



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:

Is the situation changing?	Indicated by trends in: <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.
How severe is the disease, and is severity changing?	Indicated by trends in: <ul style="list-style-type: none"> hospitalisations, ICU admissions and deaths from sentinel systems; and clinical severity in hospitalised cases and ICU admissions.
Is the virus changing?	Indicated by trends in: <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 have started to increase through both sentinel general practitioner surveillance systems and ILI presentations to emergency departments.
- Notifications have continued to rise nationally, with increases most notable in South Australia, Queensland and New South Wales.
- During this reporting period there were 574 laboratory confirmed notifications of influenza, with Queensland and South Australia reporting the highest number of notifications. The majority of virus detections have been pandemic (H1N1) 2009, with co-circulation of influenza B.
- Influenza B in South Australia has continued to represent 85% of their notifications, and also accounted for the majority of influenza B reported nationally over this period. Queensland has reported mostly pandemic (H1N1) 2009 with some co-circulation of influenza B and New South Wales has reported circulation of mostly pandemic (H1N1) 2009.
- As at 24 June 2011, there have been 5,640 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 1,088 for the same period in 2010.
- The WHO has reported that worldwide influenza activity is low and activity associated with the northern hemisphere influenza season has finished. Influenza activity remains low in most temperate countries of the southern hemisphere.

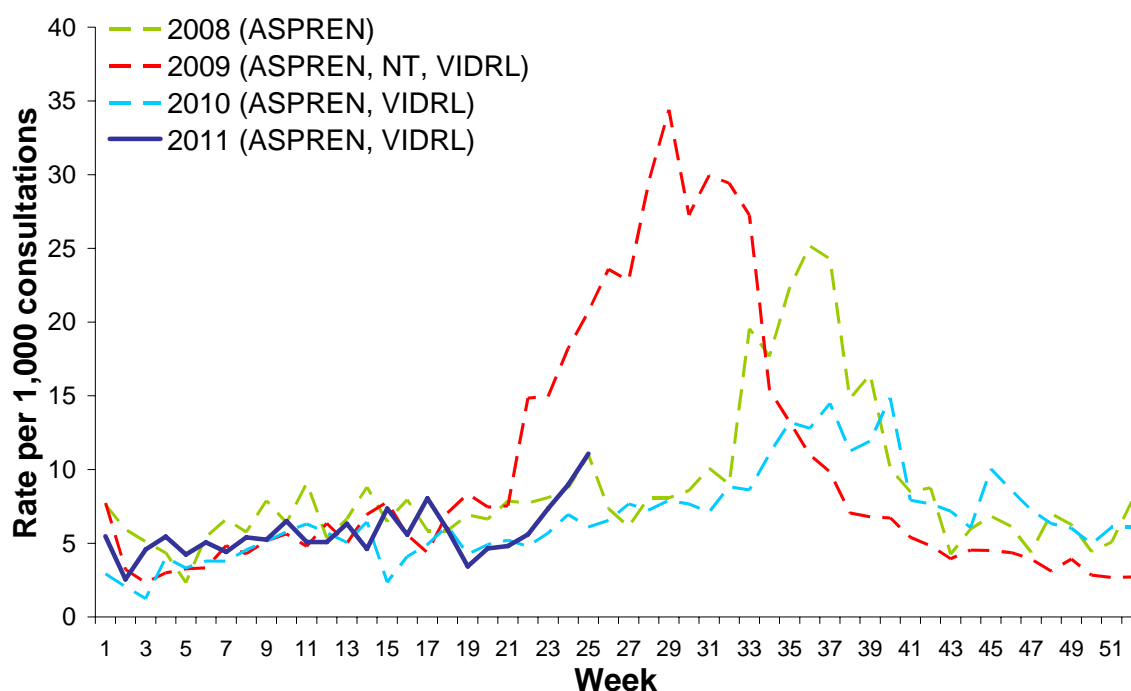
1. Influenza activity in Australia

Influenza-Like Illness

Sentinel General Practice Surveillance

Sentinel general practitioner ILI consultation rates continued to increase this fortnight. In the week ending 19 June 2011, the national ILI consultation rate to sentinel GPs was 11 cases per 1,000 consultations, up from 7 cases per 1,000 consultations last fortnight (Figure 1).

Figure 1. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2008 to 19 June 2011*



* Delays in the reporting of data may cause data to change retrospectively. As data from the VIDRL surveillance system is combined with ASPREN data for 2010 and 2011, rates may not be directly comparable across 2008 and 2009.

SOURCE: ASPREN and VIDRL GP surveillance system¹.

Of the ASPREN ILI specimens collected in the fortnight ending 19 June 2011, 3 specimens (6%) were positive for influenza, with all of those being typed as influenza type B. Due to the small number of specimens tested it is difficult to yet determine any general trends in influenza positivity. Seven specimens were positive for other respiratory viruses, with the majority of these being rhinovirus (4) (Table 1). Please note the results of ASPREN ILI laboratory respiratory viral tests now include Western Australia.

Table 1. ASPREN ILI consultations laboratory respiratory viral tests that were positive for influenza or other respiratory virus, 1 January 2011 to 19 June 2011.

