

Influenza Weekly Epidemiology Report, NSW

23 to 29 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 29 June 2012:

- The influenza-like illness (ILI) presentation rate to selected emergency departments (ED) decreased but remained above the usual range for this time of year.
- The number of ED admissions to critical care units for ILI and pneumonia increased this week and was within the usual range seen for this time of year.
- ED activity in a range of respiratory illness categories was at or above peak levels for people aged 65 years or older.
- 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.

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.

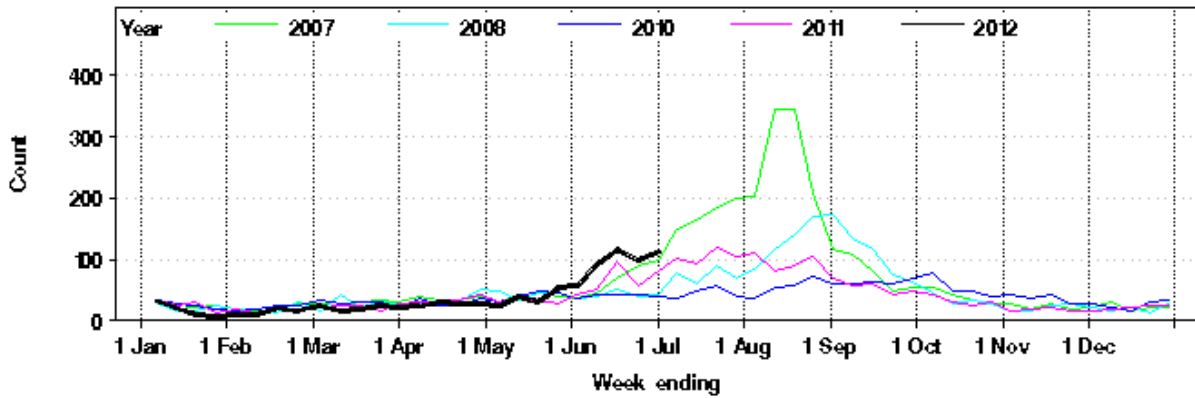
Presentations for influenza-like illness and other respiratory illness

- 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) eased slightly this week (rate of 2.9 cases per 1000 presentations) but still remains above the usual range for this time of year (Figure 1 and Table 1).
- Total admissions from ED to critical care units for ILI and pneumonia increased this week and are higher than usual for this time of year (Figure 2).
- ED presentations for 'Pneumonia' and for 'Respiratory, fever and unspecified infections' were above their usual ranges for this time of year (Table 1). Respiratory illness presentations in persons aged 65 years or older increased and were 39% higher than average for this time of year.
- Total ED presentations for bronchiolitis increased this week but were within the usual range for this time of year (Figure 3).

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

Category: All visits with the above inclusions

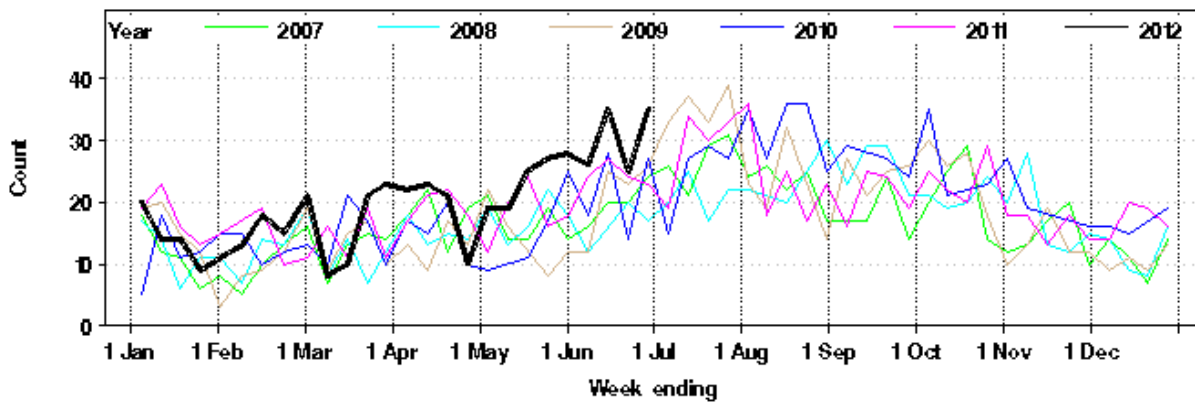
Total 1-week counts



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.

