

NSW Health Influenza Surveillance Report

Week 23: 1 to 7 June 2015

Summary:

- **The influenza season is likely to commence in the next few weeks.**
- **Influenza activity is increasing but continues to be generally low in most parts of NSW.**

In this reporting week:

- [Hospital surveillance](#) – presentations to NSW emergency departments for influenza-like illness (ILI) increased but were below the flu season threshold. Bronchiolitis presentations remained high; although lower compared to previous weeks
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza was low (4.2%) but increasing 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.
- [Deaths](#) - The NSW Registry of Births, Deaths, and Marriages have recorded 7 deaths in association with influenza in 2015.
- [National and international influenza surveillance](#) – Australia is currently in the inter-seasonal period for influenza, with overall influenza activity at low levels. The updated 2015 influenza vaccines are well matched to the currently circulating influenza strains.

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 7 June 2015:

- ILI presentations increased slightly and were within the range of activity seen in previous years (Figure 1 and Table 1). The index of increase for ILI presentations increased to 11.5 on 7 June, higher than the previous week but below the influenza season threshold of 15.
- The proportion of ILI presentations to all ED presentations was low at 1.0 per 1000 presentations.
- ED presentations for pneumonia were steady this week (Figure 2), however presentations in the Northern Sydney LHD remained elevated (Table 1).
- Pneumonia or ILI presentations which resulted in admission to critical care increased this week but were within the usual range for this time of year (Figure 3 and Table 1).
- The overall numbers of respiratory, fever and unspecified infection presentations were elevated for children under the age of 5 years and adults aged more than 65 years (Table 1).
- Bronchiolitis presentations continued to be elevated this week and were above the usual range for this time of year (Figure 4 and Table 1). The decline in the number of presentations seen in previous weeks did not continue into this week. Historical data indicates that presentations should start to decline at this time of year. Decreases in presentations for bronchiolitis tend to mirror decreases in the detection of respiratory syncytial virus (RSV) in respiratory specimens.

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 7 June 2015 (black line), compared with each of the 5 previous years (coloured lines).

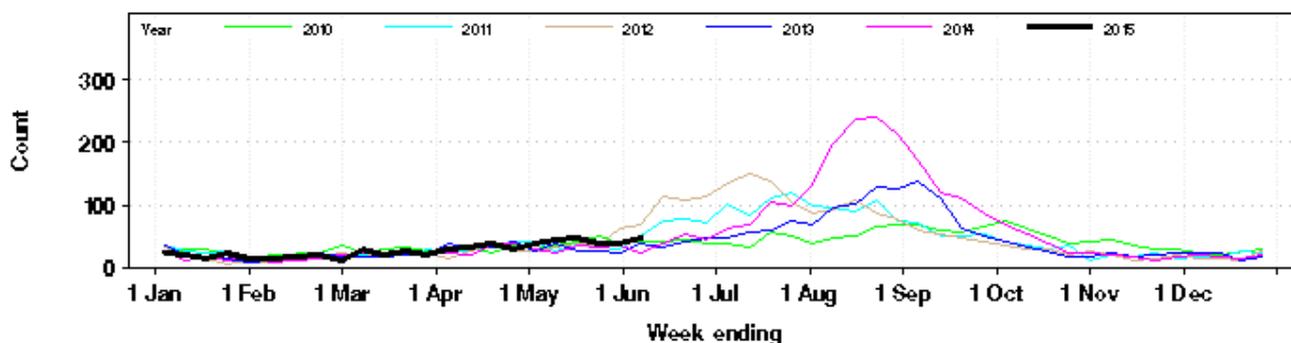
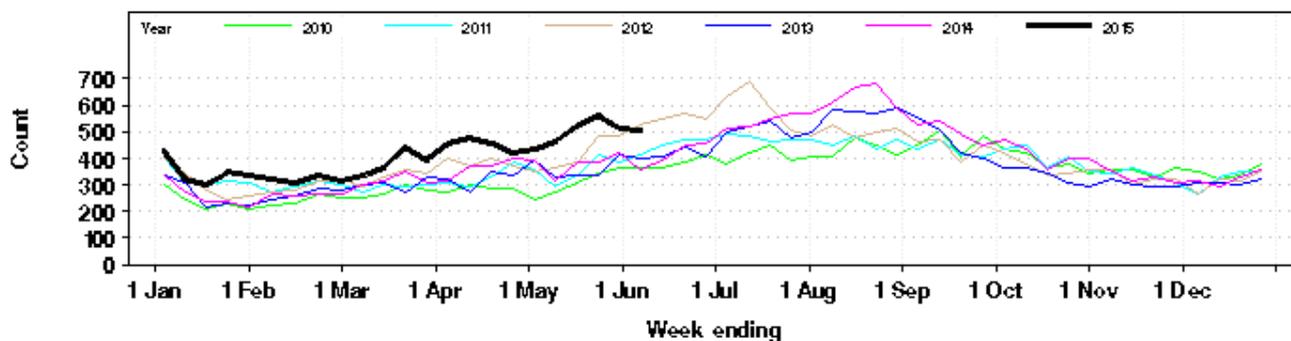


