

# NSW Health Influenza Surveillance Report

Week 32 Ending 10 August 2014

## Summary:

**For the week ending 10 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 EDs increased significantly this week and remained high. ILI and pneumonia admissions to critical care wards increased this week and 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. 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.
- [Deaths](#) – 13 deaths linked to influenza reported during the current influenza season.
- [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](#).

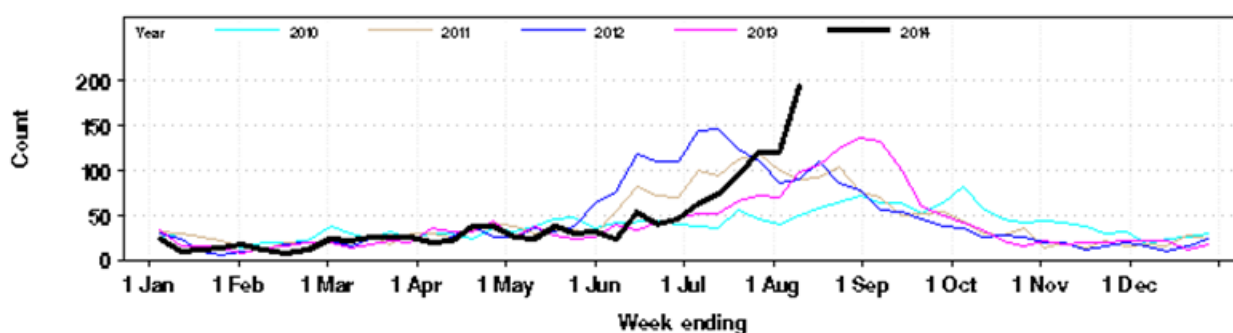
# 1. Emergency Department (ED) Surveillance

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

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

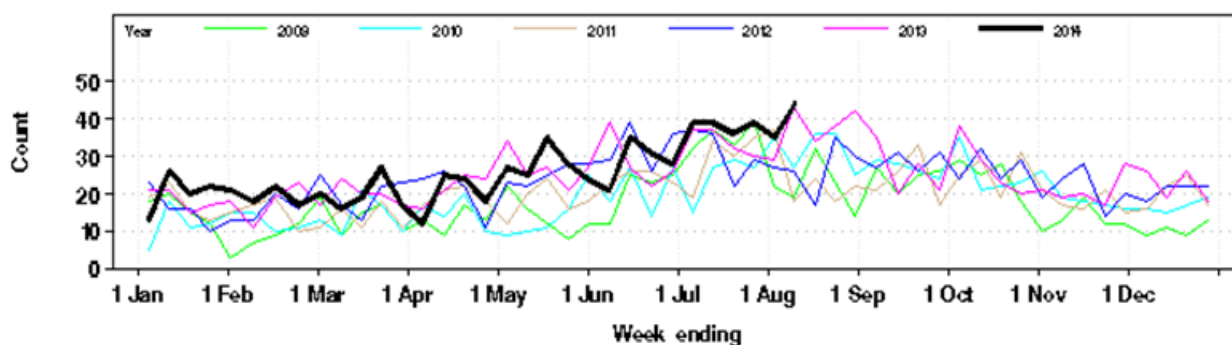
- On 10 August 2014, the index of increase <sup>(2)</sup> for influenza-like illness ED presentations was 45.1, significantly increased from the previous week and well above the season threshold and consistent with the winter influenza season. The index crossed the season threshold of 15 on 1 July 2014.
- This week the total number of ILI presentations increased significantly from already previously elevated levels; ILI presentations as a proportion of all ED presentations remained high at 4.4 cases per 1000 presentations (Figure 1 and Table 1). This was well above 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 increased this week and were above the normal range for this time of year (Figure 2 and Table 1).
- Numbers of respiratory, fever and unspecified infections presentations in all age groups, across several LHDs were above peak levels of recent years. Levels were well above peak levels of recent years at Liverpool and Armidale hospitals (Table 1).

