NSW Health Influenza Surveillance Report

Week 20: 16 to 22 May 2016

Summary:

- **The influenza season has not yet started and it is unlikely to start in the next four weeks.**
- **Although higher than the usual inter-seasonal average, influenza activity continued to be low across NSW, with influenza A(H1N1) viruses the most common strain identified.**

In this reporting week:

- Hospital surveillance – the rate of influenza like illness (ILI) presentations to selected emergency departments was low and consistent with inter-seasonal activity.
- Laboratory surveillance – the proportion of respiratory samples positive for influenza was low at 2.8%.
- Community surveillance – influenza notifications were low in all NSW local health districts. Data collected from eGPS, ASPREN and Flu Tracking showed low levels of ILI activity. One new influenza outbreak was reported in a residential group housing facility.
- National and international influenza surveillance – no new national reports have been issued. . Influenza activity in the Northern Hemisphere has decreased with influenza B strains now predominant.
- 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

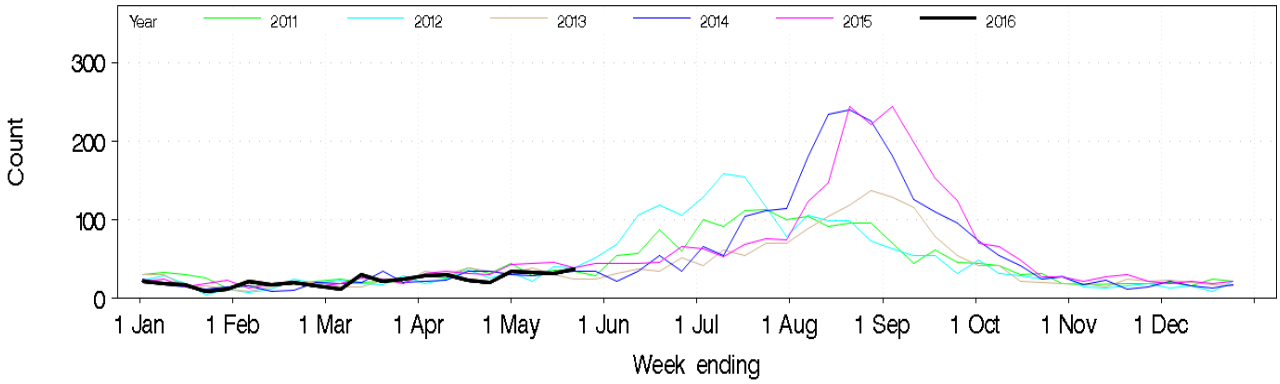
NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

For the week ending 22 May 2016:

- ILI presentations [2] increased slightly this week and activity is within the usual range of activity seen in recent years. Presentations were significantly above the five-year mean for this week at Orange Health Service (Figure 1 and Table 1).
- The index of increase for ILI presentations was 8.2 on 22 May, well below the seasonal threshold but higher than the previous week (6.8).
- The proportion of ILI presentations to all ED presentations was low at 0.8 per 1000 presentations, and similar to the previous week.
- ED presentations for pneumonia [3] increased but were within the usual range for this time of year (Figure 2). Presentations were significantly above the five-year mean for this week at Calvary Mater Newcastle.
- Pneumonia or ILI presentations which resulted in admission increased but remained within the usual range for this time of year. Admissions to critical care increased and were above the usual range for this time of year (Figure 3 and Table 1).
- Bronchiolitis presentations increased after having been steady for the past few weeks. However, presentations were within 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.
- The category combining all respiratory, fever and unspecified infection presentations increased but were within the usual range for this time of year (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 22 May 2016 (black line), compared with each of the 5 previous years (coloured lines).



[1] NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance system. Centre for Epidemiology and Evidence, NSW Ministry of Health. Comparisons are made with data for the preceding five years. Recent counts are subject to change. Data from 60 NSW emergency departments are included representing approximately 82% of ED visits in the 2014-15 financial year. The coverage of rural EDs is lower than metropolitan EDs.
[2]The ED 'ILI' syndrome includes provisional diagnoses selected by a clinician of 'influenza-like illness' or 'influenza' (including 'pneumonia with influenza'), avian and other new influenza viruses.
[3]The ED 'Pneumonia' syndrome includes provisional diagnoses selected by a clinician of 'viral, bacterial, atypical or unspecified pneumonia', 'SARS', or 'legionnaire's disease'. It excludes the diagnosis 'pneumonia with influenza'.