Figure 2: Total weekly counts of ED presentations for pneumonia, from January – 7 June 2015 (black line), compared with each of the 5 previous years (coloured lines).



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

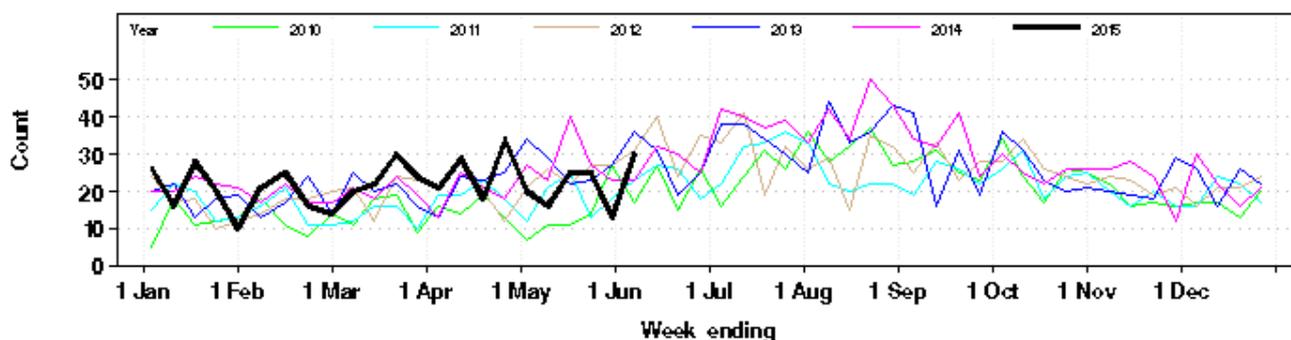


Figure 4: Total weekly counts of ED visits for bronchiolitis, from January – 7 June 2015 (black line), compared with the 5 previous years (coloured lines).

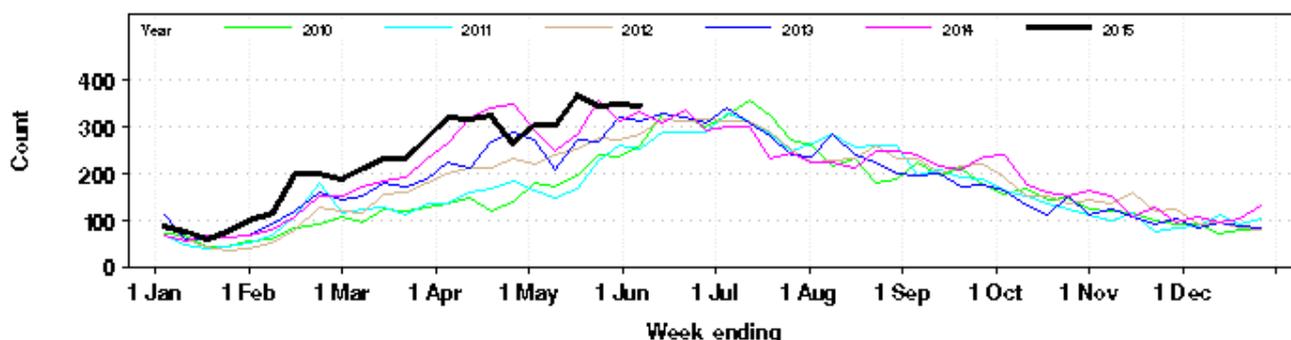


Table 1: Weekly ED and Ambulance Respiratory Activity Summary for the week ending 7 June 2015. Includes data from 59 NSW EDs and the Sydney Ambulance Division. *

