



The Department of Health and Ageing acknowledges the providers of the many sources of data used in this report and greatly appreciates their contribution.

Key Indicators

Influenza activity and severity in the community is monitored using the following indicators and surveillance systems:

<p>Is the situation changing?</p>	<p>Indicated by trends in:</p> <ul style="list-style-type: none"> laboratory confirmed cases reported to the National Notifiable Diseases Surveillance System; GP Sentinel influenza-like illness (ILI) Surveillance; emergency department (ED) presentations for ILI; ILI-related absenteeism and call centre calls; and sentinel laboratory test results.
<p>How severe is the disease, and is severity changing?</p>	<p>Indicated by trends in:</p> <ul style="list-style-type: none"> hospitalisations, intensive care unit (ICU) admissions and deaths from sentinel systems; and clinical severity in hospitalised cases and ICU admissions.
<p>Is the virus changing?</p>	<p>Indicated by trends in:</p> <ul style="list-style-type: none"> drug resistance; and genetic drift or shift from laboratory surveillance.

Summary

- Levels of influenza-like illness (ILI) in the community continued to decrease through both sentinel general practitioner surveillance systems and ILI presentations to emergency departments.
- Notifications are continuing to decrease across most states and territories, however notifications in South Australia have continued to plateau.
- During this fortnight there were 1,443 laboratory confirmed notifications of influenza, with South Australia, Queensland and Victoria reporting the highest number of notifications. Nationally, the majority of virus detections have been pandemic (H1N1) 2009, with co-circulation of influenza B.
- In the Northern Territory this fortnight notifications of influenza A(H3N2) represent 70% of their notifications, and nationally the majority of A(H3N2) notifications are being reported from the Northern Territory, Queensland and Western Australia. In Tasmania and New South Wales influenza B represents around half of their notifications, and the proportion of influenza B in Queensland appears to be increasing.
- As at 30 September 2011, there have been 24,049 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 1,988 influenza notifications. This peak was above the peak frequency experienced in previous years, except 2009.
- The WHO has reported that influenza activity in the temperate regions of the northern hemisphere remain low. Influenza transmission continues to occur in a few countries of the tropical region. In New Zealand, rates of national ILI consultations are currently below baseline activity levels, and influenza type B is currently the predominant strain circulating.
- The WHO has recommended the following viruses be used for influenza vaccines in the 2012 influenza season (southern hemisphere): an A/California/7/2009 (H1N1) pdm09-like virus; an A/Perth/16/2009 (H3N2)-like virus; and a B/Brisbane/60/2008-like virus. This recommended composition is the same as the current 2011 southern hemisphere and the 2011-2012 northern hemisphere vaccine compositions.

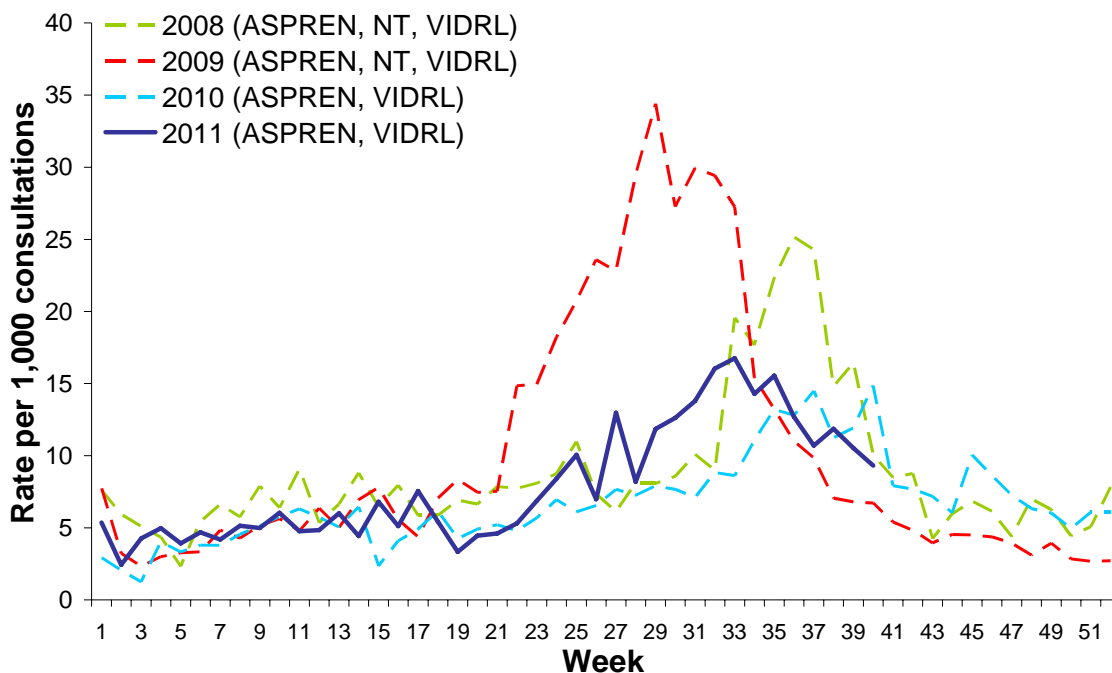
1. Influenza activity in Australia

Influenza-Like Illness

Sentinel General Practice Surveillance

Sentinel general practitioner ILI consultation rates have continued to decline in recent weeks. In the week ending 2 October 2011, the national ILI consultation rate to sentinel GPs was 9 cases per 1,000 consultations, down from 12 cases per 1,000 in the previous fortnight (Figure 1).

Figure 1. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2008 to 2 October 2011*



* Delays in the reporting of data may cause data to change retrospectively. As data from the previous Northern Territory surveillance system was combined with ASPREN and VIDRL surveillance data for 2008 and 2009, rates may not be directly comparable across 2010 and 2011. SOURCE: ASPREN and VIDRL GP surveillance system¹.

In the fortnight ending 11 September 2011, specimens were collected from just over half of ASPREN ILI patients. Of these patients, 44 specimens (29%) were positive for influenza, which is a slight decrease from the previous fortnight. Twenty-five specimens were typed as influenza type A, and were mostly pandemic (H1N1) 2009; and the remainder (19) were influenza type B. Forty-eight specimens were positive for other respiratory viruses, with the majority of these being rhinovirus (18) and parainfluenza virus type 3 (13) (Table 1). Please note, there was no additional ASPREN ILI swab testing data available for this reporting period.

Table 1. ASPREN ILI consultations laboratory respiratory viral tests that were positive for influenza or other respiratory virus, 1 January 2011 to 11 September 2011.

