

# NSW Health Influenza Surveillance Report

Week 42 Ending 19 October 2014

## Summary:

For the week ending 19 October 2014, influenza activity in the community across NSW was low and continues to trend downward.

- [Emergency Department \(ED\) surveillance](#) – influenza-like illness (ILI) presentations to ED decreased further this week and were at low levels. ILI and pneumonia admissions to critical care wards decreased and were within the usual range for this time of year.
- [Laboratory surveillance](#) – influenza activity eased further this week and is within the usual range for this time of year. There was one report of a laboratory-confirmed influenza outbreak occurring in an aged care facility.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking show ILI activity trending downward and returning to inter-season levels.
- [Hospitalisations surveillance \(FluCAN\)](#) – two new influenza admissions were reported.
- [National and international influenza surveillance](#) – National summary of the 2014 influenza season. Two new reports of human cases of infection with the avian influenza A(H7N9) strain from China.
- [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](#).

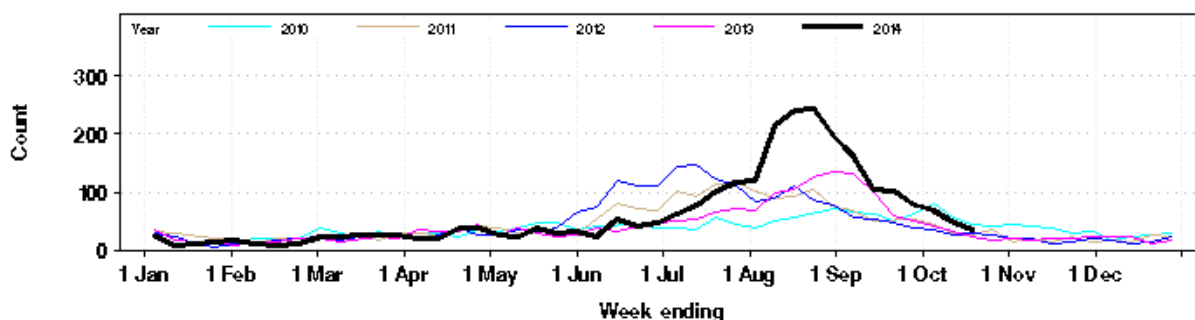
# 1. Emergency Department (ED) Surveillance

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

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

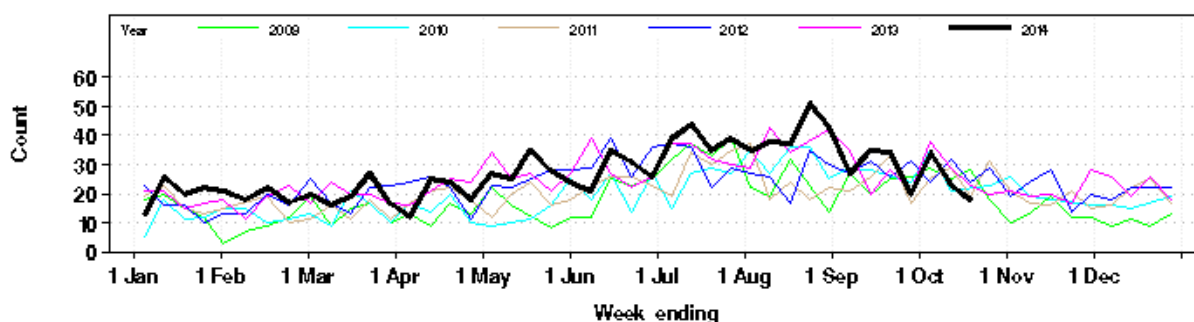
- On 19 October the index of increase for influenza-like illness presentations was 3.0, below the season threshold of 15. The index first exceeded the season threshold on 1 July and the peak index level of 50.7 occurred on 13 August.
- The total number of ILI presentations to EDs continued the trend downwards and presentations have returned to the range of activity seen in previous years (Figure 1 and Table 1).
- ILI presentations to EDs as a proportion of all ED presentations were low at 0.9 cases per 1000 presentations.
- Combined ILI and pneumonia admissions to critical care wards decreased further this week and were within the usual 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 – 19 October 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 – 19 October 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 19 October 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	Usual				
	Pneumonia	Decreased	Usual				
	Pneumonia and ILI admissions	Decreased	Below				
	Pneumonia and ILI critical care admissions	Decreased	Below				
	Bronchiolitis	Decreased	Above				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Decreased	Usual		<b>Liverpool Hospital</b>		
	Asthma	Increased	Below				
Ambulance calls, NSW	Breathing problems	Decreased	Above	<b>0-4 year olds</b>			

\* **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 19 October 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A or influenza B continued to decrease. Activity is now approaching inter-seasonal levels (Table 2 and Figure 3).

