NSW Health Influenza Surveillance Report

Week 32 Ending 11 August 2013

Influenza Surveillance Forecast (Update):

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

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 11 August 2013, influenza activity continued to increase. There is no indication yet that influenza activity has peaked in the current influenza season.

- Emergency Department surveillance – the index of increase for influenza-like illness (ILI) presentations was above the seasonal threshold. The current level is consistent with the winter influenza season. Admissions to critical care wards also increased.
- Laboratory surveillance – the proportion of respiratory samples positive for influenza A and B increased further this week (18.1%), 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 show steady increases.
- 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

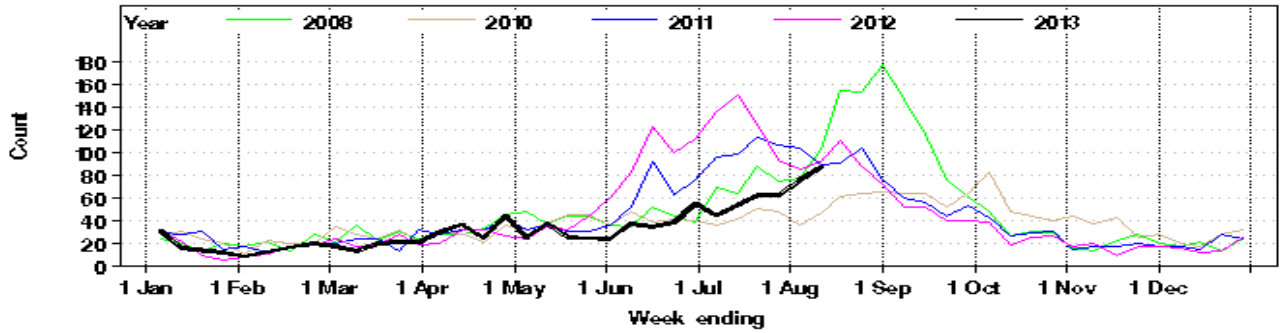
Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts 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 a considered an important signal for the start of the influenza season in NSW as it suggests influenza is circulating widely in the community.

- On 11 August 2013, the index of increase for ILI presentations was 27.6, which was consistent with rising activity during an influenza season.
- ILI activity increased further this week to a rate of 2.2 cases per 1000 presentations. The total count for ILI presentations also increased further this week but was within the usual range (Figure 1 and Table 1).
- Combined ILI and pneumonia admissions to critical care wards increased this week and were at the higher end of the usual range for this time of year (Figure 2 and Table 1).
- Presentations for respiratory illness, fever or unspecified infections in children aged 0-4 years and adults aged 35 years and over increased above the usual range for this time of year within the Sydney, South Western Sydney and Western Sydney Local Health Districts (Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 11 August 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 –11 August 2013 (black line), compared with each of the 5 previous years (coloured lines).

