

NSW Health Influenza Surveillance Report

Week 21 Ending 25 May 2014

Influenza Surveillance Forecast:

It is too early to predict which strain or strains will dominate this year and when the season will start. Currently, the same three influenza strains seen in 2013 are circulating again at low levels.

The impact of seasonal influenza in NSW this year is expected to be less than in 2013 given that:

- the influenza strains likely to predominate in NSW also circulated last season (so many people will have acquired immunity)
- the 2014 influenza vaccine is better matched to these strains than the 2103 vaccine, and the uptake of influenza vaccine in NSW this year has been higher than in recent years.

People in older age-groups are at higher risk of infection when influenza A(H3N2) is the dominant strain while younger people are more at risk of infection from the influenza A(H1N1)pdm strain.

Summary:

For the week ending 25 May 2014, influenza activity was low in NSW with no indication that the influenza season has started.

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations was well below the seasonal threshold. Bronchiolitis presentations remain high.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A or B was low at 1.9%. RSV was the most commonly identified respiratory virus.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and Flu Tracking on ILI activity in NSW are at pre-season levels.
- [Hospitalisation \(FluCAN\)](#) - no confirmed influenza admissions from FluCAN sentinel surveillance.
- [National and International influenza surveillance](#) – new human cases of infection with the avian influenza A(H7N9) strain from China; otherwise decreasing influenza activity worldwide.

About this report:

Health Protection NSW collects and analyses surveillance data on influenza and related respiratory pathogens, and produces regular surveillance reports for the community and health professionals. Surveillance reports are produced weekly reports commencing in May and continuing until the end of the influenza season. Monthly reports are produced throughout the rest of the year.

The influenza surveillance reports include data from a range of surveillance systems and sources concerned with Emergency Department illness surveillance, laboratory (virological) surveillance, and community illness surveillance. Pneumonia and influenza mortality data are also monitored and reported upon periodically.

For further information on influenza see the [NSW Health Influenza website](#).

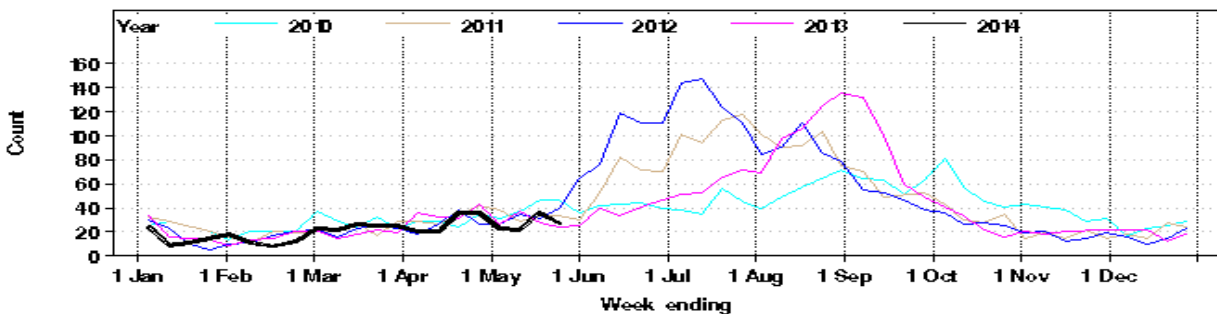
1. Emergency Department (ED) Surveillance ¹

Presentations for influenza-like illness (ILI) and other respiratory illness

The ED surveillance system uses a statistic called the 'index of increase' to indicate when presentations are increasing at a statistically significant rate. It accumulates the difference between the previous day's count of presentations and the average for that weekday over the previous 12 months. An index of increase value of 15 is considered an important signal for the start of the influenza season in NSW as it suggests influenza is circulating widely in the community.

