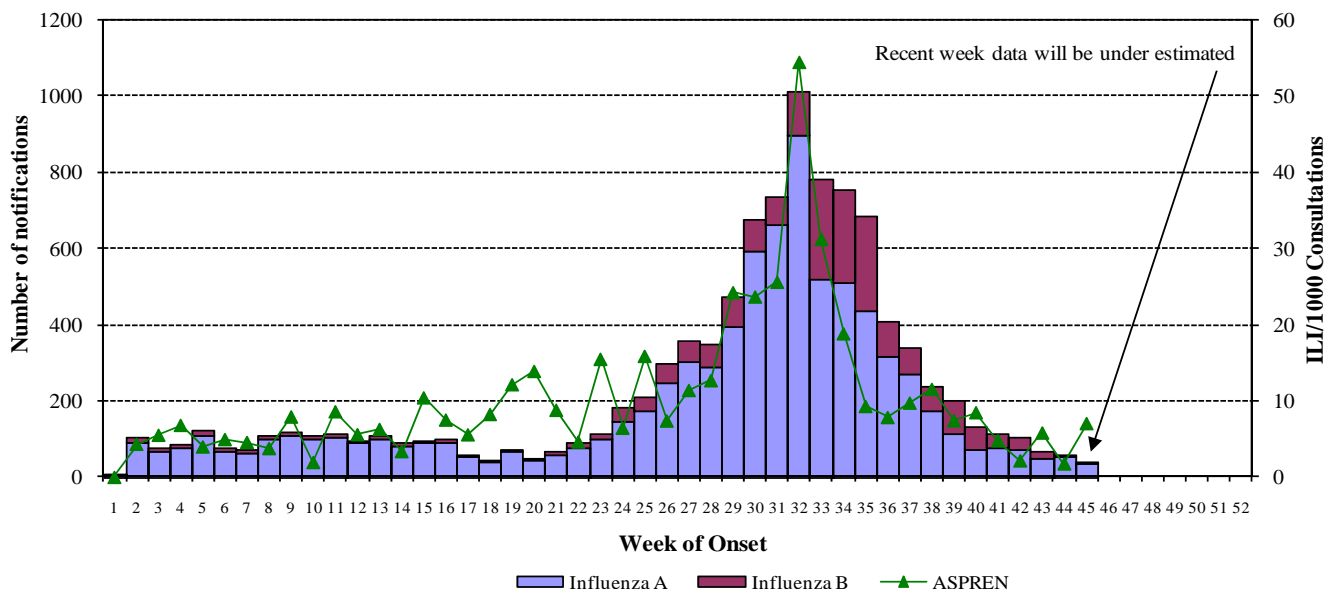


7 November 2011

## 1. Influenza Notifications in Queensland



**Figure 1: Influenza notifications in Queensland by type and week of onset from 1<sup>st</sup> January 2011 to 6<sup>th</sup> November 2011 and influenza like illness (ILI) presentation rates per 1000 consultations reported to the ASPREN sentinel network 1<sup>st</sup> January 2011 to 6<sup>th</sup> November 2011.**

Data Sources: Queensland Health Notifiable Conditions Register 08/11/2011 and ASPREN website 08/11/2011  
<https://www.dmac.adelaide.edu.au/aspren/asprenMISServlet?page=index>

