

Influenza Monthly Epidemiology Report, NSW

Including pandemic H1N1 2009 influenza

December 2009 (Report period up to 21 Dec)
Produced by: Population Health Division, NSW Health.

Summary

From 1 May to 21 December 2009:

- Presentations to emergency departments peaked mid July with on average 1300 presentations per week
- 5224 cases with laboratory confirmed pandemic H1N1 2009 influenza reported in NSW.
- 1298 patients with laboratory confirmed pandemic H1N1 2009 influenza reported have been admitted to NSW hospitals.
- 53 deaths to date in association with confirmed pandemic H1N1 2009 influenza in NSW.

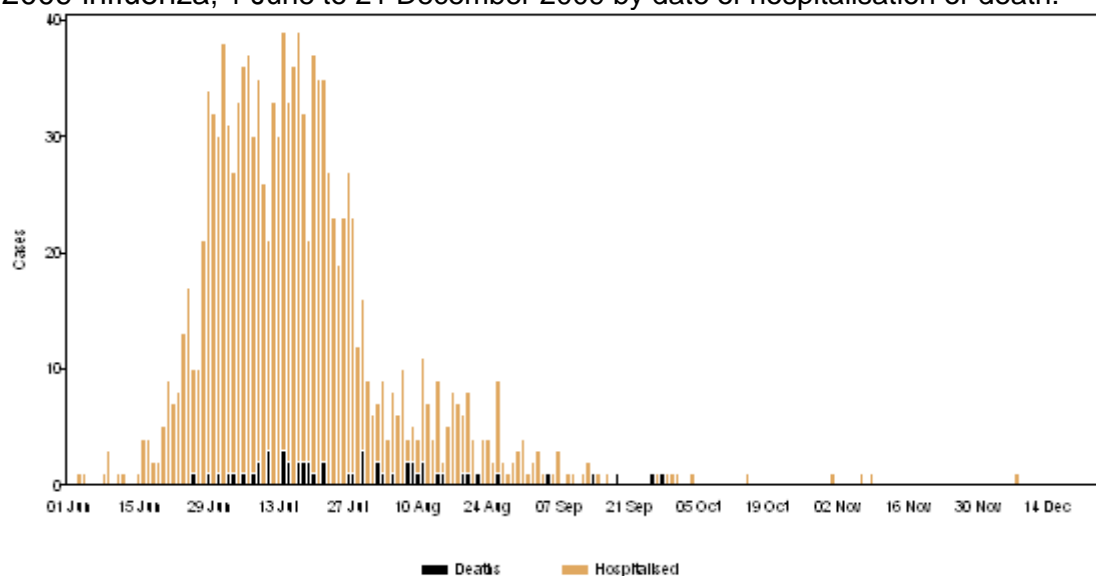
For weekly updates please see the communicable disease weekly report at <http://www.health.nsw.gov.au/publichealth/infectious/index.asp>

In December 2009 (3 week period) in NSW:

- Presentations to selected emergency departments for ILI were low, and similar to the same month last year
- 10 cases with laboratory confirmed pandemic H1N1 2009 influenza reported in NSW.
- 1 patient with laboratory confirmed pandemic H1N1 2009 influenza reported to have been admitted to NSW hospitals.
- No deaths were reported in association with confirmed pandemic H1N1 2009 influenza

parainfluenza was the most common respiratory virus diagnosed by sentinel laboratories in December

Figure 1: Hospitalisations and deaths associated with laboratory pandemic H1N1 2009 influenza, 1 June to 21 December 2009 by date of hospitalisation or death.



Introduction

A novel influenza A virus (pandemic H1N1 2009 influenza -previously called human swine influenza) was identified in April 2009 in the United States and Mexico. Since then, widespread community transmission of the virus has been confirmed in other continents including Australia.

Illness in most people has been generally mild, and broadly similar to seasonal influenza. Features that are unusual include the younger age of cases, the relative sparing of the over 60 year old age group, and the out-of-season timing of the epidemic in the northern hemisphere.

