



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:

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

## Summary

- Levels of influenza-like illness (ILI) in the community continued to decrease through all surveillance systems this reporting period. Sporadic, regional or widespread activity was reported within jurisdictions. The number of laboratory confirmed notifications also continued to decline.
- There were 201 laboratory confirmed notifications of influenza during this reporting period, including 128 pandemic (H1N1) 2009 cases. South Australia reported the highest number of notifications.
- Results from sentinel laboratory surveillance systems for this reporting period show that 11% of the respiratory tests conducted over this period were positive for influenza, which is similar to the last reporting period (9%).
- In 2010, a total of 1,305 specimens have been positive for influenza (of 14,718 specimens tested by sentinel laboratories), of which 65% were pandemic (H1N1) 2009, 24% were influenza B, 9% were A/H3N2 and 2% were influenza A untyped. The majority of influenza B positive specimens have been from WA.
- As at 22 October 2010, there have been 10,392 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2010. A total of 43,904 confirmed cases of pandemic (H1N1) 2009 have occurred in Australia since May 2009, including 6,268 in 2010.
- This reporting period, sentinel hospitals reported five influenza related admissions including three for pandemic (H1N1) 2009, a decrease compared to the last reporting period. ANZICS reported a decrease in ICU admissions for influenza and the APSU reported three cases of influenza complications in children (<15 years).
- The WHO has advised that the world is no longer in phase 6 of influenza pandemic alert and has moved into the post pandemic period.

# 1. Influenza activity in Australia

## Geographic spread of influenza and ILI – Jurisdictional Surveillance

In the fortnight ending 15 October 2010, influenza and ILI activity as reported by state and territory Health Departments was 'sporadic' in the ACT and Tas, 'regional' in Qld, WA, NSW and the NT and 'widespread' in SA and VIC (Figure 1). Definitions of these activity levels are provided in the Data Considerations section of this report.

**Figure 1. Map of influenza and ILI activity, by state and territory, during fortnight ending 15 October 2010**

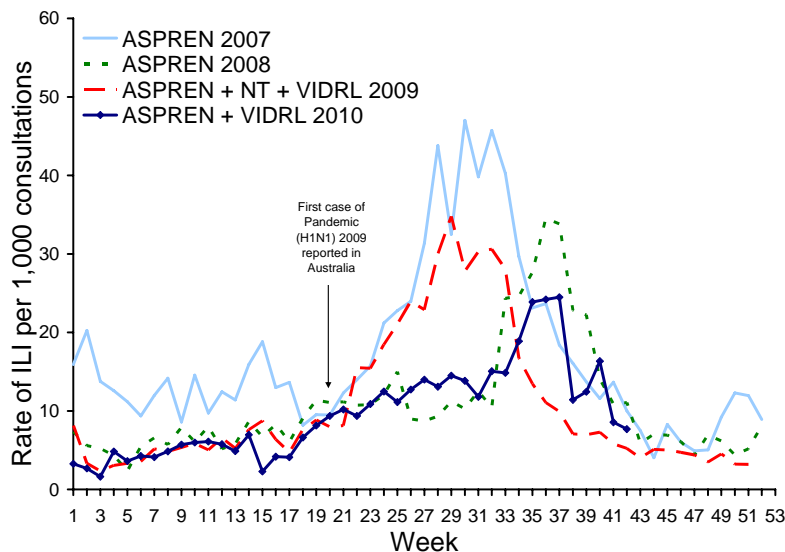


## Influenza-Like Illness

### Sentinel General Practice Surveillance

In the week ending 17 October 2010, the national ILI consultation rate to sentinel GPs was approximately 8 cases per 1,000 consultations (Figure 2), which was similar to the previous week (9 cases per 1,000 consultations). The overall consultation rates for 2010 are similar to those reported in 2008.

**Figure 2. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2007 to 17 October 2010\***



\* 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 week ending 22 October 2010, one specimen was positive for influenza (H1N1) 2009 (Table 1). Please note the results of ASPREN ILI laboratory respiratory viral tests do not currently include WA.

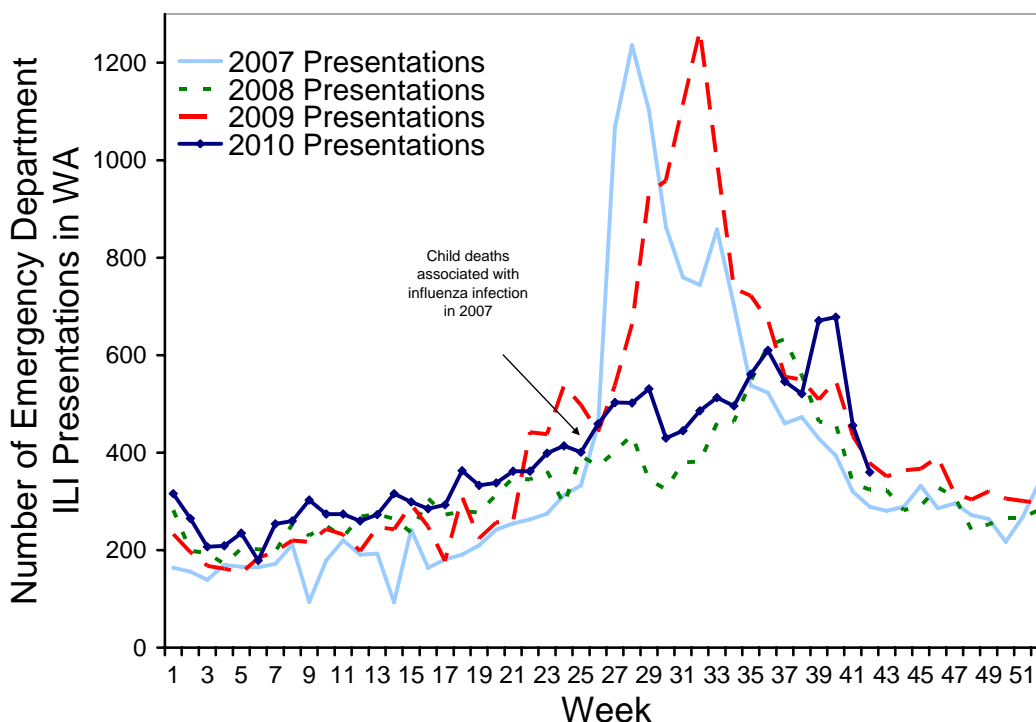
**Table 1. ASPREN ILI consultations laboratory respiratory viral tests that were positive for influenza for the week ending 22 October 2010.**

	ASPREN – national
<b>Total specimens tested</b>	19
<b>Positive Influenza A</b>	<b>1</b>
<i>Pandemic (H1N1) 2009</i>	1
<i>Seasonal A/H1N1</i>	0
<i>Seasonal A/H3N2</i>	0
<i>Influenza A untyped</i>	0
<b>Positive Influenza B</b>	0
<b>Positive – type unknown</b>	0

### WA Emergency Departments

Respiratory viral presentations reported in WA EDs have decreased in the last two weeks, following an overall upward trend since the beginning of 2010 (Figure 3). In the week ending 17 October 2010 there were 360 respiratory viral presentations, including 25 admissions.

