

NSW Health Influenza Surveillance Report

Week 19 Ending 10 May 2015

Influenza Surveillance Forecast:

- The 2015 influenza season has not yet started but influenza activity in NSW has been higher than expected in the last few months, suggesting an early start to the annual flu season is more likely.
- The elderly and the very young will again be particularly at risk if, as expected, the A/H3N2 strain predominates this year.
- The 2015 seasonal influenza vaccines for Australia have been updated to match the new variants of the A(H3N2) and B strains that emerged last year and which contributed to severe flu seasons both here and in the northern hemisphere.
- The 2015 seasonal vaccines are well-matched to the currently circulating influenza strains but influenza viruses are prone to change and vaccines can become less effective when they do.

Summary:

For the week ending 10 May 2015, influenza activity was LOW across NSW and has decreased from the unusually high activity seen earlier this year.

- [Emergency Department and Hospital surveillance \(FluCAN\)](#) – the index of increase for influenza-like illness (ILI) presentations was well below the seasonal threshold. ILI and pneumonia admissions to critical care wards decreased and were within the usual range for this time of year. No new influenza admissions to hospital were reported.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A or B was low (2.5%). There were no reports of laboratory-confirmed influenza outbreaks in institutions.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking show low ILI activity as expected for this time of year.
- [National and international influenza surveillance](#) – Australia is currently in the inter-seasonal period for influenza, with overall influenza activity at low levels.

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 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 and Hospital (FluCAN) Surveillance

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

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

- On 10 May the index of increase for ILI presentations was 8.1, below the season threshold of 15.
- The overall number of ILI presentations increased slightly, which was above the range of activity seen in previous years (Figure 1 and Table 1).
- ILI presentations to EDs as a proportion of all ED presentations were low at 1.0 case per 1000 presentations.
- ED presentations for pneumonia increased slightly (Figure 2) but combined ILI and pneumonia admissions to critical care wards decreased further this week and were within the usual range for this time of year (Figure 3 and Table 1).
- The overall number of respiratory, fever and unspecified infection presentations were elevated in children < 4 years and people aged over 35 years in all Sydney regions (Table 1).
- Bronchiolitis presentations were slightly above the usual range for this time of year (Figure 4). Presentations for bronchiolitis tend to increase around this time each year and usually reflect increasing circulation of respiratory syncytial virus (RSV) infection in the community.

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 10 May 2015 (black line), compared with each of the 5 previous years (coloured lines).