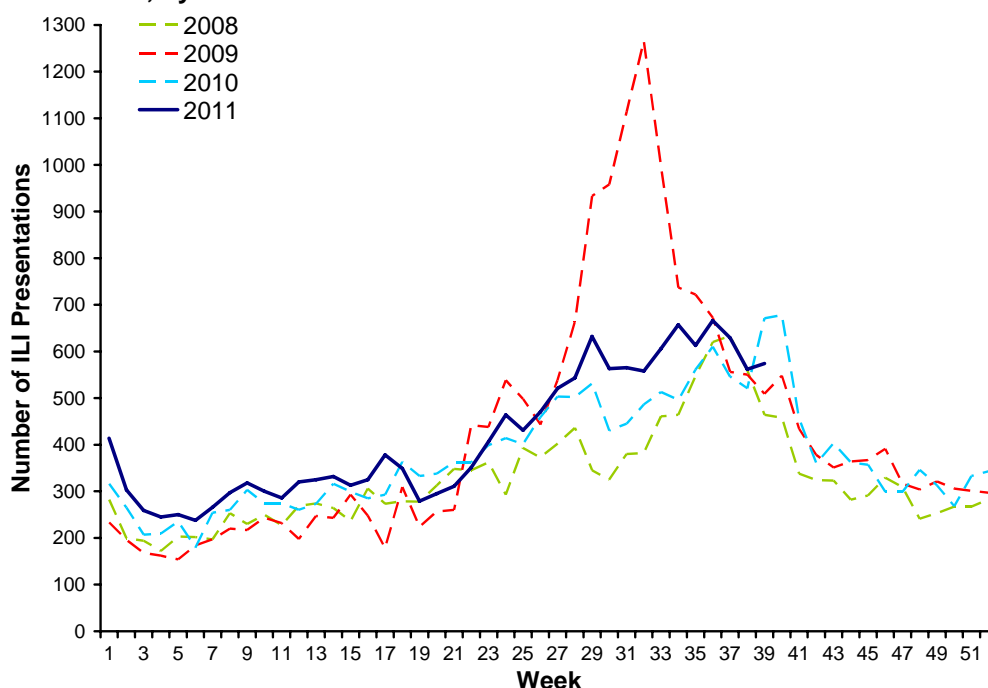
	ASPREN Fortnight (29 August to 11 September 2011)	ASPREN YTD (1 January – 11 September 2011)
Total specimens tested	150	1407
Total Influenza Positive	44	399
Influenza A	25	254
<i>Pandemic (H1N1) 2009</i>	15	193
<i>Seasonal A(H3N2)</i>	6	25
<i>Influenza A untyped</i>	4	36
Influenza B	19	145
Total Positive other Resp. Viruses*	48	391

* Other respiratory viruses include RSV, para-influenza, adenovirus and rhinovirus.

Western Australia Emergency Departments

In the fortnight ending 25 September 2011, respiratory viral presentations to WA EDs decreased compared to the previous fortnight, and presentations remain well above baseline levels. Over this period there were 1,136 presentations, including 68 admissions (Figure 2). The proportion of presentations admitted to hospital over this period decreased slightly and represented 6% of presentations.

Figure 2. Number of respiratory viral presentations to WA EDs from 1 January 2008 to 25 September 2011, by week

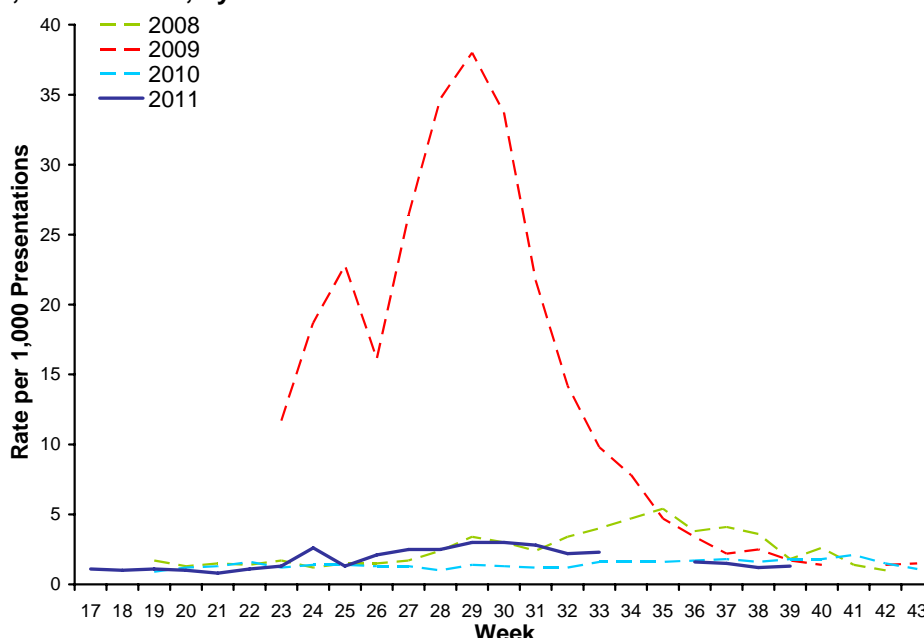


Source: WA 'Virus Watch' Report²

New South Wales Emergency Departments

In the week ending 30 September 2011 the number of patients presenting to NSW EDs with ILI was relatively similar to the previous week and activity was reported as being below the usual range for this time of year (Figure 3). Just over half of the ILI presentations were reported in people aged 25 to 44 and 55 to 64 years (58%). Total admissions from ED to critical care units for ILI and pneumonia decreased this week, and remained within the usual range for this time of year.³ The peak in ED presentations appears to have occurred in the week ending 29 July 2011.

Figure 3. Rate of influenza-like illness presentations to NSW Emergency Departments between May and October, 2008 to 2011, by week*



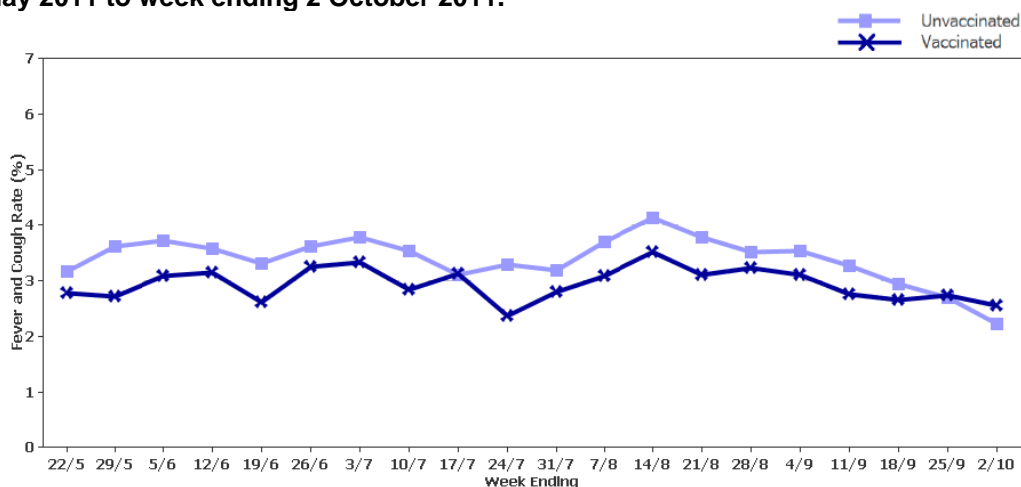
Source: NSW Influenza Weekly Epidemiology Report³
*Data missing for weeks 34 and 35

FluTracking

FluTracking, a national online system for collecting data on ILI in the community, noted that in the week ending 2 October 2011 fever and cough was reported by 2.6% of vaccinated participants and 2.2% of unvaccinated participants (Figure 4).⁴ Fever, cough and absence from normal duties was reported by 1.3% of vaccinated participants and 1.3% of unvaccinated participants. Rates of ILI among FluTracking participants has remained relatively stable this season, compared to previous years (Figure 5).