### Influenza Notifications

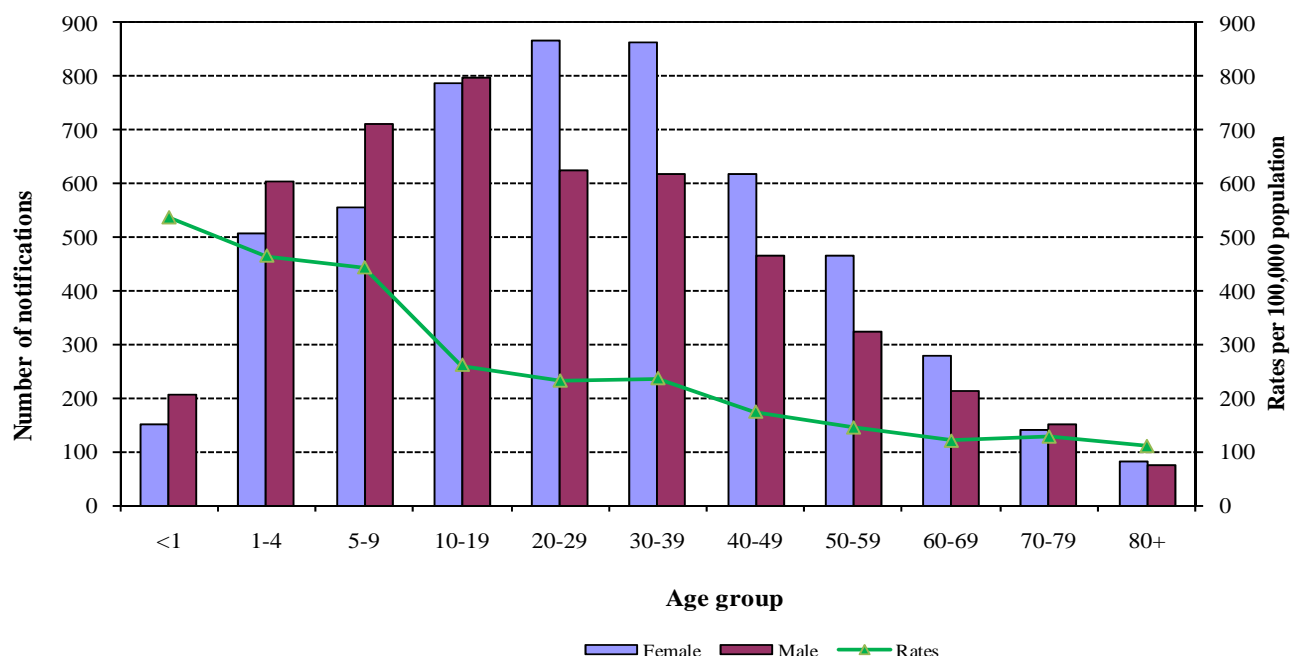
Year to date (YTD) there have been 10,109 notifications of influenza in Queensland. Subtype is recorded for 3814 of the 8094 notifications of influenza A, comprising 2970 pandemic (H1N1)2009 and 844 H3N2. There have been 2005 notifications of influenza B. Typing data were unavailable for 10 notifications.

Figure 1 shows notifications for influenza A and B by week of onset and Influenza Like Illness (ILI) presentation rates, per 1000 consultations, by week. Please see section below for an explanation of the Australian Sentinel Practices Research Network (ASPREN). Untyped influenza notifications have been excluded from this graph.

The YTD notification count is 1.7 times the five year mean for the same period. However, it is important to note that the profile of influenza notifications is not the same each year, especially with regard to the start of the season. Comparison of YTD data, or counts during a particular week, across years may be misleading. In addition, there have been changes to diagnostic methods and test requesting practises in recent years, which may influence counts.

The 2011 profile shows significant inter-seasonal activity at the beginning of the year. There was a sustained increasing trend in notifications from around week 21, which is consistent with the commencement of the 2011 influenza season. The downward trend from week 33 is consistent with a season peak in week 32, with 1006 notifications.

Please note that recent week notifications will usually be under estimated in data presented by date of disease onset.



**Figure 2: Age and gender profile of Influenza notifications and age specific rates in Queensland (2011) to 6<sup>th</sup> November 2011.**

Data Sources: Queensland Health Notifiable Conditions Register 08/11/2011

\*The Estimated Resident Population – (ERP), 2009 was used

[http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/B1A61B9B22F1C1E5CA25777500188208/\\$File/32350ds0004\\_qld\\_2004\\_2009.xls](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/B1A61B9B22F1C1E5CA25777500188208/$File/32350ds0004_qld_2004_2009.xls)

Figure 2 shows 2011 YTD influenza notifications and rates by age group and gender. The highest influenza notification rate occurred in the <1 age group (536.3 per 100,000 population) and the lowest rate occurred in the 80+ age group (109.6 per 100,000 population). The median age of notification was 25 years and the age range was <1 to 96 years. Influenza notifications were slightly higher in females (53%) than males (47%).

Table 1 provides a weekly count of influenza notifications by Health Service District (HSD) and YTD totals. Darling Downs and West Moreton are now separate HSD and this is reflected in the table. Some numbers may not be directly comparable with previous reports. Recent week data will be an underestimate.

