

NSW Health Influenza Surveillance Report

Week 28: 6 to 12 July 2015

Summary:

- **All measures indicate that the influenza season has commenced, however hospital activity remains low to moderate.**
- **Influenza activity is expected to continue to increase from now until the season peaks.**

In this reporting week:

- [Hospital surveillance](#) – presentations to NSW emergency departments for influenza-like illness (ILI) were steady and were above the flu season threshold. Bronchiolitis presentations remained high although appear to be trending downwards.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza was low (10.0%) but continues to increase, with influenza B viruses predominant. Respiratory syncytial virus (RSV) and rhinovirus activity remain high.
- [Community surveillance](#) – influenza notifications were highest in metropolitan areas but low overall. Data collected from ASPREN and FluTracking show low but increasing 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](#) – Across Australia the influenza activity is variable. While influenza notifications are higher than at this point last year, they are still at low levels.

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 12 July 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 18.9 on 5 July, similar to the previous week. (The index crossed the threshold of 15 on 26 June consistent with the start of the influenza season).
- The proportion of ILI presentations to all ED presentations remained steady and was low at 1.4 per 1000 presentations.
- ED presentations for pneumonia decreased slightly this week, compared to last week and were within the range seen for this time of year (Figure 2).
- Pneumonia or ILI presentations which resulted in admission to critical care increased this week and were at the higher end of the usual range for this time of year (Figure 3 and Table 1).
- The overall numbers of respiratory, fever and unspecified infection presentations decreased this week and were within usual range for this time of year (Table 1).
- Bronchiolitis presentations decreased this week and continue to be above the usual range for this time of year (Figure 4 and Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 12 July 2015 (black line), compared with each of the 5 previous years (coloured lines).

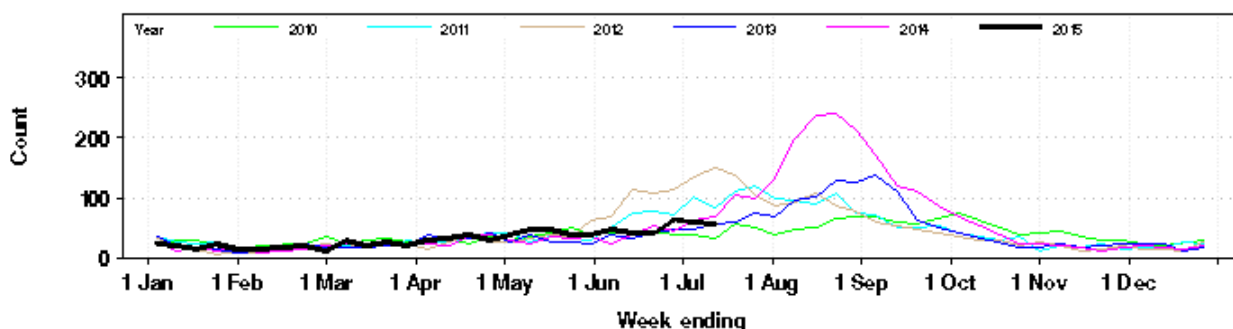
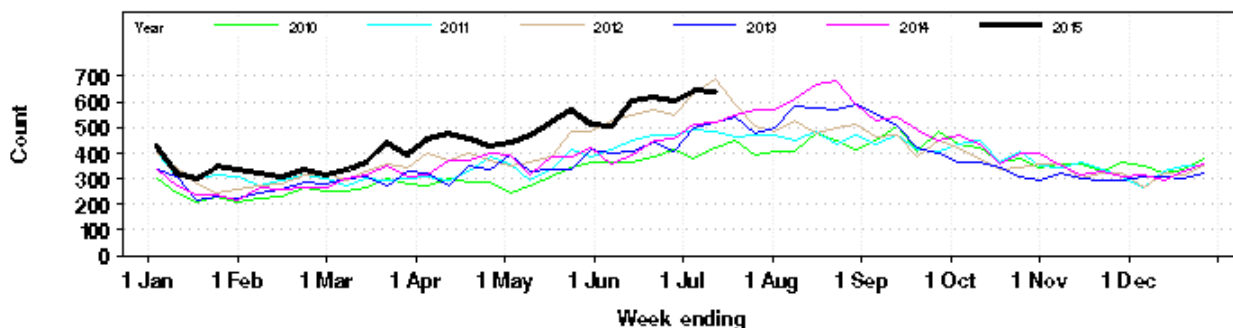


