Influenza Weekly Epidemiology Report, NSW

26 May to 1 June 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 1 June 2012:

- The influenza-like illness (ILI) presentation rate to selected emergency departments (EDs) increased but remained within the usual range for this time of year.
- ED admissions to critical care units for ILI and pneumonia continued to increase above the usual range seen for this time of year.
- Bronchiolitis presentation rates to EDs remained steady.
- Laboratory testing data indicated a further marked increase in influenza A/H3N2 activity.
- Influenza was the most common respiratory virus identified by sentinel laboratories, with nearly 12% of all specimens testing positive for influenza.
- The rate of deaths due to pneumonia or influenza remained below the seasonal threshold.

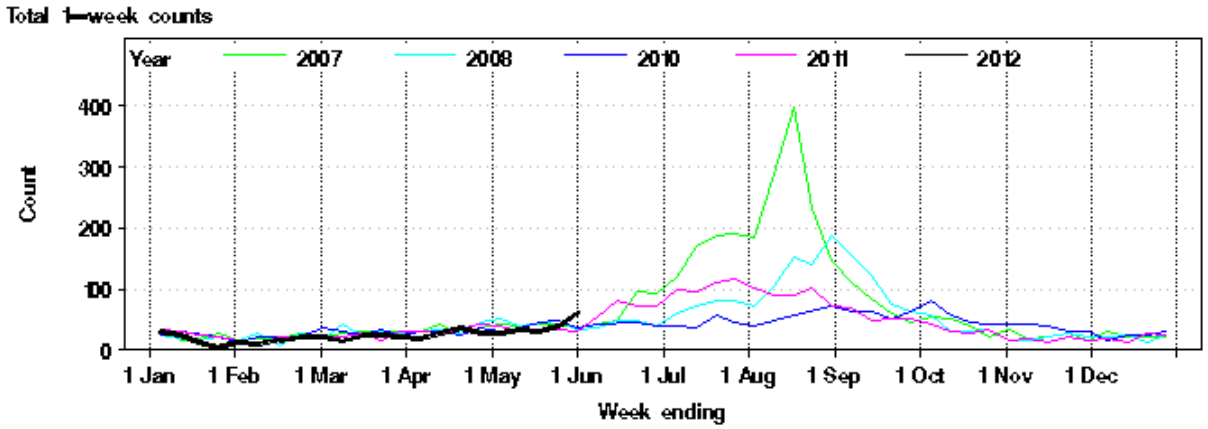
2. Emergency Department (ED) presentations

Data from 59 NSW emergency departments 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

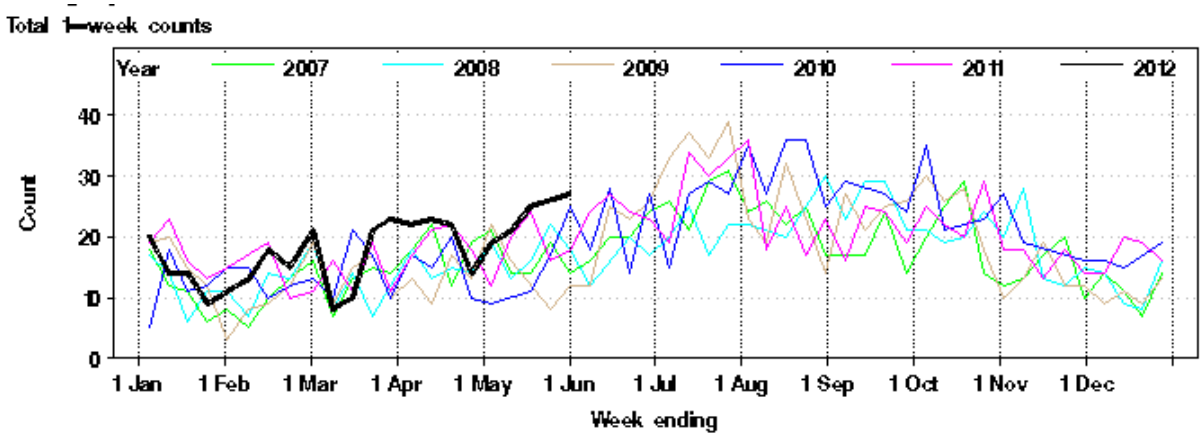
- The total number of patients presenting to EDs with influenza-like illness (ILI) increased this week (rate of 1.7 cases per 1000 presentations). However, it was within the usual range for this time of year (Figure 1 and Table 1).
- The majority (62%) of ILI presentations were reported in people aged 15 to 44 years of age.
- Total admissions from ED to critical care units for ILI and pneumonia continued to increase this week and was above the usual range for this time of year (Figure 2).
- Total ED presentations for bronchiolitis was steady this week and was just above the usual range for this time of year (Figure 3).
- ED presentations for ‘Pneumonia’ and for ‘Respiratory, fever and unspecified infections’ were above their usual ranges for this time of year (Table 1).