Figure 2: Total weekly counts of ED presentations for pneumonia, from January – 22 May 2016 (black line), compared with each of the 5 previous years (coloured lines).

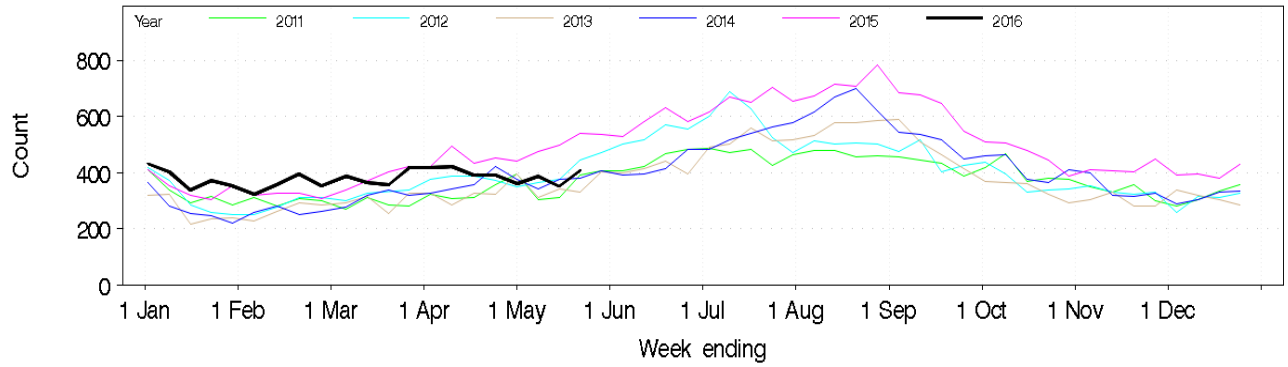


Figure 3: Total weekly counts of ED presentations for pneumonia or influenza-like illness and admitted to a critical care ward, from January – 22 May 2016 (black line), compared with each of the 5 previous years (coloured lines).

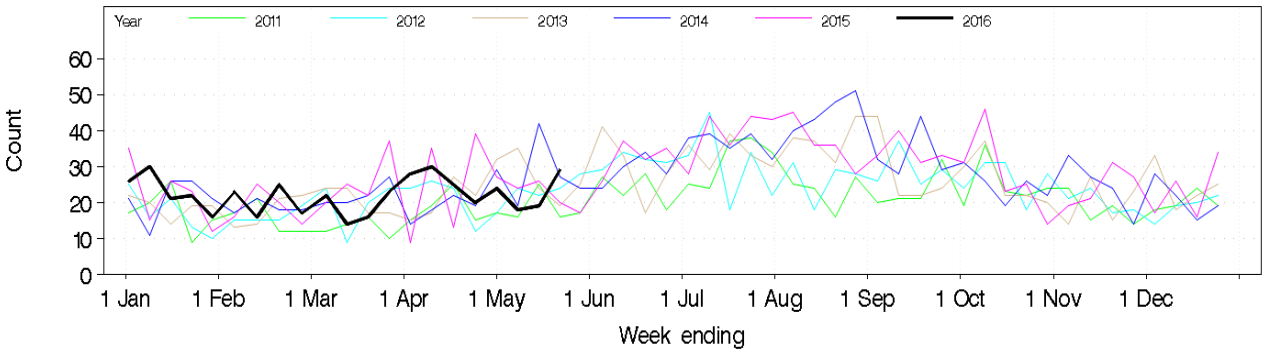


Figure 4: Total weekly counts of ED presentations for bronchiolitis, from January – 22 May 2016 (black line), compared with the 5 previous years (coloured lines).

