

# Influenza Monthly Epidemiology Report, NSW

## Including a summary for the year 2011

December 2011

Produced by: Population Health Division, NSW Health.

Please note influenza reports will now only be produced on a monthly basis until May 2012, unless unusual activity becomes apparent over the summer months

This report describes the surveillance for influenza, and other respiratory pathogens, undertaken by the NSW Ministry of 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

#### In December 2011:

- the rate of influenza like illness (ILI) presentations to selected emergency departments was low and is within the normal range expected for December
- 19 cases with laboratory-confirmed influenza A-predominantly H3N2 and 4 cases of influenza B were identified by sentinel laboratories
- Rhinovirus was the most common respiratory virus identified by sentinel laboratories.

From 1 January to 31 December 2011:

- ILI presentations to selected emergency departments remained low and were below the normal expected range throughout the year
- 2438 cases of laboratory confirmed influenza A – of which 1682 (69% were pH1N1) and 95 (4% were H3N2) were reported in NSW. The remaining 639 cases all tested negative to pH1N1 and were assumed to be due to A(H3N2).
- 1215 cases of influenza B were reported in NSW
- At least sixty-one patients with confirmed influenza were admitted to intensive care units (ICU)
- Nine deaths were reported in association with confirmed influenza in NSW, five of these were in children.

### 2. Emergency Department (ED) presentations

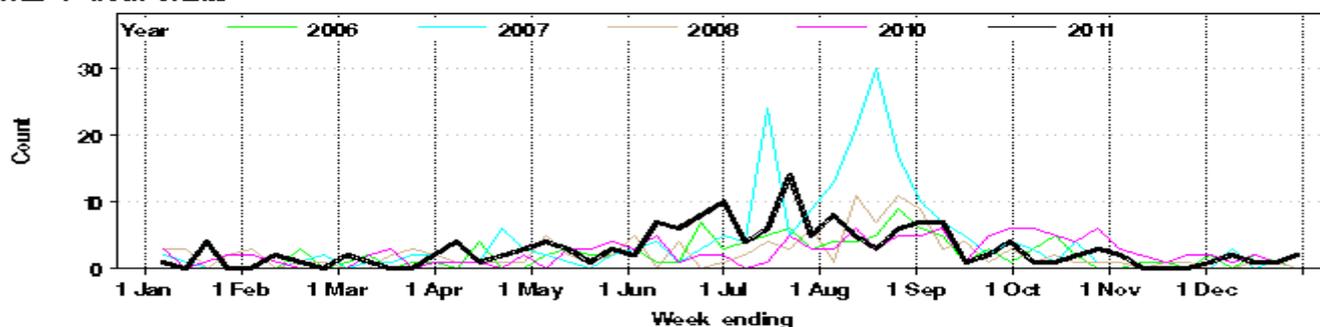
Data from 56 NSW emergency departments are included. Comparisons are made with data for the preceding six years. Recent counts are subject to change.

## Presentations for influenza-like illness

**Figure 1:** Comparison of weekly influenza-like illness presentations to NSW emergency departments, 2006-2011\*

**Category:** All visits with the above inclusions

Total 1-week counts



**Note:** Excludes data from 2009 to enable easier comparison of 2010 data with data from previous non-pandemic years. Some people presenting to NSW emergency departments have been referred to an influenza clinic without being recorded in the regular ED information system. (Under-reporting of influenza-related ED presentations will occur in this situation.) Includes data from 56 emergency departments. Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the NSW Emergency Department Data Collection (HOIST).