The community was initially generally susceptible to a novel influenza virus. This means that despite the generally mild profile of the illness, the impact of the virus has been substantial, particularly as community transmission became established in Australia during the winter.

This report provides a summary of the surveillance for influenza, including pandemic H1N1 2009 influenza, undertaken by NSW Health to date. This includes data from a range of surveillance systems.

Emergency Department (ED) presentations

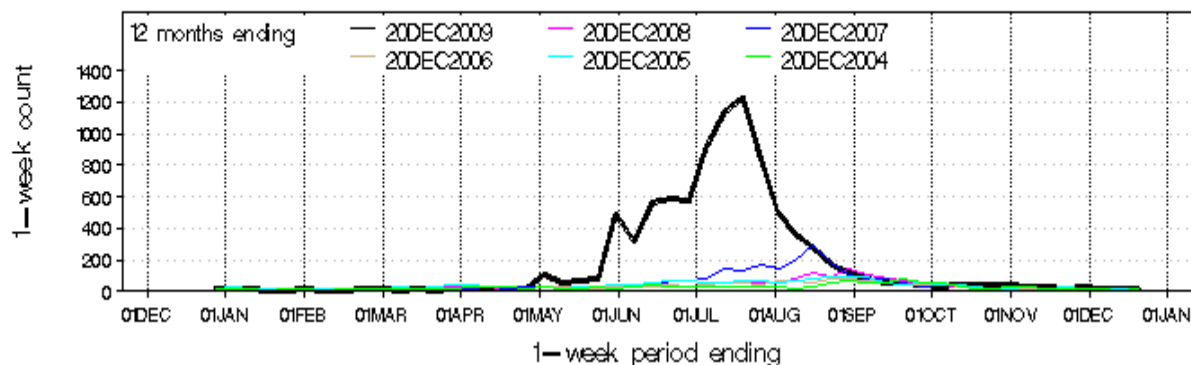
Data from 52 NSW emergency departments are included. Comparisons are made with data for the preceding six years. Recent counts are subject to change.

Presentations for influenza-like illness

Figure 2: Comparison of weekly influenza-like illness presentations to NSW emergency departments, 2003-2009*

Category: All visits with the above inclusions

Total 1-week counts



* 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 49 emergency departments. Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the NSW Emergency Department Data Collection (HOIST).

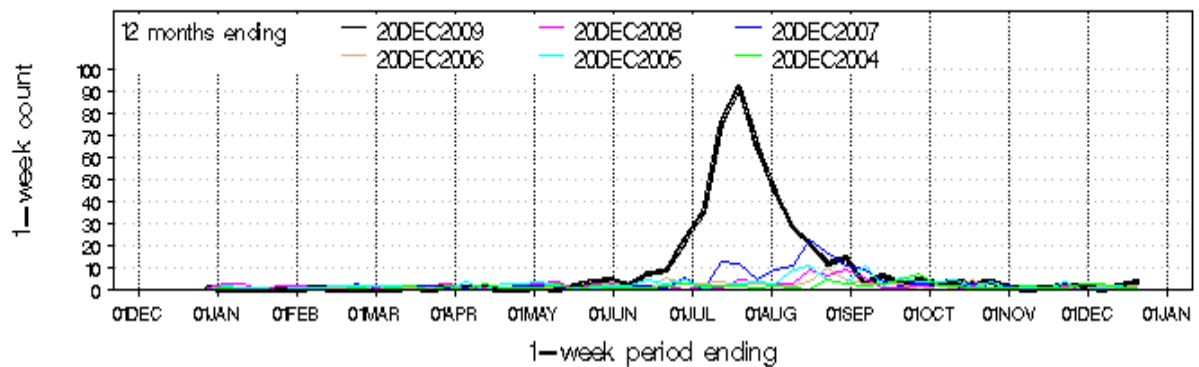
- Presentations to emergency departments for influenza-like illness peaked in mid July at around 1300 presentations per week. The July peak was approximately three times the previous highest peak of 2007.
- In December 2009 for the three week period, there were 88 presentations with influenza-like illness. This is less than the previous three week period in November (116 presentations), but is greater the count of 43 for the same three week period in December in 2008

Admissions to hospital from emergency departments for influenza-like illness

Figure 3: Weekly counts of admissions to hospital for influenza-like illness from NSW emergency departments, 2003-2009*.