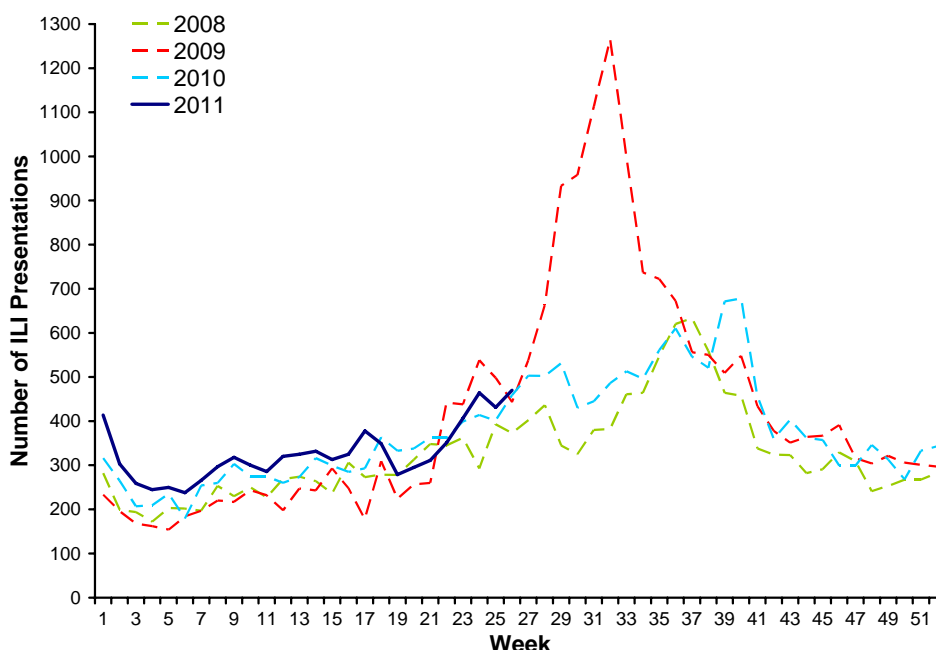
	ASPREN Fortnight (6 June – 19 June 2011)	ASPREN YTD (1 Jan – 19 June 2011)
Total specimens tested	47	389
Total Influenza Positive	3	48
Influenza A	0	35
<i>Pandemic (H1N1) 2009</i>	0	24
<i>Seasonal A/H3N2</i>	0	1
<i>Influenza A untyped</i>	0	10
Influenza B	3	13
Total Positive other Resp. Viruses*	7	107

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

WA Emergency Departments

In the fortnight ending 26 June 2011 there were 901 respiratory viral presentations to WA EDs, including 54 admissions (Figure 2). The proportion of presentations admitted to hospital remains stable.

Figure 2. Number of respiratory viral presentations to WA EDs from 1 January 2008 to 26 June 2011, by week

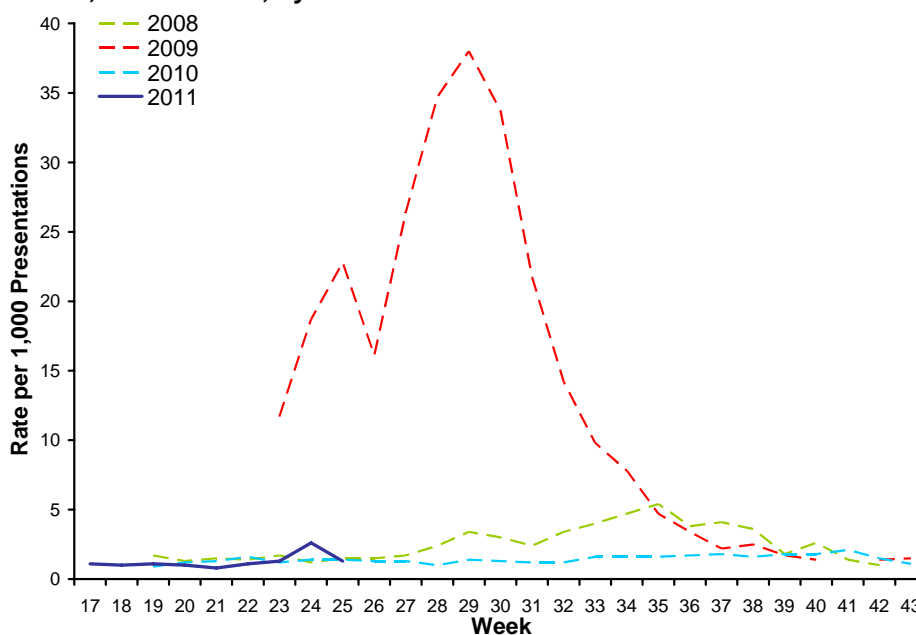


Source: WA 'Virus Watch' Report²

NSW Emergency Departments

In the week ending 24 June 2011 the total count of ILI presentations to NSW EDs was 1.3 cases per 1,000 consultations (Figure 3). This is lower than the previous week's unusually higher than expected rate (2.6 per 1,000 consultations), but is within the usual range for this time of year. A higher proportion of presentations were reported among people aged 5 to 44 years (60%).³