**Table 1: Influenza notifications by week of onset and Health Service District (HSD) from north (top) to south (bottom), Queensland, 2011 (as on 06 November)**

Health Service District	Week of onset																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Torres Strait-Northern Peninsula	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cape York	1	7	1	2	3	0	0	2	3	0	1	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0
Cairns And Hinterland	0	11	10	4	7	2	3	4	3	5	1	6	11	4	5	5	0	1	0	1	0	2	1	2	1	3
Mount Isa	1	13	0	0	1	0	1	1	1	2	2	0	0	0	2	2	0	1	1	0	0	0	0	0	1	1
Townsville	0	15	22	15	35	14	15	26	23	38	33	32	32	25	34	20	13	7	7	7	8	13	5	14	14	15
Mackay	1	5	5	2	4	0	0	1	0	2	1	3	4	3	4	4	5	4	2	0	0	0	7	3	4	4
Central Queensland	0	6	5	5	4	5	6	4	7	1	2	4	1	2	3	4	4	1	4	4	7	3	6	4	3	8
Wide Bay	0	1	3	3	4	7	3	3	5	2	2	2	6	2	4	1	1	1	2	1	3	2	1	5	9	11
Sunshine Coast	0	4	1	11	3	2	3	11	4	7	0	5	3	2	4	6	4	4	5	0	1	8	10	5	12	34
Metro North	0	5	14	15	21	9	12	31	33	20	17	10	17	13	9	19	12	13	12	13	14	9	30	49	53	58
Metro South	0	24	5	15	20	20	16	13	27	15	22	13	18	17	19	21	10	5	21	13	12	18	32	55	61	77
Darling Downs	0	4	4	5	9	8	7	4	3	5	9	5	9	10	5	8	3	2	11	4	12	9	10	18	22	25
West Moreton	0	3	0	0	3	0	2	1	1	5	9	9	3	3	3	4	2	3	3	1	4	15	3	12	9	27
Central West	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0
South West	0	0	0	0	1	1	1	1	2	0	1	0	0	1	0	0	0	2	0	0	1	2	0	2	1	0
Gold Coast	0	4	2	9	3	6	1	5	3	3	10	2	3	4	2	0	3	1	3	4	3	6	6	9	16	33
<b>Queensland (Total)</b>	<b>3</b>	<b>102</b>	<b>73</b>	<b>87</b>	<b>119</b>	<b>74</b>	<b>70</b>	<b>107</b>	<b>115</b>	<b>105</b>	<b>110</b>	<b>95</b>	<b>107</b>	<b>87</b>	<b>95</b>	<b>96</b>	<b>57</b>	<b>45</b>	<b>71</b>	<b>48</b>	<b>65</b>	<b>87</b>	<b>111</b>	<b>179</b>	<b>207</b>	<b>296</b>

Health Service District	Week of onset																											
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	YTD Total	
Torres Strait-Northern Peninsula	0	0	0	1	1	2	4	2	1	1	0	1	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	16
Cape York	0	0	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	31
Cairns And Hinterland	0	9	8	7	6	12	11	12	6	9	14	4	3	6	3	2	0	0	0	-	-	-	-	-	-	-	-	204
Mount Isa	2	0	0	1	1	4	3	2	6	3	9	1	3	3	0	0	1	2	0	-	-	-	-	-	-	-	-	71
Townsville	20	19	13	30	29	30	27	30	34	16	15	16	18	17	6	8	0	7	4	-	-	-	-	-	-	-	-	821
Mackay	6	1	4	2	8	5	7	9	8	5	7	6	0	2	0	4	2	2	0	-	-	-	-	-	-	-	-	146
Central Queensland	7	17	9	20	41	63	62	64	45	46	29	16	10	5	11	4	2	5	2	-	-	-	-	-	-	-	-	561
Wide Bay	4	8	7	12	12	23	12	25	24	17	19	19	10	1	1	9	6	5	3	-	-	-	-	-	-	-	-	301
Sunshine Coast	36	31	25	44	44	64	49	63	70	25	28	18	17	12	6	9	2	4	6	-	-	-	-	-	-	-	-	702
Metro North	96	76	148	189	221	288	236	187	204	108	84	63	55	34	25	23	15	11	7	-	-	-	-	-	-	-	-	2578
Metro South	96	102	128	176	185	269	171	189	135	85	66	47	39	19	30	21	17	9	6	-	-	-	-	-	-	-	-	2359
Darling Downs	32	23	47	73	65	91	63	74	52	44	29	21	20	17	17	16	11	9	10	-	-	-	-	-	-	-	-	925
West Moreton	34	24	34	56	48	81	73	42	38	19	14	11	5	3	3	3	4	3	0	-	-	-	-	-	-	-	-	620
Central West	0	0	0	0	0	2	0	1	0	0	2	3	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	12
South West	0	2	3	3	2	6	6	10	25	7	4	3	1	1	1	1	1	2	0	-	-	-	-	-	-	-	-	94
Gold Coast	24	35	43	59	71	69	57	42	35	22	17	5	18	11	9	4	5	0	1	-	-	-	-	-	-	-	-	668
Queensland (Total)	357	347	470	673	734	1011	781	753	683	407	338	234	199	131	112	104	66	59	39	-	-	-	-	-	-	-	-	10109

## **ASPREN**

ASPREN is a national syndromic surveillance program co-ordinated by the Discipline of General Practice at the University of Adelaide and The Royal Australian College of General Practitioners. One of the conditions under surveillance is influenza like illness (ILI).