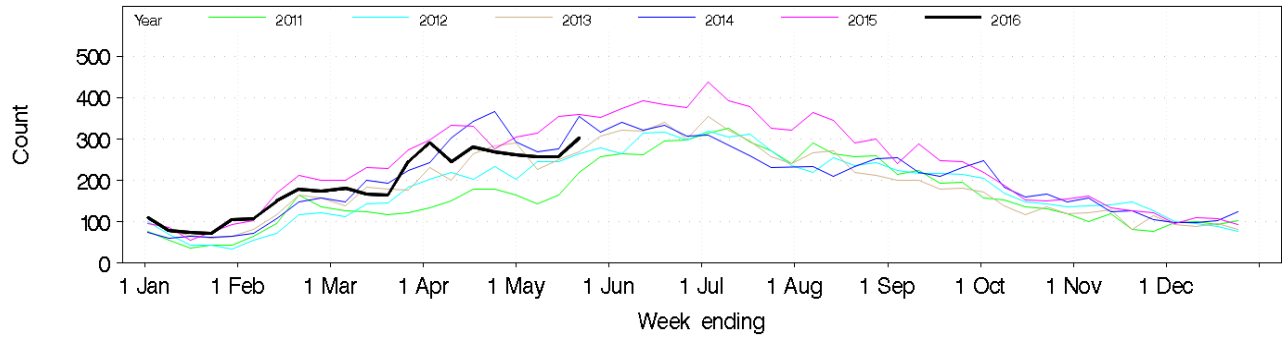


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 22 May 2016. Includes data from 60 NSW EDs and the NSW Ambulance Division. *

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)	Statistically significant severity indicators (if any)	Comment
ED presentations, 60 NSW hospitals	Influenza-like illness (ILI)	Increased	Usual		**Orange Health Service**		Daily index of increase = 8.2
	Pneumonia	Increased	Usual		**Calvary Mater Newcastle**		Situation report sent to CDONCALL on 23 May 2016.
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Increased	Above				
	Asthma	Increased	Usual				
	Bronchiolitis	Increased	Usual				Bronchiolitis is a disease of infants. **Daily index of increase = 34.5**
	All respiratory illness, fever and unspecified infections	Increased	Usual	**0-4 years**			
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)

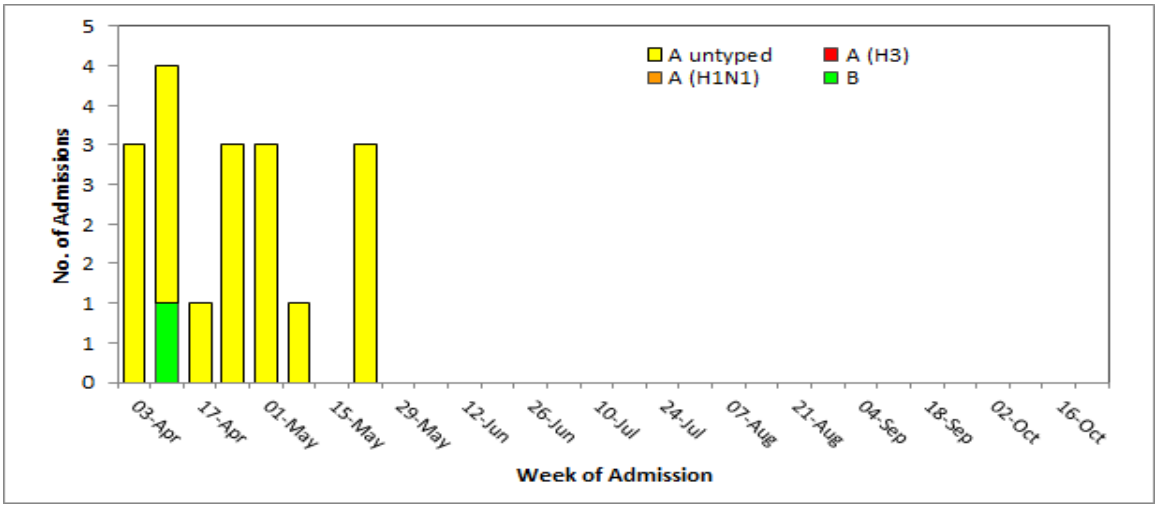
In 2009, the FluCAN surveillance system was created to be a rapid alert system for severe respiratory illness requiring hospitalisation. Data is provided on patients admitted with influenza confirmed by polymerase chain reaction (PCR) testing.

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

Due to delays in data completeness, FluCAN data is only presented up to the previous week.