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



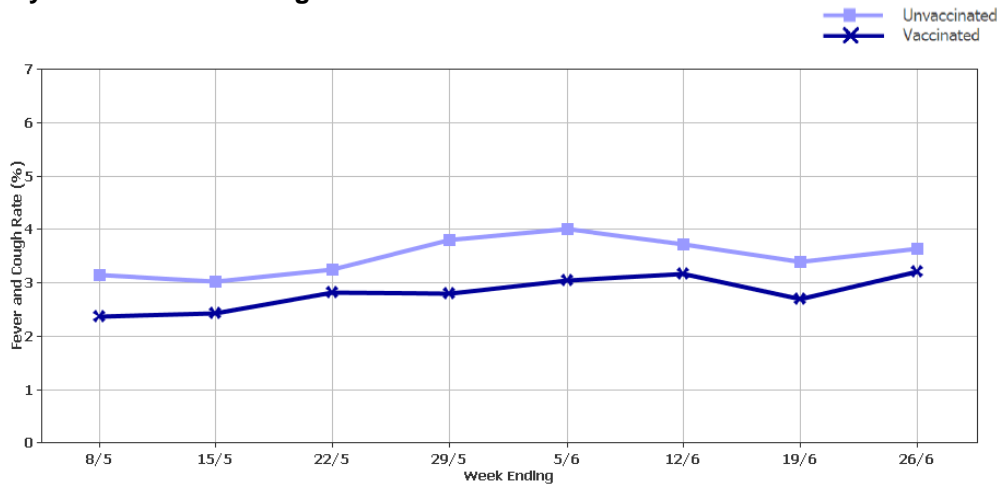
Source: NSW Influenza Weekly Epidemiology Report³

Flutracking

Flutracking, a national online system for collecting data on ILI in the community, reported that in the week ending 26 June 2011 fever and cough was reported by 3.2% of vaccinated participants and 3.6% of unvaccinated participants (Figure 4)⁴. Fever, cough and absence from normal duties was reported by 1.6% of vaccinated participants and 1.6% of unvaccinated participants.

Up to 26 June, 6,911 out of 10,510 (65.8%) participants reported having received the seasonal vaccine so far. Of the 2,447 participants who identified as working face-to-face with patients, 1,966 (80.3%) have received the vaccine.

Figure 4. Rate of ILI symptoms among Flutracking participants by week, from week ending 8 May 2011 to week ending 26 June 2011.

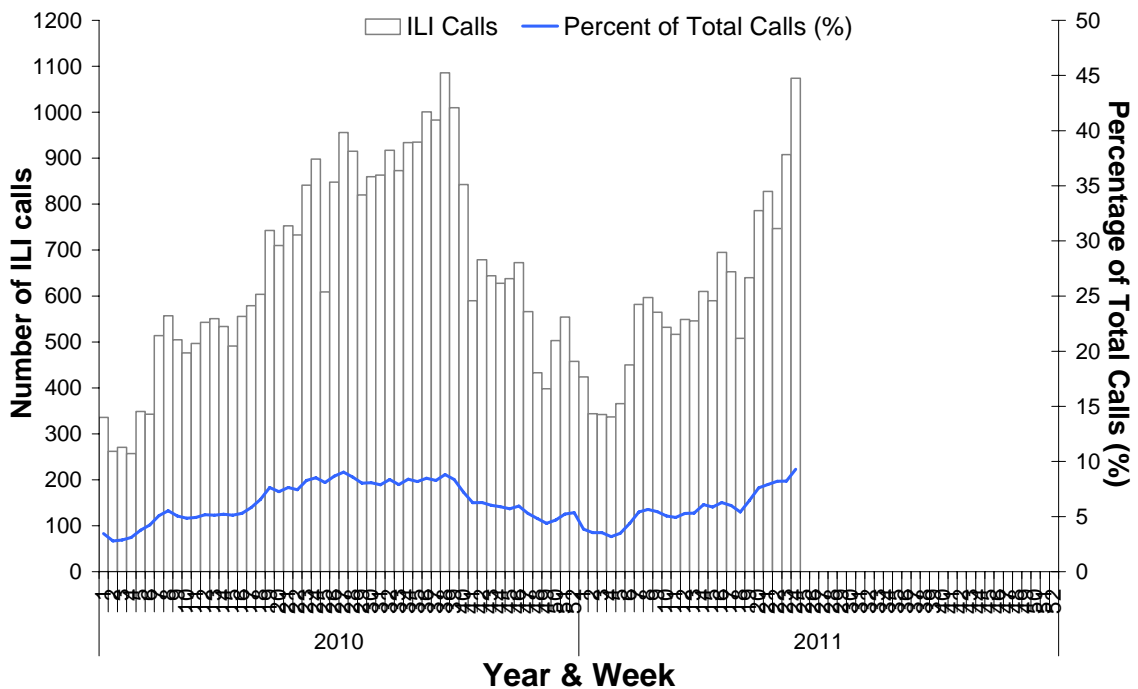


Source: FluTracking

National Health Call Centre Network

The number of ILI-related calls to the National Health Call Centre Network (NHCCN) continued to increase during this fortnight compared to recent weeks. The percentage of total calls also continued to increase. In the week ending 19 June 2011 9% of calls to the NHCCN were ILI related, which is comparable to the same period in 2010 (Figure 5).