**Figure 3. Number of respiratory viral presentations to WA EDs from 1 January 2007 to 17 October 2010 by week**

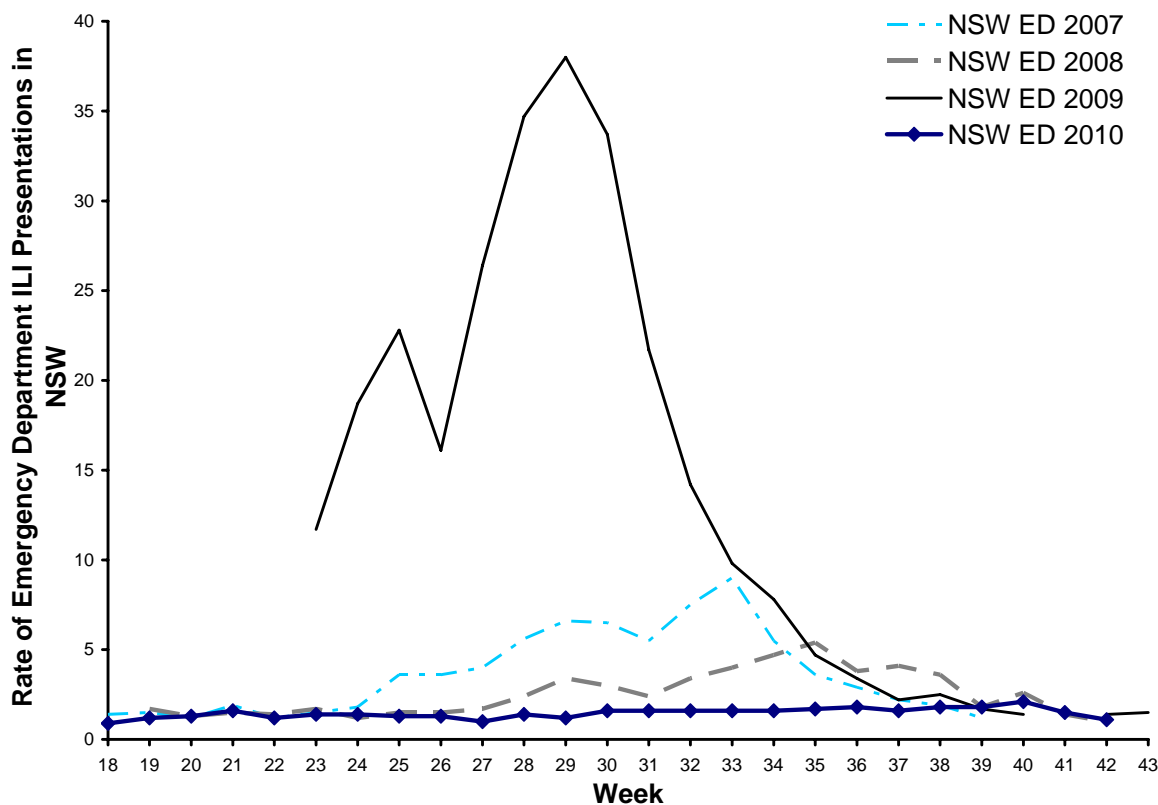


Source: WA 'Virus Watch' Report

### NSW Emergency Departments

In the week ending 22 October 2010, ILI presentations to NSW EDs decreased to 1.1 per 1,000 presentations (Figure 4). ILI presentations were mainly for mild illness and there were two admissions to hospital. In September 2010, there were 334 presentations with ILI, a rate of 1.8 per 1,000 presentations, with a total of 24 admissions to hospital. The number of ILI presentations in 2010 is similar to 2008 but well below levels observed in 2007 and 2009.

Figure 4: ILI presentations to NSW EDs from 2007-2010, by week

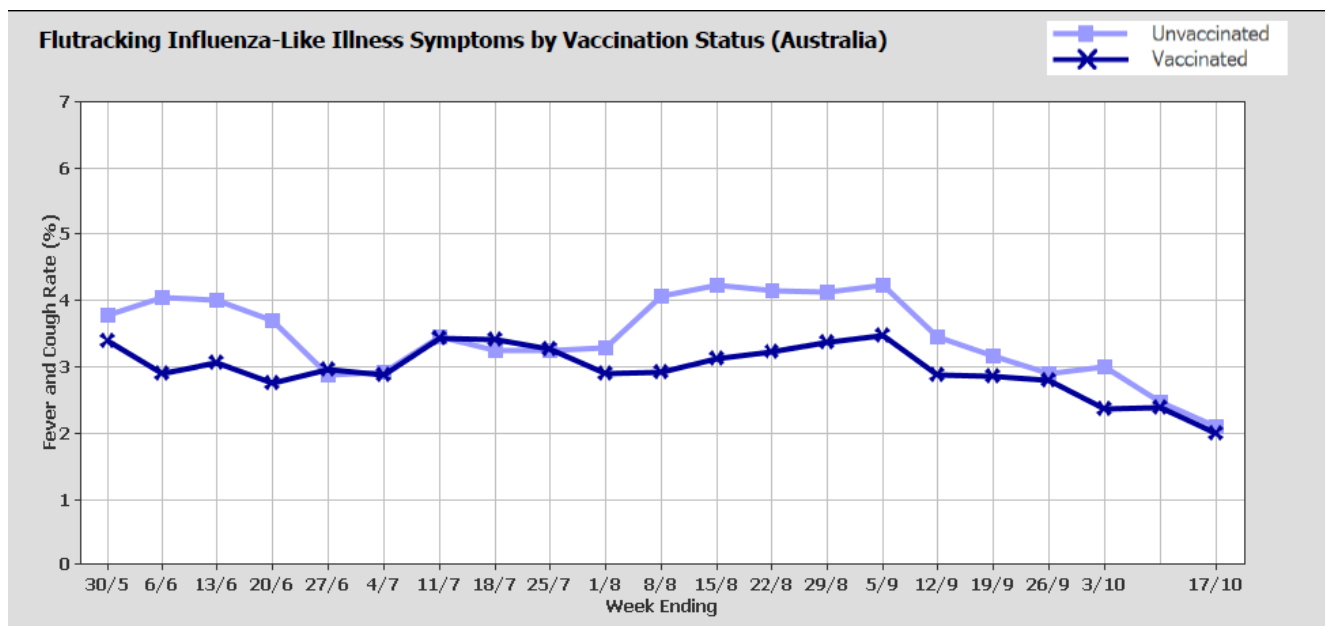


Source: NSW Health 'Influenza Weekly Epidemiology Report

### Flutracking

Flutracking is a national online system for collecting data on ILI in the community. The final Flutracking report for 2010 was produced for the week ending 17 October. In that week, ILI activity levels decreased and returned to baseline levels across Australia (Figure 5).

Figure 5. Rate of ILI symptoms among Flutracking participants by week, from week ending 30 May 2010 to week ending 17 October 2010



