

NSW Health Influenza Surveillance Report

Week 42: 12 to 18 October 2015

Summary:

- Influenza activity continues to trend down as we approach the end of the flu season.
- Influenza A and B strains are circulating at similar low levels.
- Based on previous seasons, influenza activity is likely to return to inter-season levels over the next few weeks.

In this reporting week:

- Hospital surveillance – presentations to NSW emergency departments for influenza-like illness (ILI) decreased further this week and are within the usual range seen for this time of year.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza was moderate at 7.8%, and continues to trend down.
- [Community surveillance](#) – influenza notifications decreased in most NSW local health districts. Data collected from eGPS, ASPREN and Flu Tracking showed low levels of ILI activity. Three new influenza outbreaks were reported in residential aged care facilities.
- [National and international influenza surveillance](#) – influenza activity was stable or decreasing across most regions in the country, with the exception of the Top End of the Northern Territory where activity continued to increase. New avian influenza A(H7N9) cases detected in China.
- [Recommended composition of 2016 influenza vaccines](#) – the World Health Organization (WHO) has provided recommendations for the 2016 southern hemisphere winter influenza season including two strain changes.

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

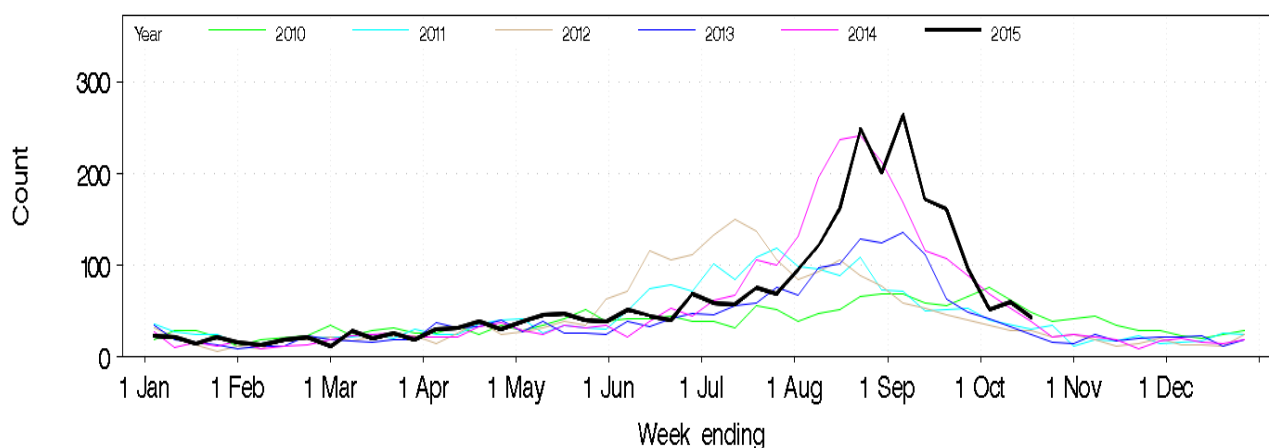
NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

For the week ending 18 October 2015:

- ILI presentations [2] decreased this week although activity is within the usual range of activity seen in recent years (Figure 1 and Table 1).
- The index of increase for ILI presentations is now well below the threshold at 3.9 on 18 October, lower than the previous week (6). The index crossed the threshold level of 15 on 26 June and peaked at 64.2 on 19 August (higher than the peak of 50.7 seen in 2014).
- The proportion of ILI presentations to all ED presentations is low at 1.0 per 1000 presentations down from the previous week (1.5 per 1000 presentations).
- Presentations were particularly elevated at Griffith Base Hospital (Table 1).
- ED presentations for pneumonia [3] decreased but remained above the usual range for this time of year (Figure 2).
- Presentations were particularly elevated in people aged 17 to 34 years (Table 1).
- Pneumonia or ILI presentations which resulted in admission continued to decrease, but remained above the usual range for this time of year. Admissions to critical care decreased and were within the usual range (Figure 3 and Table 1).
- The category combining all respiratory, fever and unspecified infection presentations decreased but remained above the usual range for this time of year. Presentations were elevated in people aged 5 to 34 years and in South Western Sydney LHD (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 18 October 2015 (black line), compared with each of the 5 previous years (coloured lines).