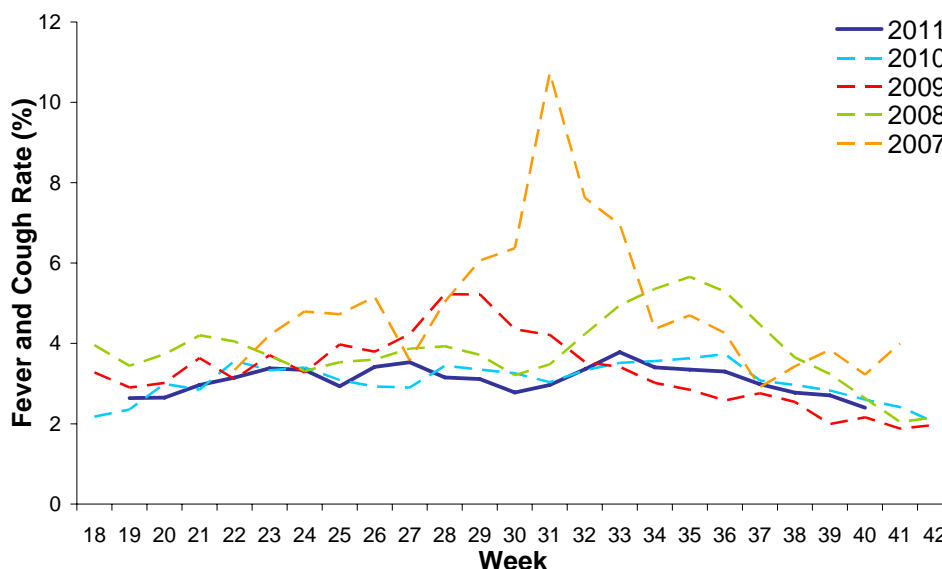
Up to 2 October 2011, 5,250 out of 9,250 (56.8%) participants reported having received the seasonal vaccine so far. Of the 2,146 participants who identified as working face-to-face with patients, 1,578 (73.5%) have received the vaccine.

Figure 4. Rate of ILI symptoms among FluTracking participants by week, from week ending 8 May 2011 to week ending 2 October 2011.



Source: FluTracking⁴

Figure 5. Rate of fever and cough among FluTracking participants by week, between May and October, 2007 to 2011.



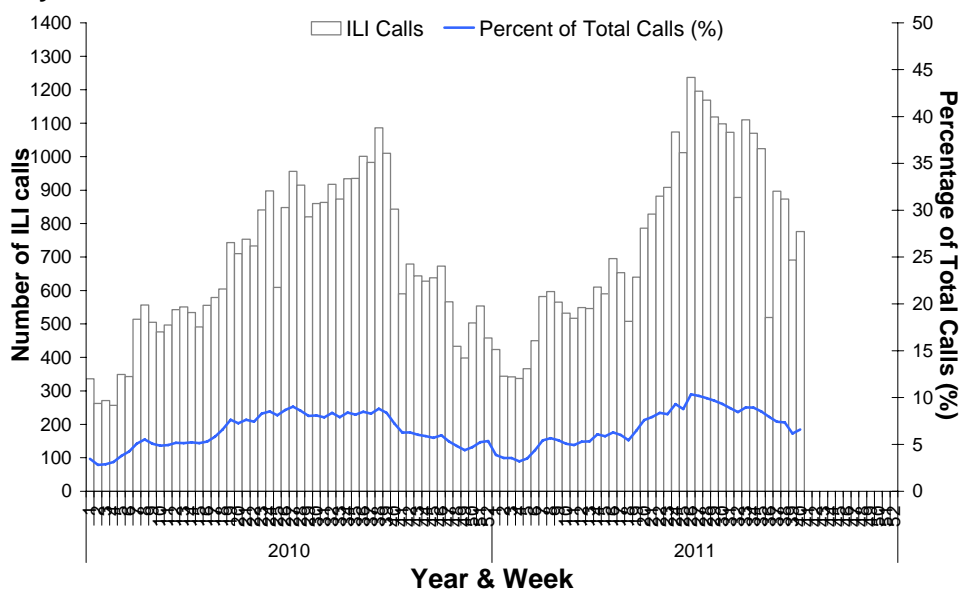
Source: FluTracking⁴

In regard to Figure 5, FluTracking investigators found that at the community level, peak ILI levels for 2007 were higher than 2009. This finding was consistent with other surveillance systems measuring ILI at the community level, with ASPREN showing similar levels of peak ILI in 2007 and 2009; Google flu trends showed higher levels of ILI at the peak in 2007 as compared to 2009; and workplace absenteeism showed slightly higher peak levels of ILI in 2007 than 2009. FluTracking data are consistent with NSW mortality data for influenza and pneumonia. Although laboratory data and emergency department (ED) data showed higher peak levels of influenza in 2009 than 2007, FluTracking found that the laboratory data were biased by increased testing in 2009 and ED data were biased by increased health seeking behaviour during the pandemic. See: <http://wwwnc.cdc.gov/eid/article/16/12/10-0935-f1.htm>

National Health Call Centre Network

The number of ILI-related calls to the National Health Call Centre Network (NHCCN) decreased compared to the previous fortnight. The percentage of total calls also decreased and in the week ending 2 October 2011 6% of calls to the NHCCN were ILI related, which is less than the same period in 2010 (Figure 6).