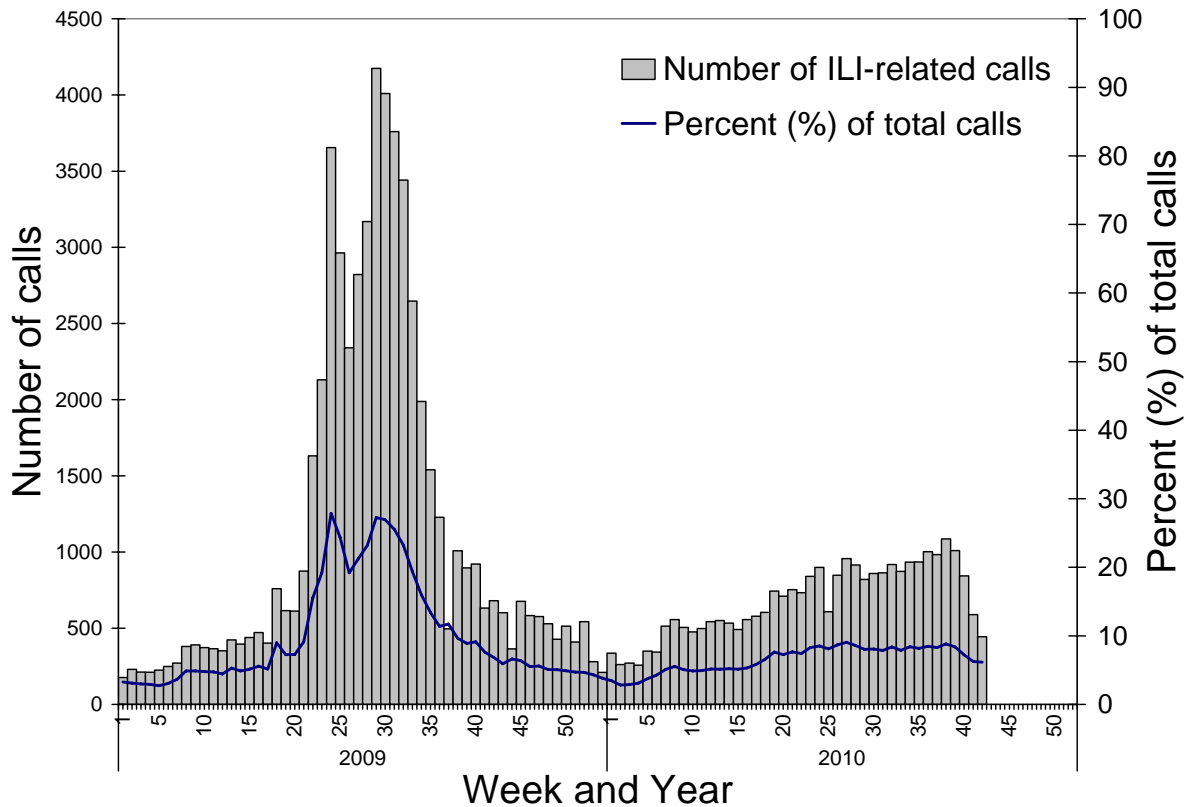
Source: Flutracking Interim Weekly Report

## National Health Call Centre Network

The number of calls to the National Health Call Centre Network (NHCCN) in this reporting period continued to be lower than previous reporting periods and the percentage of total calls also decreased (Figure 6).

Call numbers cannot be compared between early 2009 and early 2010, 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 two years.

**Figure 6. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2009 to 22 October 2010**



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

## Absenteeism

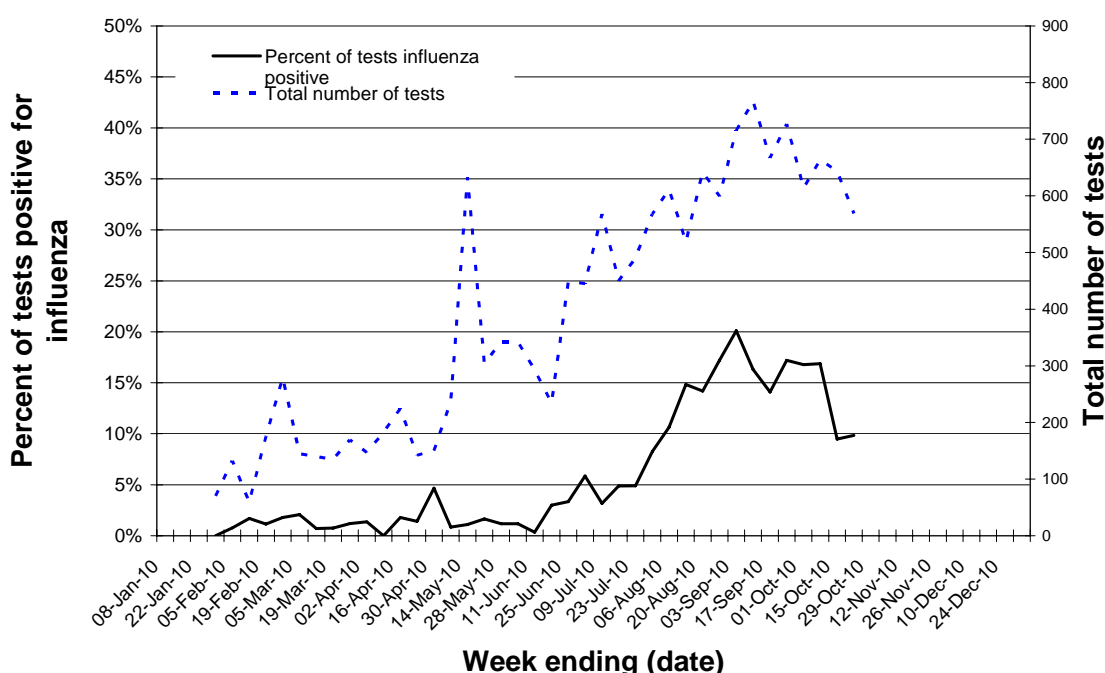
Due to system changes, absenteeism data has not been updated since July 2010. Absenteeism data will not be included in this report until provision of the data resumes.

## Laboratory confirmed influenza

### Sentinel Laboratory Surveillance

Results from sentinel laboratory surveillance systems for this reporting period show that 11% (61/569) of the respiratory tests conducted over this period were positive for influenza, which is similar to the previous reporting period (9%) (Figure 7).

**Figure 7. Total number of specimens tested by sentinel laboratories, and proportion positive, 1 January 2010 to 22 October 2010, by week**



SOURCE: Sentinel laboratory data from ASPREN, NSW NIC, WA NIC, VIC NIC & TAS Labs

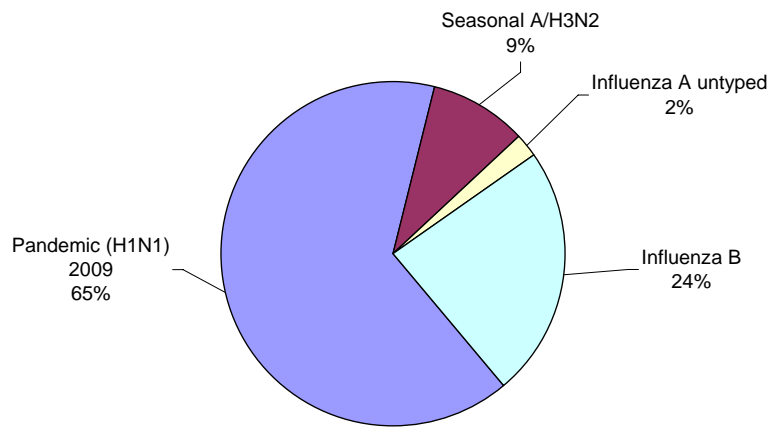
Sentinel laboratories reported 56 specimens positive for influenza during this reporting period, of which 30 were pandemic (H1N1) 2009, 22 were influenza B and 4 were A/H3N2, (Table 2). The proportion of type B influenza in WA remains high.

**Table 2. Laboratory respiratory tests that tested positive for influenza, week ending 22 October 2010**

	WA NIC	NT (reported by WA NIC)	VIDRL	TAS	NSW NIC
<b>Total specimens tested</b>	300	n/a	117	38	114
<b>Positive Influenza A</b>	<b>26</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>2</b>
<i>Pandemic (H1N1) 2009</i>	22	3	3	0	2
<i>Seasonal A/H1N1</i>	0	0	0	0	0
<i>Seasonal A/H3N2</i>	4	0	0	0	0
<i>Influenza A untyped</i>	0	0	0	0	0
<b>Positive Influenza B</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>

In 2010, a total of 1,305 specimens have been positive for influenza (9% of 14,718 specimens tested), of which 65% were pandemic (H1N1) 2009, 24% were influenza B, 9% were A/H3N2 and 2% were influenza A untyped (Figure 8). Sentinel laboratory data are used in addition to the National Notifiable Diseases Surveillance System (NNDSS) data to understand the strains circulating in Australia, as approximately 29% of NNDSS notifications are reported as influenza A untyped.