[1] NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance system. Managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change. This includes data from 59 NSW emergency departments (EDs), representing approximately 85% of metropolitan ED presentations and approximately 60% of rural ED presentations.

[2] ILI is when the treating ED doctor makes a provisional clinical diagnosis of ILI Syndrome, which includes: 'influenza-like illness' or 'influenza' (including 'pneumonia with influenza').

[3] Pneumonia is when there is a provisional clinical diagnosis of Pneumonia Syndrome, which includes: 'viral, bacterial or unspecified pneumonia', 'SARS', or 'legionnaire's disease'. Excludes 'pneumonia with influenza'.

Figure 2: Total weekly counts of ED presentations for pneumonia, from January – 18 October 2015 (black line), compared with each of the 5 previous years (coloured lines).

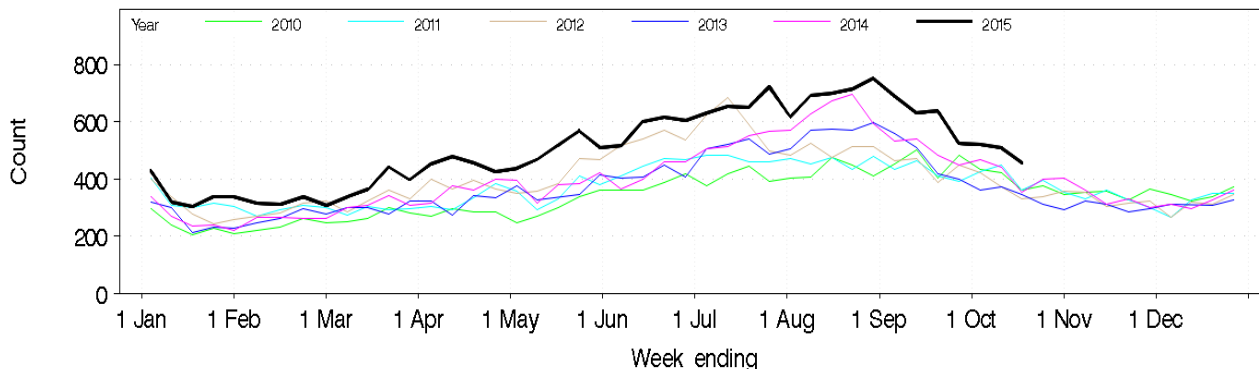


Figure 3: Total weekly counts of ED presentations for pneumonia or influenza-like illness and admitted to a critical care ward, from January – 18 October 2015 (black line), compared with each of the 5 previous years (coloured lines).

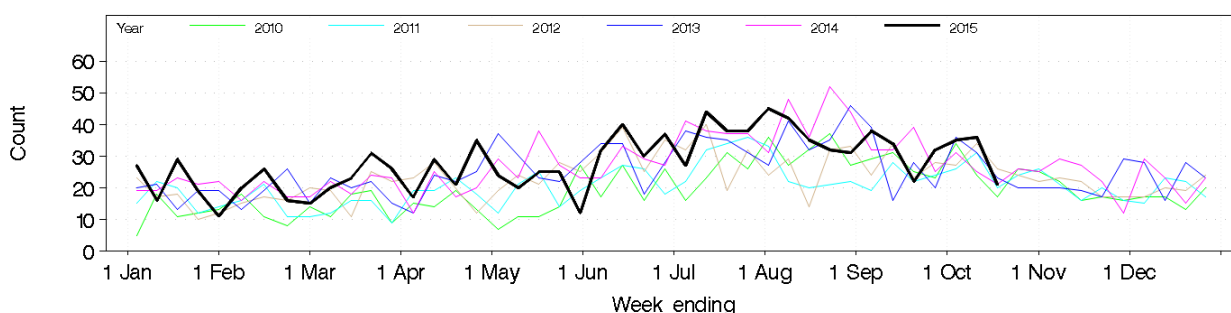


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 18 October 2015. Includes data from 59 NSW EDs and the NSW Ambulance Division. *

