

# NSW Health Influenza Surveillance Report

Week 39 Ending 28 September 2014

## Summary:

**For the week ending 28 September 2014, influenza activity in the community across NSW was moderate and continues to trend downward.**

- [Emergency Department \(ED\) surveillance](#) – influenza-like illness (ILI) presentations to ED decreased further this week but remained at moderate levels. ILI and pneumonia admissions to critical care wards decreased this week and were below the usual range for this time of year.
- [Laboratory surveillance](#) – influenza activity eased further this week but remains above the usual range for this time of year, with the influenza A(H3N2) strain predominating. There were no reports of laboratory-confirmed influenza outbreaks occurring in aged care facilities.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking show ILI activity trending downward and returning to inter-season levels.
- [Hospitalisations surveillance \(FluCAN\)](#) – one new influenza admission was reported.
- [National and international influenza surveillance](#) – the influenza A(H1N1)pdm09 strain is the predominant strain in most jurisdictions (apart from NSW and ACT). Moderate influenza activity was reported across the southern hemisphere.
- [Recommended composition of 2015 influenza vaccines](#) – The World Health Organization (WHO) has provided recommendations for the 2015 southern hemisphere winter influenza season including two strain changes.

## 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](#).

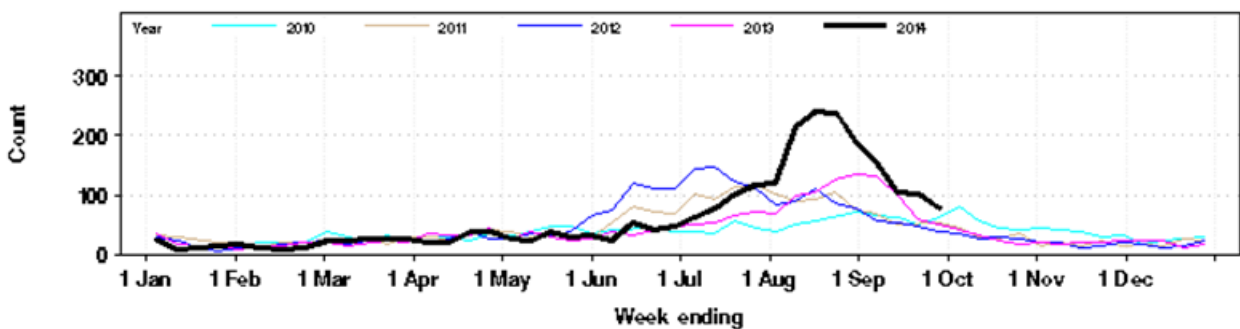
# 1. Emergency Department (ED) Surveillance

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

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

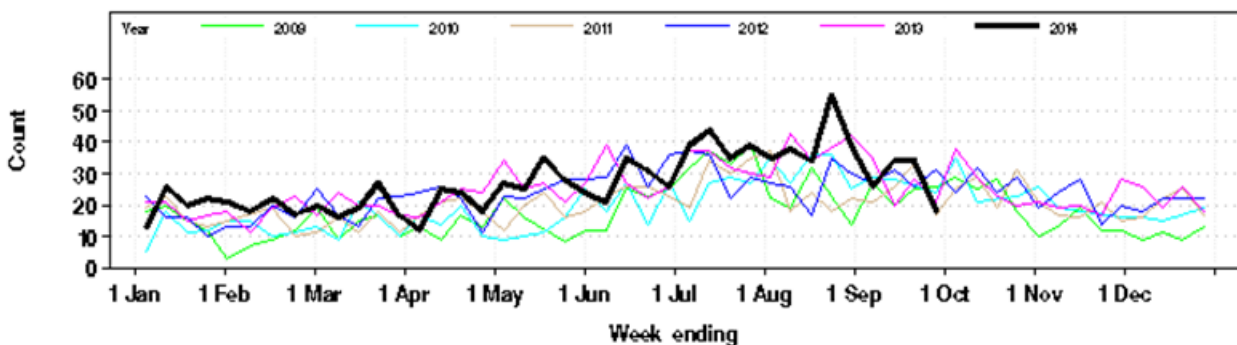
- On 28 September the index of increase for influenza-like illness presentations was 8.4, below the threshold of 15. The index crossed the season threshold of 15 on 1 July 2014 and the peak index level of 50.7 was on 13 August.
- The total number of ILI presentations to EDs continued to trend downwards, (Figure 1 and Table 1) although presentations remained above the range of activity seen in previous years.
- ILI presentations to EDs as a proportion of all ED presentations were moderate at 2.0 cases per 1000 presentations.
- Combined ILI and pneumonia admissions to critical care wards decreased further this week and were below the range for this time of year (Figure 2 and Table 1).
- The overall number of patients presenting with bronchiolitis increased. This was slightly above the usual range for the time of year (Table 1).

