

# NSW Health Influenza Surveillance Report

Week 21: 18 to 24 May 2015

## Summary:

- **The influenza season has not yet started and it is unlikely to start in the next four weeks.**
- **Influenza activity continues to be generally low in most parts of NSW.**

### In this reporting week:

- [Hospital surveillance](#) – presentations to NSW emergency departments for influenza-like illness (ILI) were well below the flu season threshold. Bronchiolitis presentations remained high; although decreased compared to previous weeks. Pneumonia presentations increased further this week.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza was low (2.7%), with influenza B viruses predominant. RSV and rhinovirus activity remain high.
- [Community surveillance](#) – influenza notifications were highest in metropolitan areas but low overall. Data collected from eGPS, ASPREN and FluTracking show low ILI activity as expected for this time of year. There was one report of an influenza outbreak in an institution.
- [National and international influenza surveillance](#) – Australia is currently in the inter-seasonal period for influenza, with overall influenza activity at low levels. The updated 2015 influenza vaccines are well matched to the currently circulating influenza strains.

## When will the Annual Flu Season start?

- The steep rise in influenza activity that marks the start of the annual flu season varies from early June to late July. The current low activity is not consistent with an early start to the flu season.
- The current elevated RSV activity may have peaked, and the flu season typically starts from 5 to 7 weeks after the peak of the respiratory syncytial virus (RSV) season.

## About this report:

Health Protection NSW collects and analyses surveillance data on influenza and other respiratory viruses. Surveillance reports are produced weekly 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. Hospital Surveillance

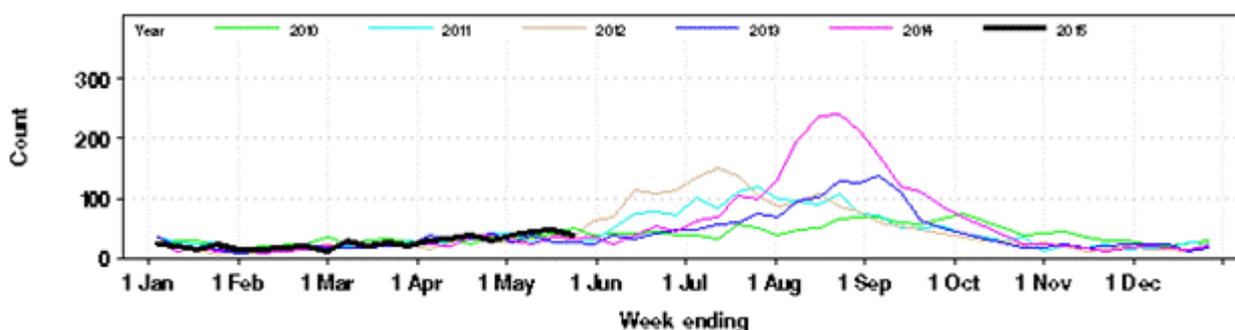
### NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: NSW PHREDSS [1]

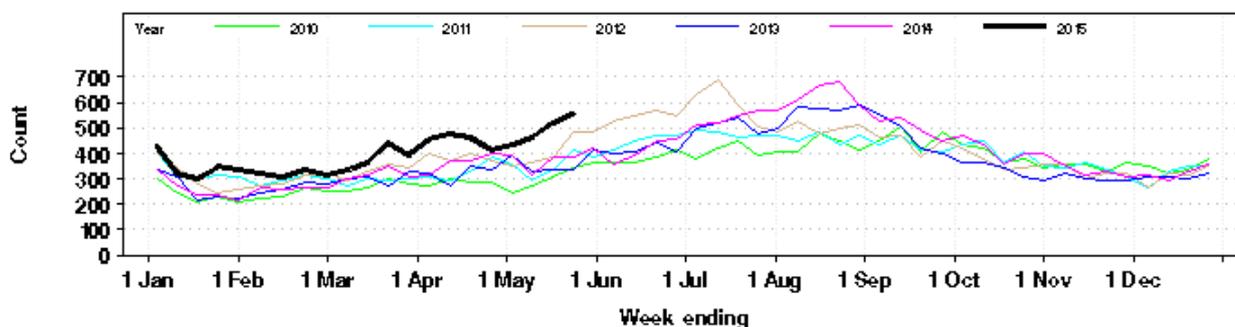
For the week ending 24 May 2015:

- ILI presentations decreased slightly and were within the range of activity seen in previous years (Figure 1 and Table 1). The index of increase for ILI presentations was 7.1 on 24 May, down from the previous week and below the influenza season threshold of 15.
- The proportion of ILI presentations to all ED presentations was low at 1.0 per 1000 presentations.
- ED presentations for pneumonia increased further (Figure 2), particularly in the 5-16 year age-group, Central Coast, South East Sydney and South Western Sydney LHDs (Table 1).
- Pneumonia or ILI presentations which resulted in admission to critical care remained steady and within the usual range for this time of year (Figure 3 and Table 1).
- The overall numbers of respiratory, fever and unspecified infection presentations were elevated for adults aged 65 years and over (Table 1).
- Bronchiolitis presentations decreased and returned to the usual range for this time of year (Figure 4 and Table 1). The decline in the number of presentations together with historical data indicates that presentations should continue to decrease. Decreases in presentations for bronchiolitis tend to mirror decreases in the detection of respiratory syncytial virus (RSV) in respiratory specimens.

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, from January – 24 May 2015 (black line), compared with each of the 5 previous years (coloured lines).

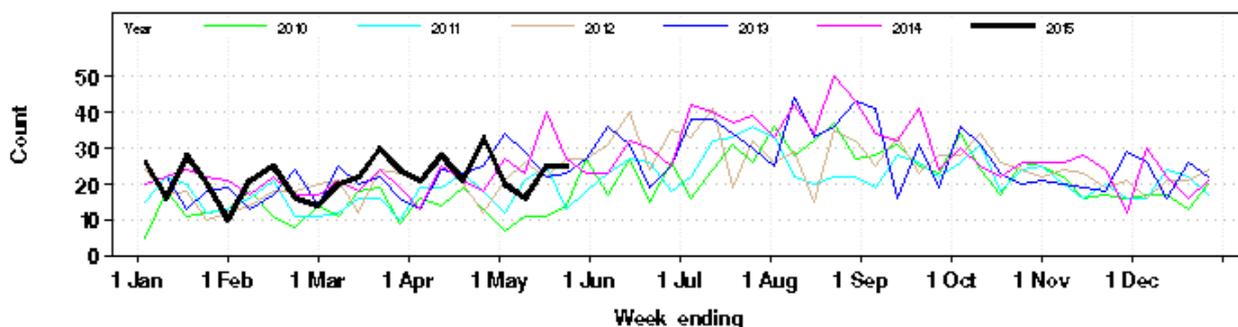


**Figure 2:** Total weekly counts of ED presentations for pneumonia, from January – 24 May 2015 (black line), compared with each of the 5 previous years (coloured lines).

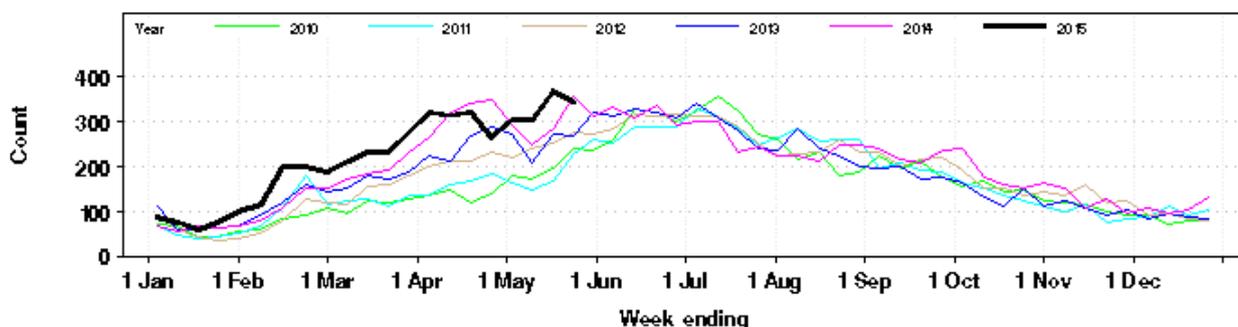


[1] NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) is managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change.