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)	Comment
ED presentations, 59 NSW hospitals	Influenza like illness (ILI)	Decreased	Usual		Griffith Base Hospital	
	Pneumonia	Decreased	Above	17-34 years		
	Pneumonia and ILI admissions	Decreased	Above			
	Pneumonia and ILI critical care admissions	Decreased	Usual			
	Bronchiolitis	Decreased	Usual			Bronchiolitis is a disease of infants.
	All respiratory illnesses	Decreased	Above	17-34 years	South West Sydney LHD	
	Respiratory illness, fever or unspecified infection	Decreased	Above	5-34 years	South West Sydney LHD	
Asthma	Steady	Above				
Ambulance Triple Zero (000) calls	Breathing problems	Steady	Above			

* **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.

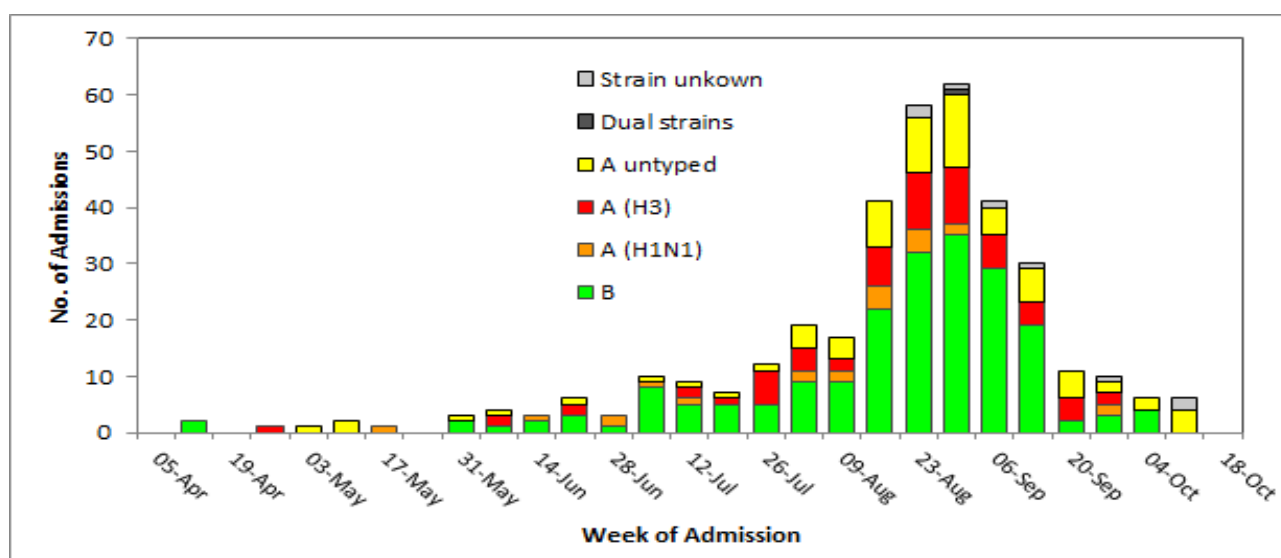
FluCAN (The Influenza Complications Alert Network)

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 42 there were no influenza admissions in NSW sentinel hospitals (Figure 4).
- Since 1 April 2015, there have been 365 hospital admissions reported for influenza; 158 with influenza A, 198 with influenza B, one dual infection, and 8 unknown (Figure 4).
- Of these admissions, 97 were paediatric (<16 years of age) cases and 268 were in adults. Thirty-three cases were admitted to ICU/HDU.