General practitioners (GP) participating in the ASPREN program contribute data on the proportion of consultations which are ILI related. Currently there are 19 Queensland GPs participating in the program, although weekly participation rate may vary.

Figure 1 shows ILI rates, as presentations per 1000 consultations, for Queensland GPs participating in the ASPREN program. An increasing trend is apparent from week 27 and is generally consistent with the profile of laboratory confirmed influenza notifications. There is a downward trend beginning in week 33. Caution should be used in interpreting these data, which may be subject to change due to delays in data submission. Recent week (45) data may be incomplete.

## **2. Influenza Activity in Australia (reporting period 1<sup>st</sup> October to 14<sup>th</sup> October, 2011)<sup>1</sup>**

Last updated 24 October 2011

- Across all surveillance systems, influenza activity this fortnight has continued to decrease.
- Levels of influenza-like illness (ILI) activity at the community level during 2011 were consistent with previous seasons, excluding 2009.
- During the 2010/11 inter-seasonal period, all jurisdictions reported higher than usual numbers of notifications, especially in the Northern Territory and Queensland. The reason for this unusually high activity is not clear, but do not appear to be due solely to increased testing. During this period, most of the influenza activity was attributed to pandemic (H1N1) 2009 and A(H3N2) infections.
- The main 2011 winter season, commenced and peaked earlier than in previous years and nationally, the majority of virus detections were pandemic (H1N1) 2009, with co-circulation of influenza B. The timing of influenza activity peaks and the distribution of influenza subtypes varied across states and territories.
- At the beginning of the winter season there was a high proportion of influenza B reported, mostly from South Australia, and very little A(H3N2). In recent weeks the proportion of A(H3N2) has continued to increase, with notifications mostly reported from Queensland, Western Australia and the Northern Territory.
- As at 16 October 2011, there have been 25,092 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011. Nationally, weekly notifications for this season peaked in the week ending 5 August 2011 with 1,989 influenza notifications.

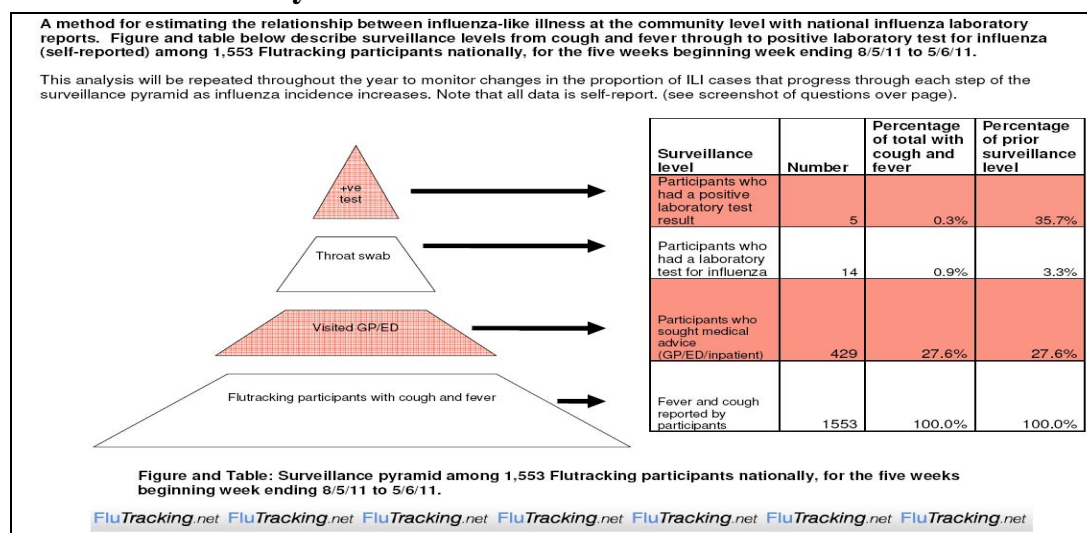
- Whilst the peak in notifications was above the peak frequency experienced in previous years, except 2009, assessment of this peak in conjunction with other surveillance systems monitored highlights that this difference in activity was not significant.
- During the season around 84% of influenza related hospitalisations were associated with pandemic (H1N1) 2009 (42%) or influenza A(untyped) (42%). Thirteen per cent of persons hospitalised with influenza were admitted to ICU.
- The WHO has reported that influenza activity in the temperate regions of the northern hemisphere remain low. Influenza activity in the tropical region is active in a few countries. In New Zealand, rates of national ILI consultations continue to remain below baseline activity levels.
- The Australian Influenza Vaccine Committee (AIVC) has agreed to adopt the WHO recommendations for the composition of the 2012 southern hemisphere influenza season vaccine. The recommended viruses are the same as the current 2011 southern hemisphere and the 2011- 2012 northern hemisphere vaccine compositions.
- This will be the final Australian Influenza Surveillance Report for 2011, unless unusual activity becomes apparent over the summer months.

