

# NSW Health Influenza Surveillance Report

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**Week 22: 29 May to 4 June, 2017**

## Summary:

- Influenza activity is increasing but remains low across all NSW local health districts.
- Influenza B strains are circulating at slightly higher levels than influenza A strains.

### In this reporting week:

- [Hospital Surveillance](#) – influenza like illness (ILI) presentations to selected emergency departments were low and at inter-seasonal levels.
- [Laboratory surveillance](#) – the total number of influenza isolations increased this week with the proportion of respiratory samples positive for influenza at 5.5%.
- [Community surveillance](#) – influenza notifications were low across all NSW local health districts (LHD). General Practice and community-based surveillance systems showed low ILI activity. One aged care facility reported an influenza B outbreak.
- [Deaths with pneumonia or influenza reported on the death certificate](#) - The NSW Registry of Births, Deaths, and Marriages have recorded 15 deaths in association with influenza in 2017. The rate of deaths classified as “pneumonia and influenza” remained low.
- [National and international influenza surveillance](#) – national influenza surveillance reports are not produced at this time of year, however many jurisdictions are reporting low influenza activity.
- [Recommended composition of 2017 influenza vaccines](#) – the 2017 Australian influenza vaccines cover two A and two B strains, including one A strain change from the 2016 influenza vaccines.

## 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

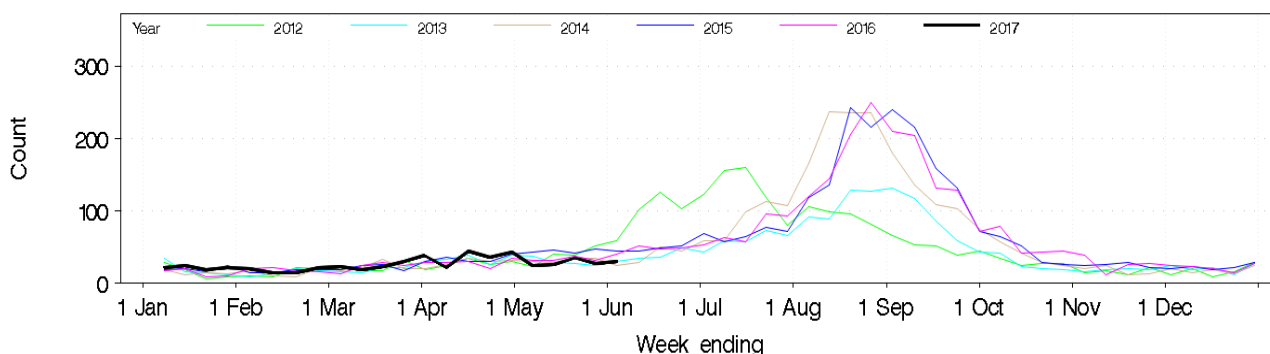
## NSW emergency department (ED) presentations for influenza-like illness (ILI) and other respiratory illnesses

Source: PHREDSS [1]

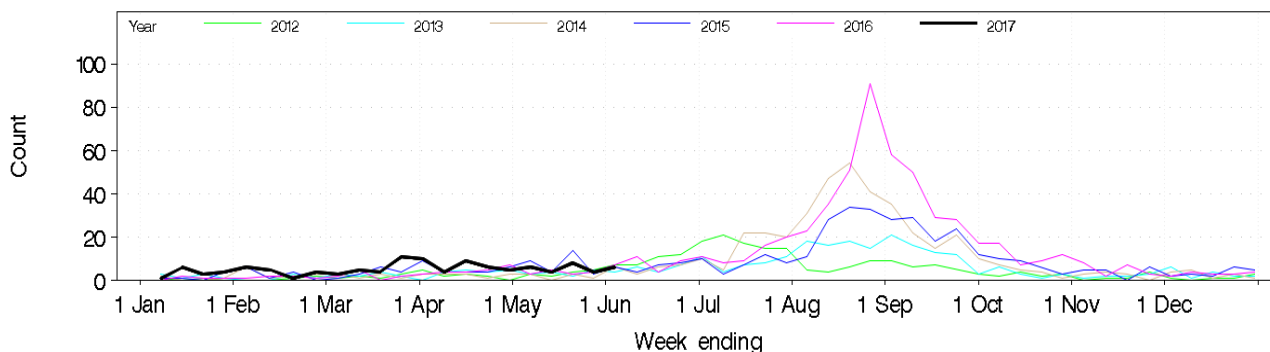
For the week ending 4 June 2017:

- ILI presentations [2] decreased this week and were within the usual range for this time of year (Figure 1 and Table 1).
- The index of increase for ILI presentations was 5.6 on 4 June, well below the seasonal threshold but higher than the previous week (4.5). The proportion of ILI presentations to all ED presentations was low at 0.7 per 1000 presentations, similar to the previous week (0.6).
- ED presentations for pneumonia [3] increased but were within the usual range for this time of year (Table 1.)
- ILI presentations which resulted in admission increased but were within the usual range for this time of year (Figure 2 and Table 1).
- Admissions for pneumonia were steady and remained within the usual range for this time of year overall (Table 1). Pneumonia and ILI presentations which resulted in admission to critical care were increased but were within the usual range for this time of year (Table 1).
- Bronchiolitis presentations this week decreased and were within the usual range for this time of year (Figure 3 and Table 1).

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, all ages, from 1 January – 4 June, 2017 (black line), compared with each of the 5 previous years (coloured lines).



**Figure 2:** Total weekly counts of ED presentations for influenza-like-illness that were admitted, all ages, from 1 January – 4 June 2017 (black line), compared with each of the 5 previous years (coloured lines).

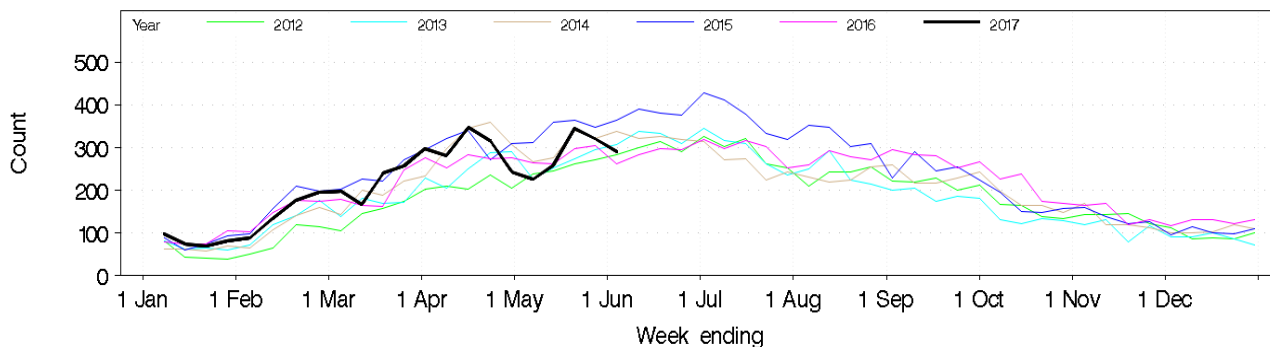


<sup>1</sup> NSW Health Public Health Rapid, Emergency Disease and Syndromic Surveillance system, CEE, NSW Ministry of Health. Comparisons are made with data for the preceding 5 years. Recent counts are subject to change. Data from 60 NSW emergency departments are included. The coverage of rural EDs is lower than metropolitan EDs. Data shown represent unplanned presentations to hospital EDs.

<sup>2</sup> 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.

<sup>3</sup> 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 3** Total weekly counts of ED presentations for bronchiolitis, all ages, from January – 4 June, 2017 (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 4 June 2017. 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*	Statistically elevated age groups	Statistically significant locations	Significant elevated severity indicators **	Comment
ED presentations, 60 NSW hospitals	Influenza-like illness (ILI)	Increased	Usual				Daily index of increase = 5.6
	ILI admissions	Increased	Usual				
	Pneumonia	Increased	Usual				
	Pneumonia and ILI admissions	Steady	Usual				
	Pneumonia and ILI critical care admissions	Increased	Usual				
	Asthma	Decreased	Below				
	Bronchiolitis	Decreased	Usual				Daily index of increase = 29.8 Bronchiolitis is a disease of infants.
	Breathing problems	Decreased	Above	Under 5 years	Sydney Children's Hospital , Tamworth Hospital		
	All respiratory illness, fever and unspecified infections	Decreased	Usual				

