

# NSW Health Influenza Surveillance Report

Week 33 Ending 17 August 2014

## Summary:

**For the week ending 17 August 2014, influenza activity in the community across NSW remained high and laboratory notifications continued to increase.**

- [Emergency Department \(ED\) surveillance](#) – influenza-like illness (ILI) presentations to ED increased further this week and remained high. ILI and pneumonia admissions to critical care wards decreased this week and were within 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. Reporting of laboratory-confirmed influenza outbreaks in aged care facilities remains high.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking indicated high ILI activity in NSW.
- [Hospitalisations surveillance \(FluCAN\)](#) – one new confirmed influenza admission was 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](#).

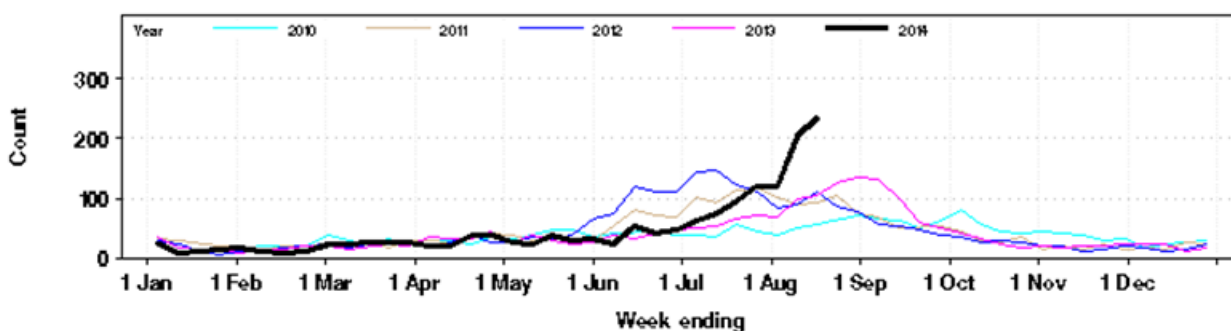
# 1. Emergency Department (ED) Surveillance

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

Data from 59 NSW emergency departments (ED) are included <sup>(1)</sup>.

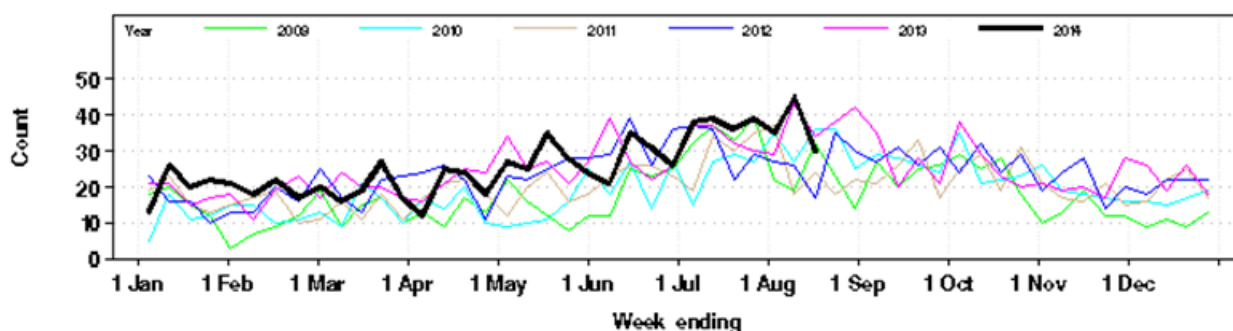
- The index of increase <sup>(2)</sup> for influenza-like illness presentations to ED increased further during the reporting week (reaching 50.1 on 13 August), and remained well above the season threshold for the winter influenza season. The index crossed the season threshold of 15 on 1 July 2014.
- The total number of ILI presentations to ED increased further, and ILI presentations as a proportion of all ED presentations also remained high at 5.6 cases per 1000 presentations (Figure 1 and Table 1). This was well above the peak levels seen in previous years and was above the usual range seen for this time of year. ILI presentations to ED in the Hunter New England, South Eastern Sydney, Western Sydney and Northern Sydney Local Health Districts were above the peak levels of recent years (Table 1).
- Combined ILI and pneumonia admissions to critical care wards decreased this week and were within the normal range for this time of year (Figure 2 and Table 1).
- The overall number of respiratory, fever and unspecified infection presentations remained above the usual range for this time of year, and were above peak levels of recent years (Table 1).

