Influenza Monthly Epidemiology Report, NSW

Including H1N1 influenza 09

July 2010

For a summary of surveillance data please go to the January 2010 report at
http://www.health.nsw.gov.au/publichealth/Infectious/reports/influenza_05022010.asp

Produced by: Population Health Division, NSW Health.

Summary

In July 2010:

- the rate of influenza like illness (ILI) presentations to selected emergency departments was low, similar to that of the previous month, and lower for than the same month last year
- 19 cases with laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- a further 12 cases of influenza A (not yet subtyped) and one case with influenza A (H3) were reported
- no cases of influenza B were reported
- eight cases with confirmed pH1N1 were admitted to intensive care units (ICU)
- no deaths to date in association with confirmed pandemic (H1N1) 2009 influenza were reported in NSW.

Respiratory syncytial virus (RSV) remained the most common respiratory virus diagnosed by sentinel laboratories in July.

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

From 1 Jan to 30 July 2010:

- ILI presentations to selected emergency departments remained low
- 33 cases of laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- two cases of influenza A (H3) were reported in NSW
- 34 cases of influenza (not subtyped) were reported in NSW
- seven cases of influenza B were reported in NSW
- ten cases with confirmed pH1N1 have been admitted to intensive care units (ICU)
- no deaths were reported in association with confirmed pandemic (H1N1) 2009 influenza in NSW.

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 mild, but severe in some, and broadly similar to seasonal influenza. Features of pandemic (H1N1) 2009 influenza 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.

Most people in the community were initially susceptible to the pandemic (H1N1) 2009 influenza virus. This means that despite the generally mild profile of the illness, the impact of the virus was substantial, particularly as community transmission became established in Australia last winter.

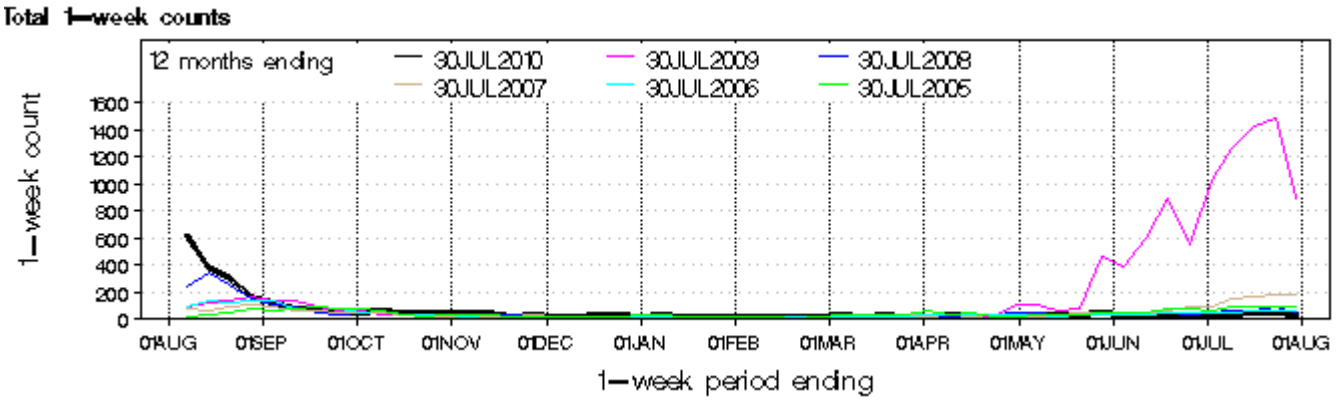
This report provides a summary of the surveillance for influenza, including pandemic (H1N1) 2009 influenza, undertaken by NSW Health to date. This includes data from a range of surveillance systems.