Figure 2: Total weekly counts of ED presentations for pneumonia, from January – 12 July 2015 (black line), compared with each of the 5 previous years (coloured lines).



[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 – 12 July 2015 (black line), compared with each of the 5 previous years (coloured lines).

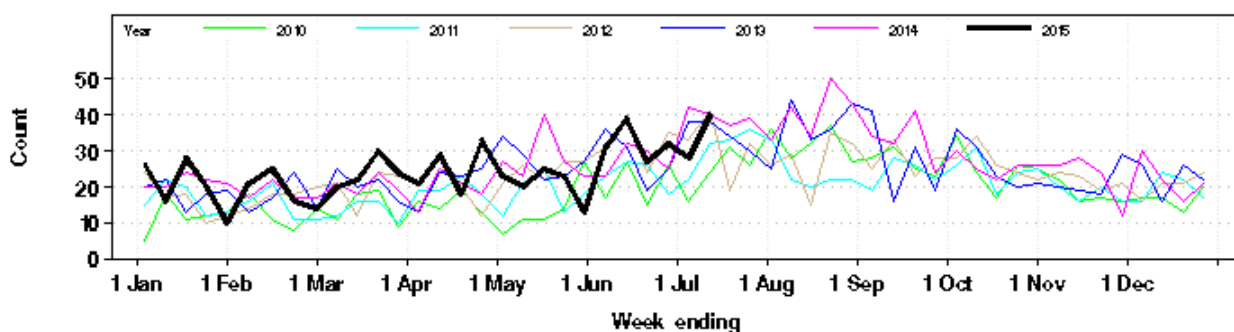


Figure 4: Total weekly counts of ED visits for bronchiolitis, from January – 12 July 2015 (black line), compared with the 5 previous years (coloured lines).

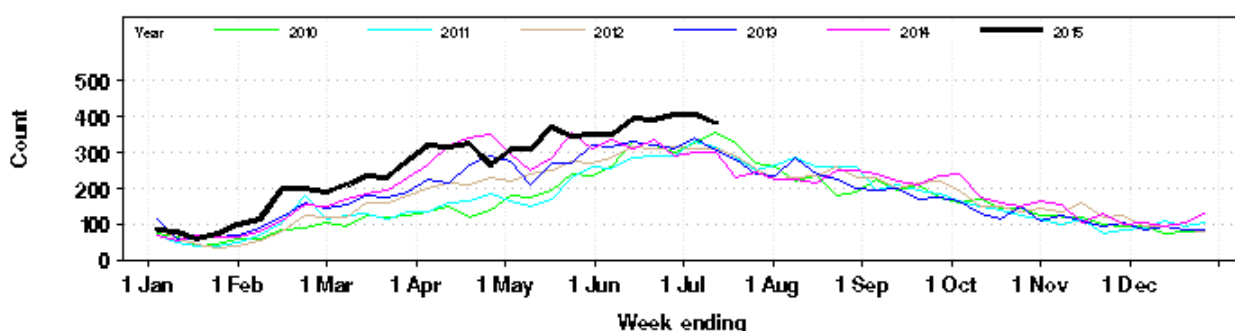


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 12 July 2015. Includes data from 59 NSW EDs and the NSW Ambulance Division. *

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)	Steady	Usual				
	Pneumonia	Steady	Above				
	Pneumonia and ILI admissions	Steady	Above				
	Pneumonia and ILI critical care admissions	Increased	Usual		Bowral Hospital		
	Bronchiolitis	Decreased	Above		Broken Hill Hospital		Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Decreased	Usual				
	Asthma	Decreased	Usual				
Ambulance Triple Zero (000) calls, NSW	Breathing problems	Increased	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.

