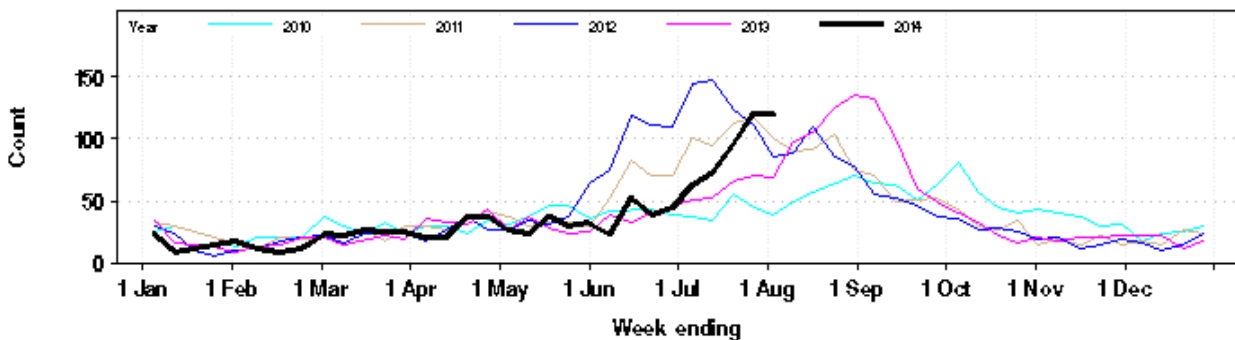
1. Emergency Department (ED) Surveillance

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

Data from 59 NSW emergency departments (ED) are included ⁽¹⁾.

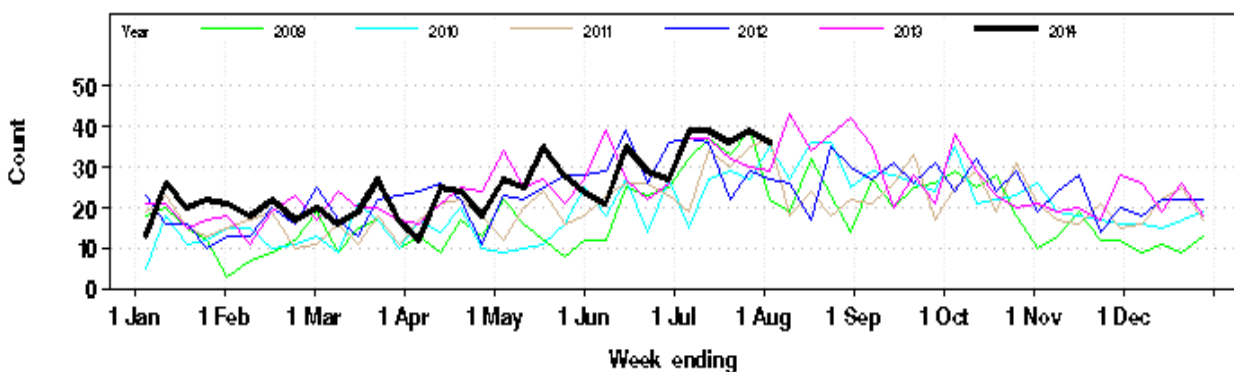
- On 3 August 2014, the index of increase ⁽²⁾ for influenza-like illness ED presentations was 31.5, down from the previous week but well above the season threshold and consistent with the winter influenza season. The index crossed the season threshold of 15 on 1 July 2014.
- This week the total number of ILI presentations eased; ILI presentations as a proportion of all ED presentations remain at high levels at 2.9 cases per 1000 presentations (Figure 1 and Table 1). This was approaching peak levels seen in previous years and was above the usual range seen for this time of year.
- Combined ILI and pneumonia admissions to critical care wards decreased slightly this week however were slightly above the normal range for this time of year (Figure 2 and Table 1).
- Pneumonia presentations for people aged 65 years and over was significantly increased (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 3 August 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 – 3 August 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.

(2) 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.

