



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 continue to remain low through the majority of ILI surveillance systems this reporting period.
- Over the summer months all jurisdictions reported higher than usual numbers of laboratory confirmed influenza notifications. In recent weeks, notifications across most jurisdictions have been stable; however South Australia has reported a large increase in notifications for this fortnight with 85% of notifications being influenza B.
- During this reporting period there were 324 laboratory confirmed notifications of influenza, with Queensland reporting the highest number of notifications. The majority of virus detections have been pandemic (H1N1) 2009, with co-circulation of influenza A/H3N2 and influenza B.
- As at 27 May 2011, there have been 3,836 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 877 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 largely finished, and a few tropical countries are experiencing low grade transmission.
- The WHO has released their recommendation for the antigen composition of 2011-2012 northern hemisphere influenza season trivalent flu vaccine. The recommended composition is the same as the 2010-2011 Northern Hemisphere and the current 2011 Southern Hemisphere vaccine compositions.

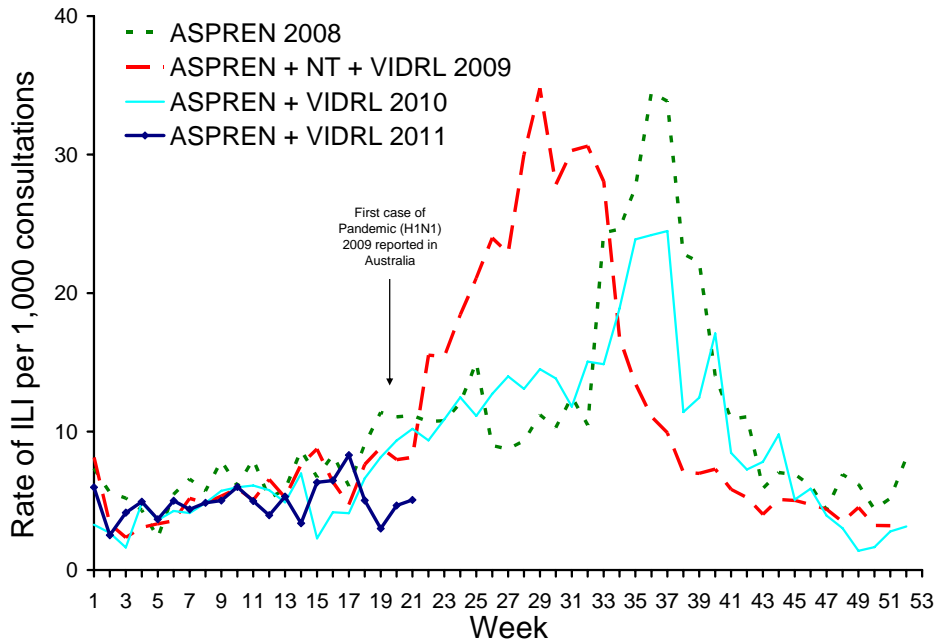
1. Influenza activity in Australia

Influenza-Like Illness

Sentinel General Practice Surveillance

In the week ending 22 May 2011, the national ILI consultation rate to sentinel GPs was 5 cases per 1,000 consultations, up from 3 cases per 1,000 consultations last fortnight (Figure 1). The overall trend in ILI rate for 2011 is stable and lower than at the same time in 2008 and 2010.

Figure 1. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2008 to 22 May 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, rates may not be directly comparable across 2007, 2008 and 2009.

SOURCE: ASPREN and VIDRL GP surveillance system.

Of the ASPREN ILI specimens collected in the fortnight ending 27 May 2011, 2 specimens (5%) were positive for influenza with one of those being positive for pandemic (H1N1) 2009, and the other influenza A untyped. Due to the small number of specimens tested it is difficult to yet determine any general trends in influenza positivity. Ten specimens were positive for other respiratory viruses with the majority of these being rhinovirus (6) (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 27 May 2011.

