Australian Government
Department of Health and Ageing

AUSTRALIAN INFLUENZA SURVEILLANCE REPORT

No. 2, 2011, REPORTING PERIOD: 2 April – 15 April 2011

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: • 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: • 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: • drug resistance; and • genetic drift or shift from laboratory surveillance.

Summary

- Levels of influenza-like illness (ILI) in the community remained low through all surveillance systems this reporting period. However, the number of laboratory confirmed notifications that have occurred during the 2010-11 inter-seasonal period has been higher than usually seen.
- During this reporting period there were 267 laboratory confirmed notifications of influenza, which included 166 cases of influenza A untyped and 46 cases of pandemic (H1N1) 2009. Queensland reported the highest number of notifications.
- All jurisdictions have been reporting higher than usual numbers of notifications over the summer months, however in recent weeks there has been a decline in the number of notifications in most jurisdictions.
- As at 15 April 2011, there have been 2,879 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 614 for the same period in 2010.
- The WHO has reported that influenza activity is continuing to decline in most parts of the Northern Hemisphere.

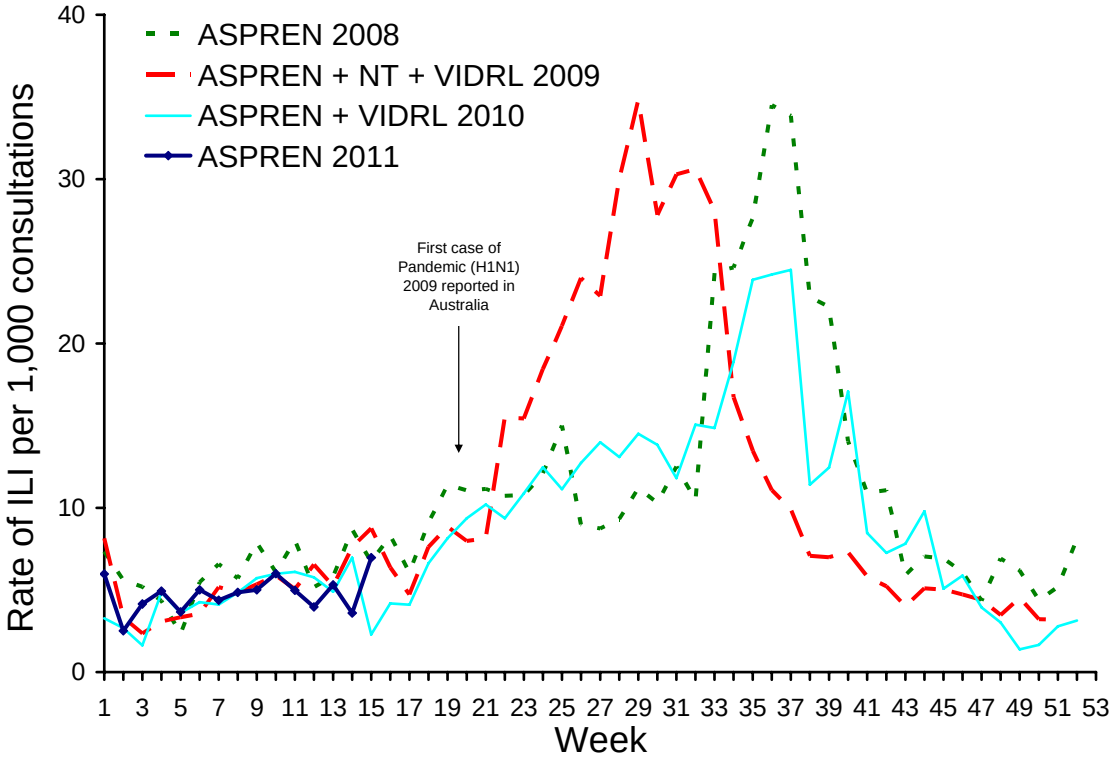
1. Influenza activity in Australia

Influenza-Like Illness

Sentinel General Practice Surveillance

In the week ending 10 April 2011, the national ILI consultation rate to sentinel GPs was 6.9 cases per 1,000 consultations, which is a slight increase from the previous week (Figure 1). The overall trend in ILI rates for 2011 are similar to those reported in 2008 to 2010.

