

NSW Health Influenza Surveillance Report

Week 42 Ending 20 October 2013

Influenza Surveillance Forecast (Update):

Influenza B is currently the dominant circulating influenza strain. Influenza B usually causes milder symptoms and children are usually at greater risk of infection.

While the currently circulating influenza A strains are well matched to the 2013 seasonal influenza vaccine there has been a slight drift in the circulating influenza B strains to B/Massachusetts/2/2012 –like viruses. The influenza B component of the 2013 seasonal influenza vaccine is a B/Wisconsin/1/2010 – like strain. Both the B/Massachusetts and B/Wisconsin strains are Yamagata-lineage viruses and it is expected that the 2013 seasonal influenza vaccine should provide some protection against the new strain.

Summary:

For the week ending 20 October 2013, influenza activity decreased further. Influenza surveillance measures appear to indicate that the influenza season is now over in NSW.

- [Emergency Department surveillance](#) – the index of increase for influenza-like illness (ILI) presentations fell well below the seasonal threshold. The current level is consistent with the winter influenza season having ended.
- [Laboratory surveillance](#) – the proportion of respiratory samples positive for influenza A or B continues to decrease but remains elevated (5.8%). Influenza is no longer the leading respiratory virus identified. Other respiratory virus activity is decreasing with the exception of rhinovirus.
- [Community illness surveillance](#) – data collected from eGPS, ASPREN and FluTracking on ILI activity in NSW have returned to pre-season levels.
- [National and International influenza surveillance](#) – One new human cases of infection with the novel avian influenza A(H7N9) strain from China; otherwise low influenza activity worldwide.
- [Recommended composition of 2014 southern hemisphere influenza vaccines](#) – WHO has provided recommendations for the 2014 southern hemisphere winter influenza season.

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 see the [NSW Health Influenza website](#).

1. Emergency Department (ED) Surveillance

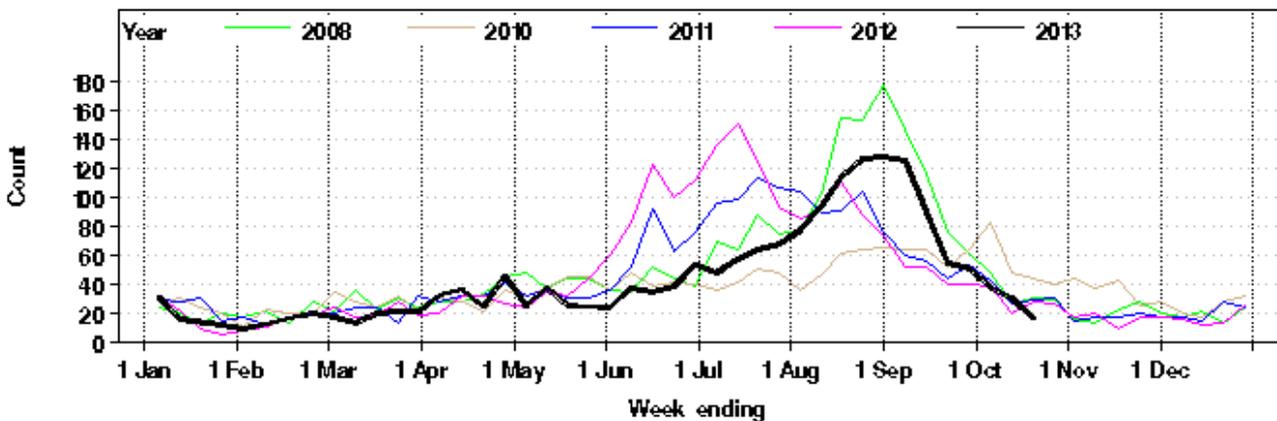
Source: NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts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

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 20 October 2013, the index of increase for ILI presentations decreased to 1.6. The index of increase crossed the seasonal threshold in late June and peaked at 32.8 on 20 August.
- ILI activity eased further this week to 0.4 cases per 1000 presentations. The total count for ILI presentations also decreased this week and was below the usual range (Figure 1 and Table 1).
- Combined ILI and pneumonia admissions to critical care wards decreased further this week and were below the usual range for this time of year (Figure 2 and Table 1).