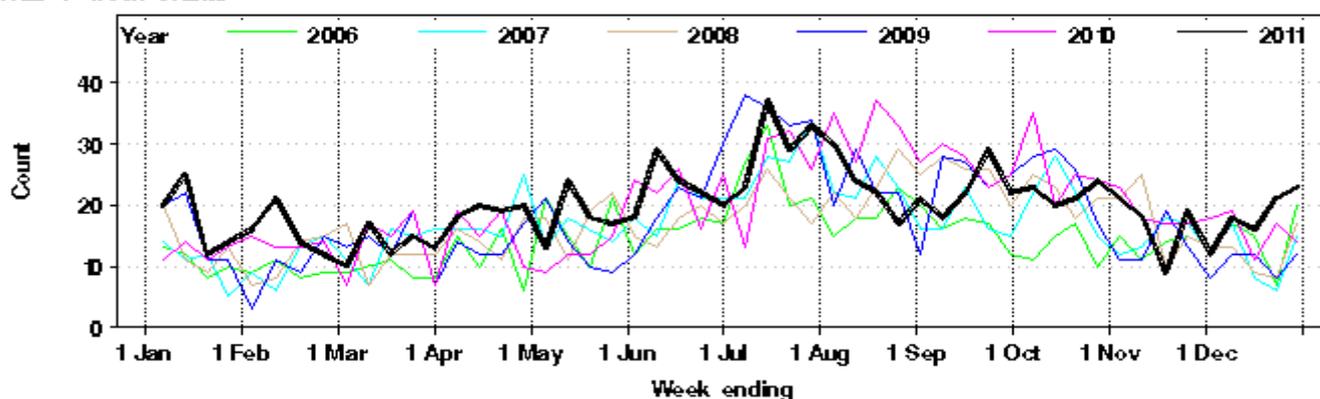
- In December 2011 there were 99 presentations with influenza-like illness (rate 0.5 per 1,000 presentations). This is similar to the previous month and the historical average.
- In 2011, presentations to emergency departments for influenza-like illness were highest in late July at around 100 presentations per week. This is only slightly higher than the 2010 peak which was the lowest annual peak in the last eight years of reporting.

## Admissions to hospital critical care units from emergency departments for influenza-like illness

**Figure 2:** Weekly counts of admissions to hospital critical care units for influenza-like-illness and pneumonia from NSW emergency departments, 2006-2011.

**Category:** All visits with the above inclusions

Total 1-week counts



**Note:** Data is preliminary and is subject to change in later weeks. Includes data from 56 emergency departments. Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the NSW Emergency Department Data Collection (HOIST).

- In December, total admissions from ED to critical care units for influenza-like-illness were within the usual range for this time of year.
- In 2011, critical care admissions from ED departments peaked in early August and were similar to previous historical averages.

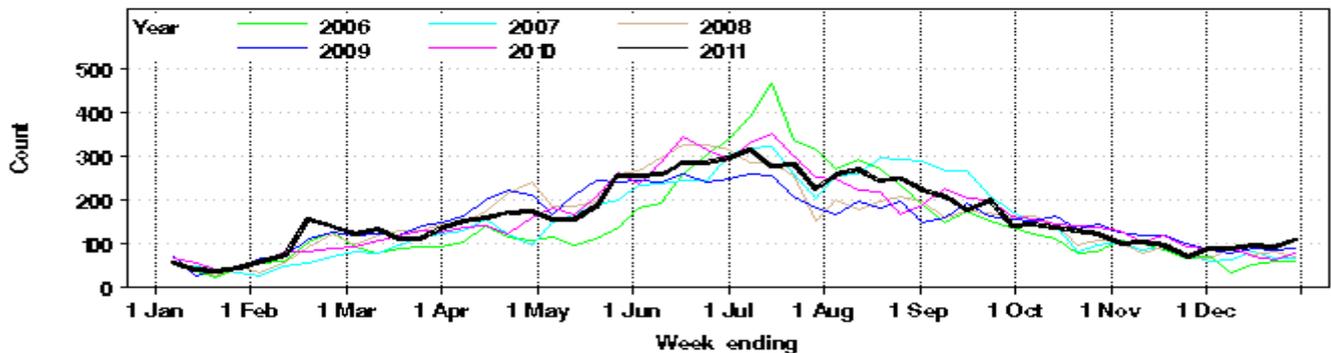
## Bronchiolitis presentations

- In December, total ED presentations for bronchiolitis were above the usual range for this time of year.

- In 2011, the number of presentations to EDs for bronchiolitis was highest in early July, and remained within the usual range for the remainder of the year with the exception of late February and December which was above the usual range.