Figure 1: Comparison of weekly influenza-like illness presentations to NSW EDs, 2007-2012.*



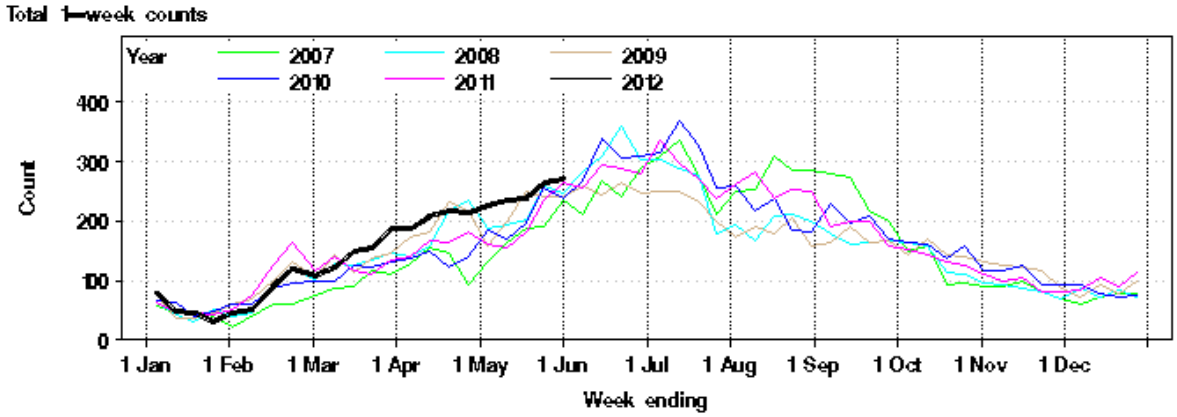
Note: Excludes data from 2009 to enable easier comparison of 2012 data with data from previous non-pandemic years. Includes data from 59 emergency departments. Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the Centre for Epidemiology and Research, NSW Health Department.

Figure 2: Comparison of weekly admissions to hospital critical care units for ILI and pneumonia, 2007-2012.



Note: As for Figure 1, although includes 2009

Figure 3: Comparison of weekly bronchiolitis presentations to NSW EDs, 2007-2012.



Note: As for Figure 1, although includes 2009

Table 1: Weekly Emergency Department and Ambulance Respiratory Activity Summary

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		**Auburn and RPA hospitals**		Counts at Auburn and RPA were low and have since declined.
	Pneumonia	Increased	**Above**			Recent situation report.	
	Pneumonia and ILI admissions	Steady	**Above**		**Western Sydney LHD**	Recent situation report.	
	Pneumonia and ILI critical care admissions	Increased	Above				
	Bronchiolitis	Increased	Slightly above				
	Respiratory, fever and unspecified infections	Steady	**Above**	**65+ years**	**South Western Sydney, Western Sydney and Sydney LHDs**		
	Asthma	Decreased	Usual		**Campbelltown**		Since declined.
	Total presentations	Steady	6.6% above 2011				
Ambulance calls, Sydney region	Breathing problems	Increased	**Above**	**65+ years**	**South Western Sydney and Sydney LHDs**		

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 1 June:

- 980 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 2).
- 105 specimens tested positive for influenza A. Of these, 67 tested positive for influenza A(H3N2) and only one was positive for influenza A(pH1N1). The remainder tested negative to influenza A(pH1N1) and are assumed to have been A(H3N2) (Table 2, Figure 4).
- 11 cases of influenza B were reported (Table 2, Figure 4).
- The proportion of respiratory samples that tested positive for influenza increased compared to the previous week and remained markedly higher than the average for this time of year.
- Fewer specimens tested positive for Respiratory syncytial virus (RSV) this week and is now below the usual range seen for this time of year

Influenza activity continued to increase across the State and is now the dominant respiratory virus identified by NSW laboratories. The number of samples positive for influenza A is consistent with an early start to the annual influenza season. The reduced RSV activity suggests NSW may now be past the RSV peak for this season.