Figure 1: Total weekly counts of ED visits for influenza-like illness, from January – 20 October 2013 (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 – 20 October 2013 (black line), compared with each of the 5 previous years (coloured lines).

Category: All visits with the above inclusions

Total 1-week counts

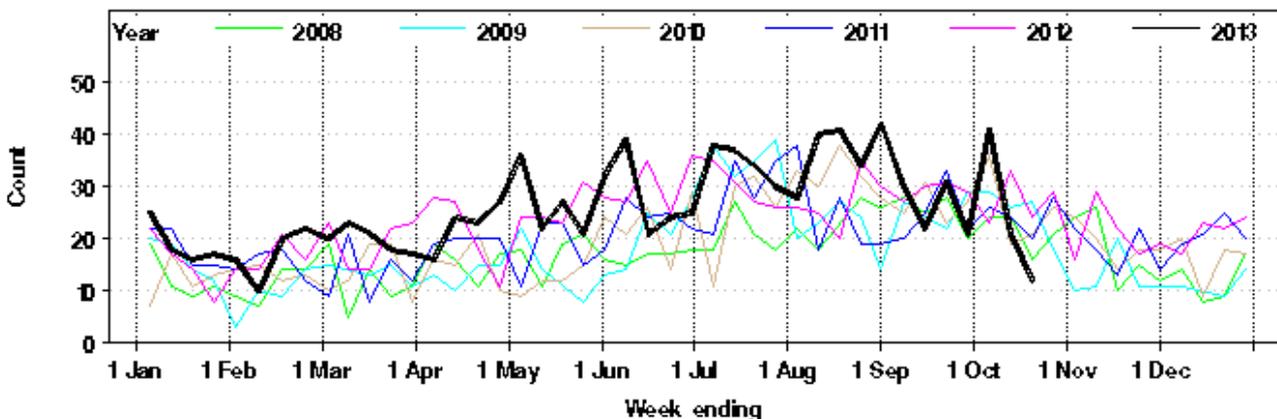


Table 1: Weekly ED and Ambulance Respiratory Activity Summary. Includes data from 59 NSW Emergency Departments and the Sydney Ambulance Division, up to 20 October 2013.

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	Below				
	Pneumonia	Decreased	Usual				
	Pneumonia and ILI admissions	Decreased	Usual				
	Pneumonia and ILI critical care admissions	Decreased	Below				
	Bronchiolitis	Decreased	Usual				
	Respiratory illness, fever or unspecified infections	Decreased	Usual				
	Asthma	Increased	Usual				Bush fires may have been responsible for an increase of 28% in presentations in 5-64 year-olds for the time of year. The increase was not statistically significant.
	Total presentations (compared with 2012 only)	Decreased	Above				Total presentations were 2% higher than the same week last year. Admissions from ED were 4% higher.
Ambulance calls, Sydney region	Breathing problems	Decreased	Above				Bush fires may have been responsible for a 7% increase for the time of year. In 35-64 year-olds the increase was 27%. These increases were not statistically significant.

Notes on Table 1: Statistically significant increases are shown in **bold**. LHD = Local Health District. 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 20 October 2013, the number and proportion of respiratory specimens reported by NSW sentinel laboratories which tested positive for influenza decreased further (Table 2 and Figure 3).

A total of 1144 tests for respiratory viruses were reported with 67 specimens (5.8%) testing positive for influenza viruses. Overall influenza activity decreased further this week, all influenza viruses are circulating at similar levels.

Influenza is no longer the leading respiratory virus circulating.

