

Influenza Monthly Epidemiology Report, NSW

January 2015

This report describes the surveillance for influenza and other respiratory pathogens, undertaken by NSW Health to date. This includes data from a range of surveillance systems.

For weekly communicable disease surveillance updates refer to the Communicable Disease Weekly Report at <http://www.health.nsw.gov.au/publichealth/infectious/index.asp>.

1. Summary

In January:

- The rate of influenza like illness (ILI) presentations to selected emergency departments was low and was within the normal range expected for January.
- 182 cases with laboratory-confirmed influenza A (predominantly H3N2) and 55 cases with influenza B were identified by sentinel laboratories.
- Rhinovirus was the most common respiratory virus identified by sentinel laboratories.

2. Emergency Department (ED) influenza-like illness activity

Data from 59 NSW emergency departments are included. Comparisons are made with data for the preceding 4-5 years. Recent counts are subject to change.

Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health.

ED Presentations for influenza-like illness:

Monitoring influenza-like illness (ILI) presentations in Emergency Departments provides important information on the burden that influenza and other similar respiratory infections places on hospitals during the influenza season. The changes in ILI presentations to EDs can also be used to predict the start, peak and end of the influenza season in NSW.

The PHREDSS surveillance system uses a statistic called the 'index of increase' to indicate when presentations are increasing at a statistically significant rate. It accumulates the difference between the previous day's count of presentations and the average for that weekday over the previous 12 months. An index of increase value of 15 is considered an important signal for the start of the influenza season in NSW as it suggests influenza is circulating widely in the community.

- On 1 February 2015 the index of increase for ILI presentations was 0.9, consistent with the usual low levels of activity at this time of year.
- In January 2015 there were 101 ED presentations with influenza-like illness (rate 0.5 per 1,000 presentations) consistent with the historical average for this time of year (Figure 1).
- Total presentations for bronchiolitis were above the usual range for this time of year (Figure 2).

Figure 1: Total weekly counts of Emergency Department visits for influenza-like illness, from January – February 2015 (black line), compared with each of the 5 previous years (coloured lines), for 59 NSW hospitals.*

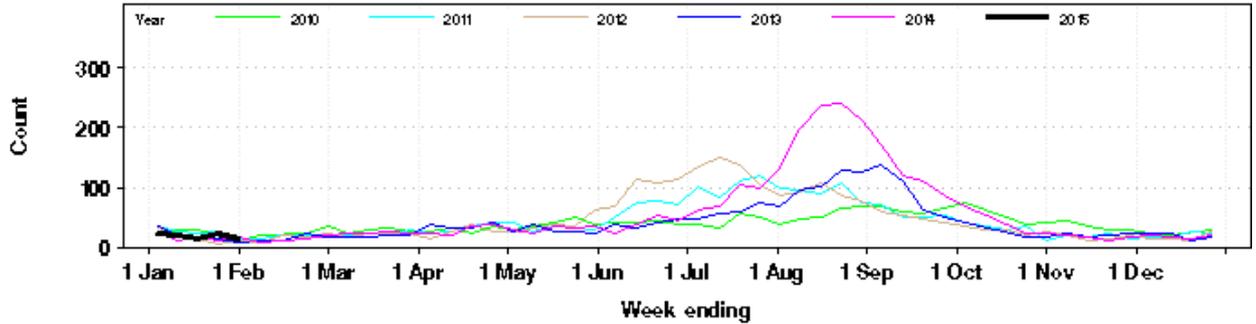
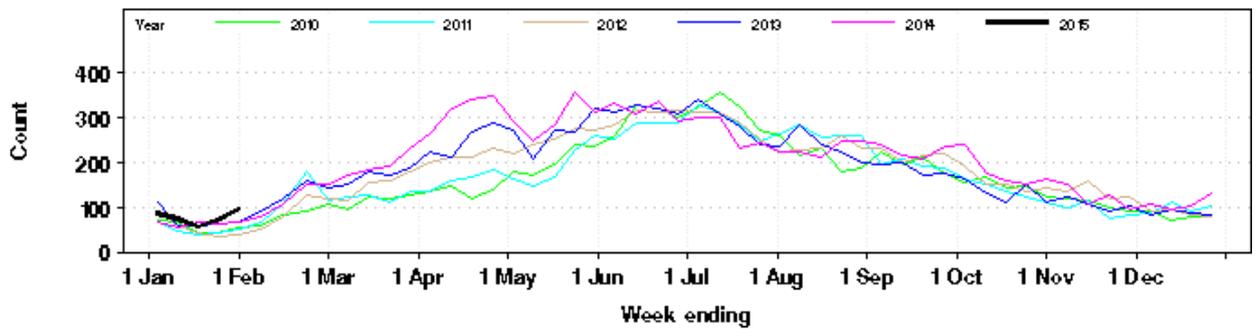


Figure 2: Total weekly counts of Emergency Department visits for bronchiolitis, from January – February 2015 (black line), compared with the 5 previous years (coloured lines).