**Figure 8. Percentage of specimens tested by sentinel laboratories influenza positive, 1 January 2010 to 22 October 2010, by subtype**



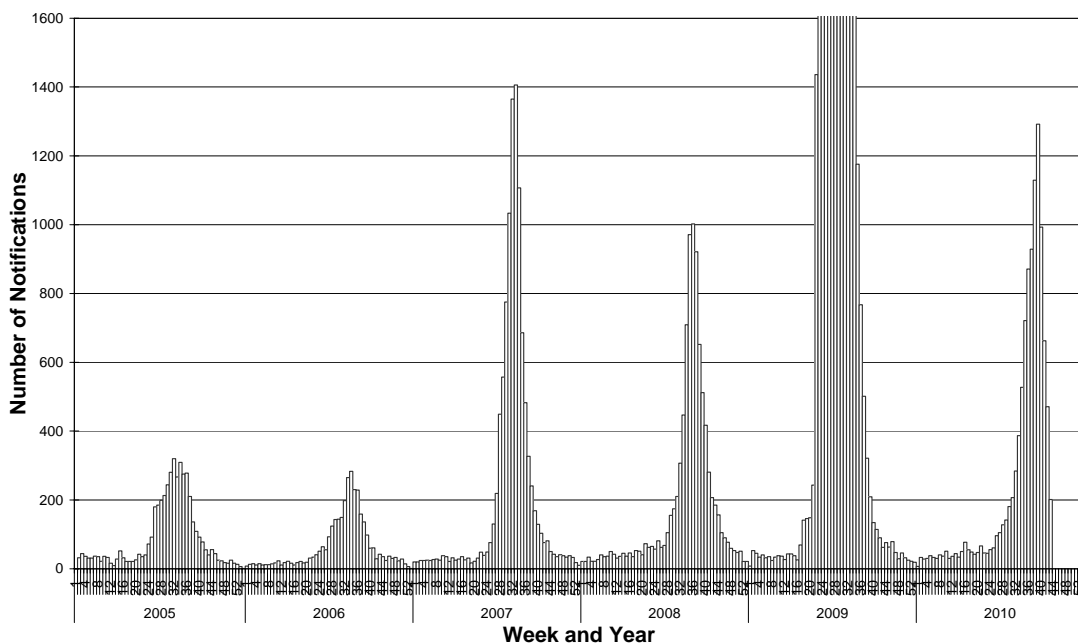
SOURCE: Sentinel laboratory data from ASPREN, NSW NIC, WA NIC, VIC NIC & TAS Labs

### Laboratory Confirmed Cases Notified to Health Departments

During this reporting period there were 201 influenza notifications reported to the NNDSS (106 in SA, 62 in Qld, 19 in WA, 8 in NSW, 4 in Vic and 1 in the ACT and Tas). They included 128 cases of pandemic (H1N1) 2009, 52 of influenza A (untyped), 11 of influenza B, 9 of untyped and one of influenza A&B (Figure 9).

There have been 10,392 confirmed cases of influenza of all types diagnosed during 2010 up to 22 October (Figure 9). Of these, 6,268 (60%) have been sub-typed as pandemic (H1N1) 2009 influenza, 3,019 (29%) as influenza A (untyped), 226 (2%) as A/H3N2 and 11 (<1%) as type A&B. A further 663 (6%) have been characterised as influenza type B and 205 (2%) were untyped.

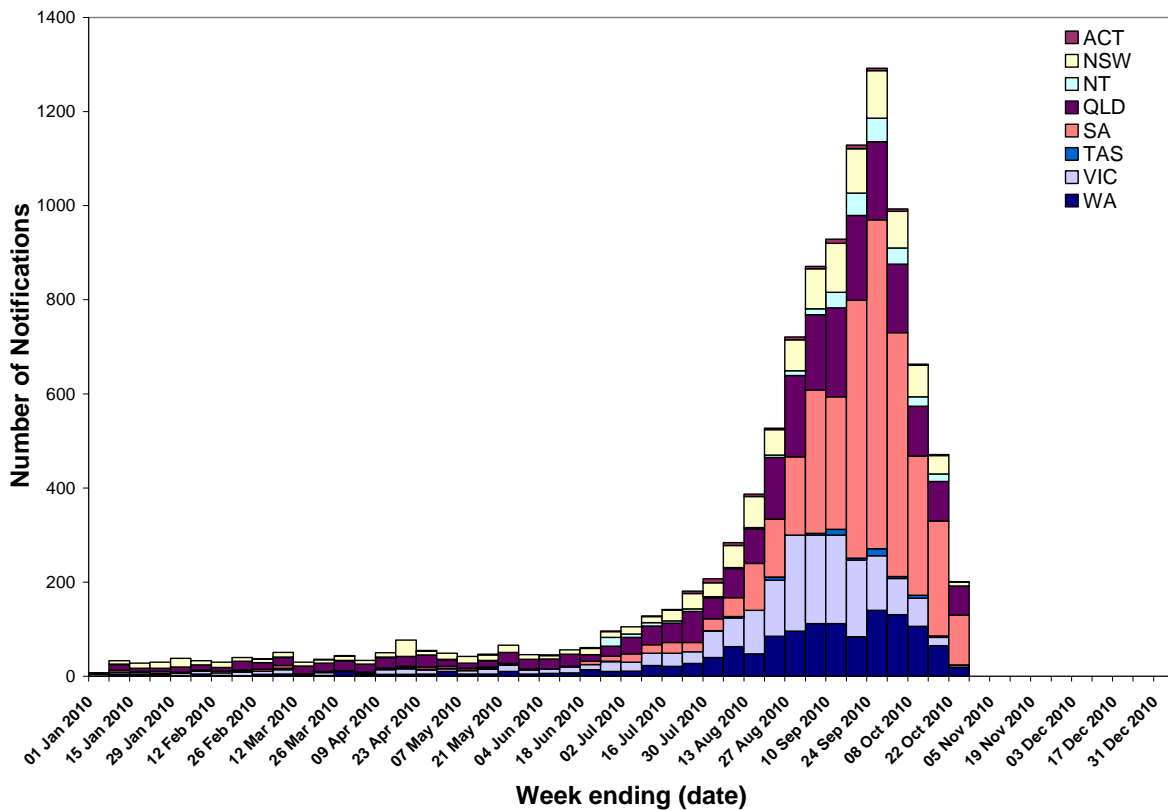
**Figure 9. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 22 October 2010**



Source: NetEpi (2009; NSW 2010) and NNDSS (2010)  
 Note: The scale in this figure has been limited to 1600 notifications per week to allow for comparison between 2010 and previous years. In 2009, notifications peaked at approximately 8,300 in Week 30.