Figure 6. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2010 to 2 October 2011



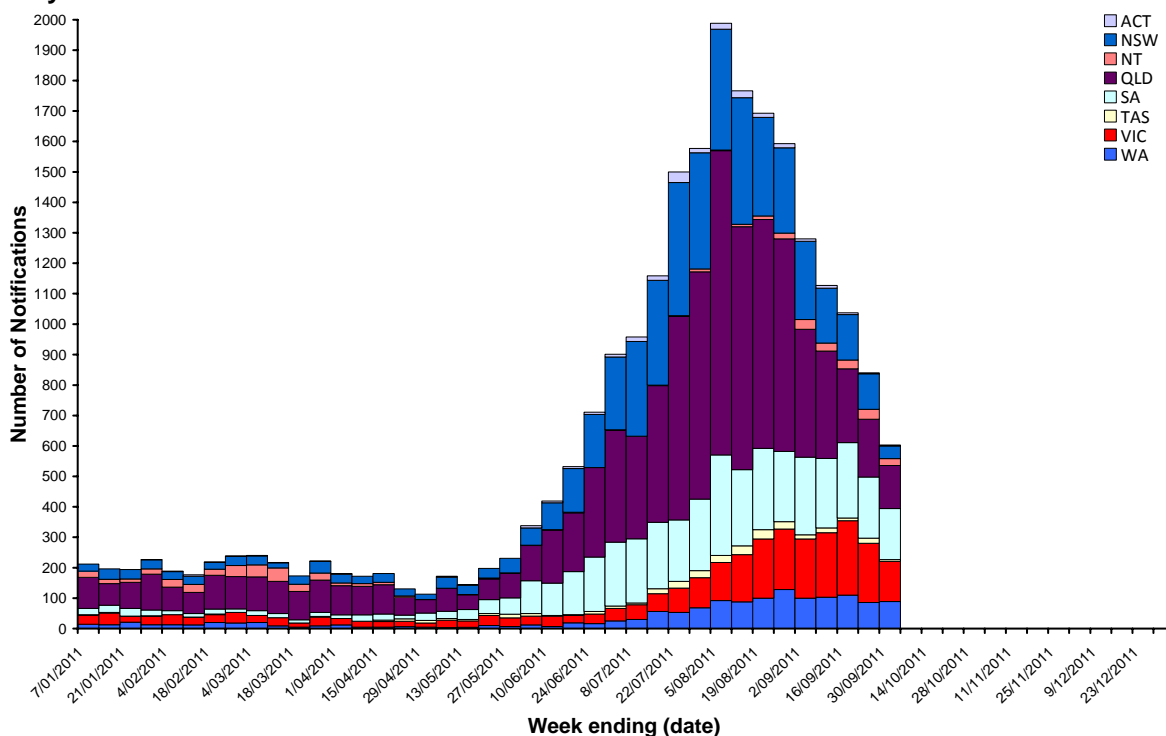
Note: National data do not include Queensland and Victoria
Source: NHCCN data

Laboratory Confirmed Influenza

Laboratory Confirmed Cases Notified to Health Departments

During this reporting period there were 1,443 laboratory confirmed influenza notifications reported to the NNDSS. Of these notifications, there were 368 in SA, 332 in Qld, 326 in Vic, 175 in WA, 159 in NSW, 54 in the NT, 23 in TAS, and 6 in the ACT (Figure 7). A weekly breakdown of trends by state and territory highlights that notifications have continued to be highest in Queensland and South Australia. Notifications are continuing to decrease across most states and territories, however notifications in South Australia have continued to plateau (Figure 9).

Figure 7. Laboratory confirmed cases of influenza in Australia, 1 January to 30 September 2011, by state, by week.

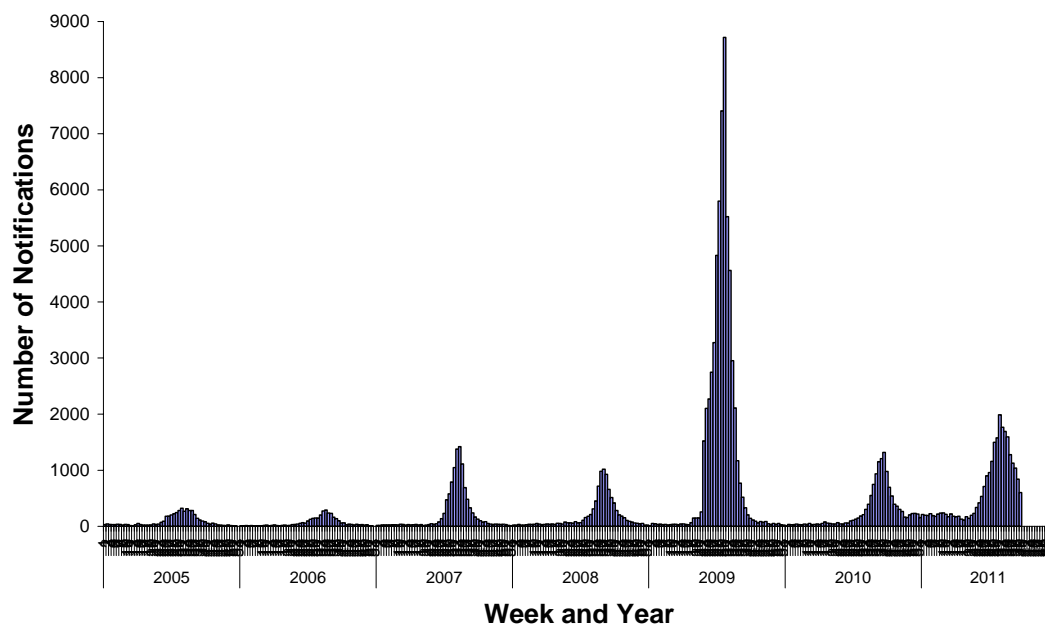


Source: NNDSS 2011

Up to 30 September, there have been 24,049 laboratory confirmed notifications of influenza diagnosed during 2011 (Figure 8). Of these notifications, there have been 9,761 notified in Qld, 4,944 in NSW, 4,226 in SA, 2,617 in Vic, 1,406 in WA, 535 in the NT, 326 in Tas and 234 in the ACT. Nationally, weekly