Figure 4: FluCAN – weekly number of confirmed influenza hospital admissions in NSW, April – October 2015.



2. Laboratory Surveillance

For the week ending 18 October 2015 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [4] which tested positive for influenza A or influenza B continued to decrease.

Influenza positive tests peaked in the week ending 23 August at 38.7%. This was lower than the peak in 2014 (41.6%) (Table 2 and Figures 5-6).

A total of 4,057 tests for respiratory viruses were reported this week with 7.8% testing positive for influenza viruses, down from 12.3% in the previous week. Influenza A and B were circulating at similar levels.

Influenza is no longer the leading respiratory virus reported. Rhinoviruses were the leading respiratory viruses reported this week. Other viruses are circulating at usual levels for this time of year (Table 2).

[4]: 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, Laverty Pathology, SydPath (St Vincent’s), Medlab, and Laverty. HAPS data not included for week 41 2015.

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 18 October, 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
02/08/2015*	22771	1125	(4.9%)	332	(29.5%)	141	(12.5%)	654	(58.1%)	2125	(9.3%)	721	273	1878	2484	149	425
30/08/2015	32606	3717	(11.4%)	1435	(38.6%)	599	(16.1%)	1715	(46.1%)	7819	(24.0%)	747	295	1014	2369	69	445
04/10/2015*	39698	3536	(8.9%)	1354	(38.3%)	595	(16.8%)	1587	(44.9%)	7092	(17.9%)	1159	577	745	2576	78	626
Week ending																	
11/10/2015	4124	231	(5.6%)	107	(46.3%)	30	(13.0%)	94	(40.7%)	275	(6.7%)	136	112	49	369	17	87
18/10/2015	4057	148	(3.6%)	60	(40.5%)	9	(6.1%)	79	(53.4%)	169	(4.2%)	144	94	47	372	17	75

Notes:

* Five-week reporting period.

** Human metapneumovirus

Figure 5: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 18 October 2015.