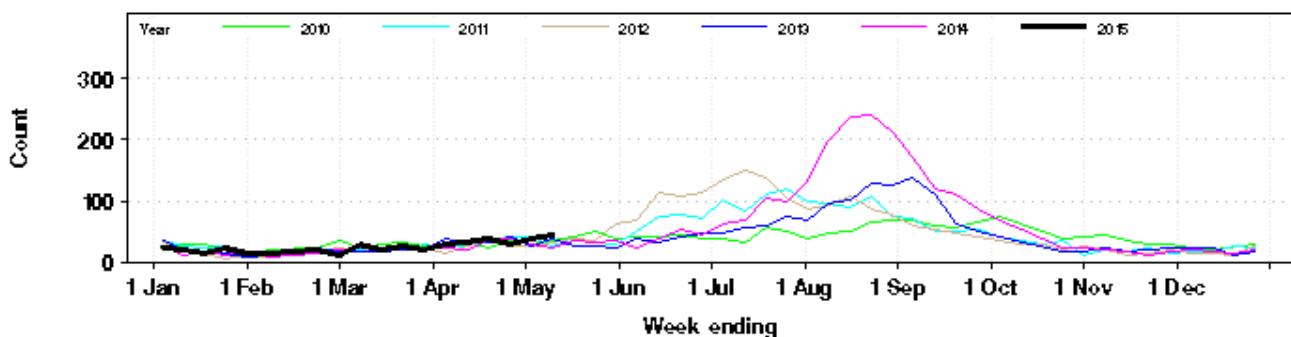
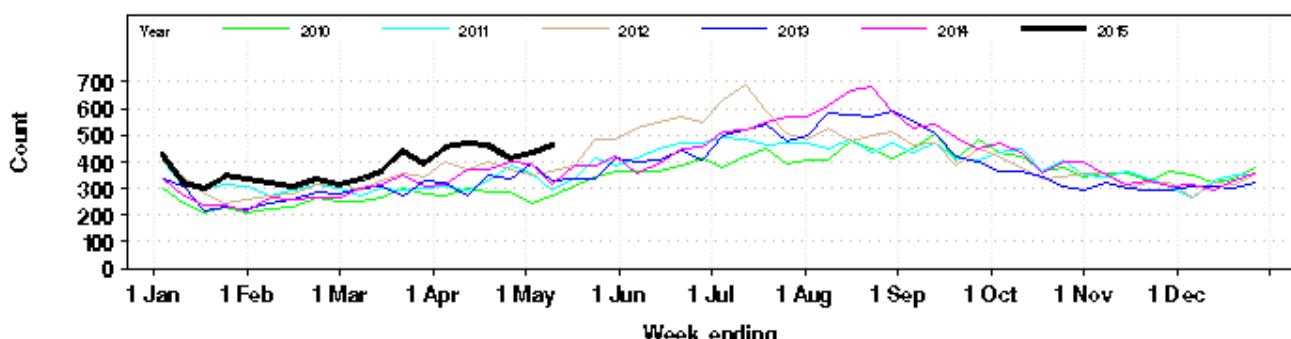


Figure 2: Total weekly counts of Emergency Department presentations for pneumonia, from January – 10 May 2015 (black line), compared with each of the 5 previous years (coloured lines).



[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.

Figure 3: Total weekly counts of Emergency Department presentations for pneumonia or influenza-like illness and admitted to a critical care ward, from January – 10 May 2015 (black line), compared with each of the 5 previous years (coloured lines).

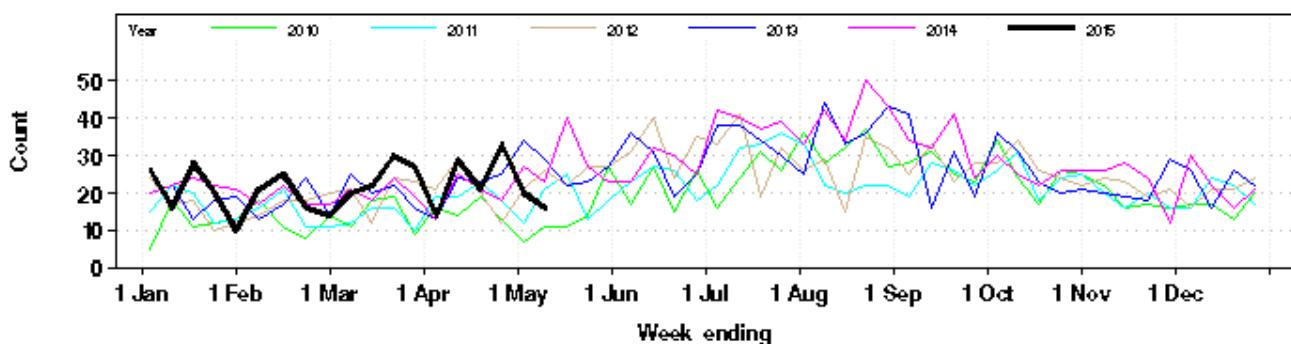


Figure 4: Total weekly counts of Emergency Department visits for bronchiolitis, from January – 10 May 2015 (black line), compared with the 5 previous years (coloured lines).