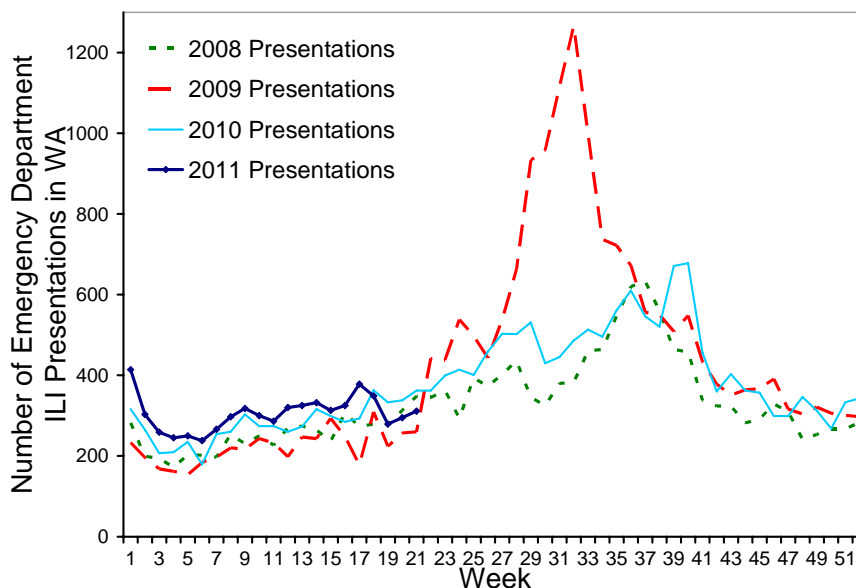
	ASPREN (Fortnight 14 May – 27 May 2011)	ASPREN (YTD 1 Jan – 27 May 2011)
Total specimens tested	40	318
Total Influenza Positive	2	39
Influenza A	2	32
<i>Pandemic (H1N1) 2009</i>	1	22
<i>Seasonal A/H3N2</i>	0	1
<i>Influenza A untyped</i>	1	9
Influenza B	0	7
Total Positive other Resp. Viruses*	10	93

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

WA Emergency Departments

In the fortnight ending 22 May 2011 there were 606 respiratory viral presentations to WA EDs, including 45 admissions. The number of respiratory viral presentations reported in WA EDs in the first quarter of 2011 has been slightly higher than in previous years, however in the past month they have dropped below the number of presentations for the same period in 2008 and 2010 (Figure 2).

Figure 2. Number of respiratory viral presentations to WA EDs from 1 January 2008 to 22 May 2011, by week



Source: WA 'Virus Watch' Report

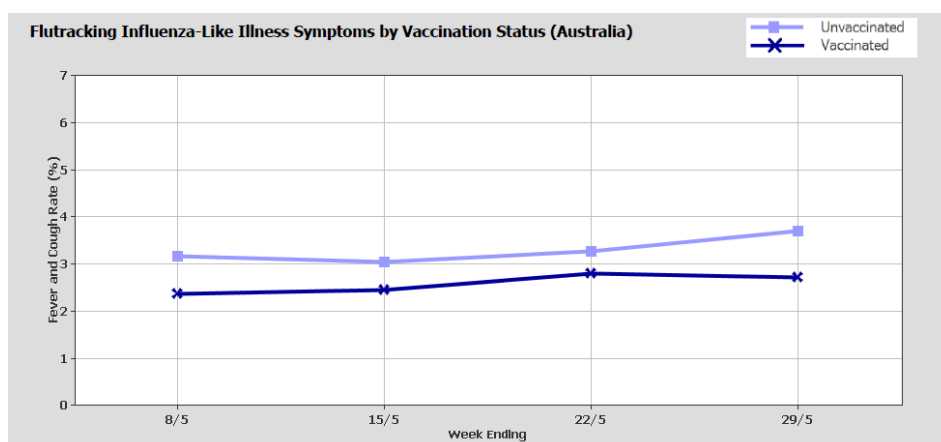
NSW Emergency Departments

In the week ending 27 May 2011 the total count of ILI presentations to NSW EDs was 0.8 cases per 1,000 consultations, which is within the usual range seen in previous years. Pneumonia and ILI admissions to critical care units showed a slight decrease, however still remain above the usual range seen at this time of year. In April 2011 there were 146 ILI presentations to NSW EDs (a rate of 1.0 per 1,000 presentations), which was slightly more than the 124 presentations seen in March 2011.¹