- During week 20 there were three influenza admission in NSW sentinel hospitals (Figure 5).
- Since 1 April 2015, there have been 18 hospital admissions reported for influenza; 17 with influenza A, one with influenza B (Figure 5).
- Of these admissions, seven were paediatric (<16 years of age) cases and eleven were in adults. No cases have been admitted to ICU/HDU.

Figure 5: FluCAN – weekly number of confirmed influenza hospital admissions in NSW, April – 22 May 2016.



2. Laboratory Surveillance

For the week ending 22 May 2016 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [4] which tested positive for influenza A or influenza B decreased in comparison with previous weeks.

A total of 3,997 tests for respiratory viruses were reported this week with 2.8% testing positive for influenza viruses, down from 3.7% in the previous week. While influenza A (H1N1) strains continued to be the leading influenza virus strain, there was a notable increase seen in the number of influenza A (H3) viruses circulating. Influenza B activity remains at low levels (Figure 6 and 7).

Rhinoviruses 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 22 May, 2016.

Month ending	Total Tests	TEST RESULTS															
		Influenza A								Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	HMPV **	Entero
		Total		H3N2		H1N1 pdm09		A (Not typed)		Total							
		Total	(%)	Total	(%A)	Total	(%A)	Total	(%A)	Total	(%)						
31/01/2016	8079	270	(3.3%)	45	(16.7%)	114	(42.2%)	111	(41.1%)	38	(0.5%)	202	179	202	941	73	96
28/02/2016	9810	397	(4.0%)	54	(13.6%)	199	(50.1%)	144	(36.3%)	96	(1.0%)	208	244	323	1484	80	150
03/04/2016*	14699	555	(3.8%)	32	(5.8%)	271	(48.8%)	248	(44.7%)	138	(0.9%)	282	412	937	1862	68	188
01/05/2016	13614	457	(3.4%)	16	(3.5%)	268	(58.6%)	173	(37.9%)	152	(1.1%)	271	371	1189	1470	71	128
Week ending																	
08/05/2016	3738	94	(2.5%)	13	(13.8%)	45	(47.9%)	36	(38.3%)	19	(0.5%)	73	78	296	411	15	30
15/05/2016	3796	106	(2.8%)	13	(12.3%)	49	(46.2%)	44	(41.5%)	35	(0.9%)	74	72	325	471	27	29
22/05/2016	3997	82	(2.1%)	17	(20.7%)	32	(39.0%)	33	(40.2%)	31	(0.8%)	75	74	338	610	11	44

Notes:
* Five-week reporting period. ** Human metapneumovirus

[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.

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Figure 6: Weekly influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January to 22 May 2016.