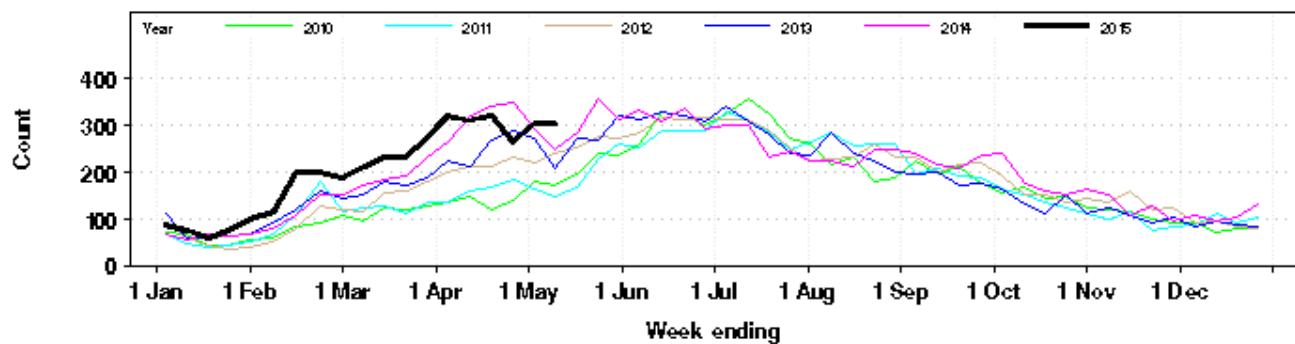


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 10 May 2015. Includes data from 59 NSW EDs and the Sydney Ambulance Division. *

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)	Increased	Above				
	Pneumonia	Increased	Above	0-4 and 17-64 years			
	Pneumonia and ILI admissions	Decreased	Above				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Steady	Above		Western NSW and Sydney LHDs, and Maitland Hospital		Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Increased	Above	0-4 and 35+ years	South Western Sydney, Western Sydney, Sydney, Northern Sydney, and South Eastern Sydney LHDs		
	Asthma	Increased	Usual				
Ambulance Triple Zero (000) calls, NSW	Breathing problems	Increased	Above	65+ years			

Notes: Statistically significant increases are shown in bold. LHD = Local Health District

* **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.

Hospital Surveillance

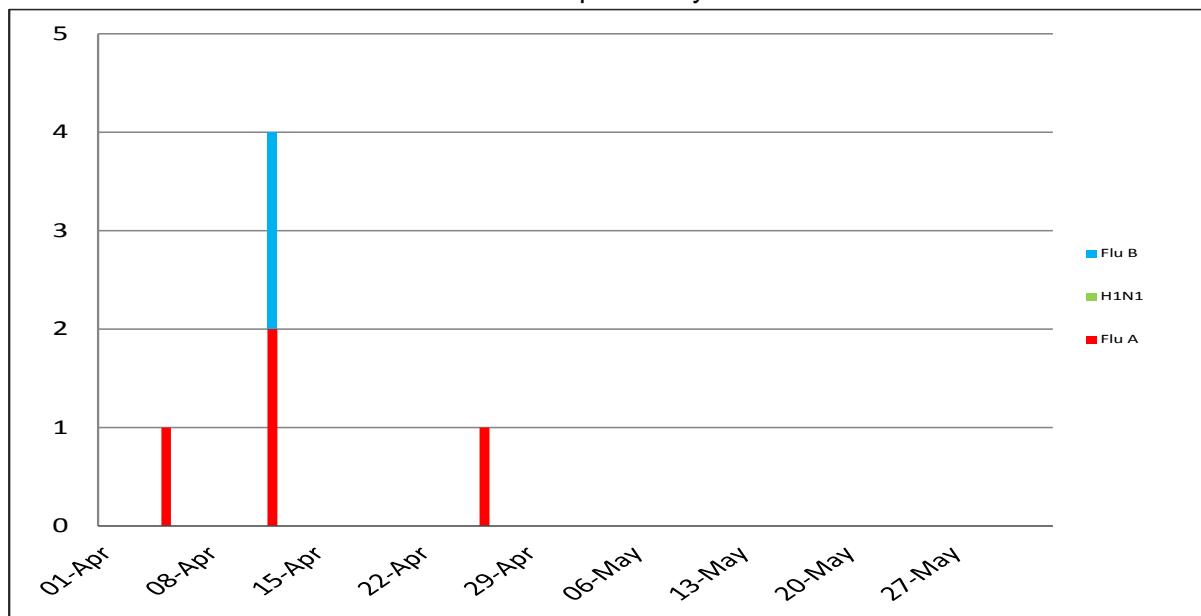
FluCAN (The Influenza Complications Alert Network)

