Influenza Monthly Epidemiology Report, NSW

Including H1N1 influenza 09

August 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 August 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
- 83 cases with laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- a further 10 cases of influenza A (not yet subtyped) and one case with influenza A (H3) were reported
- eight cases of influenza B were reported
- 11 cases with confirmed pH1N1 and one case with influenza B were admitted to intensive care units (ICU)
- One death in association with confirmed pandemic (H1N1) 2009 influenza was reported in NSW.

Respiratory syncytial virus (RSV), influenza, human metapneumovirus and adenovirus were the most common respiratory viruses diagnosed by sentinel laboratories in August.

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 27 August 2010:

- ILI presentations to selected emergency departments remained low
- 117 cases of laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- three cases of influenza A (H3) were reported in NSW
- 51 cases of influenza (not subtyped) were reported in NSW
- 15 cases of influenza B were reported in NSW
- 23 cases with confirmed pH1N1 have been admitted to intensive care units (ICU)
- one death was 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.

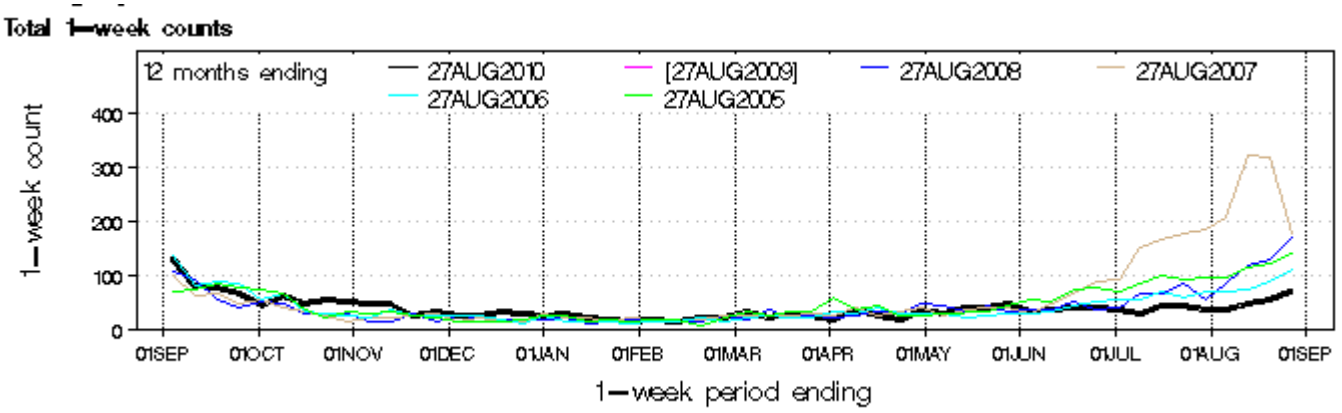
This report provides a summary of the surveillance for influenza, including pandemic (H1N1) 2009 influenza, undertaken by NSW Health to date. This includes data from a range of surveillance systems.

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*



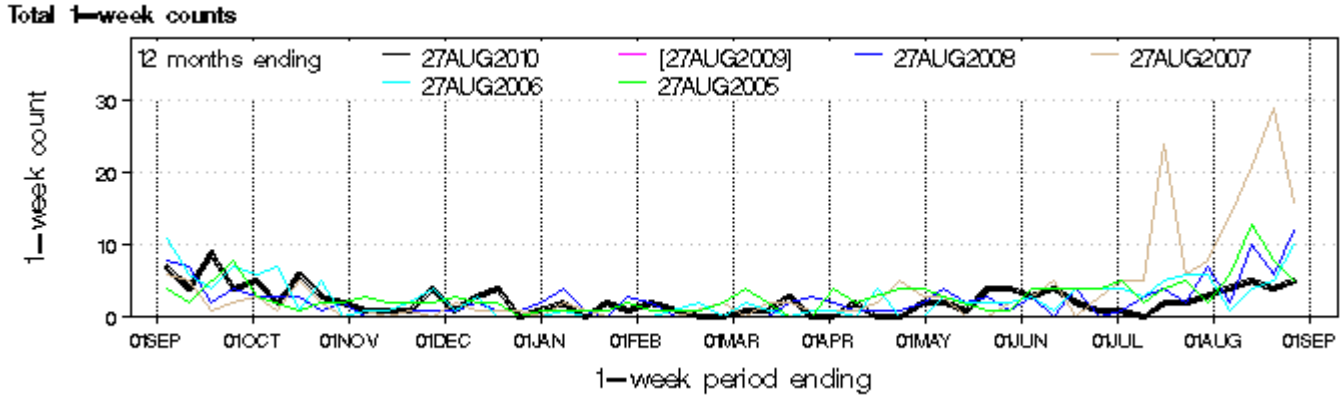
Note: Excludes data from 2009 to enable easier comparison of 2010 data with data from previous non-pandemic years. Some people presenting to NSW emergency departments have been referred to an influenza clinic without being recorded in the regular ED information system. (Under-reporting of influenza-related 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 August 2010 there were 236 presentations with influenza-like illness (rate 1.7 per 1,000 presentations). This is similar to the previous month (July - 220 presentations, rate 1.3 per 1,000 presentations), but is lower than the count of 1521 for the month of August in 2009 and similar to August 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.