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, from January – 10 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 – 10 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>	<b>0-4 year olds</b> <b>17+ year olds</b>	<b>Northern Sydney, Sydney, South West Sydney and South Eastern Sydney LHDs</b>		
	Pneumonia	Increased	<b>Above</b>	<b>65+ year olds</b>		Situation report for Kempsey Hospital 11 Aug 2014. Not statistically significant but there were a number of critical care admissions.	
	Pneumonia and ILI admissions	Increased	<b>Above</b>	<b>65+ year olds</b>			
	Pneumonia and ILI critical care admissions	Increased	<b>Above</b>				
	Bronchiolitis	Decreased	Usual				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Increased	<b>Above</b>	<b>All age groups</b>	<b>Sydney metropolitan LHDs except Central Coast, and Hunter New England (particularly Armidale), Western NSW and Northern NSW LHDs</b>	Overall situation report sent 7 Aug 2014. Situation report for Armidale Hospital sent 11 Aug 2014.	
	Asthma	Decreased	Usual				
Ambulance calls, NSW	Breathing problems	Increased	<b>Above</b>	<b>65+ year olds</b>	<b>Sydney metropolitan area</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 10 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 was at a high level for this time of year; influenza B activity also increased this week (Table 2 and Figure 3).

Overall, a total of 4259 tests for respiratory viruses were reported with 1656 specimens (38.9%) 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; rhinovirus, respiratory syncytial virus (RSV) and human metapneumovirus also are elevated for this time of year (Table 2).

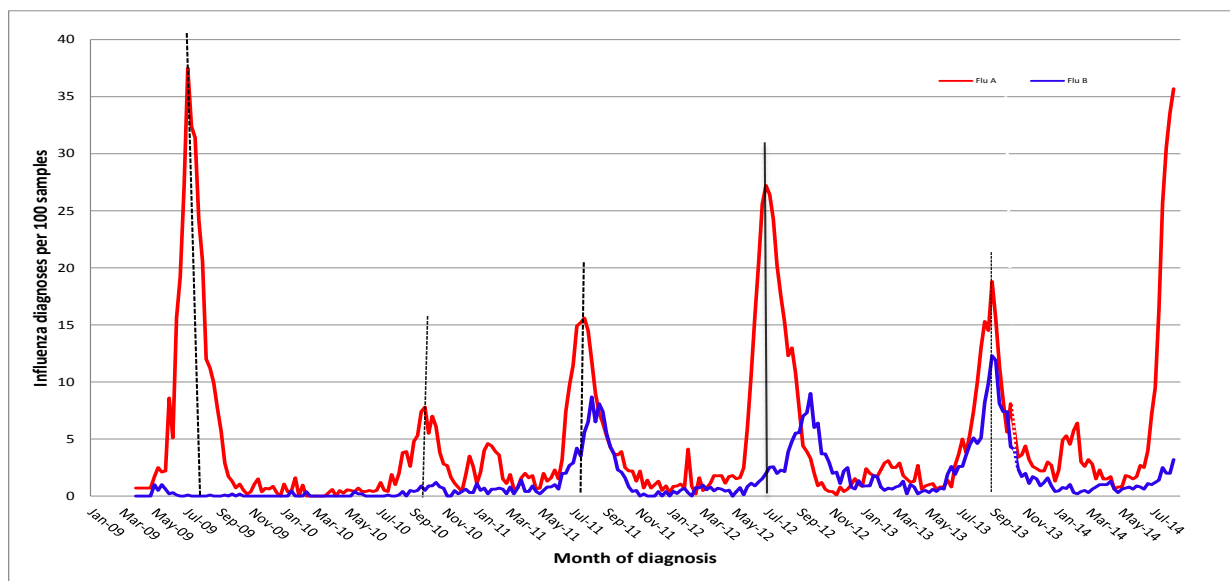
**Table 2:** Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 10 August 2014.

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	
<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	

**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

<sup>3</sup> **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 10 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 eight respiratory outbreaks in residential care facilities and one in a hospital setting reported this week; three were associated with the influenza A(H3N2) strain and one was due to the A(H1N1) strain. Six remain untyped.

In the year to date, there have been 45 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 3). All but seven of the outbreaks occurred in aged care facilities; at least 552 residents were reported to have had ILI symptoms and 67 required hospitalisation. Sixteen deaths in residents linked to these outbreaks have been reported, although not all deaths had a laboratory confirmed influenza infection.