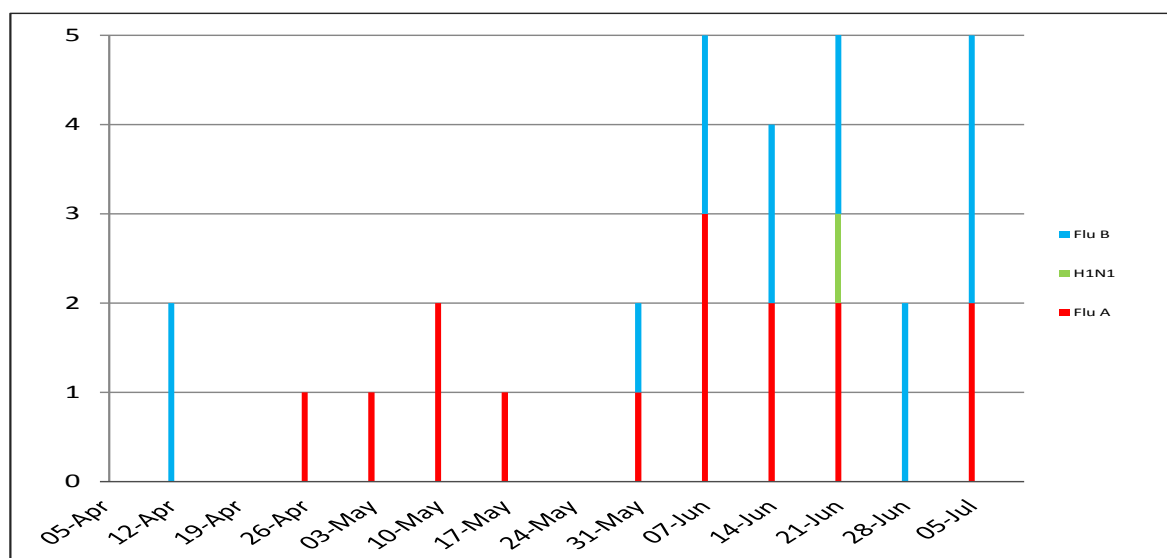
FluCAN (The Influenza Complications Alert Network)

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 28 there were five influenza admissions reported in NSW sentinel hospitals (Figure 5).
- Since 1 April 2015, there have been 36 hospital admissions reported for influenza; 18 with influenza A and 18 with influenza B (Figure 5).
- Of these admissions, 10 were paediatric (<16 years of age) cases and 26 were in adults. Three cases were admitted to ICU/HDU.

Figure 5: FluCAN – Number of confirmed influenza hospital admissions in NSW, April – July 2015.



2. Laboratory Surveillance

For the week ending 12 July 2015 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A or influenza B increased compared to the activity levels seen in the previous week (Table 2 and Figures 6 and 7).

A total of 4,075 tests for respiratory viruses were reported with 395 specimens (10.0%) testing positive for influenza viruses. Influenza B was more commonly identified than influenza A.

Rhinovirus and respiratory syncytial virus (RSV) were the leading respiratory viruses reported. Other viruses are circulating at usual levels for this time of year (Table 2).

[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.

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 12 July, 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
31/05/2015	12244	128 (1.0%)	42 (32.8%)	9 (7.0%)	83 (64.8%)	200 (1.6%)					272	167	1276	1514	64	64
28/06/2015	15431	297 (1.9%)	56 (18.9%)	16 (5.4%)	225 (75.8%)	581 (3.8%)					378	183	1585	2027	96	135
Week ending																
05/07/2015	4013	90 (2.2%)	5 (5.6%)	9 (10.0%)	78 (86.7%)	203 (5.1%)					107	59	425	512	20	61
12/07/2015	4075	123 (3.0%)	17 (13.8%)	2 (1.6%)	104 (84.6%)	272 (6.7%)					123	56	387	495	28	99

Notes:

* Five-week reporting period.