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)	Steady	Above		Western Sydney, Nepean Blue Mountains and Sydney LHDs		
	Pneumonia	Increased	Usual	65+ year olds			
	Pneumonia and ILI admissions	Decreased	Above				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Decreased	Usual				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Increased	Above	All age groups	All metropolitan LHDs and John Hunter and Dubbo hospitals		
Asthma	Decreased	Below					
Ambulance calls, NSW	Breathing problems	Increased	Above	65+ year olds	Sydney metropolitan area		

* **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 3 August 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories³ which tested positive for influenza A increased further and was at a high level for this time of year; influenza B activity was slightly increased (Table 2 and Figure 3).

Overall, a total of 3861 tests for respiratory viruses were reported with 1369 specimens (35.5%) 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 was the leading respiratory virus identified by laboratories this week; respiratory syncytial virus (RSV) and rhinovirus activity both remain high (Table 2).

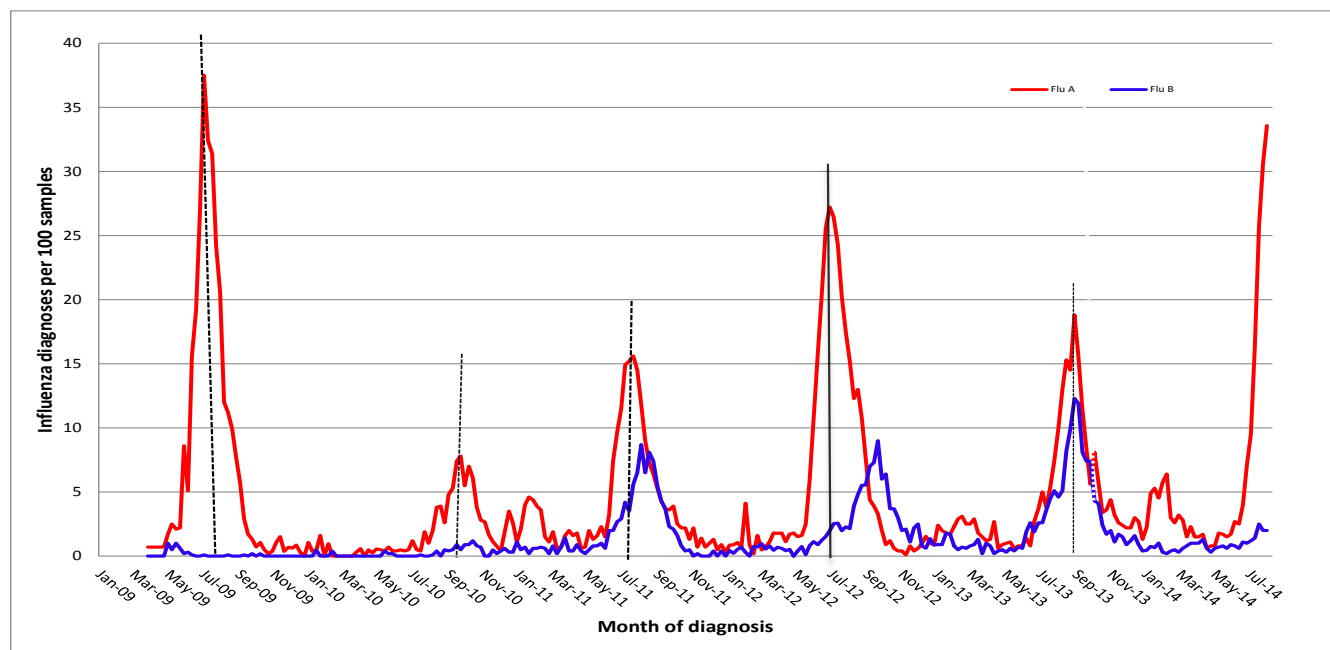
Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 3 August 2014.