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, from January – 17 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 – 17 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)	Increased	<b>Above</b>	17+ year olds	Hunter New England, South Eastern Sydney, Western Sydney and Northern Sydney LHDs		Rural areas still trending up, Metro has started trending down.
	Pneumonia	Increased	<b>Above</b>	65+ year olds	Kempsey hospital	Situation report sent on 12 Aug 2014 for Kempsey pneumonia.	Presentations have decreased, but remain higher than previous years.
	Pneumonia and ILI admissions	Decreased	<b>Above</b>	65+ year olds			
	Pneumonia and ILI critical care admissions	Decreased	Usual		Belmont hospital		4 of 5 patients aged 65+ years.
	Bronchiolitis	Decreased	Usual				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Steady	<b>Above</b>	All age groups	Sydney metropolitan LHDs except Central Coast, and Hunter New England (particularly Armidale) and Nepean Blue Mountains LHDs	Situation report sent 12 Aug 2014 for Armidale Hospital.	
	Asthma	Steady	Usual				
Ambulance calls, NSW	Breathing problems	Increased	<b>Above</b>	35+ 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 17 August 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories <sup>(3)</sup> which tested positive for influenza A increased further and remained above the usual range for this time of year (Table 2 and Figure 3). Influenza B activity also increased this week.

Overall, a total of 5793 tests for respiratory viruses were reported with 2293 specimens (39.6%) testing positive for influenza viruses. These testing results suggest that the influenza A (H3N2) strain is continuing to circulate at higher levels than the influenza A (H1N1) or influenza B strains (Table 2).

Influenza was the leading respiratory virus identified by laboratories this week; reports of rhinovirus, respiratory syncytial virus and human metapneumovirus were also high for this time of year (Table 2).

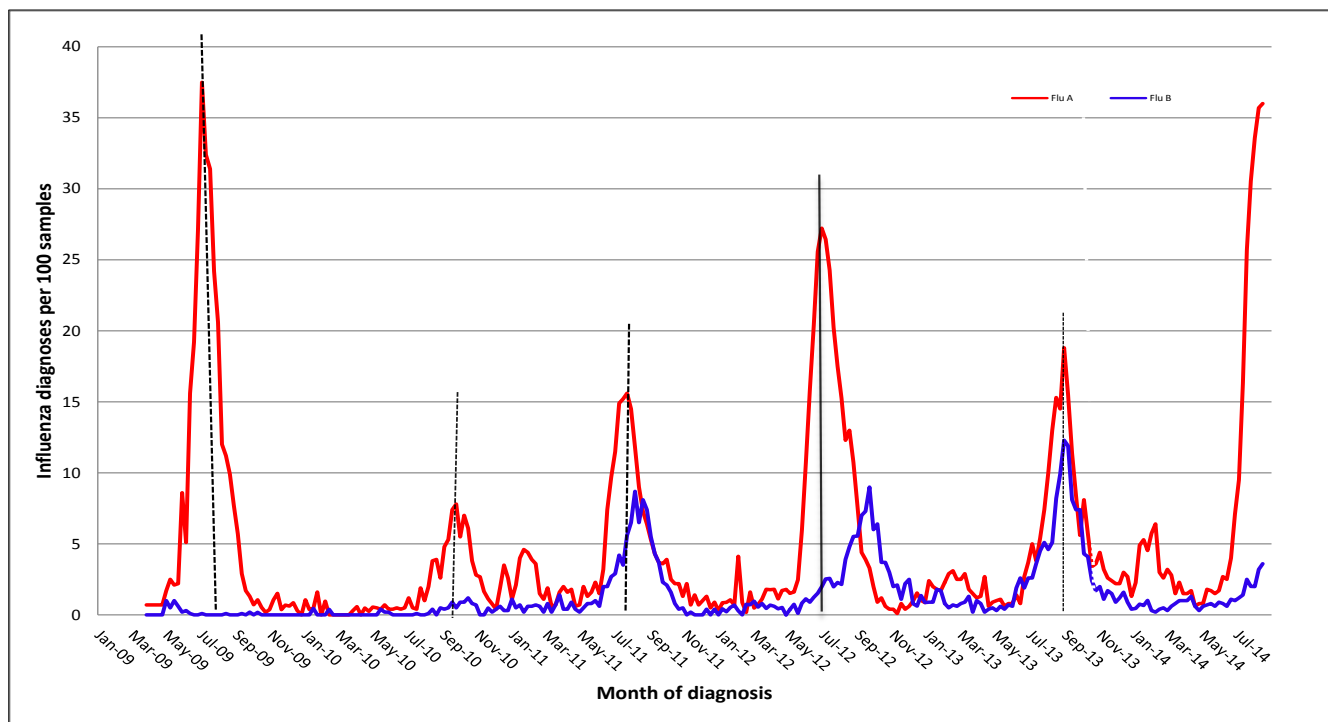
**Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 17 August 2014.**