Flutracking

Flutracking, a national online system for collecting data on ILI in the community, reported that in the week ending 29 May 2011 fever and cough was reported by 2.7% of vaccinated participants and 3.7% of unvaccinated participants (Figure 3). Fever, cough and absence from normal duties was reported by 1.4% of vaccinated participants and 1.8% of unvaccinated participants.¹

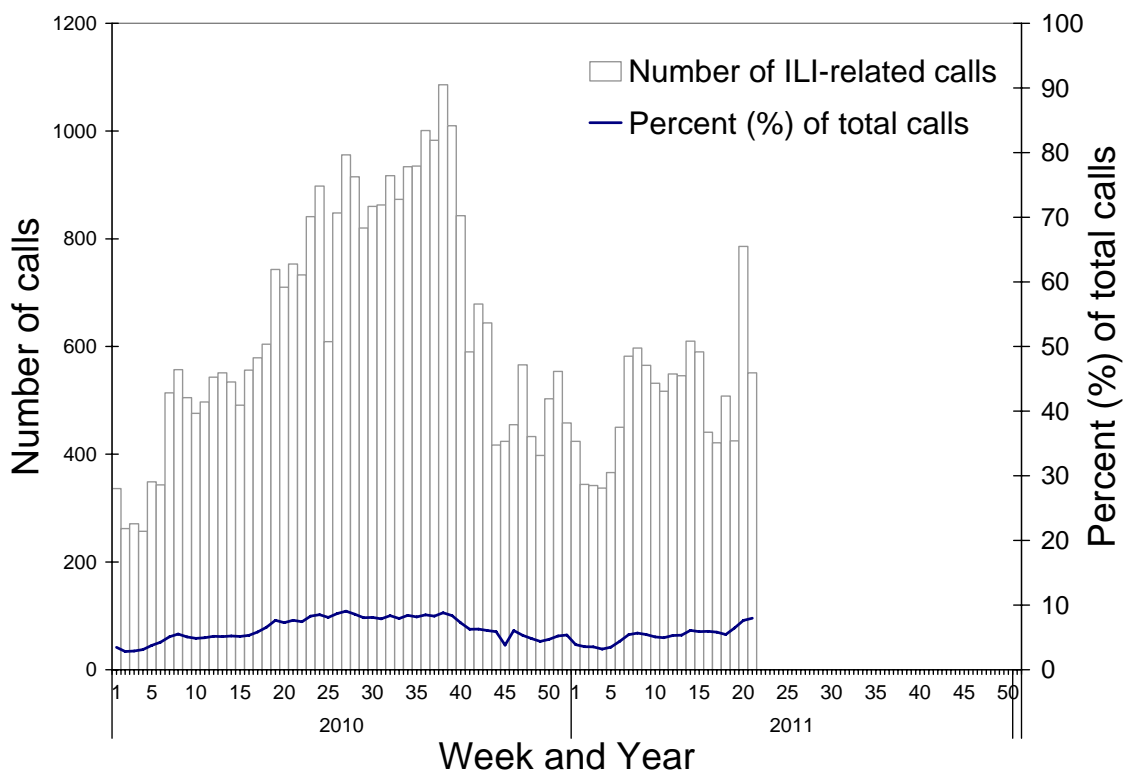
Figure 3. Rate of ILI symptoms among Flutracking participants by week, from week ending 8 May 2011 to week ending 29 May 2011.