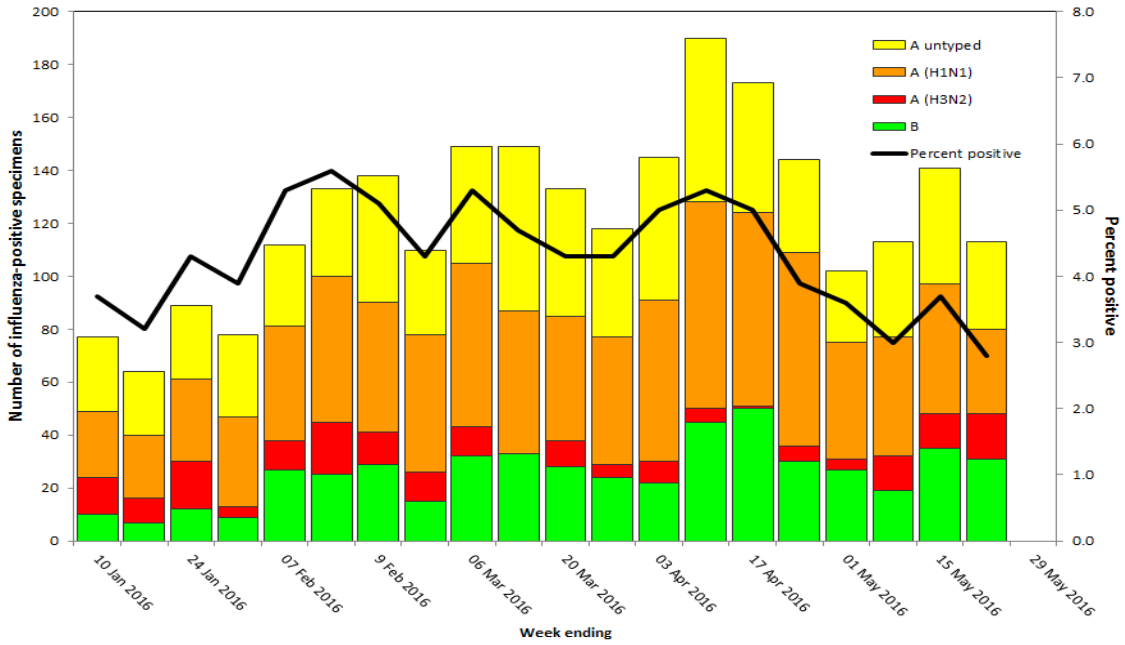
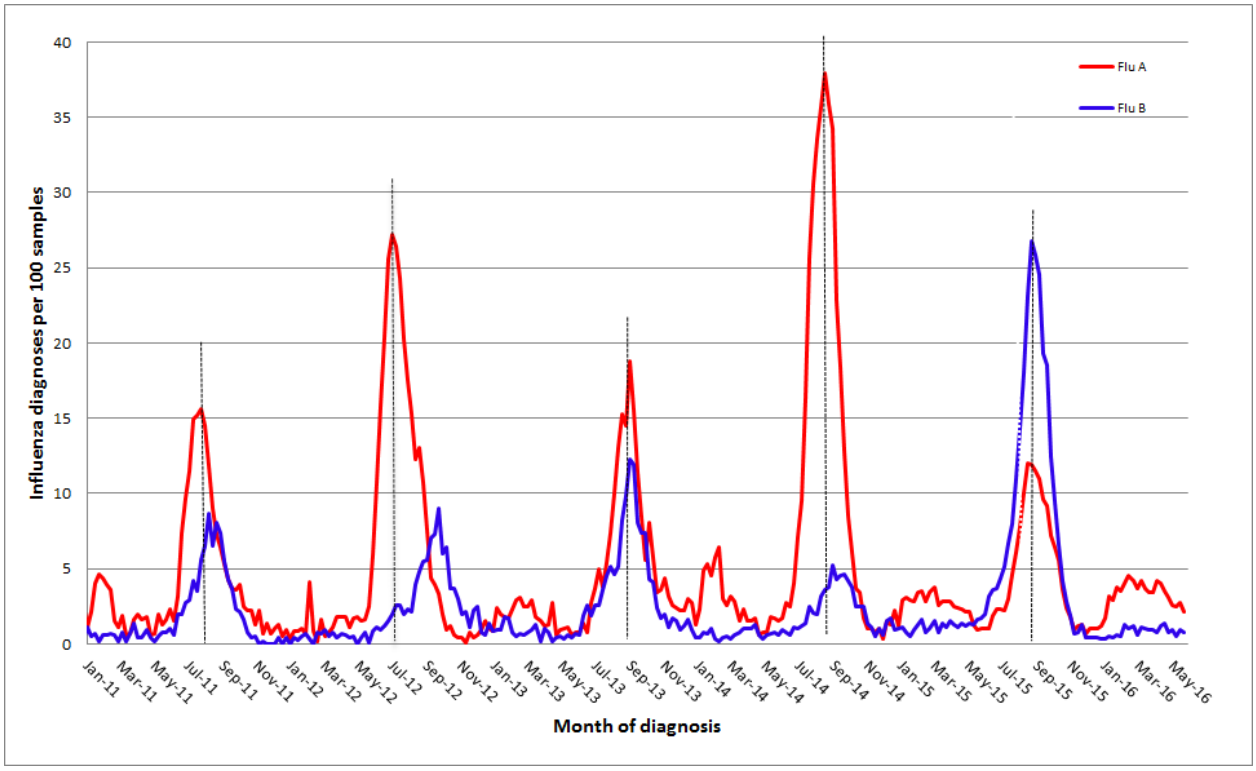


Figure 7: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2010 – 22 May 2016, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 22 May there were 106 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, lower than the 121 notifications in the previous week.