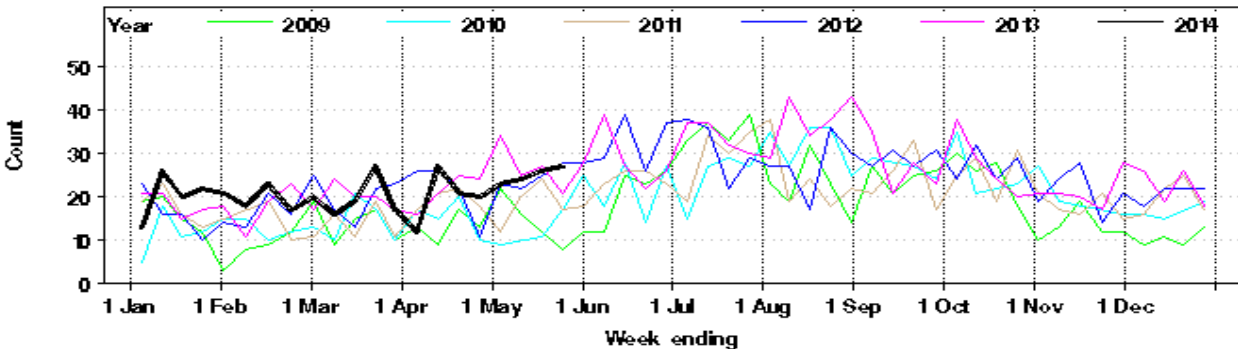
- On 25 May 2014, the index of increase for influenza-like illness presentations was 6.5, well below the threshold of 15 and suggested that the influenza season had not commenced in NSW.
- ILI activity was low this week to 0.7 cases per 1000 presentations. The total count for ILI presentations eased this week and was within the usual range (Figure 1 and Table 1).
- Combined ILI and pneumonia admissions to critical care wards increased further this week however were within the usual range for this time of year (Figure 2 and Table 1).
- The overall number of bronchiolitis presentations in infants increased above the usual level for the time of year, and was comparable to the peak in mid-April and to usual peak levels during winter months (Figure 3 and Table 1).
- Bronchiolitis presentations in Hunter New England Local Health District were above the usual seasonal range and at their highest levels for the year, similar to 2010/2012 peak levels (data not shown). The largest increases were seen at Tamworth Base Hospital.

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 25 May 2014 (black line), compared with each of the 5 previous years (coloured lines).*



* **Note:** Excludes 2009 data to enable comparison of 2013 data with data from previous non-pandemic years.

Figure 2: Total weekly counts of ED visits for pneumonia and ILI admitted to a critical care ward, from January – 25 May 2014 (black line), compared with each of the 5 previous years (coloured lines).



¹ **Source:** NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) is managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change.

Figure 3: Total weekly counts of ED visits for bronchiolitis, from January –25 May 2014 (black line), compared with each of the 5 previous years (coloured lines).

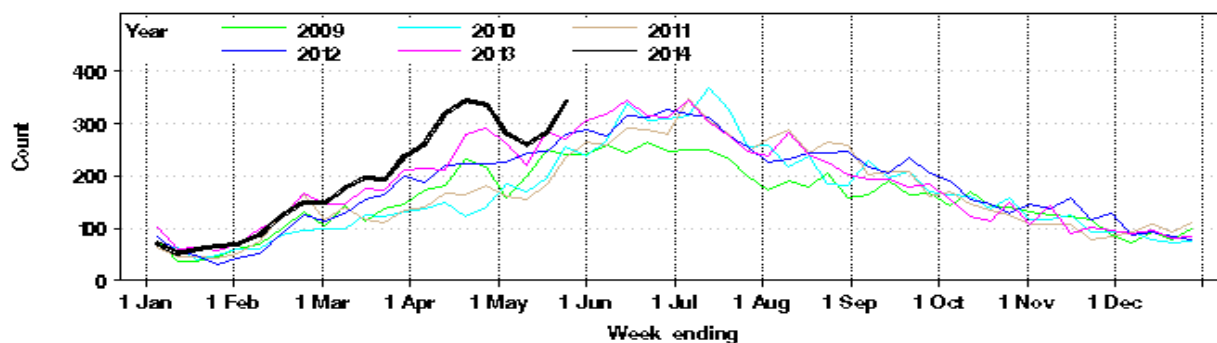


Table 1: Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW EDs and the Sydney Ambulance Division. *