**Category: All visits with the above inclusions**

**Total 1-week counts**



### 3. Laboratory testing summary for influenza

#### In December 2011:

- 2359 tests for respiratory viruses were performed at sentinel NSW laboratories (Table 1).
- 19 specimens tested positive for influenza A - 4 of these have tested positive for A(H3N2), only one tested positive for influenza A (pH1N1). The remainder tested negative to influenza A (pH1N1) and are assumed to be A(H3N2) (Table 1, Figure 4).
- Four cases of influenza B were reported (Table 1, Figure 4).

Throughout December, laboratory testing suggests influenza has continued to decline further and is circulating at low levels. Other respiratory viruses have circulated at higher levels than influenza, including rhinovirus, parainfluenza, adenovirus, respiratory syncytial virus, and human metapneumovirus.

#### From 1 January to 30 December 2011:

- 44, 727 tests for respiratory viruses were performed at sentinel NSW public hospital and private laboratories (Table 1).
- 2438 tests were positive for influenza A, and 1215 positive for influenza B (Table 1, Figure 4).
  - 1682 of the confirmed influenza A samples were positive for pH1N1, 95 samples were H3N2, and 661 samples were negative for pH1N1 and are assumed to be H3N2.
- At least sixty-one patients with confirmed influenza were admitted to intensive care units (ICU)
- Nine deaths were reported in association with confirmed influenza in NSW, five of these were in children.
- There were a number of respiratory outbreaks in aged care facilities. Of the 20 respiratory outbreaks notified to public health units, four were confirmed influenza A, two were confirmed RSV and there was one outbreak associated with confirmed Rhinovirus. In total 78 residents and 17 staff were affected with 12 hospitalisations and four deaths.
- Routine resistance testing of a selection of NSW influenza A samples collected since May 2011 detected 31 influenza A (H1N1)2009 samples with the H275Y neuraminidase mutation associated with resistance to oseltamivir (Tamiflu™) and peramivir. None of the samples showed resistance to zanamivir (Relenza™). Of these samples, 29 were collected from patients in the Hunter region whose ages ranged from 4 months to 58 years, six were hospitalised and three were pregnant, there were no deaths. A further two oseltamivir-resistant pandemic (H1N1) 2009 viruses, sampled in July and August, were also found to belong to the cluster. Both of these cases were detected outside the Hunter New England region with no recent travel history to this region. Only one of the cases reported was treated with oseltamivir prior to their positive test for influenza, however this was case not the earliest known cases in the cluster.

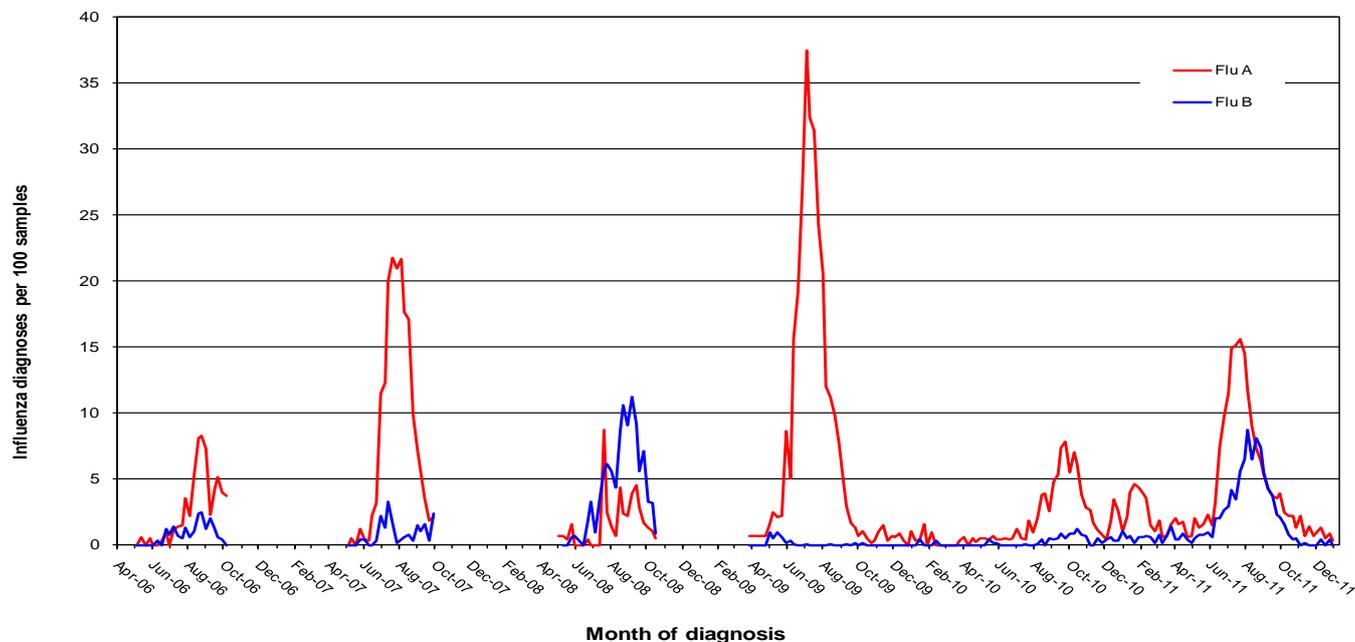
**Table 1:** Summary of testing for respiratory viruses and influenza at NSW public hospital laboratories, 1 January to 30 December 2011.