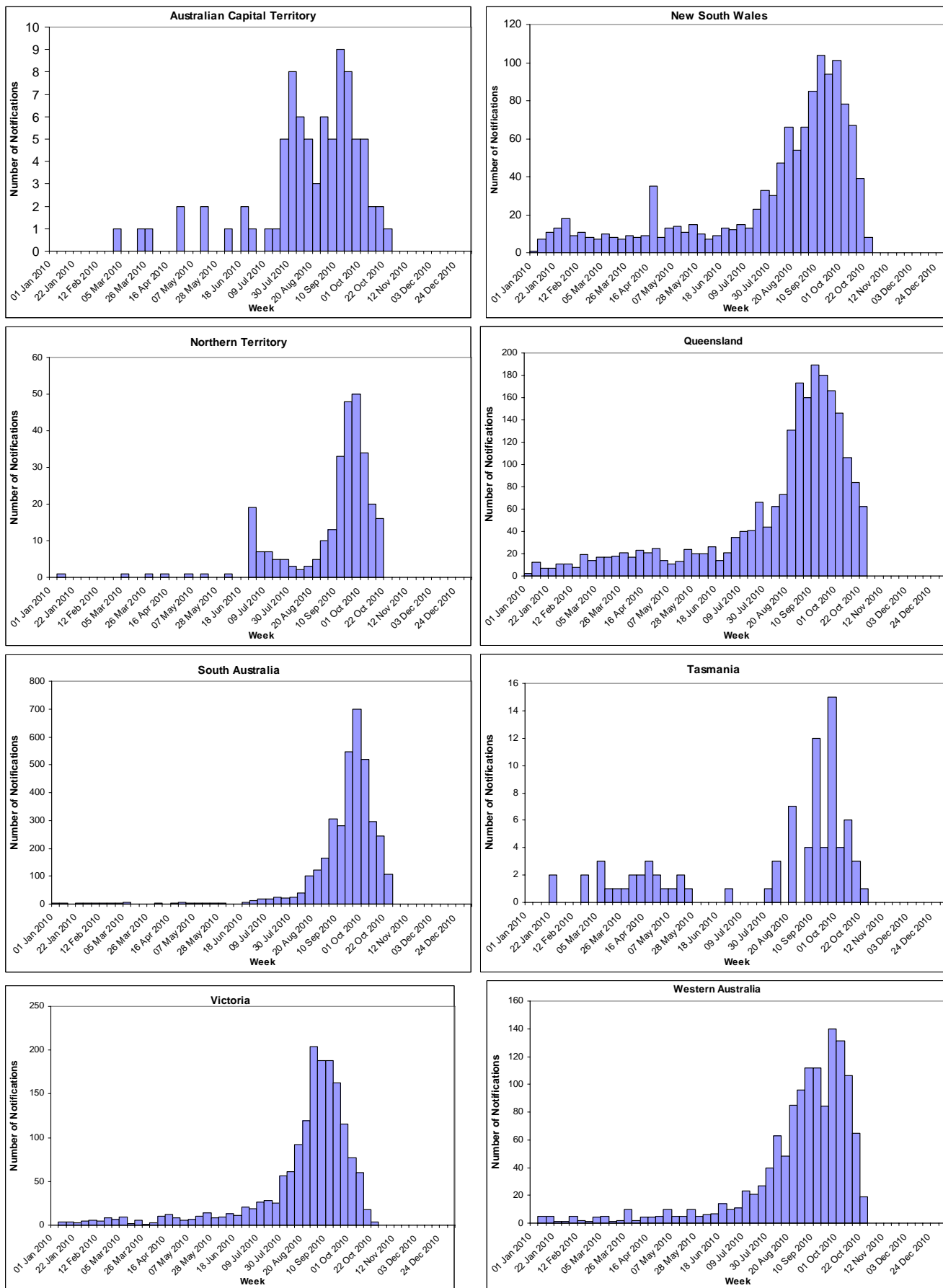
As at 22 October 2010, the number of laboratory confirmed cases of influenza was 3,612 in SA, 2,171 in QLD, 1,636 in VIC, 1,312 in WA and 1,206 in NSW. There were a further 287 cases in the NT, 85 cases in TAS and 83 cases in the ACT (Figure 10). Nationally and across all jurisdictions, notifications of laboratory confirmed influenza have continued to decline. For a breakdown of trends by state and territory, see Figure 11.

**Figure 10. Laboratory confirmed cases of influenza in Australia, 1 January to 22 October 2010, by state, by week.**



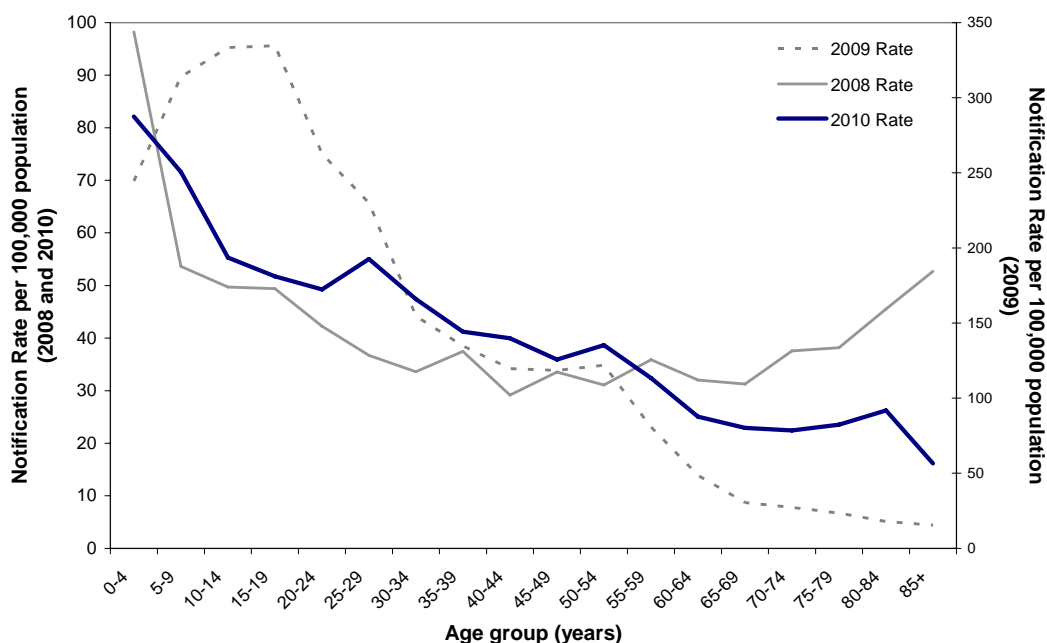


**Figure 11. State breakdowns of laboratory confirmed cases on influenza, 1 January to 22 October 2010, by week**



In 2010, influenza notifications have trended downwards with increasing age. This distribution is reasonably similar to 2008, except in the 70 and over age group, in which sharp increases occurred in 2008 (Figure 12). In 2009 the distribution of influenza notifications tended to occur in persons aged less than 55 years, with substantially higher rates observed in persons aged less than 30 years, compared to older age groups.

**Figure 12. Laboratory confirmed cases of influenza (pandemic (H1N1) 2009 and seasonal) in Australia, 1 January 2008 to 22 October 2010, by age group**



Source: NNDSS and NetEpi (NSW).

## 2. Influenza severity to 1 October 2010 <sup>1</sup>

### Pandemic (H1N1) 2009

While pandemic (H1N1) 2009 is generally considered a mild disease at the community level, it has had serious consequences for some people. Figures of hospitalisations, ICU admissions and deaths are currently used as indicators of the severity of the disease in Australia (Table 3).

Pandemic (H1N1) data for 2009 are being finalised through cleaning and validation processes. It is possible that these processes will result in some changes in the data presented here. Validated data will be progressively reported as these steps are completed.

Since the first case of pandemic (H1N1) 2009 in Australia in May 2009, there have been a total of 43,904 confirmed cases of pandemic (H1N1) 2009 in Australia as at 22 October 2010. Of these, 37,636 cases were reported in 2009 and 6,268 cases were reported in 2010. A total of 213 pandemic influenza-associated deaths have been reported, 22 of which occurred in 2010.

<sup>1</sup> Note that while the analysis of severity is on-going, updates are presented as required when there are significant changes detected. With the current low levels of pandemic (H1N1) 2009 influenza activity in Australia it is anticipated that the indicators of pandemic associated severity will not vary significantly.