Emergency Department (ED) presentations

Data from 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

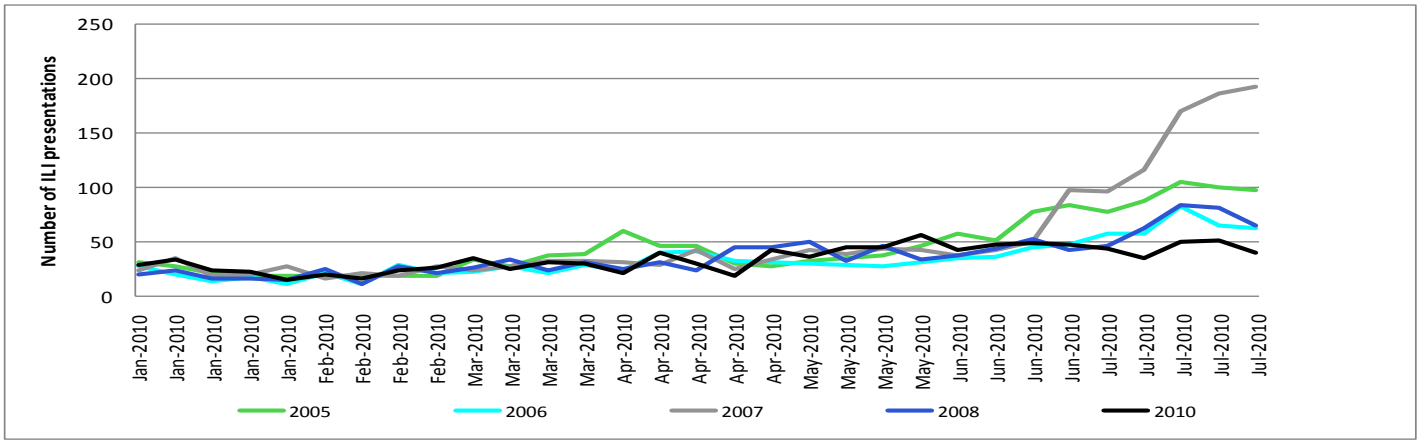
Figure 1: Comparison of weekly influenza-like illness presentations to NSW emergency departments, 2005-2010*



Note: In 2009 some people presenting to NSW emergency departments were 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 July 2010 there were 220 presentations with influenza-like illness (rate 1.3 per 1,000 presentations). This is similar to the previous month (June 185 presentations, rate 1.3 per 1,000 presentations), but is lower than the count of 2498 for the month of June in 2009 and similar to June totals for 2005-2008.
- Presentations to emergency departments for influenza-like illness were highest in mid July 2009 at around 1,300 presentations per week. The July peak was approximately three times the previous highest peak of 2007.

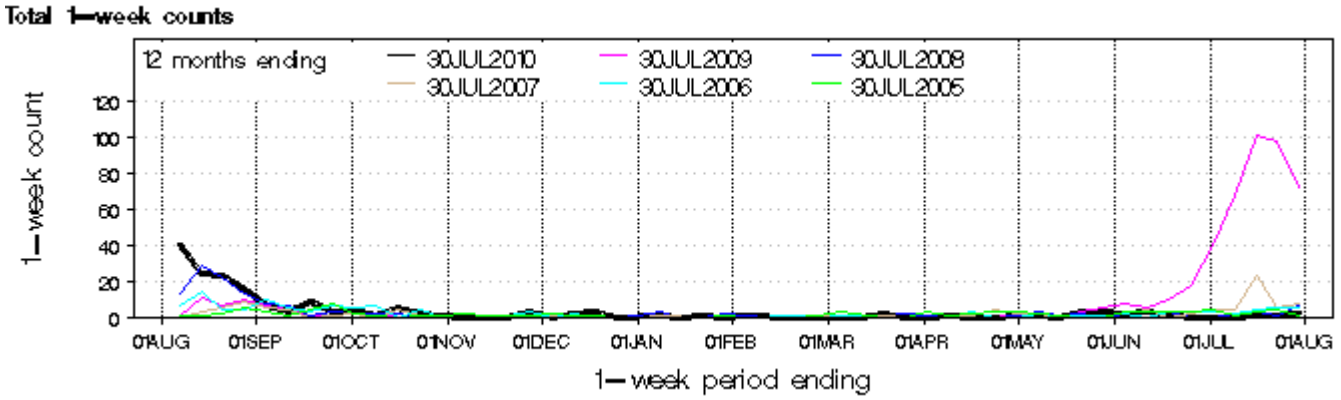
Figure 2: Comparison of weekly influenza-like illness presentations to NSW emergency departments, 2005-2008 compared with 2010.