Month ending	Total Tests	TEST RESULTS *															
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	Enterov	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
<b>Week ending</b>																	
10/08/2014	4259	1519	(35.7%)	380	(25.0%)	146	(9.6%)	993	(65.4%)	137	(3.2%)	56	32	85	220	3	73
17/08/2014	5793	2084	(36.0%)	410	(19.7%)	182	(8.7%)	1490	(71.5%)	209	(3.6%)	60	54	192	175	3	58

**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 17 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 16 respiratory outbreaks in residential care facilities and one in a hospital setting reported this week; seven were due to the influenza A(H3N2) strain, one was due to the A(H1N1) strain and nine remain untyped.

In the year to date there have been 62 laboratory-confirmed influenza outbreaks in institutions reported to NSW public health units (Table 3). Fifty-four of these outbreaks have been in aged care facilities (ACF), with at least 697 residents affected and resulting in 84 hospitalisations. Nineteen deaths in residents linked to these ACF outbreaks have been reported, although influenza has not been confirmed for all of the fatal cases.

As influenza A(H3N2) is currently the dominant strain in NSW people in older age-groups, particularly residents of aged care facilities, are at higher risk of infection than when influenza A(H1N1)pdm was the dominant strain.

**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	62

**Note:** \* Year to date.

### 3. Community Illness Surveillance

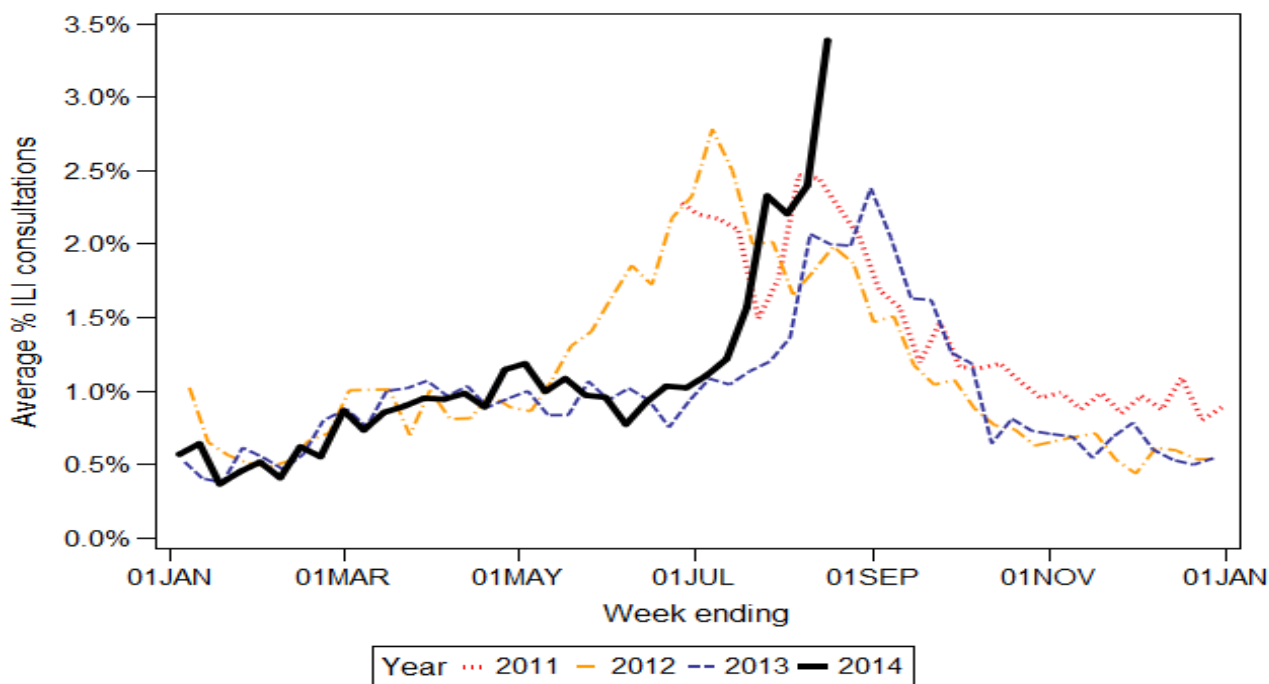
#### Electronic General Practice Surveillance (eGPS)

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 they are not representative of all practices within the participating LHDs or across NSW. In week 33:

- there were 13 surveillance reports received from eGPS sentinel practices in NSW;
- the average rate for patient consultations was 3.4% (range 0.6 – 11%), which was higher than in the previous week and markedly higher than for the same time period in recent years (Figure 5).