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	Usual				
	Pneumonia	Steady	Usual		Northern Sydney LHD	Situation report sent on 5/6/2015	
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Increased	Usual				
	Bronchiolitis	Steady	Above				Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Steady	Above	0-4 years 65+ years			
	Asthma	Steady	Usual				
Ambulance Triple Zero (000) calls, NSW	Breathing problems	Steady	Usual	65+ years			

* **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 23 there were no influenza admissions reported in NSW sentinel hospitals.
- Since 1 April 2015, there have been 10 hospital admissions reported for influenza: 8 with influenza A and 2 with influenza B.
- Of these admissions, 5 were paediatric (<16 years of age) cases and 5 were in adults. Two cases were admitted to ICU/HDU.

2. Laboratory Surveillance

For the week ending 7 June 2015 the number and proportion of respiratory specimens reported by NSW sentinel laboratories [2] which tested positive for influenza A or influenza B increased again compared to the activity levels seen in the previous week (Table 2 and Figures 5 and 6).

A total of 3,472 tests for respiratory viruses were reported with 146 specimens (4.2%) testing positive for influenza viruses. Influenza B viruses were more commonly identified than influenza A viruses.

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).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 7 June, 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 (%)	Total (%)	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%)	40 (31.3%)	9 (7.0%)	84 (65.6%)	200 (1.6%)	272	167	1276	1514	64	64			
Week ending															
07/06/2015	3472	34 (1.0%)	7 (20.6%)	2 (5.9%)	25 (73.5%)	112 (3.2%)	99	36	381	468	6	21			

Notes:

* Five-week reporting period.

** Human metapneumovirus

[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.

Figure 5: Influenza positive test results by type and sub-type reported by NSW sentinel laboratories, 1 January 2010 to 7 June 2015.