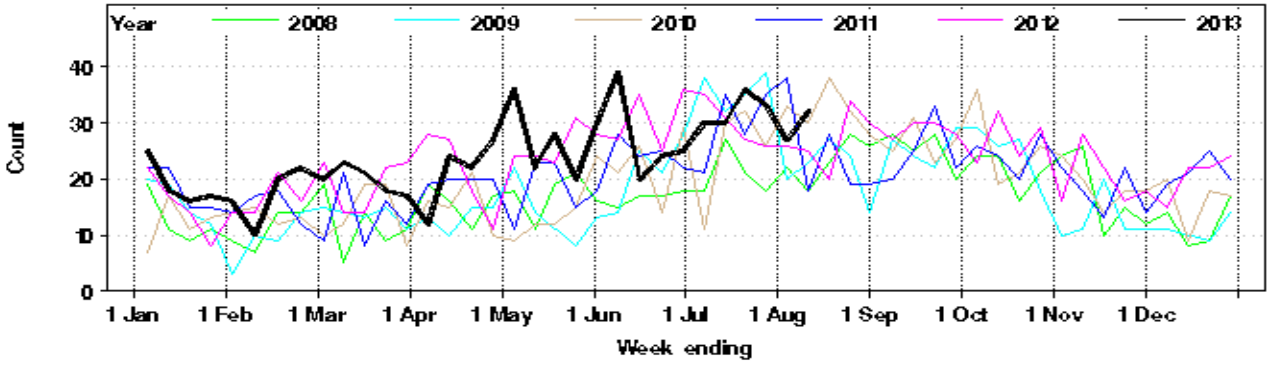


Table 1: Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW EDs and the Sydney Ambulance Division. *

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)	Increased	Usual				
	Pneumonia	Increased	Above				
	Pneumonia and ILI admissions	Increased	Above				
	Pneumonia and ILI critical care admissions	Decreased	Usual				
	Bronchiolitis	Increased	Usual				
	Respiratory illness, fever or unspecified infections	Increased	Above	**0-4 years, 35 years and over**	**Western Sydney, South Western Sydney, Northern Sydney and Sydney LHDs**		
	Asthma	Increased	Above				
	Total presentations (compared with 2012 only)	Increased	Above				Overall, 8% higher than the same week in 2012. Admissions from ED were 10% higher.
Ambulance calls, Sydney region	Breathing problems	Increased	Above				

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

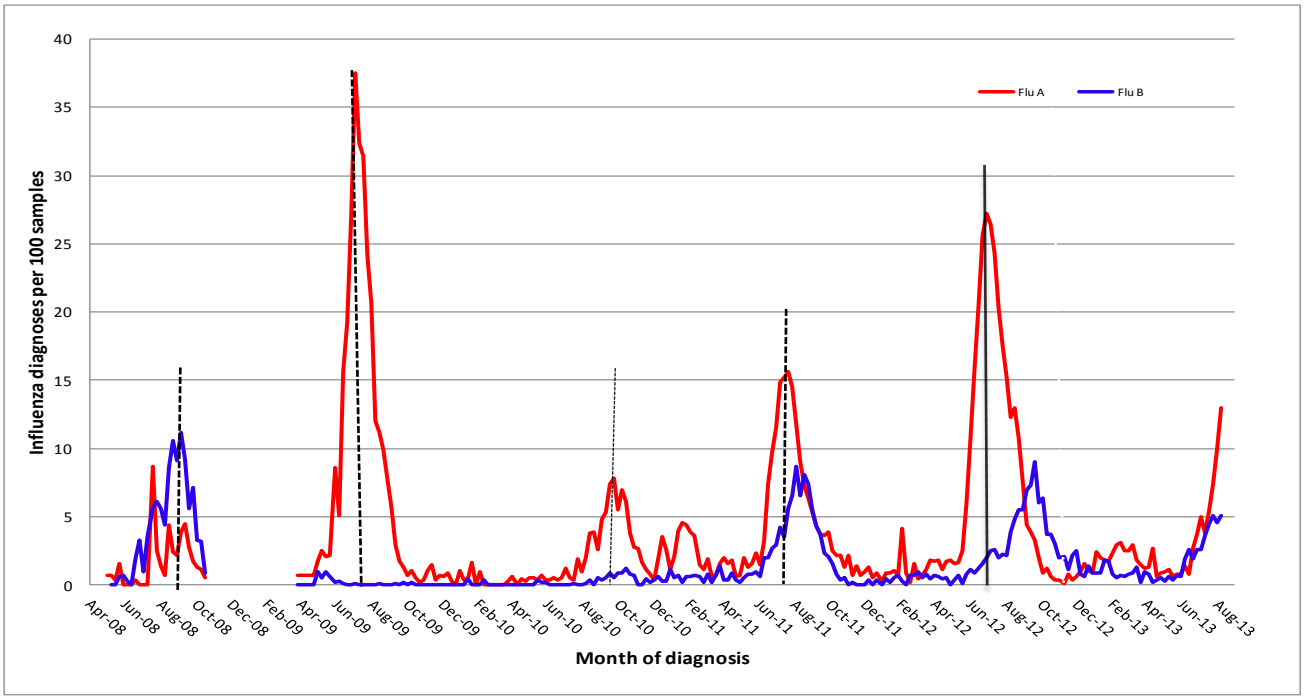
A total of 1756 tests for respiratory viruses were reported with 318 specimens (18.1%) testing positive for influenza viruses. Influenza A viruses are predominating, with A(H1N1) pdm09 circulating at higher levels than A(H3N2). Influenza B activity increased this week.

