



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 are continuing to show signs of increasing through some surveillance systems (ASPREN, WA Emergency Departments, absenteeism and NHCCN calls).
- Reporting from sentinel laboratories suggests that influenza activity is gradually increasing. Tests positive for influenza have remained stable over the last two reporting periods, at 5%. The most common respiratory viruses diagnosed by sentinel laboratories this reporting period were respiratory syncytial virus (RSV) in WA and NSW and picornavirus in VIC.
- In 2010, sentinel laboratories reported that 168 specimens have been positive for influenza (of 6,935 specimens tested), of which 67% were pandemic (H1N1) 2009, 24% were A/H3N2, 5% were influenza B and 4% were influenza A (untyped).
- Of the 1,561 confirmed cases of influenza of all types diagnosed during 2010 up to 23 July, there have been 284 confirmed cases of pandemic (H1N1) 2009 influenza reported in Australia, bringing the total of confirmed cases to 37,920 since May 2009. There have been 28 new confirmed cases of pandemic (H1N1) 2009 influenza diagnosed and reported in Australia (ACT, NSW, Qld, NT, SA and WA) during this reporting period.
- Sentinel hospitals have reported two hospitalisations for influenza in this reporting period, including one for pandemic (H1N1) 2009. ANZICS reported one ICU admissions for influenza during this period.
- In China, influenza B accounted for 55.5% of influenza viruses detected in the week to 18 July 2010. Of these, approximately 46.1% are the same strain as that in the 2010 Southern Hemisphere vaccine.
- As at 18 July 2010, the WHO Regional Offices have reported over 18,366 deaths associated with pandemic (H1N1) 2009 influenza worldwide. Current pandemic influenza transmission remains low.

# 1. Influenza activity in Australia

## Geographic spread of influenza and ILI – Jurisdictional Surveillance

In the fortnight ending 23 July 2010, influenza and ILI activity as reported by state and territory Health Departments indicated that there was 'sporadic' activity in four states (ACT, VIC, NT and SA), 'local' activity in WA and QLD, 'regional' activity in NSW and TAS reported 'syndromic only' (Figure 1).

'Syndromic only' activity is defined as an increase in syndromic surveillance systems with no laboratory confirmed cases. 'Sporadic' activity is defined as 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' activity is defined as outbreaks of influenza or increases in cases in syndromic surveillance systems and recent laboratory-confirmed influenza in a single region of the state. 'Regional' activity is defined as 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.

**Figure 1. Map of influenza and ILI activity, by state and territory, during fortnight ending 23 July 2010**

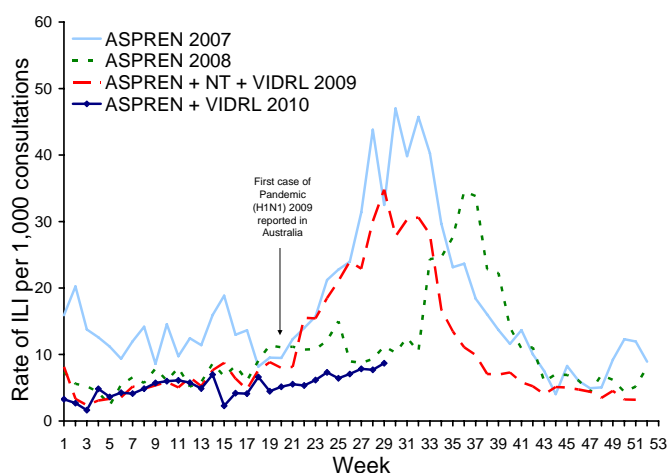


## Influenza-Like Illness

### Sentinel General Practice Surveillance

In the week ending 18 July 2010, national ILI consultation rates to sentinel GPs was approximately 9 cases per 1,000 consultations (Figure 2).