**Figure 3:** Total weekly counts of ED presentations for pneumonia or influenza-like illness and admitted to a critical care ward, from January – 24 May 2015 (black line), compared with each of the 5 previous years (coloured lines).



**Figure 4:** Total weekly counts of ED visits for bronchiolitis, from January – 24 May 2015 (black line), compared with the 5 previous years (coloured lines).



**Table 1:** Weekly ED and Ambulance Respiratory Activity Summary for the week ending 24 May 2015. Includes data from 59 NSW EDs and the Sydney Ambulance Division. \*

Data source	Diagnosis or problem category	Trend since last week	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	Increased	<b>Above</b>	5-16 years	Central Coast LHD South Eastern Sydney LHD South Western Sydney LHD	Situation report sent for SWS LHD 22 May	
	Pneumonia and ILI admissions	Increased	<b>Above</b>				
	Pneumonia and ILI critical care admissions	Steady	Usual				
	Bronchiolitis	Decreased	<b>Above</b>		Hunter New England LHD		Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Steady	<b>Above</b>	65+ years			
	Asthma	Decreased	Usual				
Ambulance Triple Zero (000) calls, NSW	Breathing problems	Increased	<b>Above</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.

## FluCAN (The Influenza Complications Alert Network)

In 2009, the [FluCAN](#) surveillance system was created to be a rapid alert system for severe respiratory illness requiring hospitalisation. Data is provided on patients admitted with influenza confirmed by polymerase chain reaction (PCR) testing.

In NSW, three hospitals participate in providing weekly FluCAN data: Westmead Hospital, John Hunter Hospital and the Children's Hospital at Westmead.

- During week 21 there were no influenza admissions reported in NSW sentinel hospitals (Figure 5).
- Since 1 April 2015, there have been 7 hospital admissions reported for influenza: 5 with influenza A and two with influenza B.
- Of these admissions, 3 were paediatric (<16 years of age) cases and 4 were in adults. One case was admitted to ICU/HDU.

## 2. Laboratory Surveillance

For the week ending 24 May 2015 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A or influenza B increased slightly compared to the activity levels seen in the previous week (Table 2 and Figures 5 and 6).

A total of 3,219 tests for respiratory viruses were reported with 88 specimens (2.7%) testing positive for influenza viruses. Influenza B viruses were more commonly identified than influenza A viruses.

Rhinovirus and respiratory syncytial virus (RSV) were the leading respiratory viruses reported, 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 24 May, 2015.

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 (%)						
01/02/2015*	5920	182 (3.1%)	40 (22.0%)	11 (6.0%)	131 (72.0%)	55 (0.9%)	150	181	181	607	59	49
01/03/2015	6287	212 (3.4%)	72 (34.0%)	14 (6.6%)	126 (59.4%)	75 (1.2%)	128	83	271	842	24	29
29/03/2015	8577	242 (2.8%)	87 (36.0%)	21 (8.7%)	135 (55.8%)	108 (1.3%)	181	117	767	1084	52	34
03/05/2015*	12584	285 (2.3%)	125 (43.9%)	13 (4.6%)	147 (51.6%)	163 (1.3%)	257	187	1351	1443	59	78
Week ending												
10/05/2015	2826	35 (1.2%)	11 (31.4%)	2 (5.7%)	26 (74.3%)	34 (1.2%)	57	41	327	358	13	13
17/05/2015	3219	30 (0.9%)	8 (26.7%)	3 (10.0%)	19 (63.3%)	52 (1.6%)	71	40	331	385	10	14
24/05/2015	3246	33 (1.0%)	12 (36.4%)	2 (6.1%)	19 (57.6%)	55 (1.7%)	76	47	317	419	21	17