Figure 5. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2010 to 19 June 2011



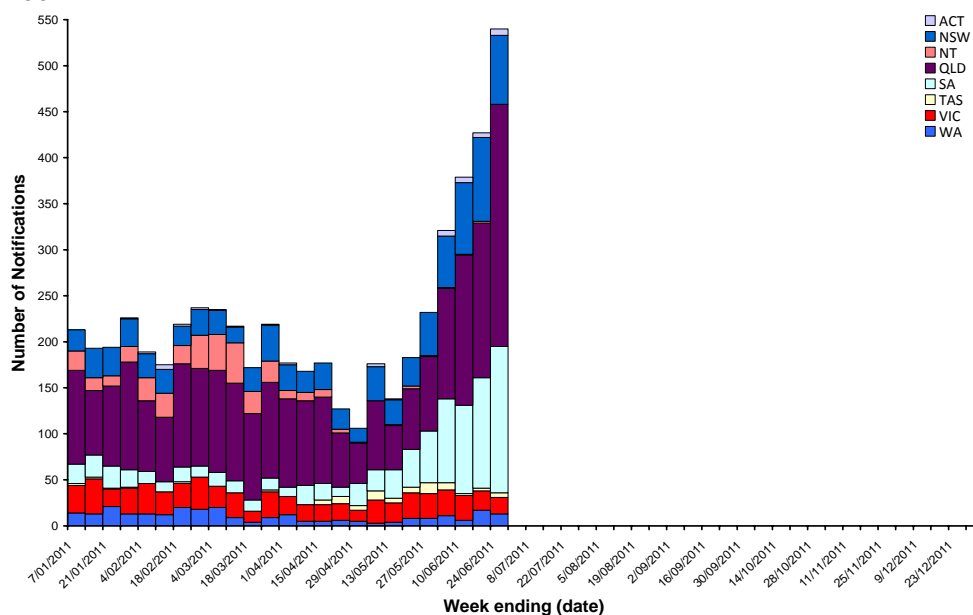
Note: National data do not include QLD and VIC
Source: NHCCN data

Laboratory Confirmed Influenza

Laboratory Confirmed Cases Notified to Health Departments

During this reporting period there were 967 influenza notifications reported to the NNDSS (Figure 6). The number of laboratory confirmed influenza reported by states and territories was 431 in Qld, 279 in SA, 166 in NSW, 39 in Vic, 30 in WA, 12 in the ACT, 8 in TAS, and 2 in the NT (Figure 6). A weekly breakdown of trends by state and territory highlights that in recent weeks notifications have increased mostly in South Australia, Queensland and New South Wales, with some increases also observed in most of the other jurisdictions (Figure 8).

Figure 6. Laboratory confirmed cases of influenza in Australia, 1 January to 24 June 2011, by state, by week.



Source: NNDSS 2011

Up to 24 June, there have been 5,640 laboratory confirmed notifications of influenza diagnosed during 2011 (Figure 7). Of these notifications, there have been 2,525 notified in Qld, 893 in SA, 884 in NSW, 605 in Vic, 340 in the NT, 269 cases in WA, 79 cases in Tas and 45 cases in the ACT. All jurisdictions reported higher than usual numbers of notifications over the summer months, especially in the Northern Territory and Queensland. The reason for this unusually high activity earlier in the year is not clear, but it does not appear to be due solely to increased testing.