Four week period ending	Virology specimens tested	Influenza A (total pos) (%)	H1N1** (total pos) (%)	Influenza B (total pos) (%)	Adenovirus	Parainfluenza 1, 2 & 3	RSV	Rhinovirus	HMPV***
27/01/2011	1572	57 (3.7%)	36 (64%)	6 (0.4%)	22	50	36	97	20
25/02/2011	1842	43 (2.3%)	32 (74%)	9 (0.5%)	20	21	69	180	8
*01/04/2011	2697	36 (1.3%)	26 (72%)	18 (0.7%)	14	40	184	235	13
29/04/2011	2292	27 (1.1%)	14 (52%)	12 (0.5%)	22	36	288	174	29
27/05/2011	2595	49 (1.9%)	30 (61%)	24 (0.9%)	47	46	348	202	16
*01/07/2011	4373	363 (8.3%)	314 (85%)	104 (2.4%)	64	64	562	251	49
29/07/2011	6114	927 (15%)	758 (83%)	304 (5.0%)	128	135	520	252	103
*02/09/2011	7821	642 (8.2%)	432 (67%)	557 (7.1%)	150	239	466	411	195
*30/09/2011	4630	181 (3.9%)	38 (21%)	150 (3.2%)	123	242	233	346	160
28/10/2011	3073	64 (2.1%)	18 (28%)	26 (0.9%)	115	184	122	273	136
25/11/2011	2359	30 (1.3%)	1 (3%)	1 (0.04%)	86	112	51	227	51
*30/12/2011	2359	19 (0.8%)	1 (5%)	4 (0.2%)	53	94	50	250	35
<b>Week ending</b>									
2/12/2011	520	5 (1.0%)	0	0	10	23	10	66	11
9/12/2011	471	6 (1.3%)	1 (17%)	2 (0.4%)	14	15	7	52	3
16/12/2011	564	3 (0.5%)	0	0	8	22	11	55	9
23/12/2011	458	4 (0.9%)	0	2 (0.4%)	17	17	15	49	5
30/12/2011	346	1 (0.3%)	0	0	4	17	7	28	7

\* Equals a five week period \*\* 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 Services (HAPS), St Vincents (SydPath), Douglas Hanley Moir (DHM) and VDRLab. Nepean data recommenced 27 May 2011 but did not supply Dec data).

**Figure 4:** Percent of laboratory tests positive for influenza A and influenza B, 1 January 2006 – 30 December 2011, 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), South West Area Pathology Services (SWAPS), Pacific Laboratory Medicine Services (PaLMS), Royal Prince Alfred Hospital (RPAH), Hunter Area Pathology Services (HAPS), St Vincents (SydPath), Nepean (no data between Oct 2010 to June 2011 and Dec 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