Note: Figure 2 excludes data from 2009 to enable easier comparison of 2010 data with data from previous non-pandemic years. Data presented is as for figure 1 but is reported by rate per 1000 presentations.

Admissions to hospital from emergency departments for influenza-like illness

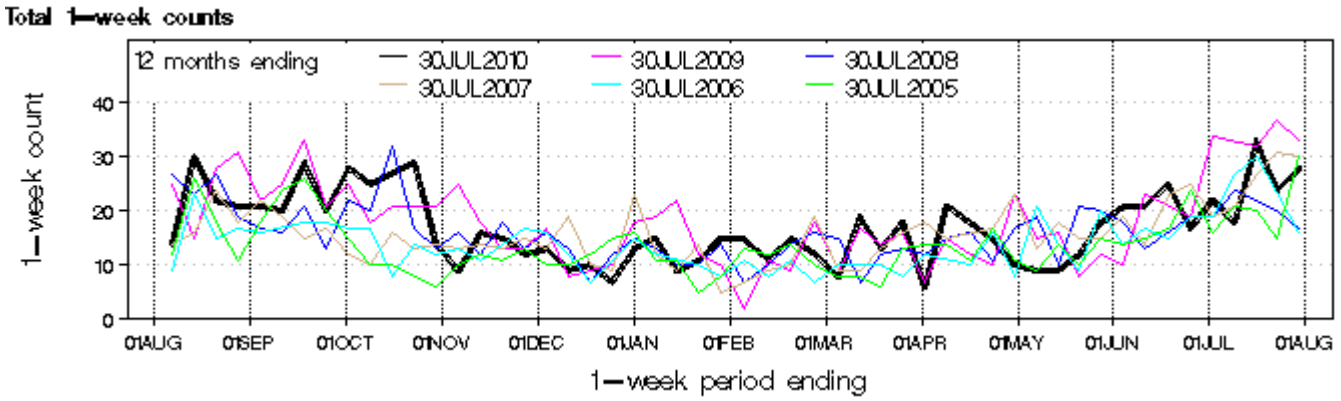
Figure 3: Weekly counts of admissions to hospital for influenza-like illness from NSW emergency departments, 2005-2010*.



Note: In 2009 some people presenting to NSW emergency departments were 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).

- There were 13 admissions to hospital following presentation to emergency departments with influenza-like illness in June 2010. This was similar to the previous month (13 admissions), but lower than that of June 2009, when 44 persons were admitted with ILI.
- Admissions from emergency departments to hospital for influenza-like illness were highest in mid July 2009 and peaked at around 110 admissions per week.

Figure 4: Weekly counts of admissions to hospital critical care units for influenza-like-illness and pneumonia from NSW emergency departments, 2005-2010*.



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 July 2010 there were eight admissions to ICUs with confirmed pH1N1 2009 influenza.
- All cases were aged under 60 years, five cases require respiratory support and one case was placed on ECMO (extracorporeal membrane oxygenation).
- Six cases had previously identified risk factors for pH1N1
- One case still remains in ICU

Laboratory testing summary for influenza

In July 2010:

- 3,389 tests for respiratory viruses were performed at sentinel NSW laboratories