Category: All visits with the above inclusions

Total 1-week counts



* 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 49 emergency departments. Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) and the NSW Emergency Department Data Collection (HOIST).

- Admissions from emergency departments to hospital for influenza-like illness peaked in mid July at around 110 admissions.
- There were 10 admissions to hospital following presentation to emergency departments with influenza-like illness in the three week period of December. This is more than the previous three week period of November (4 admissions), and greater than the three week period in December 2008 when no people were admitted with ILI.

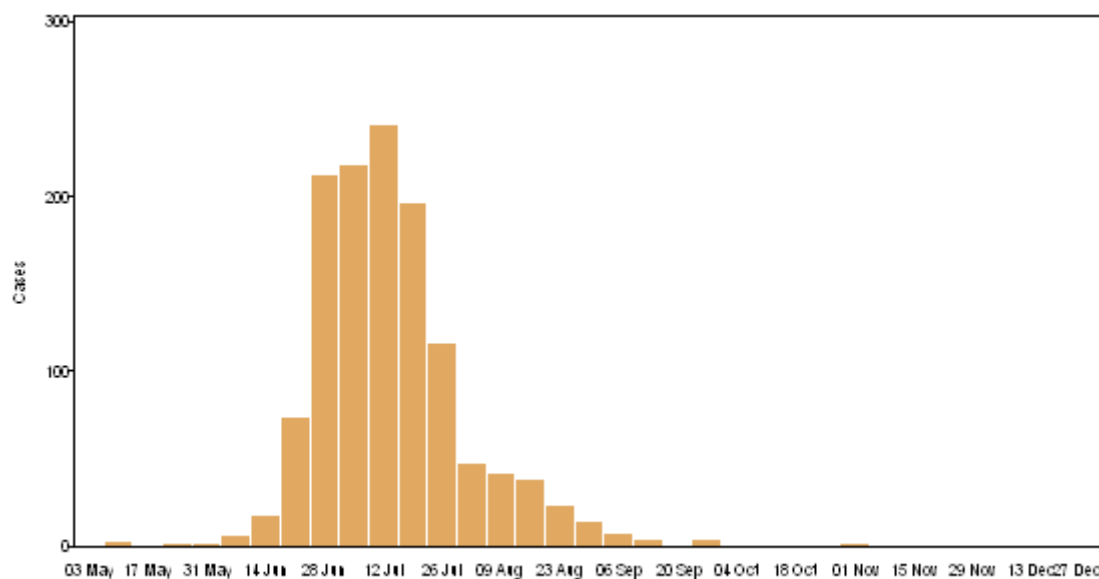
Pandemic H1N1 2009 influenza

Hospitalisations

From 1 May to 21 December 2009 there were:

- 1298 patients with laboratory confirmed pandemic H1N1 2009 influenza reported to have been admitted to NSW hospitals (Figure 4).

Figure 4: Hospitalisations associated with laboratory confirmed H1N1 influenza 09, 1 June to 21 December 2009, by hospitalisation date.



- Hospital admissions for patients with confirmed H1N1 2009 influenza peaked in July, at about 35 cases per day, and decreased further in August and September. Note that delays in reporting may mean that the recent numbers are under-reported.
- In December for the three week period, one was admitted to hospital.

Deaths

Deaths associated with pandemic H1N1 2009 influenza

From May 1 to 21 December 2009 there were:

- 53 deaths to date in association with confirmed pandemic H1N1 2009 influenza in NSW. Of these, 49 had underlying chronic conditions and 4 are under investigation.
- Deaths in association pandemic H1N1 2009 influenza have occurred in people aged 9-88 years.