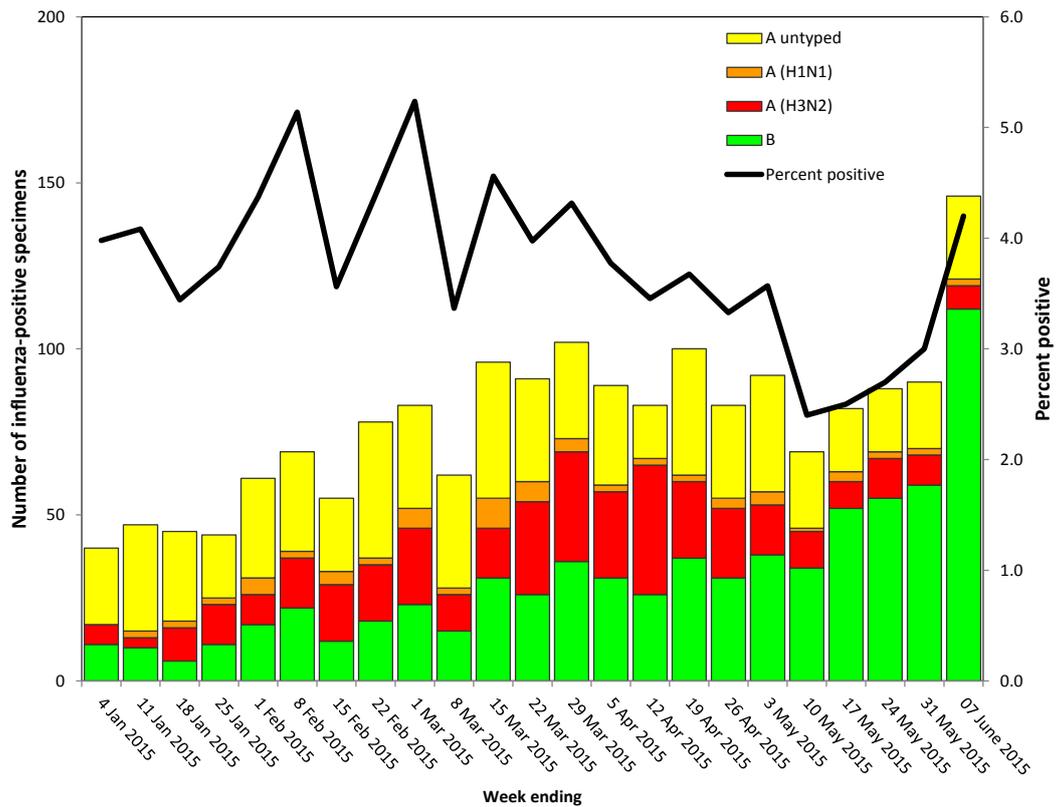
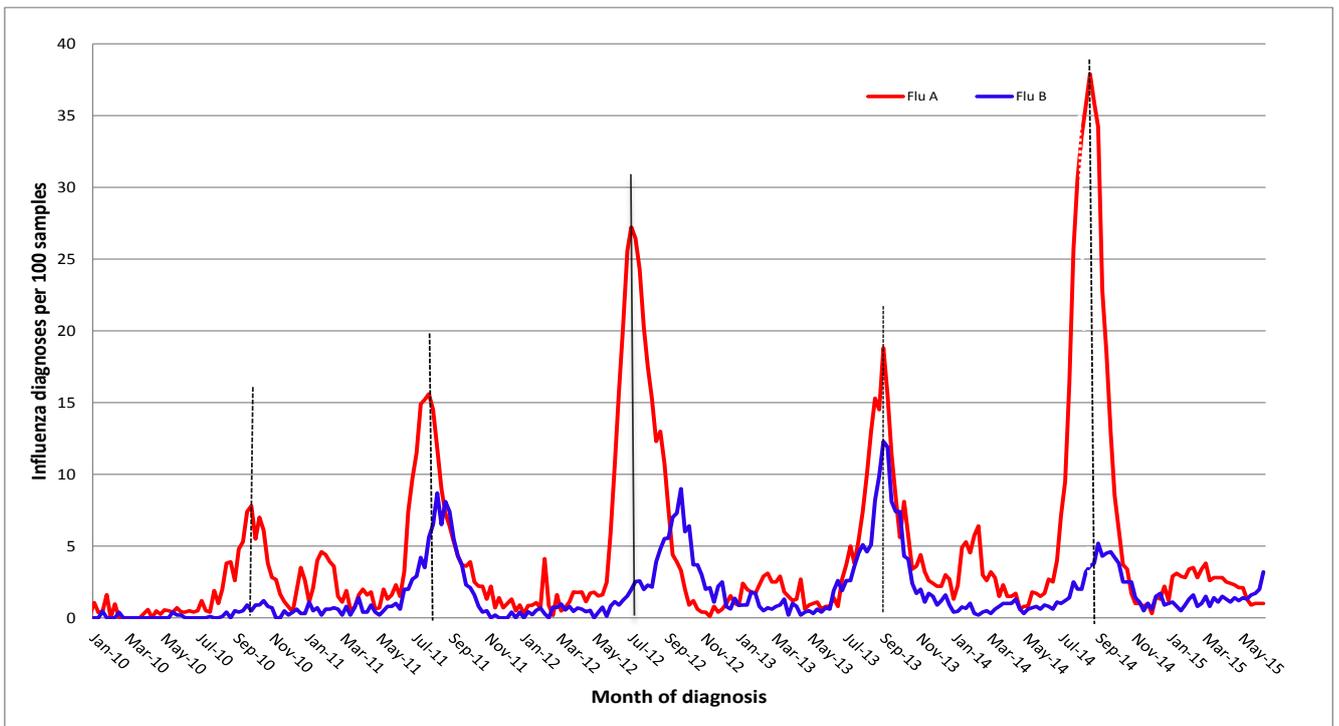


Figure 6: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2010 – 7 June 2015, New South Wales.



3. Community Surveillance

Influenza notifications by Local Health District (LHD)

In the week ending 7 June, there were 88 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 7 June 2015		Previous 4 weeks	
	Number of notifications	Rate per 100 000 population	Average weekly notifications	Rate per 100 000 population
Central Coast	2	0.60	2	0.60
Far West	1	3.26	1	3.26
Hunter New England	7	0.77	6	0.60
Illawarra Shoalhaven	4	1.00	1	0.25
Mid North Coast	5	2.33	1	0.58
Murrumbidgee	1	0.34	1	0.43
Nepean Blue Mountains	5	1.36	3	0.75
Northern NSW	5	1.68	2	0.67
Northern Sydney	16	1.78	17	1.92
South Eastern Sydney	12	1.34	12	1.37
Southern NSW	1	0.49	0	0.12
South Western Sydney	8	0.85	5	0.50
Sydney	5	0.81	10	1.53
Western NSW	1	0.36	1	0.45
Western Sydney	15	1.62	14	1.54

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 A outbreak in a residential care facility reported this week.