Data source	Diagnosis or problem category	Trend since last week	Overall comparison with usual range for time of year	Statistically significant age groups (if any)	Statistically significant local increase (if any)	Action other than this report (if any)	Comment
ED presentations, 59 NSW hospitals	Influenza like illness (ILI)	Decreased	Usual				
	Pneumonia	Increased	Usual				
	Pneumonia and ILI admissions	Increased	Usual				
	Pneumonia and ILI critical care admissions	Increased	Usual				
	Bronchiolitis	Increased	Above		Hunter New England LHD, and Shellharbour Hospital		Bronchiolitis is a disease of infants.
	Respiratory illness, fever or unspecified infections	Increased	Usual	0-4 year olds			
	Asthma	Increased	Usual				
Ambulance calls, Sydney region	Breathing problems	Steady	Usual				

* **Notes on Table 1:** Statistically significant increases are shown in bold. Recent activity counts are subject to change. This is a routine general report for information on respiratory activity and is additional to public health situation reports that advise of unusual increases in activity in particular provisional ED diagnosis groupings or Ambulance problem categories.

2. Laboratory Surveillance

For the week ending 25 May 2014, the number and proportion of respiratory specimens reported by NSW sentinel laboratories² which tested positive for influenza was steady and remains low (Table 2 and Figure 4). A total of 1490 tests for respiratory viruses were reported with 29 specimens (1.9%) testing positive for influenza viruses. An additional 14 laboratory-confirmed influenza cases were notified to public health units during the reporting week (follow the link for more information on [notified influenza infections](#)).

² **Source:** Participating sentinel laboratories include the following: South Eastern Area Laboratory Services, The Children’s Hospital at Westmead, Sydney South West Pathology Service, Pacific Laboratory Medicine Service, Royal Prince Alfred Hospital, Hunter Area Pathology Service, Pathology West – Westmead & Pathology West - Nepean [no data from Oct 2010 to June 2011], Douglas Hanley Moir Pathology, VDRLab [data from 5 March 2010], Lavery Pathology [data from 1 April 2010 to February 2011], SydPath (St Vincent’s) Pathology [data from Nov 2010], Medlab, and Lavery [data from September 2013].

Testing suggests that Influenza A and B viruses are circulating at similarly low levels.

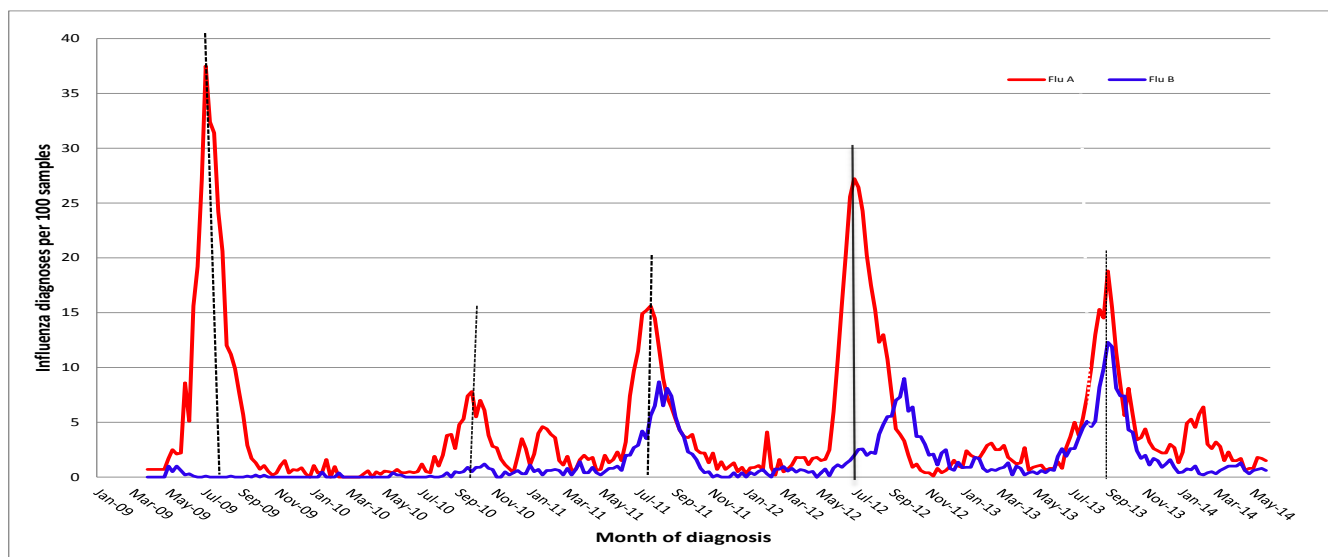
Respiratory syncytial virus (RSV) was the leading respiratory virus identified by laboratories this week, as is usual for this time of year, and rhinovirus identifications also remained high (Table 2).