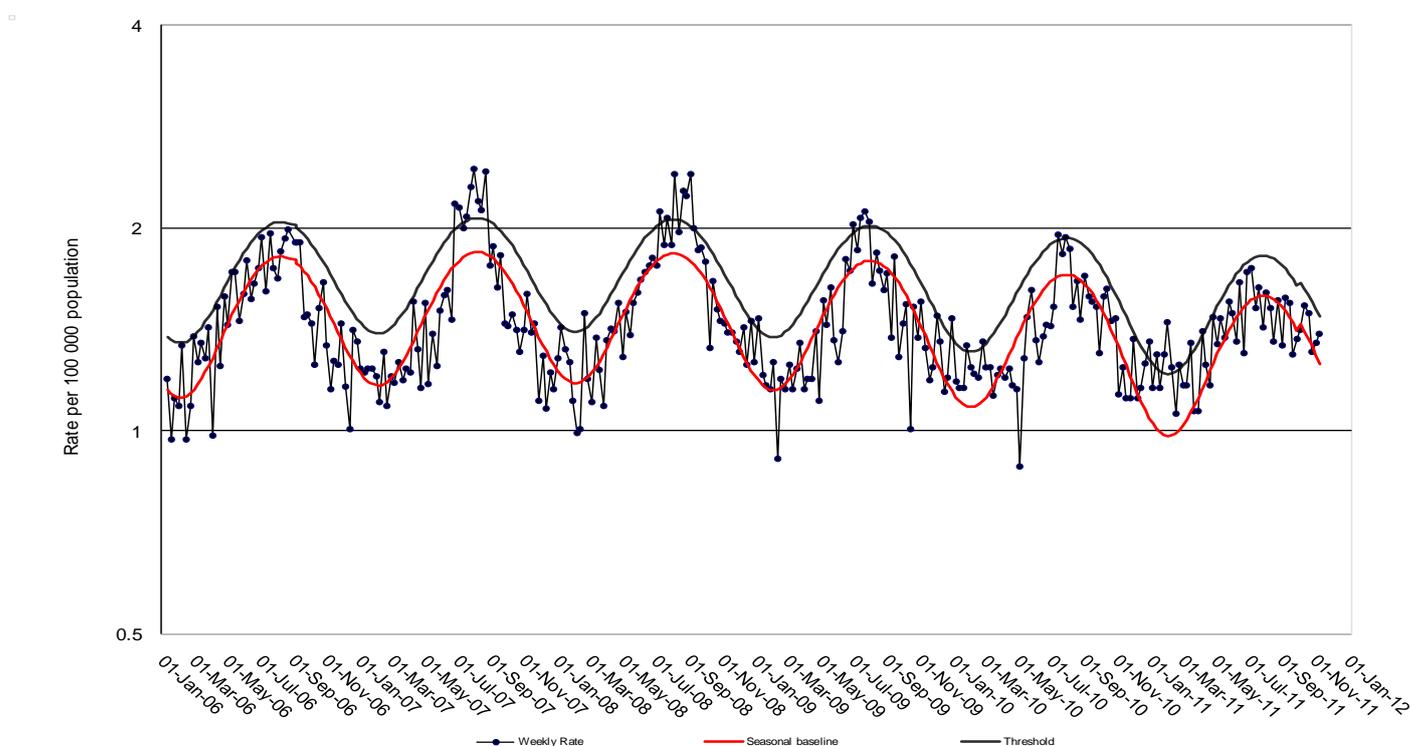
Deaths registration data is routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death.

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 30 December:

- There were 1.3 pneumonia or influenza deaths per 100,000 NSW population, below the seasonal threshold of 1.3 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, 2006-2011



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. Immunisation and Influenza-like-illness (ILI) reporting from the NSW Population Health Survey 2009-2011