In 2009, the [FluCAN](#) surveillance system was created with the involvement and support of the Thoracic Society of Australia and New Zealand and with funding from the NHMRC to be a rapid alert system for severe respiratory illness. The aim of FluCAN was to establish and maintain a real-time sentinel hospital surveillance system for acute respiratory disease requiring hospitalisation, which could provide a reliable and timely source of information that could be used to inform public health policy.

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

- During week 19 there were no influenza admissions reported in NSW sentinel hospitals (Figure 5).
- Since 1 April 2015, there have been 6 hospital admissions reported for influenza: 4 with influenza A and two with influenza B (Figure 8).
- Of these admissions, 3 were paediatric (<16 years of age) cases and 3 were in adults. One case was admitted to ICU/HDU.

Figure 5: FluCAN – Number of confirmed influenza hospital admissions in NSW by date of specimen, April – May 2015.



2. Laboratory Surveillance

For the week ending 10 May 2015 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A or influenza B fell slightly compared to the activity levels seen in April (Table 2 and Figure 6 & 7).

Overall, a total of 2715 tests for respiratory viruses were reported with 69 specimens (2.5%) testing positive for influenza 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).

[2]: Preliminary laboratory surveillance 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.

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 10 May, 2015.

Month ending	Total Tests	TEST RESULTS											
		Influenza A				Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	Enterov	HMPV
		Total	H3N2 **	H1N1 pdm09	A (Not typed)	Total	(%)						
		Total (%)	Total (%A) **	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%)	82 (33.9%)	21 (8.7%)	140 (57.9%)	108 (1.3%)		181	117	767	1084	52	34
03/05/2015*	12584	285 (2.3%)	105 (36.8%)	13 (4.6%)	167 (58.6%)	163 (1.3%)		257	187	1351	1443	59	78
Week ending													
10/05/2015	2715	35 (1.3%)	8 (22.9%)	1 (2.9%)	26 (74.3%)	34 (1.3%)		57	41	309	358	13	13

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

Figure 6: Influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January 2010 to 10 May 2015.