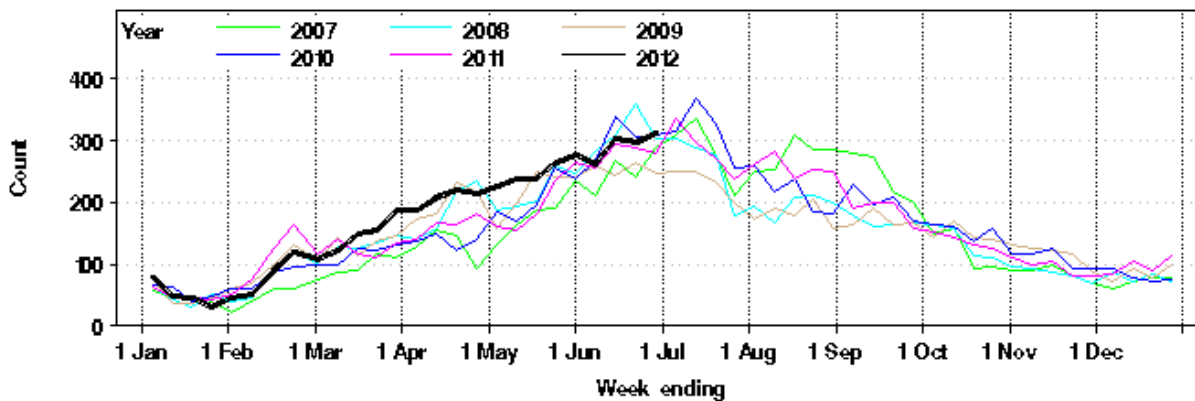
Total 1-week counts



Note: As for Figure 1, although includes 2009

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

Total 1-week counts



Note: As for Figure 1, although includes 2009.

Table 1: Weekly Emergency Department and Ambulance Respiratory Activity Summary
2 July 2012 (includes data up to 29 June 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)	Decreased	Above		Westmead, Lismore, St Vincent's and Canterbury EDs		
	Pneumonia	Decreased	Above	65+ years	Belmont ED		In over 65 year-olds, levels remained well above peak levels of recent years and were 59% higher than usual for this time of year. The increase at Belmont ED has since declined.
	Pneumonia and ILI admissions	Increased	Above	65+ years			In over 65 year-olds, levels remained well above peak levels of recent years and were 51% higher than usual for this time of year.
	Pneumonia and ILI critical care admissions	Increased	Usual		Sydney LHD		
	Bronchiolitis	Increased	Usual		Western Sydney LHD, Dubbo ED		
	Respiratory, fever and unspecified infections	Decreased	Above	65+ years, 35-64 years	Hunter New England LHD, Maitland ED		In over 65 year-olds, levels remained well above peak levels of recent years and were 39% higher than usual for this time of year. In 35-64 year-olds, levels were well above usual for this time of year, but below peak levels of recent years.
	Asthma	Decreased	Usual				
	Total presentations	Steady	5% above 2011				
Ambulance calls, Sydney region	Breathing problems	Increased	Above	65+ years			In over 65 year-olds, levels were well above peak levels of recent years and were 27% higher than usual for this time of year. In 35-64 year-olds, levels were 29% higher than usual.

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 29 June:

- A total of 1664 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 2).
- Over 28% of specimens tested positive for influenza A. Of these, 264 tested positive for influenza A(H3N2). The remainder tested negative to influenza A(pH1N1) and are assumed to have been A(H3N2) (Table 2, Figure 4).
- A total of 34 specimens tested positive for influenza B (Table 2, Figure 4).
- The proportion of respiratory specimens positive for influenza increased again compared to the previous week and remains much higher than in the past two years.

Influenza activity increased again across the State and 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 almost all 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.

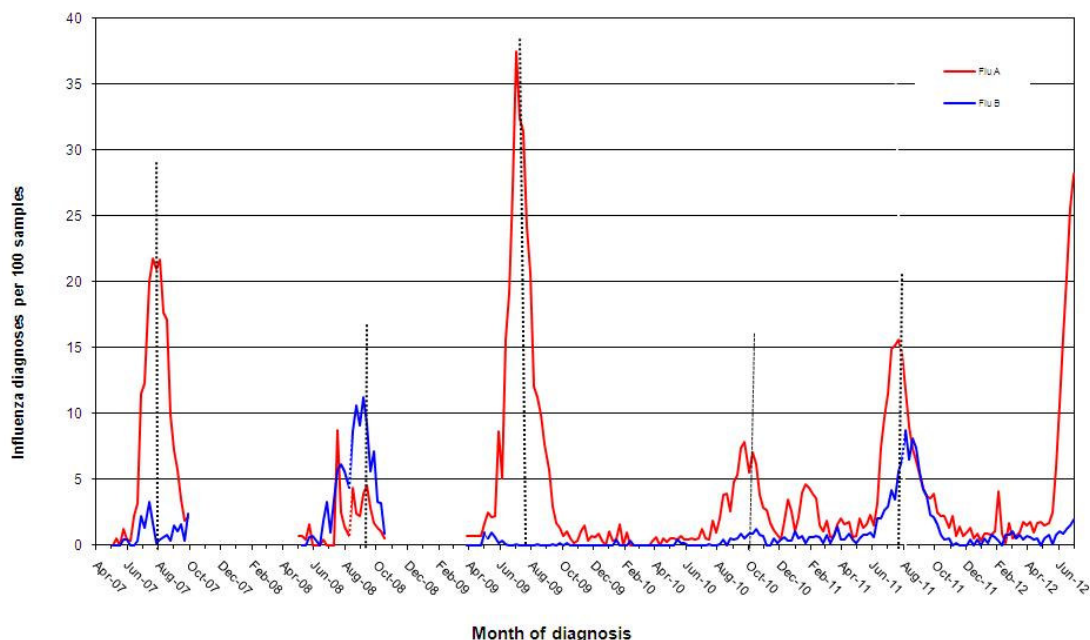
Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 29 June 2012.

