

# NSW Health Influenza Surveillance Report

Week 36 Ending 8 September 2013

## Influenza Surveillance Forecast (Update):

Influenza A(H1N1)pdm09 is currently the dominant circulating influenza A strain; younger people, including pregnant women, may be at greater risk of infection with this strain.

In 2012, influenza A(H3N2) A was the dominant circulating influenza A strain and people in older age groups were more at 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 8 September 2013, influenza activity eased. Influenza surveillance measures appear to indicate that we have passed the peak of influenza activity for the current influenza season.**

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations was above the seasonal threshold, although continues to decline. The current level is consistent with the winter influenza season.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A and B eased slightly this week (27.4%), predominantly influenza A(H1N1)pdm09. Other respiratory virus activity is also high.
- [Community illness surveillance](#) – data collected from eGPs, ASPREN and FluTracking on ILI activity in NSW overall eased further this week.
- [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.

## 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

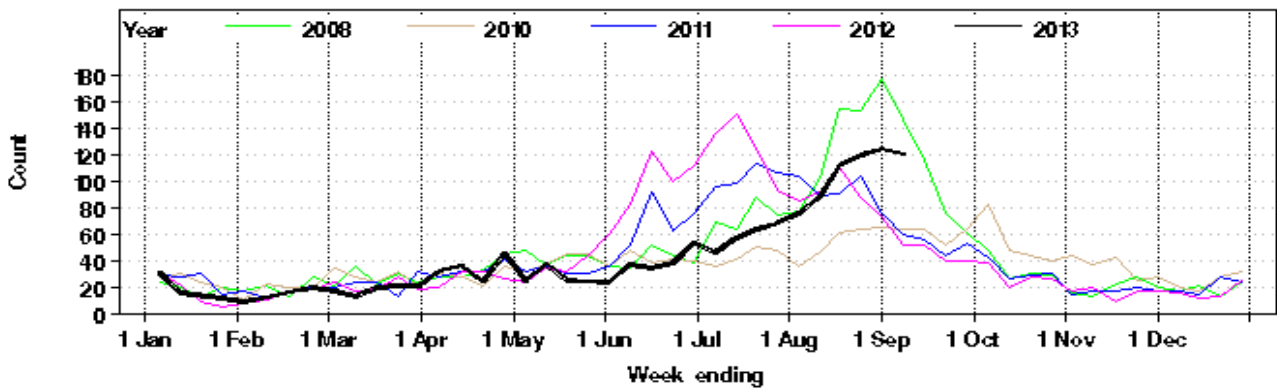
**Source:** NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent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

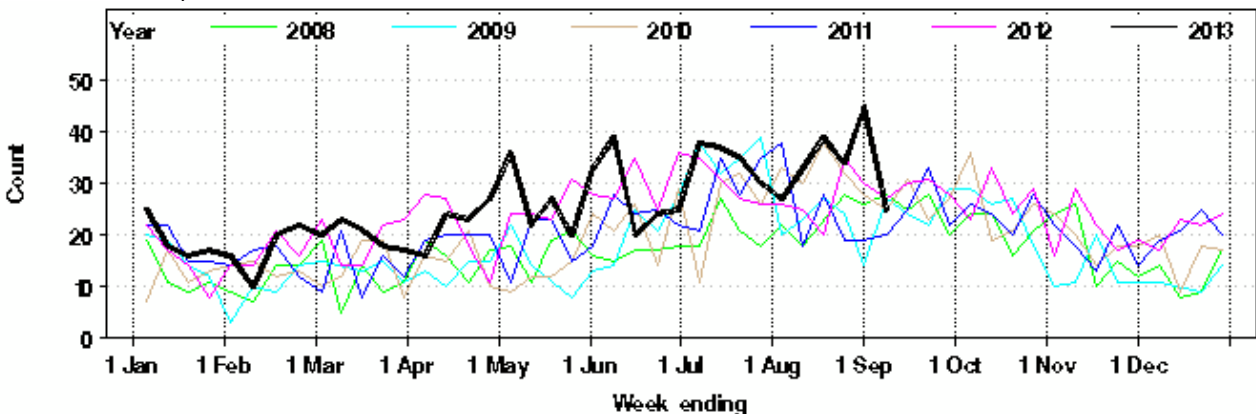
- On 8 September 2013, the index of increase for ILI presentations was lower (24.3) but still consistent with the influenza season activity seen since it crossed the threshold in late June.
- ILI activity remained steady this week at 3.0 cases per 1000 presentations. The total count for ILI presentations eased this week and was within the usual range (Figure 1 and Table 1).
- Combined ILI and pneumonia admissions to critical care wards decreased this week and have returned to the usual range for this time of year (Figure 2 and Table 1).
- The overall number of respiratory illness, fever or unspecified infection presentations decreased but remained well above the usual number for this time of year (Table 1). The relative increases were greatest in the 35-64 year old (up 29%) and 0-4 year old age-groups (up 19%).

