

# NSW Health Influenza Surveillance Report

Week 27 Ending 7 July 2013

## Influenza Surveillance Forecast:

Influenza activity in NSW is now increasing. 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. However;

- the influenza strains likely to predominate in NSW this year also circulated last season (so many people will have acquired immunity)
- the 2013 influenza vaccine is better matched to these strains than the 2102 vaccine, and
- the uptake of influenza vaccine in NSW this year has been higher than in recent years.

It is important to note, however, that as the influenza A(H1N1)pdm09 is currently the dominant circulating strain, younger people may be at higher risk of infection compared to last year when older groups were more at risk when A(H3N2) was the main influenza A strain circulating.

## Summary:

**For the week ending 7 July 2013, influenza activity continued to increase and gave a strong indication that the influenza season has started.**

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations was above the seasonal threshold, suggesting that the influenza season has started in NSW. The number of ILI presentations admitted to critical care increased further this week and bronchiolitis remained elevated.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A or B increased to 7.6%, influenza A (H1N1)pdm09 appears to be the dominant circulating strain . RSV also remains prevalent.
- [Community illness surveillance](#) – data collected from eGPs, ASPREN and FluTracking.net on ILI activity in NSW remained steady.
- [National and International influenza surveillance](#) – low influenza activity worldwide, no further reports of human cases of infection with the novel avian influenza A(H7N9) strain from China.

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

## 1. Emergency Department (ED) Surveillance

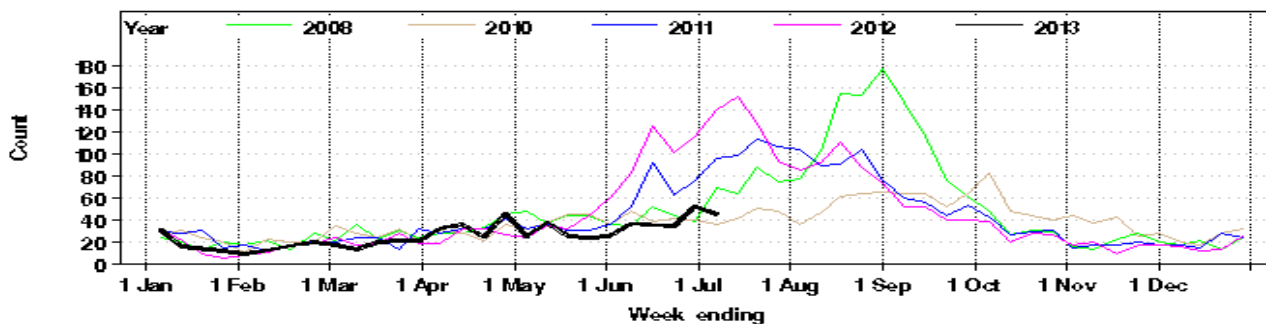
**Source:** NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent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

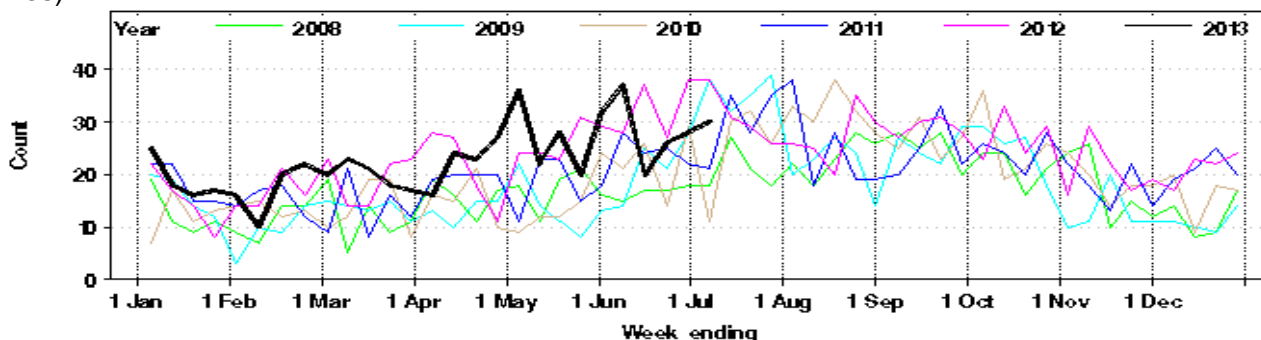
- On 7 July 2013, the index of increase for influenza-like illness presentations was 17.4, above the threshold of 15, and suggested that the influenza season has commenced in NSW.
- The rate of ILI presentations was decreased slightly this week, a rate of 1.2 cases per 1000 presentations, remained toward the lower end of the usual range for this time of year (Figure 1 and Table 1).
- ILI and pneumonia admissions to critical care wards increased slightly further this week and were within the usual range for this time of year (Figure 2 and Table 1).
- The number of children presenting with bronchiolitis increased over the period of the week and were at the upper end of 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, from January – 7 July 2013 (black line), compared with each of the 5 previous years (coloured lines).\*