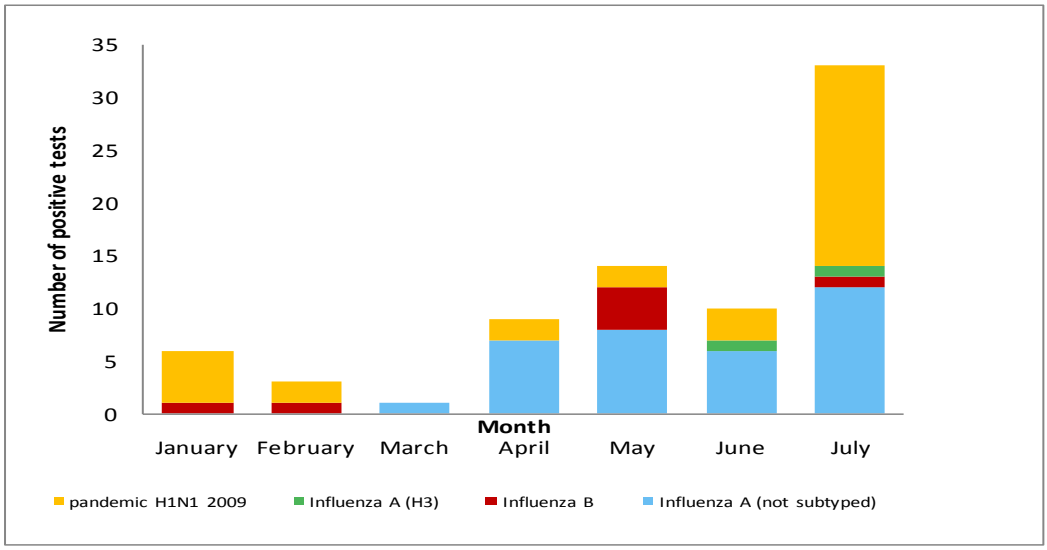
- 32 specimens tested positive for influenza A - 19 of these have tested positive for pandemic (H1N1) 2009 influenza, one was H3 and the remainder (12) have not yet been subtyped
- one case of influenza B was reported.
- the number of tests positive for influenza in July was higher than the previous month (June) although overall influenza activity remains low

Respiratory syncytial virus (RSV) continued to be the most common respiratory virus diagnosed by sentinel laboratories in July.

From 1 January to 30 July 2010:

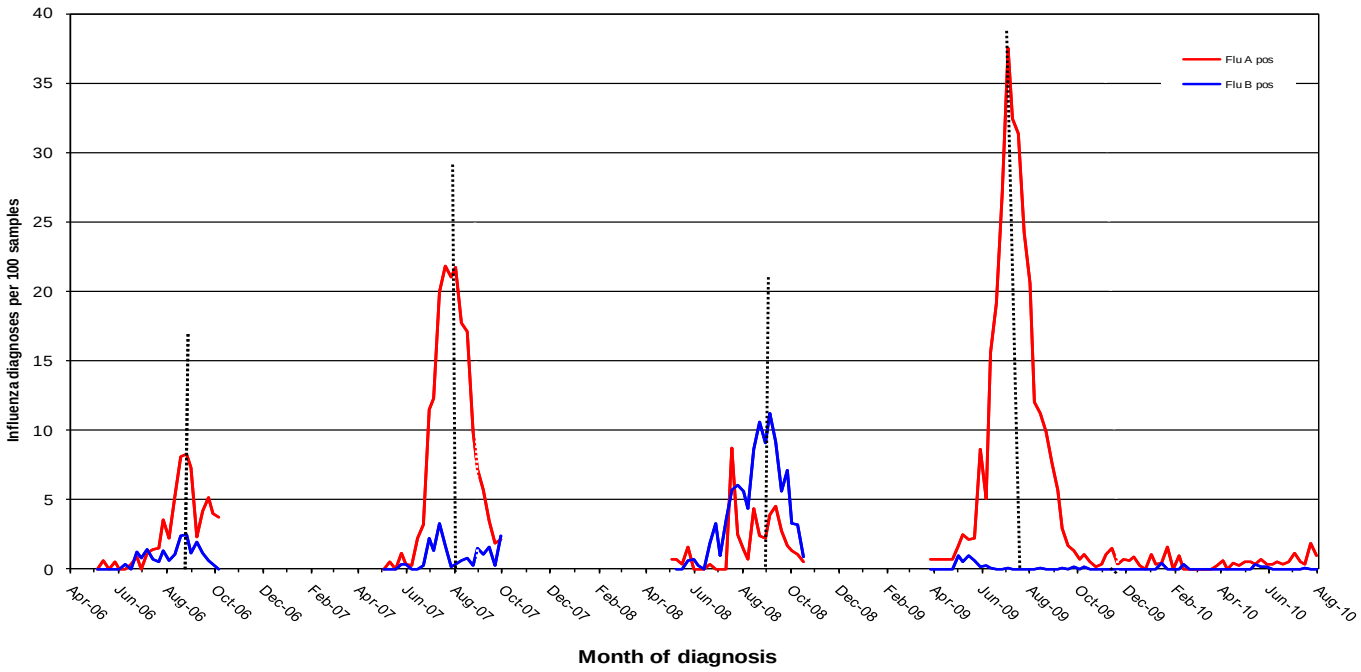
- 12,740 tests for respiratory viruses were performed at sentinel NSW public hospital and private laboratories - slightly higher than previous years for this time of year.
- 69 tests were positive for influenza A, and seven positive for influenza B.
    - 33 influenza A were also positive for pandemic (H1N1) 2009 influenza, two samples were H3, four are awaiting subtyping and 30 were unable to be subtyped

