

Influenza Monthly Epidemiology Report, NSW

Including H1N1 influenza 09

October 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.

Please note influenza reports will now only be produced on a monthly basis until May 2011, unless unusual activity becomes apparent over the summer months

Summary

In October 2010:

- the rate of influenza like illness (ILI) presentations to selected emergency departments was low, similar to that of the previous month, however higher than the same month last year
- 125 cases with laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- a further 31 cases of influenza A (not yet subtyped) and three cases with influenza A (H3) were reported
- 29 cases of influenza B were reported
- 12 cases with confirmed pH1N1 influenza were admitted to intensive care units (ICU)
- one death in association with confirmed pandemic (H1N1) 2009 influenza was reported in NSW.

Influenza was the most common respiratory virus identified by sentinel laboratories testing in October.

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 1 October 2010:

- ILI presentations to selected emergency departments remained low
- 485 cases of laboratory confirmed pandemic (H1N1) 2009 influenza were reported in NSW
- 14 cases of influenza A (H3) were reported in NSW
- 138 cases of influenza (not subtyped) were reported in NSW
- 80 cases of influenza B were reported in NSW
- 66 cases with confirmed influenza have been admitted to intensive care units (ICU)
- eight 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.

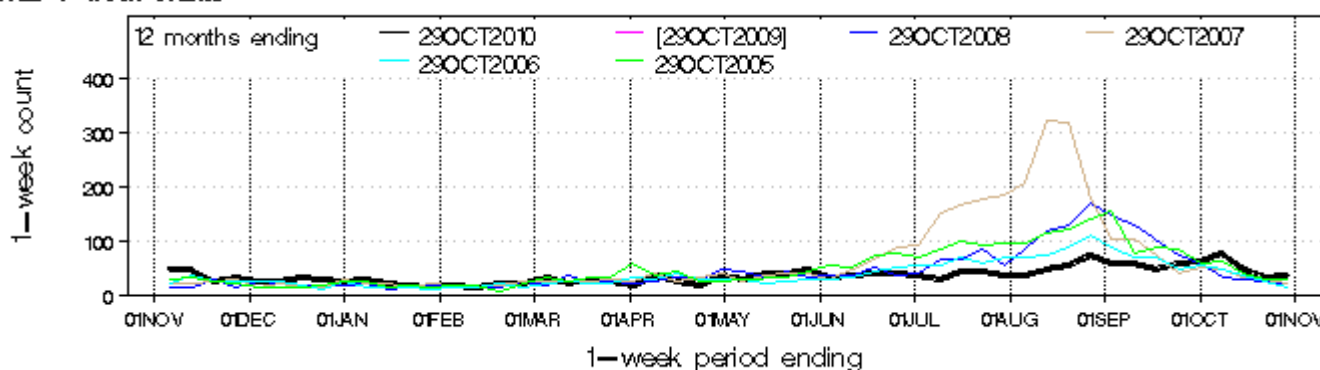
Emergency Department (ED) presentations

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*

Total 1-week counts



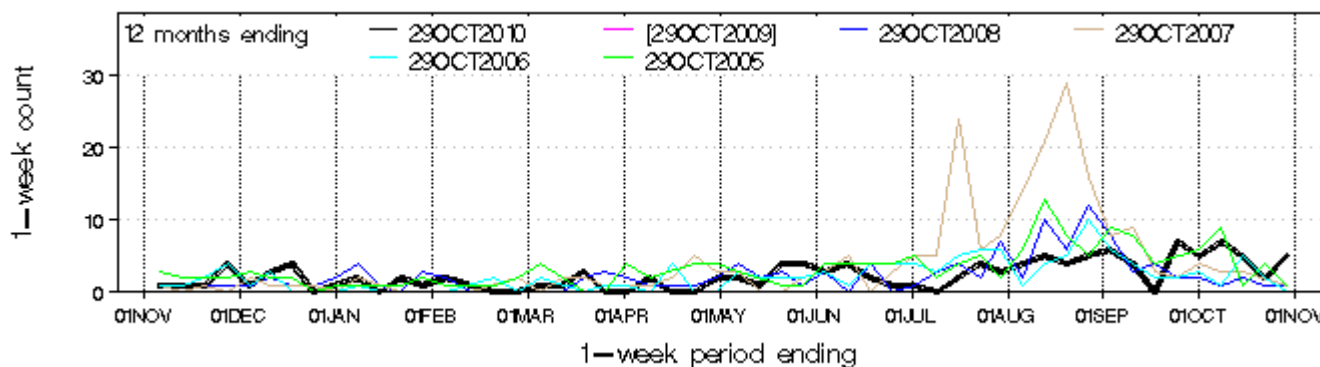