Figure 1. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2008 to 10 April 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 8 April 2011, 3 specimens (8%) were positive for pandemic (H1N1) 2009. Fourteen specimens were positive for other respiratory viruses, with the majority of those being metaphneumovirus (8) (Table 1). Please note the results of ASPREN ILI laboratory respiratory viral tests do not currently include WA.

Table 1. ASPREN ILI consultations laboratory respiratory viral tests that were positive for influenza or other respiratory virus, 1 January 2011 to 8 April 2011.

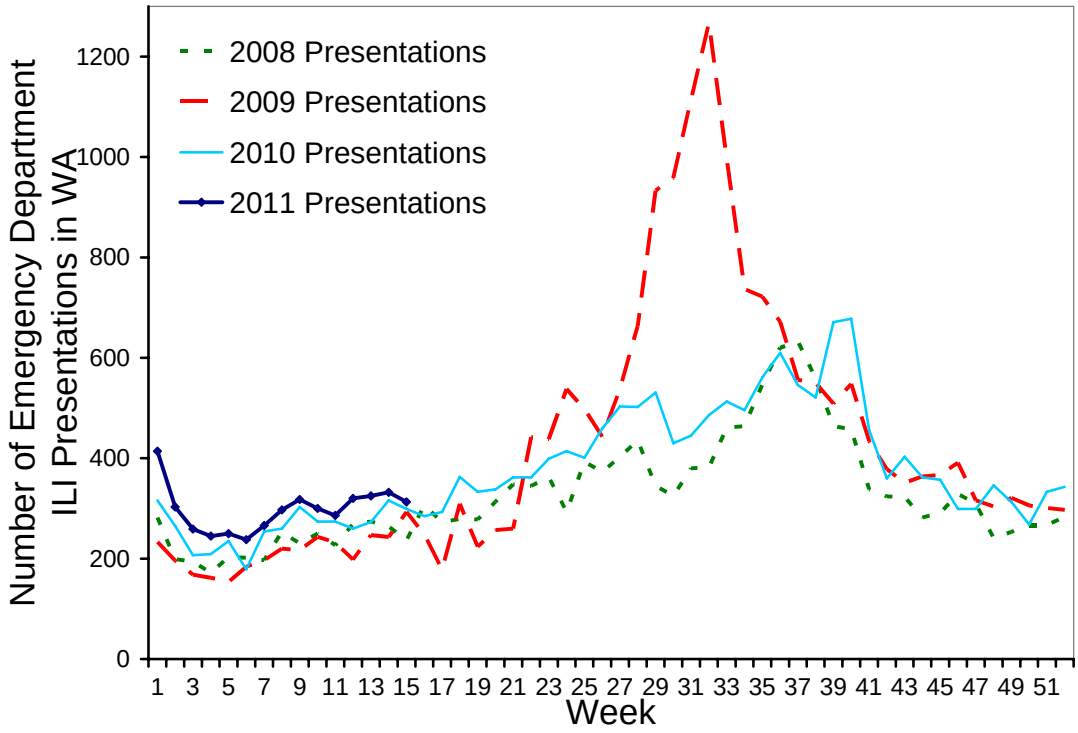
	ASPREN (Fortnight 26 March – 8 April 2011)	ASPREN (YTD 1 Jan – 8 April 2011)
Total specimens tested	**36**	**140**
Total Influenza Positive	**3**	**21**
Influenza A	**3**	**20**
Pandemic (H1N1) 2009	*3*	*15*
Seasonal A/H3N2	*0*	*0*
Influenza A untyped	*0*	*5*
Influenza B	**0**	**1**
Total Positive other Resp. Viruses*	**14**	**56**

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

WA Emergency Departments

The number of respiratory viral presentations reported in WA EDs have been slightly higher than in previous years, however the current trend appears to be consistent with previous years (Figure 2). In the fortnight ending 10 April 2011 there were 645 respiratory viral presentations, including 38 admissions.

