

NSW Health Influenza Surveillance Report

Week 40 Ending 6 October 2013

Influenza Surveillance Forecast (Update):

Influenza B is currently the dominant circulating influenza strain. Influenza B usually causes milder symptoms and children are usually at greater risk of infection.

While the currently circulating influenza A strains are well matched to the 2013 seasonal influenza vaccine there has been a slight drift in the circulating influenza B strains to B/Massachusetts/2/2012 –like viruses. The influenza B component of the 2013 seasonal influenza vaccine is a B/Wisconsin/1/2010 – like strain. Both the B/Massachusetts and B/Wisconsin strains are Yamagata-lineage viruses and it is expected that the 2013 seasonal influenza vaccine should provide some protection against the new strain.

Summary:

For the week ending 6 October 2013, influenza activity decreased further. Influenza surveillance measures appear to indicate that we have passed the peak (1 September) of influenza activity for the current influenza season.

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations fell well below the seasonal threshold. The current level is consistent with the winter influenza season ending.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A and B continues to decrease but remains elevated (12.4%). Other respiratory virus activity is decreasing.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking on ILI activity in NSW overall decreased further this week and have returned to pre-season levels.
- [National and International influenza surveillance](#) – No new human cases of infection with the novel avian influenza A(H7N9) strain from China; otherwise low influenza activity worldwide.
- [Recommended composition of 2014 southern hemisphere influenza vaccines](#) – WHO has provided recommendations for the 2014 southern hemisphere winter influenza season.

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 reports 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 see the [NSW Health Influenza website](#).

1. Emergency Department (ED) Surveillance

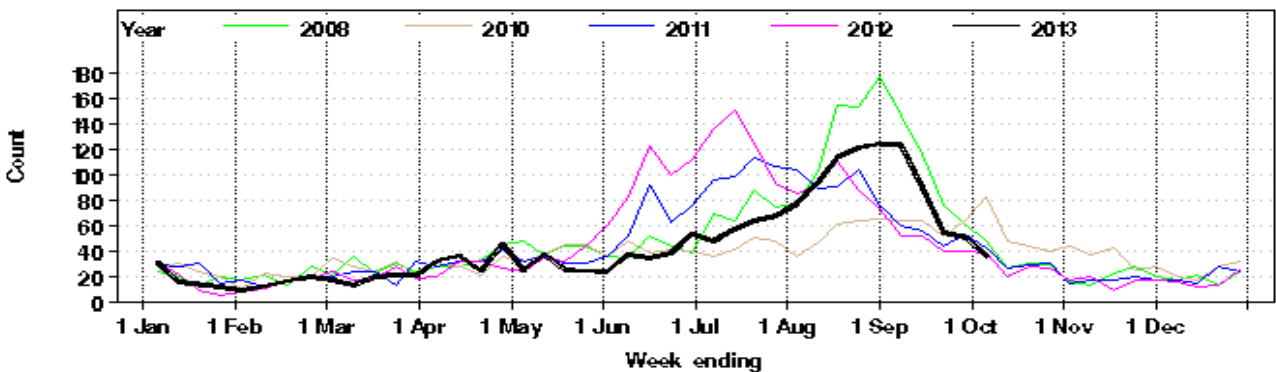
Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change.

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

The ED 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 6 October 2013, the index of increase for ILI presentations decreased to 5.3, well below the threshold and is consistent with the end of this year’s influenza season having first crossed in late June and peaked at 32.8 on 20 August.
- ILI activity eased further this week to 1.0 cases per 1000 presentations. The total count for ILI presentations also decreased this week and was within the usual range (Figure 1 and Table 1).
- Combined ILI and pneumonia admissions to critical care wards increased significantly this week and was above the usual range for this time of year (Figure 2 and Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 6 October 2013 (black line), compared with each of the 5 previous years (coloured lines).



*Note: Excludes 2009 data to enable comparison of 2013 data with data from previous non-pandemic years.

Figure 2: Total weekly counts of ED visits for pneumonia and ILI admitted to a critical care ward, from January – 6 October 2013 (black line), compared with each of the 5 previous years (coloured lines).