### 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.

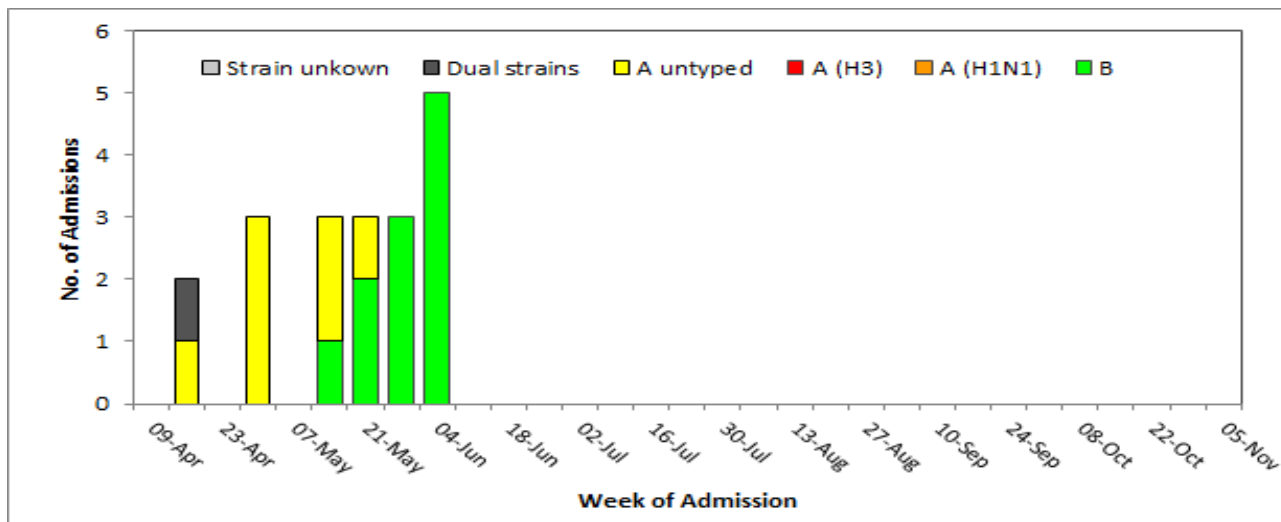
In NSW, three hospitals participate in providing weekly FluCAN data: Westmead Hospital, John Hunter Hospital and the Children's Hospital at Westmead.

During week 22 there were five influenza admissions in NSW sentinel hospitals (Figure 4); all were due to influenza B infections.

Since 1 April 2017, there have been 19 hospital admissions reported for influenza; 7 with influenza A, 13 with influenza B and one with a co-infection (Figure 4). Of these admissions, 13 were paediatric cases (<16 years of age) and 6 were in adults.

No cases were admitted to a critical care ward.

**Figure 4:** FluCAN – Number of confirmed influenza hospital admissions in NSW, 09 April – 4 June, 2017.



## 2. Laboratory Surveillance

For the week ending 4 June 2017 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [4] which tested positive for influenza A or influenza B was low (Table 2).

A total of 5,687 tests for respiratory viruses were reported this week with 5.5% testing positive for influenza viruses, higher than the 5,623 tests and a 4.5% influenza-positive rate in the previous week. Influenza B appears to be circulating at slightly higher levels (Figures 5 and 6).

Rhinovirus was the leading respiratory virus 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 4 June 2017.