**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 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. 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 33 there were 41 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was 4.8 per cent, similar to the previous week, and within the usual range seen for this time of year.

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

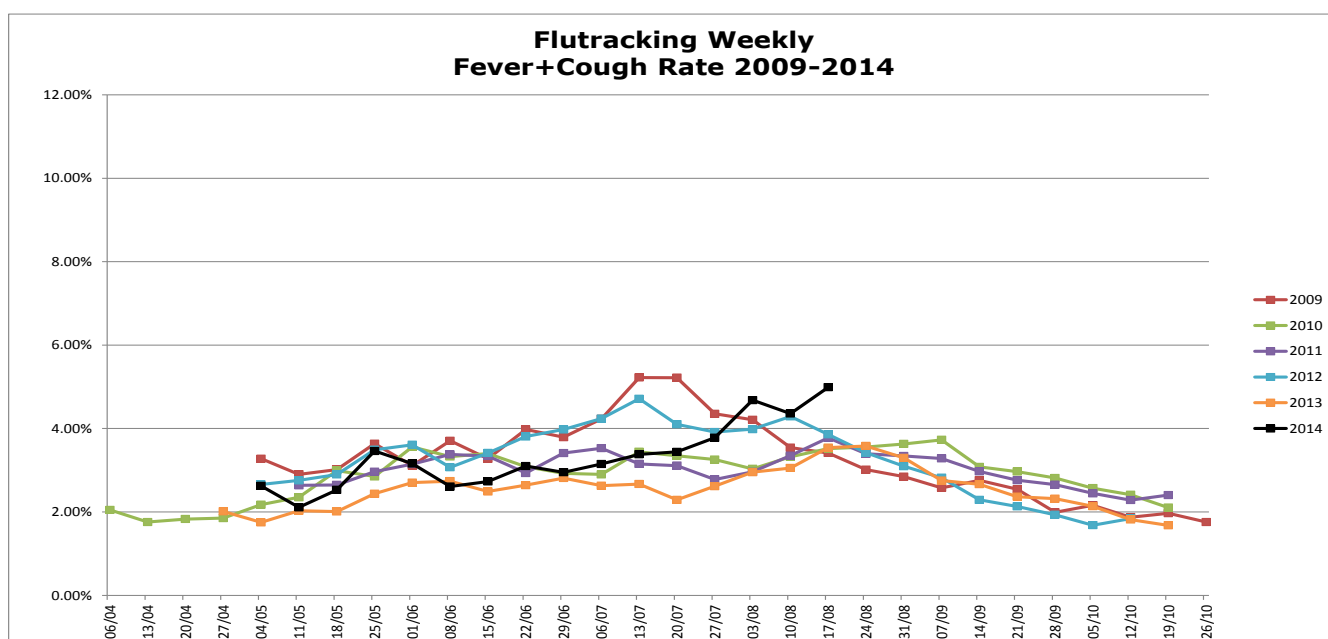
## FluTracking.net

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 33 FluTracking received reports for 5476 people in NSW, including:

- 5.0% of respondents reported fever and cough, higher than the previous week and above the usual range for this time of year (Figure 6);
- 3.4% of respondents reported fever, cough and absence from normal duties, higher than the previous week (data not shown).