Overall, a total of 2024 tests for respiratory viruses were reported with 119 specimens (5.9%) testing positive for influenza viruses. Influenza is no longer the leading respiratory virus identified by laboratories. Rhinovirus was the leading respiratory virus reported this week, with other viruses circulating at usual levels for this time of year (Table 2).

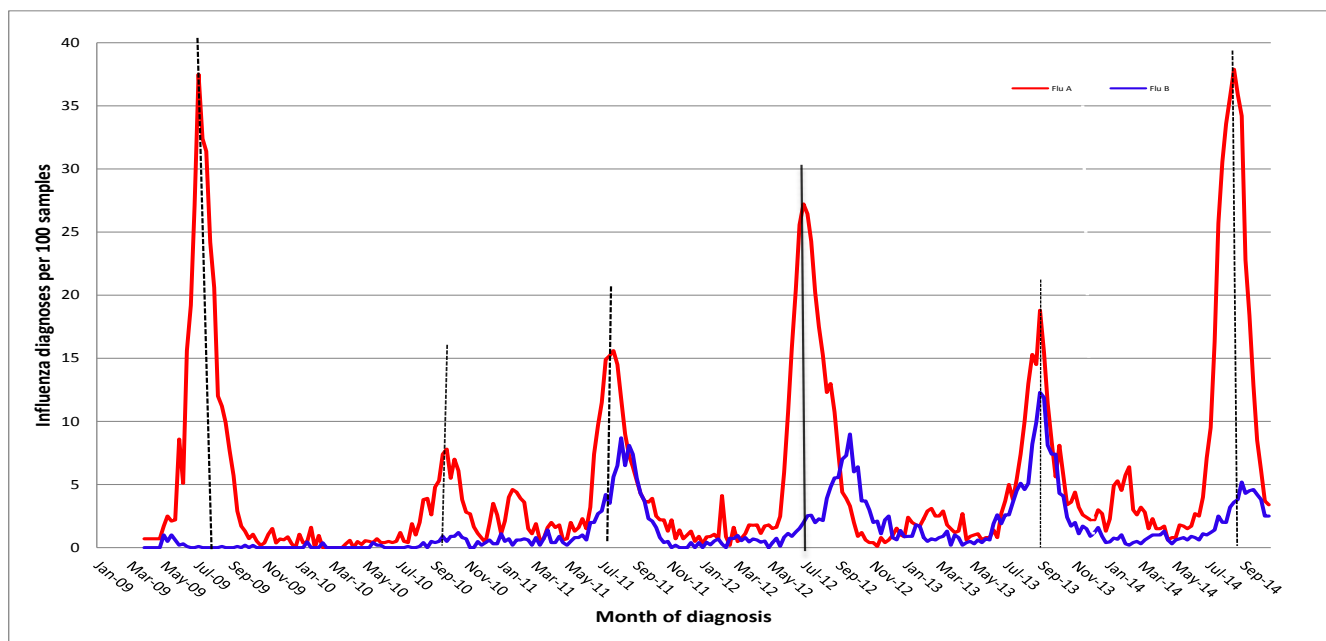
**Table 2:** Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 19 October, 2014.

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%)	959	(27.4%)	327	(9.4%)	2215	(63.3%)	264	(1.9%)	216	143	852	926	22	245
31/08/2014	22209	7982	(35.9%)	1642	(20.6%)	661	(8.3%)	5679	(71.1%)	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>																	
05/10/2014	2630	160	(6.1%)	24	(15.0%)	13	(8.1%)	123	(76.9%)	100	(3.8%)	89	55	51	238	7	89
12/10/2014	2384	100	(4.2%)	8	(8.0%)	3	(3.0%)	89	(89.0%)	64	(2.7%)	68	54	42	209	9	48
19/10/2014	2024	69	(3.4%)	13	(18.8%)	1	(1.4%)	55	(79.7%)	50	(2.5%)	64	50	35	212	36	66

**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 19 October 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 was one influenza A (not typed) outbreak in a residential care facility reported this week.