** Human metapneumovirus

Figure 6: Influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January 2015 to 12 July 2015.

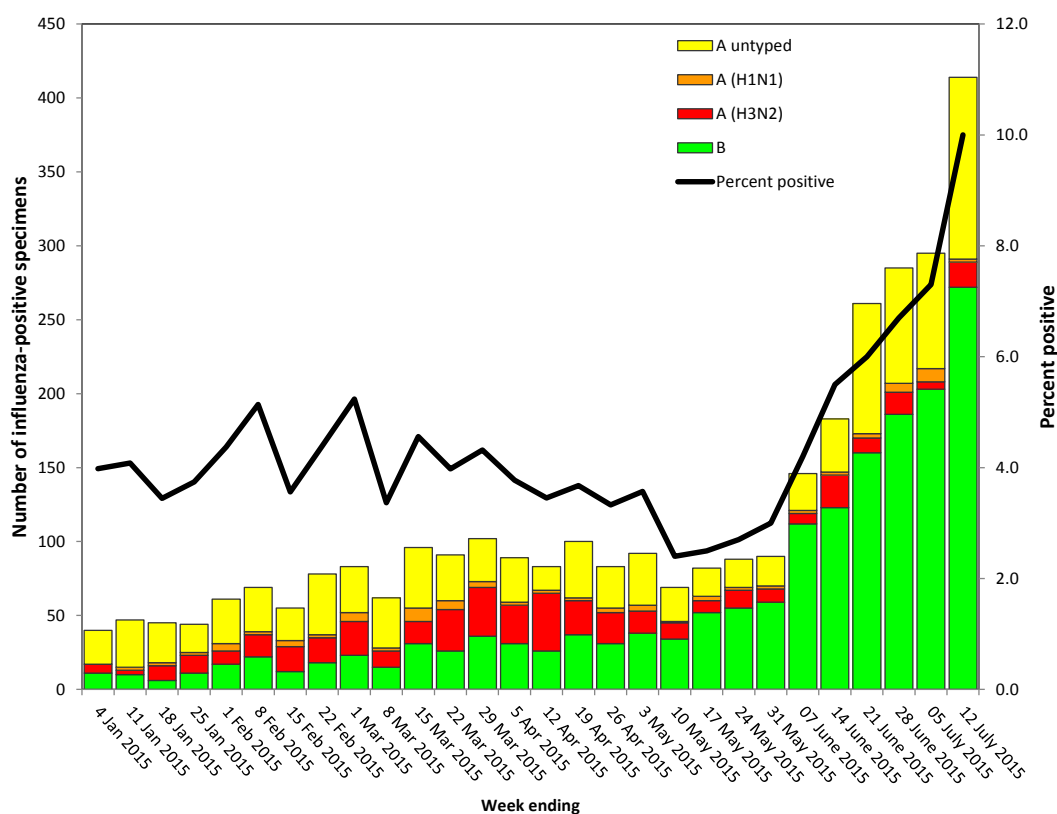
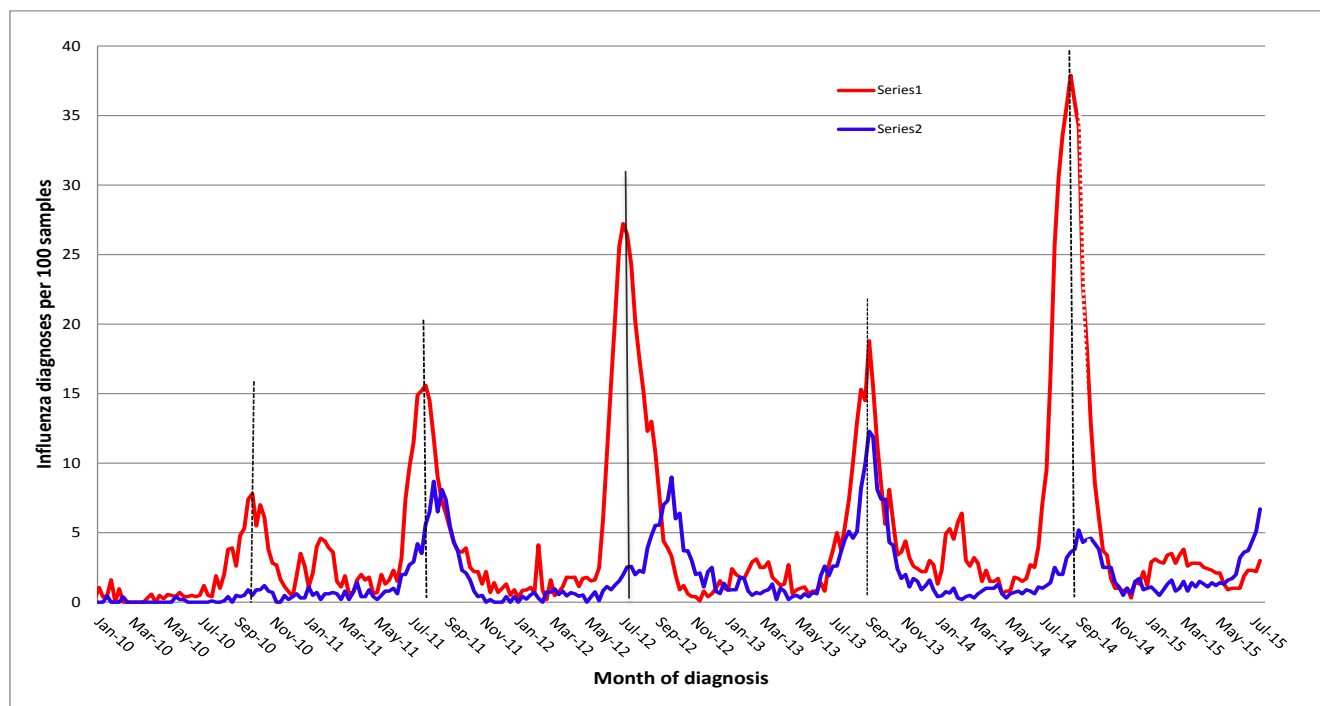