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, from January – 28 September 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 – 28 September 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 for the week ending 28 September 2014. 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)	Decreased	Above	<b>65+ year olds</b>			
	Pneumonia	Decreased	Usual				
	Pneumonia and ILI admissions	Decreased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Increased	Above				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Decreased	Usual				
	Asthma	Steady	Usual				
Ambulance calls, NSW	Breathing problems	Decreasing	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 28 September 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A continued to decrease. Activity remains at moderate levels (Table 2 and Figure 3). Influenza B activity also decreased this week.

Overall, a total of 3372 tests for respiratory viruses were reported with 428 specimens (12.7%) testing positive for influenza viruses. The influenza A (H3N2) strain is continuing to circulate at higher levels than the influenza A(H1N1)pdm09 or influenza B strains (Table 2). Influenza was the leading respiratory virus identified by laboratories this week; reports of rhinovirus, adenovirus and human metapneumovirus (HMPV) were also high for this time of year (Table 2).

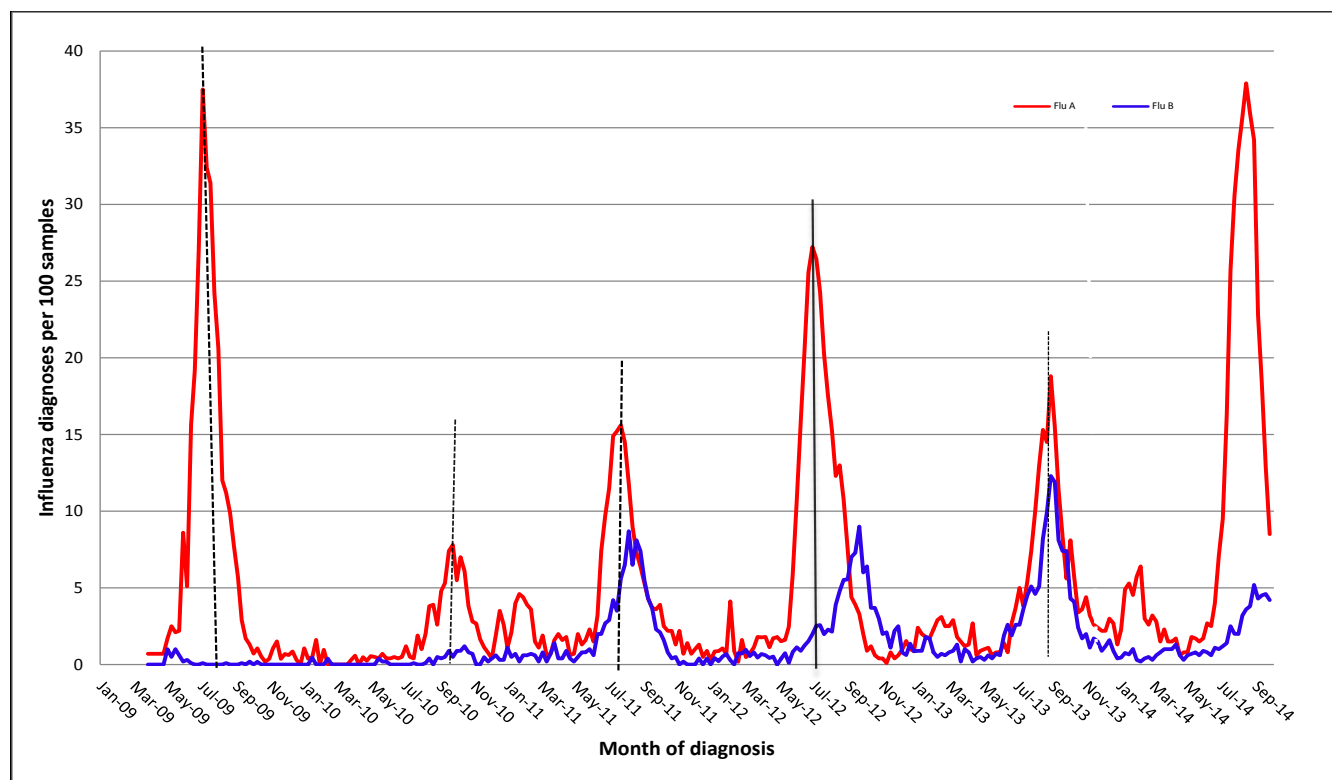
**Table 2:** Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 28 September, 2014.