In the year to date there have been 120 laboratory-confirmed influenza outbreaks in institutions reported to NSW public health units (Table 3). Of these, 111 outbreaks have been in residential care facilities (RCF), with at least 1887 residents affected and resulting in 214 hospitalisations. Ninety 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 October 2014.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014**
No. of outbreaks	2	25	9	1	2	4	39	12	120

**Note:** \* Summary figures are subject to change as they also include updates from previously reported outbreaks.

\*\* Year to date.

## 3. Community Illness Surveillance

### Electronic General Practice Surveillance (eGPS)

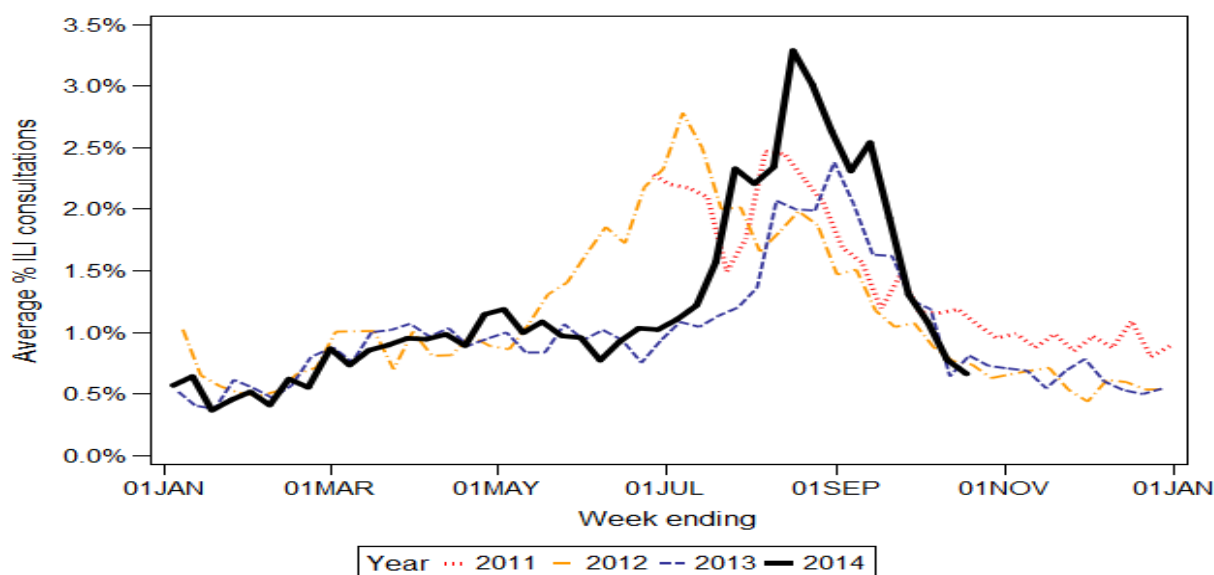
eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney\* (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an

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 42:

- there were 7 surveillance reports received from eGPS sentinel practices in NSW (Northern Sydney practices only);
- the average rate for patient consultations was low at 0.7% (range 0.0 – 1.2%), which was similar to 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



### 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 42 there were 40 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 2.9 per cent, down from the previous week and within the usual range seen for this time of year.