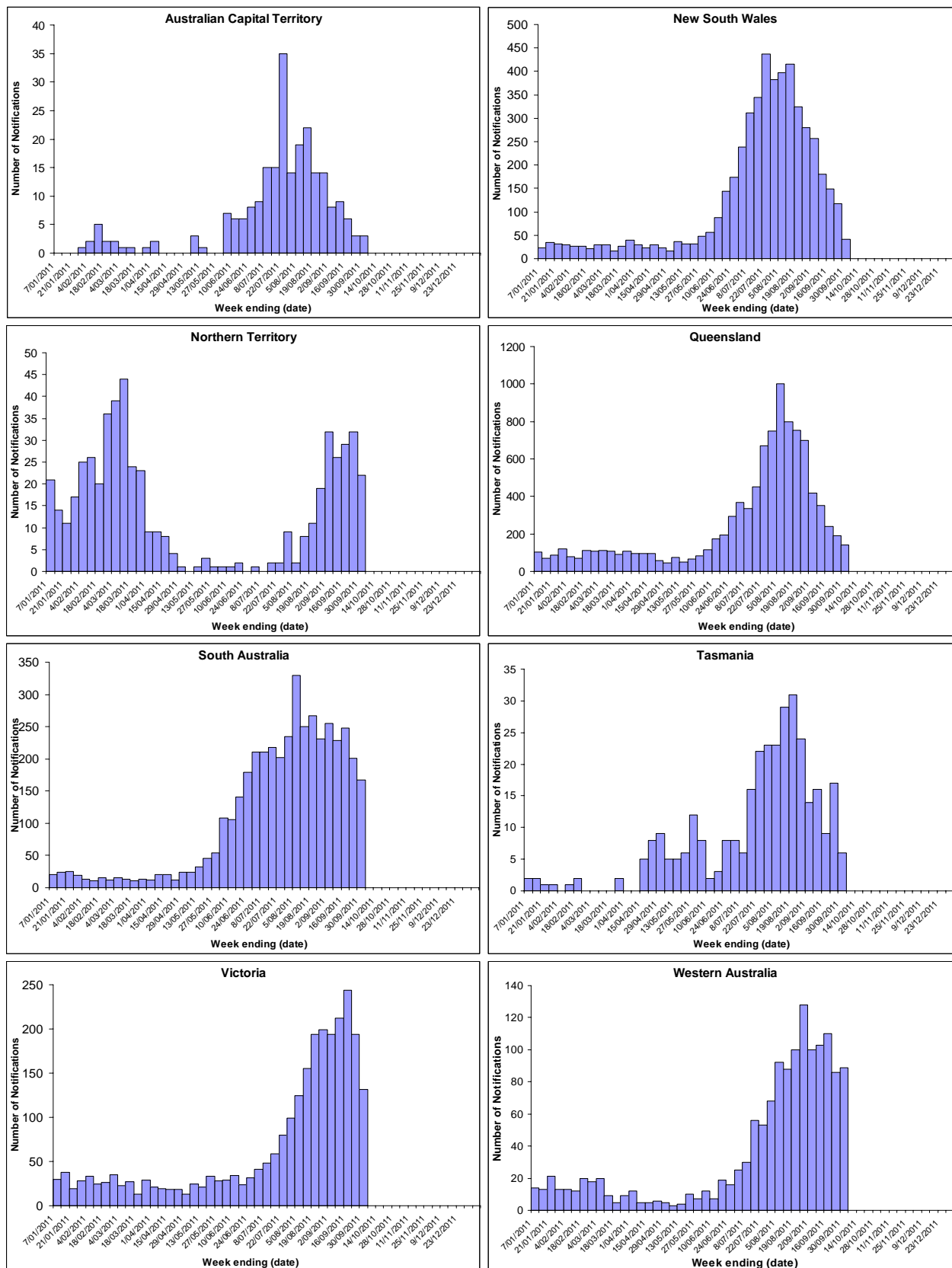
notifications for this season have peaked. This season's peak appears to have occurred in the week ending 5 August 2011 with 1,988 influenza notifications, and was above the peak frequency experienced in previous years, except 2009. Over the summer months, all jurisdictions reported higher than usual 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.

Figure 8. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 30 September 2011



Source: NNDSS 2011

Figure 9. State breakdowns of laboratory confirmed cases of influenza, 1 January to 30 September 2011, by week



Source: NNDSS 2011

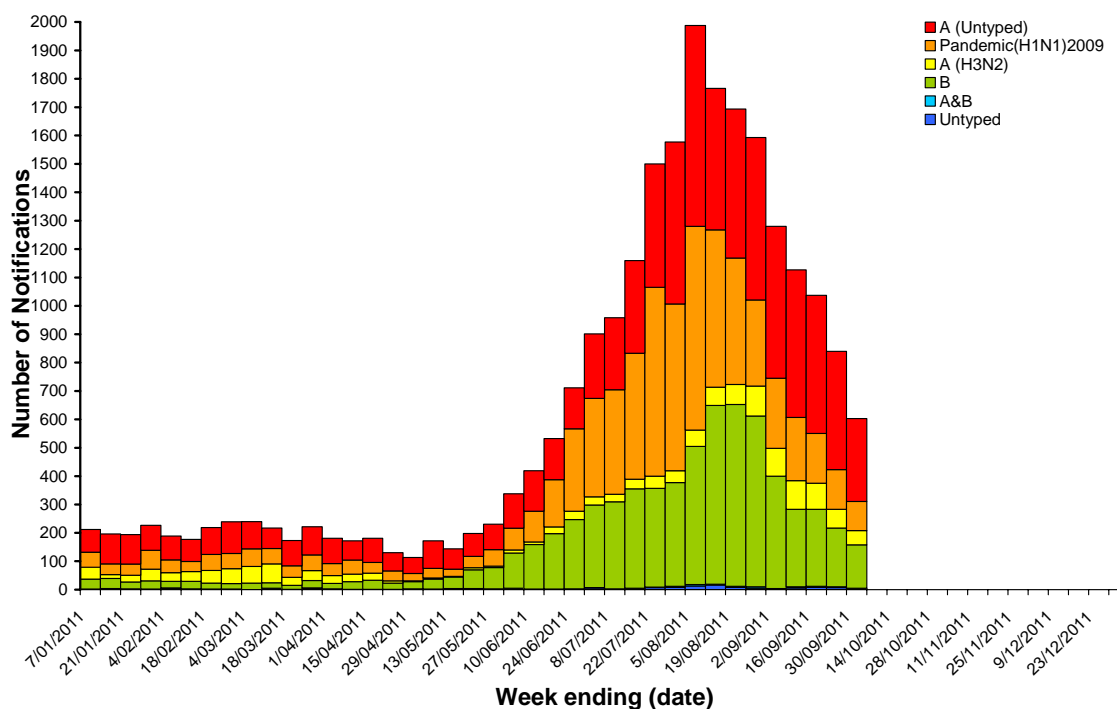
Of the 1,443 influenza notifications reported to the NNDSS this reporting period, 1,068 were influenza A (709 were influenza A (untyped), 243 were pandemic (H1N1) 2009 and 116 were A(H3N2)), 360 were influenza B, 4 were influenza A&B and 11 notifications were reported as untyped (Figure 10). Nationally, compared to the beginning of the winter season, the proportion of A(H3N2) circulating has continued to increase.

The majority of states and territories have reported mostly pandemic (H1N1) 2009, with co-circulation of influenza B. However, in the Northern Territory this fortnight notifications of influenza A(H3N2) represent 70% of their notifications, and nationally the majority of A(H3N2) notifications are being reported from the Northern Territory, Queensland and Western Australia. In Tasmania and New South Wales influenza B represents around half of their notifications, and the proportion of influenza B in Queensland appears to be increasing.

So far in 2011, 17,167 (71%) cases were reported as influenza A (36% influenza A (untyped), 29% pandemic (H1N1) 2009 and 6% A(H3N2)) and 6,676 (28%) were influenza B. A further 75 (<1%) were influenza type A&B and 131 (<1%) were untyped (Figure 10).

Note: Northern Territory sub-typing results reported to the NNDSS as "Influenza A/Not Pandemic" have been counted as influenza A(H3N2) notifications.