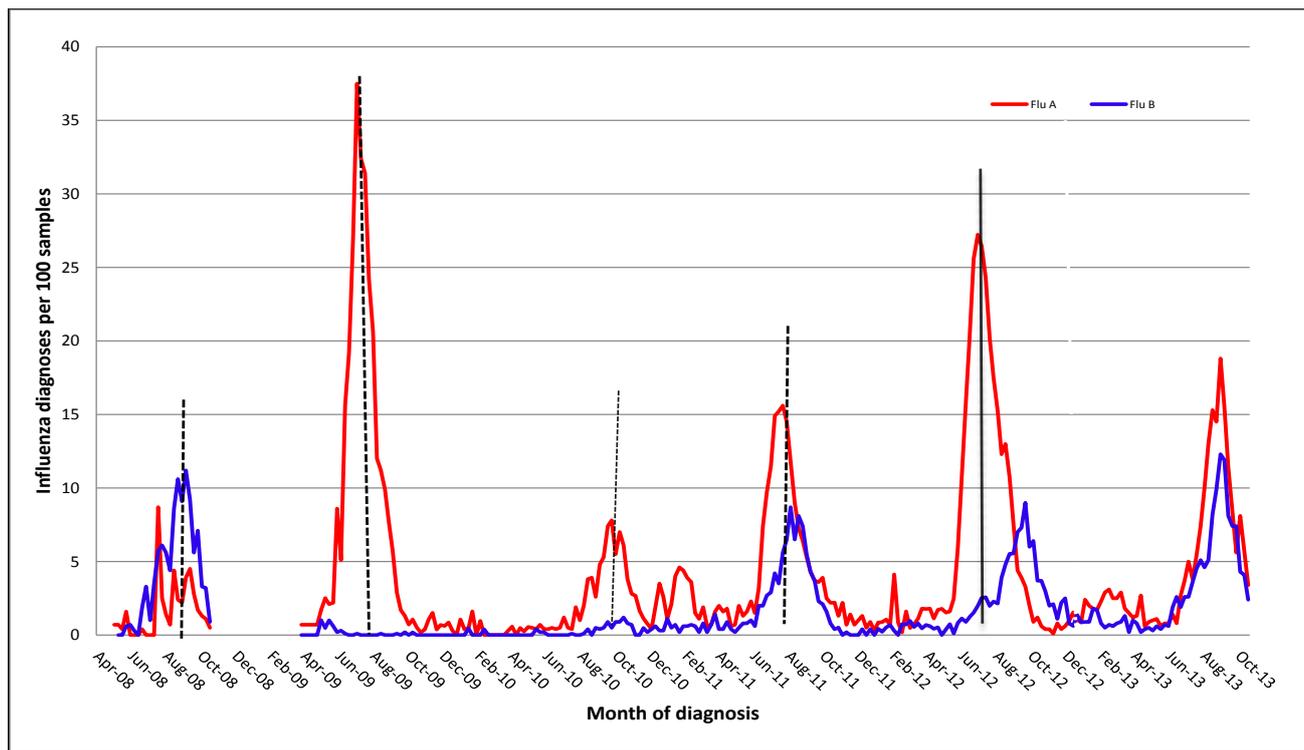
Table 2: Summary of tests and results for influenza and other respiratory viruses at NSW laboratories, 1 January to 20 October 2013.

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	(%)								
01/02/2013*	2199	44	(2.0%)	13	(29.5%)	14	(31.8%)	17	(38.6%)	26	(1.2%)	68	87	81	328	37	59
01/03/2013	2263	60	(2.7%)	17	(28.3%)	20	(33.3%)	23	(38.3%)	15	(0.7%)	55	41	119	452	29	31
29/03/2013	2595	47	(1.8%)	9	(19.1%)	12	(25.5%)	26	(55.3%)	21	(0.8%)	82	59	333	488	53	33
26/04/2013	3165	39	(1.2%)	13	(33.3%)	11	(28.2%)	15	(38.5%)	10	(0.3%)	92	188	599	586	61	54
02/06/2013*	4885	38	(0.8%)	14	(36.8%)	12	(31.6%)	12	(31.6%)	23	(0.5%)	116	115	742	812	41	62
30/06/2013	4855	106	(2.2%)	21	(19.8%)	45	(42.5%)	40	(37.7%)	108	(2.2%)	109	105	863	685	44	94
28/07/2013	6051	397	(6.6%)	30	(7.6%)	151	(38.0%)	216	(54.4%)	240	(4.0%)	164	131	714	672	49	206
01/09/2013*	10305	1505	(14.6%)	94	(6.2%)	917	(60.9%)	494	(32.8%)	873	(8.5%)	244	218	458	813	30	349
29/09/2013	8994	969	(10.8%)	67	(6.9%)	655	(57.3%)	347	(35.8%)	804	(8.9%)	219	224	290	589	16	191
Week ending																	
06/10/2013	1567	119	(7.6%)	29	(24.4%)	57	(47.9%)	33	(27.7%)	72	(4.6%)	63	77	36	102	3	36
11/10/2013	1308	75	(5.7%)	26	(34.7%)	25	(33.3%)	24	(32.0%)	53	(4.1%)	42	63	32	136	3	31