Admissions to hospital from emergency departments for influenza-like illness

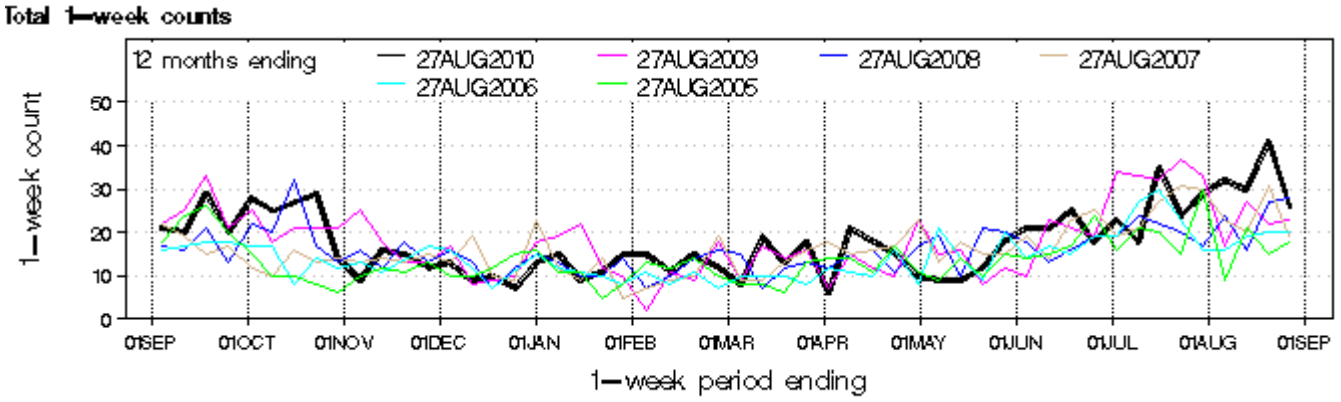
Figure 2: Weekly counts of admissions to hospital for influenza-like illness from NSW emergency departments, 2005-2010*.



Note: As for figure 1.

- There were 19 admissions to hospital following presentation to emergency departments with influenza-like illness in August 2010. This was slightly higher than the previous month (13 admissions), but lower than that of August 2009, when there were 114 admissions 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 3: 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 August 2010 there were 11 admissions to ICUs with confirmed pH1N1 2009 influenza.
- The majority of cases (10) were aged under 60 years, five cases required respiratory support and one case was placed on ECMO (extracorporeal membrane oxygenation).
- Six cases had identified risk factors for severe outcomes from pH1N1 infection.

Laboratory testing summary for influenza

In August 2010:

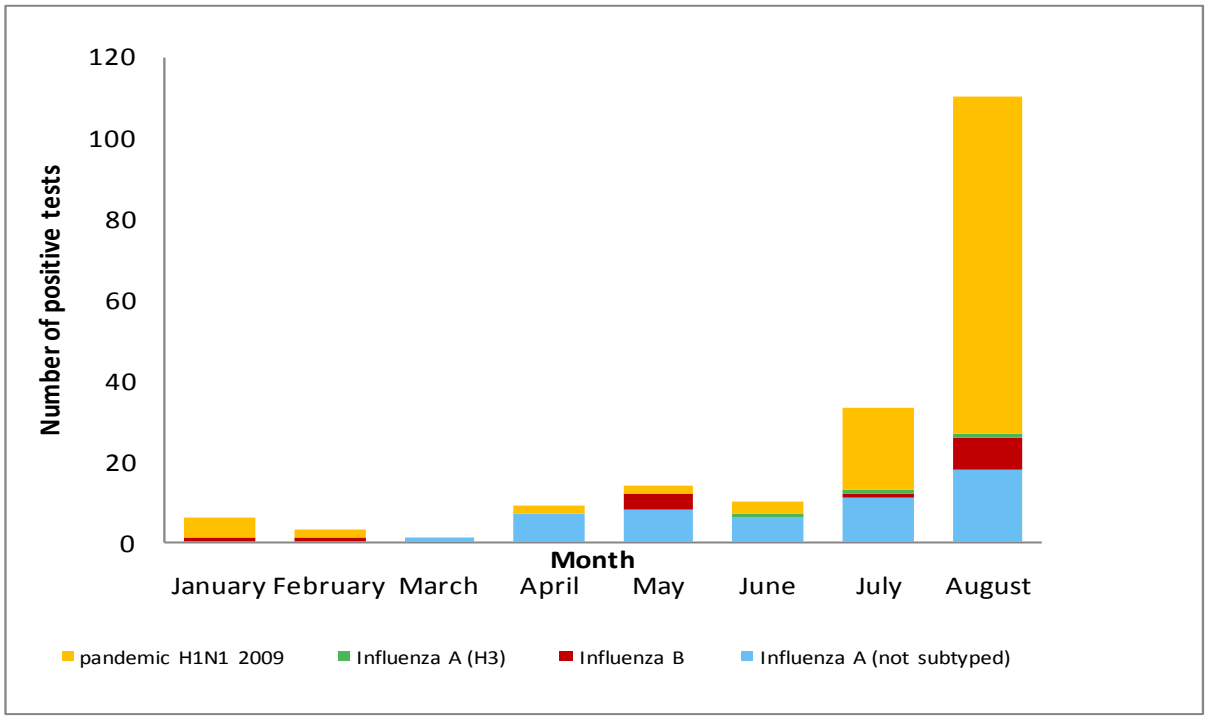
- 3292 tests for respiratory viruses were performed at sentinel NSW laboratories
- 102 specimens tested positive for influenza A - 83 of these have tested positive for pandemic (H1N1) 2009 influenza, one was H3 and the remainder (18) had not yet been subtyped
- eight cases of influenza B were reported.
- the number of tests positive for influenza in August was higher than the previous month (July) although overall influenza activity remained low

Respiratory syncytial virus (RSV), influenza, human metapneumovirus and adenovirus were the most common respiratory viruses diagnosed by sentinel laboratories in August.

From 1 January to 27 August 2010:

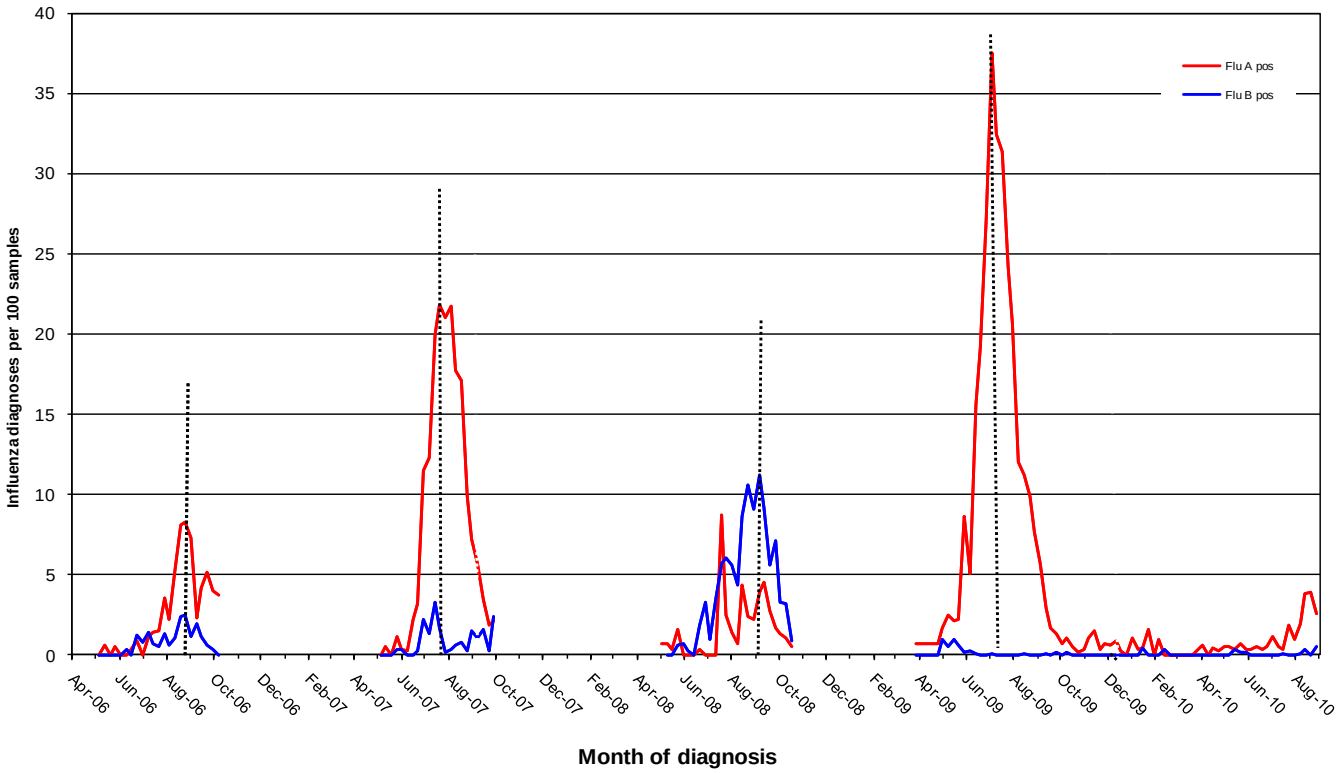
- 16,032 tests for respiratory viruses were performed at sentinel NSW public hospital and private laboratories - slightly higher than previous years for this time of year.
- 171 tests were positive for influenza A, and 15 positive for influenza B.
    - 117 of the influenza A were also positive for pandemic (H1N1) 2009 influenza, three samples were H3, and 51 were not yet subtyped

Figure 4: Number of positive laboratory tests for influenza by month ending 27 August 2010



Note: Data is provided by laboratories on a weekly basis. 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 5: Percent of laboratory tests positive for influenza A and influenza B, 1 January 2005 – 27 August 2010, 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), 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 27 August 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%)	20 (59%)	1 (0.03%)	68	43	609	193	21
27/08/2010	3292	102 (3.0%)	83 (81%)	8 (0.2%)	72	59	222	118	73
Week ending									
06/08/2010	800	16 (2%)	10 (63%)	1 (0.1%)	26	14	83	39	7
13/08/2010	685	26 (3.8%)	21 (81%)	3 (0.4%)	20	15	55	39	22
20/08/2010	937	37 (3.9%)	32 (86%)	0	8	13	47	25	19
27/08/2010	870	23 (2.6%)	20 (77%)	4	18	17	37	15	25

* 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), 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.

August 2010

- Public health Units reported there was one death in a person with confirmed H1N1, this person had multiple co-morbidities.
- Death registration data show that as of 20 August 2010, there were 128 pneumonia or influenza deaths per 1000 deaths in NSW, which is below the seasonal threshold of 145 per 1,000.
- There were no additional deaths identified when death registration data were cross matched with laboratory notified cases of influenza.