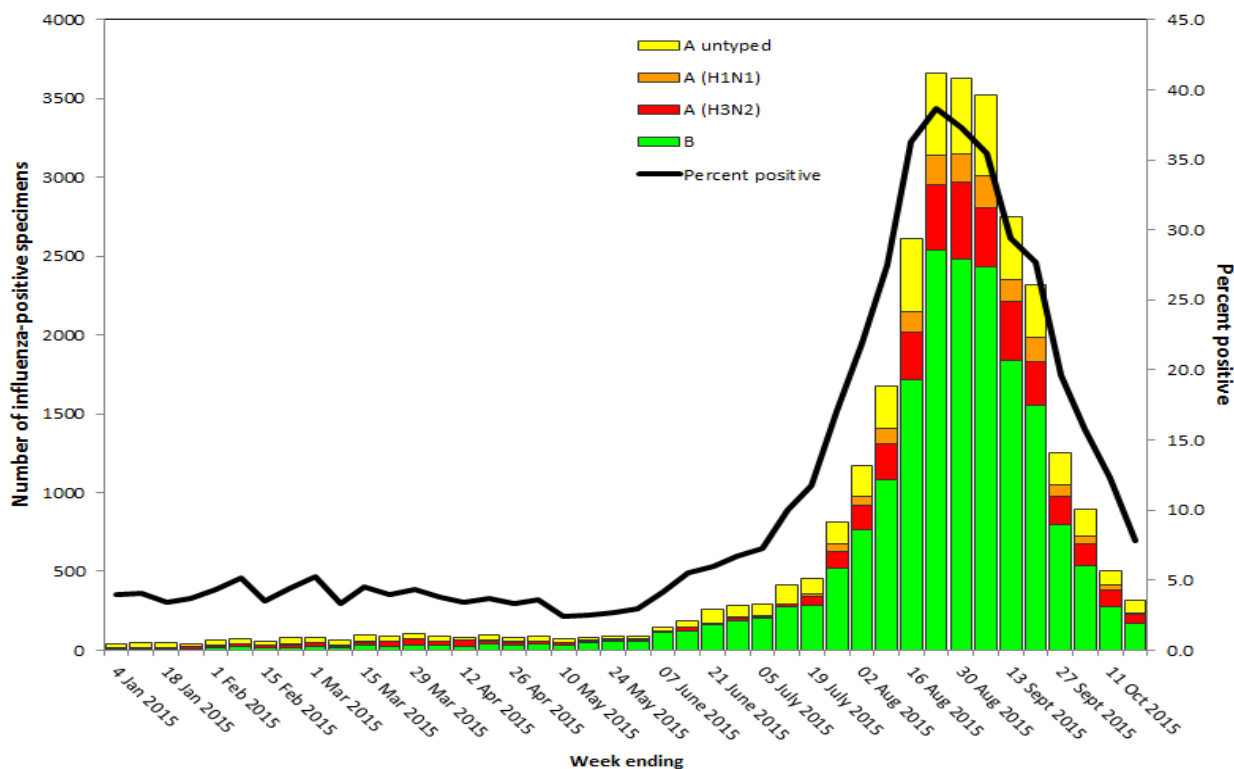
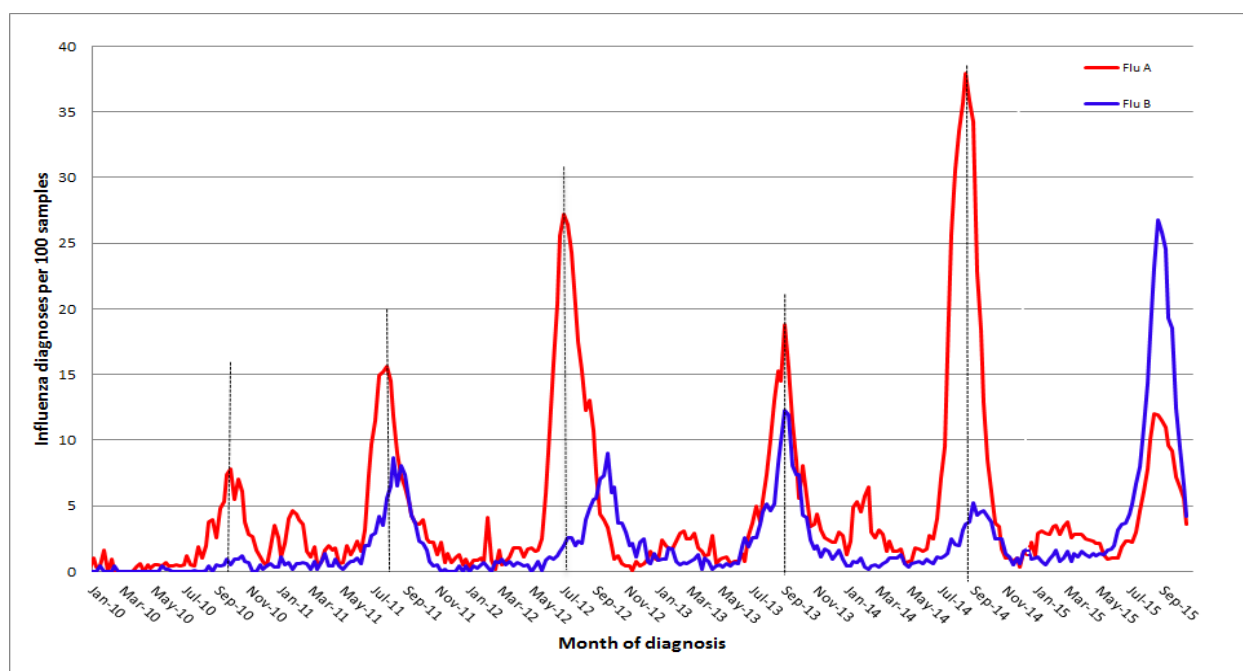


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2010 – 18 October 2015, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 18 October there were 396 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, down from 582 notifications in the previous week.