Month ending	Total Tests	TEST RESULTS													
		Influenza A						Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	HMPV **	Enterovirus
		Total	H3N2	H1N1 pdm09	A (Not typed)	Total	Total								
		Total (%)	Total (%A)	Total (%A)	Total (%A)	Total (%)	Total (%)								
29/01/2017	9981	489 (4.9%)	53 (10.8%)	4 (0.8%)	432 (88.3%)	92 (0.9%)	374	433	323	1462	236	131			
26/02/2017	12273	564 (4.6%)	78 (13.8%)	7 (1.2%)	479 (84.9%)	83 (0.7%)	430	458	719	2772	170	248			
02/04/2017*	21161	724 (3.4%)	83 (11.5%)	16 (2.2%)	625 (86.3%)	158 (0.7%)	684	1000	1830	5427	290	530			
30/04/2017	18089	377 (2.1%)	63 (16.7%)	15 (4.0%)	299 (79.3%)	135 (0.7%)	588	901	2600	4202	231	468			
04/06/2017*	26372	657 (2.5%)	67 (10.2%)	52 (7.9%)	538 (81.9%)	506 (1.9%)	1037	852	3275	6859	299	503			
<b>Week ending</b>															
07/05/2017	4805	128 (2.7%)	29 (22.7%)	11 (8.6%)	88 (68.8%)	39 (0.8%)	179	167	611	1008	60	79			
14/05/2017	4913	96 (2.0%)	10 (10.4%)	7 (7.3%)	79 (82.3%)	60 (1.2%)	180	165	622	1203	52	72			
21/05/2017	5344	142 (2.7%)	11 (7.7%)	12 (8.5%)	119 (83.8%)	113 (2.1%)	168	186	661	1520	56	114			
28/05/2017	5623	144 (2.6%)	4 (2.8%)	10 (6.9%)	130 (90.3%)	128 (2.3%)	262	176	719	1593	63	105			
04/06/2017	5687	147 (2.6%)	13 (8.8%)	12 (8.2%)	122 (83.0%)	166 (2.9%)	248	158	662	1535	68	133			

<sup>4</sup> 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: Pathology North (Hunter, Royal North Shore Hospital), Pathology West (Nepean, Westmead), South Eastern Area Laboratory Services, Sydney South West Pathology Service (Liverpool, Royal Prince Alfred Hospital), The Children’s Hospital at Westmead, Australian Clinical Labs, Douglas Hanly Moir Pathology, Laverly Pathology, Medlab, SydPath, VDRLab

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 4 June 2017.