Note: Excludes data from 2009 to enable easier comparison of 2010 data with data from previous non-pandemic years. Some people presenting to NSW emergency departments have been referred to an influenza clinic without being recorded in the regular ED information system. (Under-reporting of influenza-related 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 October 2010 there were 287 presentations with influenza-like illness (rate 1.9 per 1,000 presentations). This is similar to the previous month (September - 344 presentations, rate 1.8 per 1,000 presentations), higher than the count of 231 (rate 1.6 per 1,000 presentations) for the month of October in 2009, and similar to October 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*.

Total 1-week counts

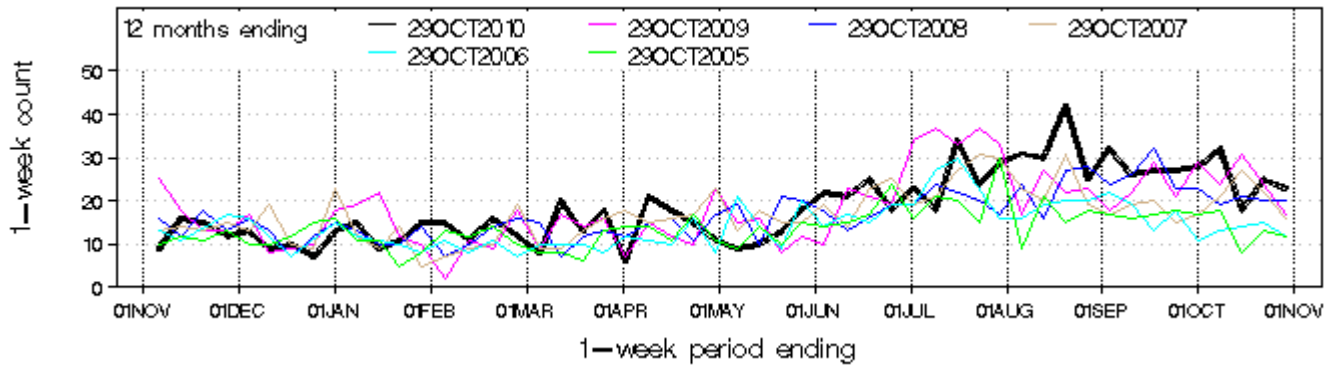


Note: As for figure 1.

- There were 22 admissions to hospital following presentation to emergency departments with influenza-like illness in October 2010. This was similar to the previous month (24 admissions), but higher than that of October 2009, when there were 13 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*.

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).

- Pneumonia and influenza presentations admitted to a critical care ward decreased but have remained above the usual range for the time of year. However, investigations have suggested this increase is due to a range of viral and other pathogens.
- In October 2010 there were 12 admissions to ICUs with confirmed pH1N1 2009 influenza.
 - 11/12 cases were aged under 65 years, six cases required respiratory support.
 - seven cases had identified risk factors for severe outcomes from pH1N1 infection, three had no risk factors, and risk factor information was unknown for the remaining two cases.