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 (%)	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%)	959 (27.4%)	327 (9.4%)	2215 (63.3%)	264 (1.9%)	216	143	852	926	22	245			
31/08/2014	22209	7980 (35.9%)	1620 (20.3%)	659 (8.3%)	5595 (70.1%)	893 (4.0%)	275	155	416	990	41	319			
28/09/2014	17167	2831 (16.5%)	475 (16.8%)	173 (6.1%)	2183 (77.1%)	754 (4.4%)	371	227	264	1210	76	369			
<b>Week ending</b>															
07/09/2014	5244	1195 (22.8%)	215 (18.0%)	70 (5.9%)	910 (76.2%)	224 (4.3%)	107	51	75	252	16	83			
14/09/2014	4485	825 (18.4%)	140 (17.0%)	57 (6.9%)	628 (76.1%)	204 (4.5%)	81	40	83	283	27	100			
21/09/2014	4066	523 (12.9%)	78 (14.9%)	32 (6.1%)	413 (79.0%)	186 (4.6%)	100	74	45	328	16	112			
28/09/2014	3372	288 (8.5%)	42 (14.6%)	14 (4.9%)	232 (80.6%)	140 (4.2%)	83	62	61	347	17	74			

**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 (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]. Medlab data not available for week ending 5 September 2014.

**Figure 3:** Percent of respiratory samples positive for influenza A or influenza B, 1 January 2009 to 28 September 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 no respiratory outbreaks in residential care facilities reported this week.

In the year to date there have been 115 laboratory-confirmed influenza outbreaks in institutions reported to NSW public health units (Table 3). One hundred and six of these outbreaks have been in residential care facilities (RCF), with at least 1744 residents affected and resulting in 200 hospitalisations. Seventy-nine deaths in residents linked to these RCF outbreaks have been reported, although influenza has not been confirmed for all of the fatal cases.

People in older age-groups are at higher risk of infection from influenza A(H3N2) strains (currently the dominant strain in NSW) than from the influenza A(H1N1)pdm09 strain. An influenza A(H3N2) strain also predominated in 2012 and was associated with an increase in influenza outbreaks in institutions, particularly aged care facilities (Table 3).

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

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014*
No. of outbreaks	2	25	9	1	2	4	39	12	115

