Influenza Weekly Epidemiology Report, NSW

7 to 13 July 2012

Produced by: Public and Population Health Division, NSW Ministry of Health.

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

For the week ending 13 July 2012:

- The influenza-like illness (ILI) presentation rate to selected emergency departments (ED) increased and remained above the usual range for this time of year.
- ED admissions to critical care units for ILI and pneumonia decreased this week, but were above peak levels in recent years, particularly in the over 65 year age group.
- ED activity in a range of respiratory illness categories continued to be at or above peak levels in the over 65 year age group.
- Laboratory testing data shows that influenza A(H3N2) activity remains high.
- Almost all circulating influenza A (H3N2) viruses are A/Victoria/361/2011-like. The WHO Collaborating Centre for Reference and Research on Influenza advises that current influenza vaccines are likely to induce significant protection against this new H3N2 lineage.
- The population death rate for influenza and pneumonia was below the epidemic threshold (as of 22 June).

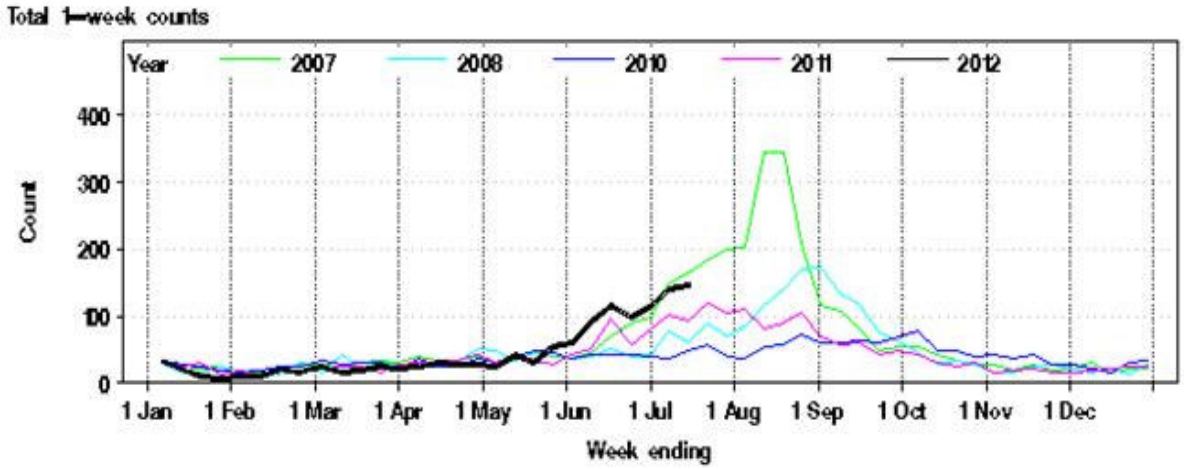
2. Emergency Department (ED) presentations

Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding six years. Recent counts are subject to change.

Presentations for influenza-like illness and other respiratory illness

- Activity for respiratory illness in people aged 65 years or older was at or above peak levels in a range of ED categories, and for Ambulance calls in the Sydney region (Table 1).
- The total number of patients presenting to ED with influenza-like illness (ILI) increased this week (rate of 4.0 cases per 1000 presentations) and is above the usual range for this time of year (Figure 1 and Table 1). Activity remains well below the peak activity level seen in 2007.
- Total admissions from ED to critical care units for ILI and pneumonia decreased but remained above peak levels in recent years (Figure 2), particularly in the over 65 year age group.
- The number of patients presenting with any respiratory illness declined compared with the previous week and counts were within the usual range of recent years.