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 11 August 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%)	21	(19.8%)	45	(42.5%)	108	(2.2%)	109	105	663	685	44	94
28/07/2013	6051	397	(6.6%)	30	(7.6%)	151	(38.0%)	240	(4.0%)	164	131	714	672	49	206
Week ending															
04/08/2013	1667	167	(10.0%)	14	(8.4%)	70	(41.9%)	76	(4.6%)	43	31	120	151	5	65
11/08/2013	1756	228	(13.0%)	10	(4.4%)	116	(50.9%)	90	(5.1%)	58	44	93	167	11	69

** 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 3: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2008 – 11 August 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], Laverty Pathology [data from 1 April 2010 to February 2011] and SydPath (St Vincent's) Pathology [data since Nov 2010].

3. Community Illness Surveillance

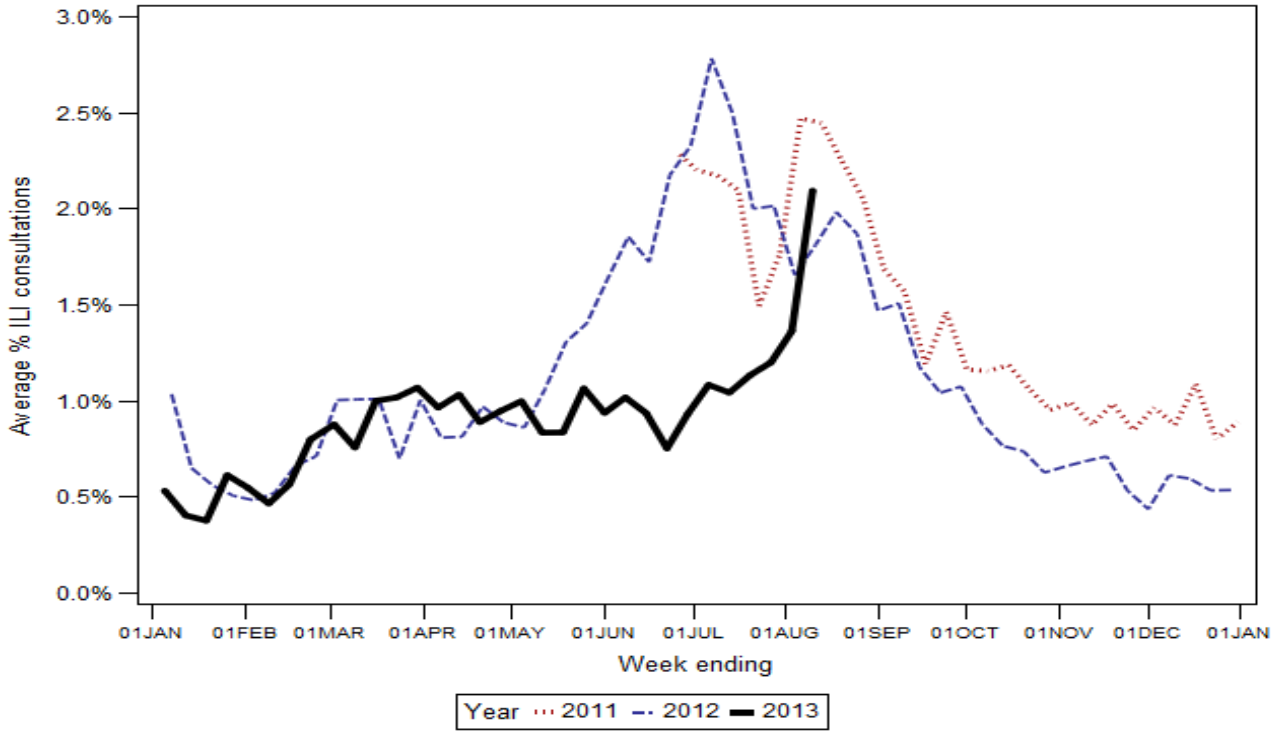
Electronic General Practice Surveillance (eGPS)