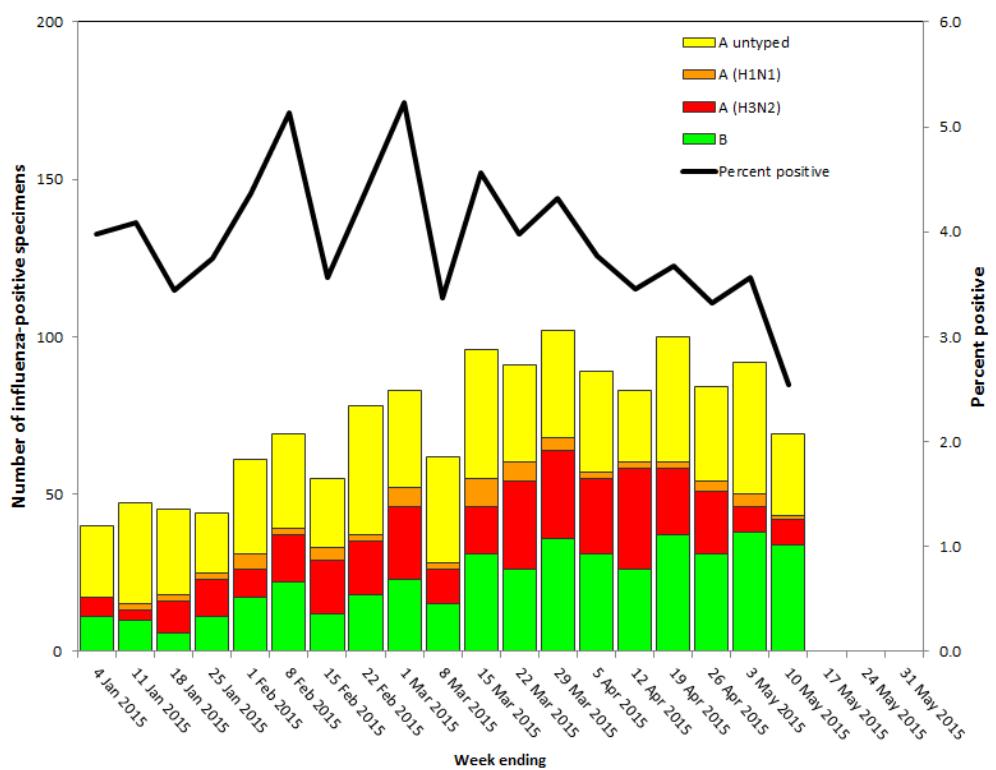
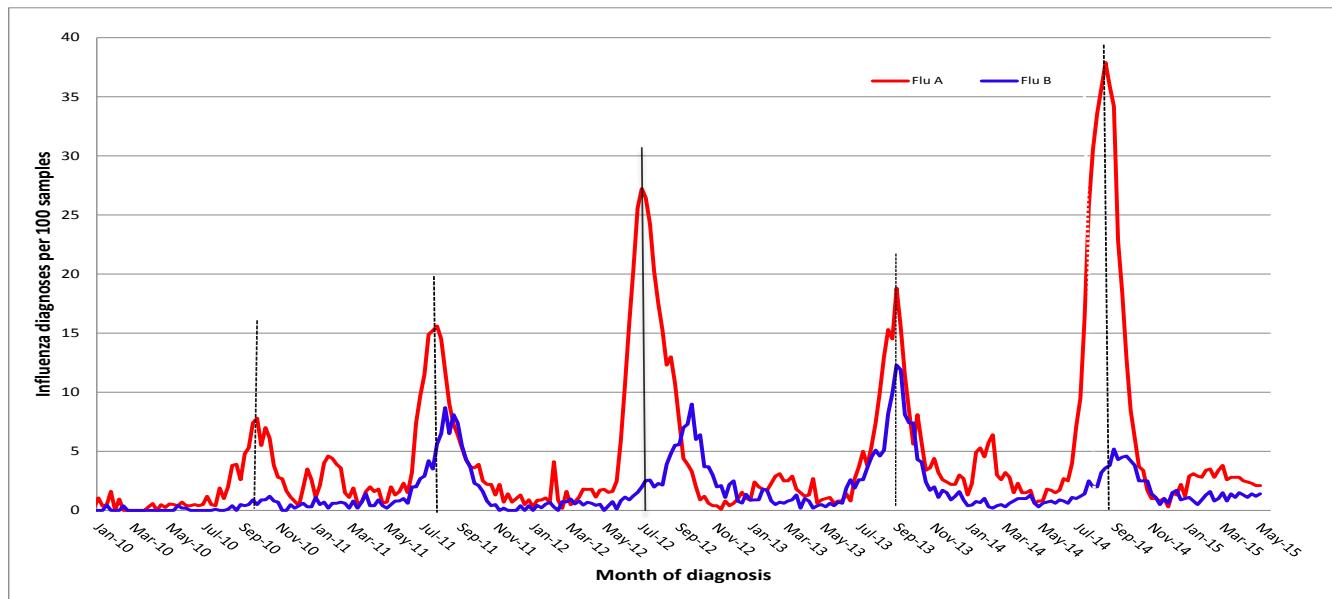


Figure 7: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2010 – 10 May 2015, New South Wales. (see Notes below)



Notes on sentinel laboratory surveillance:

Data is provided by participating sentinel laboratories on a weekly basis and excludes serology.