Interpreting death data

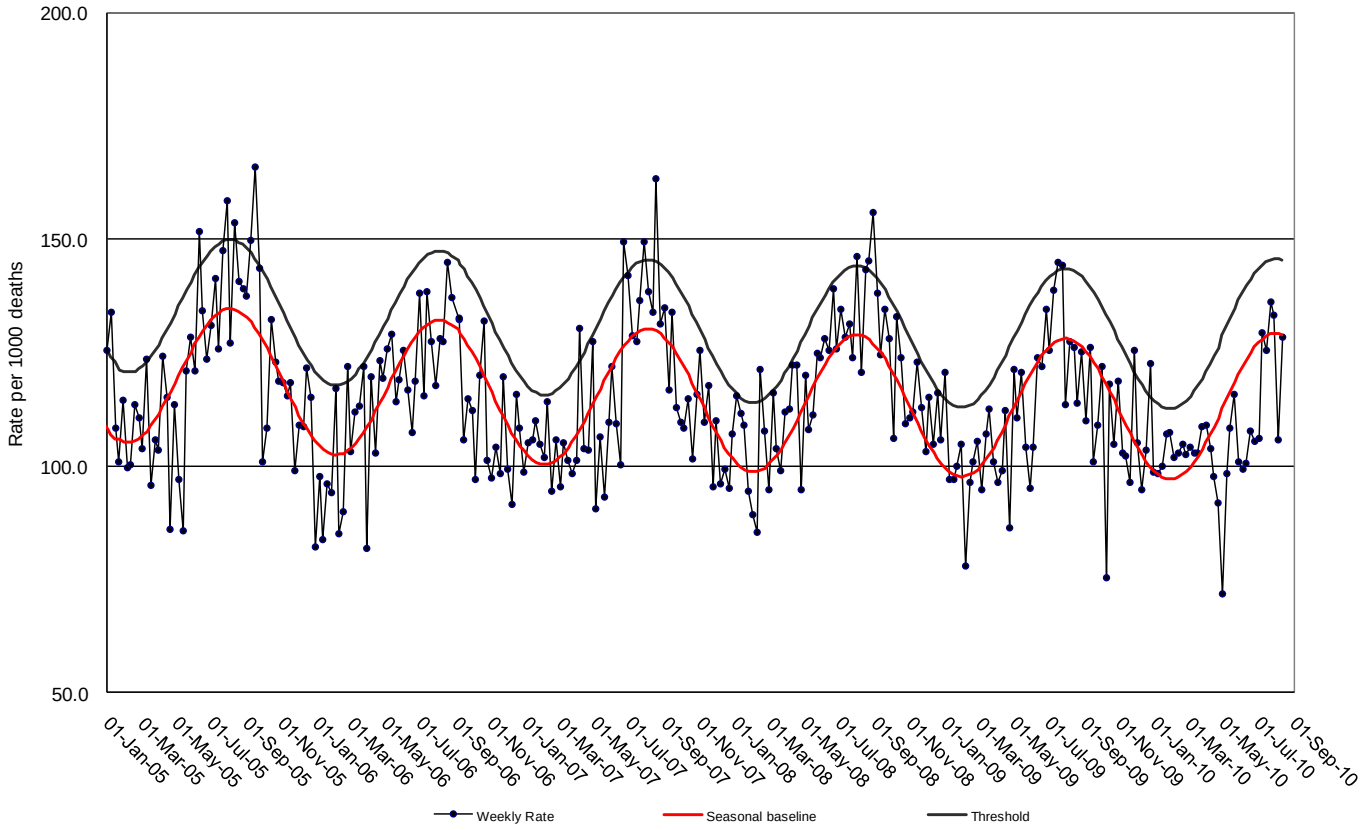
Note: Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data. Influenza deaths confirmed by serology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

From 1 January to 27 August 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 13 people with laboratory confirmed influenza have died up to 27 August. All 13 case had multiple co-morbidities, were aged 50 years and over and laboratory confirmation was by serology.

Figure 6: Rate of deaths classified as influenza and pneumonia as per NSW Registered Death Certificates, 2005-2010



Source: NSW Registry of Births, Deaths and Marriages.

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.

- Uptake of H1N1 vaccination has increased over time since data became available in November 2009 to 43.4% in August 2010 (Table 2).

- Vaccination rates vary across the AHS's from 36.4% in North Coast to 51.1% in Northern Sydney & Central Coast for the month of August 2010, and an increase can be seen in all AHS from November 2009 to August 2010 across all AHS.
- 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 - August 2010

Indicator	Group	Apr-10				May-10				Jun-10				Jul-10				Aug-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	39.9	45.5	661	40.8	37.1	44.6	1241	43.4	40.6	46.1	1081	43.4	40.4	46.3
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	100	26.0	17.4	34.6
	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	84	23.8	14.7	32.9
	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	554	35.2	31.2	39.2
	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	343	66.5	61.5	71.5
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	435	36.8	32.2	41.3
	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	646	47.8	44.0	51.7
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	132	42.4	34.0	50.9
	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	121	44.6	35.8	53.5
	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	139	44.6	36.3	52.9
	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	131	51.1	42.6	59.7
	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	132	48.5	40.0	57.0
	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	165	36.4	29.0	43.7
	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	123	42.3	33.5	51.0
	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	138	39.1	31.0	47.3
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		87.2	84.1	90.2
	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		12.8	9.8	15.9

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 April can be sourced from previous monthly reports.