Table 1a: Age distribution of deaths in association with confirmed pandemic H1N1 2009 influenza, 1 May to 21 December 2009

Age group	Number of cases	Percent of cases
Under 40	6	11.3
40-49	9	17.0
50-59	18	34.0
60-69	8	15.1
70+	12	22.6
TOTAL	53	100.0

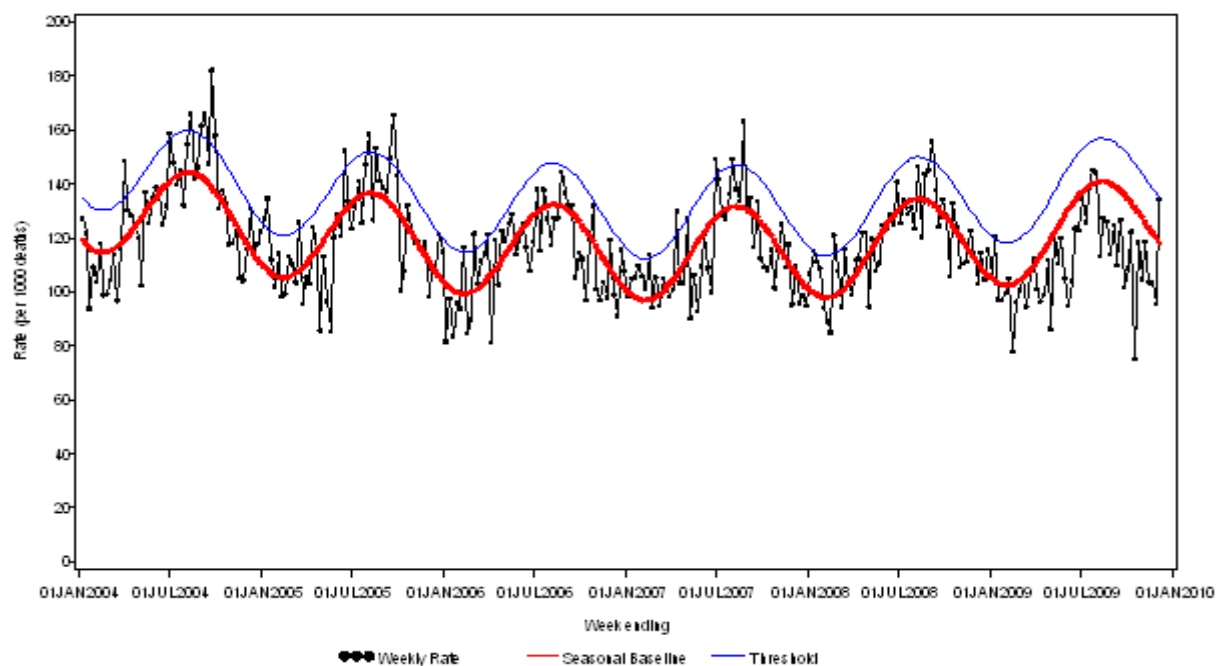
Table 1b: Deaths in association with confirmed pandemic H1N1 2009 influenza, 1 May to 21 December 2009

Month	Number of cases	Percent of cases
May	0	0.0
June	2	3.8
July	29	54.7
August	17	32.1
September	5	9.4
October	0	0.0
November	0	0.0
December	0	0.0
TOTAL	53	100.0

Deaths with influenza or pneumonia reported on the death certificate

- While pneumonia has many causes, a well-known marker 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 (Figure 5)
- 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 circulating widely.
- Deaths referred to a coroner are not yet 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.
- Death registration data show that as of 4 December 2009, there were 134 pneumonia or influenza deaths per 1000 deaths in NSW, which was slightly below the seasonal threshold of 135 per 1000.