### FluTracking

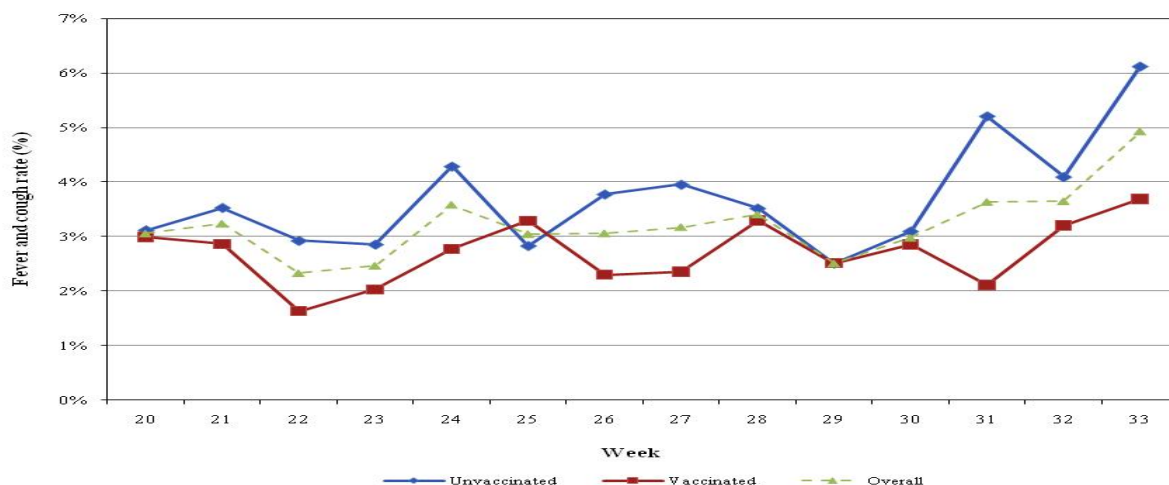
FluTracking is a pilot online health surveillance system which aims to detect epidemics of influenza. It is a joint initiative of The University of Newcastle, Hunter New England Area Health Service (NSW Health) and Hunter Medical Research Institute. Participation is voluntary and involves the completion of a weekly online survey during the influenza season.

Data are collected on basic demographics, symptoms of ILI and absenteeism. See the FluTracking website<sup>2</sup> for further information about this program or to enrol as a 'Flu Tracker'.

### Burden of Illness Pyramid



**Figure 3: Influenza burden of illness pyramid reproduced with permission from Dr Craig Dalton**  
[flutrackings@hnehealth.nsw.gov.au](mailto:flutrackings@hnehealth.nsw.gov.au) .



**Figure 4: Queensland FluTracking weekly fever and cough rate, stratified by vaccination status, weeks 20-33 in 2011. Figure provided by [flutracking@hnehealth.nsw.gov.au](mailto:flutracking@hnehealth.nsw.gov.au).**

Figure 4 provides a summary of Queensland FluTracking data from May to early August. There is an increasing and divergent trend in the percentage of unvaccinated participants reporting fever and cough from week 30, compared with those who reported vaccination. Although these data are unlikely to be representative of the Queensland population, the trend is consistent with high levels influenza circulation in the community during the reporting period. No further update on these data was available at the time of reporting.