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

### 3. Community Illness Surveillance

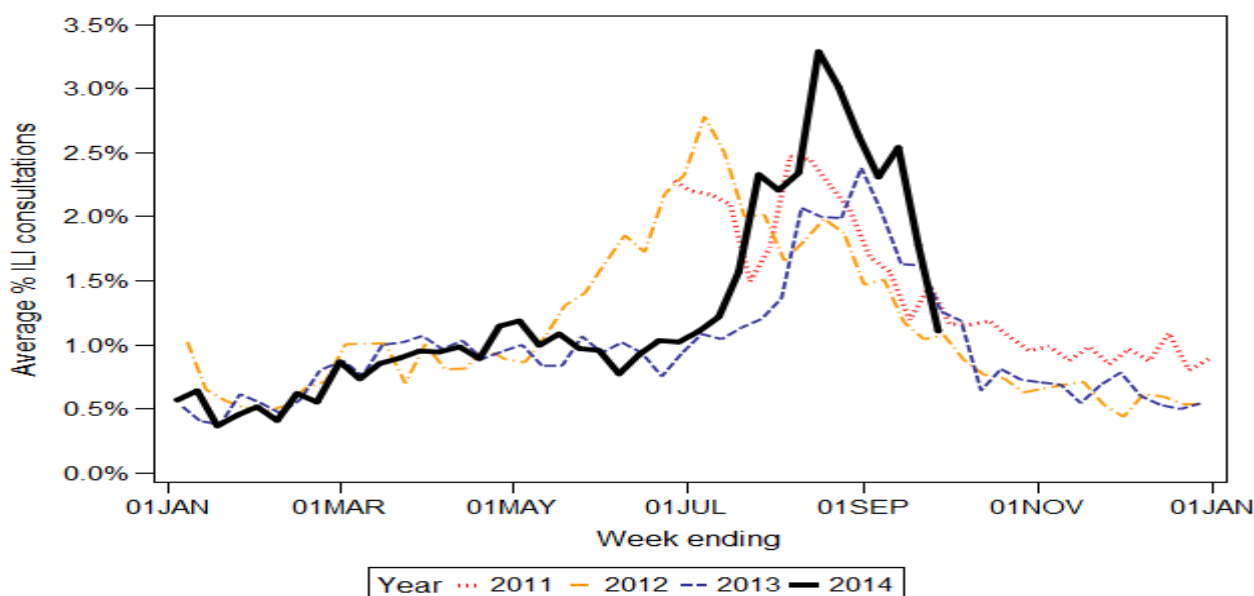
#### Electronic General Practice Surveillance (eGPS)

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 39:

- there were 11 surveillance reports received from eGPS sentinel practices in NSW;
- the average rate for patient consultations was 1.1% (range 0.5 – 2.3%), which was lower than the previous week and similar to 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 2 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 39 there were 32 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was 6.7 per cent, up from the previous week and higher than the usual range seen for this time of year.