Month ending	Total Tests	TEST RESULTS *															
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	Entero	HMPV		
		Total		H3N2 **		H1N1 pdm09		A (Not typed)								Total	
		Total	(%)	Total	(%A) **	Total	(%A)	Total	(%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%)	34	(12.1%)	156	(55.7%)	58	(0.9%)	102	88	792	560	39	92
03/08/2014	13818	3497	(25.3%)	958	(27.4%)	327	(9.4%)	2216	(63.4%)	264	(1.9%)	216	143	852	926	22	245
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
20/07/2014	2794	718	(25.7%)	208	(29.0%)	67	(9.3%)	443	(61.7%)	70	(2.5%)	48	25	165	211	6	57
27/07/2014	3103	956	(30.8%)	223	(23.3%)	59	(6.2%)	674	(70.5%)	63	(2.0%)	47	34	146	193	7	49
03/08/2014	3861	1292	(33.5%)	349	(27.0%)	125	(9.7%)	818	(63.3%)	77	(2.0%)	55	36	187	199	3	60

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

³ **Source:** Participating sentinel laboratories include the following: South Eastern Area Laboratory Services (Data incomplete for week 29), 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 3: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2009 to 3 August 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 institutions

There were five respiratory outbreaks in residential care facilities and three in hospital settings reported this week, the majority were associated with the influenza A(H3N2) strain (five remain untyped, two were influenza A (H1N1 and H3 combined and one was influenza B and A (H3) combined).

In the year to date, there have been 36 laboratory confirmed influenza A outbreaks in institutions reported to NSW public health units (Table 3). All but five of the outbreaks occurred in aged care facilities; at least 415 residents were reported to have had ILI symptoms and 52 required hospitalisation. Twelve deaths in residents linked to these outbreaks have been reported, all of whom were noted to have other significant co-morbidities.

As influenza A(H3N2) is currently the dominant strain in NSW, people in older age-groups, including residents of aged care facilities, are again at higher risk of infection.

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

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014*
No. of outbreaks	2	25	9	1	2	4	39	12	36

Note: * Year to date.

3. Community Illness Surveillance

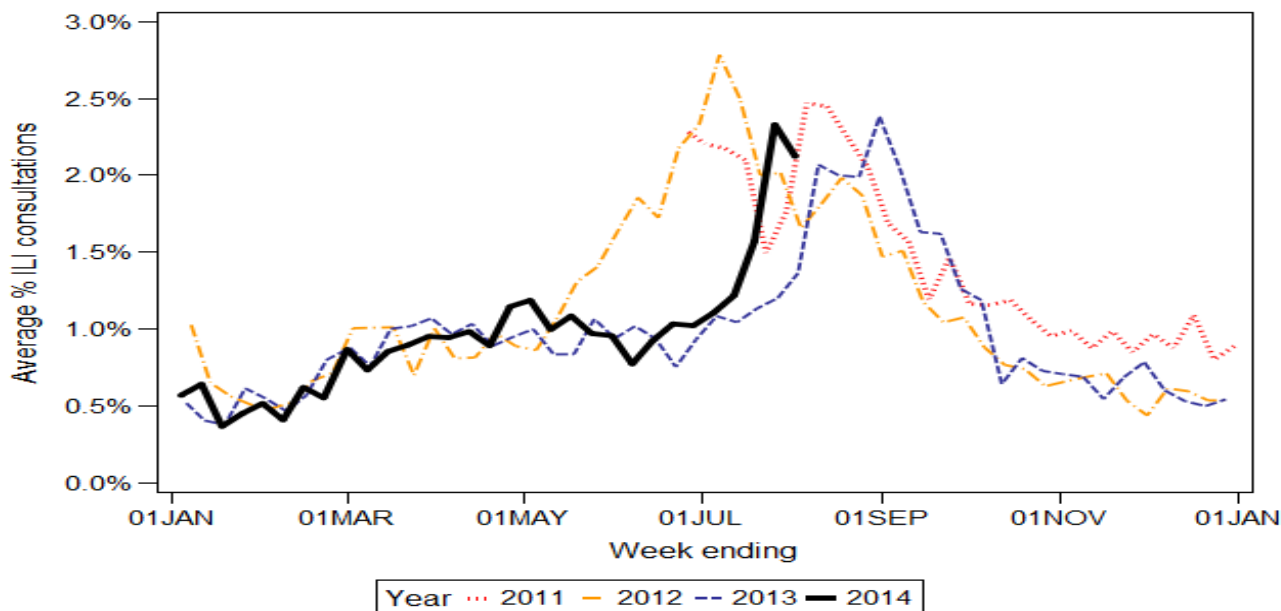
Electronic General Practice Surveillance (eGPS)