Category: All visits with the above inclusions

Total 1-week counts

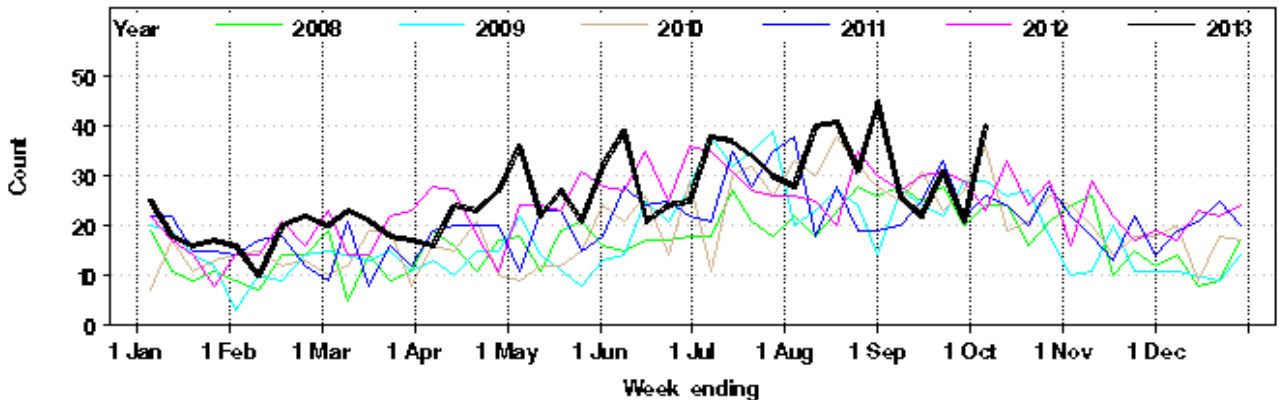


Table 1: Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW Emergency Departments and the Sydney Ambulance Division, up to 6 October 2013.

Data source	Diagnosis or problem category	Trend since last week	Overall 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)	Decreased	Usual				
	Pneumonia	Decreased	Usual				
	Pneumonia and ILI admissions	Steady	Usual				
	Pneumonia and ILI critical care admissions	Increased	Above				
	Bronchiolitis	Decreased	Below				
	Respiratory illness, fever or unspecified infections	Decreased	Usual				
	Asthma	Decreased	Below				
	Total presentations (compared with 2012 only)	Steady	Similar				Total presentations were similar to the same week last year. Admissions from ED were 9% higher.
Ambulance calls, Sydney region	Breathing problems	Decreased	Below				

Notes on Table 1: Statistically significant increases are shown in **bold**. LHD = Local Health District. 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.

2. Laboratory Surveillance

For the week ending 6 October 2013, the number and proportion of respiratory specimens reported by NSW sentinel laboratories which tested positive for influenza decreased further (Table 2 and Figure 3). Influenza was still the most common respiratory virus identified.

A total of 1458 tests for respiratory viruses were reported with 181 specimens (12.4%) testing positive for influenza viruses. Overall influenza activity decreased further this week, influenza A(H1N1)pdm09 is circulating at higher levels than A(H3N2). Influenza B activity decreased this week.