Participating sentinel laboratories include the following: South Eastern Area Laboratory Services, Institute of Clinical Pathology and Medical Research, The Children's Hospital at Westmead, Sydney South West Pathology Service, Pacific Laboratory Medicine Service, Royal Prince Alfred Hospital, Hunter Area Pathology Service, Nepean Hospital Pathology, Douglas Hanley Moir Pathology, VDRLab, Laverty Pathology, SydPath (St Vincent's) Pathology, and Medlab.

In the week ending 10 May, the highest total number of laboratory-confirmed influenza notifications and highest notification rate per population was observed in Northern Sydney Local Health District (NSLHD). Many of these notifications were linked to a large nursing home outbreak in NSLHD.

Influenza activity has been generally low in most non-metropolitan Local Health Districts.

Table 3: Influenza laboratory notifications to the NSW Notifiable Conditions Information Management System (NCIMS) by NSW Local Health District, 1 January to 10 May, 2015.

Local Health District	Week ending 10 May 2015		Previous 4 weeks	
	Number of notifications	Rate per 100 000 population	Average weekly notifications	Rate per 100 000 population
Central Coast	1	0.3	2	0.45
Far West	0	0	0	0
Hunter New England	4	0.44	4	0.41
Illawarra Shoalhaven	2	0.5	4	1
Mid North Coast	2	0.93	2	0.79
Murrumbidgee	0	0	0	0.52
Nepean Blue Mountains	2	0.54	4	1.09
Northern NSW	1	0.34	2	0.59
Northern Sydney	19	2.12	21	2.31
South Eastern Sydney	8	0.9	22	2.46
Southern NSW	0	0	0	0
South Western Sydney	3	0.32	4	0.42
Sydney	4	0.64	3	0.48
Western NSW	1	0.36	2	0.54
Western Sydney	6	0.65	8	0.89

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

Laboratory-confirmed influenza outbreaks in institutions*

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

In the year to date there have been 7 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 strain in NSW) than from the influenza A(H1N1)pdm09 strain. An influenza A(H3N2) strain also predominated in 2012 and was associated with an increase in influenza outbreaks in institutions, particularly aged care facilities (Table 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	7