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	45

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

## 3. Community Illness Surveillance

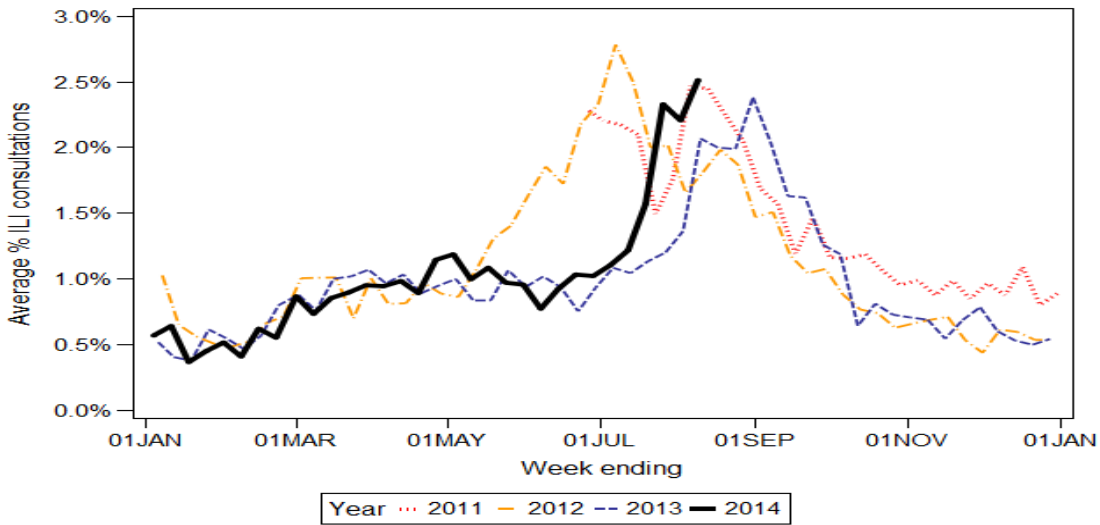
### Electronic General Practice Surveillance (eGPS)

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 32 there were surveillance reports received from 13 sentinel practices in NSW.
- The average rate for patient consultations was 2.5% (range 0.9 – 5.3%) (Figure 5). This is higher than the rate in the previous week and is similar to the ILI activity seen in previous years.

**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 32 there were 35 ASPREN reports received from NSW GPs. The overall consultation rate for ILI has increased to 4.9%, but was within the usual range seen for this time of year.

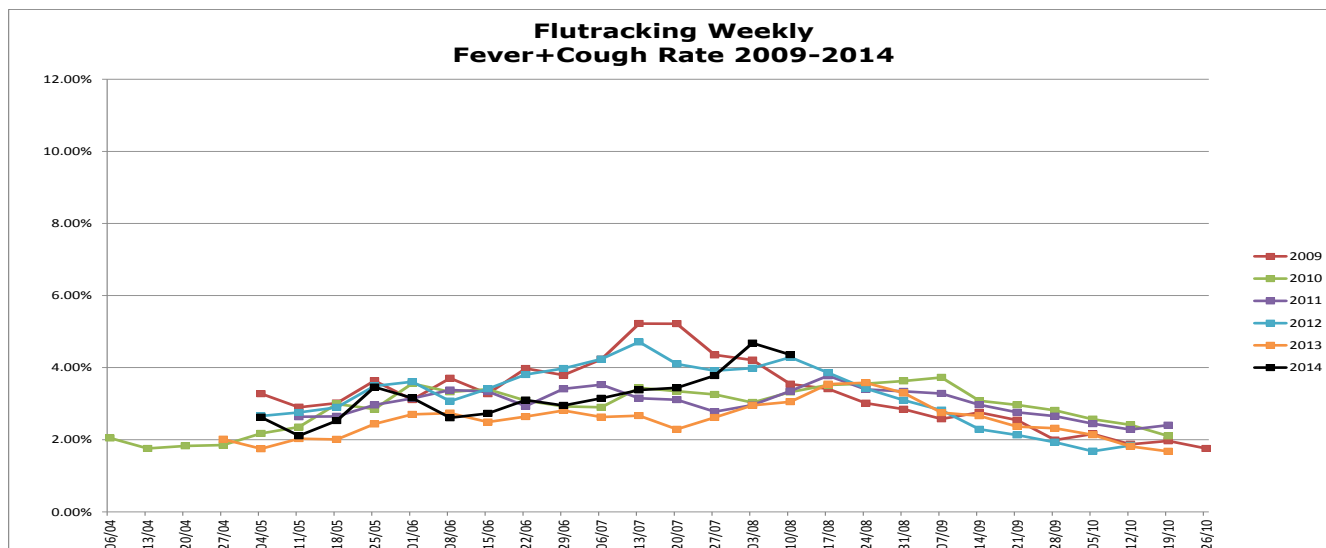
For further information please see the [ASPREN](#) website.