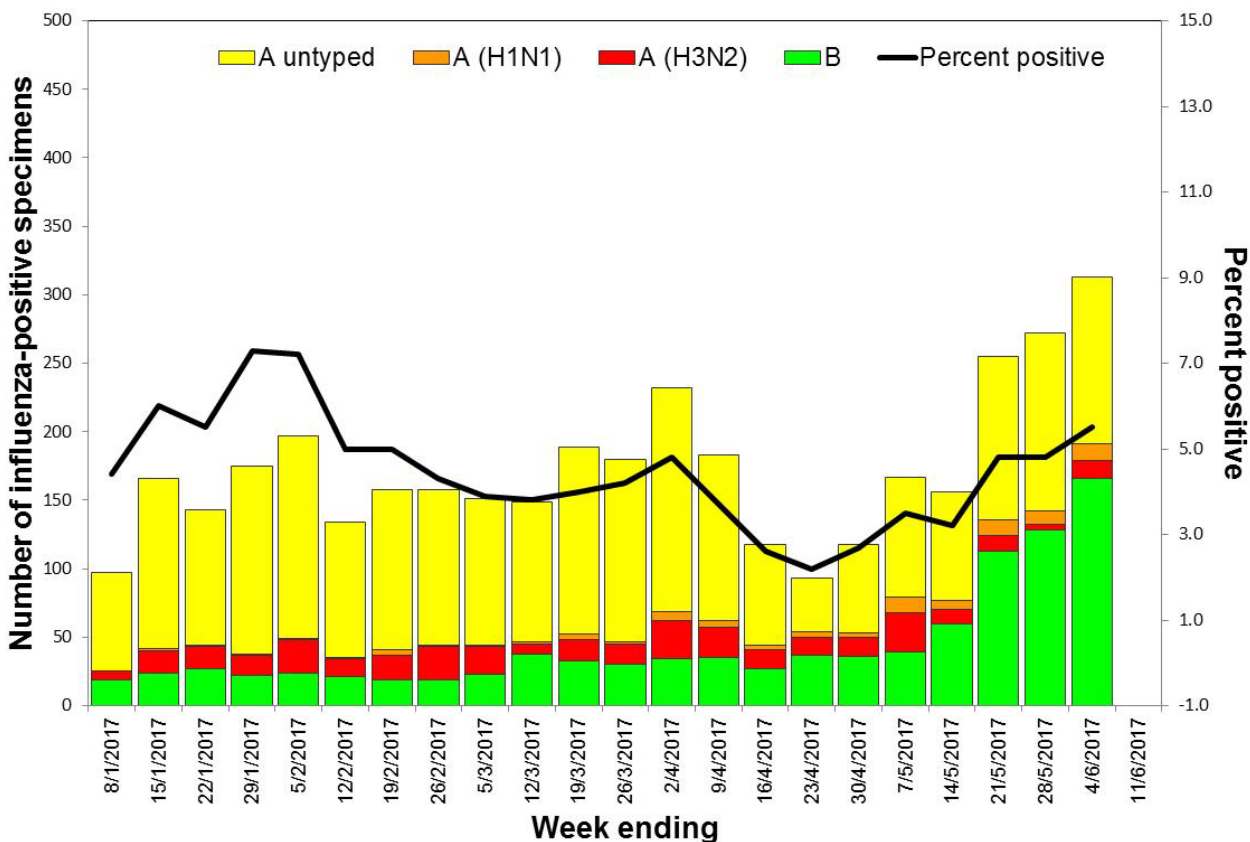
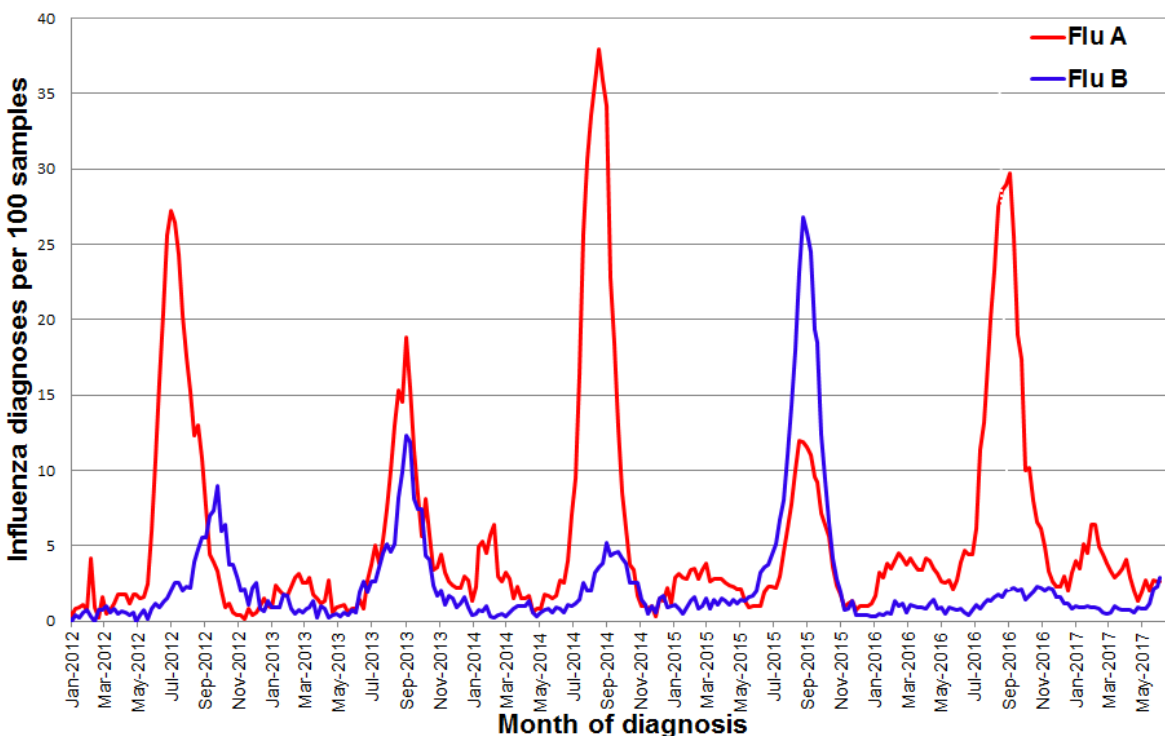


Figure 6: Percentage of laboratory tests positive for influenza A and influenza B by week, 1 January 2012 to 4 June 2017, New South Wales.