**Table 3. Summary of severity indicators of pandemic (H1N1) in Australia, 2009 and 2010 (up to 22 October 2010)**

	2009 <sup>#</sup>				2010 <sup>a</sup>	
	Confirmed pandemic (H1N1) 2009 cases	Hospitalised cases	ICU cases	Deaths <sup>b</sup>	Confirmed (H1N1) 2010 cases	Deaths <sup>b</sup>
Total number	37,636	13% (4,992/37,636) confirmed cases)	14% (681/4,992 hospitalisations)	191	<b>6,268</b>	<b>22</b>
Crude rate per 100,000 population	172.1	22.8	3.1	0.9	<b>28.6</b>	<b>n/a</b>
Median age (years)	21	31	44	53	<b>24</b>	<b>52</b>
Females	51% (19,139/37,636)	51% (2,528/4,992)	53% (364/681)	44%	<b>51.9%</b> <b>(3,250/6,268)</b>	<b>40%</b> <b>(8/21<sup>€</sup>)</b>
Vulnerable groups (Indigenous persons, pregnant women & individuals with at least 1 co-morbidity)	n/a	58% (2,892/4,992)	74% (504/681)	67%	<b>n/a</b>	<b>73%</b> <b>(16/22)</b>
Indigenous people~	11% (3,877/34,750)	20% (808/4,048)	19% (102/533)	13%	<b>6.1%</b> <b>(168/2,742)</b>	<b>0%</b>
Pregnant women*	n/a	27% (287/1,056 hospitalised females aged 15-44 years)	16% (47/289) hospitalised pregnant women)	4%	<b>n/a</b>	<b>0%</b>
Cases with at least 1 co-morbidity	n/a	46% (2,303/4,992)	67% (457/681)	62%	<b>n/a</b>	<b>83%</b> <b>(16/22)</b>

<sup>#</sup>Data are extracted from a number of sources depending on the availability of information. Figures used in the analysis have been provided in parentheses. Data are not always complete for each summarised figure.

<sup>a</sup>Data for 2009 from NetEpi, data for 2010 from NNDSS and NetEpi (NSW).

<sup>b</sup>The number of deaths is likely to be under-reported and representative of hospital related death notifications only.

n/a - No data collected or available.

<sup>€</sup>The denominator for this row is the number of confirmed deaths for which sex is known. In 2010, one case had sex unknown.

\*Includes women in the post-partum period.

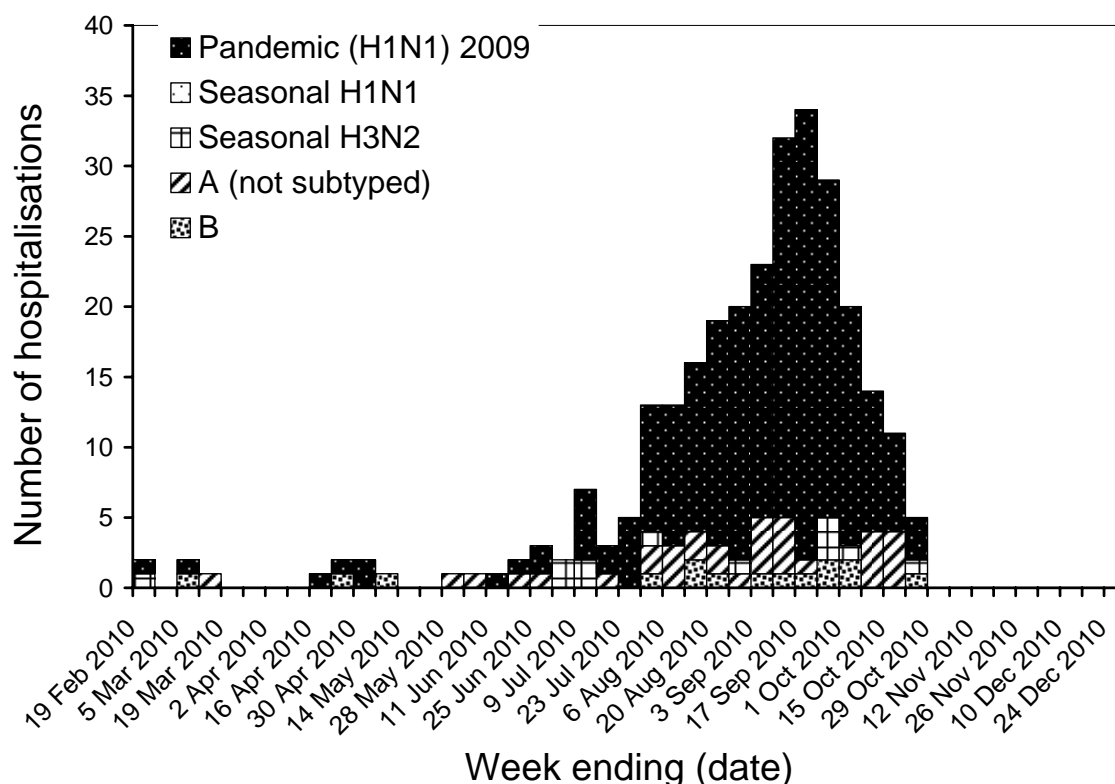
~The denominator for this row is the number of confirmed cases for which Indigenous status is known. In 2010, 3,526 cases had Indigenous status unknown.

## **Influenza Hospitalisations**

### **Influenza Complications Alert Network (FluCAN)**

The Influenza Complications Alert Network (FluCAN) reported a decrease in the number of influenza associated hospitalisations in the week ending 22 October 2010 from sentinel hospitals. During this reporting period there were three pandemic (H1N1) 2009, one influenza A (H3N2) and one influenza B associated hospitalisation reported. For the period of 1 March to 22 October 2010, FluCAN has reported a total of 280 influenza associated hospitalisations (Figure 13). Of these, 225 were associated with pandemic (H1N1) 2009, including 59 with ICU admission.

Figure 13. Number of influenza hospitalisations, sentinel hospitals, Australia, 1 March to 22 October 2010



Source: Influenza Complications Alert Network (FluCAN). Data from 15 sentinel hospitals from all jurisdictions.

Table 4. FluCAN sentinel hospitalisation severity indicator summary 1 March to 22 October 2010

	Pandemic (H1N1) 2009			Seasonal			Total Influenza		
	All hospitalised	ICU cases	Deaths	All hospitalised	ICU cases	Deaths	All hospitalised	ICU cases	Deaths
ICU proportion of all hospitalised	25%			22%			25%		
Median age (years)	35	38	36	41	41	n/a	36	35	36
Females	51%	46%	67%	52%	42%	0%	51%	45%	67%
Total of vulnerable groups (Indigenous, pregnant & individuals with at least 1 co-morbidity)	74%	81%	100%	70%	100%	0%	73%	84%	100%
Indigenous people	5%	1%	0%	0%	0%	0%	4%	3%	0%
Pregnant women									
% of all admission	7%	12%	0%	6%	8%	0%	7%	12%	0%
% of women of child bearing age (15-49years)	14%	27%	0%	11%	20%	0%	21%	24%	0%
Cases with at least 1 co-morbidity	70%	81%	100%	67%	92%	0%	69%	83%	100%

## Australian Paediatric Surveillance Unit (APSU)

The Australian Paediatric Surveillance Unit (APSU) conducts a survey of the admissions of children aged 15 years and under to Intensive Care Units (ICUs) due to influenza complications. Details of admissions are reported on a weekly basis.