**Figure 1:** Total weekly counts of ED visits for influenza-like illness, from January – 8 September 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 –8 September 2013 (black line), compared with each of the 5 previous years (coloured lines).



**Table 1:** Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW Emergency Departments and the Sydney Ambulance Division, up to 8 September 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		Western Sydney LHD		
	Pneumonia	Decreased	<b>Above</b>				
	Pneumonia and ILI admissions	Decreased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Increase d	Usual				
	Respiratory illness, fever or unspecified infections	Decreased	<b>Above</b>	All ages except 17-34 year-olds	All metropolitan Sydney LHDs		
	Asthma	Increase d	<b>Above</b>			Informed Environmental Health Branch about Nepean Hospital	Presentations to Nepean Hospital increased over a few days, coincident with bushfire hazard reduction burns.
	Total presentations (compared with 2012 only)	Decreased	<b>Above</b>				Overall, 6% higher than the same week in 2012. Admissions from ED were 4% higher.
Ambulance calls, Sydney region	Breathing problems	Decreased	<b>Above</b>		Western Sydney LHD		Overall up 22% and in Western Sydney up 43% compared with usual for the time of year.

**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 8 September 2013, the number and proportion of respiratory specimens reported by NSW sentinel laboratories which tested positive for influenza decreased (Table 2 and Figure 3). Influenza was still the most common respiratory virus identified.

A total of 2726 tests for respiratory viruses were reported with 747 specimens (27.4%) testing positive for influenza viruses. Influenza A viruses were predominating, with A(H1N1)pdm09 circulating at higher levels than A(H3N2). Influenza B activity increased further this week.

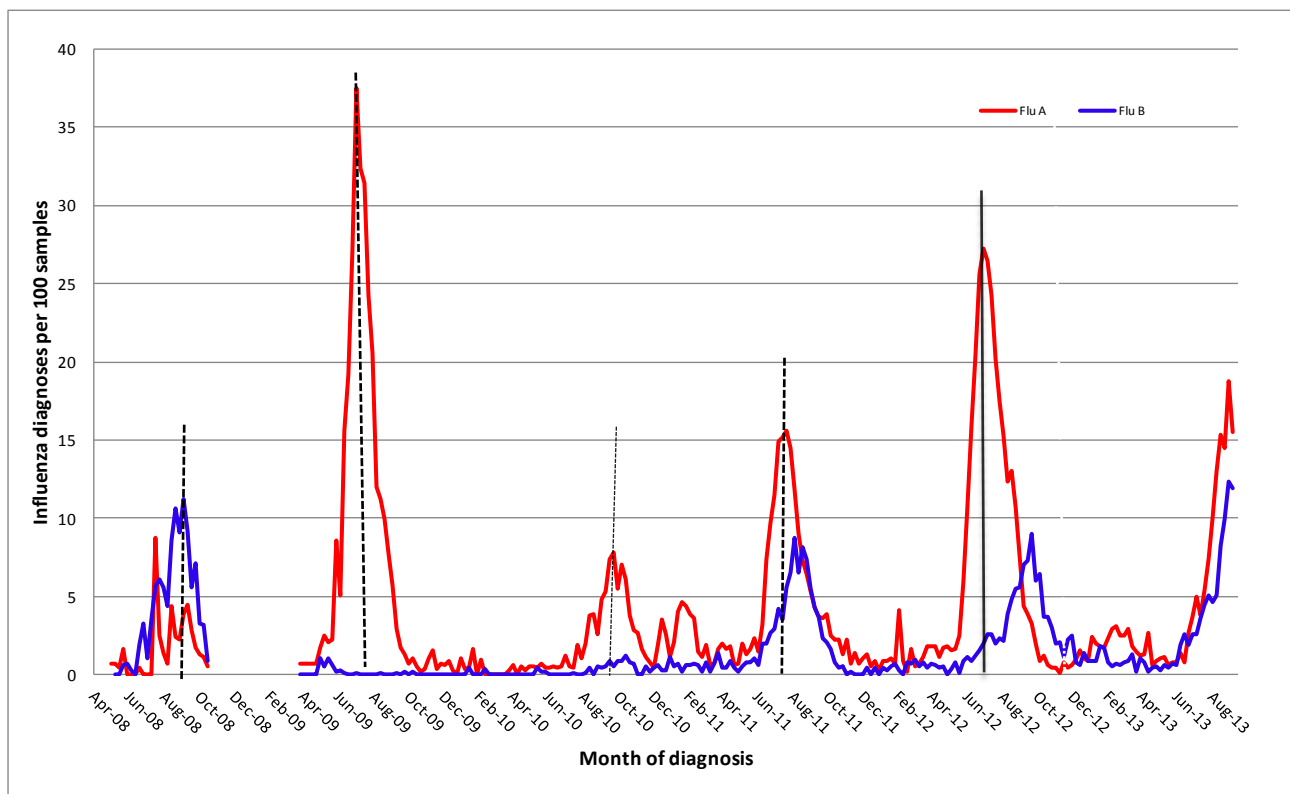
**Table 2:** Summary of tests and results for influenza and other respiratory viruses at NSW laboratories, 1 January to 8 September 2013.