Month ending	Virology specimens tested	Influenza A (total pos) (%)	Inf. A(H3N2) (total pos) (% Flu A) *	Inf. A(pH1N1) (total pos) (% Flu A) *	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 (11%)	11 (0.4%)	65	63	422 (14.7%)	231	114	28
01/06/2012	4394	209 (4.7%)	166 (79%)	2 (0.1%)	30 (1.3%)	91	76	574 (13.6%)	463	170	31
Week ending											
08/06/2012	1233	196 (15.8%)	104 (53%)	0	11 (0.9%)	25	10	127 (10.9%)	161	1	11
15/06/2012	1298	265 (20.4%)	106 (40%)	0	16 (1.2%)	28	28	119 (9.2%)	88	2	7
22/06/2012	1509	386 (25.6%)	139 (36%)	2	23 (1.5%)	21	9	154 (10.2%)	154	8	13
29/06/2012	1664	469 (28.2%)	264 (56.3%)	0	34 (2.0%)	22	21	158 (9.5%)	132	5	22

* 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 – 29 June 2012, New South Wales.



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 Pathology Services (SSWPS), Pacific Laboratory Medicine Services (PaLMS), Royal Prince Alfred Hospital (RPAH), Hunter Area Pathology Services (HAPS), St Vincent's (SydPath), Nepean (no data between Oct 2010 to June 2011), Douglas Hanley Moir (DHM), VDRLab from 5 March 2010, Laverty (data from 1 April 2010 to February 2011) and St Vincent's (data since November 2010).

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

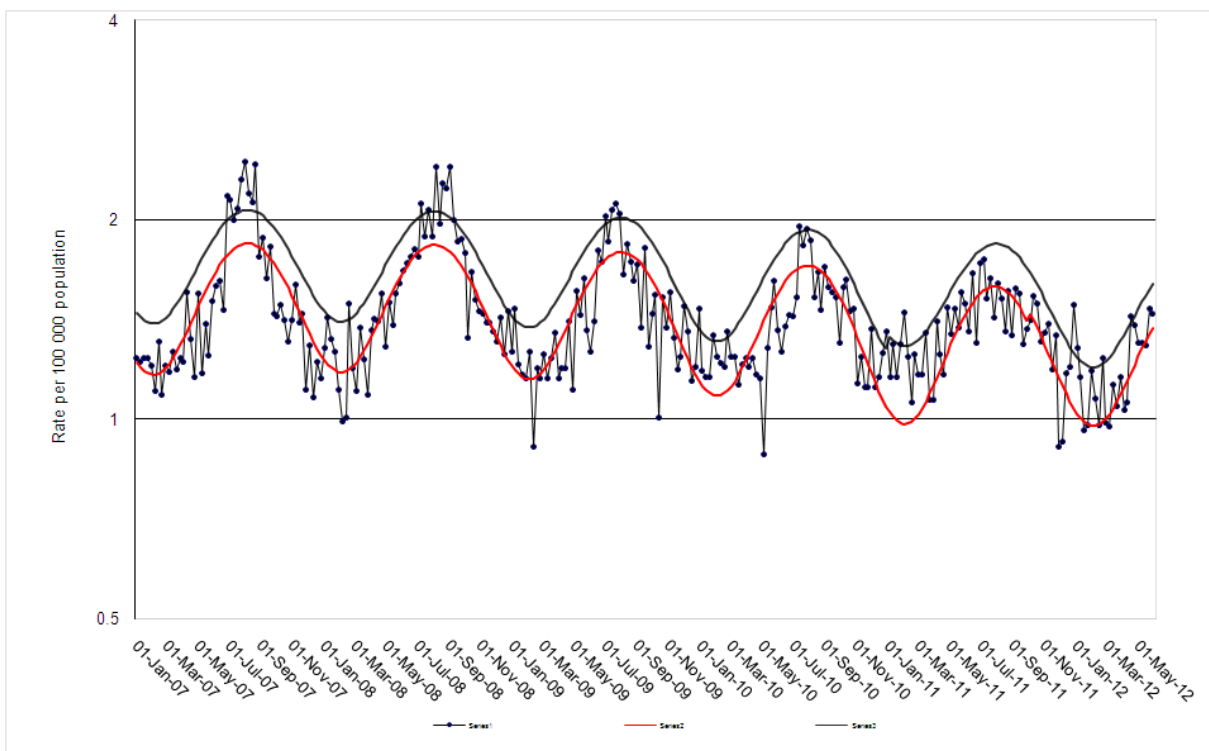
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 8 June:

- There were 1.4 pneumonia or influenza deaths per 100,000 NSW population, below the seasonal threshold of 1.6 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 8 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>