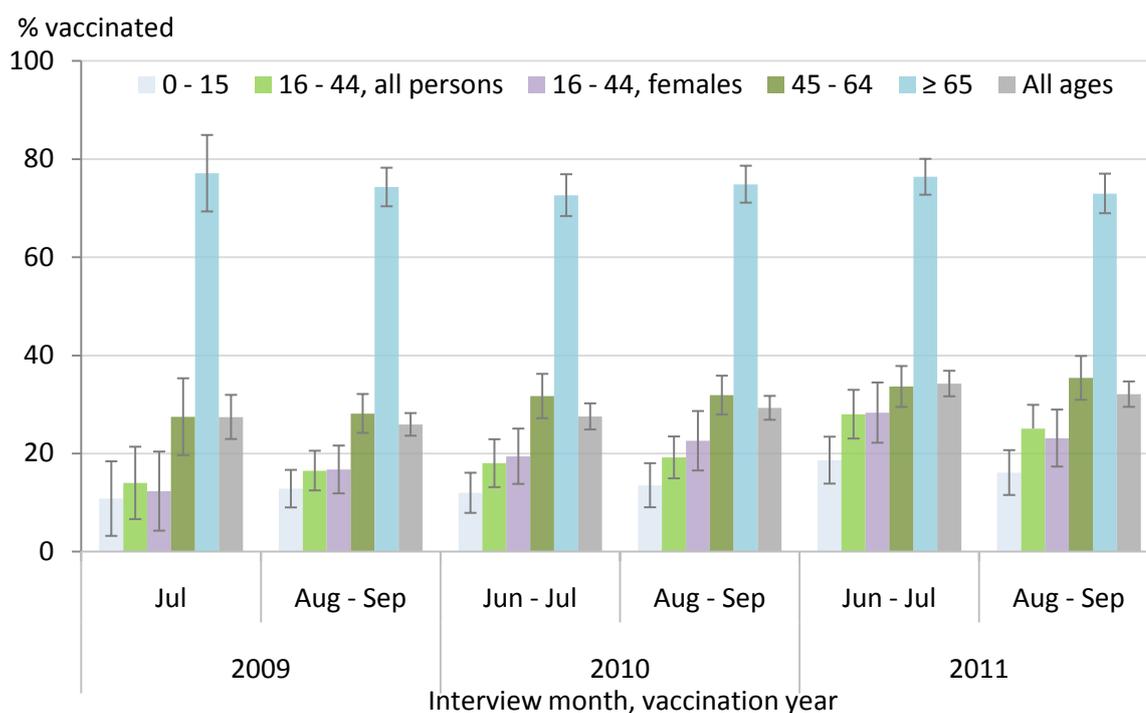
The New South Wales Population Health Survey (NSWPHS) is an ongoing telephone survey of state residents that is one of the main mechanisms through which NSW Health monitors population health and reports on performance indicators. Its objectives are to:

- monitor changes over time in self-reported health behaviours, health status, health service use, satisfaction with health services, and other factors that influence health;
- support the planning, implementation, and evaluation of health services;
- collect health information that is not available from other sources;
- respond quickly to emerging needs for health information;
- promote research.

For 2011, results from the NSWPHS indicate that influenza vaccination;

- was highest amongst people aged 65 years and older
- there has been an overall increase uptake of influenza vaccination since 2009
- all age groups with the exception of people aged 65 years showed an increased in vaccination uptake since 2009 (Figure 6).

**Figure 6:** Vaccinated against influenza by age, survey month and year, all persons, and females 16 – 44 years, NSW, Jul 2009 – Sep 2011



Source: New South Wales Population Health Survey. Centre for Epidemiology and Research. NSW Ministry of Health