Rates were highest in Northern Sydney and Nepean Blue Mountains (Table 3). Compared to the previous week, notifications decreased across the majority of LHDs.

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

Local Health District	Week ending 22 May 2016		Weekly average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	3	0.89	3	0.74
Far West	0	0	1	3.28
Hunter New England	4	0.44	12	1.31
Illawarra Shoalhaven	0	0	3	0.68
Mid North Coast	2	0.92	3	1.23
Murrumbidgee	1	0.42	1	0.42
Nepean Blue Mountains	12	3.2	6	1.53
Northern NSW	3	1	3	1
Northern Sydney	29	3.2	25	2.73
South Eastern Sydney	12	1.33	12	1.36
South Western Sydney	7	0.72	12	1.27
Southern NSW	0	0	2	0.96
Sydney	12	1.91	12	1.95
Western NSW	0	0	1	0.36
Western Sydney	21	2.22	25	2.67

Notes: * 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 (influenza A H1N1) outbreak reported this week in a residential housing facility. Sadly one of the residents died. A total of seven institutional outbreaks have been reported to date in 2016 (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. In 2015, influenza B was the predominant strain, and was also associated with an increase in influenza outbreaks in institutions, particularly residential aged care facilities (Table 4).

Table 4: Reported influenza outbreaks in NSW institutions, January 2010 to 22 May 2016.

Year	2010	2011	2012	2013	2014	2015	2016*
No. of outbreaks	2	4	39	12	120	103	7

Notes: * 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.

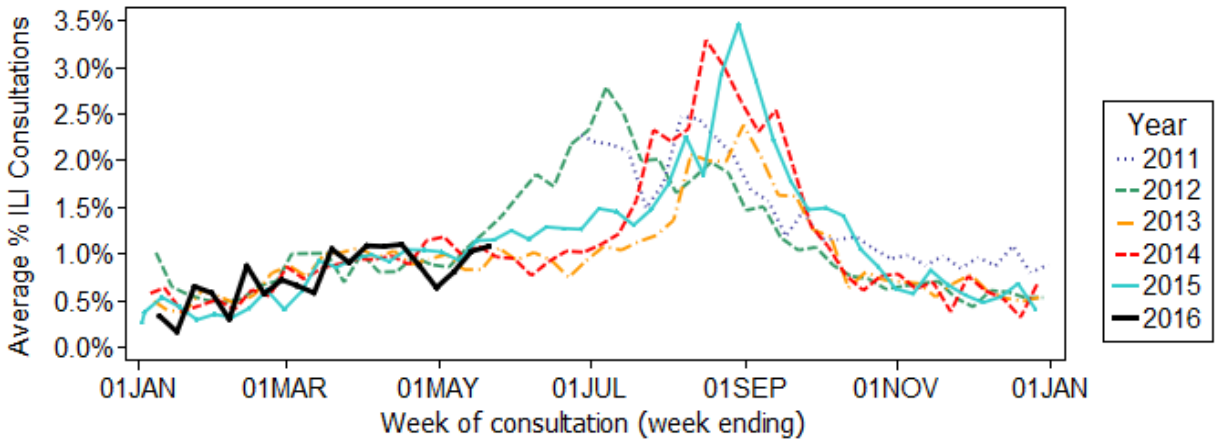
Data generated from eGPS should be interpreted with caution as they are not representative of all practices within the participating LHDs or across NSW.

In Week 20:

- There were five 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 increased to 1.1% (range 0.4 – 2.4%), slightly up from 1.0% in the previous week and within the usual range seen for this time of year (Figure 8).

Figure 8. Average rate of influenza-like presentations to sentinel general practices by week of consultation 2011-2016 (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 20 there were 27 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 1.8 %, higher lower than the previous week (1.2%).

For further information please see the ASPREN website.