Figure 5: Number of positive laboratory tests for influenza by month ending 30 July 2010



Note: Influenza A (seasonal) includes all influenza A not subtyped. Excludes culture and 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), Douglas Hanley Moir (DHM), VDRlab from 5 March 2010 and Laverty and Nepean from 1 April 2010. There is no data available for Sydney Adventist Hospital.

Figure 6: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2005 – 30 July 2010, New South Wales.



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 , VDRLab from 5 March 2010 and Laverty and Nepean from 1 April 2010.

Table 1: Summary of testing for respiratory viruses and influenza at NSW public hospital laboratories,1 January to 30 July 2010.

Four week period ending	Virology specimens tested	Influenza A (total pos) (%)	H1N1** influenza 09 (total pos) (%)	Influenza B (total pos) (%)	Adenovirus	Parainfluenza 1, 2 & 3	RSV	Rhinovirus	HMPV***
29/01/2010	853	5 (0.6%)	5 (100%)	1 (0.1%)	20	28	52	52	6
26/02/2010	1071	2 (0.2%)	2 (100%)	1 (0.1%)	9	32	61	78	3
26/03/2010	1456	1 (0.06%)	0	0	14	54	113	100	8
30/04/2010*	1742	9 (0.5%)	2 (22.2%)	0	22	59	244	103	5
28/05/2010	1945	10 (0.5%)	2 (20%)	4 (0.2%)	20	29	304	176	20
25/06/2010	2284	10 (0.4%)	3 (33%)	0	28	23	515	174	2
31/07/2010	3389	32 (1.0%)	19 (59%)	1 (0.03%)	68	43	609	193	21
Week ending									
02/07/2010	600	7 (1.2%)	3 (43%)	0	14	8	132	35	1
09/07/2010	679	3 (0.5%)	2 (67%)	0	8	9	148	36	4
16/07/2010	751	3 (0.4%)	2 (67%)	1 (0.1%)	17	6	129	54	8
23/07/2010	687	13 (1.9%)	10 (77%)	0	13	9	96	40	2
31/07/2010	672	6 (0.9%)	2 (33%)	0	16	11	104	28	6

* Equals a five week period ** Subset of influenza A cases *** HMPV = Human metapneumovirus

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 , VDRLab from 5 March 2010 and Laverty and Nepean from 1 April 2010.

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 circulating widely.

July 2010

- death registration data show that as of 16 July 2010, there were 121 pneumonia or influenza deaths per 1000 deaths in NSW, which is below the seasonal threshold of 126 per 1,000.
- There were no deaths identified when death registration data was cross matched with laboratory notified cases of influenza.