### 3. Community Surveillance

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

In the week ending 4 June there were 282 notifications of influenza confirmed by polymerase chain reaction (PCR) testing, higher than the 235 notifications in the previous week. Population rates were low overall but highest in Northern Sydney, Northern NSW, Western Sydney and South Eastern Sydney LHDs (Table 3).

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

Local Health District	Week ending 04 Jun 2017		Average (previous 4 weeks)	
	Number of notifications	Rate per 100 000 population	Number of notifications	Rate per 100 000 population
Central Coast	1	0.29	4	1.09
Hunter New England	14	1.51	14	1.51
Illawarra Shoalhaven	10	2.45	7	1.77
Mid North Coast	10	4.5	5	2.02
Murrumbidgee	0	0	1	0.52
Nepean Blue Mountains	16	4.16	6	1.49
Northern NSW	17	5.55	7	2.12
Northern Sydney	59	6.45	41	4.51
South Eastern Sydney	47	5.07	26	2.83
South Western Sydney	31	3.13	26	2.58
Southern NSW	1	0.47	1	0.58
Sydney	23	3.51	14	2.14
Western NSW	2	0.72	3	1.19
Western Sydney	51	5.26	30	3.04

**Notes:** \* All data are preliminary and may change as more notifications are received. Excludes notifications based on serology. For further information see the [influenza notifications data page](#).

#### Influenza outbreaks in institutions

There was one influenza (B) outbreak reported this week in a residential care facility. There have been 14 influenza outbreaks reported from NSW institutions to date in 2017 (Table 4).

**Table 4:** Reported influenza outbreaks in NSW institutions, January 2010 to 4 June 2017.

Year	2010	2011	2012	2013	2014	2015	2016	2017*
No. of outbreaks	2	4	39	12	120	103	279	14

**Notes:** \* 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 22 there were 41 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was moderate at 2.0%, lower than the previous week (4.2%). For further information please see the [ASPREN](#) website.

## FluTracking.net

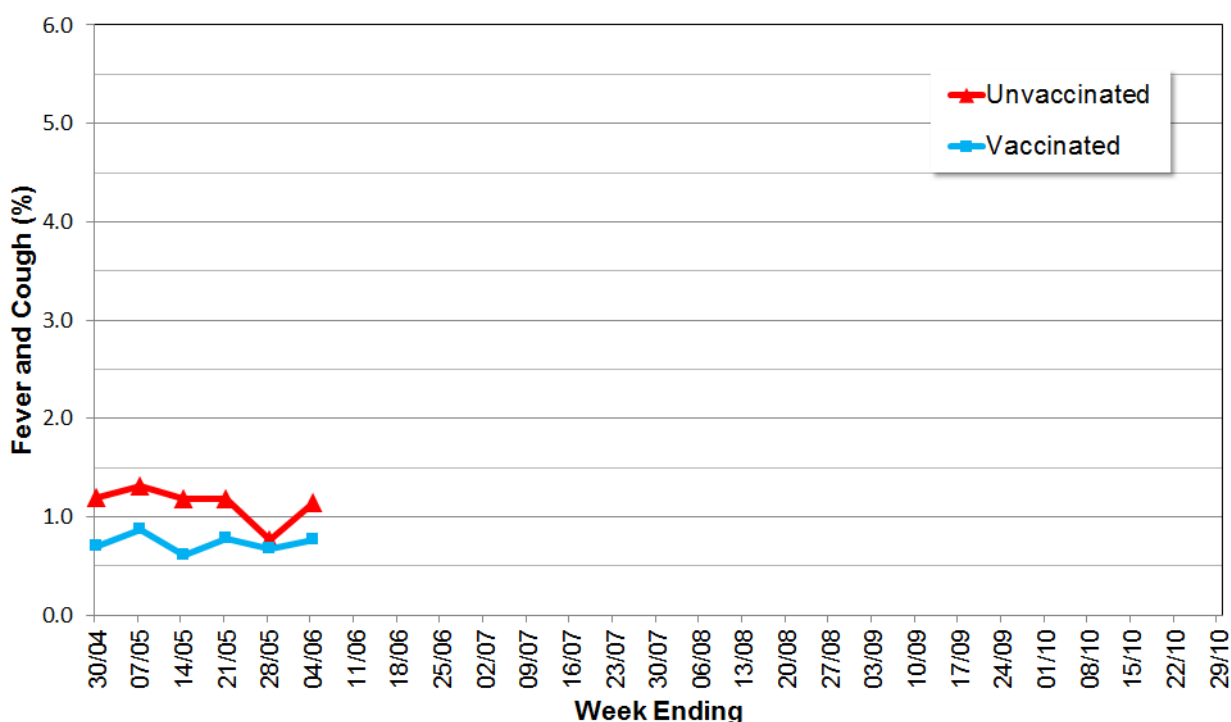
FluTracking.net is an online health surveillance system to detect epidemics of influenza. FluTracking is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute.