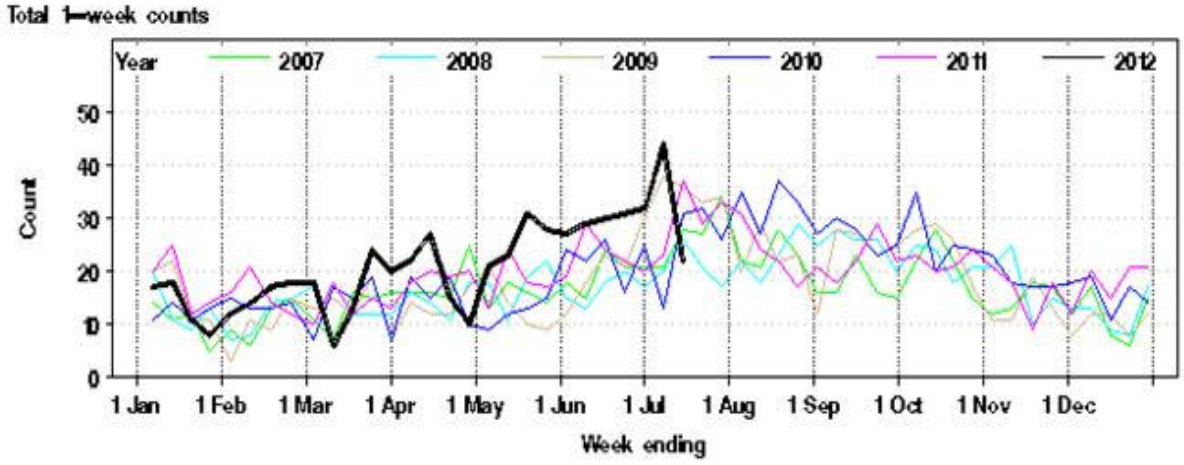
Figure 1: Total weekly counts of Emergency Department visits for influenza-like illness, from January – July 2012 (black line), compared with each of the 5 previous years (coloured lines) excluding 2009, for 59 NSW hospitals.*



Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the Centre for Epidemiology and Intelligence, NSW Health Centre for Population Health.

*** Note:** Excludes data from 2009 to enable easier comparison of 2012 data with data from previous non-pandemic years. Includes data from 59 emergency departments.

Figure 2: Total weekly counts of Emergency Department visits for pneumonia and influenza-like illness, which were subsequently admitted to a critical care ward, from January – July 2012 (black line), compared with each of the 5 previous years (coloured lines), for 59 NSW hospitals.



Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the Centre for Epidemiology and Intelligence, NSW Health Centre for Population Health.

Table 1: Weekly Emergency Department and Ambulance Respiratory Activity Summary - data up to 13 July 2012. Includes 59 NSW Emergency Departments (EDs) and 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	**Above previous years except 2007**		**St George Hospital**		St George was above the previous seasonal peak of August 2007.
	Pneumonia	Increased	**Above**	**65+ years**	**Murrumbidgee LHD, and Griffith, Mount Druitt and Belmont Hospitals**		Overall levels were well above peak levels in recent years, including 2007 and 2009. In over 65 year-olds, levels were 75% higher than usual for this time of year. In younger adults levels were above peak levels in 2007 but below those of 2009.
	Pneumonia and ILI admissions	Increased	**Above previous years except 2009**	**65+ years**	**Griffith, Mount Druitt and Belmont Hospitals**		In over 65 year-olds, levels were 60% higher than usual for this time of year. Mount Druitt and Griffith are above previous peaks. In younger adults levels were above peak levels in 2007 but below those of 2009.
	Pneumonia and ILI critical care admissions	Decreased	Usual				In over 65 year-olds, levels remained above the usual range for this time of year.
	Bronchiolitis	Decreased	Usual				
	Respiratory, fever and unspecified infections	Steady	Usual	**65+ years**			Overall levels were well above peak levels in recent years, including 2007 and 2009. In over 65 year-olds, levels were 54% higher than usual for this time of year.
	Asthma	Decreased	Usual				
	Total presentations	Steady	8% above 2011. In 65+ years, 17% above 2011.				Total inpatient admissions from ED were 8% above 2011 and in over 65 year-olds were 14% above.
Ambulance calls, Sydney region	Breathing problems	Increased	**Above**	**65+ years**			In over 65 year-olds, levels were 41% higher than usual for this time of year.

Notes on Table 1:

(1) Statistically significant increases are shown in bold.

(2) This report summarises activity from 59 Emergency Departments (EDs) across NSW and the Sydney Ambulance Operations Region. It provides information on general respiratory activity. Recent activity counts are subject to change.

(3) 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. It is prepared by the Centre for Epidemiology and Research.

3. Laboratory testing summary for influenza

For the week ending 13 July:

- A total of 1904 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 2).
- Over 24% of specimens tested positive for influenza A. Of these, 290 tested positive for influenza A(H3N2) and one for influenza A(pH1N1). The remainder tested negative to influenza A(pH1N1) and are assumed to have been A(H3N2) (Table 2, Figure 4).
- A total of 49 specimens tested positive for influenza B (Table 2, Figure 4).
- The proportion of respiratory specimens positive for influenza A decreased slightly compared to the previous week while influenza B increased slightly. Influenza A diagnoses remain much higher than for the same period in the past two years.