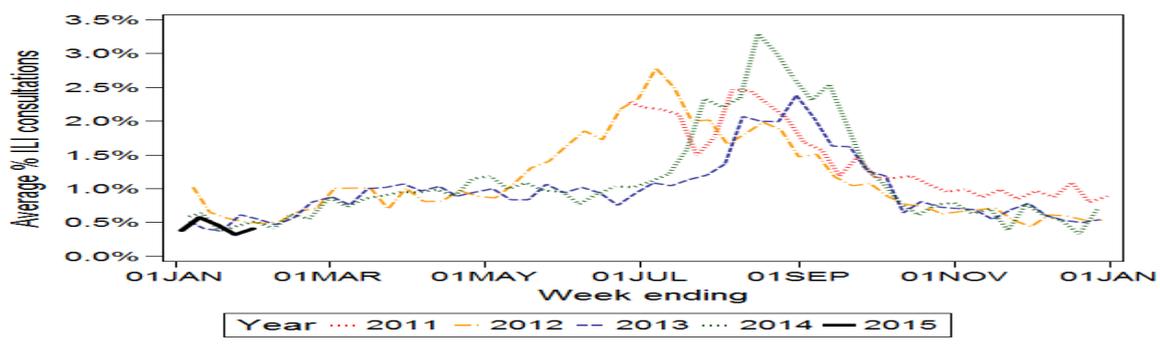
3. Community Illness Surveillance

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.

- For January, weekly reports were received on average from 14 sentinel practices.
- The average rate for patient consultations with ILI was 0.4% (range 0.0 – 1.3), consistent with the historical average but higher than the previous month (Figure 3).

Figure 3. ILI consultations as a percentage of all consultations at sentinel general practices, by week of consultation, July 2011 to January 2015.



Notes on eGPS data:

- The number of practices reporting may vary from week to week. Data is available from Week 29, 2011.
- Data generated from eGPS should be interpreted with caution as it is not representative of all practices within the participating LHDs or across NSW.

4. Laboratory testing summary for influenza

Sentinel laboratory surveillance for influenza and other respiratory viruses is conducted throughout the year. Summary information is provided here with more detailed information provided at the end of the report (see Table 1).

In January 2015:

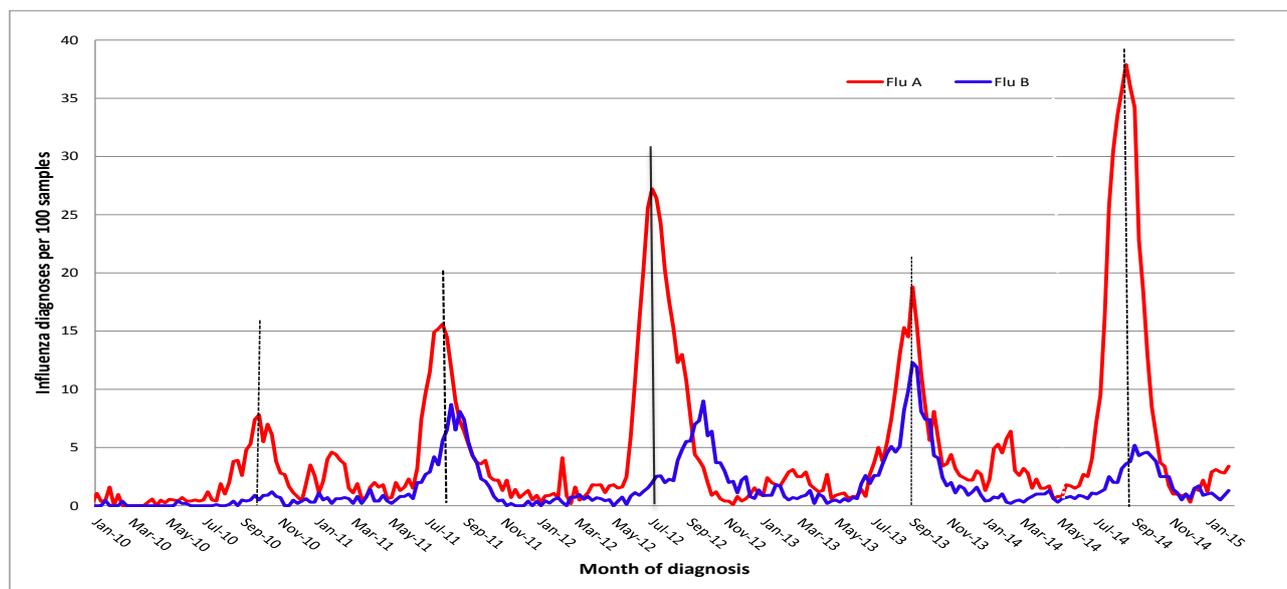
- 5 920 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 1).
- 182 specimens tested positive for influenza A – 40 of these tested positive for A(H3N2), 11 tested positive for influenza A(pH1N1) and 131 were not typed further (Table 1, Figure 4).
- 55 cases of influenza B were reported (Table 1, Figure 4).

During January, laboratory testing suggested influenza activity had increased slightly although it remained at low levels. Rhinoviruses are the leading respiratory viruses identified by laboratories, and this is usual for this time of year.