Participants complete a simple online weekly survey which is used to generate data on the rate of ILI symptoms in communities.

In week 22 FluTracking received reports for 7,836 people in NSW with the following results:

- 1.9% of respondents reported fever and cough, higher than the previous week (1.4%). Of these, 0.8% reported being vaccinated (Figure 7).
- 1.0% of respondents reported fever, cough and absence from normal duties, higher than the previous week (0.8%).

**Figure 7:** FluTracking – Percent of participants reporting fever AND cough by Vaccination Status, NSW.



**Notes:** From 2016, if a participant reported influenza-like illness symptoms for more than one consecutive week, only the first reported week of symptoms is included. Participants are not considered vaccinated until two or more weeks has elapsed since their recorded time of vaccination

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

## 4. Deaths with pneumonia or influenza reported on the death certificate

Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

The predicted seasonal baseline estimates the predicted rate of influenza or pneumonia deaths in the absence of influenza epidemics. If deaths exceed the epidemic threshold, then it may be an indication that influenza is beginning to circulate widely.

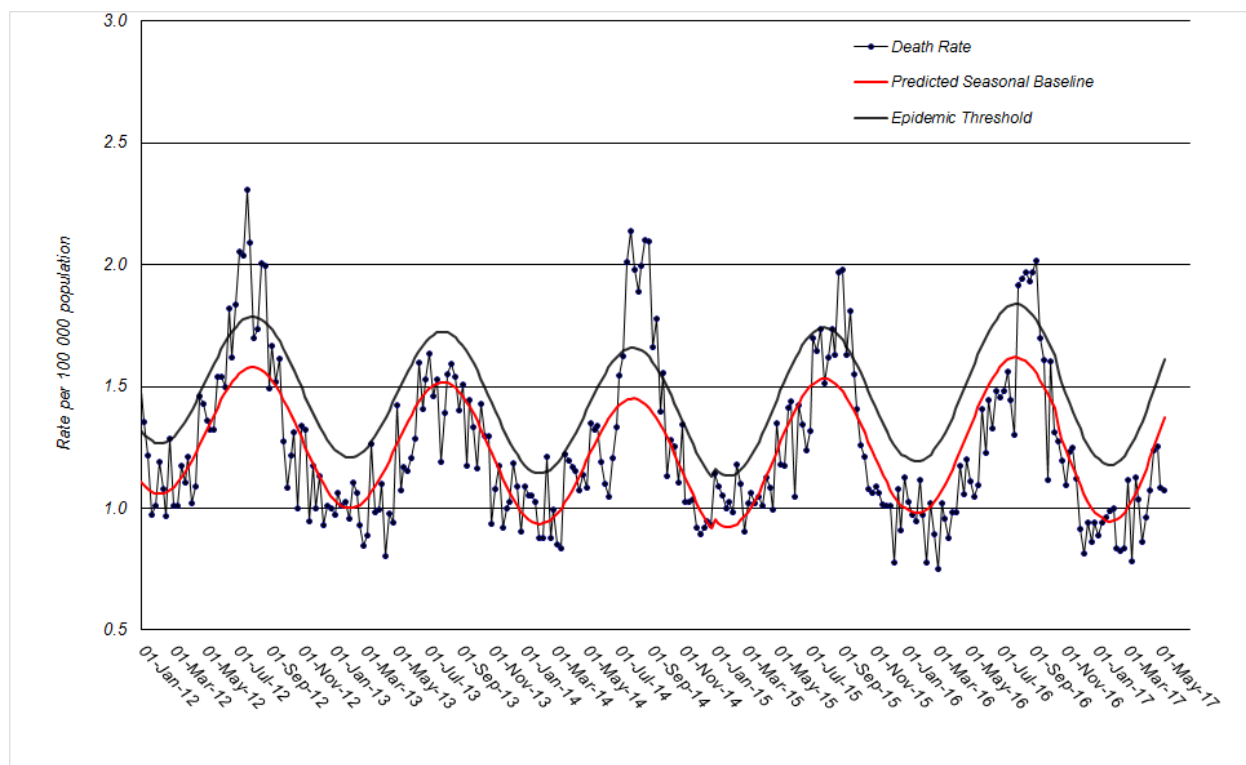
Due to delays in the death registration process, death data for recent weeks are highly variable. For this reason, death data from the three most recent weeks are not included in the report.