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 32 (ending 8 August), reports were received from 19 sentinel practices.
- The average rate for patient consultations with ILI increased to 2.1% (range 0.1 – 5.7%). This compares to 1.4% in the previous week (Figure 4) and is similar to 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.

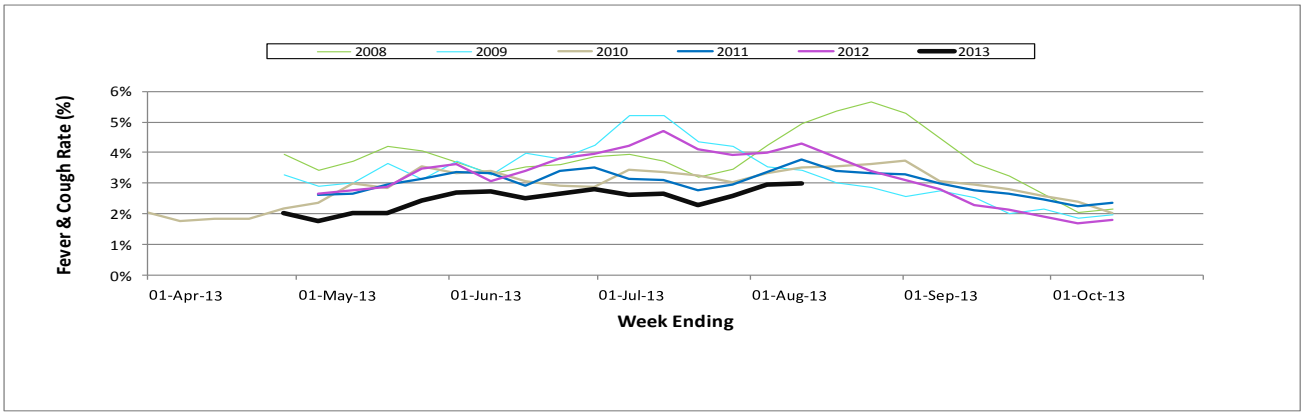
- For the week ending 11 August, there were 30 ASPREN reports received from NSW GP's. The average rate for people presenting with ILI was 3.1% of consultations, similar to 2.9% in the previous week. For further information please see the ASPREN website.

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 11 August, FluTracking received reports for 4960 people in NSW. Fever and cough reports were similar to the previous week 3.0% of respondents and remained below the usual range for this time of year (Figure 5). Overall, 1.9% 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