Figure 2. Number of respiratory viral presentations to WA EDs from 1 January 2008 to 10 April 2011, by week



Source: WA 'Virus Watch' Report

NSW Emergency Departments

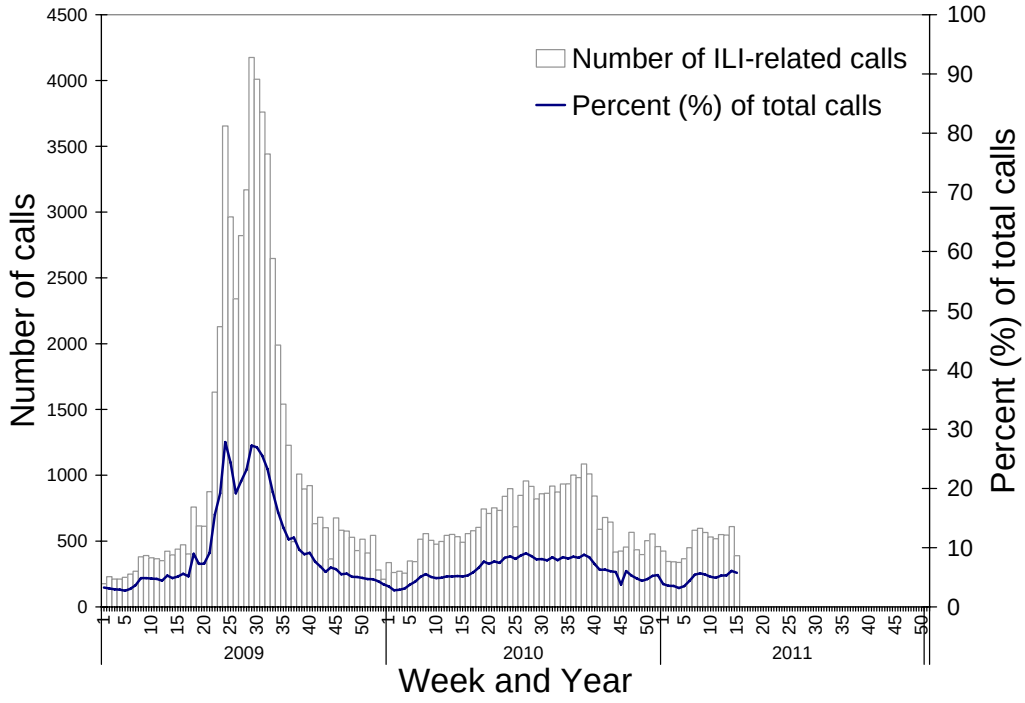
In March 2011 there were 124 ILI presentations to NSW EDs (a rate of 0.7 per 1,000 presentations). This is slightly more than the 76 presentations seen in February 2011, and is similar to March totals in previous years.[1]

National Health Call Centre Network

The number of ILI-related calls to the National Health Call Centre Network (NHCCN) in this reporting period continued to be low and similar to previous weeks. The percentage of total calls remained low and stable (Figure 3).

Call numbers cannot be compared between early 2009 and early 2010 and 2011, as not all call centres were online in early 2009. The difference in the number of operating call centres accounts for the apparent increase in recorded ILI calls (and baseline levels) between the three years.