### 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 32 FluTracking received reports for 5576 people in NSW. Fever and cough reports eased slightly compared to the previous week at 4.4% of respondents, and was within the usual range for this time of year (Figure 6). Overall, 3.0% 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.

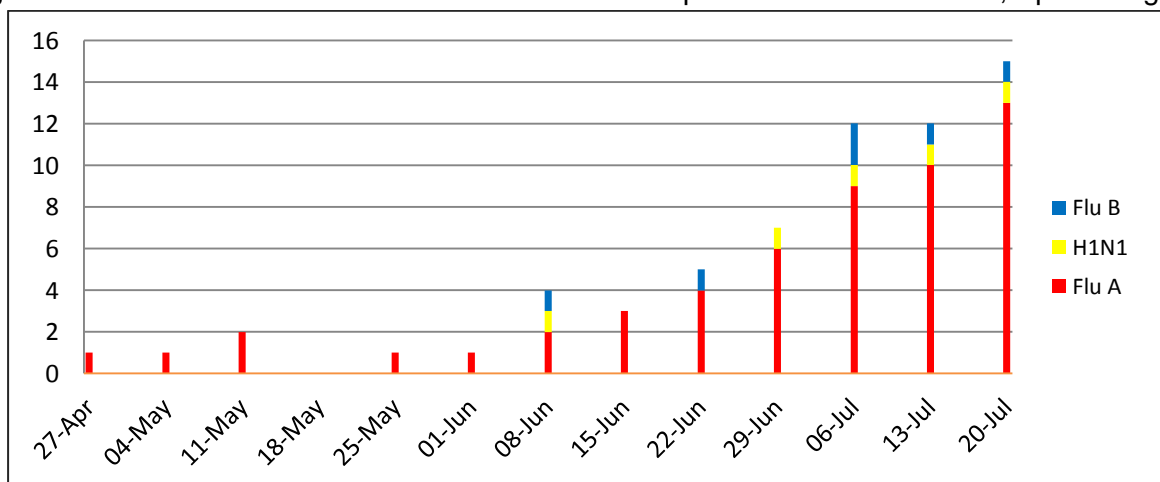
### FluCAN (The Influenza Complications Alert Network)

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 32 there was 1 confirmed influenza admission reported in NSW sentinel hospitals (Figure 7).
- Since 7 April 2014, there have been 87 hospital admissions reported for influenza: 80 with influenza A and seven with influenza B (Figure 7).
- Of these admissions, 54 were paediatric (<16 years of age) case and 33 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. Deaths

In previous years we have routinely reviewed deaths registration data for deaths attributed to pneumonia or influenza. Unfortunately death data from the NSW Register of Births, Deaths and Marriages is currently unavailable although we hope to report on this data shortly.

Information on influenza-related deaths obtained from a variety of other sources for the period 01 May to 10 August 2014 indicated that there have been at least 13 people die in NSW with laboratory-confirmed influenza infections. Three of these have been in children aged less than 15 years, three in people aged 30 to 50 years, and seven in people aged more than 50 years. It is unclear to what extent the influenza infection contributed to their death.

## 5. National and International Influenza Surveillance

### Australian Influenza Activity Update (week ending 1 August 2014)

- Nationally influenza activity has continued to increase, with all jurisdictions except Victoria, reporting increasing activity.
- As at 1 August 2014, there have been 18,009 cases of laboratory confirmed influenza reported, with 5,827 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. The proportion of A(H3N2) in WA has increased in recent weeks however, A(H1N1)pdm09 remains more prevalent.
- 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 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 42 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>

### Influenza activity worldwide

The World Health Organization (WHO) summary of global influenza activity as of 11 August 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 Europe and North America, 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. Influenza activity still continued in the south region of China mainly due to influenza A(H3N2) viruses.
- In Africa and western Asia, influenza activity was low.
- In the southern hemisphere, influenza activity continued to increase in most countries. 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 Australia and 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 virus. In South Africa the influenza detection rate increased with influenza A(H3N2) the most frequently detected virus.

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% as influenza B.
- Of the sub-typed influenza A viruses, 43% were A(H1N1)pdm09 and 57% 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.