Table 2: Summary of testing for influenza and other respiratory viruses at NSW laboratories, 1 January to 25 May 2014.*

Month ending	Total Tests	TEST RESULTS *															
		Influenza A								Influenza B		Adeno	Parainf 1, 2 & 3	RSV	Rhino	Entero	HMPV
		Total		H3N2 **		H1N1 pdm09		A (Not typed)		Total							
Total	(%)	Total	(%A) **	Total	(%A)	Total	(%A)	Total	(%)								
02/02/2014*	3541	163	(4.6%)	36	(22.1%)	31	(19.0%)	96	(58.9%)	23	(0.6%)	98	123	90	339	12	32
02/03/2014	3413	127	(3.7%)	19	(15.0%)	38	(29.9%)	70	(55.1%)	12	(0.4%)	56	79	149	362	7	23
30/03/2014	4843	95	(2.0%)	11	(11.6%)	36	(37.9%)	49	(51.6%)	41	(0.8%)	97	135	387	549	22	37
27/04/2014	5360	64	(1.2%)	3	(4.7%)	15	(23.4%)	47	(73.4%)	45	(0.8%)	103	177	753	535	30	50
Week ending																	
04/05/2014	1424	12	(0.8%)	0	(0.0%)	2	(16.7%)	10	(83.3%)	8	(0.6%)	23	44	228	137	8	22
11/05/2014	1473	27	(1.8%)	1	(3.7%)	6	(22.2%)	20	(74.1%)	11	(0.7%)	21	30	213	108	2	12
18/05/2014	1418	24	(1.7%)	4	(16.7%)	3	(12.5%)	17	(70.8%)	11	(0.8%)	22	34	170	134	4	12
25/05/2014	1490	22	(1.5%)	2	(9.1%)	2	(9.1%)	18	(81.8%)	9	(0.6%)	16	25	199	136	4	24

Note: ** Subset of influenza A positive tests. Not all influenza A samples are typed; samples that test negative for A(H1N1)pdm09 are assumed to be A(H3N2). *** HMPV = Human metapneumovirus

Figure 4: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2009 – 25 May 2014, New South Wales. *



Note: Laboratory surveillance data is provided by laboratories on a weekly basis and includes point-of-care tests as of 10 August 2012. Serological diagnoses are not included.

Laboratory-confirmed influenza outbreaks in residential care facilities and other settings

There were no further influenza outbreaks in institutions reported this month, leaving just the two outbreaks in aged care facilities reported in January (Table 3).

Table 3. Reported influenza outbreaks in NSW institutions, 2006 to May, 2014.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014*
No. of outbreaks	2	25	9	1	2	4	39	12	2

Note: * Year to date.