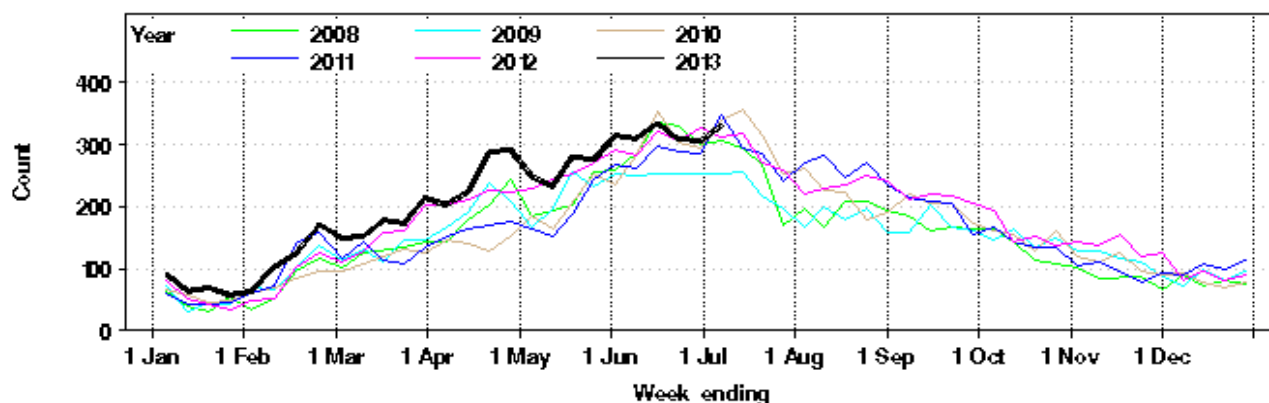


\* **Note:** Excludes 2009 data to enable comparison of 2013 data with data from previous non-pandemic years.

**Figure 2:** Total weekly counts of ED visits for pneumonia and ILI admitted to a critical care ward, from January – 7 July 2013 (black line), compared with each of the 5 previous years (coloured lines).



**Figure 3:** Total weekly counts of ED visits for bronchiolitis, from January – 7 July 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 EDs and the Sydney Ambulance Division. \*

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				The current level is consistent with the early stage of the winter influenza season.
	Pneumonia	Increased	Usual				
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Increased	Usual				
	Bronchiolitis	Increased	Usual				
	Respiratory, fever and unspecified infections	Increased	Usual				
	Asthma	Decreased	Usual				
Total presentations (compared with 2012 only)	Increased	Usual				Overall, 2% lower than the same week in 2012. Admissions from ED were 2.1% higher.	
Ambulance calls, Sydney region	Breathing problems	Decreased	Usual				

\* **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.

## 2. Laboratory Surveillance

For the week ending 7 July 2013, the number and proportion of respiratory specimens reported by NSW sentinel laboratories which tested positive for influenza continue to increase (Table 2 and Figure 4). However, respiratory syncytial virus (RSV) was the most common respiratory virus identified by NSW sentinel laboratories.

A total of 1415 tests for respiratory viruses were reported with 71 specimens (7.6 %) testing positive for influenza viruses. Influenza A was the dominant circulating strain, influenza A(H1N1) pdm09 appears to be circulated at higher levels than A(H3N2). Influenza B activity continued to decrease this week.

The most recent sequencing results on NSW influenza A and B samples submitted to the WHO Collaborating Centre for Reference and Research on Influenza indicate that these were matched to the reference strains used in the Australian influenza vaccine for 2013.