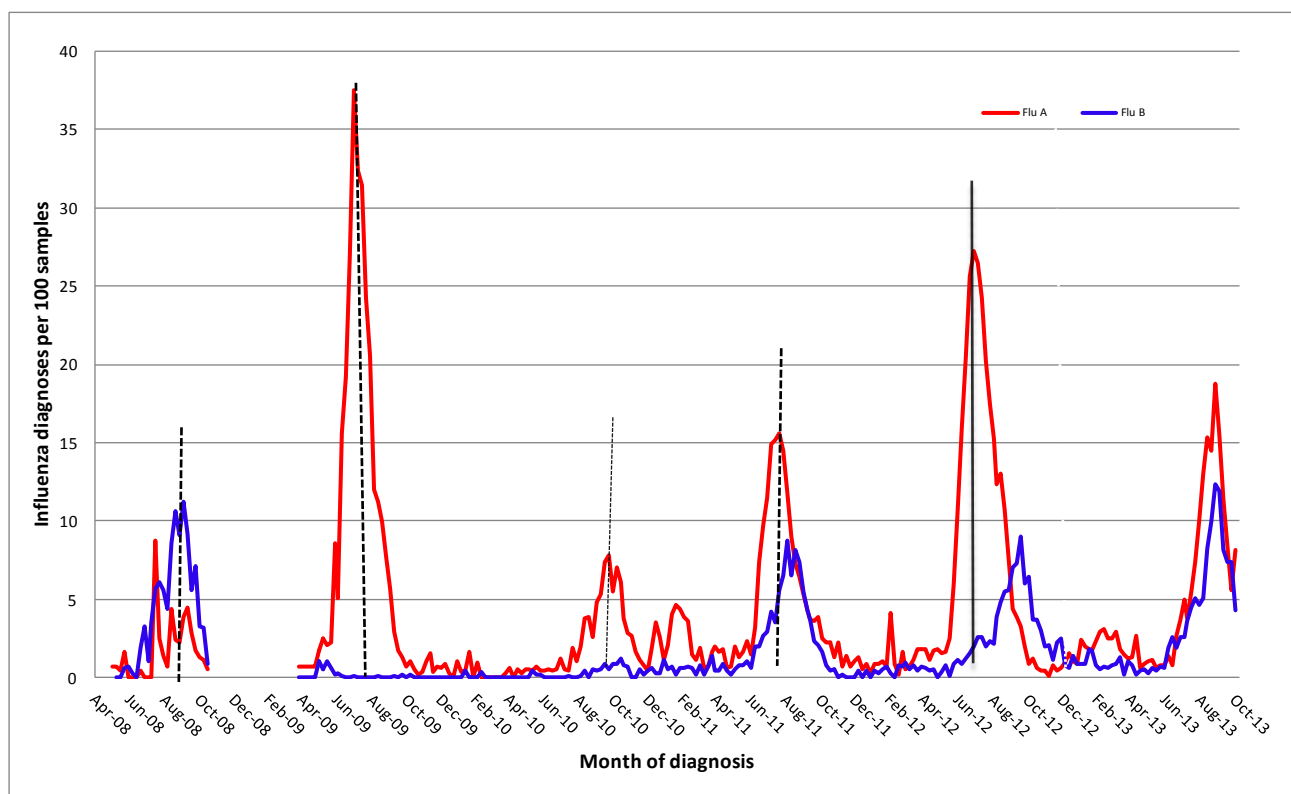
Table 2: Summary of tests and results for influenza and other respiratory viruses at NSW laboratories, 1 January to 6 October 2013.

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 (%)						
01/02/2013*	2199	44 (2.0%)	13 (29.5%)	14 (31.8%)	17 (38.6%)	26 (1.2%)	68	87	81	328	37	59	
01/03/2013	2263	60 (2.7%)	17 (28.3%)	20 (33.3%)	23 (38.3%)	15 (0.7%)	55	41	119	452	29	31	
29/03/2013	2595	47 (1.8%)	9 (19.1%)	12 (25.5%)	26 (55.3%)	21 (0.8%)	82	59	333	488	53	33	
26/04/2013	3165	39 (1.2%)	13 (33.3%)	11 (28.2%)	15 (38.5%)	10 (0.3%)	92	188	599	586	61	54	
02/06/2013*	4885	38 (0.8%)	14 (36.8%)	12 (31.6%)	12 (31.6%)	23 (0.5%)	116	115	742	812	41	62	
30/06/2013	4855	106 (2.2%)	21 (19.8%)	45 (42.5%)	40 (37.7%)	108 (2.2%)	109	105	663	685	44	94	
28/07/2013	6051	397 (6.6%)	30 (7.6%)	151 (38.0%)	216 (54.4%)	240 (4.0%)	164	131	714	672	49	206	
01/09/2013*	10305	1505 (14.6%)	94 (6.2%)	917 (60.9%)	494 (32.8%)	873 (8.5%)	244	218	458	813	30	349	
29/09/2013	8994	969 (10.8%)	67 (6.9%)	555 (57.3%)	347 (35.8%)	804 (8.9%)	219	224	290	589	16	191	
Week													
06/10/2013	1458	118 (8.1%)	29 (24.6%)	57 (48.3%)	32 (27.1%)	63 (4.3%)	42	59	33	98	2	29	