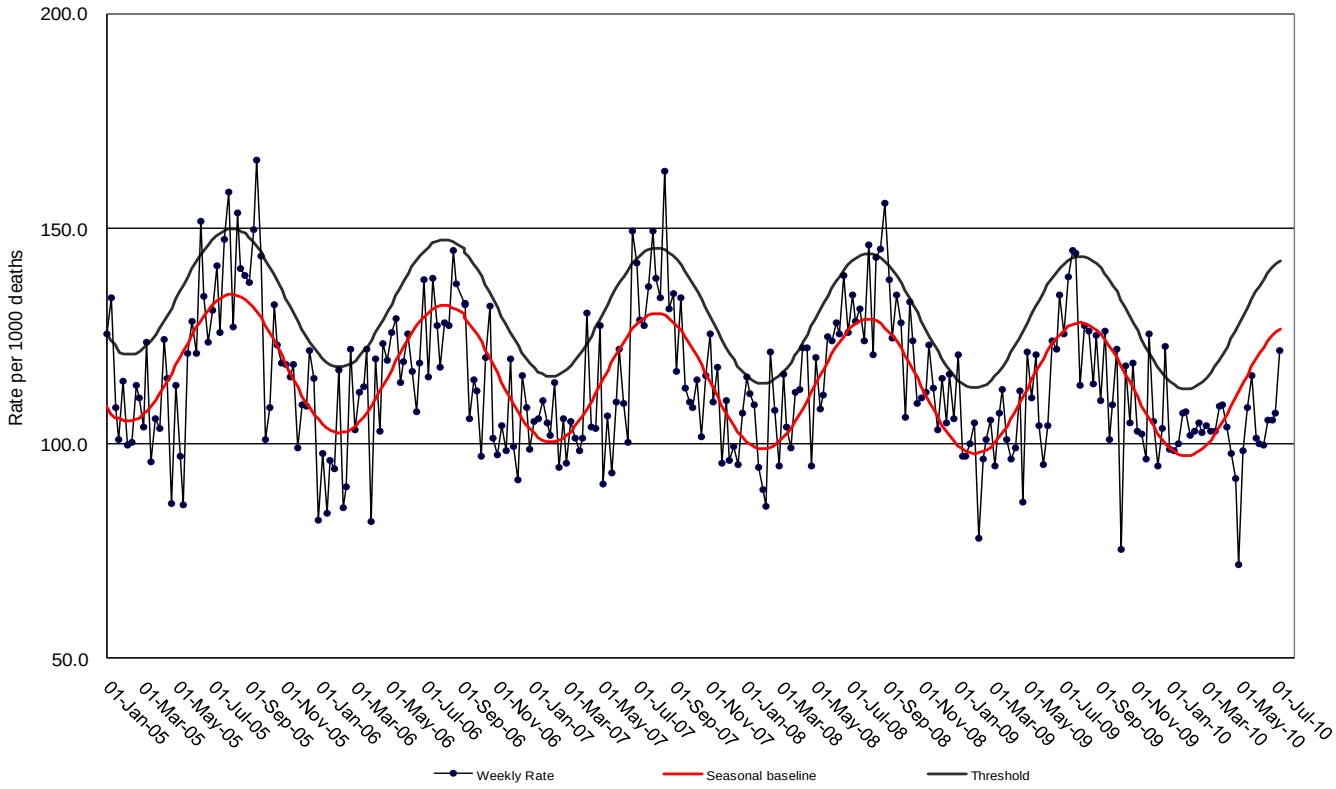
Interpreting death data
Note: Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data. Influenza deaths confirmed by serology need to be viewed with caution as positive tests may also indicate past vaccination or previous infection .

From 1 January to 16 July 2010.

Death registration data have been cross matched with laboratory notified cases of influenza:

- death registration data cross matched with laboratory notified cases of influenza show ten people with laboratory confirmed influenza have died up to 16 July. All ten case had multiple co-morbidities, were aged 50 years and over and laboratory confirmation was by serology.