NSW Health also regularly sends a sample of influenza isolates to the WHO Collaborating Centre for Reference and Research on Influenza in Melbourne for further characterisation. Results for influenza isolates submitted up to the end of March 2012 were as follows:

- All A/H3N2 isolates identified as A/Victoria/361/2011-like.

The A/Victoria/361/2011-like H3N2 virus lineage emerged after the production of the current Southern Hemisphere seasonal influenza vaccine. It is not yet known what level of protection will be induced by the current H3N2 component of the vaccine against this new lineage.

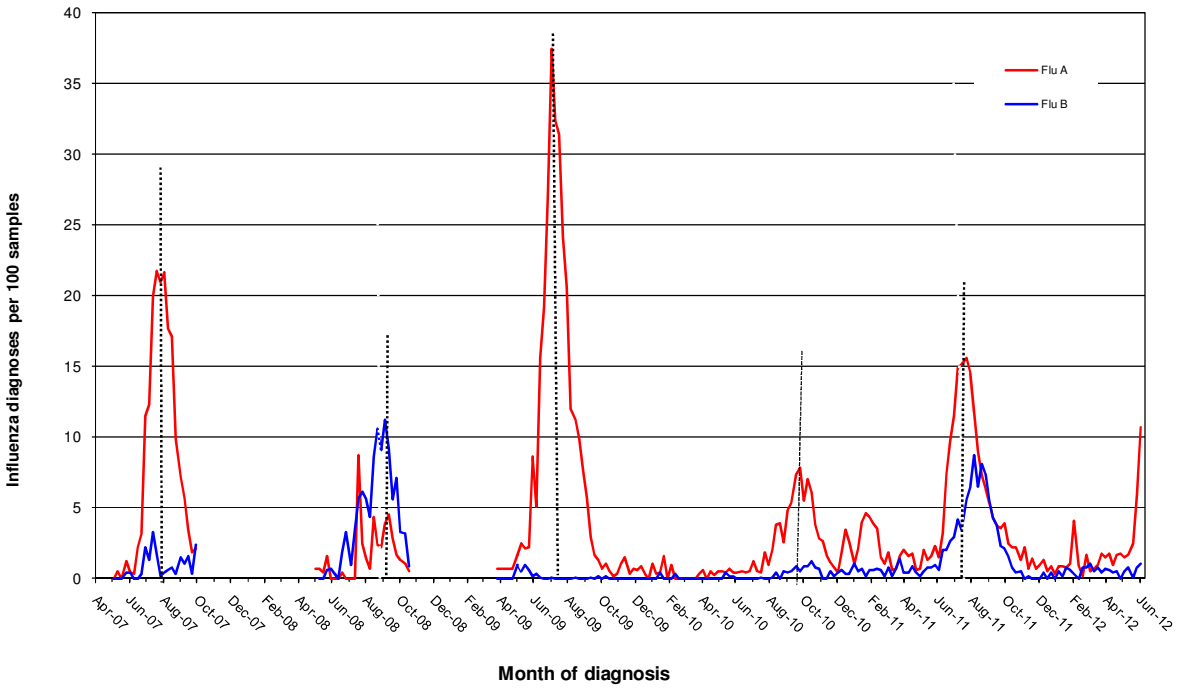
Table 2: Summary of testing for respiratory viruses and influenza at NSW laboratories 1 January to 1 June 2012.

W/E	Virology specimens tested	Influenza A (total pos) (%)	Influenza A (H3) (total pos) (%)	H1N1** influenza 09 (total pos) (%)	Influenza B (total pos) (%)	Adenovirus	Parainfluenza 1, 2 & 3	RSV	Rhinovirus	Enterovirus	HMPV***
27/01/2012	1617	14 (0.9%)	6 (43%)	4 (29%)	7 (0.4%)	37	60	38	119	64	36
02/03/2012*	2520	31 (1.2%)	12 (39%)	1 (3%)	15 (0.6%)	44	65	156	224	128	30
30/03/2012	2573	36 (1.4%)	25 (69%)	3 (9%)	16 (0.6%)	59	79	269	263	114	40
27/04/2012	2857	46 (1.6%)	31 (67%)	5 (9%)	11 (0.4%)	65	63	422 (14.7%)	231	114	28
Week ending											
04/05/2012	784	12 (1.5%)	10 (83%)	0	4 (0.5%)	20	15	127 (16.2%)	63	32	4
11/05/2012	808	13 (1.6%)	9 (69%)	0	6 (0.7%)	8	15	114 (14.1%)	92	31	4
18/05/2012	848	21 (2.5%)	10 (48%)	0	1 (0.1%)	16	9	108 (12.7%)	108	38	7
25/05/2012	974	58 (6.0%)	32 (55%)	1 (1.7%)	8 (0.8%)	23	19	134 (13.8%)	87	33	7
01/06/2012	980	105 (10.7%)	67 (64%)	1 (1.0%)	11 (1.1%)	24	18	91 (9.3%)	113	36	9