* All samples are tested for influenza viruses. Not all samples are tested for all of the other viruses listed.

** Samples that test negative for A(H1N1)pdm09 are assumed to be A(H3N2).

Figure 3: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2008 – 6 October 2013, New South Wales.



Note: Laboratory surveillance data is provided by laboratories on a weekly basis and includes point-of-care tests since 10 August 2012. Serological diagnoses are not included.

Source: 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 [no data from Oct 2010 to June 2011], Douglas Hanley Moir Pathology, VDRLab [data from 5 March 2010], Lavery Pathology [data from 1 April 2010 to February 2011], SydPath (St Vincent’s) Pathology [data from Nov 2010], Medlab, and Lavery [data from September 2013].

Laboratory-confirmed influenza outbreaks in residential care facilities

Two new laboratory confirmed influenza A outbreaks were reported in regional aged care facilities in NSW this week.

In the year to date (up to week 40), there have been nine laboratory-confirmed influenza outbreaks in institutions reported to NSW Public Health Units (Table 3): six influenza A, two influenza B and one mixed influenza A and B outbreak. At least 103 residents were reported to have had ILI symptoms and five have required hospitalisation. No deaths in residents linked to the outbreaks have been reported.

Table 3. Reported influenza outbreaks in NSW institutions, 2005-2013.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013*
No. of outbreaks	5	2	25	9	1	2	4	39	9

* Up to 6 October 2013.

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 when the influenza A(H3N2) strain predominated.

3. Community Illness Surveillance

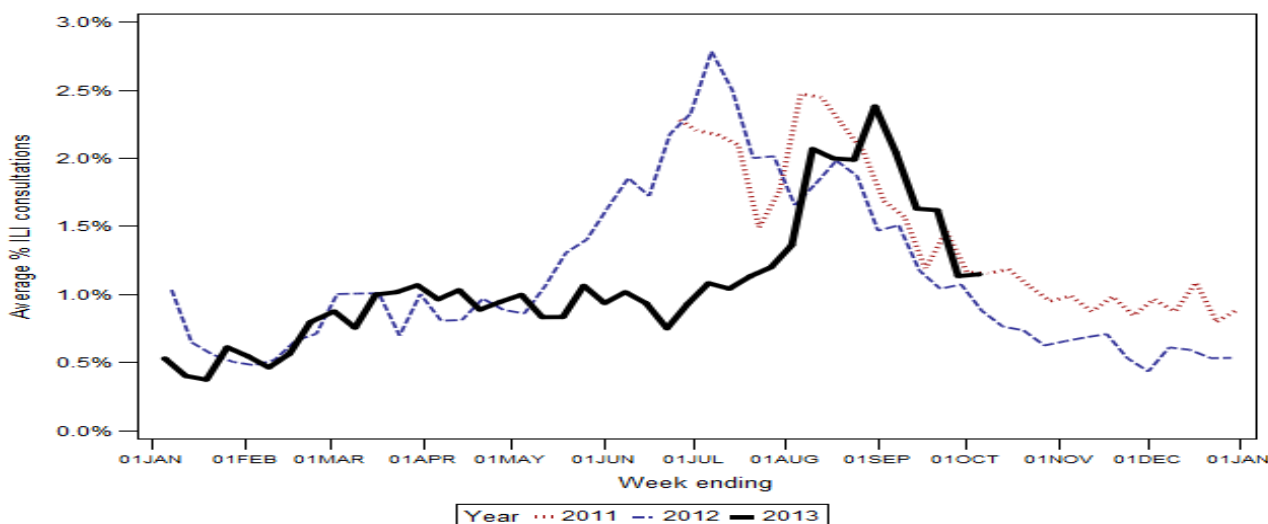
Electronic General Practice Surveillance (eGPS)

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 it is not representative of all practices within the participating LHDs or across NSW.