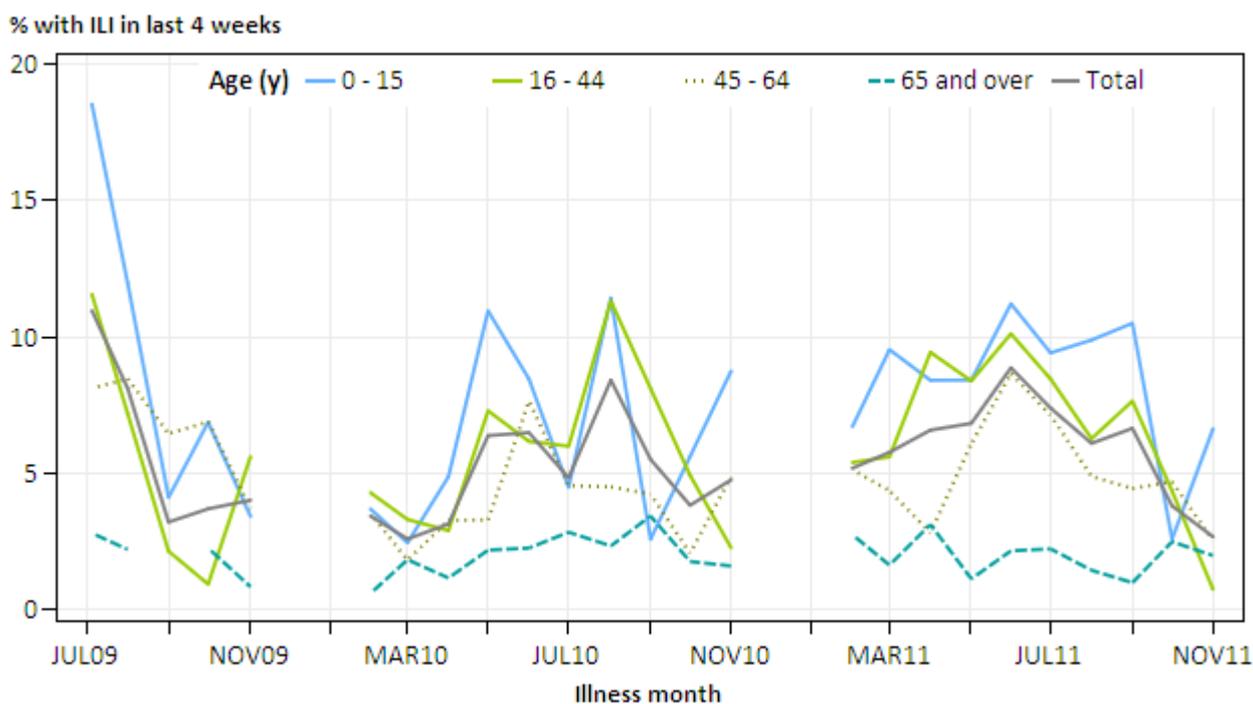
### Notes

1. For all persons, estimates were based on 12 252 interviews from Jul - Sep 2009, Jun - Sep 2010 and Jun - Sep 2011; for females 16 – 44 years, estimates were based on 1653 interviews.
2. For all persons, estimates did not include 168 respondents with 'Refused' response (3), with 'Don't know' response (97) or were 'Not asked' (68).
3. The question used to define the indicator was "Were you vaccinated or immunised against flu in the last 12 months?".
4. The survey question was specific to seasonal influenza immunisation and did not refer to the pandemic (H1N1) 2009 virus ("swine flu") vaccine.
5. For 2009, data were available from 15 July only.
6. Data were weighted according to probability of selection and the age, sex and geographic distributions of the NSW population.
7. From February 2011, the survey sample was stratified by Local Health Districts. Previously, the survey sample was stratified Area Health Services.

For 2011, results from the NSWPHS indicate that a report of ILI was;

- highest in children aged less than 15 years
- was similar to the previous year
- and people over the age of 65 years were least likely to report an ILI (Figure 7)

**Figure 7:** ILI incidence by illness month and age group, all persons, Jul 2009 – Sep 2011, NSW



Source: New South Wales Population Health Survey. Centre for Epidemiology and Research. NSW Ministry of Health.

#### Notes

1. Estimates were based on 27 084 respondents in NSW from Jul 2009 – Sep 2011.
2. Estimates did not include respondents with 'Refused' response (0 %), with 'Don't know' response (0.15 %) or were 'Not asked' (3 %)
3. ILI was defined as self-reported fever, cough and fatigue symptoms in the last 4 weeks.
4. Monthly incidences were based on month of illness rather than interview month. For respondents reporting ILI, illness date was assigned as 2 weeks before the interview date and illness month was assigned from this date.
5. As a result of analysis by illness month, January and December were excluded because data were unavailable for the full month. (Health Survey interview are conducted from February to December each year.)
6. Data were weighted according to probability of selection and the age, sex and geographic distributions of the NSW population.
7. From February 2011, the survey sample was stratified by Local Health Districts. Previously, the survey sample was stratified Area Health Services.

For further information please refer to NSW Population Health Survey at

<http://www.health.nsw.gov.au/publichealth/surveys/phs.asp>

and/or methods Barr et al NSW Population Health Survey:Description of Methods at

[http://www.health.nsw.gov.au/resources/publichealth/surveys/health\\_survey\\_method.asp](http://www.health.nsw.gov.au/resources/publichealth/surveys/health_survey_method.asp)

## 6. 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>