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						
Total (%)	Total (%A) **	Total (%)	Total (%)	Total (%)	Total (%)	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			
1/03/2013	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%)	888 (59.0%)	523 (34.8%)	873 (8.5%)	244	218	458	813	30	349			
<b>Week ending</b>															
8/09/2013	2726	423 (15.5%)	27 (6.4%)	248 (58.6%)	148 (35.0%)	324 (11.9%)	53	39	132	119	1	59			

\* 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 – 8 September 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] and Medlab [data from September 2013].

### Laboratory-confirmed Influenza outbreaks in residential care facilities

In the year to date (up to week 36), there have been six laboratory-confirmed influenza outbreaks in institutions reported to NSW Public Health Units (Table 3): three influenza A, two influenza B and one mixed influenza A and B outbreak. At least 80 residents were reported to have had ILI symptoms and four 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	6

\* Outbreaks reported up to 8 September 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)pdm strain which predominated in these years.

### 3. Community Illness Surveillance

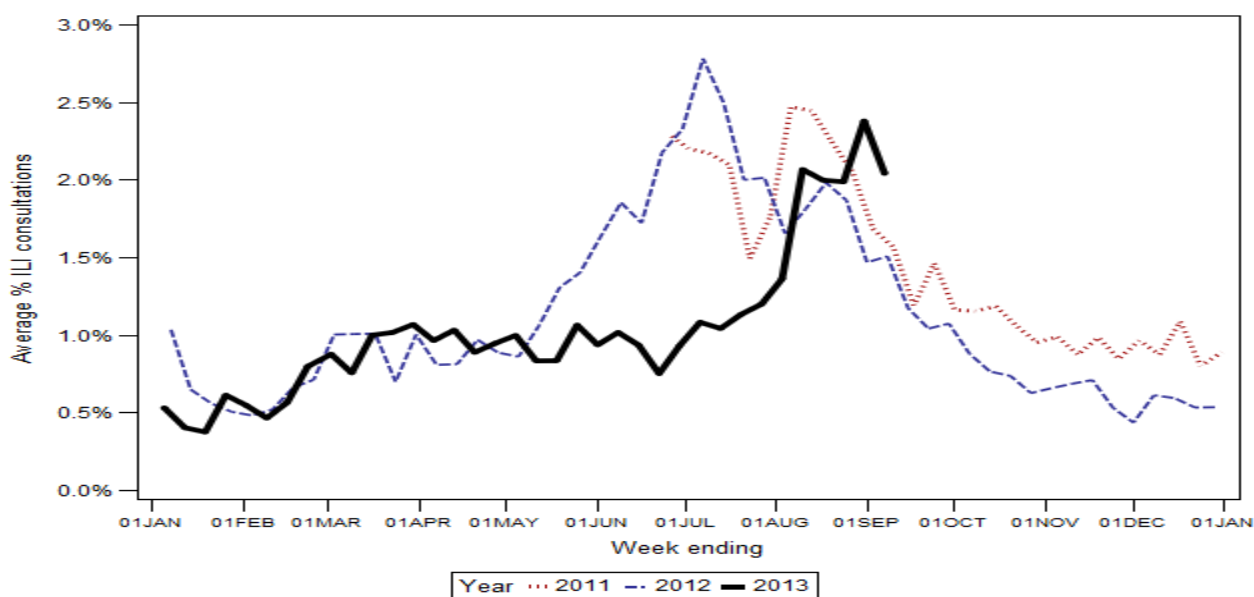
#### Electronic General Practice Surveillance (eGPS)

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 36 (ending 5 September), reports were received from 20 sentinel practices.
- The average rate for patient consultations with ILI decreased to 2.0% (range 0.3 – 3.7%). This is lower than 2.3% in the previous week (Figure 4) however the rate is above 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.