Influenza A(H3N2) continues to be the dominant respiratory virus identified by NSW laboratories.

NSW Health regularly sends a sample of influenza isolates to the WHO Collaborating Centre for Reference and Research on Influenza (WHOCC) in Melbourne for further characterisation. The most recent results indicate that the circulating influenza A (H3N2) viruses are almost all A/Victoria/361/2011-like, while influenza B isolates are mostly B/Brisbane/60/2008-like.

The A/Victoria/361/2011-like H3N2 virus lineage emerged after the production of the current Southern Hemisphere seasonal influenza vaccine and so is not specifically targeted by the vaccine. The WHOCC advises that the current influenza vaccine is still likely to induce significant protection against this new H3N2 lineage. The current vaccine does specifically target influenza B/Brisbane/60/2008-like viruses.

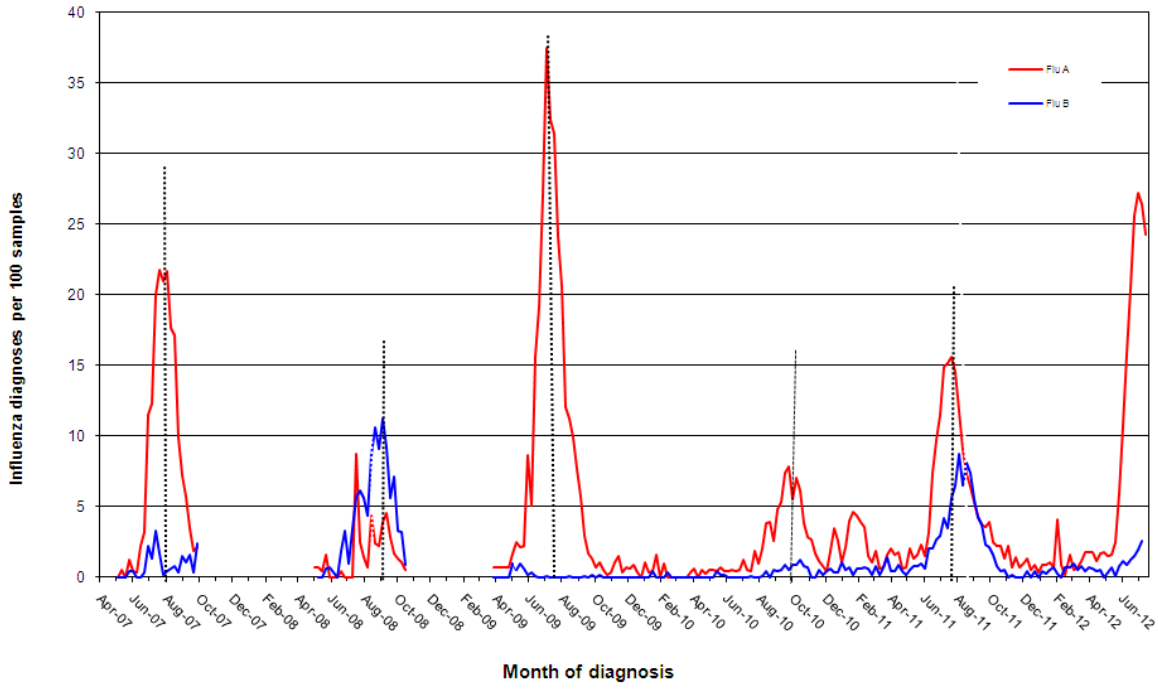
Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 13 July 2012.

Month ending	Total Tests	Influenza A		A(H3N2)		A(pH1N1)		Influenza B		Adeno.	Parainf. 1, 2 & 3	RSV	Rhino.	Entero.	HMPV**
		Total	(%)	Total	(% Flu A) *	Total	(% Flu A) *	Total	(%)						
27/01/2012	1617	14	(0.9%)	6	(42.9%)	4	(28.6%)	7	(0.4%)	37	60	38	119	64	36
02/03/2012*	2520	31	(1.2%)	12	(38.7%)	1	(3.2%)	15	(0.6%)	44	65	156	224	128	30
30/03/2012	2573	36	(1.4%)	25	(69.4%)	3	(8.3%)	16	(0.6%)	59	79	269	263	114	40
27/04/2012	2857	46	(1.6%)	31	(67.4%)	5	(10.9%)	11	(0.4%)	65	63	422	231	114	28
01/06/2012	4394	209	(4.8%)	166	(79.4%)	2	(1.0%)	30	(0.7%)	91	76	574	463	170	31
29/06/2012	5704	1316	(23.1%)	613	(46.6%)	2	(0.2%)	84	(1.5%)	96	68	558	535	16	53
Week ending															
06/07/2012	1736	459	(26.4%)	277	(60.3%)	0	(0.0%)	44	(2.5%)	34	13	146	136	4	11
13/07/2012	1904	462	(24.3%)	290	(62.8%)	1	(0.2%)	49	(2.6%)	42	23	162	117	7	19