## For the week ending 12 May 2017:

- There were 1.07 influenza and pneumonia deaths per 100 000 NSW population, which was well below the epidemic threshold of 1.61 per 100 000 population (Figure 8).

For the year up to 12 May 2017, only 15 of the 18,033 death certificates mentioned influenza; all deaths have been in people aged over 65 years. A total of 1,480 (8.2%) of the 18,033 death certificates mentioned pneumonia.

**Figure 8:** Rate of deaths classified as influenza and pneumonia per 100 000 NSW population, 2012 – 12 May 2017.



Source: NSW Registry of Births, Deaths and Marriages.

### \* Notes on interpreting death data:

- 1) The number of deaths mentioning “Pneumonia or influenza” is reported as a rate per 100,000 NSW population. Using the NSW population provides a more stable and reliable denominator than deaths from all causes. This is because pneumonia and influenza are known to contribute to increases in deaths from non-respiratory illnesses, such as deaths due to ischaemic heart disease. As the number of these deaths will increase with rises in influenza activity, the actual effect of influenza on mortality rates will be obscured if all-cause mortality is used as the denominator. This limitation is avoided by using the NSW population, which is relatively constant throughout the year, as the denominator.
- 2) Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data.
- 3) The interval between death and death data availability is usually at least 7 days, and so these data are one week behind reports from emergency departments and laboratories. In addition, previous weekly rates may also change due to longer delays in reporting some deaths.

## 5. 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 low influenza activity.

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 29 May 2017](#) provides data up to 14 May. WHO reports that in the temperate zone of the southern hemisphere, influenza activity started to increase slowly but remained low in general. Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Worldwide, influenza B viruses were predominant.

Follow the link for the [WHO influenza surveillance reports](#).

## Avian Influenza Update

WHO publishes monthly updated risk assessments of human infections with avian influenza viruses at [Influenza at the human-animal interface](#). These reports provide 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](#).

## 6. Composition of 2017 Australian influenza vaccines

The WHO Consultation on the Composition of Influenza Vaccines for the 2017 Southern Hemisphere was held in Geneva on 26-28 September 2016. Following the Consultation, WHO announced its recommendations for the composition of trivalent vaccine for use in the 2017 Southern Hemisphere influenza season as follows:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus (Victoria lineage)

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

Of note, there has been replacement of the A/California/7/2009 (H1N1)pdm09-like virus component with an A/Michigan/45/2015 (H1N1)pdm09-like virus in the vaccine recommendations, the first time the recommended A(H1N1) strain has changed since 2010.

All influenza vaccination included in the Australian National Immunisation Influenza Program in 2017 are quadrivalent vaccines.

More details about the most recent influenza vaccine recommendations can be found at: [http://www.who.int/influenza/vaccines/virus/recommendations/2017\\_south/en/](http://www.who.int/influenza/vaccines/virus/recommendations/2017_south/en/).

The WHO consultation on the composition of influenza vaccines for the Northern Hemisphere 2017-18 influenza season was held in February 2017. The recommended composition was unchanged from the composition recommended for the 2017 Southern Hemisphere vaccines. Information about the Northern Hemisphere vaccine recommendations can be found at: [WHO | Recommended composition of influenza virus vaccines for use in the 2017-2018 northern hemisphere influenza season](#).