**Notes:**

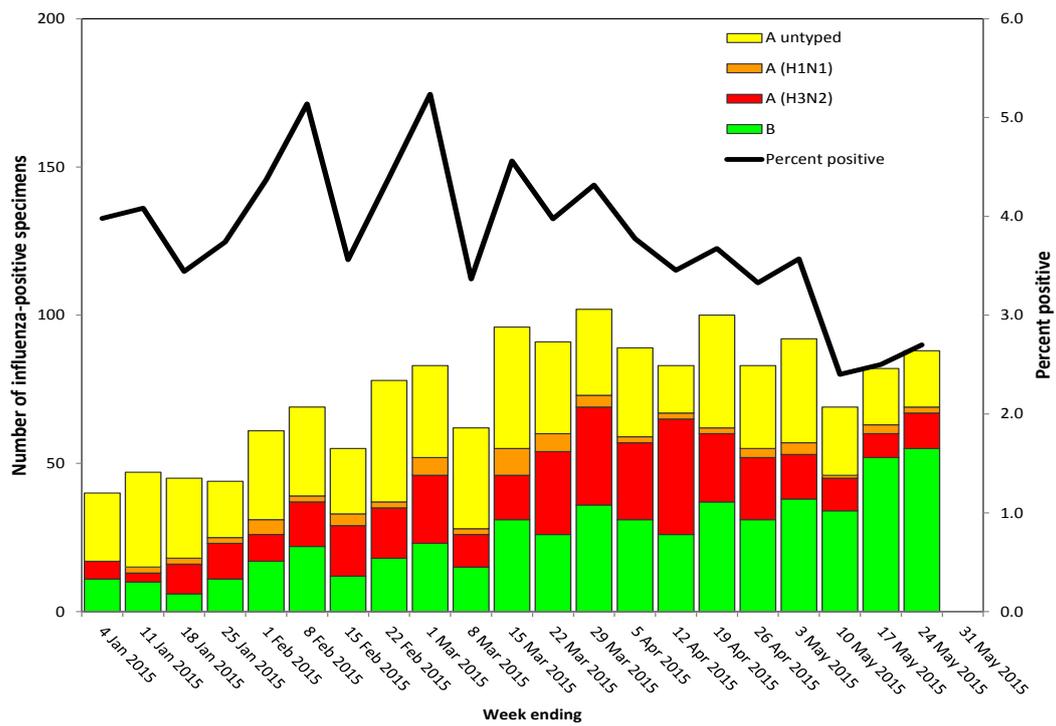
\* Five-week reporting period.

\*\* Human metapneumovirus

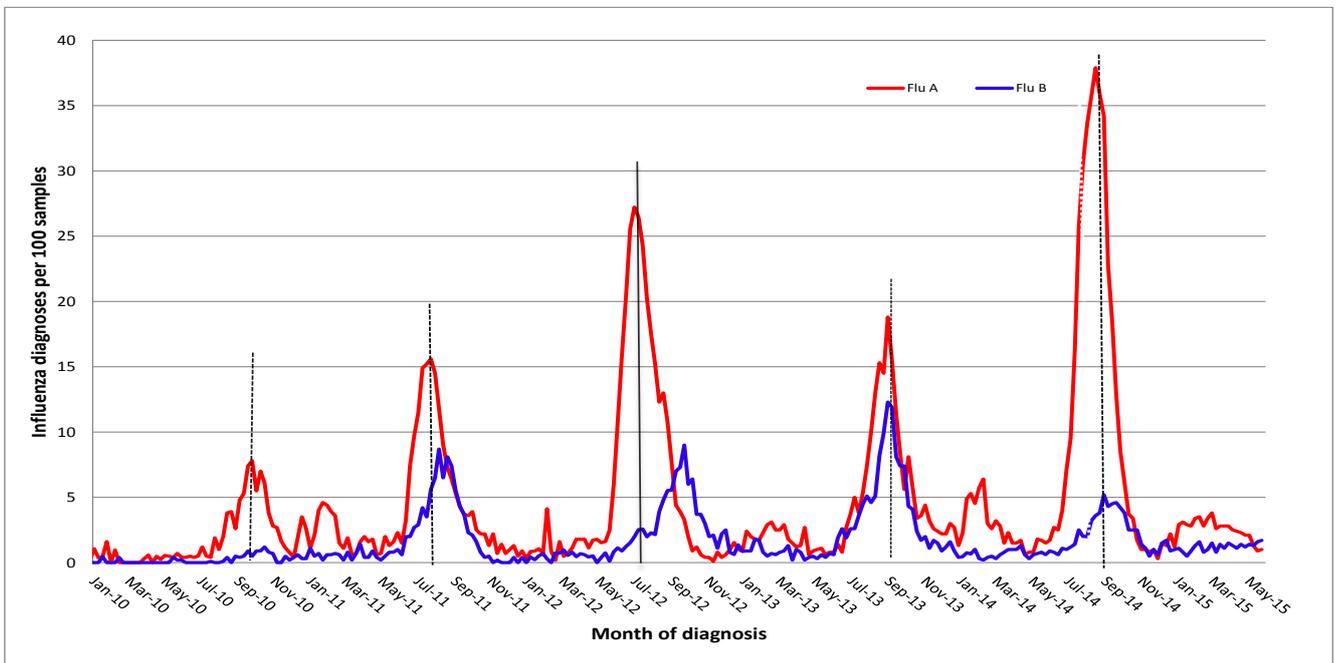
[2]: Preliminary laboratory data is provided by participating sentinel laboratories on a weekly basis and are subject to change. Point-of-care test results have been included since August 2012 but serological diagnoses are not included.