In the year to date there have been 10 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 influenza A strain in NSW) than from the influenza A(H1N1) strain. An influenza A(H3N2) strain also 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 June 2015.

Year	2010	2011	2012	2013	2014	2015 *
No. of outbreaks	2	4	39	12	120	10

Note:

* Year to date.

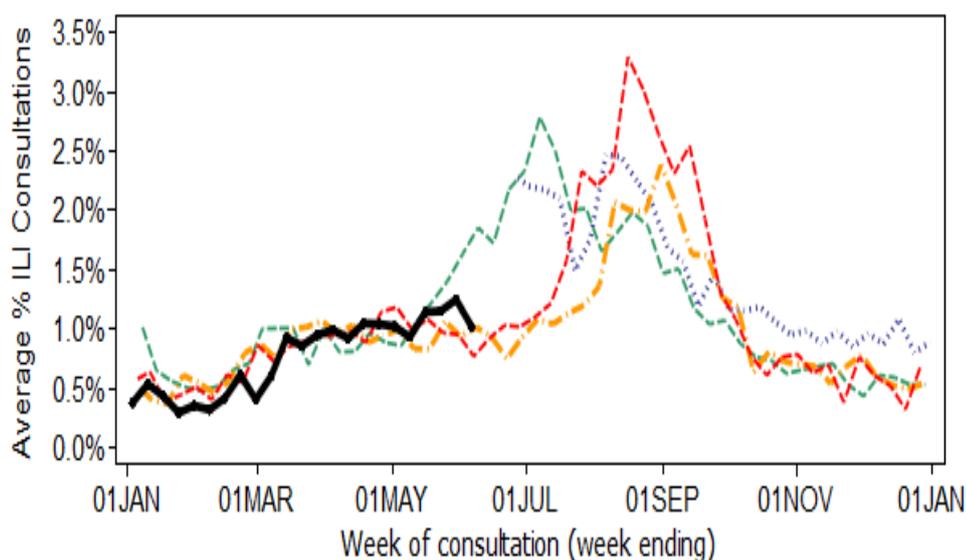
Electronic General Practice Surveillance (eGPS)

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 23:

- there were 9 surveillance reports received from eGPS sentinel practices in NSW;
- the average rate of ILI patient consultations was low at 1.0% (range 0.4 – 2.3%), which was similar to the previous week and similar to the same time period in recent years (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 23 there were 35 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 2.4 per cent although increasing, and within the usual range seen for this time of year.