National Health Call Centre Network

The number of ILI-related calls to the National Health Call Centre Network (NHCCN) during this fortnight increased compared to recent weeks. The percentage of total calls also increased slightly, comparable to the same period in 2010 (Figure 4).

Figure 4. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2009 to 27 May 2011



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

Laboratory Confirmed Influenza

Sentinel Laboratory Surveillance

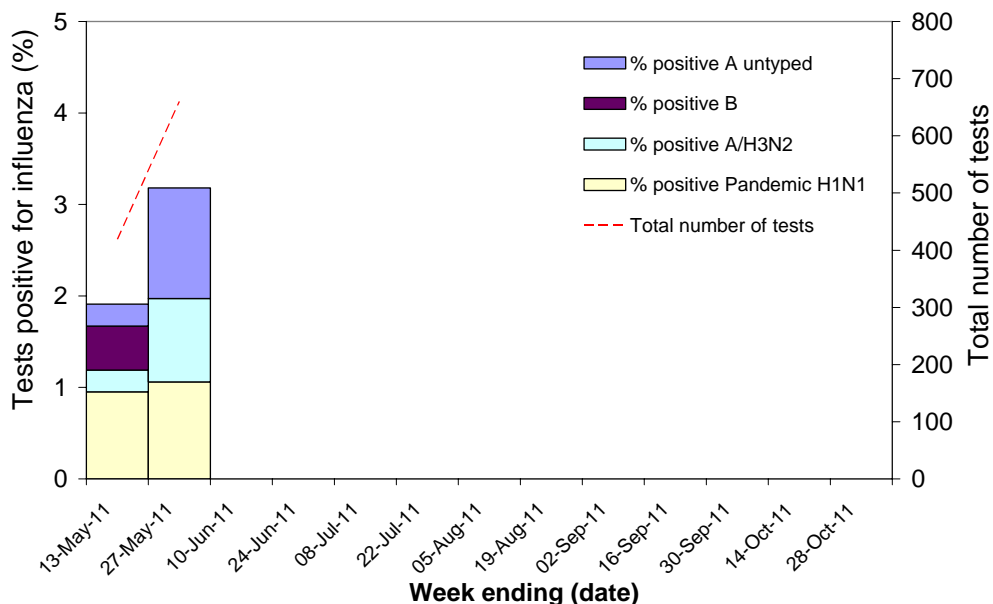
Results from sentinel laboratory surveillance systems for this reporting period show that 3.2% (21/660) of the respiratory tests conducted over this period were positive for influenza (Table 2).

Table 2. Laboratory respiratory tests that tested positive for influenza, 14 May – 27 May 2011

	NSW NIC	WA NIC	NT (Reported by WA NIC)	VIC NIC	TAS Laboratories
Total specimens tested	154	228	N/A	175	103
Total Influenza Positive	1	8	0	0	12
Positive Influenza A	1	8	0	0	12
<i>Pandemic (H1N1) 2009</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>5</i>
<i>Seasonal A/H3N2</i>	<i>0</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Influenza A untyped</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>7</i>
Positive Influenza B	0	0	0	0	0
The most common respiratory virus detected	RSV & Rhinovirus	RSV	N/A	RSV & Picornavirus	N/A

In 2011 a total of 2.8% of specimens have been positive for influenza, with a breakdown of subtypes within this proportion highlighted in Figure 5.

Figure 5. Proportion of sentinel laboratory tests positive for influenza, by subtype and fortnight, 30 April to 27 May 2011.