Figure 7. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 24 June 2011

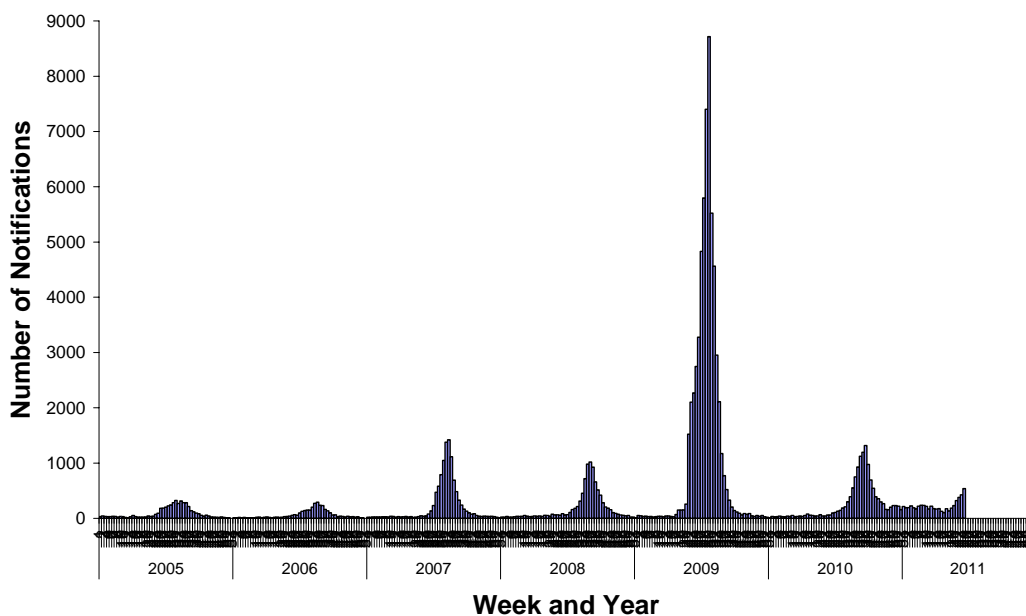
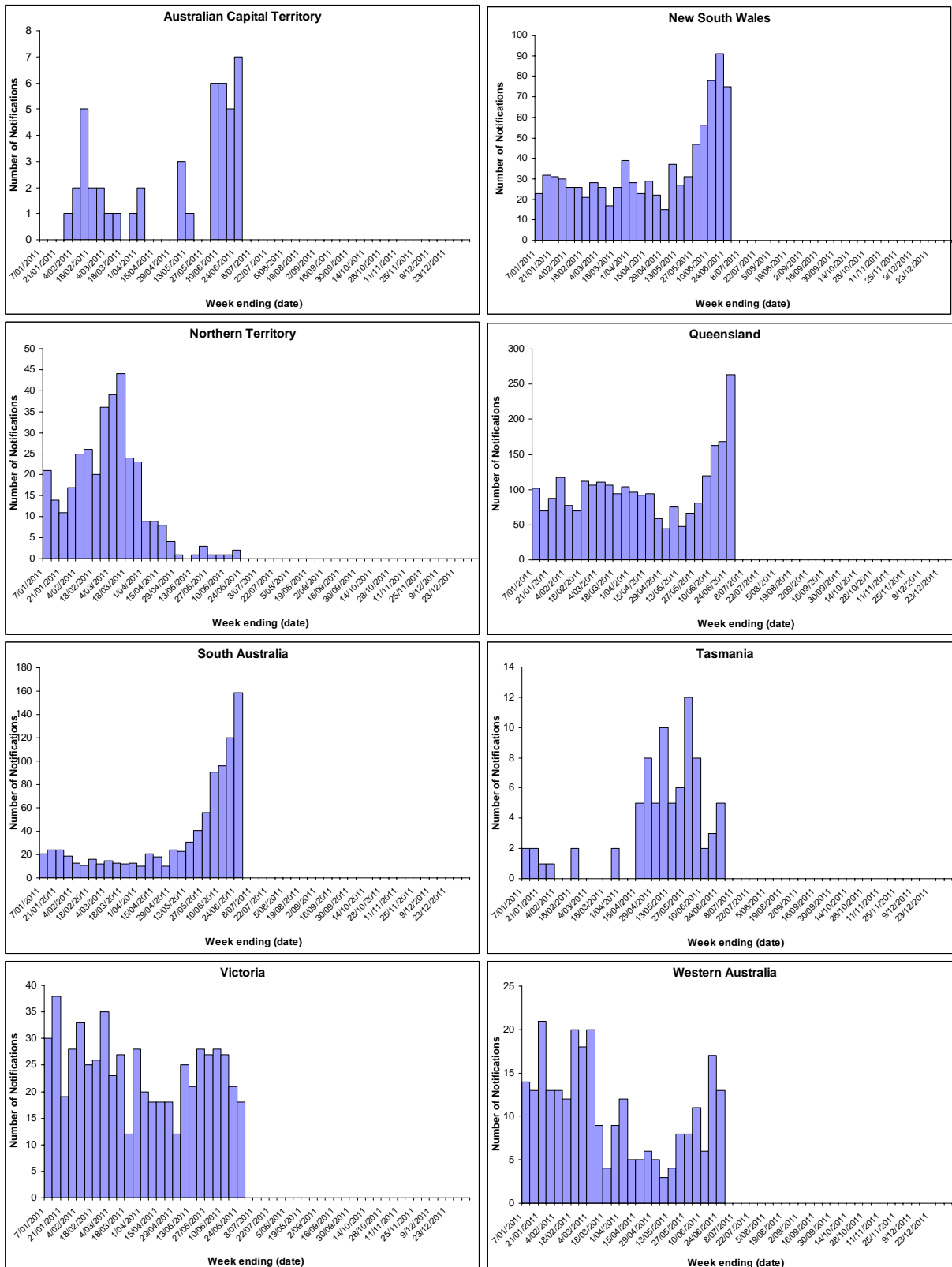


Figure 8. State breakdowns of laboratory confirmed cases of influenza, 1 January to 24 June 2011, by week