Figure 3. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2009 to 15 April 2011



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

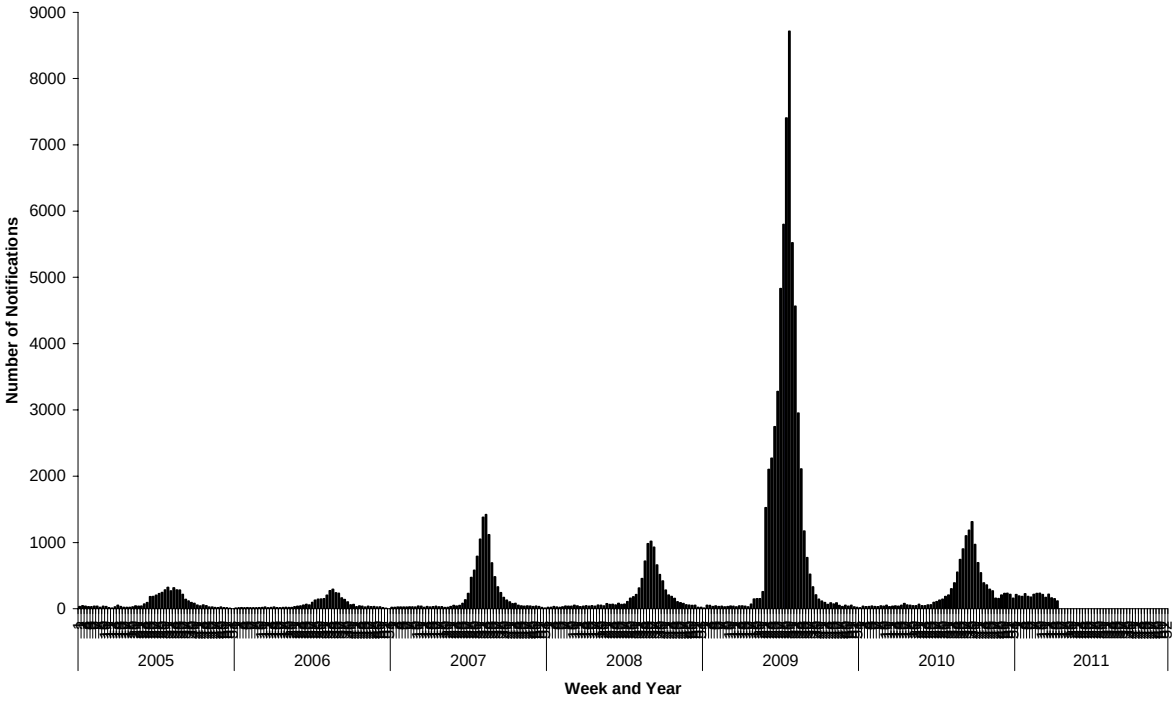
Laboratory Confirmed Cases Notified to Health Departments

During this reporting period there were 267 influenza notifications reported to the NNDSS (172 in Qld, 28 in SA, 21 in NSW, 20 in Vic, 14 in the NT, 8 in WA and 4 in Tas). They included 166 cases of influenza A (untyped), 46 cases of pandemic (H1N1) 2009, 14 cases of influenza A/H3N2, 40 of influenza B and 1 of influenza untyped (Figure 4).

There have been 2,879 confirmed cases of influenza of all types diagnosed during 2011 up to 15 April (Figure 4). Of these, 1,377 (47%) have been sub-typed as influenza A (untyped), 642 (23%) as pandemic (H1N1) 2009, 471 (16%) as type A/H3N2, and 18 (1%) were type A&B. A further 340 (12%) have been characterised as influenza type B and 31 (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 4. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 15 April 2011



Source: NNDSS 2011

As at 15 April 2011, the number of laboratory confirmed cases of influenza was 1,416 in Qld, 365 in Vic, 361 in NSW, 321 in then NT, 201 in SA, 185 cases in WA, 17 cases in the ACT and 13 cases in TAS (Figure 5). All jurisdictions are reporting higher than usual numbers of notifications for this time of the year, especially in the Northern Territory and Queensland. Based on sub-typing information, Queensland are reporting circulation of mostly pandemic (H1N1) 2009 and type A/H3N2. The majority of the Northern Territory cases have been type A/H3N2. A breakdown of trends by state and territory, highlights that in recent weeks there has been a decline in the number of notifications in most jurisdictions (Figure 6).