- For week 40 (ending 3 October), reports were received from 18 sentinel practices.
- The average rate for patient consultations with ILI remained steady at 1.1% (range 0.0 – 2.8%). This is the same as the previous week (1.1%) (Figure 4) and is within the usual range of ILI activity seen at this time in the two previous years.

Figure 4. Average rate of influenza-like-presentations to sentinel general practices, by week of consultation, 2011-2013.



Note: The number of practices reporting may vary from week to week. Data available from Week 29, 2011.

The Australian Sentinel Practices Research Network (ASPREN)

ASPREN is a network of sentinel general practitioners (GPs) run through the RACGP and University of Adelaide that has collected de-identified information on influenza like illness and other conditions seen in general practice since 1991. GP's participating in the program report on the proportion of patients presenting with an ILI. The number of GP's participating on a weekly basis may vary.

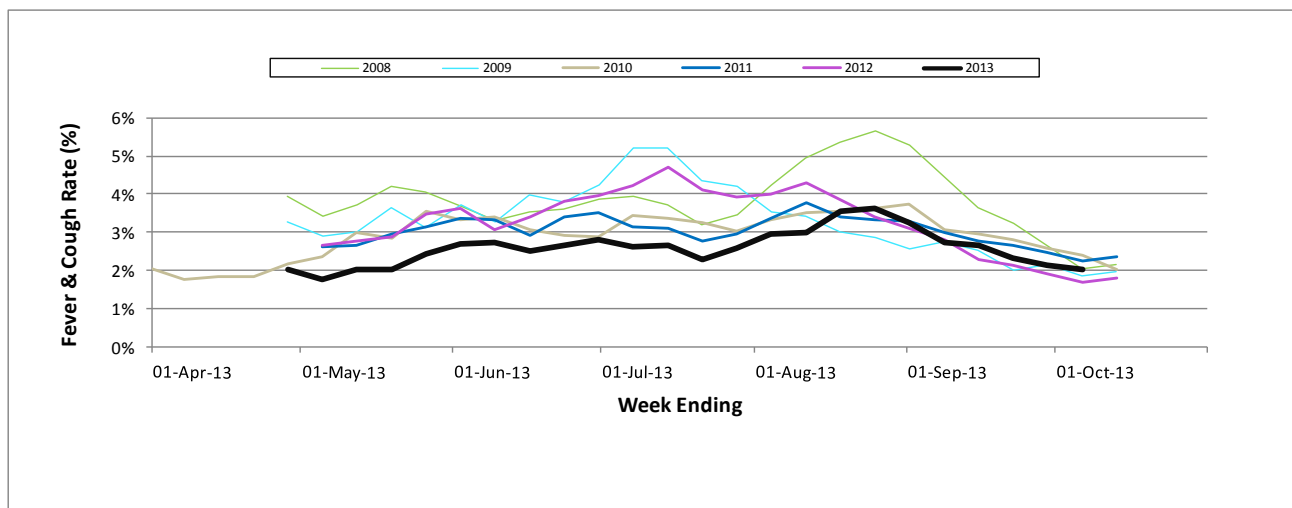
- For the week ending 6 October, there were 24 ASPREN reports received from NSW GP's, of these only two reported ILI presentations. For further information please see the [ASPREN](#) website.

FluTracking.net

FluTracking.net is an online health surveillance system to detect epidemics of influenza. 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.

- For the week ending 6 October, FluTracking received reports for 4672 people in NSW. The number of respondents reporting fever and cough this week was 2.1%; this was within the usual range for this time of year (Figure 5). Overall, 1.3% of respondents reported fever, cough and absence from normal duties.

Figure 5: FluTracking – Weekly influenza like illness reporting rate, NSW, 2008 – 2013.