Figure 10. Laboratory confirmed cases of influenza in Australia, 1 January 2011 to 30 September 2011, by sub-type and week



Source: NNDSS 2011

Sentinel Laboratory Surveillance

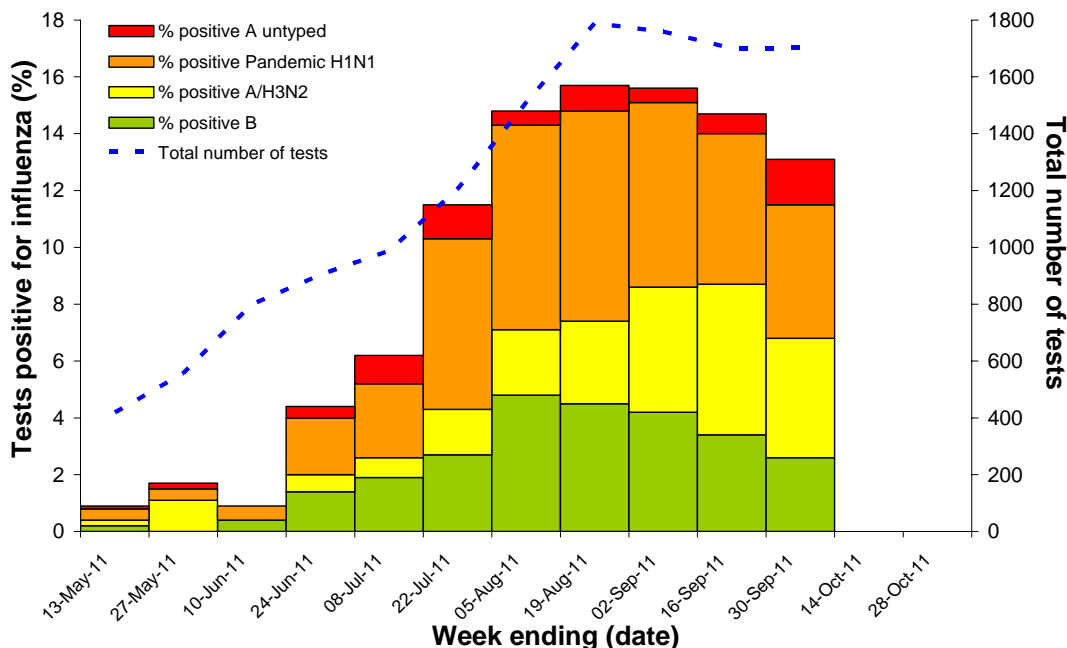
Results from sentinel laboratory surveillance systems for this reporting period show that 13.1% (223/1,702) of the respiratory viral tests conducted over this period were positive for influenza (Table 2). Positive influenza specimens were reported from all sentinel laboratories. The proportion of A(H3N2) reported through sentinel laboratory surveillance systems have continued to increase this fortnight.

Table 2. Sentinel laboratory respiratory virus testing results, 17 September to 30 September 2011

	NSW NIC	WA NIC	NT (Reported by WA NIC)	VIC NIC	TAS (PCR Testing Data)
Total specimens tested	317	975	8	274	128
Total Influenza Positive	12	141	3	53	14
Positive Influenza A	9	118	3	42	7
<i>Pandemic (H1N1) 2009</i>	<i>0</i>	<i>78</i>	<i>0</i>	<i>2</i>	<i>0</i>
<i>A(H3N2)</i>	<i>2</i>	<i>38</i>	<i>3</i>	<i>29</i>	<i>0</i>
<i>Influenza A untyped</i>	<i>7</i>	<i>2</i>	<i>0</i>	<i>11</i>	<i>7</i>
Positive Influenza B	3	23	0	11	7
Most common respiratory virus detected	Parainfluenza	Human metapneumovirus	-	Influenza A	RSV

Since the fortnight ending 30 April 2011, a total of 11.4% of specimens have been positive for influenza. A breakdown of subtypes within this positive proportion by fortnight is highlighted in Figure 11.

Figure 11. Proportion of sentinel laboratory* tests positive for influenza, by subtype and fortnight, 30 April to 30 September 2011.



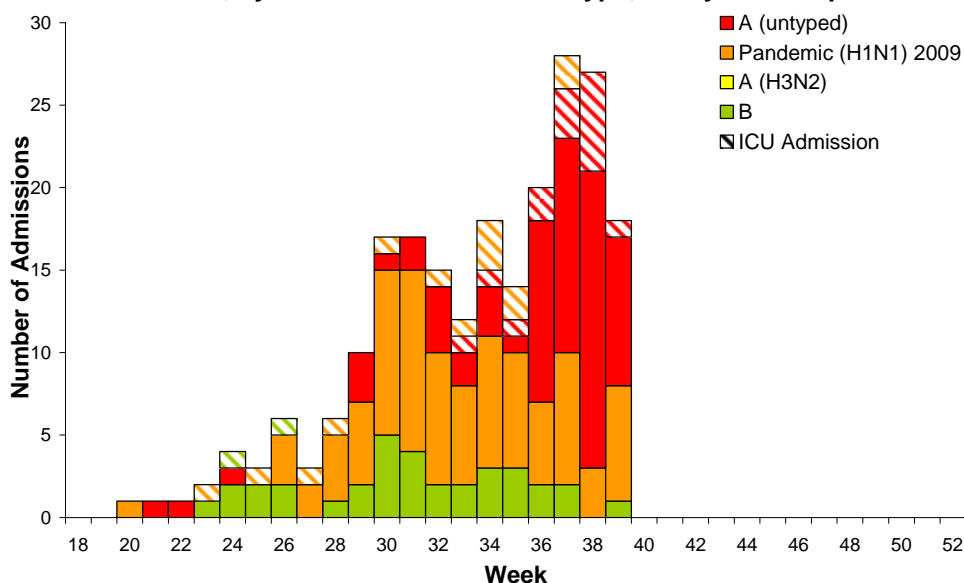
* Tasmanian PCR testing data included from 9 July 2011

Influenza Hospitalisations

Influenza Complications Alert Network (FluCAN) – Victoria and the Australian Capital Territory

The Influenza Complications Alert Network (FluCAN) sentinel hospital system in Victoria, South Australia, Western Australia and the ACT has reported 223 hospitalisations, including 31 ICU admissions, associated with influenza between 1 May and 29 September 2011 (Figure 12). Almost half (45%) of the hospitalisations and 45% of ICU admissions have been associated with pandemic (H1N1) 2009 infection. The mean age of patients hospitalised has been 51 years.