* All samples are tested for influenza viruses. Not all samples are tested for all of the other viruses listed.

** Samples that test negative for A(H1N1)pdm09 are assumed to be A(H3N2).

Figure 3: Percent of respiratory samples positive for influenza A or influenza B, 1 January 2008 – 20 October 2013, New South Wales.



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

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

Laboratory-confirmed influenza outbreaks in residential care facilities

One new laboratory confirmed influenza A outbreak was reported in an aged care facility in rural NSW this week.

In the year to date (up to week 42), there have been eleven laboratory-confirmed influenza outbreaks in institutions reported to NSW Public Health Units (Table 3): seven influenza A, two influenza B and one mixed influenza A and B outbreak. At least 140 residents were reported to have had ILI symptoms and nine have required hospitalisation. Four deaths in residents linked to the outbreaks have been reported.

Table 3. Reported influenza outbreaks in NSW institutions, 2005-2013.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013*
No. of outbreaks	5	2	25	9	1	2	4	39	11

* Up to 20 October 2013.

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.

3. Community Illness Surveillance

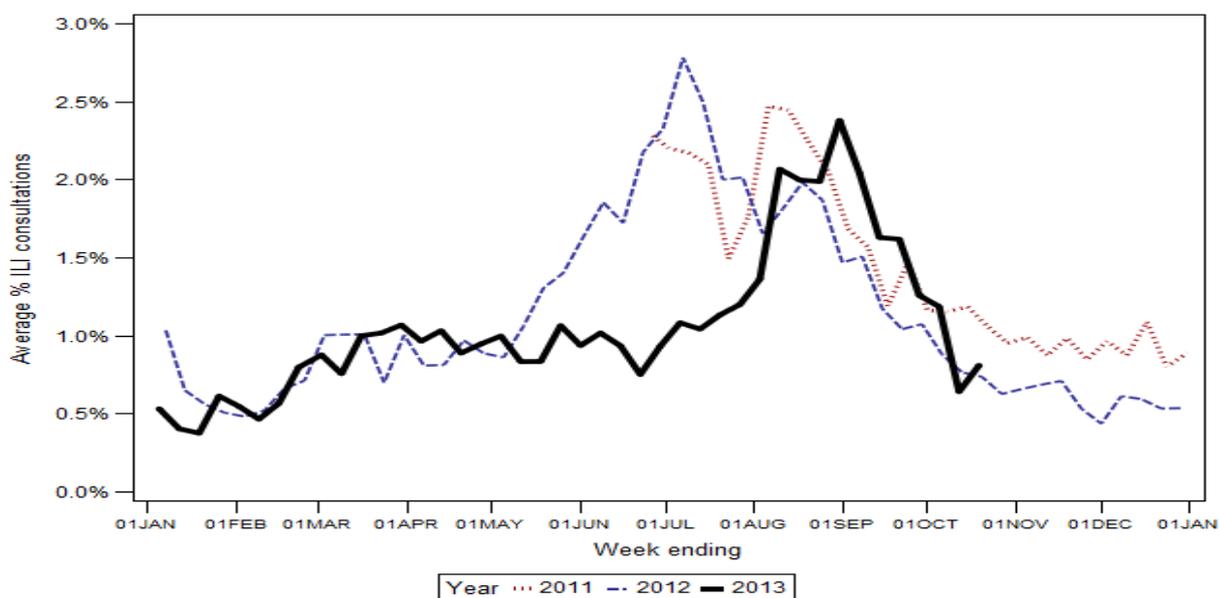
Electronic General Practice Surveillance (eGPS)

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.