Figure 5: Rate of deaths classified as influenza and pneumonia as per NSW Registered Death Certificates, 2004-2009



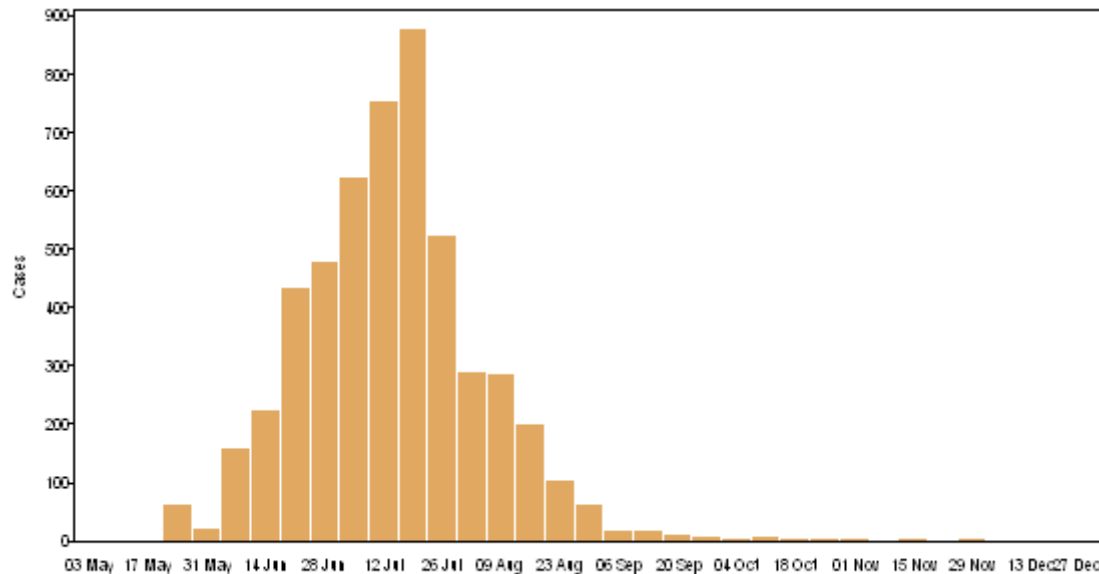
Source: NSW Registry of Births, Deaths and Marriages.

Laboratory testing summary for influenza (including pandemic H1N1 2009 influenza)

From May 1 to 21 December 2009 there were:

- 5224 people with lab confirmed H1N1 influenza 09 reported in NSW (Figure 6)

Figure 6: Notifications of cases of laboratory confirmed H1N1 influenza 09, 1 June to 21 December 2009, by notification date*.



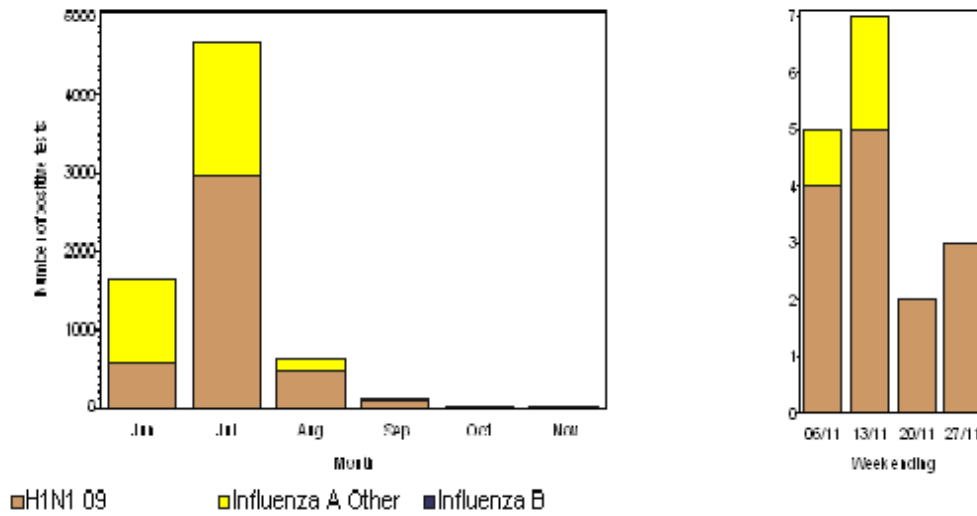
* Note that with the start of the 'Protect' phase on 17 June, 2009, efforts were focused on early detection and treatment of influenza-like illness in those considered at risk of severe illness and laboratory testing was generally confined to this group.