* Subset of influenza A positive tests; ** HMPV = Human metapneumovirus

Note: Data is provided by laboratories on a weekly basis. Excludes point of care tests. Influenza laboratory diagnoses using virology are reported by South Eastern Area Laboratory Services (SEALS), Institute of Clinical Pathology and Medical Research (ICPMR), The Children's Hospital at Westmead (CHW), Sydney South West Area Services (SSWPS), Pacific Laboratory Medicine Services (PaLMS), Royal Prince Alfred Hospital (RPAH), Hunter Area Pathology Service (HAPS), St Vincent's (SydPath) , Nepean, Douglas Hanley Moir (DHM) , VDRLab .

Figure 4: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2007 – 13 July 2012, New South Wales.



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

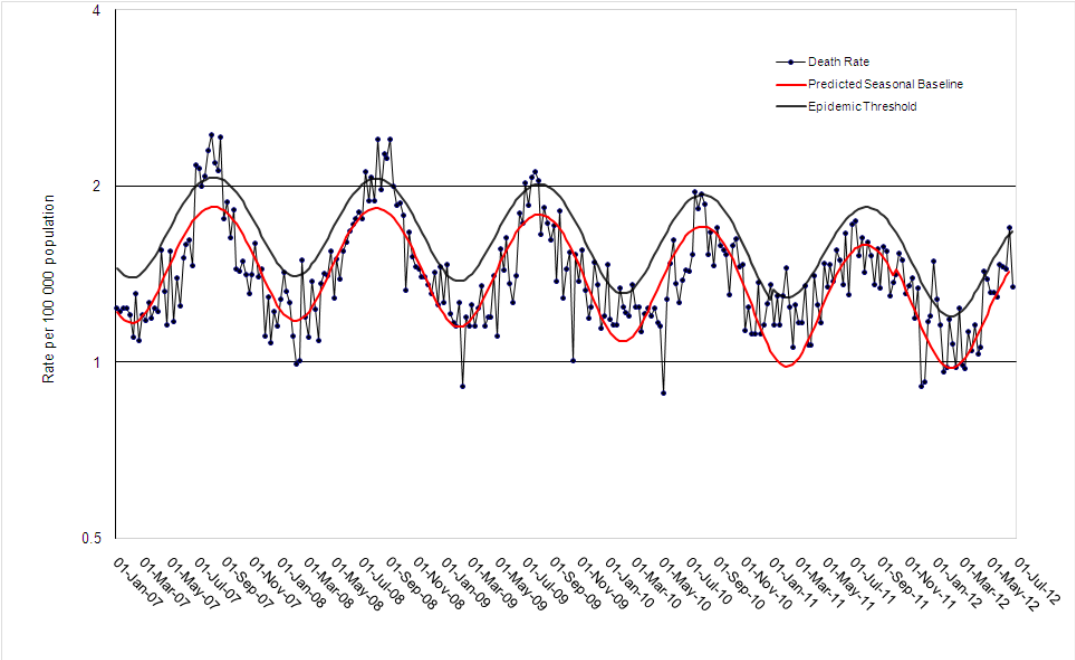
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 22 June:

- There were 1.35 pneumonia or influenza deaths per 100,000 NSW population, below the epidemic threshold of 1.68 per 100,000 population (Figure 5).*

Figure 5: Rate of deaths classified as influenza and pneumonia (by NSW Registered Death Certificates) per 100,000 NSW population, 2007 to 22 June 2012.



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 Links

Australian Influenza Surveillance Reports:
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-ozflu-2011.htm

World Health Organization Influenza Updates:
http://www.who.int/csr/disease/influenza/en/index.html

WHO Collaborating Centre for Reference and Research on Influenza (Melbourne):
http://www.influenzacentre.org/index.htm