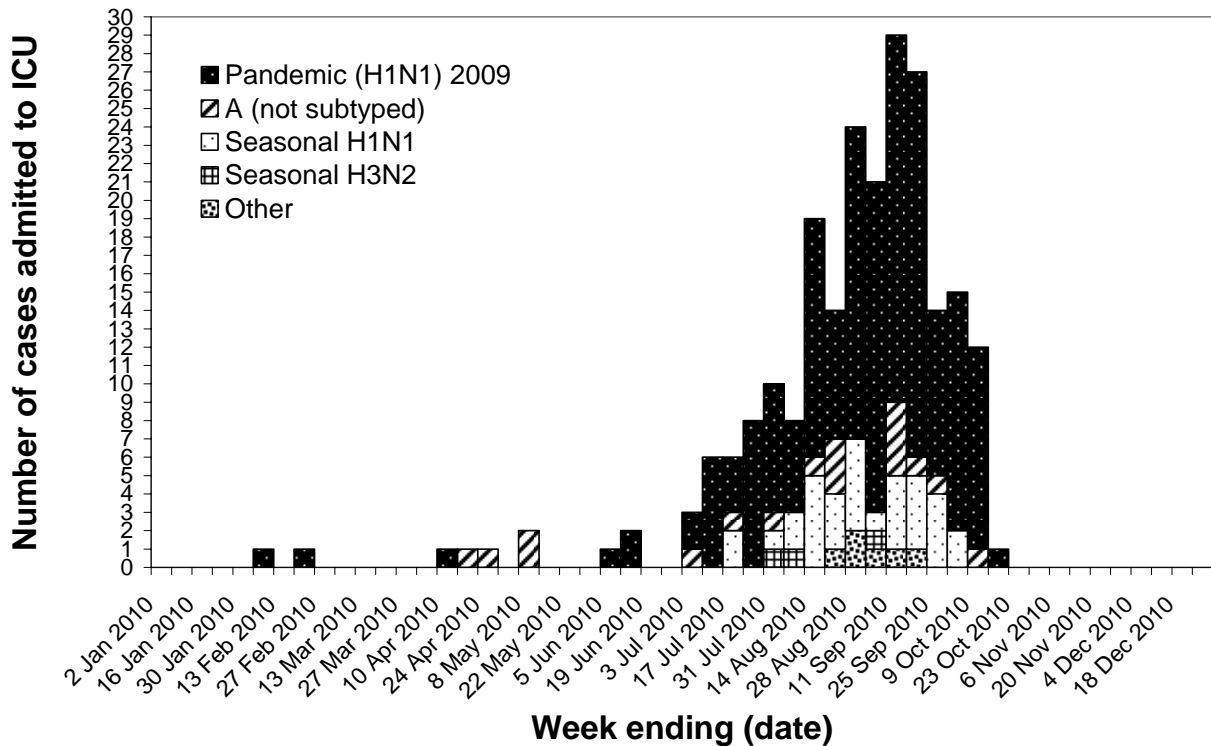
For the week ending 25 October 2010, there were three cases of severe influenza complications in children reported to the APSU. Since 1 July 2010, 35 hospitalisations have been reported, 16 of which were associated with pandemic (H1N1) 2009. Five of those cases were admitted to ICU. Nine cases were associated with Influenza A (not subtyped), and two were associated with influenza B. Five of the cases associated with pandemic (H1N1) 2009 had an underlying chronic condition.

### Intensive care admissions

The Australian and New Zealand Intensive Care Society (ANZICS) has reported a total of 227 ICU admissions for influenza in 2010, one of which occurred during this reporting period. Of these, 167 were associated with pandemic (H1N1) 2009, 18 with influenza A (not subtyped), three with seasonal A/H3N2, 33 with seasonal H1N1 (these may be pandemic cases, yet to be confirmed), and six cases of influenza untyped (Figure 14).

Of the 167 pandemic (H1N1) 2009 ICU admissions in 2010, the median age at admission was 42 years (range 2-80) and 92 admissions had known co-morbidities.

Figure 14. Number of ICU admissions for influenza in Australia, 1 January to 22 October 2010



Source: Australian and New Zealand Intensive Care Society (ANZICS) data base

### Deaths associated with influenza and pneumonia

#### Nationally reported pandemic (H1N1) 2009 deaths

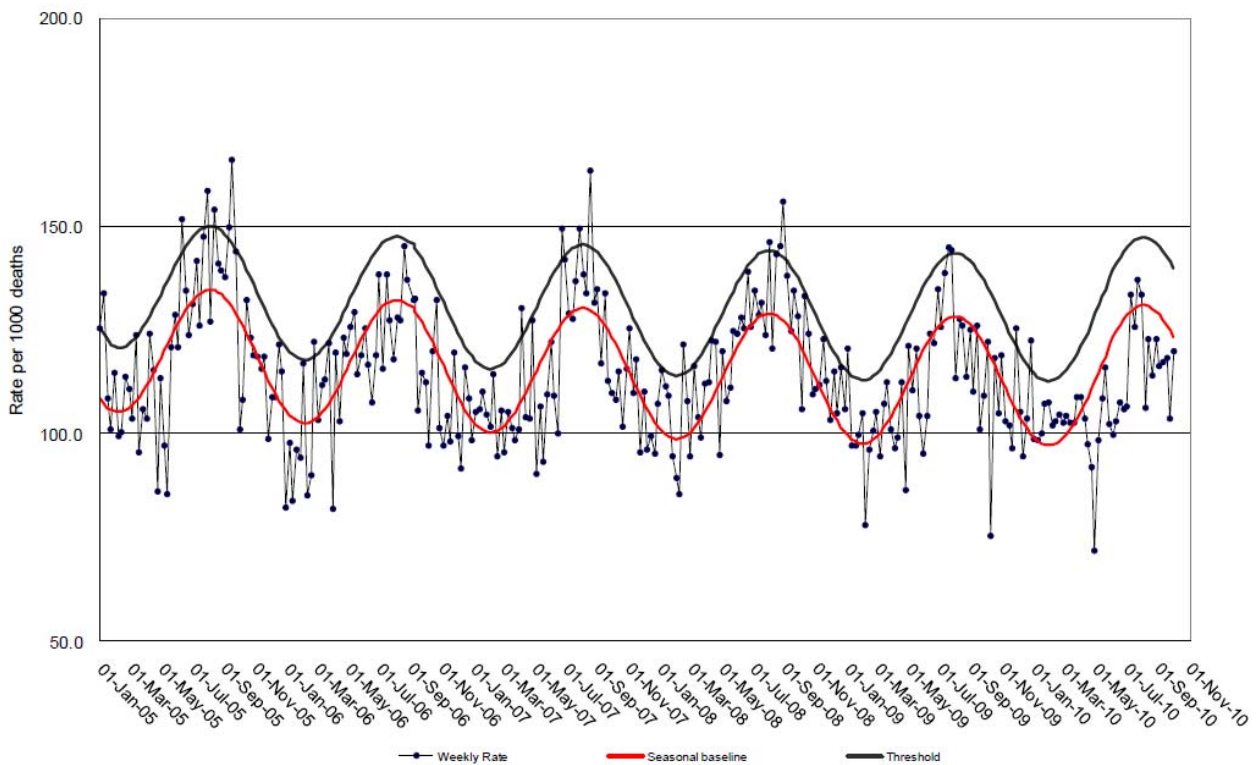
In 2010, 22 pandemic influenza related deaths have been notified to the NNDSS. The deaths occurred in late May, July, August, September and October with a median age of 52 years. Sixteen of the deaths were reported as having underlying risk factors.

**NSW**

Death registration data show that for the week ending 22 October 2010, there were 120 pneumonia or influenza associated deaths per 1,000 deaths in NSW, which is below the seasonal threshold for this period of 141 per 1,000 deaths (Figure 15).

NSW death registration data cross-matched with laboratory cases of influenza show 21 people with laboratory confirmed influenza have died up to 29 September 2010. Seventeen of the cases had multiple co-morbidities and were aged 50 years and over<sup>1</sup>.

**Figure 15. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2005 to 22 October 2010**



Source: NSW 'Influenza Monthly Epidemiology Report'

**3. Virology**

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

From 1 January to 24 October 2010, there were 1,161 Australian influenza isolates subtyped by the WHO CC with the majority of isolates typed as pandemic (H1N1) 2009 (Table 5).