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 31 there were surveillance reports received from 14 sentinel practices in NSW.
- The average rate for patient consultations was 2.1% (range 0.7 – 6.1%) (Figure 5). This is lower 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



*Note – South Eastern Sydney are currently only providing data for 3 practices.

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 31 there were 33 ASPREN reports received from NSW GPs. The overall consultation rate for ILI has increased to 3.5%, but is within the usual range seen for this time of year.

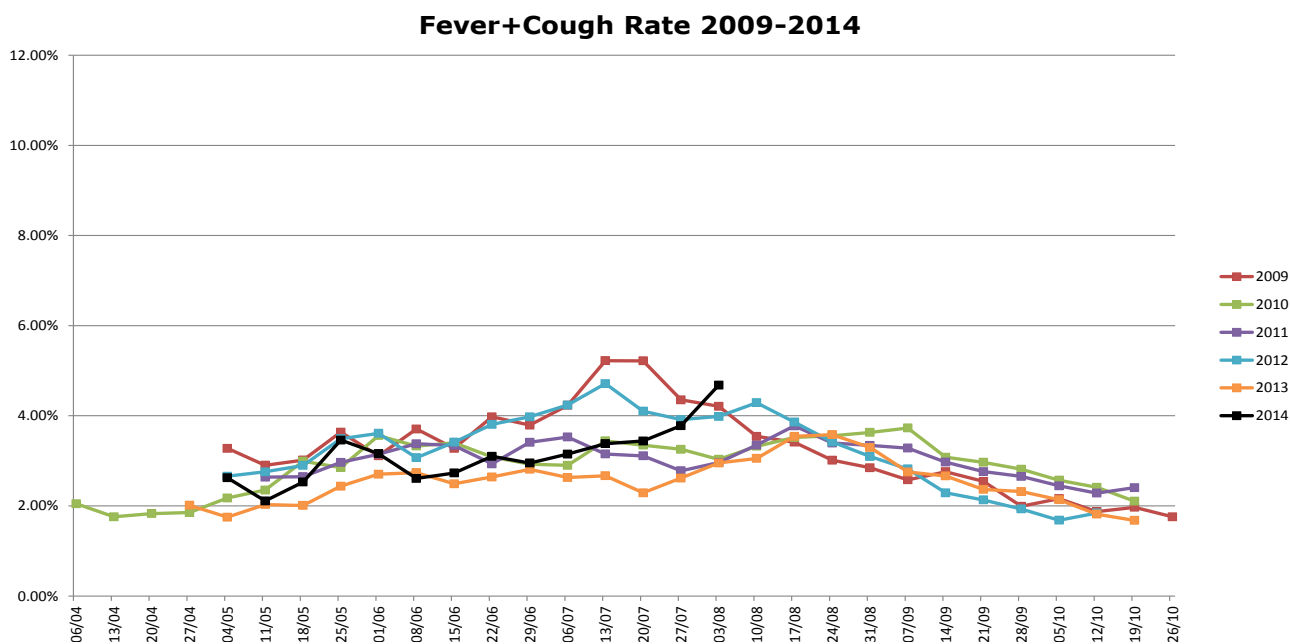
For further information please see the [ASPREN](#) website.

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 31 FluTracking received reports for 5510 people in NSW. Fever and cough reports increased compared to the previous week at 4.7% of respondents, and was above the usual range for this time of year (Figure 6). Overall, 3.1% of respondents reported fever, cough and absence from normal duties, which has increased compared to the previous week.