Reports of influenza outbreaks in aged care facilities were uncommon from 2009 to 2011. This is thought to be as a result of the higher levels of sero-protection observed in people in older age-groups against the influenza A(H1N1)pdm09 strain which predominated in these years.

Influenza outbreak reports increased dramatically in 2012 when the influenza A(H3N2) strain predominated. Both strains of influenza A and an influenza B strain circulated during 2013.

3. Community Illness Surveillance

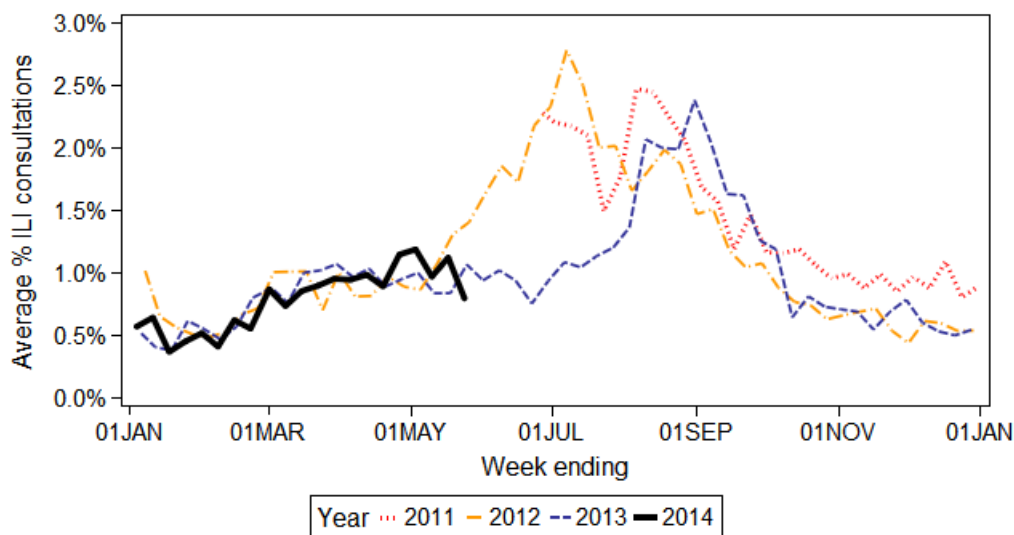
Electronic General Practice Surveillance (eGPS)

eGPS is a primary care influenza surveillance system involving sentinel general practices within three NSW Local Health Districts (LHD): Northern Sydney (NS), South Eastern Sydney (SES) and Illawarra Shoalhaven (IS). The system monitors patient consultations for influenza-like illness (ILI) as an indicator of influenza activity. Consultations for ILI are identified each week by an automatic search of electronic records for validated combinations of ILI terms rather than diagnosis codes.

Data generated from eGPS should be interpreted with caution as it is not representative of all practices within the participating LHDs or across NSW.

- In week 21 there were surveillance reports received from 8 sentinel practices in NSW (Northern Sydney data not available).
- The average rate for patient consultations was 0.8% (range 0.1 – 1.7%) (Figure 5). This is lower than the rate in the previous week (1.0%) and is below the usual range of ILI activity seen at this time in the three previous years.

Figure 5. Average rate of influenza-like presentations to sentinel general practices, by week of consultation 2011-14



The Australian Sentinel Practices Research Network (ASPREN)

ASPREN is a network of sentinel general practitioners (GPs) run through the RACGP and the University of Adelaide that has collected de-identified information on influenza like illness and other conditions seen in general practice since 1991. GPs participating in the program report on the proportion of patients presenting with an ILI. The number of GPs participating on a weekly basis may vary.

- In week 25 there were 25 ASPREN reports received from NSW GPs. The overall consultation rate for ILI was low at 1.7%, consistent with inter-seasonal reporting.