- For week 42 (ending 17 October), reports were received from 19 sentinel practices.
- The average rate for patient consultations with ILI decreased to 0.8% (range 0.0 – 1.8%). This is similar to the previous week (0.6%) (Figure 4) and is within the usual range of ILI activity seen at this time in the two previous years.

Figure 4. Average rate of influenza-like-presentations to sentinel general practices, by week of consultation, 2011-2013.



Note: The number of practices reporting may vary from week to week. Data available from Week 29, 2011.

The Australian Sentinel Practices Research Network (ASPREN)

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

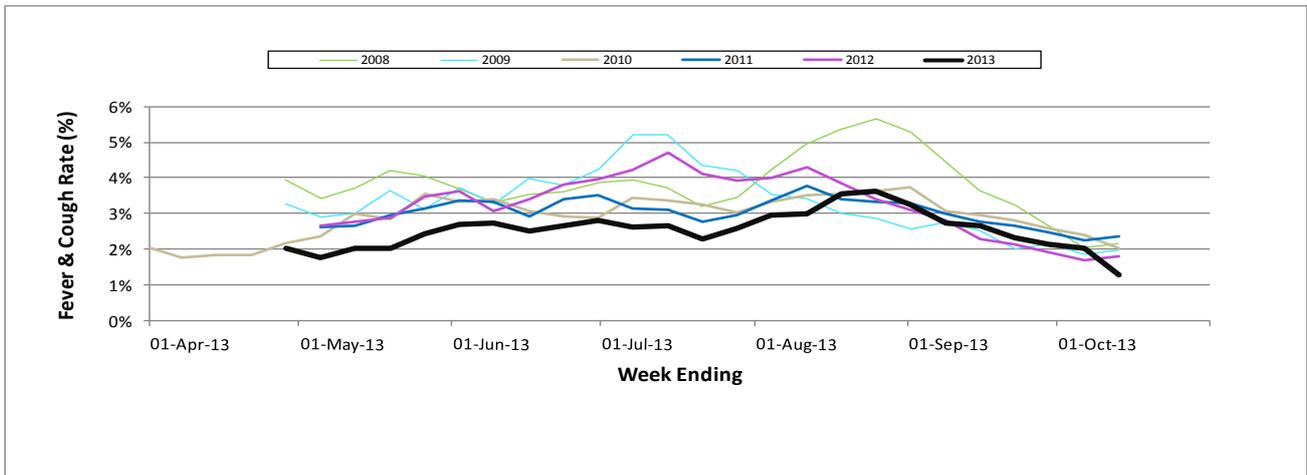
- For the week ending 20 October, there were 28 ASPREN reports received from NSW GP's, of these only five people presented with ILI symptoms. For further information please see the [ASPREN](#) website

FluTracking.net

FluTracking.net is an online health surveillance system to detect epidemics of influenza. 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 20 October, FluTracking received reports for 4545 people in NSW. The number of respondents reporting fever and cough this week was 1.2%; this was within the usual range for this time of year (Figure 5). Overall, 0.9% of respondents reported fever, cough and absence from normal duties.

Figure 5: FluTracking – Weekly influenza like illness reporting rate, NSW, 2008 – 2013.



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

4. National and International Influenza Surveillance

National Influenza Surveillance

Nationally the 2013 influenza season appears to have peaked at the end of August. Overall influenza activity has been relatively low compared to 2011 and 2012.