### 3. International Influenza Surveillance (reporting period 1<sup>st</sup> October to 14<sup>th</sup> October, 2011)<sup>1</sup>

The WHO has reported that as at 21 October 2011 influenza activity in the temperate regions of the northern hemisphere remains low or undetectable. In the tropical zone, influenza activity is active in countries of the Americas (Cuba, Honduras and El Salvador); central Africa (Cameroon); and southern and southeast Asia (Bangladesh, Cambodia, Thailand, Lao People's Democratic Republic and Vietnam). Influenza transmission in South Africa and South America remains low and the season appears to be largely over.

In New Zealand, for the week ending 16 October 2011, the national rate of ILI consultations continue to remain below the baseline level of activity, with 6 of the twenty district health boards above the national average weekly consultation rate. During this season, almost half of New Zealand's influenza viruses were identified as influenza type B, with around a third identified as A(H3N2).

National Influenza Centres in 69 countries have reported that for the period 25 September to 8 October 2011, a total of 1,027 specimens were reported as positive for influenza viruses, 716 (70%) were typed as influenza A and 311 (30%) as influenza B. Of the sub-typed influenza A viruses reported, 30% were pandemic (H1N1) 2009 and 70% were influenza A(H3N2). Influenza A(H3N2) was predominant at low levels in some countries of the Americas and Asia, where as influenza B was predominant in parts of Africa. Influenza pandemic (H1N1) 2009 activity declined further in the southern hemisphere.

## 4. Virology<sup>1</sup>

### *Typing and antigenic characterisation*

#### **WHO Collaborating Centre for Reference & Research on Influenza (WHO CC) in Melbourne**

From 1 January to 16 October 2011, there were 2,274 Australian influenza isolates subtyped by the WHO CC with almost half of these isolated subtyped as pandemic (H1N1) 2009 (Table 2.0).

Table 2: Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 16 October 2011

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
<b>Pandemic (H1N1) 2009</b>	9	360	35	330	65	22	111	82	1,014
<b>A(H3N2)</b>	2	19	48	159	31	7	107	26	399
<b>B</b>	1	170	47	141	298	14	181	9	861
<b>Total</b>	<b>12</b>	<b>549</b>	<b>130</b>	<b>630</b>	<b>394</b>	<b>43</b>	<b>399</b>	<b>117</b>	<b>2,274</b>

Please note: There may be up to a month delay on reporting of samples  
Isolates tested by the WHO CC are not necessarily a random sample of all those in the community

Recent analysis of the low reactor pandemic (H1N1) 2009 strains has shown that about 40% have a particular change in the haemagglutinin sequence, which is known to affect antigenicity and to be associated with adaptation to growth in mammalian cell lines. Other low-reactor pandemic (H1N1) 2009 viruses analysed at the WHO CC in 2011 have been genetically diverse. Overall the data do not point to the emergence of a distinct group of antigenic drift variants.

### ***Antiviral Resistance***

The WHO Collaborating Centre in Melbourne has reported that from 1 January to 16 October 2011, 15 influenza viral isolates (out of 1,857 tested) have shown resistance to the neuraminidase inhibitor oseltamivir by enzyme inhibition assay (EIA). A further 18 specimens, out of a total of 210 tested by pyrosequencing, have shown the H275Y mutation known to confer resistance to oseltamivir. A total of 33 influenza viruses have shown resistance to oseltamivir in 2011, all have been the pandemic (H1N1) 2009 subtype.

The recent increase in oseltamivir resistance in pandemic (H1N1) 2009 influenza isolates predominately occurred in the Hunter New England region of New South Wales between June and August 2011. The cluster consisted of 29 cases, of which 6 were hospitalised and three were pregnant. A further two oseltamivir-resistant pandemic (H1N1) 2009 viruses, sampled in July and August, were also found to belong to the cluster. Both of these cases were detected outside the Hunter New England region with no recent travel history to this region. Only one of the cases reported was treated with oseltamivir prior to their positive test for influenza, however this was case not the earliest known cases in the cluster. All of the viruses are sensitive to zanamivir and have not shown any antigenic changes that would affect their recognition by vaccine-induced antibodies.

### **Note**

This will be the final Queensland influenza surveillance report for 2011. Influenza notification numbers and trends will be summarised in the *Statewide Weekly Communicable Diseases Surveillance Report* located at; [http://www.health.qld.gov.au/ph/cdb/sru\\_data.asp](http://www.health.qld.gov.au/ph/cdb/sru_data.asp), until further notice.



## Reference

1. Australian Influenza Surveillance Report No.15, 1 October 2011 – 14 October 2011  
<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm>
2. FluTracking website <http://www.flutracking.net/index.html>