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

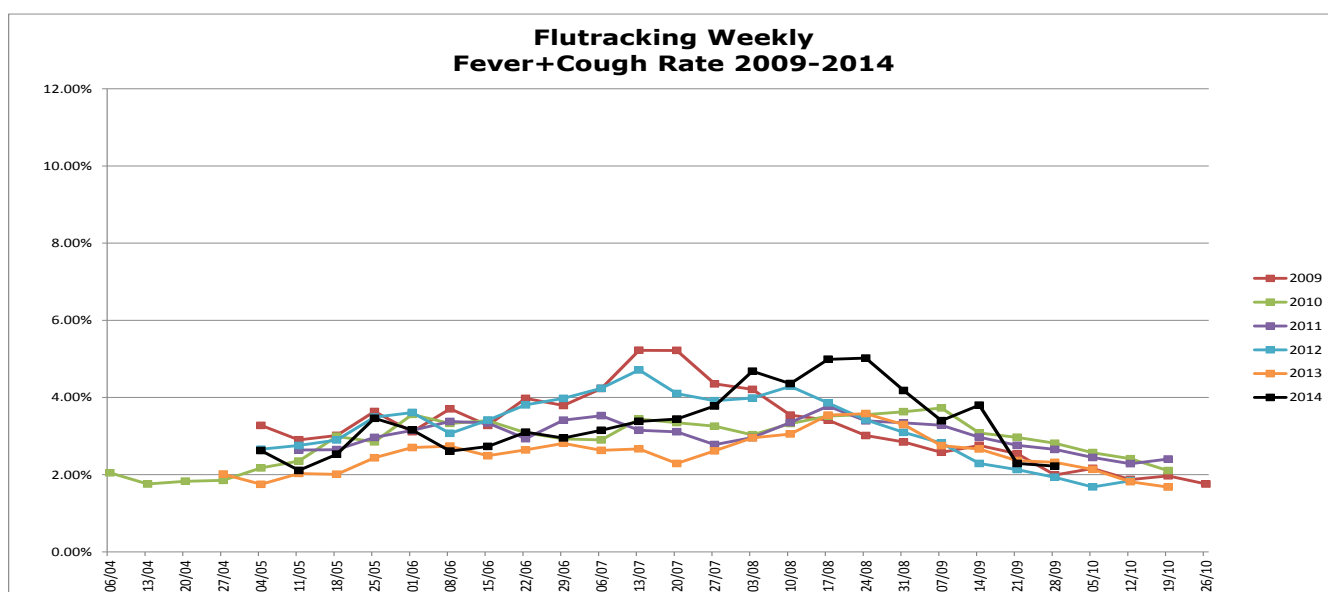
## FluTracking.net

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 39 FluTracking received reports for 4959 people in NSW, including:

- 2.2% of respondents reported fever and cough, similar to the previous week and was within the usual range for this time of year (Figure 6);
- 1.3% of respondents reported fever, cough and absence from normal duties, similar to 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.

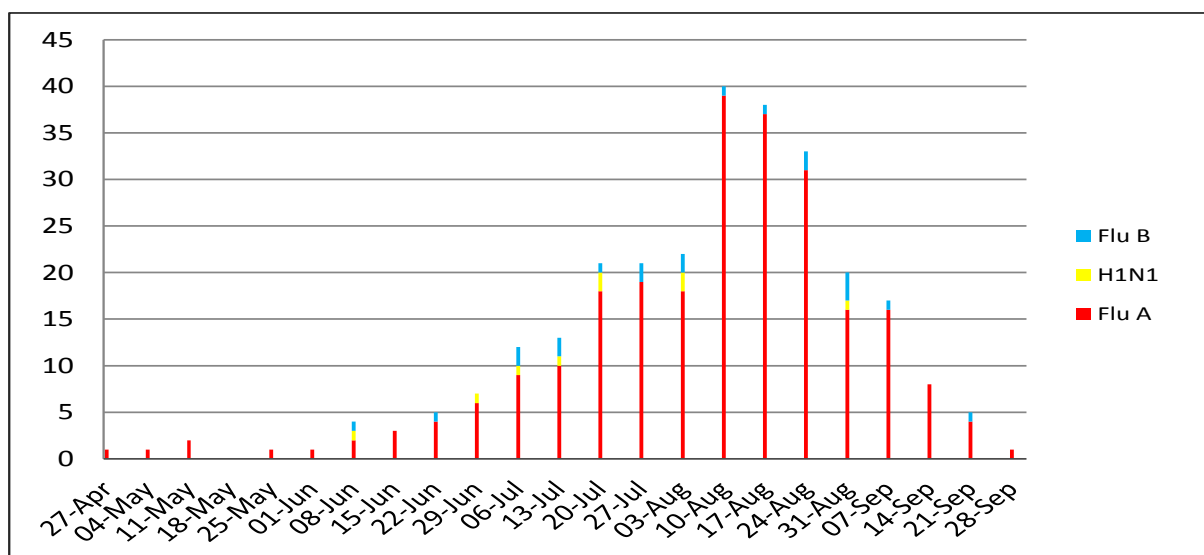
## FluCAN (The Influenza Complications Alert Network)

In 2009, the [FluCAN](#) surveillance system was created with the involvement and support of the Thoracic Society of Australia and New Zealand and with funding from the NHMRC to be a rapid alert system for severe respiratory illness. 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 (Westmead data not supplied).

- In week 39 there was one influenza admission reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 276 hospital admissions reported for influenza: 256 with influenza A and 20 with influenza B (Figure 7).
- Of these admissions, 145 were paediatric (<16 years of age) case and 131 were in adults. Eighteen of the cases were admitted to an ICU/HDU.