Table 1: Summary of testing for respiratory viruses and influenza at NSW public hospital laboratories, 1 January to 1 February 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
Week ending												
04/01/2015	1005	29 (2.9%)	6 (20.7%)	0 (0.0%)	23 (79.3%)	11 (1.1%)	34	49	38	155	13	11
11/01/2015	1151	37 (3.2%)	3 (8.1%)	2 (5.4%)	32 (86.5%)	10 (0.9%)	48	38	31	123	8	13
18/01/2015	1307	39 (3.0%)	10 (25.6%)	2 (5.1%)	27 (69.2%)	6 (0.5%)	30	32	21	116	15	10
25/01/2015	1176	33 (2.8%)	12 (36.4%)	2 (6.1%)	19 (57.6%)	11 (0.9%)	20	33	37	102	18	11
01/02/2015	1281	44 (3.4%)	9 (20.5%)	5 (11.4%)	30 (68.2%)	17 (1.3%)	18	29	54	111	5	4

Figure 4: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2010 – 1 February 2015, New South Wales.



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.

Laboratory-confirmed influenza outbreaks in residential care facilities and other settings

There was one influenza B outbreak in an institution reported for the month of January (Table 2).

Reports of influenza outbreaks in aged care facilities were uncommon from 2009 to 2011. This is thought to be as a result of the higher levels of sero-protection observed in people in older age-groups against the influenza A(H1N1)pdm09 strain which predominated in these years.

Influenza outbreak reports increased dramatically in 2012 and 2014 when the influenza A(H3N2) strain predominated. Both strains of influenza A and an influenza B strain circulated during 2013.

Table 2. Reported influenza outbreaks in NSW institutions, 2007 to January, 2015.

Year	2007	2008	2009	2010	2011	2012	2013	2014*
No. of outbreaks	25	9	1	2	4	39	12	120

* Year to date.

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 increased influenza activity. Total national reports of laboratory-confirmed influenza in January were high, similar to 2014 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 World Health Organization (WHO) reported that influenza activity was high in the northern hemisphere with influenza A(H3N2) viruses predominating so far this season. Antigenic characterization of most recent A(H3N2) viruses so far indicates differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014-2015.

Based on tests to date, the influenza A(H3N2) viruses are expected to be sensitive to neuraminidase inhibitors.

The [WHO Global Influenza Update](#) on 26 January indicated that:

- In North America, the influenza season was ongoing with high levels of influenza activity in most countries, although it may have passed its peak in the US. Influenza A(H3N2) virus predominated.
- In Europe influenza activity was still on the rise with highest activity in the north-western part. Influenza A(H3N2) virus continues to predominate.
- In northern and western Africa influenza activity appears to have peaked with influenza B virus predominating, while Egypt reported mainly influenza A(H3N2) detections.
- In eastern Asia, influenza activity started to decrease with influenza A(H3N2) virus predominating. In central Asia, influenza activity remained low.
- In western Asia, Bahrain and the Islamic Republic of Iran reported mainly influenza A(H1N1)pdm09 activity.
- In tropical countries of the Americas, influenza activity was low in most countries of the Caribbean, Central America and in the tropical countries of South America.
- In the southern hemisphere, influenza activity remained at inter-seasonal levels.

It also reported influenza laboratory data for Weeks 53/2014 and 1/2015 (28 December 2014 to 10 January 2015), which noted:

- Of the 133 812 respiratory specimens tested, 32 903 (25%) were positive for influenza viruses. Of these, 94% were typed as influenza A and 6% as influenza B.
- Of the sub-typed influenza A viruses, 97% were A(H3N2) and 3% were A(H1N1)pdm09.
- Of the characterized B viruses, 98% belonged to the B-Yamagata lineage and 2% to the B-Victoria lineage.

Avian influenza A(H5N1) in 2014

On 26 January the [WHO](#) reported that they had received reports of 24 confirmed human cases of avian influenza A(H5N1) infection with onset of illness in 2015, including 11 deaths. The most recent cases have been reported from Egypt.

Avian influenza A(H7N9) in China

According to the Hong Kong Centre for Health Protection [website](#), China has had 52 influenza A(H7N9) cases in January 2015.

There remains no evidence of sustained human-to-human transmission and most cases are linked to exposure to poultry, particularly in live poultry markets. The disease is mild in poultry so outbreaks remain difficult to detect.

6. Recommended composition of Australian influenza vaccines in 2015

A WHO consultation held in September 2014 recommended that trivalent vaccines for use in the 2015 influenza season (southern hemisphere winter) contain the following:

- 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.

^a *A/South Australia/55/2014, A/Norway/466/2014 and A/Stockholm/6/2014 are A/Switzerland/9715293/2013-like viruses.*

It is also recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

These changed vaccine recommendations from the previous year reflect observed antigenic drift in circulating A(H3N2) and B/Yamagata lineage viruses. For more information see:

http://www.who.int/influenza/vaccines/virus/recommendations/2015_south/en/