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

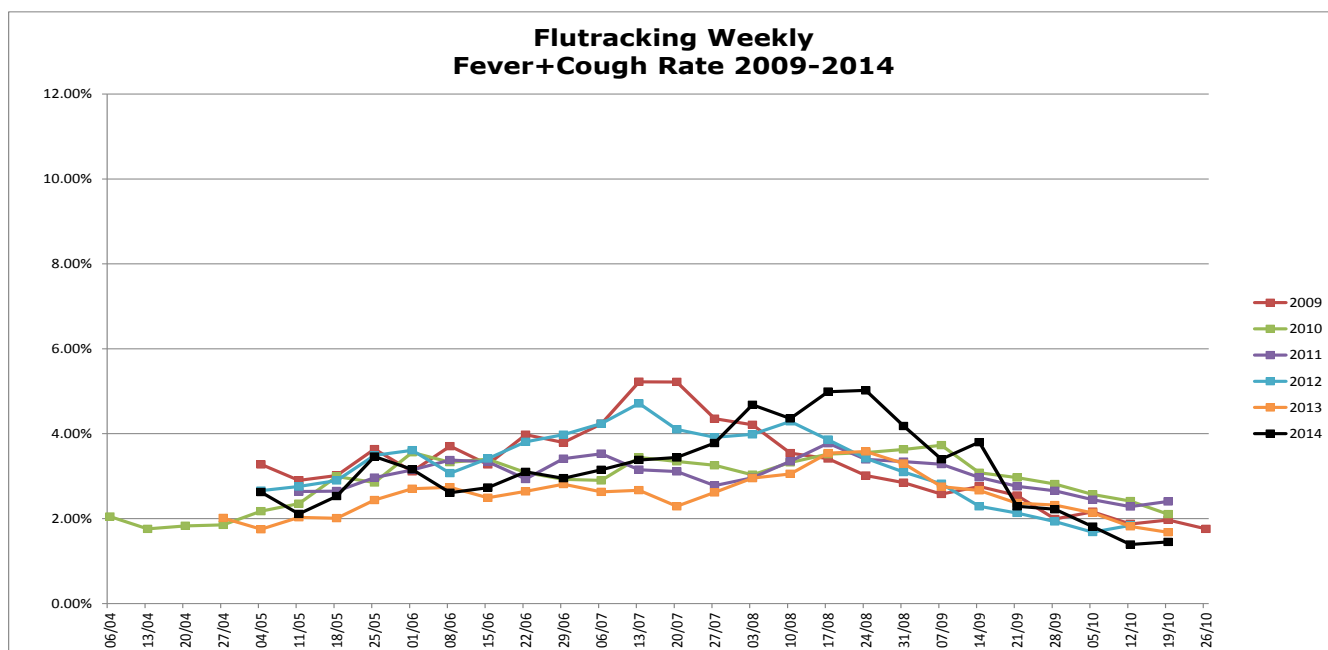
### FluTracking.net

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 42 FluTracking received reports for 5445 people in NSW, including:

- 1.5% of respondents reported fever and cough, slightly up from the previous week and within the usual range for this time of year (Figure 6);
- 0.9% of respondents reported fever, cough and absence from normal duties, slightly 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.

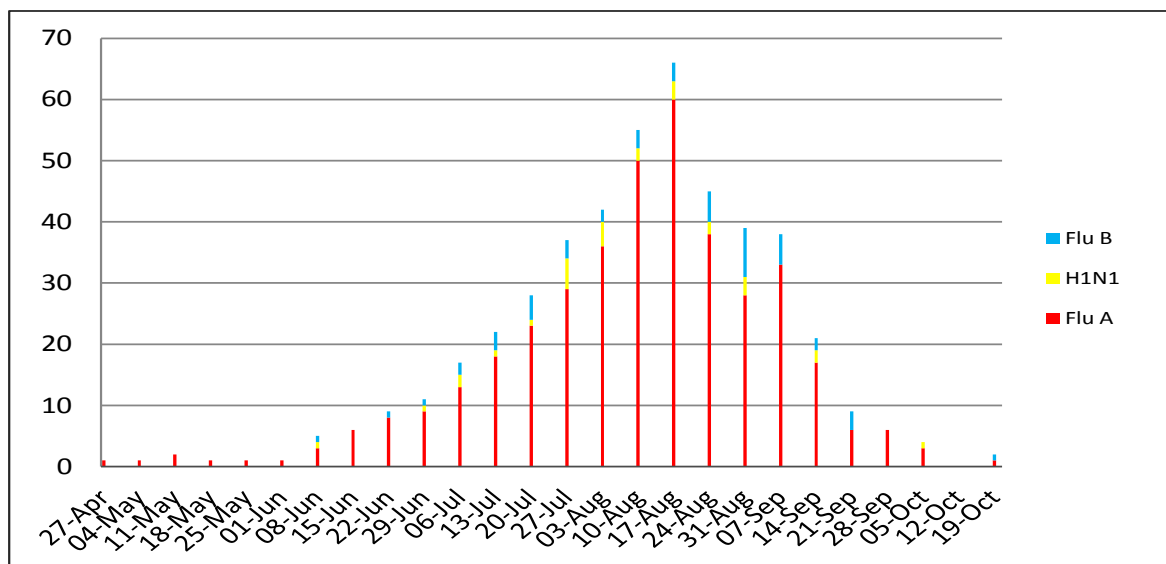
### FluCAN (The Influenza Complications Alert Network)

In 2009, 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.