Figure 12. Number of influenza hospitalisations at sentinel hospitals, Victoria, South Australia, Western Australia and the ACT, by week and influenza subtype, 1 May to 29 September 2011



Source: FluCAN Sentinel Hospitals

Australian Paediatric Surveillance

The Australian Paediatric Surveillance Unit (APSU) conducts seasonal surveillance of children aged 15 years and under who are hospitalised with severe complications of influenza. Between 1 July and

11 October 2011, there have been 46 hospitalisations associated with severe influenza complications in children, including 18 ICU admissions. The majority of these hospitalisations were associated with pandemic (H1N1) 2009 infection. Of the 31 hospitalisations with completed questionnaires, 13 were noted as having underlying chronic medical conditions. *Please note hospitalisation numbers may change over time due to case reviews.*

Deaths associated with influenza and pneumonia

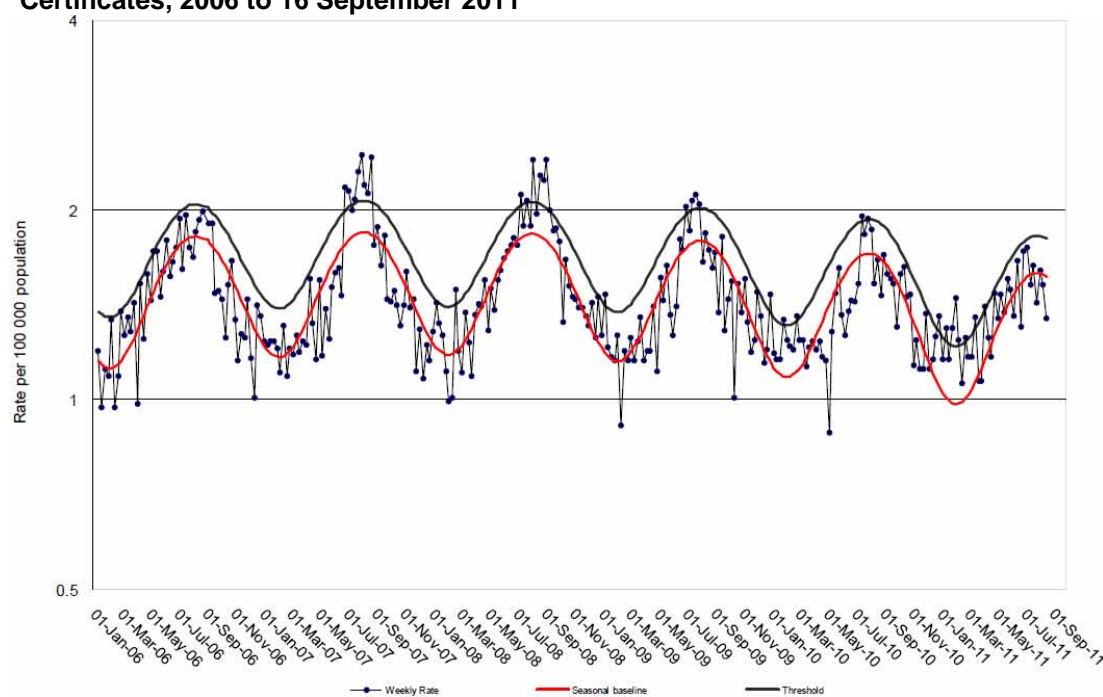
Nationally Notified Influenza Associated Deaths

In 2011, 14 influenza associated deaths have been notified to the NNDSS, with a median age of 47 years. Ten of these cases were reported as having a pandemic (H1N1) 2009 infection, two with influenza type B and the other case reported as having influenza type A (untyped).

New South Wales Influenza and Pneumonia Death Registrations

Death registration data up to 16 September 2011 showed that there were 1.5 pneumonia or influenza associated deaths per 100,000 population in NSW, which is below the seasonal threshold of 1.7 per 100,000 NSW population for this period (Figure 13).³

Figure 13. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2006 to 16 September 2011



Source: NSW 'Influenza Weekly Epidemiology Report'³

2. Virology

Typing and antigenic characterisation

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

From 1 January to 3 October 2011, there were 1,997 Australian influenza isolates subtyped by the WHO CC with almost half of these isolates subtyped as pandemic (H1N1) 2009 (Table 3).

Table 3. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 3 October 2011

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
Pandemic (H1N1) 2009	9	356	32	320	59	22	96	60	954
A(H3N2)	1	17	48	147	23	7	80	23	346
B	1	130	37	120	245	12	143	9	697
Total	11	503	117	587	327	41	319	92	1,997

SOURCE: WHO CC

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 2 October 2011, 15 influenza viral isolates (out of 1,649 tested) have shown resistance to the neuraminidase inhibitor oseltamivir by enzyme inhibition assay (EIA). A further 18 specimens, out of a total of 203 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 increases in oseltamivir resistance in pandemic (H1N1) 2009 influenza isolates have predominately occurred in the Hunter New England region of New South Wales between June and August 2011. The cluster consists 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, have also been 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 so far were 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.

3. International Influenza Surveillance

The WHO⁵ has reported that as at 7 October 2011 influenza activity in the temperate regions of the northern hemisphere remains low or undetectable. Tropical zone countries reported mostly low influenza activity, with some ongoing transmission reported in countries of the Americas (Cuba, Honduras and Bolivia); western Africa (Cameroon); and southern Asia (India, Thailand, Vietnam and Singapore). Influenza transmission in South Africa and South America remains low.

In New Zealand⁶, for the week ending 2 October 2011, the national rate of ILI consultations are currently below the baseline level of activity, with 7 of the twenty district health boards above the national average weekly consultation rate. Influenza type B continues to be the predominant strain circulating in New Zealand, with some A(H3N2).

National Influenza Centres in 73 countries have reported that for the period 11 to 24 September 2011, a total of 1,299 specimens were reported as positive for influenza viruses, 960 (74%) were typed as influenza A and 339 (26%) as influenza B. Of the sub-typed influenza A viruses reported, 44% were pandemic (H1N1)2009 and 56% were influenza A(H3N2)⁷.

2012 Southern Hemisphere Vaccine

The WHO has recommended the following viruses be used for influenza vaccines in the 2012 influenza season (southern hemisphere):⁸

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Perth/16/2009 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus

This recommended composition is the same as the current 2011 southern hemisphere and the 2011-2012 northern hemisphere vaccine compositions.

4. Data considerations

The information in this report is reliant on the surveillance sources available to the Department of Health and Ageing. As access to sources increase as the season progresses, this report will be updated with the additional information.

This report aims to increase awareness of influenza activity in Australia by providing an analysis of the various surveillance data sources throughout Australia. While every care has been taken in preparing this report, the Commonwealth does not accept liability for any injury or loss or damage arising from the use of, or reliance upon, the content of the report. Delays in the reporting of data may cause data to change retrospectively. For further details about information contained in this report please contact the Influenza Surveillance Team through flu@health.gov.au.

Sentinel General Practice Surveillance

The sentinel general practice ILI surveillance data between 2008 and 2011 consists of two main general practitioner schemes, the Australian Sentinel Practices Research Network (ASPREN) and a Victorian Infectious Disease Reference Laboratory (VIDRL) coordinated sentinel GP ILI surveillance program. Additionally, between 2008 and 2009 a Northern Territory surveillance scheme also operated, however this scheme has since been incorporated in to the ASPREN scheme. The national case definition for ILI is presentation with fever, cough and fatigue.