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

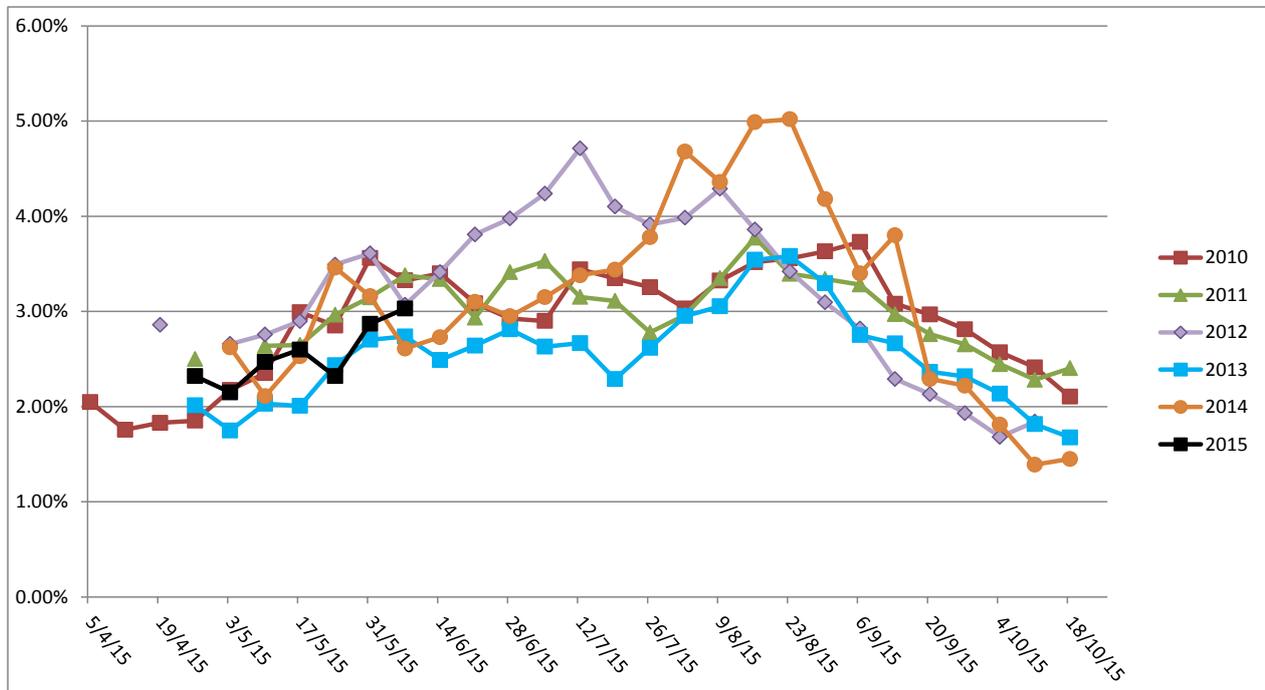
FluTracking.net

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 23 FluTracking received reports for 6463 people in NSW, including:

- 3.0% of respondents reported fever and cough, up from the previous week but within the usual range for this time of year (Figure 8);
- 1.6% of respondents reported fever, cough and absence from normal duties, higher than the previous week (data not shown).

Figure 8: FluTracking – Weekly influenza like illness reporting rate, NSW, 2010 – 2015.



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

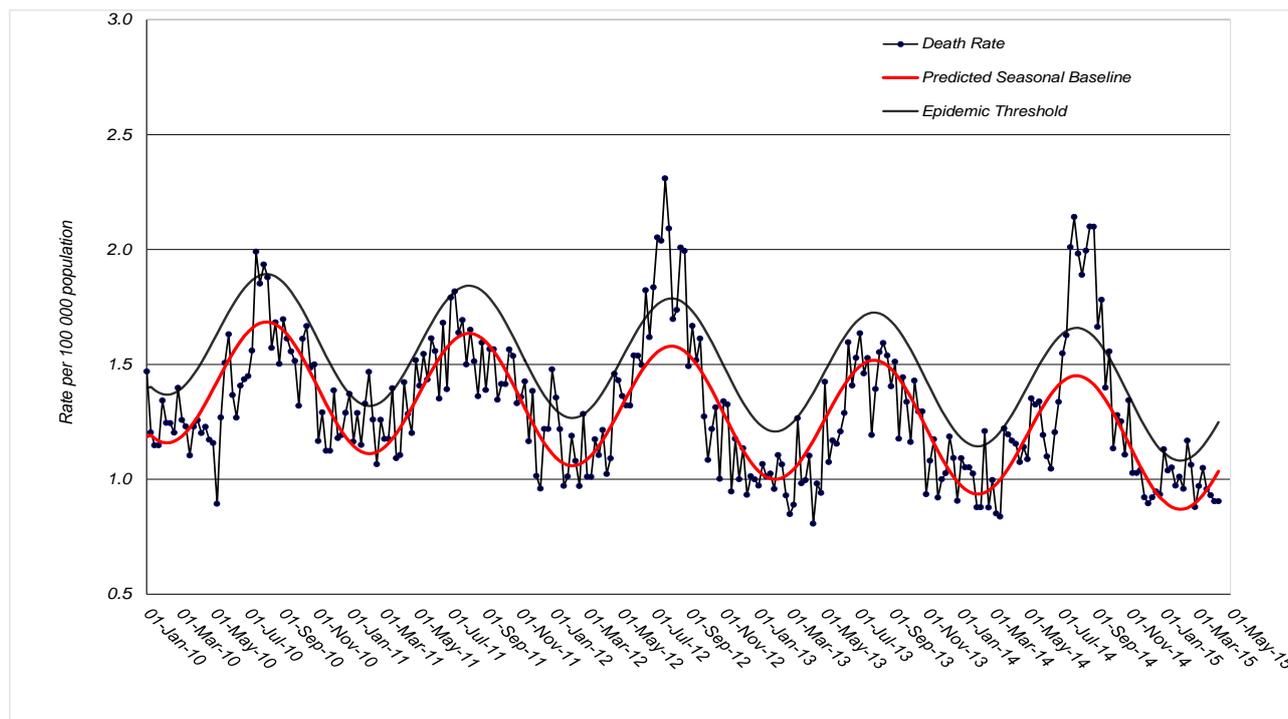
4. Deaths with pneumonia or influenza reported on the death certificate