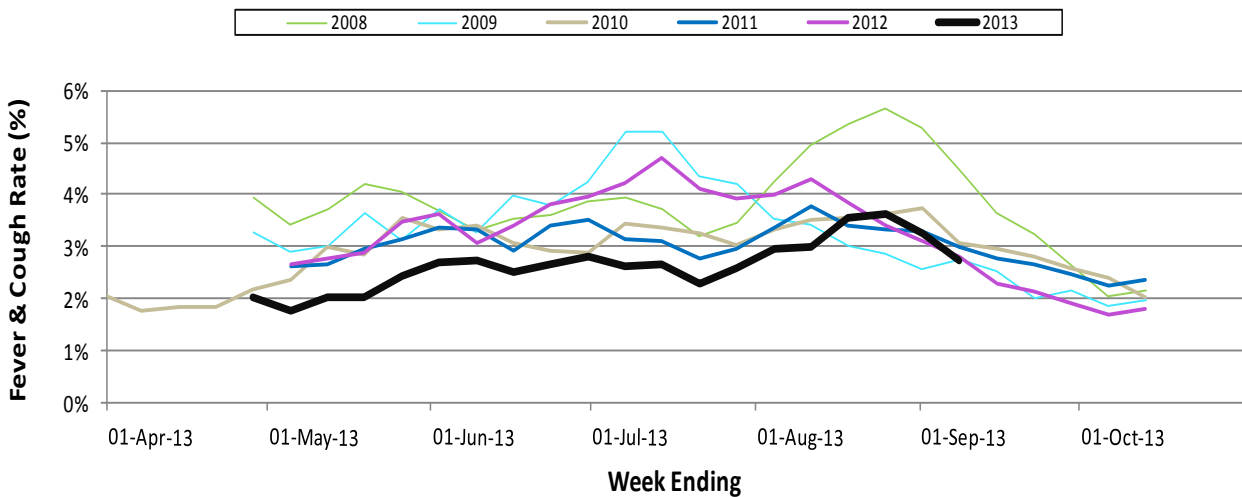
- For the week ending 8 September, there were 30 ASPREN reports received from NSW GP's. The average rate for people presenting with ILI was 2.3% of consultations, lower than the previous week (3.6%). For further information please see the [ASPREN](#) website.

#### 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 8 September, FluTracking received reports for 4380 people in NSW. The number of respondents reporting fever and cough this week was 2.7%; this was within the usual range for this time of year (Figure 5). Overall, 1.6% 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