- In week 42 there were two influenza admissions reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 469 hospital admissions reported for influenza: 422 with influenza A and 47 with influenza B (Figure 7).
- Of these admissions, 152 were paediatric (<16 years of age) case and 317 were in adults. Forty-eight of the cases were admitted to an ICU/HDU.

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



## 4. National and International Influenza Surveillance

### Australian Influenza Activity Update (week ending 10 October 2014)

The Australian Department of Health has reported the following:

Nationally, influenza activity continued to decrease this fortnight with no regions reporting widespread activity.

- There have been 62,918 cases of laboratory confirmed influenza reported, which is almost three times the notifications received for the same period in 2013.
- Over the 2013-14 inter-seasonal period, higher than usual numbers of influenza notifications were reported from most jurisdictions. Rates of inter-seasonal influenza have been generally increasing since the 2009 influenza pandemic. Notification data trends for 2014, show a sharp increase in mid-July, a peak in mid-August followed by a rapid decline to inter-seasonal levels in early October. Overall influenza activity remained elevated for approximately 12 weeks. Nationally, the timing of the season peak was similar to 2013 and 2011.
- Across jurisdictions, influenza activity peaked in mid to late August and was followed by rapid declines. However in South Australia (SA) and Victoria (Vic), there was sustained peak activity for up to five weeks. While the majority of notifications this year were from New South Wales (NSW) (31%) and Queensland (Qld)(27%), two of the most populous jurisdictions, notification rates were highest in SA.
- Nationally influenza A was the predominant influenza virus type however the distribution of influenza types and subtypes was variable between jurisdictions and has changed as the season progressed. Influenza A(H1N1)pdm09 predominated across most jurisdictions throughout the season, however influenza A(H3N2) was predominant in New South Wales and the Australian Capital Territory\*, with late season increases noted in Qld, Western Australia (WA), the Northern Territory (NT) and Tasmania (Tas). In recent weeks, the typical, late season increase in influenza B infections has also been noted.
- Notification rates have had a bimodal age distribution trend, with rates highest in those aged less than 5 years and in those aged 80 years and over, with a smaller peak among those aged 30-44 years. This age distribution trend, especially in the younger to middle aged populations is

consistent with previous years dominated by influenza A(H1N1)pdm09, whereas infections in older age groups is typical of influenza A(H3N2).

- The rate of influenza associated hospitalisations has declined steadily over the past month. The overall rate of influenza cases admitted directly to ICU was 10% which was less than the rate from 2012 and 2013 (around 12%). The majority of influenza associated hospitalisations in 2014 were due to influenza A infections, with very few associated with influenza B infection. Three quarters of hospitalisations had known medical co-morbidities reported. In Australia it has been estimated that there have been over 8,500 adult, influenza-associated hospitalisations since April 2014. The age distribution of hospital admissions shows a peak in the 0-4 year age group, with hospitalisations increasing with increasing age, especially among those aged 65 years and over.

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/) .

## **Influenza activity worldwide**

The World Health Organization (WHO) influenza update released on 6 October 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 co-circulated with respiratory syncytial virus (RSV).
- In Africa and western Asia, influenza activity was low.
- In eastern Asia, influenza activity in most countries remained low or decreased after some influenza A(H3N2) activity in August and September.
- In tropical Asia, influenza activity continued to decrease or remain low with influenza A(H3N2) predominant.
- In the southern hemisphere, influenza activity decreased in general except in several Pacific Islands where ILI activity remained high. In the temperate zone of South America, influenza-like



illness (ILI) decreased and continued to be associated with RSV. Influenza A(H3N2) virus was the most frequently detected influenza virus. In Australia and New Zealand Influenza activity also decreased.

WHO FluNet laboratory reporting during weeks 39 and 40 (21 September to 4 October 2014) noted:

- Of the 34 991 respiratory specimens tested, 1465 (4.2%) were positive for influenza viruses. Of these, 68% were typed as influenza A and 32% 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, 99% belonged to the B-Yamagata lineage and 1% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No 222](#).

## **Avian influenza in Humans**

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

On 18 October 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 455 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 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.