Figure 7: Percentage of laboratory tests positive for influenza A and influenza B, 1 January 2010 – 12 July 2015, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 12 July, there were 272 notifications of influenza confirmed by polymerase chain reaction (PCR) testing. The highest numbers of notifications were for residents of Northern Sydney, Western 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 5 July 2015		Previous 4 weeks	
	Number of notifications	Rate per 100 000 population	Average weekly notifications	Rate per 100 000 population
Central Coast	8	2.39	4	1.27
Far West	0	0.00	1	1.63
Hunter New England	18	1.98	21	2.25
Illawarra Shoalhaven	6	1.50	4	1.06
Mid North Coast	6	2.79	4	1.75
Murrumbidgee	9	3.10	3	1.12
Nepean Blue Mountains	24	6.52	18	4.75
Northern NSW	6	2.02	13	4.29
Northern Sydney	50	5.57	31	3.42
South Eastern Sydney	40	4.48	35	3.86
Southern NSW	8	3.89	5	2.43
South Western Sydney	25	2.65	28	2.94
Sydney	25	4.03	21	3.31
Western NSW	2	0.72	3	1.08
Western Sydney	45	4.85	49	5.31

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

Influenza outbreaks in institutions

There was one influenza B outbreak reported in an residential care facility this week.

In the year to date there have been 15 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 than from the influenza A(H1N1) strain. The influenza A(H3N2) strain 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 July 2015.