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



## 4. National and International Influenza Surveillance

### Australian Influenza Activity Update (week ending 12 September 2014)

The Australian Department of Health has reported the following:

- Across almost all jurisdictions, seasonal influenza activity appears to have peaked in recent weeks with the exception of South Australia where activity has been plateauing.
- There have been 52,746 cases of laboratory confirmed influenza reported, with 9,088 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 remains the predominant influenza virus type in most jurisdictions. However, in New South Wales and the Australian Capital Territory, influenza A(H3N2) remained the most common virus type.
- The influenza vaccine is likely to provide good coverage against the currently circulating viruses.
- The rate of influenza associated hospitalisations has remained stable over the past fortnight, with around 10% of cases admitted directly to ICU. The majority of hospital admissions have been associated influenza A infections and the median age of cases is 50 years.
- The severity of the 2014 influenza season appears to be moderate across most jurisdictions. However, more severe activity is noted in NSW.

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>

### Recommended composition of 2015 Australian influenza vaccines

The WHO Consultation on the Composition of Influenza Vaccines for the Southern Hemisphere 2015 was held in Geneva on 22-24 September 2014. Following the Consultation, WHO changed its recommendations for the composition of trivalent vaccines for use in the 2015 influenza season (southern hemisphere winter) as follows:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Switzerland/9715293/2013 (H3N2)-like virus<sup>a</sup>;
- a B/Phuket/3073/2013-like virus.



It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

<sup>a</sup>A/South Australia/55/2014, A/Norway/466/2014 and A/Stockholm/6/2014 are A/Switzerland/9715293/2013-like viruses

These changes from the previous vaccine recommendations (for the southern hemisphere in 2014 and the northern hemisphere in 2014-2015) reflect observed antigenic drift in circulating A(H3N2) and B/Yamagata lineage viruses. More details about the most recent recommendations can be found at: [http://www.who.int/influenza/vaccines/virus/recommendations/2015\\_south/en/](http://www.who.int/influenza/vaccines/virus/recommendations/2015_south/en/).

## Avian influenza in Humans

### Human infection with avian influenza A(H7N9) viruses:

On 2 September 2014, the National Health and Family Planning Commission of China notified the World Health Organization (WHO) of two new laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus. Since this time there have been no further cases.

According to the most recent update on avian influenza A(H7N9) available on the Hong Kong Centre for Health Protection [website](#), a total of 453 human cases of avian influenza A(H7N9) have been confirmed in the Mainland. This has been the first report of cases of avian influenza A(H7N9) since July 2014.

There remains no evidence of sustained human-to-human transmission and most cases are linked to exposure to poultry, particularly in live poultry markets. The disease is mild in poultry so outbreaks remain difficult to detect.

### Influenza activity worldwide

The World Health Organization (WHO) influenza update released on 12 September 2014 noted that globally the influenza season was ongoing in the southern hemisphere. Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

- In Europe and North America, overall influenza activity remained at inter-seasonal levels.
- In tropical countries of the Americas, influenza B was predominant with co-circulation of respiratory syncytial virus (RSV).
- In Africa (with exception of the southern cone) and western Asia, influenza activity was low.
- In eastern Asia, influenza activity remained low in most countries with influenza A(H3N2) the main detected virus subtype. Influenza A(H3N2) and B activity continued in south China.
- In the southern hemisphere, the influenza season was ongoing. In the temperate zone of South America, influenza activity associated mainly with A(H3N2) viruses decreased. In Australia and New Zealand, the influenza season was ongoing. Australia reported continued high activity associated with A(H1N1)pdm09 and A(H3N2) viruses. In South Africa the influenza season continued with A(H3N2) predominating.

WHO FluNet laboratory reporting during weeks 35 and 36 (24 August to 6 September 2014) noted:

- Of the 22 607 respiratory specimens tested, 2675 (11.8%) 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, 30% were A(H1N1)pdm09 and 70% were A(H3N2).
- Of the characterized B viruses, 98.5% belonged to the B-Yamagata lineage and 1.5% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No 220](#).



## Influenza vaccines for the 2014-2015 northern hemisphere influenza season

Travellers to the northern hemisphere should note that the composition of [influenza vaccines recommended by WHO for the 2014-2015 northern hemisphere influenza season](#) is the same as was recommended for influenza vaccines for the 2014 southern hemisphere influenza season.

### 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.