Rates were highest in South Western Sydney (Table 3). Compared to the previous week, notifications increased in South Western Sydney, were steady in Northern Sydney and decreased in all other LHDs.

Table 3: Weekly notifications of laboratory-confirmed influenza by Local Health District.

Local Health District	Week ending 18 Oct 2015		Previous 4 weeks	
	Number of notifications	Rate per 100 000 population	Average weekly notifications	Rate per 100 000 population
Central Coast	9	2.69	25	7.47
Far West	2	6.52	1	3.26
Hunter New England	39	4.29	107	11.73
Illawarra Shoalhaven	10	2.5	36	9.02
Mid North Coast	4	1.86	23	10.86
Murrumbidgee	16	6.7	22	9.21
Nepean Blue Mountains	18	4.89	54	14.58
Northern NSW	8	2.69	19	6.5
Northern Sydney	52	5.79	154	17.19
South Eastern Sydney	30	3.36	141	15.8
South Western Sydney	104	11.01	178	18.8
Southern NSW	5	2.43	8	4.06
Sydney	22	3.55	108	17.41
Western NSW	6	2.16	37	13.34
Western Sydney	71	7.66	155	16.69

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

Influenza outbreaks in institutions

There were three influenza outbreaks reported in residential aged care facilities this week. Two were due to influenza A and one was influenza B.

In the year to date, there have been 100 laboratory confirmed influenza outbreaks in institutions reported to NSW public health units (Table 4): 57 have been due to influenza A, 29 due to influenza B, 11 were combined A and B, and 3 are unknown. At least 1318 residents were reported to have had ILI symptoms and 161 required hospitalisation. Forty-three deaths in residents linked to these outbreaks have been reported, all of whom were noted to have other significant co-morbidities.

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 residential aged care facilities (Table 4).

Table 4. Reported influenza outbreaks in NSW institutions, 2010 to 18 October 2015.

Year	2010	2011	2012	2013	2014	2015 *
No. of outbreaks	2	4	39	12	120	100

* Year to date.

Electronic General Practice Surveillance (eGPS)

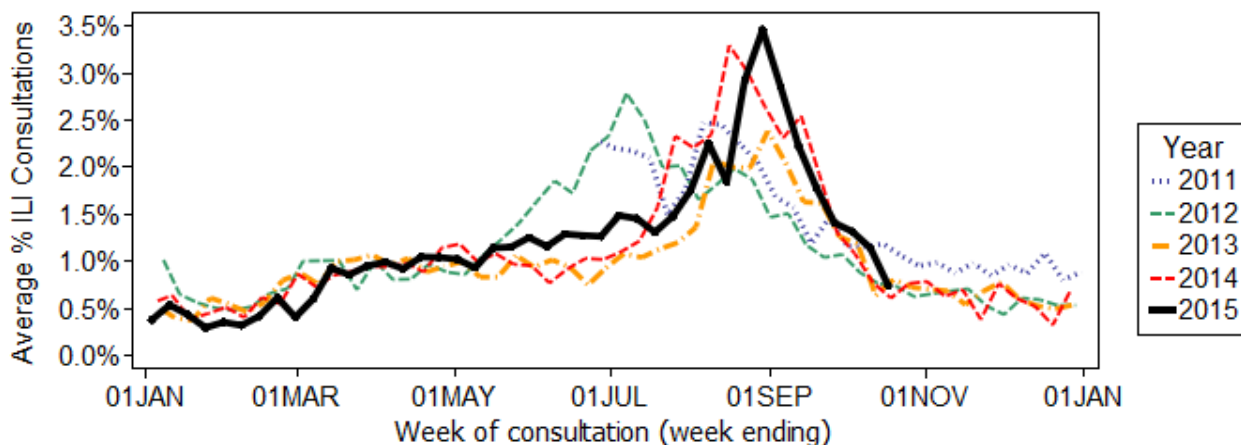
eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an indicator 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 42:

- There were four surveillance reports received from eGPS sentinel practices in NSW; no reports were received from South Eastern Sydney and Illawarra Shoalhaven this week.
- The average rate of ILI patient consultations decreased to 0.7% (range 0.2 – 1.1%), down from 1.1% in the previous week and within the usual range seen for this time of year (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 42 there were 27 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 1.3 %, the same as the previous week.