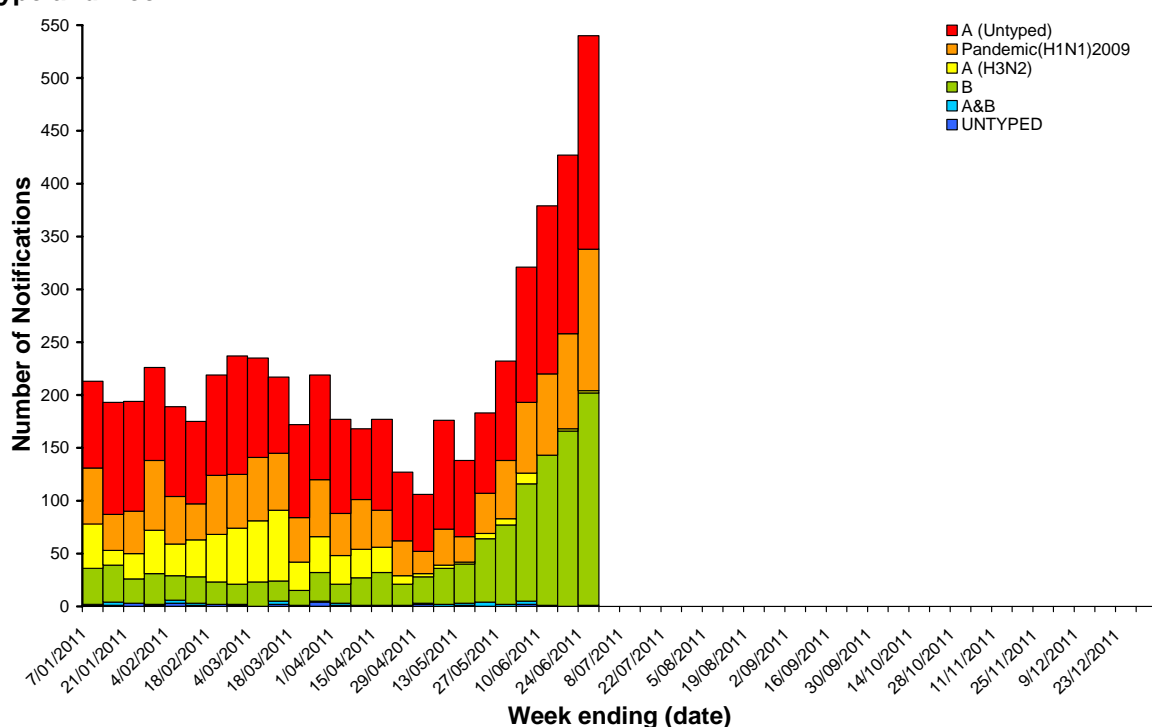
Of the 967 influenza notifications reported to the NNDSS this reporting period, 371 were influenza A (untyped), 224 were pandemic (H1N1) 2009, 367 were influenza B, 4 were A/H3N2 and one notification was reported as untyped (Figure 9).

Influenza B in South Australia has continued to represent 85% of their notifications, and also accounted for the majority of influenza B reported nationally over this period. Queensland has reported mostly pandemic (H1N1) 2009 with some co-circulation of influenza B and New South Wales has reported circulation of mostly pandemic (H1N1) 2009. *Note: South Australian and Queensland testing data are not reflected in the sentinel laboratory data.*

So far in 2011, 2,467 (44%) cases have been sub-typed as influenza A (untyped), 1,284 (23%) as pandemic (H1N1) 2009, 589 (11%) as type A/H3N2, and 35 (<1%) were type A&B. A further 1,238 (22%) have been characterised as influenza type B and 27 (<1%) were untyped (Figure 9).

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

Figure 9. Laboratory confirmed cases of influenza in Australia, 1 January 2011 to 24 June 2011, by sub-type and week



Source: NNDSS 2011

Sentinel Laboratory Surveillance

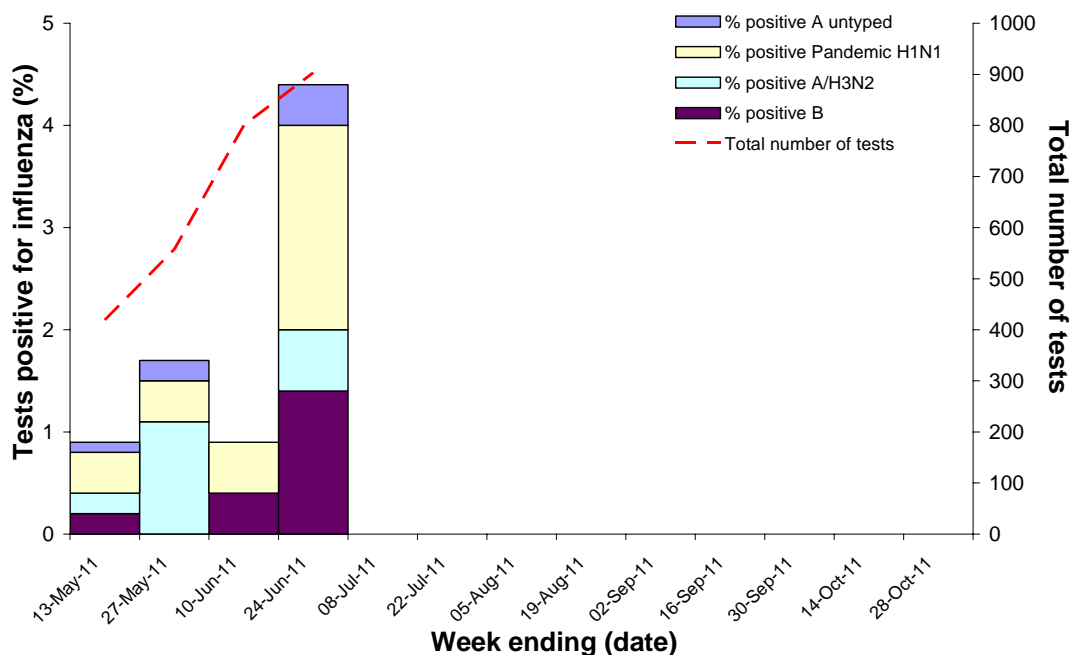
Results from sentinel laboratory surveillance systems for this reporting period show that 4.7% (46/970) of the respiratory tests conducted over this period were positive for influenza (Table 2). Positive influenza specimens were reported from all sentinel laboratories, except the Northern Territory.