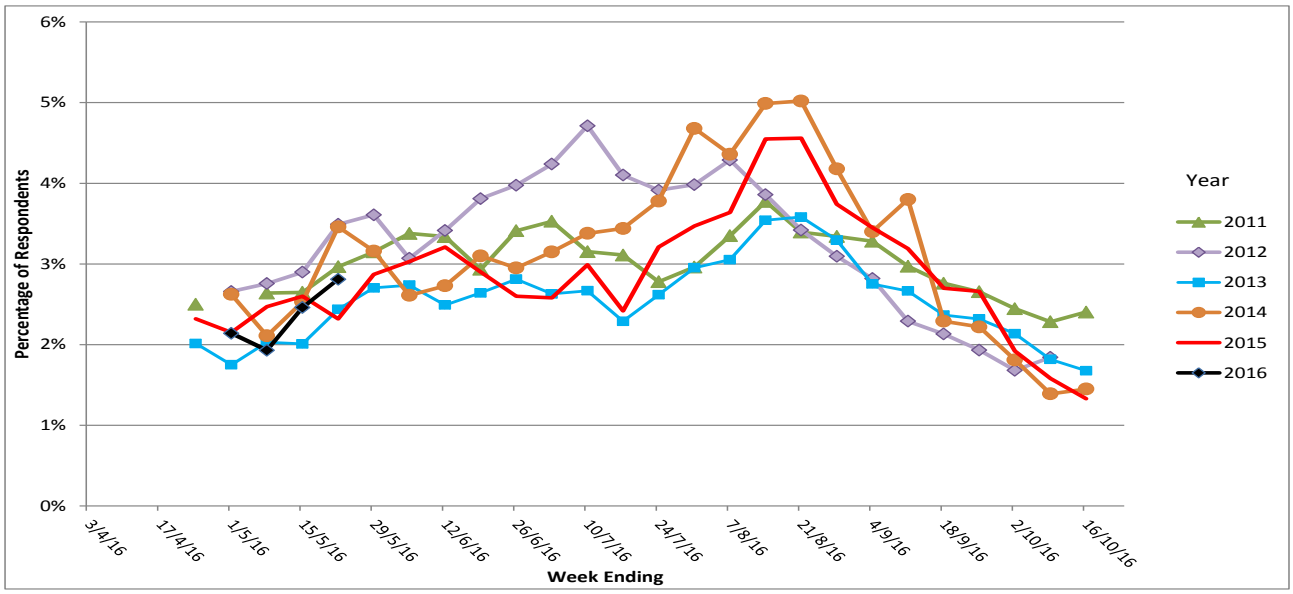
FluTracking.net

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 20 FluTracking received reports for 7303 people in NSW with the following results:

- 2.8% of respondents reported fever and cough, up from the previous week (2.5%) (Figure 9).
- 1.7 % of respondents reported fever, cough and absence from normal duties, up from the previous week (data not shown).

Figure 9: FluTracking – weekly influenza-like illness reporting rate, NSW, 2011 – 2016.



For further information, including national estimates, please see the FluTracking website.

4. National and International Influenza Surveillance

National Influenza Surveillance

Although national influenza surveillance reports are not produced at this time of year, many jurisdictions are reporting increased influenza activity. Total national reports of laboratory-confirmed influenza in January were high, similar to 2015 but higher than in earlier years.

For further information on the National Notifiable Disease Surveillance System, which includes laboratory-confirmed influenza reports, see: http://www9.health.gov.au/cda/source/cda-index.cfm.

Global Influenza Update

The latest WHO global update on 16 May 2016 provides data up to 1 May. Influenza activity in the Northern Hemisphere continued to decrease.

A predominance of influenza B virus activity continued to be reported in most of the northern hemisphere and in some tropical areas. In a few countries in the southern hemisphere, slight increases in influenza-like illness (ILI) activity were reported. Follow the link for the WHO influenza surveillance reports.

Avian Influenza Update:

Human infections with avian influenza viruses

The most recent WHO risk assessment of human infections with avian influenza viruses (see Influenza at the human-animal interface) was published on 4 April 2016. This report provides updated information on human cases of infection with H5 and H7 clade viruses and outbreaks among animals.

The overall risk assessment for these viruses remains unchanged. 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.

For H7N9, WHO has noted current evidence suggests that this virus has not acquired the ability of sustained transmission among humans but it is possible that limited human-to-human transmission may have occurred where there was unprotected close contact with symptomatic human cases.

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

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

5. 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 include two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus.

For the trivalent vaccine this was changed 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/.

The Commonwealth Government has announced that trivalent influenza vaccines will be replaced by quadrivalent vaccines in the National Immunisation Program (NIP) for 2016. For further information see: http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2015-ley133.htm.