- Notifications of confirmed cases were highest in the middle weeks of July, and have since decreased.

During the three weeks of December 2009:

- 1133 tests for respiratory viruses were performed at NSW public hospital laboratories in the 3 weeks 28 November to 18 December 2009
- 0.5% of these tests were positive for influenza A in the 3 weeks ending 18 December.
- All were positive for pandemic H1N1 2009 influenza
- parainfluenza was the most common respiratory virus detected in the 3 weeks ending 18 December.

Figure 7: Number of positive laboratory tests for influenza for months ending .



Note: 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), Nepean- up to 1 October, Douglas Hanley Moir (DHM) from 21 August and St Vincent's Hospital (SYDPATH).

Figure 8: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2005 to 21 December, New South Wales

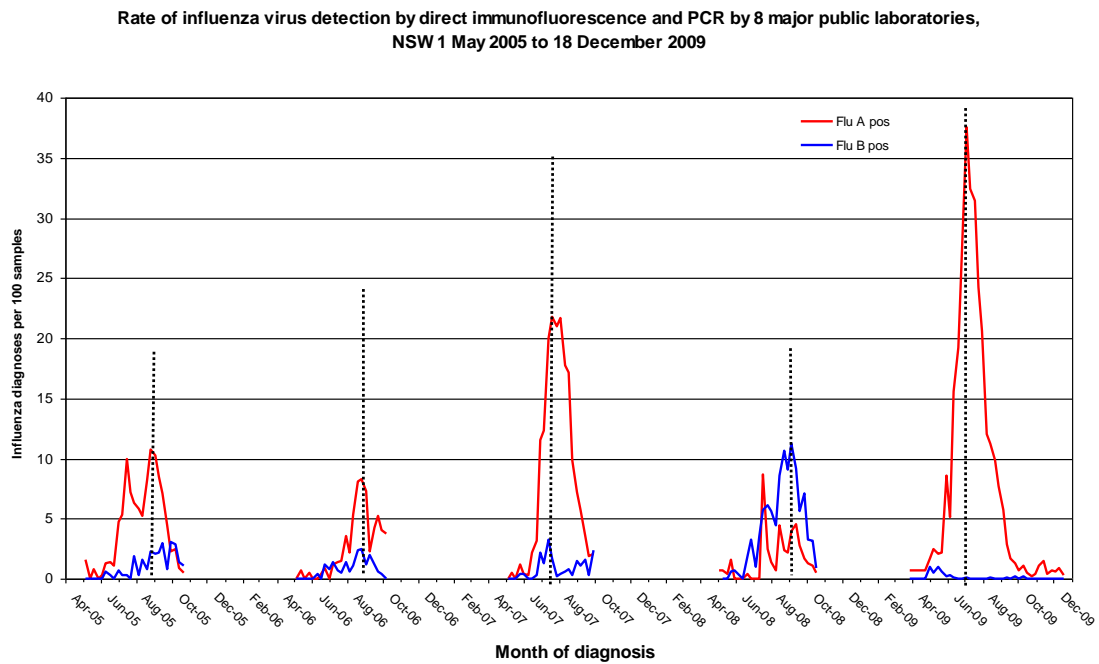


Table 2: Summary of testing for respiratory viruses and influenza at NSW public hospital laboratories, 4 week periods ending 18 December 2009