Table 2. Laboratory respiratory tests that tested positive for influenza, 11 June to 24 June 2011

	NSW NIC	WA NIC	NT (Reported by WA NIC)	VIC NIC	TAS Laboratories
Total specimens tested	358	317	0	228	67
Total Influenza Positive	21	12	0	7	6
Positive Influenza A	15	10	0	2	-
<i>Pandemic (H1N1) 2009</i>	<i>11</i>	<i>6</i>	<i>0</i>	<i>1</i>	<i>-</i>
<i>A/H3N2</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>1</i>	<i>-</i>
<i>Influenza A untyped</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>-</i>
Positive Influenza B	6	2	0	5	-
The most common respiratory virus detected	RSV	RSV	N/A	Picornavirus	-

In 2011 a total of 3.5% of specimens have been positive for influenza. A breakdown of subtypes within this positive proportion by fortnight is highlighted in Figure 10.

Figure 10. Proportion of sentinel laboratory* tests positive for influenza, by subtype and fortnight, 30 April to 24 June 2011.



* Currently excludes Tasmanian sentinel surveillance data

Deaths associated with influenza and pneumonia

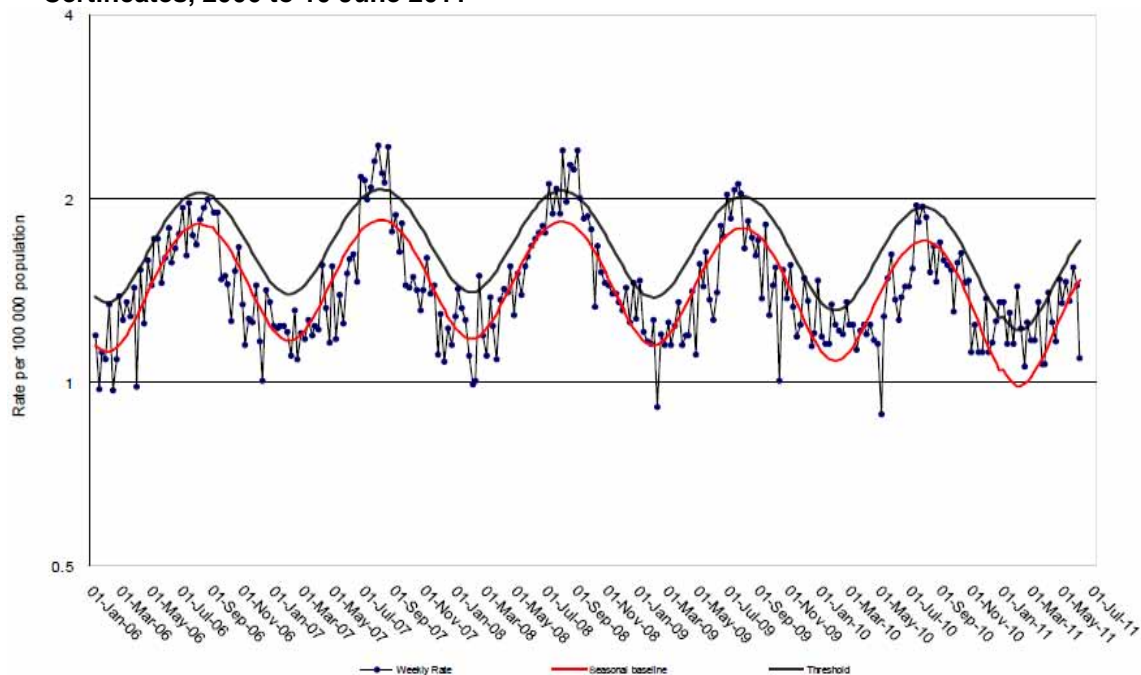
Nationally notified influenza associated deaths

In 2011, 5 influenza associated deaths have been notified to the NNDSS, with all cases having pandemic (H1N1) 2009.

NSW

Death registration data up to 10 June 2011 showed that there were 1.1 pneumonia or influenza associated deaths per 100,000 population in NSW, which is below the seasonal threshold of 1.7 per 100,000 population for this period (Figure 11).³

Figure 11. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2006 to 10 June 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 26 June 2011, there were 569 Australian influenza isolates subtyped by the WHO CC with the majority of these isolates subtyped as pandemic (H1N1) 2009 (48%) (Table 3).

Table 3. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 26 June 2011

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
Pandemic (H1N1) 2009	0	13	28	177	0	15	19	22	274
A(H3N2)	0	1	48	105	1	1	4	8	168
B	0	8	32	29	42	1	11	4	127
Total	0	22	108	311	43	17	34	34	569

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.

Antigenic characterisation has shown influenza isolates to be a close match with the composition of the 2011 southern hemisphere influenza vaccine with some viruses showing reduced reactivity, however there has been insufficient testing to date to determine any general trends.