** Subset of influenza A cases *** 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), South West Area Pathology Services (SWAPS), 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 laboratory tests positive for influenza A and influenza B, 1 January 2007 – 1 June 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 11 May:

- There were 1.2 pneumonia or influenza deaths per 100,000 NSW population, below the seasonal threshold of 1.5 per 100,000 population (Figure 6).*

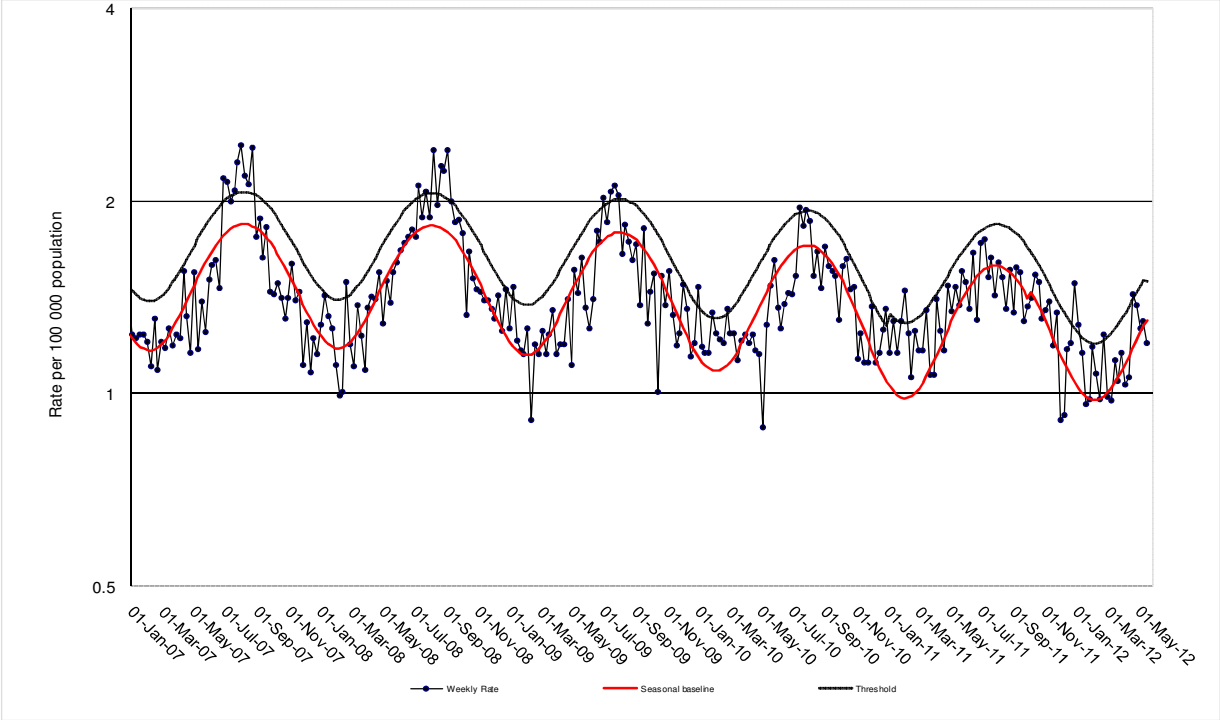

Figure 6: Rate of deaths classified as influenza and pneumonia (by NSW Registered Death Certificates) per 100,000 NSW population, 2007-2012

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

For the latest information on national influenza activity please see the Australian Influenza Surveillance Reports at the following website:
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-ozflu-2011.htm

For the latest information on international influenza activity please see the World Health Organization Influenza Updates at the following website:
http://www.who.int/csr/disease/influenza/en/index.html

For the information on current strains covered in this year's influenza vaccine see WHO Collaborating Centre for Reference and Research on Influenza at the following website:
http://www.influenzacentre.org/centre_vaccines.htm