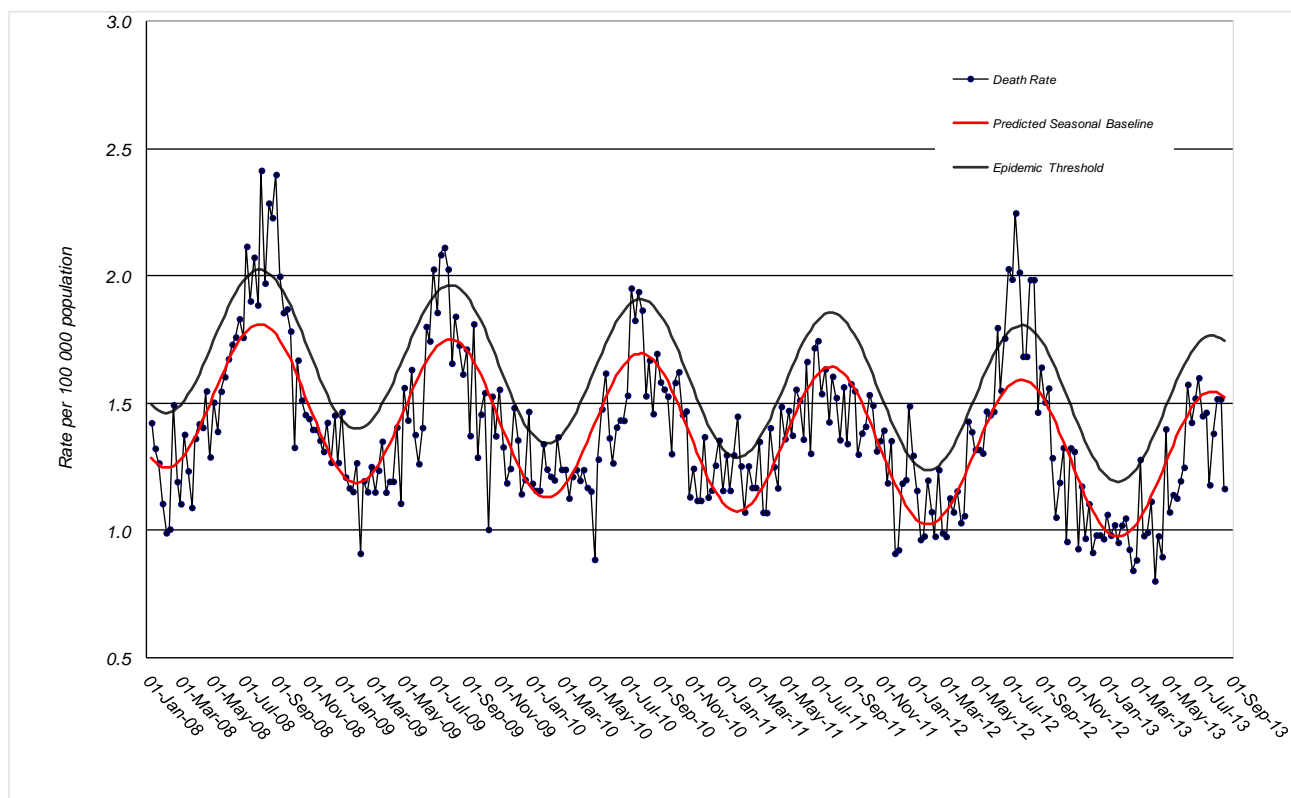
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 23 August:

- There were 1.46 pneumonia or influenza deaths per 100,000 NSW population, which is below the epidemic threshold of 1.74 per 100,000 population (Figure 6).
- Up to 23 August, out of 32,043 deaths there were 10 death certificates mentioning influenza, and 2,919 mentioning pneumonia. The majority of these influenza and pneumonia deaths were in persons aged greater than 65 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 seasonal increase in influenza activity has slowed. Influenza activity remains relatively low compared to 2011 and 2012.

- While influenza A remains the predominant influenza virus type, the proportion of influenza B this season has been higher than recent years. Although the majority of influenza A reports are unsubtyped, approximately 15 percent of overall notifications have been reported as influenza A(H1N1)pdm09. This strain was uncommon in 2012.
- Across other jurisdictions the distribution of influenza types and subtypes is variable. In Western Australia, influenza A(H3N2) remains the predominant subtype although 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.

## Avian influenza A(H7N9) in China

The World Health Organization (WHO) has reported no new cases this week. The latest case reported, a 51 year-old woman from Guangdong province, is hospitalized and in a critical condition. This is the first new confirmed case of human infection with avian influenza A(H7N9) virus since 20 July 2013. To date, WHO has been informed of a total of 135 laboratory-confirmed cases, including 44 deaths.

## Influenza activity worldwide

In summary during weeks 32 and 33, WHO has reported:

- Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal levels.
- In most parts of tropical Asia influenza activity decreased.
- In Central America and the Caribbean, influenza and Respiratory Syncytial Virus (RSV) transmission declined. RSV, influenza A(H1N1)pdm09 and influenza A(H3N2) were the main respiratory viruses reported.
- In tropical South America, influenza A(H1N1)pdm09 virus predominated. A significant increase in influenza A(H1N1)pdm09 activity was observed in Peru in the middle of July, while influenza activity in general decreased in Venezuela, Ecuador and Brazil.
- Influenza activity peaked in the temperate areas of South America and in South Africa in late June. Influenza activity in these areas was primarily associated with influenza A(H1N1)pdm09 virus throughout the season, with increasing influenza A(H3N2) virus detections observed towards the end.
- In Australia and New Zealand, numbers of influenza viruses detected and rates of influenza-like illness were lower than in previous years, but showed an increasing trend. Influenza A(H3N2) and type B were much more commonly detected than A(H1N1)pdm09 in both countries. [WHO influenza update No193](#).

## 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.