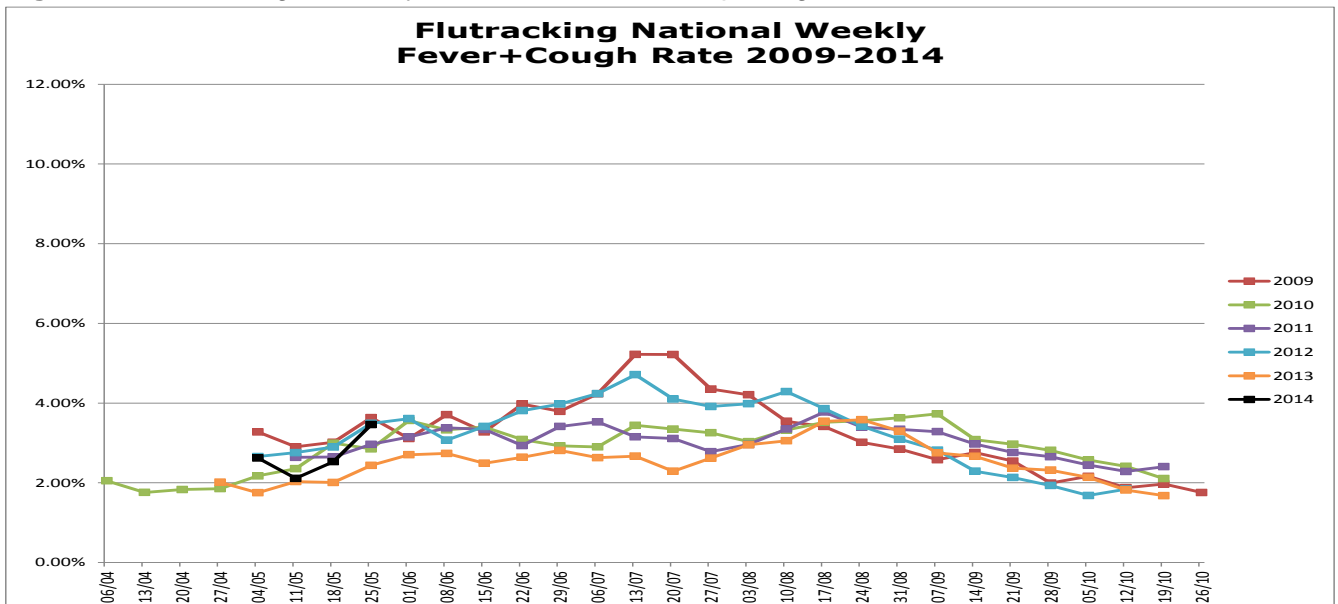
For further information please see the [ASPREN](#) website.

FluTracking.net

FluTracking.net is an online health surveillance system to detect epidemics of influenza. FluTracking is a project of the University of Newcastle, the Hunter New England Local Health District and the Hunter Medical Research Institute. It involves participants from around Australia completing a simple online weekly survey which is used to generate data on the rate of ILI symptoms in communities.

- For the week ending 25 May, FluTracking received reports for 5245 people in NSW. Fever and cough reports increased to 3.5% of respondents and was within the usual range for this time of year (Figure 6). Overall, 2.0% of respondents reported fever, cough and absence from normal duties.

Figure 6: FluTracking – Weekly influenza like illness reporting rate, NSW, 2009 – 2014.



For further information please see the [FluTracking](#) website.

FluCAN (The Influenza Complications Alert Network)

In 2009, [A Rapid Alert System for Severe Respiratory Illness: The FluCAN Surveillance system](#) was created with the involvement and support of the Thoracic Society of Australia and New Zealand and funding from the NHMRC. The aim of FluCAN was to establish and maintain a real-time sentinel hospital surveillance system for acute respiratory disease requiring hospitalisation, which could provide a reliable and timely source of information that could be used to inform public health policy. In NSW, three hospitals participate in providing weekly data; Westmead Hospital, John Hunter Hospital and the Children’s Hospital at Westmead.