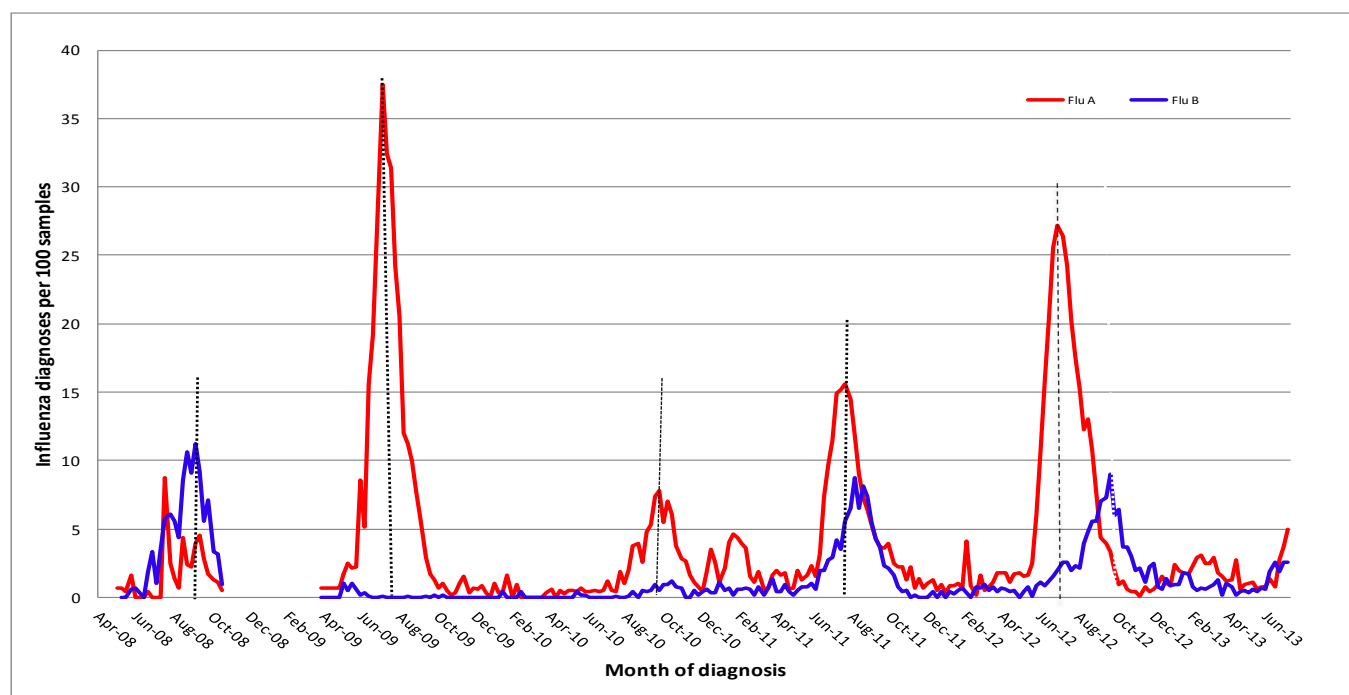
**Table 2:** Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 7 July 2013. \*

Month ending	Total Tests	Influenza A		A(H3N2)		A(H1N1)pdm09		Influenza B		Adeno.	Parainf. 1, 2 & 3	RSV	Rhino.	Entero.	HMPV***
		Total	(%)	Total	(% Flu A)**	Total	(% Flu A)**	Total	(%)						
01/02/2013*	2199	44	(2.0%)	13	(29.5%)	14	(31.8%)	26	(1.2%)	68	87	81	328	37	59
01/03/2013	2263	60	(2.7%)	17	(28.3%)	20	(33.3%)	15	(0.7%)	55	41	119	452	29	31
29/03/2013	2595	47	(1.8%)	9	(19.1%)	12	(25.5%)	21	(0.8%)	82	59	333	488	53	33
26/04/2013	3165	39	(1.2%)	13	(33.3%)	11	(28.2%)	10	(0.3%)	92	188	599	586	61	54
02/06/2013*	4885	38	(0.8%)	14	(36.8%)	12	(31.6%)	23	(0.5%)	116	115	742	812	41	62
30/06/2013	4855	106	(2.2%)	17	(16.0%)	42	(39.6%)	108	(2.2%)	109	105	663	685	44	94
<b>Week ending</b>															
07/07/2013	1415	71	(5.0%)	0	(0.0%)	28	(39.4%)	37	(2.6%)	40	29	209	175	13	38

\*\* Subset of influenza A positive tests. Not all influenza A samples are typed; not all labs currently test for A(H1N1)pdm09.