Laboratory testing summary for influenza

In October 2010:

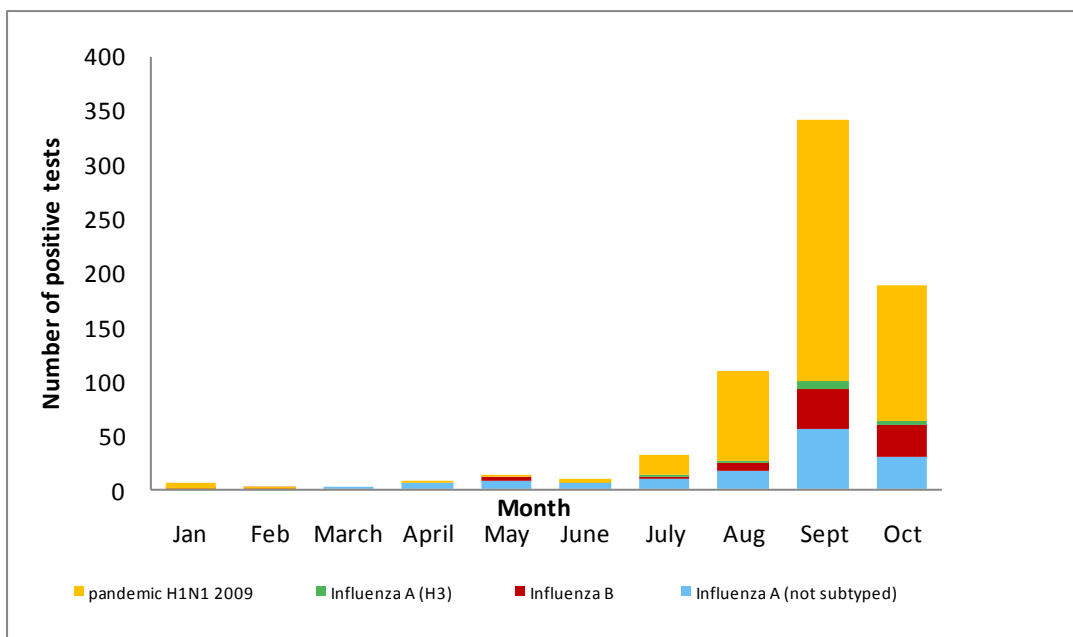
- 3126 tests for respiratory viruses were performed at sentinel NSW laboratories
- 160 specimens tested positive for influenza A - 125 of these have tested positive for pandemic (H1N1) 2009 influenza, three were H3 and the remainder (31) had not yet been subtyped
- 29 cases of influenza B were reported
- the number of tests positive for influenza in October was lower than the previous month (September) and overall influenza activity remained low.

Influenza appears to have peaked in the third week of September and was the most commonly identified respiratory virus circulating throughout October. Other respiratory viruses also circulated at low levels during October including human metapneumovirus, parainfluenza, respiratory syncytial virus and adenovirus.

From 1 January to 29 October 2010:

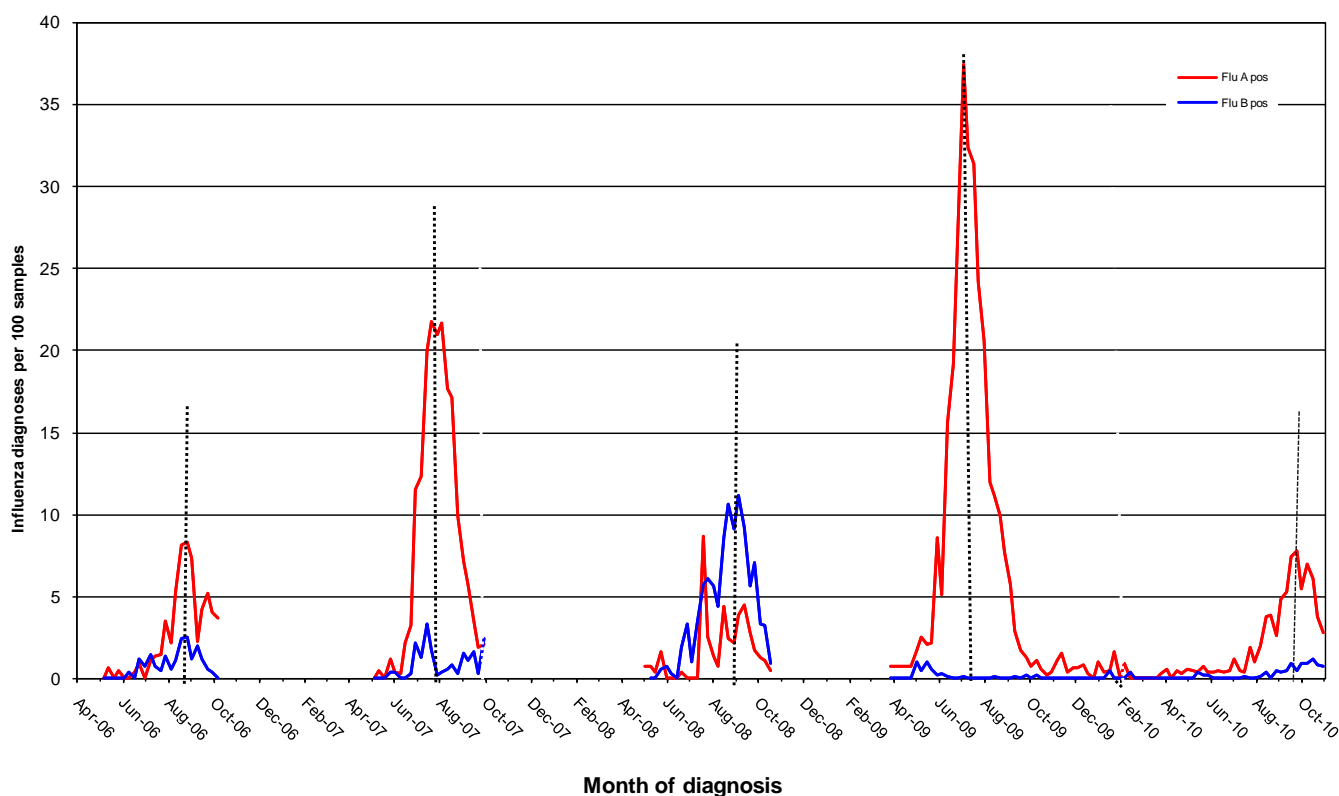
- 24,073 tests for respiratory viruses were performed at sentinel NSW public hospital and private laboratories
- 637 tests were positive for influenza A, and 80 positive for influenza B.
 - 485 of the confirmed influenza A samples positive for pandemic (H1N1) 2009 influenza, 14 samples were H3, and 138 were not subtyped.

Figure 4: Number of positive laboratory tests for influenza by month ending 29 October 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 – 29 October 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 29 October 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
01/10/2010*	4915	306 (6.2%)	242 (79%)	36 (0.7%)	99	120	176	147	148
29/10/2010	3126	160 (5.1%)	126 (78%)	29 (0.9%)	56	121	50	79	77
Week ending									
08/10/2010	822	59 (7.0%)	46 (80%)	7 (0.9%)	8	37	17	10	24
15/10/2010	852	52 (6.1%)	44 (85%)	10 (1.2%)	22	30	18	23	22
22/10/2010	768	30 (3.9%)	22 (72%)	7 (0.8%)	10	24	12	30	15
29/10/2010	684	19 (2.8%)	14 (74%)	5 (0.7%)	16	30	3	16	16

* 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.

In October 2010:

- public Health Units reported there was one death in a person with confirmed pandemic H1N1
- death registration data show that as of 15 October 2010, there were 120 pneumonia or influenza deaths per 1000 deaths in NSW, which is below the seasonal threshold of 138 per 1,000 deaths.