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

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

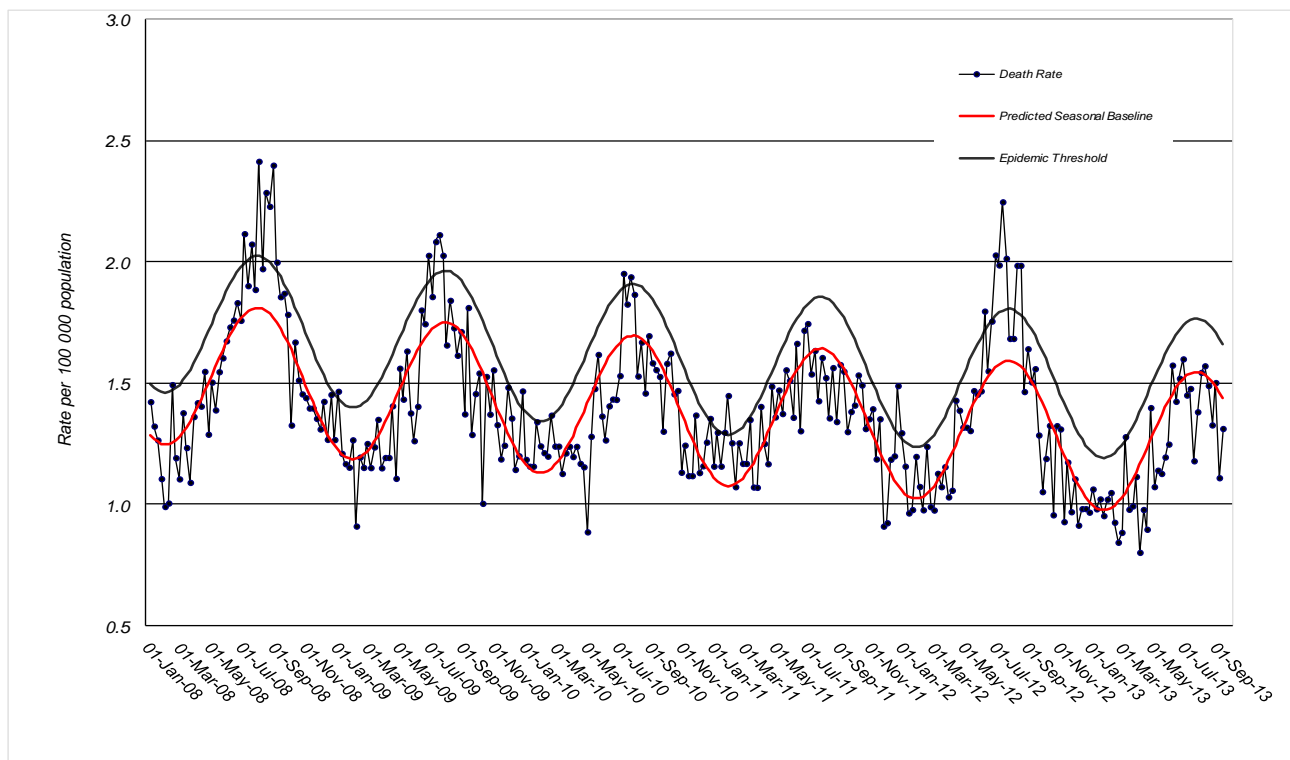
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 20 September:

- There were 1.31 pneumonia or influenza deaths per 100,000 NSW population, which is below the epidemic threshold of 1.66 per 100,000 population (Figure 6).
- Up to 20 September, out of 36,275 deaths there were 38 death certificates mentioning influenza, and 3,344 mentioning pneumonia. The number of deaths mentioning influenza increased from the previous month from 10 to 38 deaths. The majority of these influenza and pneumonia deaths were in persons aged greater than 50 years, however there were four deaths in people aged 25 to 44 years.

Figure 6: Rate of deaths classified as influenza and pneumonia (by NSW Registered Death Certificates) per 100,000 NSW population, 2008 - 2013.