- Nationally, influenza A continues to be the predominant influenza virus type. Influenza A(H1N1)pdm09 has also re-emerged this season with over 15% of overall notifications being reported as influenza A(H1N1)pdm09 compared to <1% of notifications in 2012. Overall, the proportion of influenza B this season has been higher than in recent years.
- Across jurisdictions, the distribution of influenza types and subtypes is variable. In Western Australia, influenza A(H3N2) remains the predominant subtype, however the proportion of A(H1N1)pdm09 continues to increase. Whilst the proportion of influenza type B nationally has remained relatively stable, there have been increasing proportions of influenza B in New South Wales, South Australia and Queensland; combined with decreases in Victoria.
- Notification data show that there is a predominance of influenza B infections in those aged less than 15 years, with influenza A infections peaking in the 0-4 and 30-34 years age groups. Consistent with A(H1N1)pdm09 dominant years, there are very few notifications of this subtype in those aged 65 years and over.
- The rate of influenza associated hospitalisations has started to decline over the past fortnight. During the season around 12% of influenza cases were admitted directly to ICU and a high proportion of cases had known medical co-morbidities reported. The age distribution of hospital admissions shows a peak in the 0-9 year age group, with increasing numbers of admissions occurring in older age groups.

Avian influenza A(H7N9) in China

The World Health Organization (WHO) has reported a new laboratory-confirmed case of human infection with avian influenza A(H7N9) virus this week. The patient is a 67-year-old man from Zhejiang Province. He is a farmer, and has had contact with live poultry. He became ill on 16 October 2013, was admitted to a local township hospital on 18 October 2013, and was transferred to another hospital on 21 October 2013 as his condition deteriorated. He is currently in a critical condition.

To date, WHO has been informed of a total of 137 laboratory-confirmed human cases with avian influenza A(H7N9) virus infection including 45 deaths. Currently, four patients are hospitalized and 88 have been discharged. So far, there is no evidence of sustainable human-to-human transmission.

Influenza activity worldwide

In summary during weeks 40 and 41, WHO has reported:

- Although in many European countries influenza-like illness activity started to increase, influenza detections in the northern hemisphere temperate zones remained low.
- In the regions of tropical Asia influenza activity was variable from country to country. In Hong Kong Special Administrative Region, China, influenza detections decreased, while in the south of China an increase in influenza detections was seen. In South East Asia, influenza detections decreased in Thailand, but increased in Viet Nam. In this area, co-circulation of influenza A(H3N2) and influenza B virus was reported.
- In the Caribbean region of Central America and tropical South America countries, reported cases of influenza A infection remained at low levels among most Caribbean islands and Central American countries. Respiratory syncytial virus (RSV) continued to predominate, but the RSV activity largely remained within expected seasonal levels.
- Influenza activity peaked in the temperate countries of South America and in South Africa in late June. Temperate South American countries reported co-circulation of influenza B and A (H3N2) in most countries, and while RSV activity continued to predominate, it showed an overall decreasing trend.
- In Australia and New Zealand, numbers of influenza viruses detected and rates of influenza-like illness decreased. Co-circulation of influenza A(H1N1)pdm09, A(H3N2) and B viruses was reported in both countries. [WHO influenza update No197](#).

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.

5. Recommended composition of influenza virus vaccines for use in the 2014 southern hemisphere influenza season

A World Health Organization (WHO) consultation held in September has recommended that trivalent vaccines for use in the 2014 influenza season (southern hemisphere winter) contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus *;
- an A/Texas/50/2012 (H3N2)-like virus **;
- a B/Massachusetts/2/2012-like virus.

* A/Christchurch/16/2010 is an A/California/7/2009-like virus.

** A/Texas/50/2012 is an A(H3N2) virus with antigenic properties similar to the majority of recently circulating cell-propagated A(H3N2) viruses including A/Victoria/361/2011.

The vaccine viruses recommended for the 2014 southern hemisphere influenza season are the same as those recommended for the 2013-2014 northern hemisphere influenza season. In countries or regions of the world that expect B/Victoria lineage viruses to predominate in the southern hemisphere in 2014 may continue to use a B/Brisbane/60/2008-like virus in their influenza virus vaccines.

Australia is yet to announce the composition of influenza vaccines for 2014.

Full report available at

www.who.int/influenza/vaccines/virus/recommendations/2014_south/en/index.html