Interpreting death data

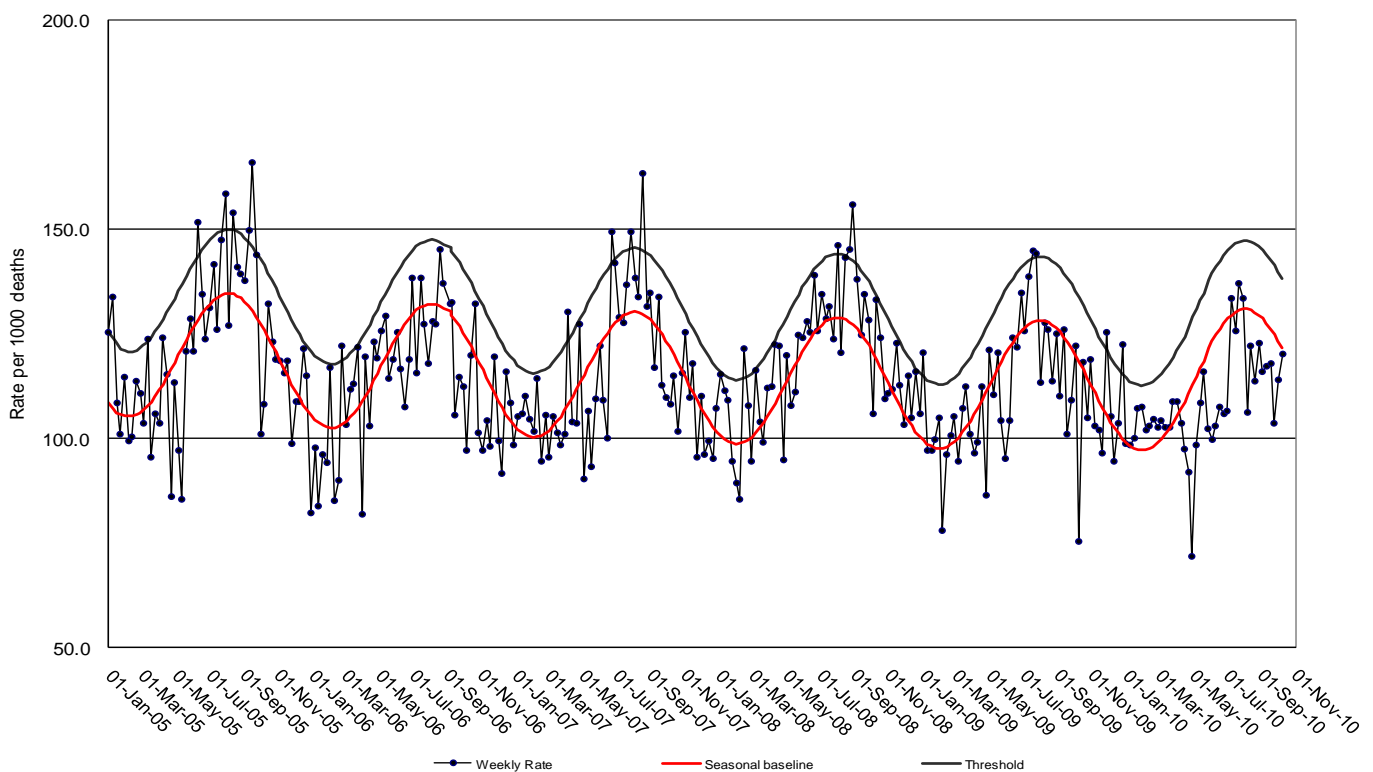
Note: Deaths referred to a coroner during the reporting period may not be available for analysis. Deaths in younger people may be more likely to require a coronial inquest. Therefore influenza-related deaths in younger people may be under-represented in these data. Influenza deaths confirmed by serology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

From 1 January to 29 October 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 29 people with laboratory confirmed influenza have died up to 29 October. All cases underlying illness, 27/29 (93%) were aged 55 years and over. For twenty-one cases laboratory confirmation was by serology. However eight cases have been diagnosed by polymerase chain reaction (PCR) testing.

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 2009 and for children less than 10 years on the 8 December 2009. The NSW Population Survey indicates that:

- uptake of H1N1 vaccination has increased over time since data became available in November 2009 to 42.6% in October 2010 (Table 2)

- vaccination rates vary across the AHS's from 34.6% in North Coast to 53% in Hunter/New England for the month of October 2010, and an increase can be seen in all AHS from November 2009 to October 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 April - October 2010