**Table 5. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2010 to 24 October 2010**

Type/Subtype	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	TOTAL
A(H1N1)	0	0	0	0	0	0	0	0	0
Pandemic (H1N1) 2009	16	33	151	285	210	1	247	105	1048
A(H3N2)	2	2	0	16	1	3	9	17	50
B	0	3	0	10	5	0	19	16	53
<b>Total</b>	<b>18</b>	<b>38</b>	<b>151</b>	<b>311</b>	<b>216</b>	<b>4</b>	<b>272</b>	<b>138</b>	<b>1161</b>

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, hence proportions of pandemic (H1N1) 2009 to seasonal are not representative of the proportions circulating.

Antigenic characterisation of 820 pandemic (H1N1) 2009 isolates has shown 739 to be the A/California/7/2009-like strain and 7 a low reactor version of this strain. Antigenic characterisation of 44 type A/H3N2 isolates has shown 35 to be the A/Perth/16/2009-like and 9 to be the A/Perth/16/2009-like low reactor versions of the strain. One isolate was antigenically characterised as a low-reactor version of B/Florida/4/2006-like, 28 were characterised as B/Brisbane/60/2008-like and one a low reactor version of this strain.

## Antiviral Resistance

The WHO Collaborating Centre in Melbourne has reported that from 1 January 2010 to 24 October 2010, no isolates (out of 833 tested) have shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and two pandemic (H1N1) 2009 isolates (out of 41 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

## 2011 Southern Hemisphere Vaccine

The WHO has recommended that the composition of vaccines for use in the 2011 influenza season (southern hemisphere winter) 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<sup>2</sup>

The 2011 composition is the same as the current 2010 Southern Hemisphere influenza vaccine.

## 4. International Influenza Surveillance

The WHO has advised that the world is no longer in phase 6 of influenza pandemic alert, and has moved into the post pandemic period.<sup>3</sup> As at 1 August 2010 there had been over 18,449 deaths associated with pandemic (H1N1) 2009 influenza worldwide since April 2009<sup>4</sup>.

The WHO has reported that influenza activity is decreasing in most parts of the Southern Hemisphere and the season does not appear to have started in the Northern Hemisphere. Influenza A/H3N2 is now the predominant influenza virus worldwide, although many areas still have active transmission of pandemic (H1N1) 2009. Most of the influenza A/H3N2 viruses detected are A/Perth/16/2009-like, which is the strain included in the seasonal vaccine for the Northern and Southern Hemispheres.<sup>4</sup>

In New Zealand, the ILI consultation rate peaked in early August and has now returned to below baseline levels. Of the influenza viruses identified through sentinel and non-sentinel swab testing in the past week, 81% were pandemic (H1N1) 2009 influenza<sup>5</sup>.

## 5. 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 and improve, this report will be refined and additional information will be included.***

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](mailto:flu@health.gov.au).

On 17 June 2009 Australia commenced the transition to a new response phase called PROTECT, in which laboratory testing is directed towards people with moderate or severe illness; those more vulnerable to severe illness; and those in institutional settings. This means that the number of confirmed cases does not reflect how many people in the community have acquired pandemic (H1N1) 2009 infection.

### **Geographic spread of influenza and ILI – Jurisdictional Surveillance**

Jurisdictions report activity levels (in line with the definitions below) on a fortnightly basis, based on laboratory-confirmed notifications, various syndromic surveillance systems, outbreak reporting and rumour surveillance.

<b>Activity level</b>	<b>Definitions:</b>
No activity	No influenza or ILI activity
Syndromic only	an increase in syndromic surveillance systems with no laboratory confirmed cases
Sporadic	small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak during the reporting period, but no increase in cases in syndromic surveillance systems
Local	outbreaks of influenza or increases in cases in syndromic surveillance systems and recent laboratory-confirmed influenza in a single region of the state
Regional	outbreaks of influenza or increases in cases in syndromic surveillance systems and a recent laboratory confirmed influenza in at least two but less than half the regions of the state
Widespread	outbreaks of influenza or increases in cases in syndromic surveillance systems and recent laboratory-confirmed influenza in at least half the regions of the state.

### **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 2010 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](http://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.

Data have been provided weekly and have been presented in this report to show the pattern of self reported ILI in the community over the 2009 season.

Further information on FluTracking is available at [www.flutracking.net/index.html](http://www.flutracking.net/index.html).

### **National Health Call Centre Network**

A national organisation provides call centre data for calls relating to ILI or influenza. Data are provided daily and are collated weekly and have been presented in this report to show the pattern of calls to this Call Centre over the 2009 and 2010 season. Data is available for all jurisdictions other than QLD and VIC.



## **Absenteeism**

A national organisation provides data on the number of employees who have been on sick leave for a continuous period of more than three days. These data are not influenza or ILI specific and absenteeism may be a result of other illnesses.

## **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 except NSW. NSW data are sourced from NetEpi.

## **NetEpi**

In 2009, NetEpi, a web-based outbreak case reporting system for pandemic (H1N1) 2009, was used as the primary source of enhanced data on confirmed cases, hospitalisations and ICU admissions in all jurisdictions. In 2010, only data for NSW are sourced from NetEpi.

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

## **Data Analysis**

Analysis of confirmed influenza cases is conducted on combined NetEpi and NNDSS data. Analysis of morbidity (hospitalisations and ICU admissions) and mortality data in 2009 has been conducted on combined NetEpi and QLD hospitalisation data.

## **FluCAN**

The Influenza Complications Network (FluCAN) collects detailed clinical information on all hospitalised cases of influenza and pneumonia from a sample of 15 sentinel hospitals across Australia. The data for this reporting period are sourced only from 14 hospitals.

## **APSU**

The Australian Paediatric Surveillance Unit collects clinical information on hospitalised cases of children aged 15 years and under with complications due to influenza infection. Approximately 1300 (80% of total) Paediatric clinicians registered with the Paediatrics and Child Health Division of the Royal College of Physicians, respond to APSU report cards. These report cards seek information regarding hospitalisations relating to 12 diseases or conditions, including influenza.

## **Australian and New Zealand Intensive Care Society data (ANZICS data)**

The Australian and New Zealand Intensive Care Society provide data from a `near real time` registry of patients admitted to Australian ICUs. This documents the key factors influencing mortality, as well as the need for hospitalisation and mechanical ventilation. Information collected includes person characteristics and information on relevant co-morbidities, nature of the clinical syndrome associated with pandemic (H1N1) 2009, major therapeutic interventions from which organ failure outcomes can be imputed, vaccination status and vital status at time of ICU discharge and hospital discharge.

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

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

## **Deaths associated with influenza and pneumonia**

Nationally reported pandemic (H1N1) 2009 deaths are notified by jurisdictions to the Commonwealth Department of Health and Ageing as they occur.

NSW influenza and pneumonia deaths data are collected from the NSW Registry of Births, Deaths and Marriages. Figure 14 is extracted from the 'Weekly Influenza Report, NSW'

## 6. References

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<sup>1</sup> NSW Influenza Monthly Epidemiology Report, September 2010. Available from [http://www.health.nsw.gov.au/publichealth/infectious/reports/influenza\\_report\\_august.asp](http://www.health.nsw.gov.au/publichealth/infectious/reports/influenza_report_august.asp) Accessed 14 October 2010.

<sup>2</sup> World Health Organisation Global Alert and Response: Influenza. Recommended composition of influenza virus vaccines for use in the 2011 southern hemisphere influenza season. Available from <http://www.who.int/csr/disease/influenza/recommendations2011south/en/index.html> Accessed 1 October 2010.

<sup>3</sup> World Health Organisation virtual press conference, 10 August 2010. Available from <http://www.who.int/en/> Accessed 11 August 2010.

<sup>4</sup> WHO Influenza update – 8 October 2010. Available from <http://www.who.int/csr/don/en/> Accessed 22 October 2010.

<sup>5</sup> New Zealand Weekly Influenza Update: 27 September - 3 October 2010. Available from [http://www.surv.esr.cri.nz/virology/influenza\\_weekly\\_update.php](http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php) Accessed 29 October 2010.