Year	2010	2011	2012	2013	2014	2015 *
No. of outbreaks	2	4	39	12	120	15

* Year to date.

Electronic General Practice Surveillance (eGPS)

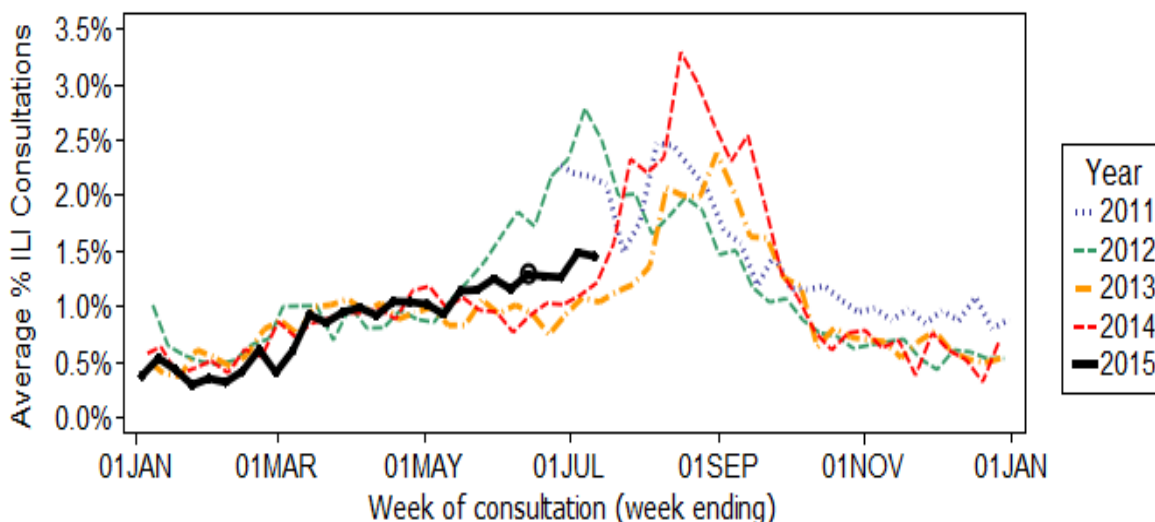
eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an indicator 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 28:

- There were 11 surveillance reports received from eGPS sentinel practices in NSW;
- The average rate of ILI patient consultations was low at 1.5% (range 0.6 – 3.3%), which was higher than the previous week, and within the range for the same time period in the last four years. (Figure 8).

Figure 8. 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 28 there were 38 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 1.9 % and within the usual range seen for this time of year.