**Participating sentinel laboratories:** South Eastern Area Laboratory Services, 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 & Nepean), Douglas Hanley Moir Pathology, VDRLab, Lavery Pathology, SydPath (St Vincent's), Medlab, and Lavery.

**Figure 5:** Influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January 2010 to 24 May 2015.



**Figure 6:** Percent of laboratory tests positive for influenza A and influenza B, 1 January 2010 – 24 May 2015, New South Wales.



### 3. Community Surveillance

#### Influenza notifications by Local Health District (LHD)

In the week ending 24 May, there were 68 notifications of influenza confirmed by polymerase chain reaction (PCR) testing. The highest numbers of notifications were for residents of Western Sydney, Northern Sydney and South Eastern Sydney LHDs (Table 3).

Influenza activity has been lower in most non-metropolitan LHDs. Notification rates per population are not particularly instructive when case numbers are low.

**Table 3:** Notifications of laboratory-confirmed influenza by NSW Local Health District of residence.

Local Health District	Week ending 24 May 2015		Previous 4 weeks	
	Number of notifications	Rate per 100 000 population	Average weekly notifications	Rate per 100 000 population
Central Coast	3	0.90	1	0.30
Far West	1	3.26	1	1.63
Hunter New England	5	0.55	4	0.41
Illawarra Shoalhaven	0	0.00	3	0.69
Mid North Coast	2	0.93	1	0.35
Murrumbidgee	0	0.00	2	0.69
Nepean Blue Mountains	5	1.36	2	0.54
Northern NSW	1	0.34	2	0.59
Northern Sydney	12	1.34	21	2.37
South Eastern Sydney	10	1.12	13	1.40
Southern NSW	0	0.00	0	0.12
South Western Sydney	5	0.53	5	0.48
Sydney	5	0.81	7	1.05
Western NSW	2	0.72	1	0.18
Western Sydney	17	1.83	10	1.02

**Note:** \* All data are preliminary and may change as more notifications are received. Excludes notifications based on serology.

#### Influenza outbreaks in institutions

There were no influenza outbreaks in residential care facilities reported this week.

In the year to date there have been 8 laboratory-confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4).

People in older age-groups are at higher risk of infection from influenza A(H3N2) strains (currently the dominant influenza A strain in NSW) than from the influenza A(H1N1) strain. An influenza A(H3N2) strain also predominated in 2012 and 2014 and was associated with an increase in influenza outbreaks in institutions, particularly aged care facilities (Table 4).

**Table 4.** Reported influenza outbreaks in NSW institutions, 2010 to May 2015.

Year	2010	2011	2012	2013	2014	2015 *
No. of outbreaks	2	4	39	12	120	8

**Note:**

\* Year to date.