\*\*\* Samples that test negative for A(H1N1)pdm09 are assumed to be A(H3N2).\*\*\*\* HMPV = Human metapneumovirus

**Figure 4:** Percent of respiratory samples positive for influenza A or influenza B, 1 January 2008 – 7 July 2013, New South Wales. \*



**Note:** Laboratory surveillance data is provided by laboratories on a weekly basis and includes point-of-care tests as of 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] and SydPath (St Vincent’s) Pathology [data since Nov 2010].

### 3. Community Illness Surveillance

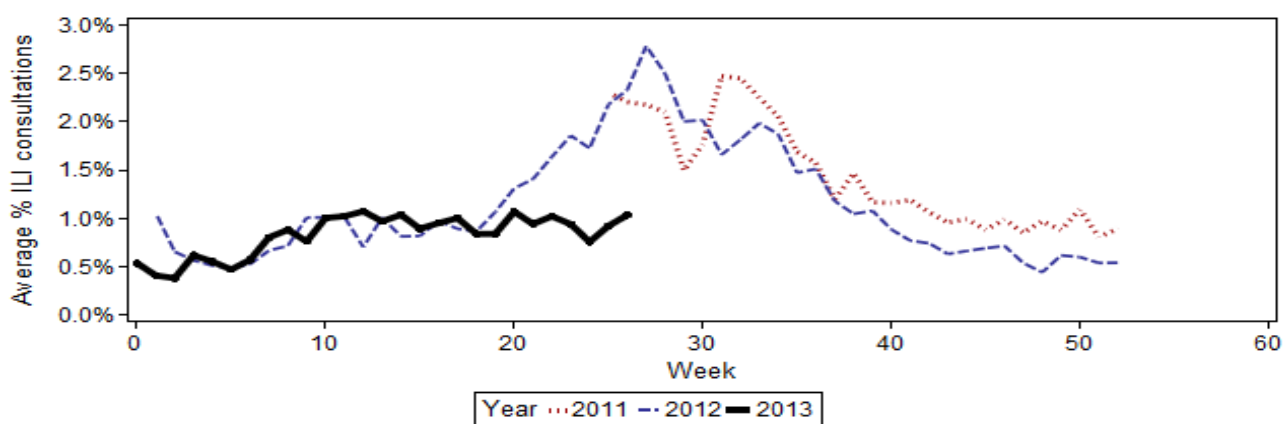
#### Electronic General Practice Surveillance (eGPS)

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 27 (ending 4 July), reports were received from 18 sentinel practices.
- The average rate for patient consultations with ILI was 1.0% (range 0.0 – 2.5%). This compares to 0.9% in the previous week (Table 3, Figure 5) and below activity seen in the previous year.

**Figure 5. 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 7 July, there were 17 ASPREN reports received from NSW GP's. The average rate for people presenting with ILI was 1.0% of consultations.

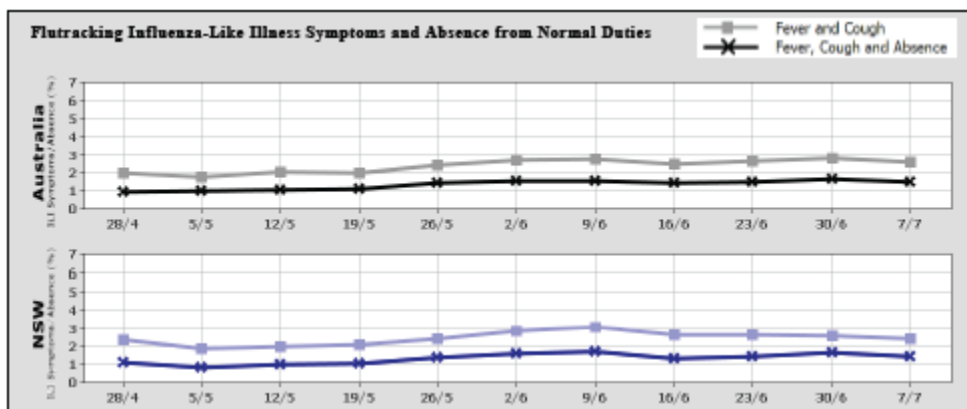
For further information please see the [ASPREN](#) website.