The ASPREN currently has sentinel GPs who report ILI presentation rates in NSW, NT, SA, ACT, VIC, QLD, TAS and WA. The VIDRL scheme operates in metropolitan and rural general practice sentinel sites throughout Victoria and also incorporates ILI presentation data from the Melbourne Medical Deputising Service. As jurisdictions joined ASPREN at different times and the number of GPs reporting has changed over time, the representativeness of sentinel general practice ILI surveillance data in 2011 may be different from that of previous years.

ASPREN ILI surveillance data are provided to the Department on a weekly basis throughout the year, whereas data from the VIDRL coordinated sentinel GP ILI surveillance program is provided between May and October each year.

Approximately 30% of all ILI patients presenting to ASPREN sentinel GPs are swabbed for laboratory testing. Please note the results of ASPREN ILI laboratory respiratory viral tests now include Western Australia.

Further information on ASPREN is available at www.dmac.adelaide.edu.au/aspren and information regarding the VIDRL coordinated sentinel GP ILI surveillance program is available at: <https://www.victorianflusurveillance.com.au/>.

Sentinel Emergency Department Data

Western Australia – Emergency Department ILI surveillance data are extracted from the ‘Virus Watch’ Report. This report is produced weekly. The Western Australia Influenza Surveillance Program collects data from eight Perth emergency departments.

New South Wales – Emergency Department ILI surveillance data are extracted from the ‘Weekly Influenza Report, NSW’. The New South Wales Influenza Surveillance Program collects data from 56 emergency departments across New South Wales.

FluTracking

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

Further information on FluTracking is available at www.flutracking.net/index.html.

FluTracking investigators found that at the community level, peak ILI levels for 2007 were higher than 2009. This finding was consistent with other surveillance systems measuring ILI at the community level, with ASPREN showing similar levels of peak ILI in 2007 and 2009; Google flu trends showed higher levels of ILI at the peak in 2007 as compared to 2009; and workplace absenteeism showed slightly higher peak levels of ILI in 2007 than 2009. FluTracking data are consistent with NSW mortality data for influenza and

pneumonia. Although laboratory data and emergency department (ED) data showed higher peak levels of influenza in 2009 than 2007, FluTracking found that the laboratory data were biased by increased testing in 2009 and ED data were biased by increased health seeking behaviour during the pandemic. See: <http://wwwnc.cdc.gov/eid/article/16/12/10-0935-f1.htm>

National Notifiable Diseases Surveillance System (NNDSS)

Laboratory confirmed influenza (all types) is notifiable under public health legislation in all jurisdictions in Australia. Confirmed cases of influenza are notified through the NNDSS by all jurisdictions. The national case definition is available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd_flu.htm.

Analyses of Australian notifications are based on the diagnosis date, which is the earliest of the onset date, specimen date or notification date.

Sentinel Laboratory Surveillance data

Laboratory testing data are provided weekly directly from PathWest (WA), VIDRL (VIC), ICPMR (NSW), and Tasmanian laboratories reporting PCR results. Additionally, approximately 30% of all ILI patients presenting to ASPREN based sentinel GPs are swabbed for laboratory testing. Please note the results of ASPREN ILI laboratory respiratory viral tests now include Western Australia.

Influenza Complications Alert Network (FluCAN)

The Influenza Complications Alert Network (FluCAN) sentinel hospital system monitors influenza hospitalisations at the following sites:

- Victoria – Geelong Hospital, Royal Melbourne Hospital, Monash Medical Centre and Alfred Hospital;
- Australian Capital Territory – the Canberra Hospital and Calvary Hospital;
- South Australia – Royal Adelaide Hospital;
- Western Australia – Royal Perth Hospital.

Influenza counts are based on active surveillance at each site for admissions with PCR-confirmed influenza in adults. Some adjustments may be made in previous periods as test results become available. ICU status is as determined at the time of admission and does not include patients subsequently transferred to ICU.

Australian Paediatric Surveillance Unit

The Australian Paediatric Surveillance Unit (APSU) conducts seasonal surveillance of children aged 15 years and under who are hospitalised with severe complications of influenza. Reports are collated on a weekly basis from approximately 1,300 paediatricians and other child health clinicians around Australia. The protocol and case definition is available at: <http://www.apsu.org.au/download.cfm?DownloadFile=96DE7B48-0CC2-E99A-525BCD4BD6A2CB80>.

Deaths associated with influenza and pneumonia

Nationally reported influenza associated deaths are notified by jurisdictions to the NNDSS, which is maintained by the Department of Health and Ageing. Notifications of influenza associated deaths are likely to underestimate the true number of influenza associated deaths occurring in the community.

NSW influenza and pneumonia deaths data are collected from the NSW Registry of Births, Deaths and Marriages. Figure 13 is extracted from the 'Weekly Influenza Report, NSW'. NSW Registered Death Certificates are 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 beginning to circulate widely.

WHO Collaborating Centre for Reference & Research on Influenza (WHO CC)

Data are provided weekly to the Department from the WHO CC.

5. References

- 1 The 2011 Victorian Influenza Vaccine Effectiveness Audit Report #21, 25 September 2011. Available from: www.victorianflusurveillance.com.au. Accessed 12 October 2011.
- 2 WA Virus Watch Report, 25 September 2011. Available from: http://www.public.health.wa.gov.au/cproot/4149/2/20110925_Virus_WAtch.pdf. Accessed 12 October 2011
- 3 NSW Influenza Weekly Epidemiology Report, 24 to 30 September 2011. Available from: http://www.health.nsw.gov.au/resources/publichealth/infectious/influenza/pdf/week_ending_30092011.pdf. Accessed 12 October 2011.
- 4 FluTracking Weekly Interim Report #22, 2 October 2011. Available from: <http://www1.hnehealth.nsw.gov.au/hnepH/HNEPHApplications/FluSurvey/Reports/LatestReport.pdf>. Accessed 12 October 2011.
- 5 WHO Weekly Influenza Update 144 (7 October 2011). Available from: http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html. Accessed 12 October 2011.
- 6 New Zealand Influenza Weekly Update, 26 September to 2 October 2011. Available from: http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php, Accessed 12 October 2011.
- 7 WHO Laboratory confirmed data from the Global Influenza Surveillance Network – 7 October 2011. Available from: http://www.who.int/influenza/gisrs_laboratory/updates/summaryreport/en/index.html. Accessed 12 October 2012.
- 8 WHO Recommended composition of influenza virus vaccines for use in the 2012 southern hemisphere influenza season. Available from: <http://www.who.int/influenza/vaccines/virus/recommendations/2012south/en/index.html> . Accessed 12 October 2011.