Indicator	Group	Nov-09				Dec-09				Feb-10				Mar-10				Apr-10				May-10			
		N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI
Overall Swine flu vaccination		515	16.1	12.9	19.3	515	23.3	19.6	27.0	804	25.7	22.7	28.8	1563	29.8	27.5	32.0	1109	36.5	33.7	39.4	1207	42.7	39.9	45.9
Swine flu vaccination by age group	<10 years	NA	NA	NA	NA	NA	NA	NA	NA	70	8.6	2.0	15.1	116	19.0	11.8	26.1	94	19.1	11.2	27.1	95	22.1	13.8	30.9
	10 to 19	50	10.0	1.7	18.3	50	10.0	1.7	18.3	65	15.4	6.6	24.2	129	14.0	8.0	19.9	107	14.0	7.4	20.6	101	10.7	21.7	39.7
	20 to 64	299	12.0	8.3	15.7	304	14.1	10.2	18.1	416	17.8	14.1	21.5	665	25.9	23.0	28.8	594	31.5	27.7	35.3	636	34.3	30.6	38.0
	65 years and older	166	25.3	16.7	31.9	161	44.7	37.0	52.4	253	46.2	40.1	52.4	453	44.4	39.8	48.8	324	50.0	52.6	63.4	375	65.3	60.5	70.2
Swine flu vaccination by sex	Males	205	17.6	12.3	22.8	211	20.4	14.9	25.8	239	24.4	19.5	29.3	612	27.6	24.1	31.2	422	30.8	26.4	35.2	469	38.6	34.2	43.0
	Females	310	15.2	11.2	19.2	304	25.3	20.4	30.2	505	26.5	22.7	30.4	951	31.1	28.2	34.1	687	40.0	36.4	43.7	738	45.3	41.7	48.9
Overall Swine flu vaccination by AHS	Sydney South West	40	10.0	0.7	19.3	43	20.9	8.8	33.1	91	26.4	17.3	35.4	147	30.6	23.2	38.1	109	40.4	31.2	49.6	133	42.1	33.7	50.9
	South Eastern Sydney & Illawarra	46	26.1	13.4	38.8	53	20.8	9.8	31.7	85	27.1	17.6	36.5	192	26.0	19.8	32.3	120	39.2	30.4	47.9	115	40.0	31.0	49.0
	Sydney West	54	5.6	0.0	11.7	73	26.0	16.0	36.1	92	27.2	18.1	36.3	174	22.4	16.2	28.6	123	33.3	25.0	41.7	136	38.2	30.1	46.4
	Northern Sydney & Central Coast	64	17.2	7.9	26.4	71	18.3	9.3	27.3	80	32.5	22.2	42.8	213	32.9	26.6	39.2	115	47.8	38.7	57.0	123	50.4	41.6	59.2
	Hunter & New England	98	25.0	15.9	34.1	74	24.3	14.5	34.3	109	21.1	13.4	28.8	208	40.4	33.7	47.1	170	41.8	34.3	49.2	172	50.0	42.5	57.5
	North Coast	78	16.7	8.4	24.9	70	31.4	20.5	42.3	129	25.6	18.0	33.1	236	25.0	19.5	30.5	168	26.8	20.1	33.5	175	38.9	31.6	46.1
	Greater Southern	68	13.2	5.2	21.3	70	24.3	14.2	34.3	108	22.2	14.4	30.1	180	26.7	20.2	33.1	160	31.9	24.7	39.1	166	37.3	30.0	44.7
	Greater Western	77	11.7	4.5	18.9	61	18.0	8.4	27.7	110	26.4	18.1	34.6	213	32.9	26.8	39.2	144	35.4	27.6	43.2	187	44.4	37.3	51.5
Swine flu vaccination by location	GP	85.5	77.9	93.1		90.8	85.6	96.0		88.4	84.0	92.8		87.1	84.0	90.1		86.9	83.6	90.2		87.6	84.7	90.4	
	Other location	14.5	6.9	22.1		9.2	4.0	14.4		11.6	7.2	16.0		12.9	9.9	16.0		13.1	9.8	16.4		12.4	9.6	15.3	

Table 3: Swine Flu Immunisation in NSW population health survey respondents from November 2009 - October 2010 (continued)