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

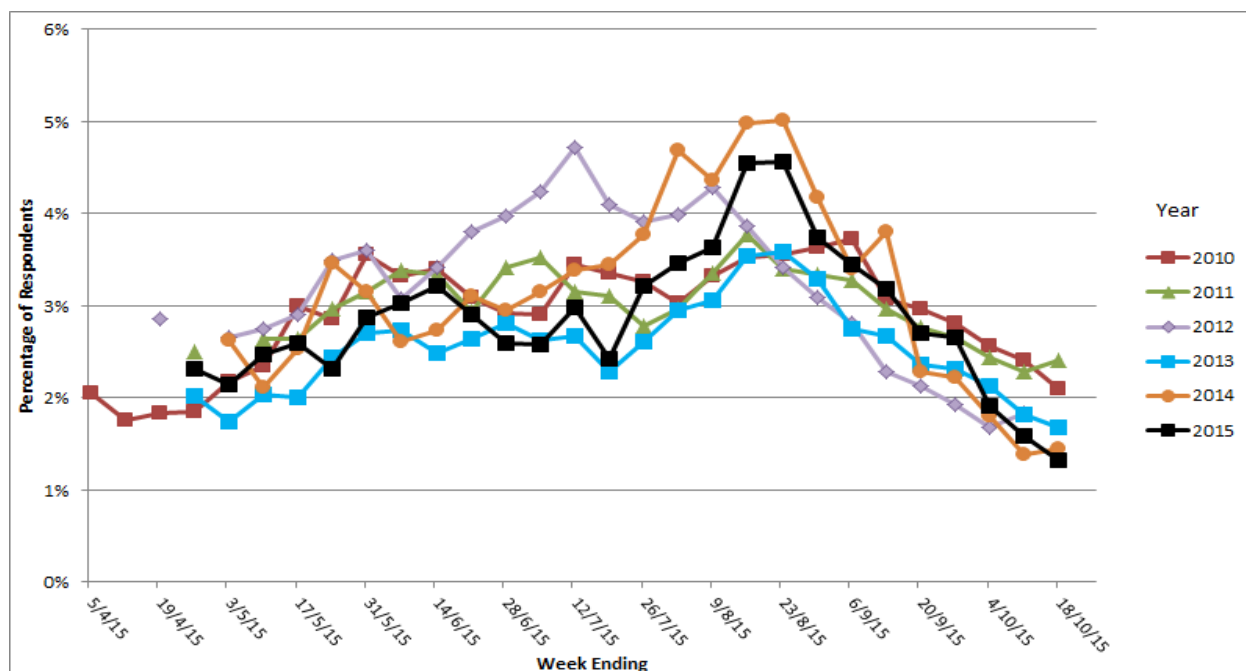
FluTracking.net

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 6214 people in NSW with the following results:

- 1.3% of respondents reported fever and cough, down from the previous week (1.6%) (Figure 8).
- 1.0 % 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, including national estimates, please see the [FluTracking](#) website.

4. National and International Influenza Surveillance

National Influenza Surveillance

The Australian Department of Health has reported up to 9 October 2015.

Nationally, influenza activity has continued to decline following a seasonal peak in mid-August. It is anticipated that influenza activity will decline to inter-seasonal levels in the next few weeks.