Figure 7: Rate of deaths classified as influenza and pneumonia as per NSW Registered Death Certificates, 2005-2010



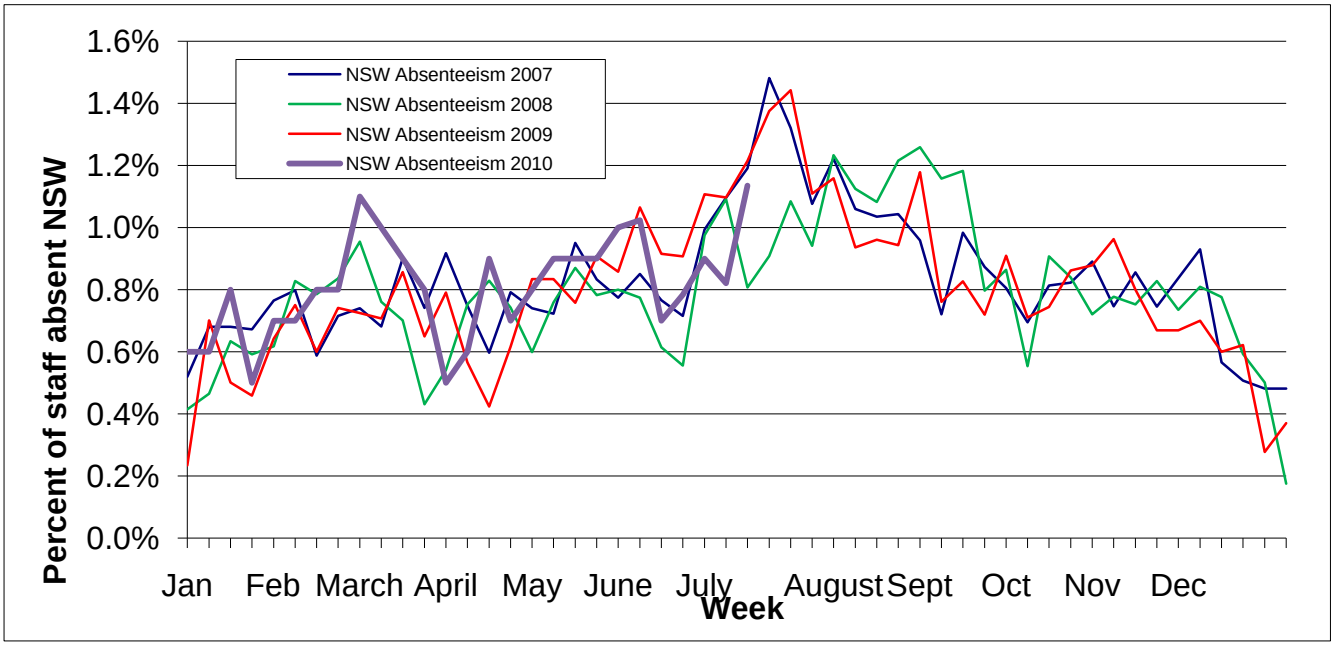
Source: NSW Registry of Births, Deaths and Marriages.

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 are available to the week ending 14 July 2010 (Figure 8).

- In the week ending 14 July 2010, 1.1% of NSW employees from a major Australian company took sick leave of more than 3 consecutive days.
- Absenteeism peaked in the week ending 22 July 2009 when 1.4% of their NSW employees took sick leave of more than three consecutive days.

Figure 8: Weekly proportion of employees of a national employer taking more than 3 consecutive days sick leave, NSW, to 14 July 2010 with comparison to 2007-2009*.



Note: 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.

Immunisation for pandemic (H1N1) 2009 influenza

The New South Wales Population Health Survey 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.

Vaccination for pandemic (H1N1) 2009 influenza became available for adults on the 30 September and for children less than 10 years on the 8 December 2009.

- Reported uptake of H1N1 vaccination has increased over time since data became available in November 2009 to be 43.4% in July 2010 (Table 2).
- Vaccination rates to July vary across the State from 35.5% in Sydney to 50.0% in Hunter and New England
- The majority of people reported having their influenza vaccination at their GP.