- In week 21 there were no confirmed influenza admission reported at NSW sentinel hospitals.
- Since 7 April 2014 there have been three hospital admissions reported – all were paediatric cases.

4. National and International Influenza Surveillance

National Influenza Surveillance

Although national influenza surveillance reports are not produced at this time of year, most jurisdictions are reporting low influenza activity.

For further information on the National Notifiable Disease Surveillance System, which includes laboratory-confirmed influenza reports, see: <http://www9.health.gov.au/cda/source/cda-index.cfm> .

Avian influenza in Humans – World Health Organization (WHO) updates

Human infection with avian influenza A(H7N9) viruses: as of 22 May WHO reported that China had notified 293 cases in 2014. There has been a declining trend in reports in recent weeks (Figure 6).

There remains no evidence of sustained human-to-human transmission and most cases are linked to exposure to poultry, particularly in live poultry markets. The disease is mild in poultry so outbreaks remain difficult to detect.

Influenza activity worldwide

WHO summaries of global influenza activity as of 19 May noted the following:

- Globally the northern hemisphere influenza season was at inter-seasonal levels in most countries. Influenza B virus continued to be the majority of late season detections in most regions.
- In North America, influenza levels were at inter-seasonal levels with some influenza B circulation still detected.
- In Europe, influenza activity was at inter-seasonal levels in most countries.
- In eastern Asia, influenza activity approached inter-seasonal levels in most countries with influenza B virus predominating.
- In tropical Asia, influenza activity continued to decline in most countries. In northern Africa and western Asia, influenza activity remained low in most countries, with influenza B the predominant virus detected.
- In the southern hemisphere, influenza activity is still low, although in some countries influenza-like illness (ILI) activity is slowly increasing. Influenza detections were still low.

WHO FluNet laboratory reporting during weeks 17 and 18 (20 April to 3 May 2014) noted:

- Of the 40 300 respiratory specimens tested, 3739 (9.3%) were positive for influenza viruses. Of these, 45% were typed as influenza A and 55% as influenza B.
- Of the sub-typed influenza A viruses, 31% were influenza A(H1N1)pdm09 and 69% were influenza A(H3N2).
- Of the characterized B viruses, 89% belonged to the B-Yamagata lineage and 11% to the B-Victoria lineage.

For further information see the full WHO report at: [WHO influenza update No211](#).

Useful influenza surveillance links

- Follow the link for the [Australian Influenza Surveillance Reports](#) which provide the latest information on national influenza activity.
- Follow the link for the [World Health Organization Global Influenza Programme](#).

- Follow the link for Australia's [WHO Collaborating Centre for Reference and Research on Influenza](#), part of an international network of centres analysing influenza viruses currently circulating in the human population in different countries around the world. The centre also provides information on the [current vaccine recommendations](#) for influenza.

Composition of 2014 Australian influenza vaccines

The [Australian Influenza Vaccine Committee](#) (AIVC) met on 10 October 2013 and made recommendations for the influenza vaccine components for the Australian 2014 influenza season.

The 2014 trivalent influenza vaccines differ from the 2013 season trivalent vaccines as they contain two new strains. The H1N1 pandemic influenza virus strain, A(H1N1)pdm09, remains in the vaccine but the second influenza A strain and the influenza B strain are different from previous years.

The changes in the vaccine are based on changes in the expected circulating strains this year so it will be especially important for those who are at risk to be vaccinated.

The strains in the 2014 southern hemisphere trivalent seasonal influenza vaccines are:

- A (H1N1): an A/California/7/2009 (H1N1) - like virus, 15 µg HA per dose
- A (H3N2): an A/Texas/50/2012 (H3N2) - like virus, 15 µg HA per dose
- B: a B/Massachusetts/2/2012 - like virus, 15 µg HA per dose

The 2014 Influenza vaccination campaign under the National Immunisation Programme was launched on 15 March 2014. Follow the link for more information on the 2014 campaign: <http://www.immunise.health.gov.au/> .