- This year children aged less than 15 years accounted for one-third of all influenza notifications, an increase on 2014 when this age-group accounted for one-quarter of notifications. Overall notification rates have been highest in the 5-9 year age group and the 85+ year age group.
- The notable predominance of influenza B has continued throughout the 2015 season. Influenza B viruses accounted for 62% of all notifications this year; predominately B/Yamagata lineage viruses but with an increase in B/Victoria lineage viruses towards the end of the season.
- Where subtype information was available, A(H3N2) was the predominant influenza A subtype with a ratio of approximately 3 notified cases of A(H3N2) for every notified case of A(H1N1).
- In recent weeks, as notifications have decreased overall the proportion of influenza A and B have been close to evenly distributed nationally.
- There were a similar number of hospitalisations reported as last year, however the overall proportion of patients admitted directly to Intensive Care Units (ICUs) was less, at approximately 7%, compared with 10-12% in recent years. Children were admitted to ICU at a slightly higher rate (9%) than adults.
- Admissions to ICU due to influenza A and influenza B were reported at similar proportions, suggesting that, at a type level, clinical severity was similar.
- Reported mortality was described as moderate and largely limited to the elderly.
- The seasonal influenza vaccines appear to be a good match for circulating strains with 77% of samples matching the trivalent seasonal vaccine (TIV).

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) provides [fortnightly reports](#) of global influenza activity. As of 19 October 2015 (with data up to 4 October), global surveillance indicated that:

- In the Northern Hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections. Increased respiratory syncytial virus (RSV) activity was reported in the United States of America (USA).
- Few influenza detections were reported by countries in Africa.
- In tropical countries of the Americas, only Cuba reported significant influenza activity and associated this with high numbers of severe acute respiratory infections (SARI).
- In temperate South America, respiratory virus activity continued to decrease in recent weeks after RSV activity peaked in early July and influenza virus activity peaked at the end of August.
- In tropical Asia, only India and Lao People's Democratic Republic reported increased influenza activity mainly due to A(H1N1)pdm09 virus in India and A(H3N2) virus, respectively. Influenza activity declined in southern China.
- In New Zealand, influenza activity continued to decrease after peaks in mid-August.

WHO reported on global influenza laboratory data for the period 21 September to 4 October 2015, which noted:

- Of the 49 103 specimens submitted for testing, 2240 were positive for influenza viruses, of which 1495 (67%) were typed as influenza A and 745 (33%) as influenza B.
- Of the sub-typed seasonal influenza A viruses, 350 (30%) were influenza A (H1N1) and 824 (70%) were influenza A(H3N2).
- Of the characterized B viruses, 138 (67%) belonged to the B/Yamagata lineage and 69 (33%) to the B/Victoria lineage.

Avian influenza Update:

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

[WHO reported](#) that on 14 October 2015 China notified two new laboratory-confirmed cases of human notification with avian influenza A(H7N9) viruses. Both cases were identified in residents of Zhejiang province but from different municipalities. Both cases had exposure to poultry and live poultry markets.

As of June 2015, the Food and Agriculture Organization (FAO) has reported continued avian influenza A(H7N9) virus detections in the animal population in multiple provinces in China, indicating that the virus persists in the poultry population. If the pattern of human cases follows the trends seen in previous years, the human case number may rise over the coming months. Further sporadic cases of human infection with avian influenza A(H7N9) virus are expected in affected and possibly neighbouring areas.

WHO noted that should human cases from affected areas travel internationally and their infections be detected in another country, community level spread is considered unlikely as the virus has not demonstrated the ability to transmit easily among humans.

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](#).

Composition of 2016 Australian influenza vaccines

The WHO Consultation on the Composition of Influenza Vaccines for the 2016 Southern Hemisphere was held in Memphis on 21-23 September 2015. Following the Consultation, WHO announced its recommendations for the composition of trivalent vaccines for use in the 2016 influenza season (southern hemisphere winter) as follows:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus (Victoria lineage).

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus.

This is a change to both the A/H3 (previously A/Switzerland) and B (previously B/Phuket Yamagata lineage) viruses from the vaccine recommendations for the southern hemisphere in 2015 and the northern hemisphere in 2015-2016. More details about the most recent recommendations can be found at: http://www.who.int/influenza/vaccines/virus/recommendations/2016_south/en/