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

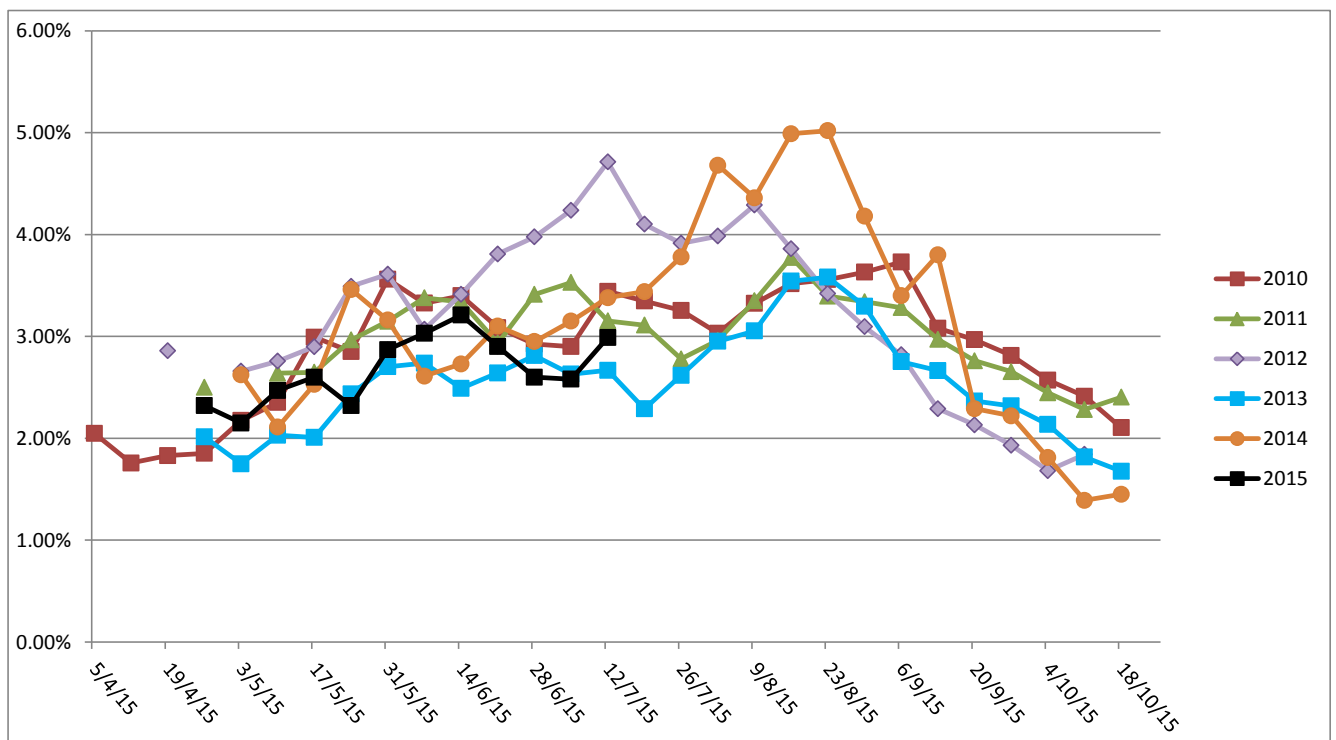
FluTracking.net

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 28 FluTracking received reports for 6331 people in NSW, including:

- 3.0% of respondents reported fever and cough, higher than the previous week and below the usual range for this time of year (Figure 9);
- 2.0% of respondents reported fever, cough and absence from normal duties, higher than the previous week (data not shown).

Figure 9: 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 up to 8 July 2015.

Current activity:

- There are indications that the 2015 influenza season has started, with notifications of laboratory confirmed influenza to the National Notifiable Diseases Surveillance System (NNDSS) increasing in recent weeks.
- All jurisdictions, excluding the NT, have reported increasing activity.
- While laboratory confirmed influenza notifications reported so far this year are twice the number reported for the same period in previous years, they are still at low levels when considering the peak of last year's season.
- The number of notifications, and the onset and peak of the influenza season may be influenced by a range of factors, including immunity to circulating strains, increased public awareness, the healthcare seeking behaviours of patients and testing and notification practices of medical practitioners.
- Nationally, notifications have been highest among those aged over 85 years with a secondary peak in those aged between 5 and 14 years.
- Systems that monitor influenza-like illness (ILI) show variable activity levels. FluTracking is reporting low levels of ILI in the community while ILI levels detected through calls to the National Health Call Centre Network and through presentation to sentinel GPs are increasing.
- Influenza B is currently the predominant influenza virus type circulating in Australia.
- Infection due to influenza B virus is often thought to be milder than influenza A virus infection; however recent studies do not support this widely held view.
- The seasonal influenza vaccines appear to be a good match for circulating strains.
-

Severity of the 2015 season:

- The timing and peak of influenza notifications and clinical severity of infected cases varies from year to year.
- The overall scale and clinical severity of this year's influenza season will become apparent as it progresses.
- So far in 2015, 36 influenza associated deaths have been notified to the NNDSS.

Follow the link for the [Australian Influenza Surveillance Reports](#) which provide the latest information on national influenza activity.