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.

For the week ending 22 May:

- There were 1.06 pneumonia and influenza deaths per 100 000 NSW population, which is below the epidemic threshold of 1.44 per 100 000 population (Figure 9).
- Up to 22 May, out of 18 156 deaths there has been seven death certificates mentioning influenza, all in people aged over 65 years, and 1574 mentioning pneumonia.

Figure 9: Rate of deaths classified as influenza and pneumonia per 100 000 NSW population, 2010 - 2015.



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

The Australian Department of Health has reported the following for the period 9 to 22 May 2015:

- Australia is currently in the inter-seasonal period for influenza. Overall influenza activity is low and stable, but higher than at the same time in previous years.
- Influenza activity across jurisdictions is variable. Influenza activity is higher in most jurisdictions compared to the same period in previous years.
- This year to date, influenza A is the predominant circulating virus type; of those viruses where subtyping data are available, influenza A(H3N2) is the most common. Influenza B is circulating at increasing levels in recent weeks.
- Of the limited number of isolates that have been further characterised for similarity with the vaccine components, influenza A viruses appear to be well matched. Over 80% of the influenza B

viruses characterised are a match to the trivalent vaccine strain; the remaining influenza B viruses matching the additional strain in the quadrivalent vaccine.

- Influenza-like illness (ILI) levels detected through the sentinel GP ILI surveillance system are increasing. 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-2015.htm>

Global Influenza Update

The World Health Organization (WHO) reported on current influenza activity in the [WHO Global Influenza Update](#) of 1 June 2015 (with data up to 18 May) which indicated that:

- In North America, influenza activity continued to decrease and was nearing inter-seasonal levels. Influenza type B has increased in recent weeks resulting in a slowed decline in overall influenza activity. In North America, influenza activity continued to decrease and was nearing inter-seasonal levels. Influenza type B has increased in recent weeks resulting in a slowed decline in overall influenza activity.
- In Europe, influenza activity continued to decline with all countries reporting low levels. Although influenza A(H3N2)virus dominated for the season, influenza B continued to dominate in recent weeks.
- In northern Africa, influenza activity has continued to decrease and remained low in general, with influenza A viruses predominant.
- In western Asia, overall influenza activity, mainly associated with influenza A viruses, continued to decrease or remained low.
- In the temperate countries of Asia, influenza activity continued to decrease and remained low in most countries.
- In tropical countries of the Americas and Asia, influenza activity continued to decrease and remained low in most countries. However, influenza activity increased in Sri Lanka.
- In the southern hemisphere, influenza activity remained at low or inter-seasonal levels.

WHO reported global influenza laboratory data for the period 3 to 16 May 2015, which noted:

- Of the 39 635 specimens submitted for testing, 2 980 were positive for influenza viruses, of which 1 044 (35%) were typed as influenza A and 1 936 (65%) as influenza B.
- Of the sub-typed seasonal influenza A viruses, 359 (47%) were influenza A(H1N1) and 412 (53%) were influenza A(H3N2).
- Of the characterized B viruses, 155 (95%) belonged to the B-Yamagata lineage and 8 (5%) to the B-Victoria lineage.

Avian influenza Update

The most recent update from WHO on 1 May 2015 reported 14 new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection, including one fatal case, were reported to WHO from Egypt (13) and China (one). All cases had close contact with poultry.

The latest WHO monthly risk assessment report for human infections with avian influenza A strains H5, H7, H9 is available here: [WHO Avian influenza summary 1 May 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:

- 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.

^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/ .