Indicator	Group	Jun-10				Jul-10				Aug-10				Sep-10				Oct-10				Total (Nov 09 - Oct 10)			
		N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI	N=	%	LCI	UCI
Overall Swine flu vaccination		661	40.8	37.1	44.6	1241	43.4	40.6	46.1	1081	43.4	40.4	46.3	986	43.8	40.7	46.8	1031	42.6	39.6	45.6	10712	36.8	35.9	37.7
Swine flu vaccination by age group	<10 years	64	18.8	9.2	28.3	92	16.3	8.8	23.9	100	26.0	17.4	34.6	78	21.8	12.6	31.0	75	22.7	13.2	32.1	794	19.6	16.9	22.4
	10 to 19	63	28.6	17.4	39.7	121	24.8	17.1	32.5	84	23.8	14.7	32.9	93	38.7	28.8	48.6	92	39.2	29.1	49.1	955	23.5	20.8	26.1
	20 to 64	358	35.2	30.2	40.1	643	34.7	31.0	38.4	554	35.2	31.2	39.2	559	34.0	30.1	37.9	551	33.0	29.1	37.0	5768	29.4	28.2	30.6
	65 years and older	176	64.8	57.7	71.8	385	70.1	65.6	74.7	343	66.5	61.5	71.5	256	73.8	68.4	79.2	313	65.2	59.9	70.5	3205	58.3	56.6	60.1
Swine flu vaccination by sex	Males	264	38.3	32.4	44.1	511	40.9	36.6	45.2	435	36.8	32.2	41.3	387	38.8	34.9	44.7	417	40.5	35.8	45.2	4202	33.7	32.2	35.1
	Females	397	42.6	37.7	47.4	730	45.1	41.5	48.7	646	47.8	44.0	51.7	599	46.4	42.4	50.4	614	44.0	40.0	47.9	6480	38.9	37.7	40.0
Overall Swine flu vaccination by AHS	Sydney South West	119	42.9	34.0	51.8	110	39.1	30.0	48.2	132	42.4	34.0	50.9	114	38.6	29.7	47.5	100	35.0	25.7	44.3	1138	36.1	33.3	38.9
	South Eastern Sydney & Illawarra	106	41.5	32.1	50.9	123	44.7	35.9	53.5	121	44.6	35.8	53.5	146	50.0	41.9	58.1	102	48.0	38.3	57.7	1209	38.4	35.6	41.1
	Sydney West	99	36.4	26.9	45.8	152	35.5	27.9	43.1	139	44.6	36.3	52.9	119	43.7	34.8	52.6	122	41.0	32.3	49.7	1283	33.7	31.2	36.3
	Northern Sydney & Central Coast	99	38.4	28.8	48.0	174	43.1	35.7	50.5	131	51.1	42.6	59.7	116	37.9	29.1	46.8	93	47.3	37.1	57.5	1279	39.5	36.8	42.2
	Hunter & New England	68	50.0	38.1	61.9	128	50.0	38.1	61.9	132	48.5	40.0	57.0	116	52.6	43.5	61.7	149	53.0	45.0	61.0	1414	42.9	40.3	45.5
	North Coast	51	45.1	31.4	58.8	271	41.7	35.8	47.6	165	36.4	29.0	43.7	110	36.4	27.4	43.4	159	34.6	27.2	42.0	1612	32.9	30.6	35.2
	Greater Southern	67	38.8	27.1	50.5	132	47.0	38.5	55.5	123	42.3	33.5	51.0	130	45.4	36.8	53.8	170	40.0	32.6	47.4	1373	34.8	32.3	37.3
	Greater Western	52	34.6	21.7	47.6	151	47.0	39.1	55.0	138	39.1	31.0	47.3	135	43.7	35.3	52.1	136	43.4	35.1	51.7	1404	36.6	34.1	38.1
Swine flu vaccination by location	GP	85.6	81.4	89.8		88.1	85.3	90.8		87.2	84.1	90.2		85.8	82.6	89.1		86.5	83.3	89.7		87.1	86.1	88.2	
	Other location	14.4	10.2	18.6		11.9	9.2	14.7		12.8	9.8	15.9		14.2	10.9	17.4		13.5	10.3	16.7		12.9	11.8	13.9	

Note: All data is unweighted (therefore figures are for those people who responded to the survey not the population as a whole).