Global Influenza Update

The World Health Organization (WHO) reported on current influenza activity in the [WHO Global Influenza Update](#) of 13 July 2015 (with data up to 27 June) which indicated that:

- In North America, Europe and temperate countries in Asia, influenza activity remained at low, inter-seasonal levels in all regions with sporadic detections of mainly influenza B virus.
- With the exception of southern Africa, only a few countries reported influenza data. Levels of influenza activity were low or decreasing in these countries.
- In tropical countries of the Americas/Central America and the Caribbean, influenza activity was reported to be at inter-seasonal levels whereas RSV activity had increased.
- In western and temperate countries of Asia, low levels of influenza activity were reported where influenza type A(H1N1)pdm09 and influenza B predominated in recent weeks.
- In tropical Asia, influenza activity remained at elevated levels. Both influenza type A(H1N1)pdm09 and A(H3N2) were equally dominant during the last few weeks.
- In temperate South America, influenza activity was low while RSV detections increased. However, Paraguay had decreasing RSV detections.

- Influenza activity remained elevated in South Africa with influenza type A(H1N1)pdm09, A(H3N2), and B co-circulating.
- In Australia and New Zealand, influenza activity continued to increase and surpassed the seasonal threshold in Australia.

WHO reported global influenza laboratory data for the period 14 to 27 June 2015, which noted:

- Of the 26 786 specimens submitted for testing, 1476 were positive for influenza viruses, of which 1084 (73%) were typed as influenza A and 392 (27%) as influenza B.
- Of the sub-typed seasonal influenza A viruses, 230 (40%) were influenza A (H1N1) and 348 (60%) were influenza A(H3N2).
- Of the characterized B viruses, 62 (97%) belonged to the B-Yamagata lineage and 2 (3%) to the B-Victoria lineage.

Avian influenza Update

Human infection with avian influenza A(H5) viruses

WHO report that from 2003 through 23 June 2015, 842 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 447 have died.

Since the last WHO Influenza update on 1 May 2015, two new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection were reported to WHO from Egypt.

Overall public health risk assessment for avian influenza A(H5) viruses:

Whenever avian influenza viruses are circulating in poultry, sporadic infections and small clusters of human cases are possible in people exposed to infected poultry or contaminated environments, therefore sporadic human cases would not be unexpected.

Human infections with avian influenza A(H7N9) viruses in China

A total of 672 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 271 deaths have been reported to WHO. The majority of recently reported human cases are associated with exposure to infected live poultry or contaminated environments, including markets where live poultry are sold. WHO advises that further sporadic human cases of avian influenza A(H7N9) infection are expected in affected and possibly neighbouring areas. Should human cases from affected areas travel internationally, their infection may be detected in another country during or after arrival. If this were to occur, community level spread is considered unlikely as the virus does not have the ability to transmit easily among humans.

WHO is assessing the epidemiological situation and conducting further risk assessment based on the latest information. Overall, the public health risk from avian influenza A(H7N9) viruses has not changed.

Human infections with avian influenza A(H5N6) viruses in China

One laboratory-confirmed case of human infection with avian influenza A(H5N6) virus was reported to WHO from China. The case developed symptoms on 6 July and was admitted to hospital on 9 July and, despite medical treatment, died on 10 July.

Overall public health risk assessment for avian influenza A(H9N2) viruses: Further human cases and small clusters could occur as this virus is circulating in poultry populations across Asia and Middle East. This virus does not seem to transmit easily between humans and tends to result in mild clinical disease, therefore the current likelihood of community-level spread and public health impact of this virus is considered low.

The latest WHO monthly risk assessment report for human infections with avian influenza A strains H5, H7, H9 is available here: [WHO Avian influenza monthly summary 23 June 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:

- A/California/7/2009 (H1N1)pdm09-like virus;
- A/Switzerland/9715293/2013 (H3N2)-like virus ^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.

^a 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/ .