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



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

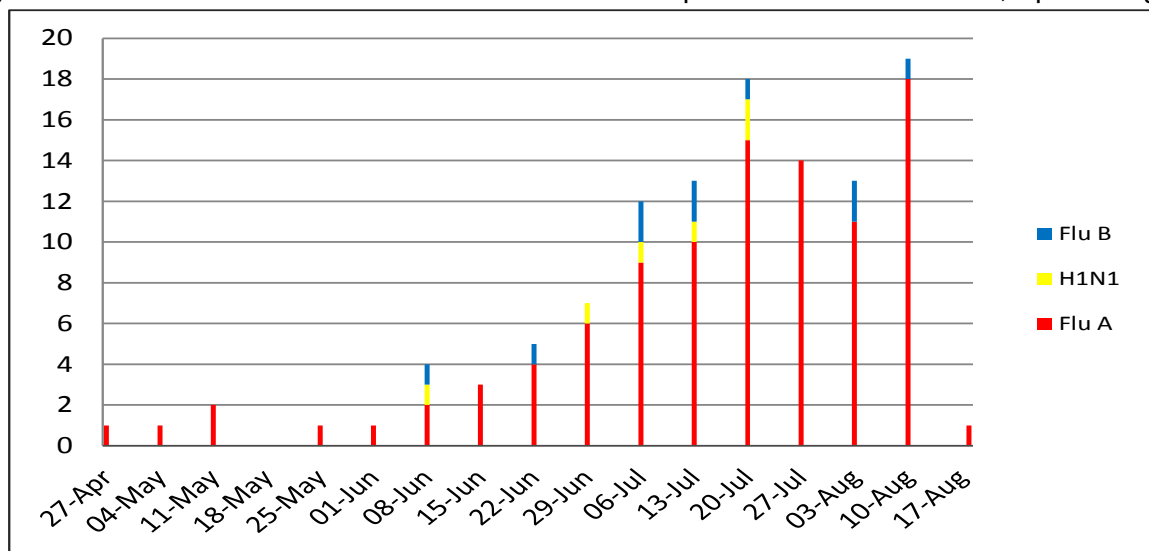
## FluCAN (The Influenza Complications Alert Network)

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 33 there was 1 confirmed influenza admission reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 115 hospital admissions reported for influenza: 105 with influenza A and 10 with influenza B (Figure 7).
- Of these admissions, 75 were paediatric (<16 years of age) case and 40 were in adults. Nine of the cases were admitted to an ICU/HDU.

**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 15 August 2014)

The Australian Department of Health has reported the following:

- Seasonal influenza activity has continued to increase across all jurisdictions with New South Wales and Queensland reporting the highest levels of activity.
- For the year to 15 August 2014, there had been 29 155 cases of laboratory-confirmed influenza reported, of which 10 410 cases had been notified in the latest fortnight.
- Influenza A strains continue to predominated over influenza B strains.
- Influenza A(H1N1)pdm09 remains the predominant influenza virus type in most jurisdictions where subtyping data are available. However, influenza A(H3N2) is the dominant strain in New South Wales and the Australian Capital Territory, with reporting of this strain also increasing in Western Australia.
- Laboratory analyses suggest that the current influenza vaccine is likely to provide good coverage against the influenza viruses currently circulating in Australia (reported by the WHO Collaborating Centre for Reference and Research on Influenza in Melbourne).
- The rate of influenza associated hospitalisations has dropped slightly over the past fortnight, with around 10 per cent of cases admitted directly to intensive care units. The majority of hospital admissions have been associated with influenza A infections and these patients have had a median age of 42 years.
- The severity of the 2014 influenza season appears to be moderate across most jurisdictions, although only NSW has noted a markedly increased impact on aged-care facilities (as described in this report).

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>

## Influenza activity worldwide

The World Health Organization (WHO) influenza update released on 11 August 2014 noted that globally influenza activity remained low, with influenza-like illness activity in the southern hemisphere either at or approaching peak seasonal levels.

- In the temperate zone of South America influenza-like illness continued to increase, but was predominantly due to respiratory syncytial virus (RSV). Influenza A(H3N2) was the most commonly detected influenza virus.
- In New Zealand, the influenza season seemed to have started with increased influenza-like illness and increasing number of influenza detections reported. Influenza A(H1N1)pdm09 the most commonly detected influenza virus strain. In South Africa the influenza detection rate increased with influenza A(H3N2) the most frequently detected influenza virus strain.
- In Europe, North America and eastern Asia influenza activity remained at inter-seasonal levels. In central Africa and western Asia, influenza activity was also low. Influenza activity still continued in the southern region of China mainly due to influenza A(H3N2) viruses.

WHO FluNet laboratory reporting during weeks 29 and 30 (13 July to 26 July 2014) noted:

- Of the 16 203 respiratory specimens tested, 1579 (12.4%) were positive for influenza viruses. Of these, 81% were typed as influenza A and 19 per cent as influenza B.
- Of the sub-typed influenza A viruses, 43% were A(H1N1)pdm09 and 57 per cent were A(H3N2).
- Of the characterized B viruses, 57% belonged to the B-Yamagata lineage and 43% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No 217](#).

## 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.