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

** Year to date.

3. Community Illness Surveillance

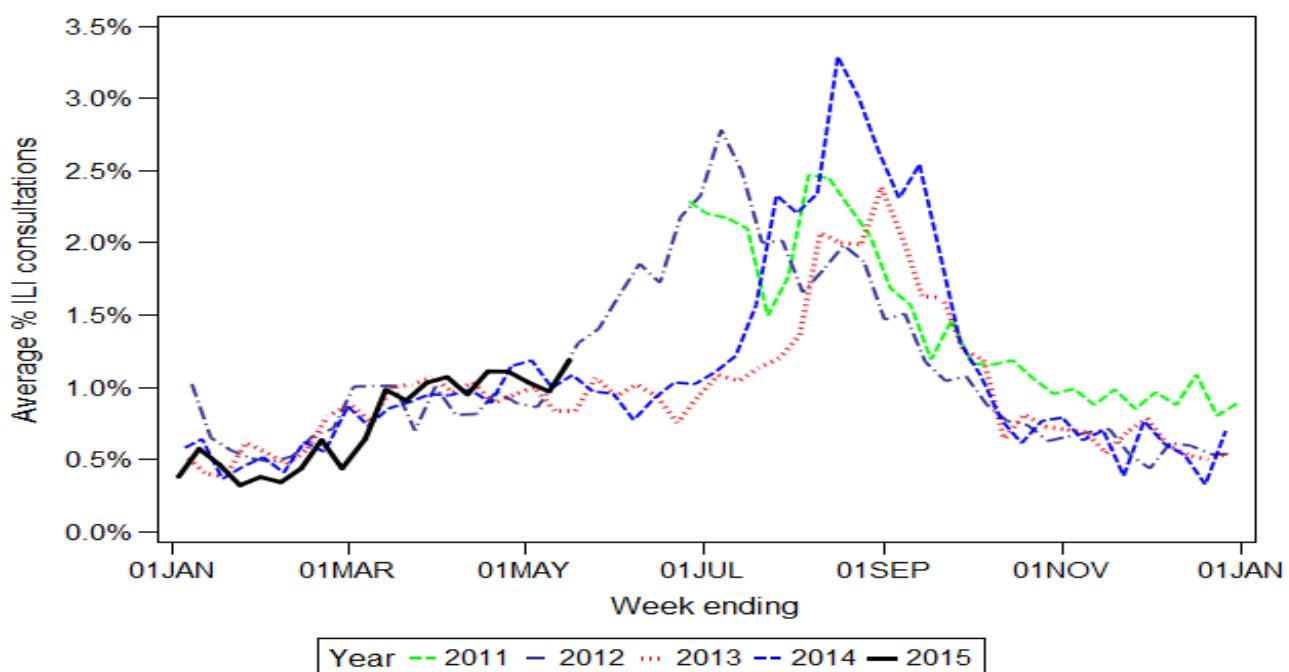
Electronic General Practice Surveillance (eGPS)

eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an indicator of influenza activity. Consultations for ILI are identified each week by an automatic search of electronic records for validated combinations of ILI terms rather than diagnosis codes.

Data generated from eGPS should be interpreted with caution as they are not representative of all practices within the participating LHDs or across NSW. In Week 19:

- there were 11 surveillance reports received from eGPS sentinel practices in NSW;
- the average rate of ILI patient consultations was low at 1.0% (range 0.2 – 1.7%), which was similar to the previous week and similar to the same time period in recent years (Figure 8).

Figure 8. Average rate of influenza-like presentations to sentinel general practices, by week of consultation 2011-15



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 19 there were 39 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 1.4 per cent, and within the usual range seen for this time of year.