Figure 5. Laboratory confirmed cases of influenza in Australia, 1 January to 15 April 2011, by state, by week.

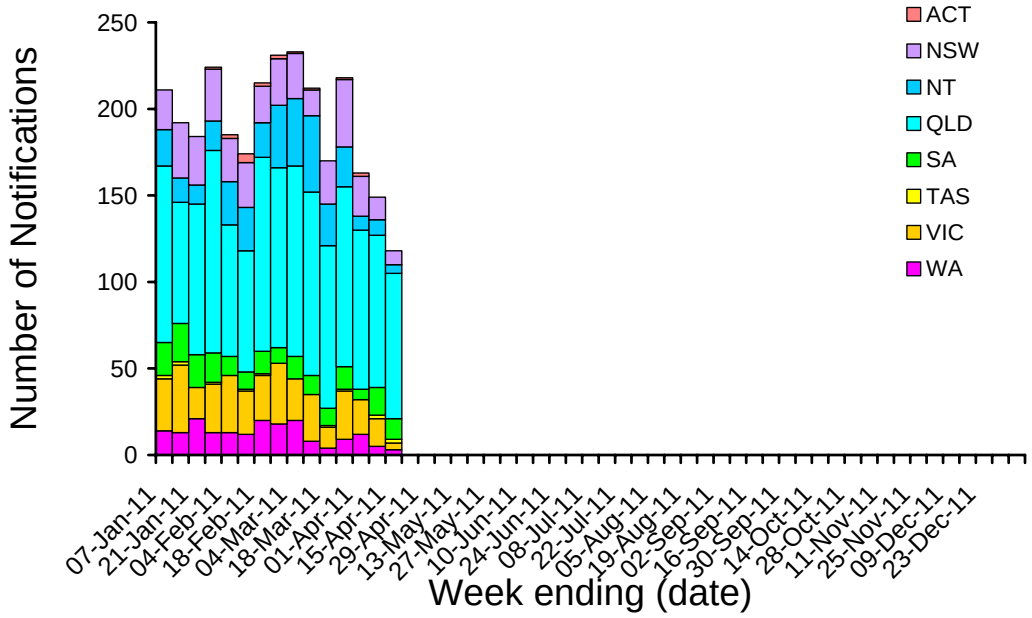
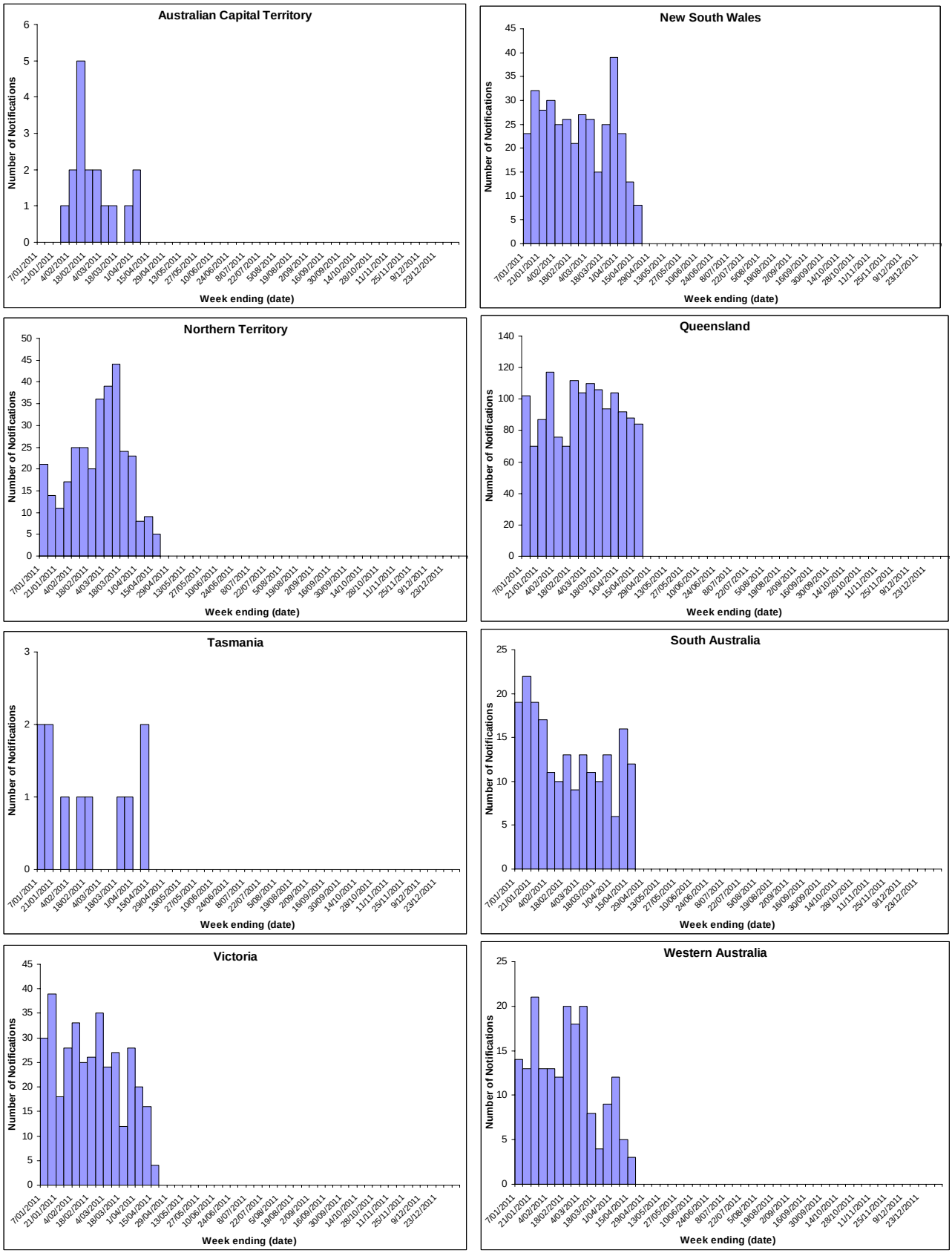