### 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 7 July, FluTracking received reports for 4513 people in NSW. Fever and cough was reported by 2.4% of respondents, with 1.4% of respondents reporting fever, cough and absence from normal duties (Figure 5).

**Figure 6: FluTracking Influenza-Like Illness Symptoms and Absence from Normal Duties, Australia and NSW, to 28 April to 07 July, 2013.**



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

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

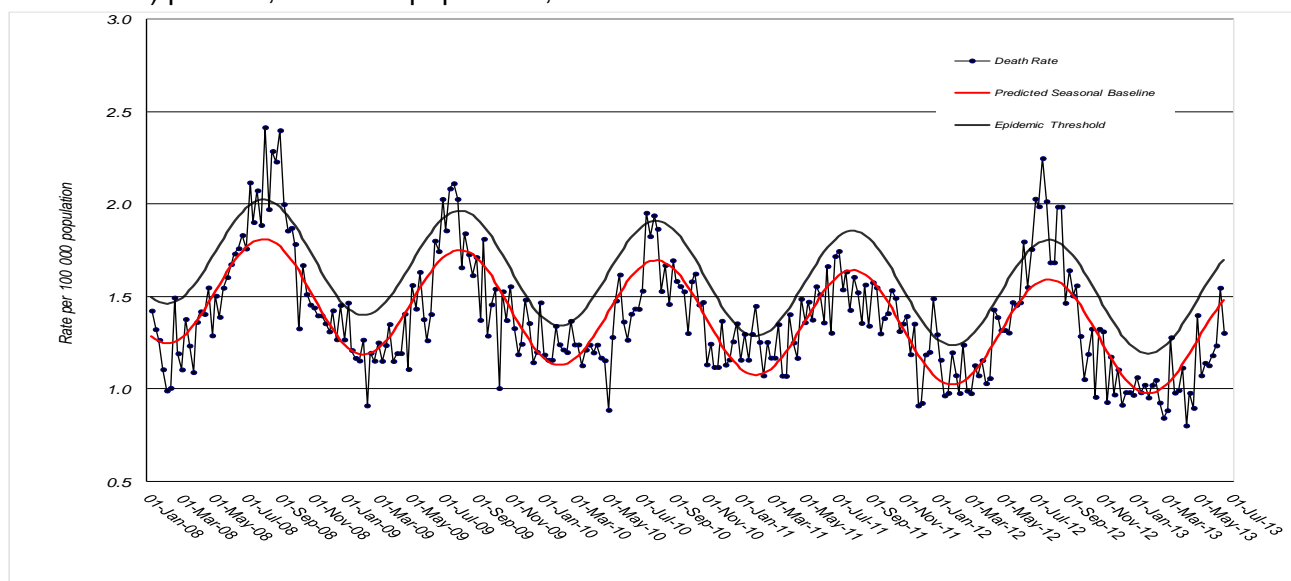
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 21 June:

- There were 1.30 pneumonia or influenza deaths per 100,000 NSW population, which is below the epidemic threshold of 1.69 per 100,000 population (Figure 7).
- Up to 21 June, out of 22,666 deaths there were 3 death certificates mentioning influenza, and 1,967 mentioning pneumonia. The majority of these influenza and pneumonia deaths were in persons aged greater than 65 years.

**Figure 7: 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

### Avian influenza A(H7N9) in China

No new cases have been reported since 21 May. Although, WHO was notified this week of an additional retrospectively detected laboratory-confirmed case of human infection with avian influenza A(H7N9) virus. To date, WHO has been informed of a total of 133 laboratory-confirmed cases, including 38 deaths.

### Influenza activity worldwide

In summary during weeks 24 and 25, WHO has reported:

- Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal level
- In most regions of tropical Asia influenza activity decreased, except for Sri Lanka and Viet Nam where influenza A activity remained relatively high.
- In Central America and the Caribbean, influenza activity remained low or similar compared to previous weeks, except in Cuba and the Dominican Republic where high influenza activity was reported and in Costa Rica, El Salvador and Panama, where influenza activity began to increase.
- Influenza activity in the southern hemisphere increased considerably in South America and in Southern Africa but remained low in Oceania. In South America, respiratory syncytial virus remained the predominant circulating virus, but the proportion of influenza positive viruses continued to increase. For further information please go to [WHO influenza update No189](#).

### 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.