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

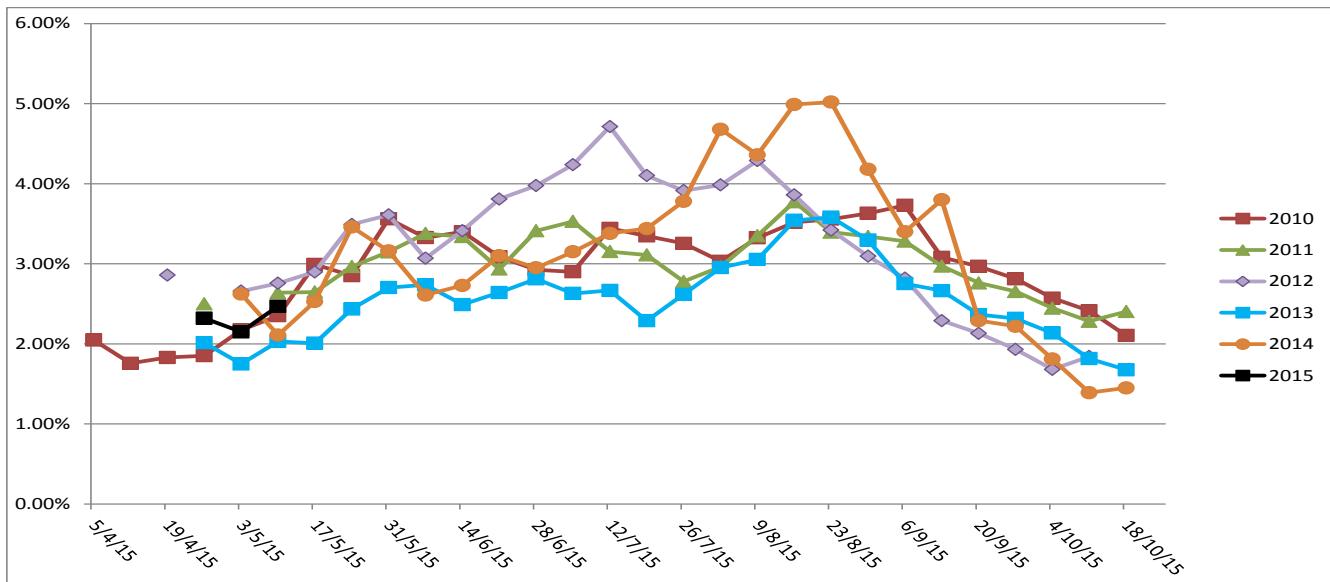
FluTracking.net

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 19 FluTracking received reports for 4959 people in NSW, including:

- 2.2% of respondents reported fever and cough, similar to the previous week and was within the usual range for this time of year (Figure 9);
- 1.3% of respondents reported fever, cough and absence from normal duties, similar to 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 the following:

- Australia is currently in the inter-seasonal period for influenza, with overall influenza activity at low levels.
- Influenza activity across jurisdictions is variable. Activity since the start of the year has been higher in a majority of jurisdictions than at the same time last year, however many jurisdictions have reported a decline in activity in the most recent reporting week compared with the week prior.
- Nationally, influenza A is the predominant circulating virus type; of those viruses where subtyping data are available, influenza A(H3N2) is the most common.
- Influenza viruses circulating in Australia appear to be a good match with the 2015 seasonal trivalent influenza 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-2014.htm>

Global Influenza Update

The World Health Organization (WHO) reported on current influenza activity in the [WHO Global Influenza Update](#) of 4 May 2015 (with data up to 19 April) which indicated that:

- In North America, influenza activity continued to decrease and was close to inter-seasonal levels with influenza B virus predominant in the last weeks.
- In Europe, influenza activity continued to decline in most countries. Influenza B virus remained predominant in recent weeks.
- In northern Africa, influenza activity decreased almost to inter-seasonal levels.

- In western Asia, a decrease in influenza activity mainly associated with A(H1N1) virus was observed in the last weeks.
- In the temperate countries of Asia, influenza activity of mainly influenza B virus was further declining.
- In tropical countries of the Americas, influenza activity was low in most countries.
- In tropical Asia, influenza activity and influenza-like illness (ILI) activity continued to decrease in southern Asia, where influenza A(H1N1) virus predominated. Influenza activity has continued to decrease from its peak in southern China including Hong Kong Special Administrative Region, China. In the southern hemisphere, influenza activity remained at inter-seasonal levels.

WHO also reported influenza laboratory data for the period 5 to 18 April 2015, which noted:

Of the 65 361 specimens, 8249 were positive for influenza viruses, of which 2566 (31%) were typed as influenza A and 5683 (69%) as influenza B.

Of the sub-typed seasonal influenza A viruses, 670 (37.6%) were influenza A(H1N1) and 1114 (62.4%) were influenza A(H3N2).

Of the characterized B viruses, 1127 (95%) belonged to the B-Yamagata lineage and 59 (5%) to the B-Victoria lineage.

Avian influenza Update

WHO did not post any further updates on avian influenza during this report week, with its most recent update posted on [31 March 2015](#) which included updates on human infections with avian influenza A H5, H7 and H9 strains.

More recently ([14 May 2015](#)), WHO reported that on 9 May 2015 the National Health and Family Planning Commission (NHFPC) of China notified 6 additional laboratory-confirmed cases of human infection with avian influenza A (H7N9) virus, including 2 deaths.

Other sources of more recent 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^a;
- 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.

^aA/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/.