Laboratory Confirmed Cases Notified to Health Departments

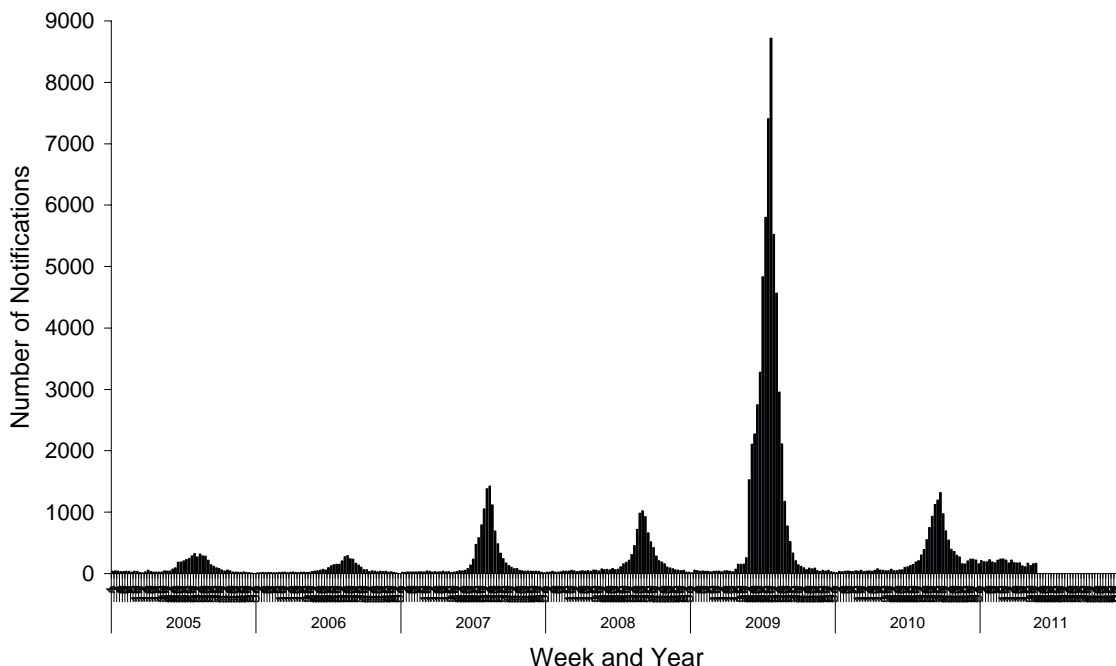
During this reporting period there were 324 influenza notifications reported to the NNDSS (131 in Qld, 80 in SA, 45 in NSW, 37 in Vic, 15 in WA, 13 in TAS and 3 in the NT). They included 144 cases of influenza A (untyped), 59 cases of pandemic (H1N1) 2009, 6 cases of A/H3N2, 111 of influenza B, 3 of influenza A&B and one untyped case (Figure 7).

South Australia have reported a large increase in notifications over this reporting period with 85% of notifications being influenza B. These account for the majority of influenza B reported over this period and are not reflected in the sentinel laboratory data.

There have been 3,836 confirmed cases of influenza diagnosed during 2011 up to 27 May (Figure 6). Of these, 1,777 (46%) have been sub-typed as influenza A (untyped), 866 (23%) as pandemic (H1N1) 2009, 542 (14%) as type A/H3N2, and 26 (<1%) were type A&B. A further 583 (15%) have been characterised as influenza type B and 42 (1%) were untyped.

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

Figure 6. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 27 May 2011



Source: NNDSS 2011

As at 27 May 2011, the number of laboratory confirmed cases of influenza in 2011 was 1,791 in Qld, 543 in NSW, 489 in Vic, 384 in SA, 334 in the NT, 221 cases in WA, 53 cases in Tas and 21 cases in the ACT (Figure 6). All jurisdictions have 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.

A breakdown of trends by state and territory, highlights that in recent weeks notifications across most jurisdictions have been relatively stable, except in SA where there has been an increase in the number of notifications over the past fortnight (Figure 8).

Figure 7. Laboratory confirmed cases of influenza in Australia, 1 January to 27 May 2011, by state, by week.