Antiviral Resistance

The WHO Collaborating Centre in Melbourne has reported that from 1 January 2011 to 26 June 2011, one isolate (out of 798 tested) has shown resistance to oseltamivir by enzyme inhibition assay (EIA). A further isolate, out of a total of 7 pandemic H1N1 (2009) tested by pyrosequencing, has shown the H275Y mutation known to confer resistance to oseltamivir.

3. International Influenza Surveillance

The WHO⁵ has reported that as at 17 June 2011 the influenza season has finished in the temperate countries of the northern hemisphere, with only sporadic influenza virus detections occurring. Transmission in tropical areas remains low with localised circulations noted in the western and eastern regions of sub-Saharan Africa and low level circulation in some countries of northern South America. South Africa has reported a sharp increase in ILI and Severe Acute Respiratory Infection rates, primarily influenza A(H1N1)2009, consistent with the start of their winter influenza season. Influenza Activity remains low in other temperate countries of the southern hemisphere.

National Influenza Centres in 65 countries have reported that for the period 22 May to 4 June 2011, a total of 483 specimens were reported as positive for influenza viruses, 250 (51.8%) were typed as influenza A and 233 (48.2%) as influenza B. Of the sub-typed influenza A viruses reported, 68% were pandemic (H1N1)2009 and 32% were influenza A(H3N2)⁶.

WHO have released a summary review of the northern hemisphere winter influenza season⁷. The summary review notes that the most commonly detected virus was different in North America, where influenza A(H3N2) and influenza type B co-circulated with pandemic (H1N1)2009, and Europe, where influenza A(H1N1)2009 was by far the most commonly detected virus. Although it was no longer the predominant influenza virus circulating in many parts of the world, pandemic (H1N1) 2009 otherwise behaved much the same way as it had during the pandemic in terms of the age groups most affected and the clinical pattern of illness. More than 90% of viruses detected around the world during the northern hemisphere influenza season were similar antigenically to those found in the seasonal trivalent influenza vaccine. Antiviral resistance in pandemic (H1N1)2009 remained at a very low level.

The WHO has released their recommendation for the antigen composition of 2011-2012 northern hemisphere influenza season trivalent flu vaccine⁸. It is recommended that vaccines contain the following:

- an A/California/7/2009 (H1N1)-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 2010-2011 Northern Hemisphere and the 2011 Southern 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 pandemic (H1N1) 2009 and seasonal influenza 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 Team through flu@health.gov.au.

Sentinel General Practice Surveillance

The Australian Sentinel Practices Research Network (ASPREN) has Sentinel GPs who report ILI presentation rates in NSW, NT, SA, ACT, VIC, QLD, TAS and WA. As jurisdictions joined ASPREN at different times and the number of GPs reporting has changed over time, the representativeness of ASPREN data in 2011 may be different from that of previous years. ASPREN data and VIDRL influenza surveillance data are sent to the Surveillance Branch on a weekly basis. Further information on Sentinel GPs' Influenza Surveillance and ASPREN activities are available at www.dmac.adelaide.edu.au/aspren.

Sentinel ED data

WA - ED surveillance data are extracted from the 'Virus Watch' Report. This report is provided weekly. The Western Australia Influenza Surveillance Program collects data from eight Perth EDs. NSW - ED surveillance data are extracted from the 'Weekly Influenza Report, NSW'. The New South Wales Influenza Surveillance Program collects data from 56 EDs 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.

Sentinel Laboratory Surveillance data

Laboratory testing data are provided weekly directly from PathWest (WA), VIDRL (VIC), ICPMR (NSW), sentinel Tasmanian laboratories, and ASPREN (national).

National Notifiable Diseases Surveillance System (NNDSS)

Laboratory confirmed influenza (all types) is notifiable in all jurisdictions in Australia. Confirmed cases of influenza are notified through NNDSS by all jurisdictions.

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

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

Data are provided weekly to the Communicable Disease and Surveillance Branch from the WHO CC.

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. However these are an underestimation of the true number of deaths occurring in the community associated with influenza.

NSW influenza and pneumonia deaths data are collected from the NSW Registry of Births, Deaths and Marriages. Figure 6 is extracted from the 'Weekly Influenza Report, NSW'.

5. References

- 1 The 2011 Victorian Influenza Vaccine Effectiveness Audit Report #8, 26 June 2011. Available from: www.victorianflusurveillance.com.au. Accessed 30 June 2011.
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- 5 WHO Weekly Influenza Update 136 (17 June 2011). Available from: http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html#. Accessed 30 June 2011.
- 6 WHO Laboratory confirmed data from the Global Influenza Surveillance Network - 17 June 2011. Available from: <http://www.who.int/csr/disease/influenza/influenzane트워크/flunet/summaryreport/en/index.html>. Accessed 30 June 2011
- 7 WHO Summary review of the 2010-2011 northern hemisphere winter influenza season. Available from: http://www.who.int/csr/disease/influenza/2010_2011_GIP_surveillance_seasonal_review/en/index.html. Accessed 16 June 2011
- 8 WHO Recommended composition of influenza virus vaccines for use in the 2011-2012 northern hemisphere influenza season. Available from: http://www.who.int/csr/disease/influenza/recommendations_2011_12north/en/index.html. Accessed 3 June 2011.