Table 2: Pandemic (H1N1) 2009 influenza immunisation in NSW population health survey respondents from November 2009 - July 2010

Indicator	Group	Apr-10				May-10				Jun-10				Jul-10				Total (Nov 09 - Jul 10)			
		N	%	LCI	UCI	N	%	LCI	UCI	N	%	LCI	UCI	N	%	LCI	UCI	N	%	LCI	UCI
Overall Swine flu vaccination		1109	36.5	33.7	39.4	1207	42.7	54.5	60.1	661	40.8	37.1	44.6	1241	43.4	40.6	46.1	7615	34.2	33.1	35.2
Swine flu vaccination by age group	<10 years	94	19.1	11.2	27.1	95	22.1	13.8	30.5	64	18.8	9.2	28.3	92	16.3	8.8	23.9	531	17.7	14.5	20.9
	10 to 19	107	14.0	7.4	20.6	101	30.7	21.7	39.7	63	28.6	17.4	39.7	121	24.8	17.1	32.5	686	19.2	16.3	22.2
	20 to 64	584	31.5	27.7	35.3	636	34.3	30.6	38.0	358	35.2	30.2	40.1	643	34.7	31.0	38.4	4105	27.5	26.1	28.8
	65 years and older	324	58.0	52.6	63.4	375	65.3	60.5	70.2	176	64.8	57.7	71.8	385	70.1	65.6	74.7	2293	54.5	52.4	56.5
Swine flu vaccination by sex	Males	422	30.8	26.4	35.2	469	38.6	34.2	43.0	264	38.3	32.4	44.1	511	40.9	36.6	45.2	2993	31.5	29.8	33.1
	Females	687	40.0	36.4	43.7	738	45.3	41.7	48.9	397	42.6	37.7	47.4	730	45.1	41.5	48.7	4622	35.9	34.6	37.3
Overall Swine flu vaccination by AHS	Sydney South West	109	40.4	31.2	49.6	133	42.1	33.7	50.5	119	42.9	34.0	51.8	110	39.1	30.0	48.2	792	34.8	31.5	38.2
	South Eastern Sydney & Illawarra	120	39.2	30.4	47.9	115	40.0	31.0	49.0	106	41.5	32.1	50.9	123	44.7	35.9	53.5	840	34.3	31.1	37.5
	Sydney West	123	33.3	25.0	41.7	136	38.2	30.1	46.4	99	36.4	26.9	45.8	152	35.5	27.9	43.1	903	29.8	26.8	32.8
	Northern Sydney & Central Coast	115	47.8	38.7	57.0	123	50.4	41.6	59.2	99	38.4	28.8	48.0	174	43.1	35.7	50.5	939	37.3	34.2	40.4
	Hunter & New England	170	41.8	34.3	49.2	172	50.0	42.5	57.5	68	50.0	38.1	61.9	128	50.0	38.1	61.9	1017	39.6	36.6	42.6
	North Coast	168	26.8	20.1	33.5	175	38.9	31.6	46.1	51	45.1	31.4	58.8	271	41.7	35.8	47.6	1178	31.9	29.3	34.6
	Greater Southern	160	31.9	24.7	39.1	166	37.3	30.0	44.7	67	38.8	27.1	50.5	132	47.0	38.5	55.5	951	31.4	28.5	34.4
	Greater Western	144	35.4	27.6	43.2	187	44.4	37.3	51.5	52	34.6	21.7	47.6	151	47.0	39.1	55.0	995	34.4	31.4	37.3
Swine flu vaccination by location	GP		86.9	83.6	90.2		87.6	84.7	90.4		85.6	81.4	89.8		88.1	85.3	90.8		87.4	86.1	88.7
	Other location		13.1	9.8	16.4		12.4	9.6	15.3		14.4	10.2	18.6		11.9	9.2	14.7		12.6	11.3	13.9

Note: All data is unweighted (therefore figures are for those people who responded to the survey not the population as a whole). Data for months November to March can be sourced from previous monthly reports.