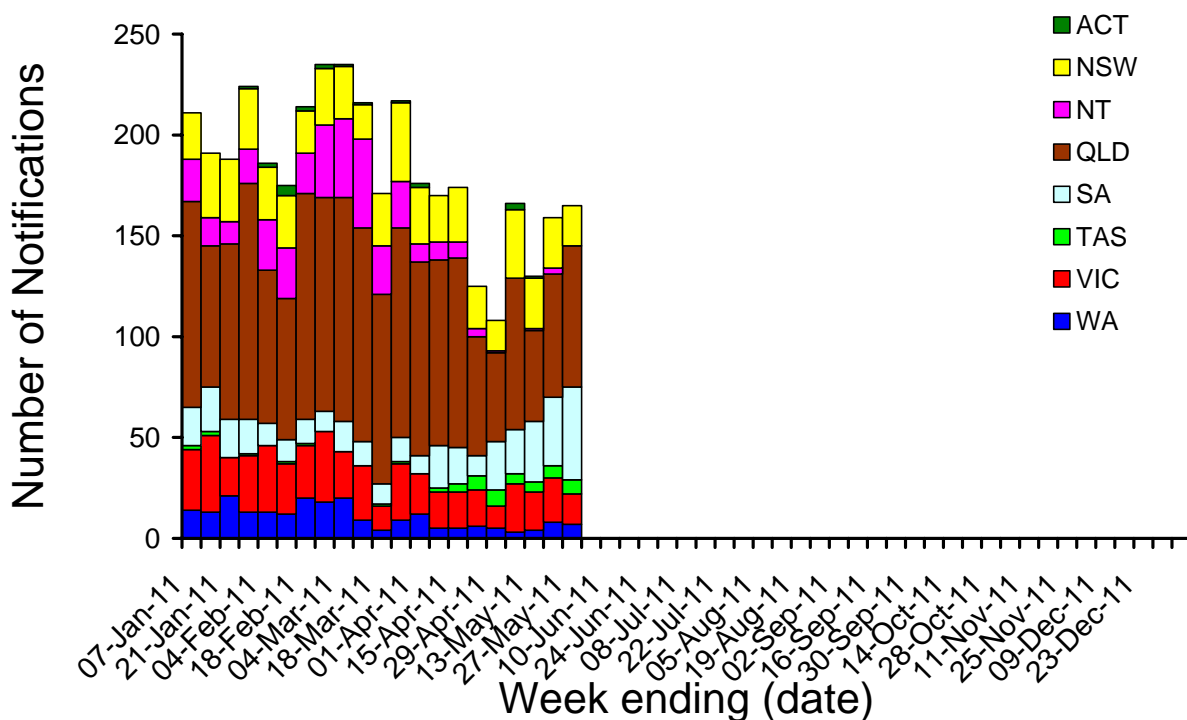