Figure 6. State breakdowns of laboratory confirmed cases of influenza, 1 January to 15 April 2011, by week



Deaths associated with influenza and pneumonia

Nationally notified influenza deaths

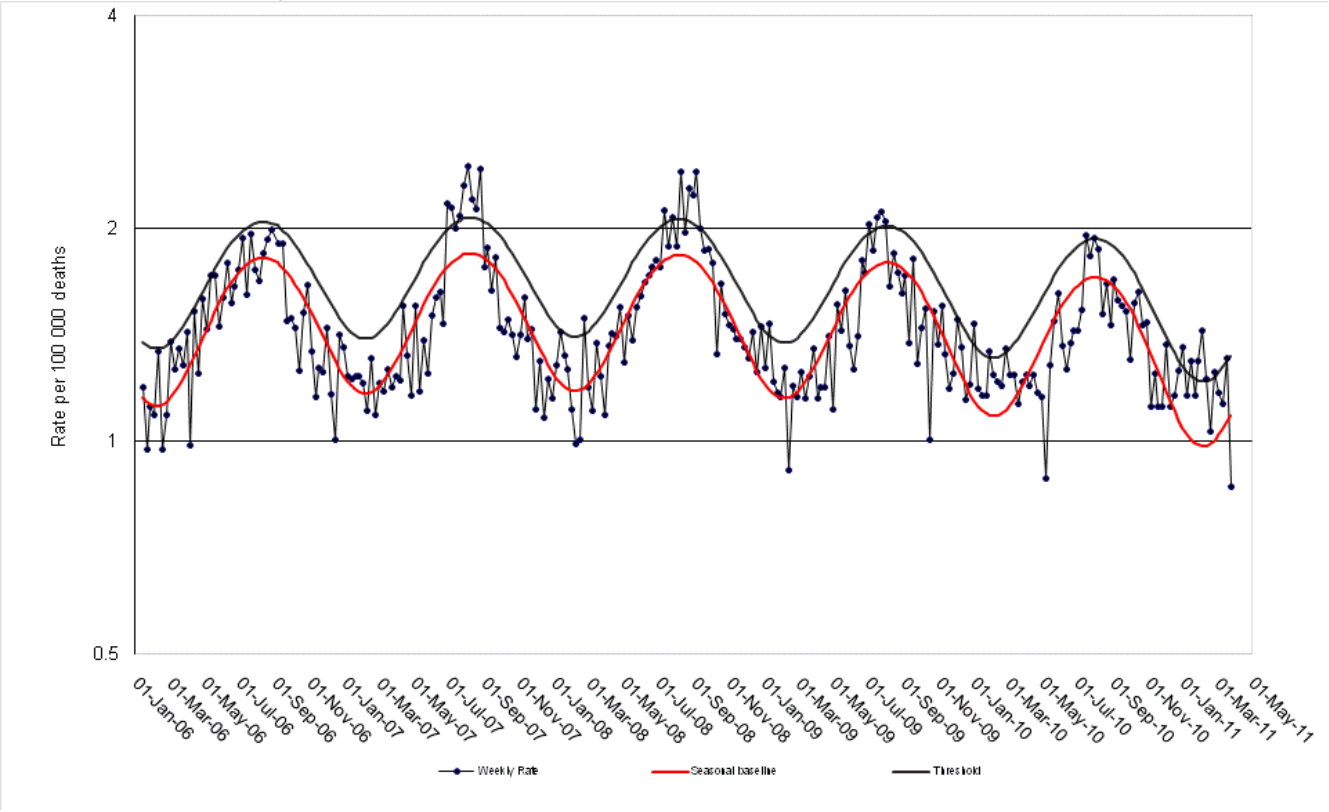
In 2011, 2 influenza deaths have been notified to the NNDSS, with both cases having pandemic (H1N1) 2009.

NSW

Death registration data show that for the week ending 25 March 2011, there were 0.9 pneumonia or influenza associated deaths per 100,000 deaths in NSW, which is below the seasonal threshold for this period of 1.2 per 100,000 deaths (Figure 7).

NSW death registration data cross-matched with laboratory cases of influenza show no people with laboratory confirmed influenza have died up to 25 March 2011.[1]

Figure 7. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2006 to 25 March 2011



Source: NSW 'Influenza Monthly Epidemiology Report'

2. Virology

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

From 1 January to 18 April 2011, there were 332 Australian influenza isolates subtyped by the WHO CC with the majority of isolates subtyped as pandemic (H1N1) 2009 (45%) or type A/H3N2 (38%) (Table 2).

Table 2. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 18 April 2011

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
Pandemic (H1N1) 2009	0	1	28	85	0	1	14	21	150
A(H3N2)	0	1	43	68	0	1	3	9	125
B	0	0	32	18	0	0	3	4	57
Total	**0**	**2**	**103**	**171**	**0**	**2**	**20**	**34**	**332**

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 but 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 18 April 2011, one isolate (out of 547 tested) has shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and one isolate (out of 7 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

3. International Influenza Surveillance

The WHO has reported that influenza activity is continuing to decline in the temperate regions of the Northern Hemisphere. In countries in the tropical zone, influenza activity is low in most areas. Reports from National Influenza Centres from 76 countries report 63% of specimens reported as influenza positive were influenza type A and 37% were influenza type B. Of the sub-typed influenza A viruses, 68% were influenza A(H1N1) 2009 and 32% were influenza A(H3N2). [2]

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.

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] NSW Influenza Monthly Epidemiology Report, March 2011. Available from http://www.health.nsw.gov.au/resources/publichealth/infectious/influenza/pdf/20110311_monthly_report.pdf, Accessed 20 April 2011.

2 WHO Influenza update – 8 April 2011. Available from http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html. Accessed 20 April 2011.