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



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

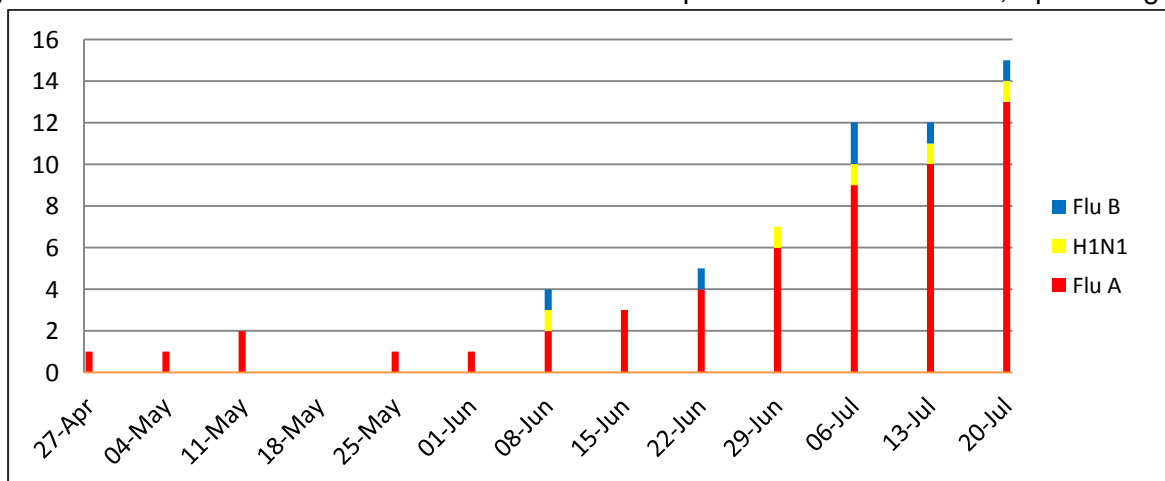
FluCAN (The Influenza Complications Alert Network)

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 31 there were 12 confirmed influenza admissions reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 91 hospital admissions reported for influenza: 84 with influenza A and seven with influenza B (Figure 7).
- Of these admissions, 53 were paediatric (<16 years of age) case and 38 were in adults. Two of the cases were admitted to an ICU.

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



4. National and International Influenza Surveillance

Australian Influenza Activity Update (week ending 18 July 2014)

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

Nationally influenza activity has continued to increase, with almost all jurisdictions reporting increasing activity.

- As at 18 July 2014, there have been 11,868 cases of laboratory confirmed influenza reported, with 2,893 notifications occurring during the report 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 and the ACT where influenza A(H3N2) is circulating at higher levels.
- Influenza virus strains currently circulating within Australia are similar to the strains included in the 2014 vaccine.
- The rate of influenza associated hospitalisations has dropped slightly over the past fortnight, with around 11% of cases admitted directly to ICU. The majority of hospital admissions have been associated with influenza A infections and the median age of cases is 43 years.
- As yet, there is no clear indication of the overall severity of the season.

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 27 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 July noted that 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 viruses predominating. Influenza activity increased slightly in the southern region of China however, mainly due to influenza A(H3N2) viruses.
- In northern Africa and western Asia, influenza activity remained low.
- In the southern hemisphere, influenza activity continued to increase in most countries. In the temperate zone of South America influenza-like illness (ILI) continued to increase but was predominantly due to respiratory syncytial virus (RSV). Influenza A(H3N2) was the most common detected influenza virus.
- In South Africa the influenza detection rate increased with influenza A(H3N2) the most frequently detected virus.

WHO FluNet laboratory reporting during weeks 27 and 28 (29 June to 12 July 2014) noted:

- Of the 25 675 respiratory specimens tested, 3184 (12.4%) were positive for influenza viruses. Of these, 89% were typed as influenza A and 11% as influenza B.
- Of the sub-typed influenza A viruses, 18% were A(H1N1)pdm09 and 82% were A(H3N2).
- Of the characterized B viruses, 98% belonged to the B-Yamagata lineage and 2% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No 216](#).

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 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.