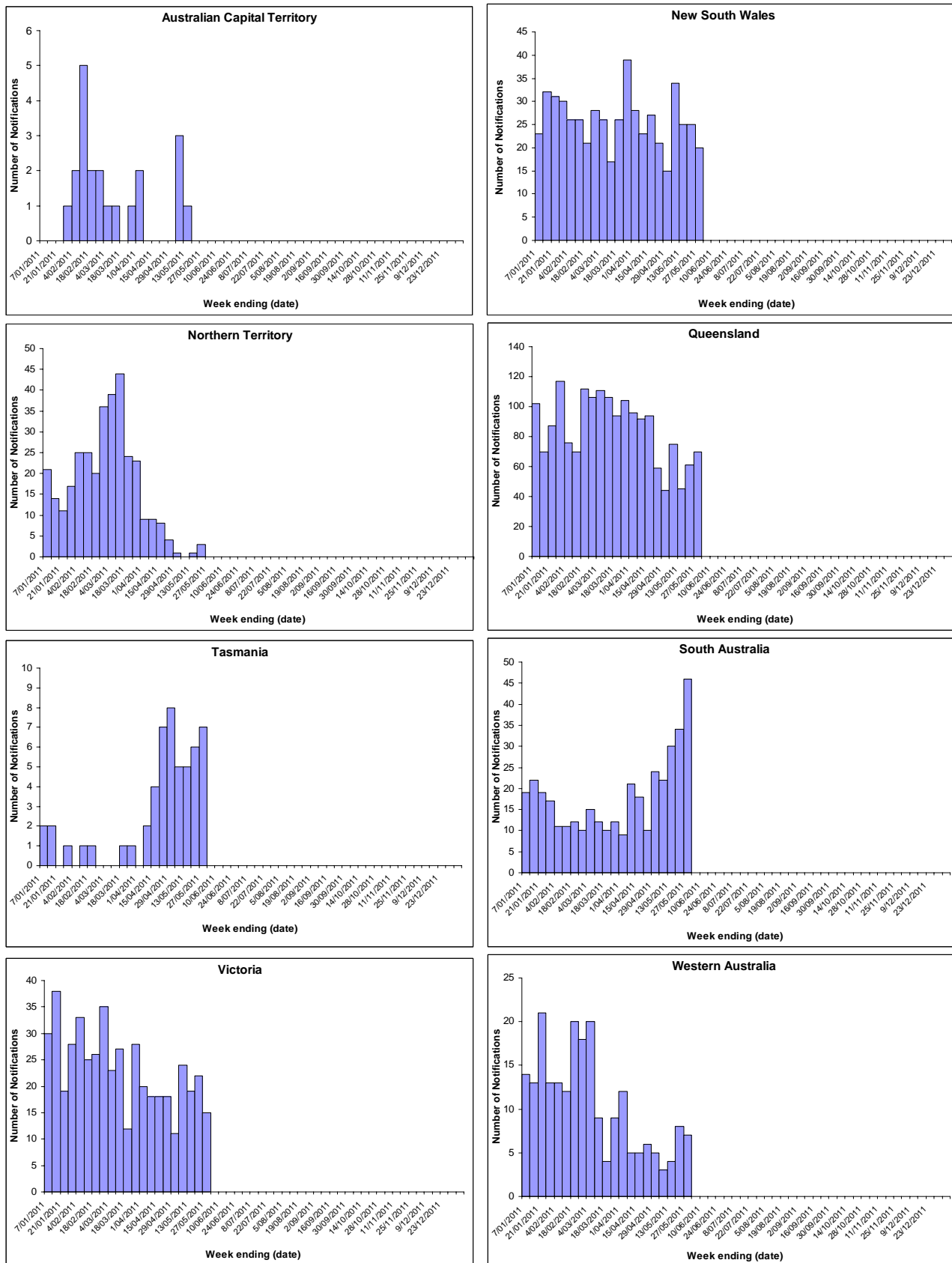