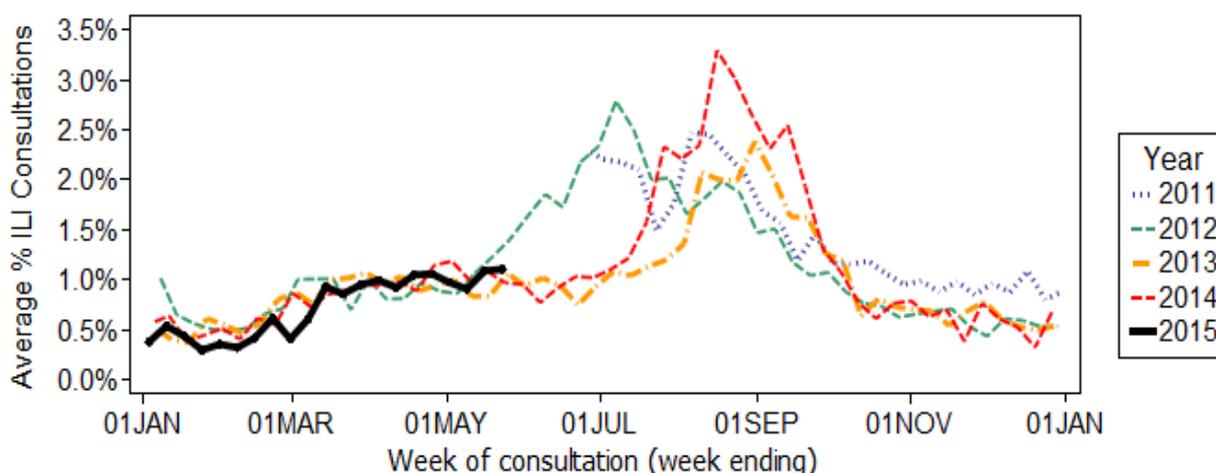
## Electronic General Practice Surveillance (eGPS)

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 21:

- there were 12 surveillance reports received from eGPS sentinel practices in NSW;
- the average rate of ILI patient consultations was low at 1.1% (range 0.3 – 2.2%), which was similar to the previous week and similar to the same time period in recent years (Figure 7).

**Figure 7.** Average rate of influenza-like presentations to sentinel general practices, by week of consultation 2011-2015 (year to date).



## 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 21 there were 38 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 1.5 per cent, and within the usual range seen for this time of year.

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

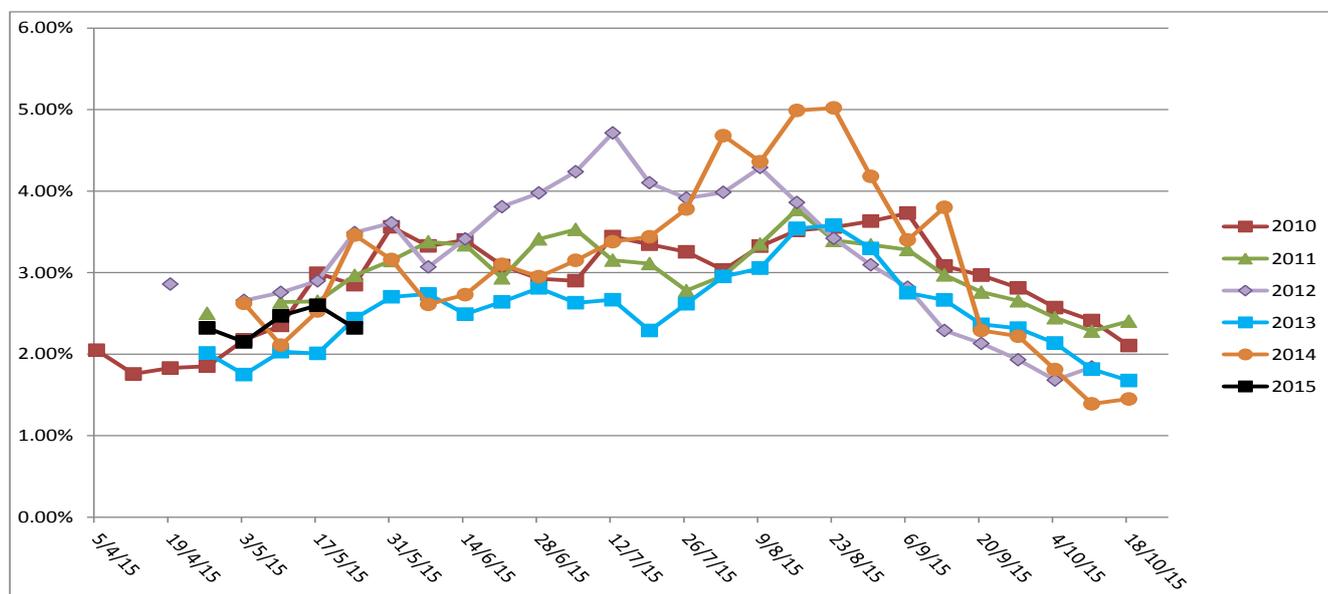
## FluTracking.net

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 21 FluTracking received reports for 6600 people in NSW, including:

- 2.3% of respondents reported fever and cough, similar to the previous week and within the usual range for this time of year (Figure 8);
- 1.4% of respondents reported fever, cough and absence from normal duties, similar to the previous week (data not shown).

**Figure 8:** FluTracking – Weekly influenza like illness reporting rate, NSW, 2010 – 2015.



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

## 4. National and International Influenza Surveillance

### National Influenza Surveillance

The Australian Department of Health has reported the following for the period 25 April to 8 May 2015:

- Australia is currently in the inter-seasonal period for influenza, with overall influenza activity at low levels
- Influenza activity across jurisdictions is variable. Recent activity in many jurisdictions has decreased from the unusually high activity seen earlier this year.
- Nationally, influenza A is the predominant circulating virus type; of those viruses where subtyping data are available, influenza A(H3N2) is the most common.
- Of the limited number of isolates that have been further characterised for similarity with the vaccine components, influenza A viruses appear to be well matched. Approximately three quarters of the influenza B viruses characterised are a match to the trivalent vaccine strain; with the remaining influenza B viruses matching the additional strain in the quadrivalent vaccine.
- Influenza-like illness (ILI) levels detected through the sentinel GP ILI surveillance system remain lower than previous years. In the most recent fortnight, rhinovirus infection was the most common cause of ILI detected.

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-2015.htm>

## Global Influenza Update

The World Health Organization (WHO) reported on current influenza activity in the [WHO Global Influenza Update](#) of 18 May 2015 (with data up to 2 May) which indicated that:

- In North America, influenza activity continued to decrease and was near inter-seasonal levels. Continued but decreasing influenza B circulation resulted in a slow decline of the influenza season.
- In Europe, influenza activity mainly associated with influenza B virus continued to decline in most countries.
- In northern Africa, influenza activity decreased to almost inter-seasonal levels with mainly influenza B detections in the last weeks.
- In western Asia, influenza activity decreased further, with predominantly influenza A(H1N1) detections in recent weeks, especially in Jordan.
- In the temperate countries of Asia, there was little to no activity throughout the region with only a few influenza B detections in the past weeks.
- In tropical countries of the Americas, influenza activity remained low in most countries, with the exception of Guatemala which showed a slight increase in influenza A(H3N2) detections.
- In tropical Asia, influenza activity was low and in general continued to decrease in most countries. In West Africa, several countries reported increased influenza detections.
- In the southern hemisphere, influenza activity remained at low or inter-seasonal levels.

WHO reported global influenza laboratory data for the period 19 April to 2 May 2015, which noted:

- Of the 51 009 specimens submitted for testing, 4 728 were positive for influenza viruses, of which 1 234 (26%) were typed as influenza A and 3 494 (74%) as influenza B.
- Of the sub-typed seasonal influenza A viruses, 456 (54%) were influenza A(H1N1) and 391 (46%) were influenza A(H3N2).
- Of the characterized B viruses, 285 (95%) belonged to the B-Yamagata lineage and 16 (5%) to the B-Victoria lineage.

## Avian influenza Update

Since the last WHO Influenza update on 31 March 2015, 14 new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection, including one fatal case, were reported to WHO from Egypt (13) and China (one). All cases had close contact with poultry.

The latest WHO monthly risk assessment report for human infections with avian influenza A strains H5, H7, H9 is available here: [WHO Avian influenza summary 1 May 2015](#)

Other sources of information on avian influenza and the risk of human infection include the following:

- US CDC [Avian influenza](#)
- European CDC (ECDC) [Avian influenza](#)
- Public Health Agency of Canada [Avian influenza H7N9](#) .

## 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/) .