Four week period ending	Virology specimens tested	Influenza A (total pos) (%)	Influenza B (total pos) (%)	H1N1 influenza 09 (total pos) (%)	Adenovirus	Parainfluenza 1, 2 & 3	RSV	Rhinovirus	HMPV
10/07/2009	13416	3805 (28%)	3 (0.02%)	1837 (48%)	81	45	445	42	16
7/08/2009	11755	2735 (23%)	1 (<0.01%)	1838 (67%)	60	33	342	18	17
4/09/2009	4986	451 (9.0%)	2 (0.04%)	346 (77%)	45	51	190	34	14
2/10/2009	2860	51 (1.8%)	2 (0.03%)	42 (82%)	63	114	105	61	24
30/10/2009	2202	12 (0.5%)	1 (0.05%)	11(92%)	39	127	77	82	49
27/11/2009	1905	17 (0.9%)	0	14 (82%)	35	96	60	76	33
18/12/2009	1133	6 (0.5%)	0	6 (100%)	16	62	49	35	19
Week ending									
4/12/2009	396	2 (0.5%)	0	2 (100%)	3	23	11	13	12
11/12/2009	349	2 (0.6%)	0	2 (100%)	5	21	20	4	3
18/12/2009	388	2 (0.5%)	0	2 (100%)	8	18	18	18	4

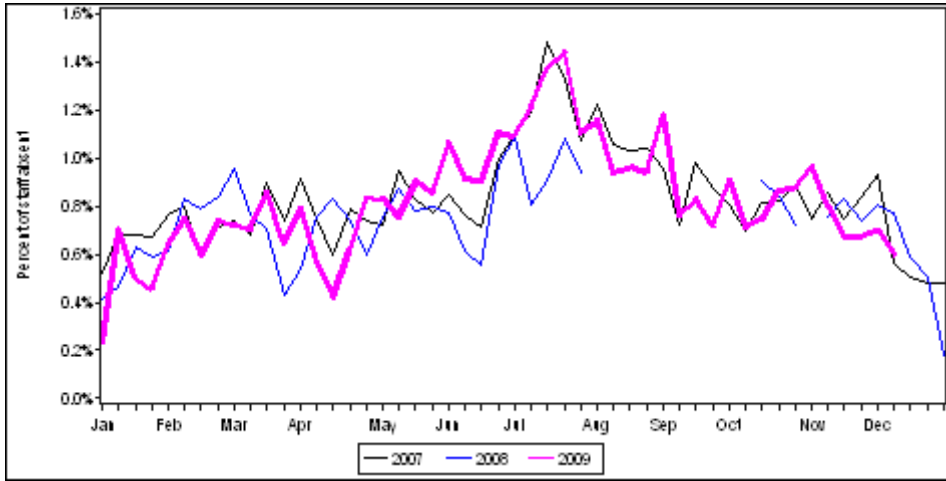
Note: Excludes point of care tests. Influenza laboratory diagnoses using virology are reported by South Eastern Area Laboratory Services (SEALS), Institute of Clinical Pathology and Medical Research (ICPMR), The Children's Hospital at Westmead (CHW), South West Area Pathology Services (SWAPS), Pacific Laboratory Medicine Services (PaLMS), Royal Prince Alfred Hospital (RPAH), Hunter Area Pathology Services (HAPS), Nepean- up to 1 October, Douglas Hanley Moir (DHM) from 21 August and St Vincent's Hospital (SYDPATH).

December only includes 3 weeks data

Community impact

Workplace absenteeism is an indicator of the level of influenza activity in the community. One major Australian employer with more than 10,000 NSW employees, has provided data on the proportion of their employees absent from work due to illness for more than 3 consecutive days. Data is available to the week ending 9 December 2009. This period includes the period with the peak in emergency presentations and hospital admissions for influenza-like illness. In the week ending 22 July 2009, 1.4% of their NSW employees took sick leave of more than three consecutive days. This was the highest level so far this year and higher than the level of around 0.7% in autumn. In the week ending 9 December 2009, 0.6% of their employees took sick leave of more than 3 consecutive days. Absenteeism this year is similar to the levels reached during the winter of 2007 when influenza incidence was also high.

Figure 9: Weekly proportion of employees of a national employer taking more than 3 consecutive days sick leave, NSW, to 9 December 2009 with comparison to 2007-2008*.



* Data were not available for some weeks in 2008. Source: Absenteeism Data.