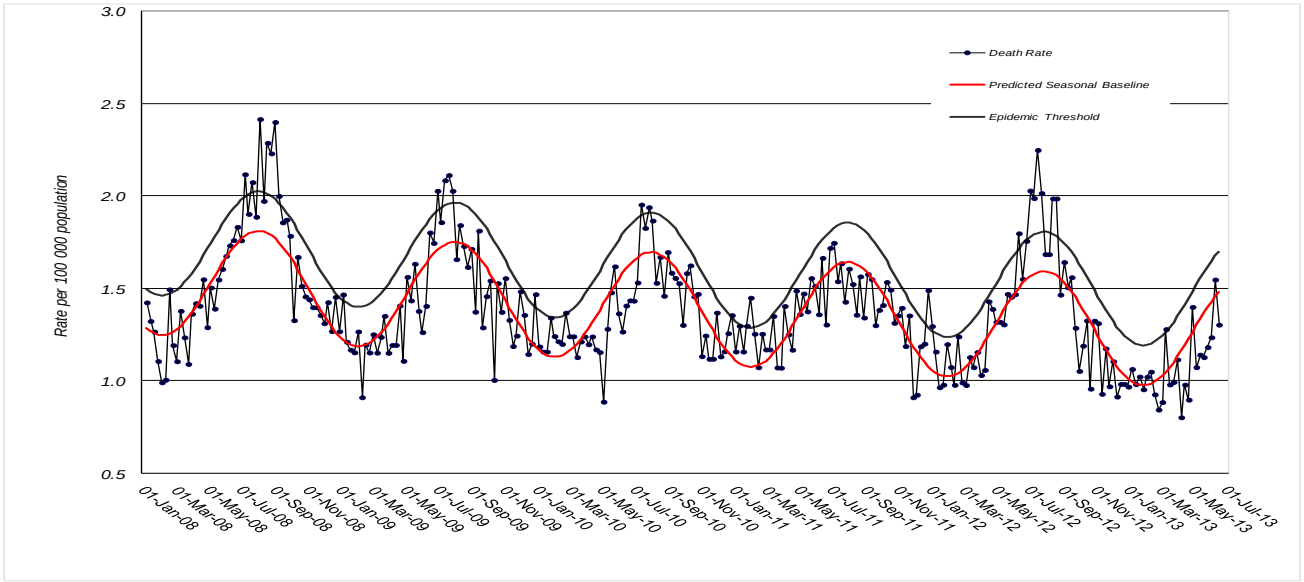
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 26 July:

- There were 1.00 pneumonia or influenza deaths per 100,000 NSW population, which is below the epidemic threshold of 1.76 per 100,000 population (Figure 6).
- Up to 26 July, out of 27,869 deaths there were 4 death certificates mentioning influenza, and 2,492 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

Avian influenza A(H7N9) in China

No new cases have been reported this week. To date, WHO has been informed of a total of 134 laboratory-confirmed cases, including 43 deaths.

A serology study in a Chinese province hit hardest by novel H7N9 influenza found evidence of asymptomatic or mild infections in 6.3% of poultry workers but none in the general community, suggesting that poultry are the source of the outbreak and mild and asymptomatic cases may be more common than first thought. See The Journal of Infectious Diseases.

Influenza activity worldwide

In summary during weeks 28 and 29, WHO has reported:

- Influenza activity in the northern hemisphere temperate zones remained at inter-seasonal levels. The United States of America reported 14 cases of human infection with influenza A(H3N2)v so far this year, since the first case in June. More details can be found at http://www.cdc.gov/flu/swineflu/h3n2v-cases.htm.
- In most regions of tropical Asia influenza activity decreased, except for Cambodia, India and Viet Nam where there are some signs of increasing influenza A activity. In Central America and the Caribbean regions, influenza activity continued to increase in Costa Rica, El Salvador and Nicaragua, remained high in Cuba, and decreased in the Dominican Republic. In tropical South America, influenza A(H1N1)pmd09 became the predominant circulating virus in most countries, except in Ecuador where RSV remained the most commonly detected respiratory virus.
- Influenza transmission peaked in the southern cone of South America and in South Africa in late June. In all of those areas, transmission was primarily associated with influenza A(H1N1)pdm09.
- In Australia and New Zealand, numbers of influenza viruses detected and rates of influenza-like illness have been lower than in previous years, but have not yet definitively peaked. Influenza A(H3N2) and type B have been much more commonly detected than A(H1N1)pdm09 in both countries. For further information see WHO influenza update No191.

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.