Figure 8. State breakdowns of laboratory confirmed cases of influenza, 1 January to 27 May 2011, by week



Deaths associated with influenza and pneumonia

Nationally notified influenza associated deaths

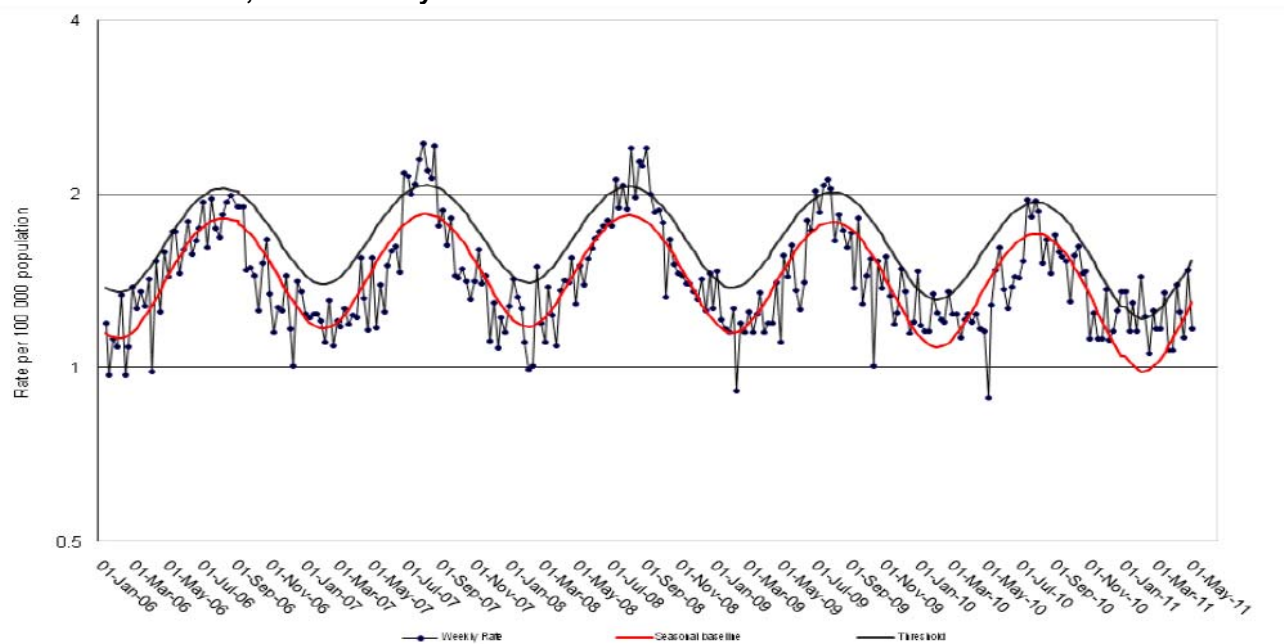
In 2011, 5 influenza associated deaths have been notified to the NNDSS, with all cases having pandemic (H1N1) 2009.

NSW

Death registration data show that for the week ending 6 May 2011, there were 1.2 pneumonia or influenza associated deaths per 100,000 population in NSW, which is below the seasonal threshold for this period of 1.5 per 100,000 population (Figure 9).

For the week ending 27 May, there was one pandemic (H1N1) 2009 associated death with known co-morbidities recorded with NSW public health units.²

Figure 9. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2006 to 6 May 2011



Source: NSW 'Influenza Weekly Epidemiology Report'

2. Virology

Typing and antigenic characterisation - WHO Collaborating Centre for Reference & Research on Influenza (WHO CC) in Melbourne

From 1 January to 29 May 2011, there were 443 Australian influenza isolates subtyped by the WHO CC with the majority of isolates subtyped as pandemic (H1N1) 2009 (48%) or type A/H3N2 (37%) (Table 3).

Table 3. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 29 May 2011

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
Pandemic (H1N1) 2009	0	8	28	127	0	12	17	22	214
A(H3N2)	0	1	48	102	0	1	4	8	164
B	0	3	32	21	0	1	4	4	65
Total	0	12	108	250	0	14	25	34	443

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 29 May 2011, one isolate (out of 748 tested) has shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA). One isolate out of a total of 7 pandemic H1N1 (2009) tested, have shown the H275Y mutation known to confer resistance to oseltamivir.

3. International Influenza Surveillance

The WHO has reported that the influenza season is largely finished in the Northern Hemisphere, with a few tropical countries experiencing low grade transmission. The influenza season has not yet started in the Southern Hemisphere. Reports from National Influenza Centres from 82 countries report that between 3 May and 17 May 2011, 35% of specimens reported as influenza positive were influenza type A and 65% were influenza type B. Of the sub-typed influenza A viruses, 54% were pandemic (H1N1) 2009 and 46% were influenza A(H3N2).³

The WHO has released their recommendation for the antigen composition of 2011-2012 northern hemisphere influenza season trivalent flu vaccine. 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.

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 Flutracking Weekly Interim Report, 29 May 2011. Available from <http://www.flutracking.net/about.html>, Accessed 3 June 2011

2 NSW Influenza Weekly Epidemiology Report, 21-27 May 2011. Available from http://www.health.nsw.gov.au/PublicHealth/Infectious/influenza_reports.asp, Accessed 01 June 2011.

3 WHO Influenza update – 20 May 2011. Available from http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html. Accessed 3 June 2011.