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

Nationally the 2013 influenza season appears to have peaked. Overall influenza activity has been relatively low compared to 2011 and 2012.

- Whilst influenza A remains the predominant influenza virus type, the proportion of influenza B this season has been higher than in recent years. Influenza A(H1N1)pdm09 has also re-emerged this season with approximately 15% of overall notifications reported as influenza A(H1N1)pdm09 compared to less than 1% of notifications in 2012.
- Across jurisdictions, the distribution of influenza types and subtypes is variable. In Western Australia, influenza A(H3N2) remains the predominant subtype, however the proportion of A(H1N1)pdm09 is increasing. Influenza type B continues to represent over half of Victoria's influenza notifications. In recent weeks there have been increasing proportions of influenza B in South Australia and Queensland.

- Notification data this year for influenza B infections have shown highest numbers in those aged 15 years and under, while influenza A notifications have been highest in the 0-4 and 30-34 years age groups. There have again been very few notifications of the influenza A(H1N1)pdm09 subtype in those aged 65 years and over.

Avian influenza A(H7N9) in China

The World Health Organization (WHO) has reported no new cases this week. To date, WHO has been informed of a total of 135 laboratory-confirmed cases, including 44 deaths.

Influenza activity worldwide

In summary during weeks 36 and 37, WHO has reported:

- Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal levels. The United States of America reported 18 cases of human infection with influenza A(H3N2)v this year, with the first case reported in June. More details can be found at <http://www.cdc.gov/flu/swineflu/h3n2v-cases.htm>.
- Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal levels.
- In most regions of tropical Asia influenza activity decreased, with the exception of Hong Kong Special Administrative Region, China, where influenza activity associated with A(H3N2) viruses increased.
- In the Caribbean region of Central America and tropical South America the influenza season appeared to have come to an end. Acute respiratory infections continued to decline. Respiratory syncytial virus predominated, and influenza A(H1N1)pdm09 and influenza A(H3N2) were the main respiratory viruses reported since May of this year.
- Influenza activity peaked in the temperate countries of South America and in South Africa in late June. Influenza activity in these areas was primarily associated with influenza A(H1N1)pdm09 throughout the season, but since July greater numbers of influenza A(H3N2) and influenza type B viruses were observed.
- Australia and New Zealand had a late start of a season in August. Influenza activity seemed to decrease in mid-September in Australia. Co-circulation of influenza A(H3N2), influenza A(H1N1)pdm09 and type B was reported in both countries. [WHO influenza update No195](#).

Useful influenza surveillance links

- Follow the link for the [Australian Influenza Surveillance Reports](#) which provide the latest information on national influenza activity.
- Follow the link for the [World Health Organization Global Influenza Programme](#).
- Follow the link for Australia's [WHO Collaborating Centre for Reference and Research on Influenza](#), part of an international network of centres analysing influenza viruses currently circulating in the human population in different countries around the world. The centre also provides information on the [current vaccine recommendations](#) for influenza.

6. Recommended composition of influenza virus vaccines for use in the 2014 southern hemisphere influenza season

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

- an A/California/7/2009 (H1N1)pdm09-like virus *;
- an A/Texas/50/2012 (H3N2)-like virus **;
- a B/Massachusetts/2/2012-like virus.

* A/Christchurch/16/2010 is an A/California/7/2009-like virus.

** A/Texas/50/2012 is an A(H3N2) virus with antigenic properties similar to the majority of recently circulating cell-propagated A(H3N2) viruses including A/Victoria/361/2011.

The vaccine viruses recommended for the 2014 southern hemisphere influenza season are the same as those recommended for the 2013-2014 northern hemisphere influenza season. In countries or regions of the world that expect B/Victoria lineage viruses to predominate in the southern hemisphere in 2014 may continue to use a B/Brisbane/60/2008-like virus in their influenza virus vaccines.

Australia is yet to announce the composition of influenza vaccines for 2014.

Full report available at

www.who.int/influenza/vaccines/virus/recommendations/2014_south/en/index.html