**Figure 2. Weekly rate of ILI reported from GP ILI surveillance systems from 1 January 2007 to 18 July 2010\***



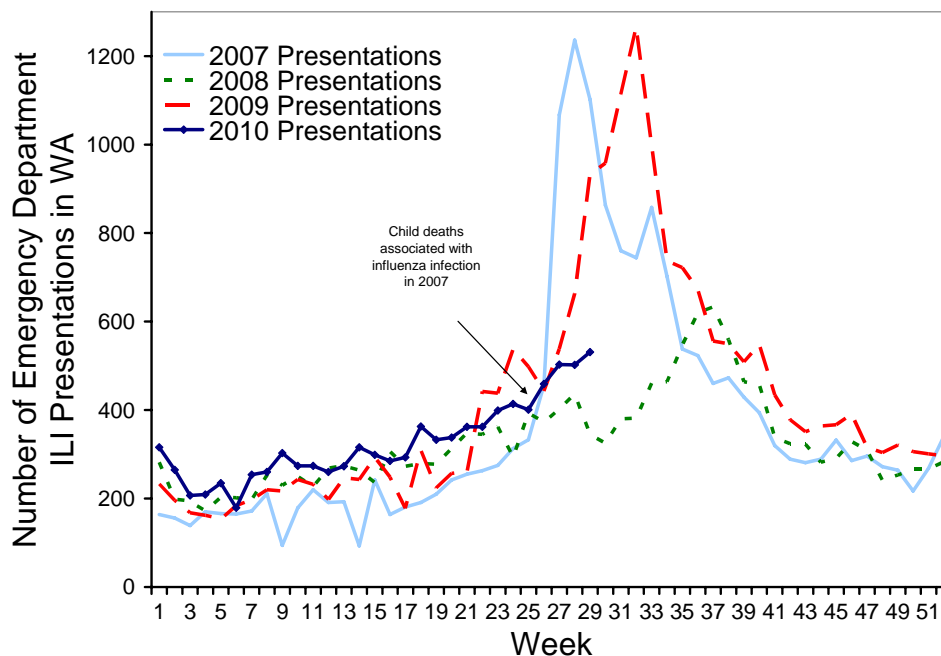
\* Delays in the reporting of data may cause data to change retrospectively. As data from the VIDRL surveillance system is combined with ASPREN data for 2010, rates may not be directly comparable across 2007, 2008 and 2009.

SOURCE: ASPREN, and VIDRL GP surveillance system.

## WA Emergency Departments

Respiratory viral presentations reported in Western Australian EDs continue to show an upward trend (Figure 3). In the week ending 18 July 2010 there were 534 respiratory viral presentations, including 34 admissions. The number of respiratory viral presentations this reporting week is similar to the previous reporting week at 502.

**Figure 3. Number of respiratory viral presentations to Western Australia EDs from 1 January 2007 to 18 July 2010 by week**

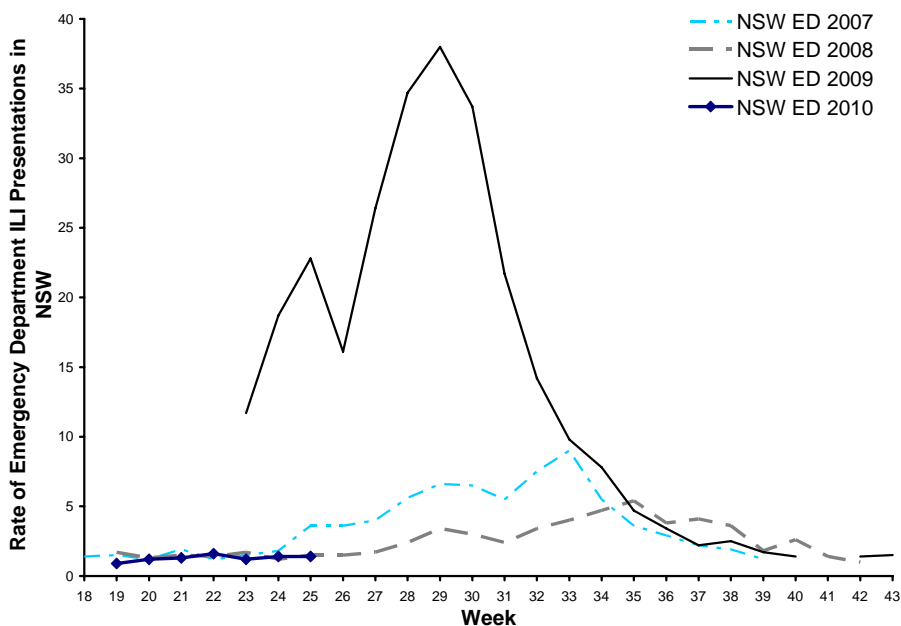


Source: WA 'Virus Watch' Report

## NSW Emergency Departments

In the week ending 16 July 2010, ILI presentations to NSW EDs remained low and similar to levels seen at the same time in 2008 (Figure 4). In June 2010, there were 14 admissions to hospital following presentation to emergency departments with ILI.

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

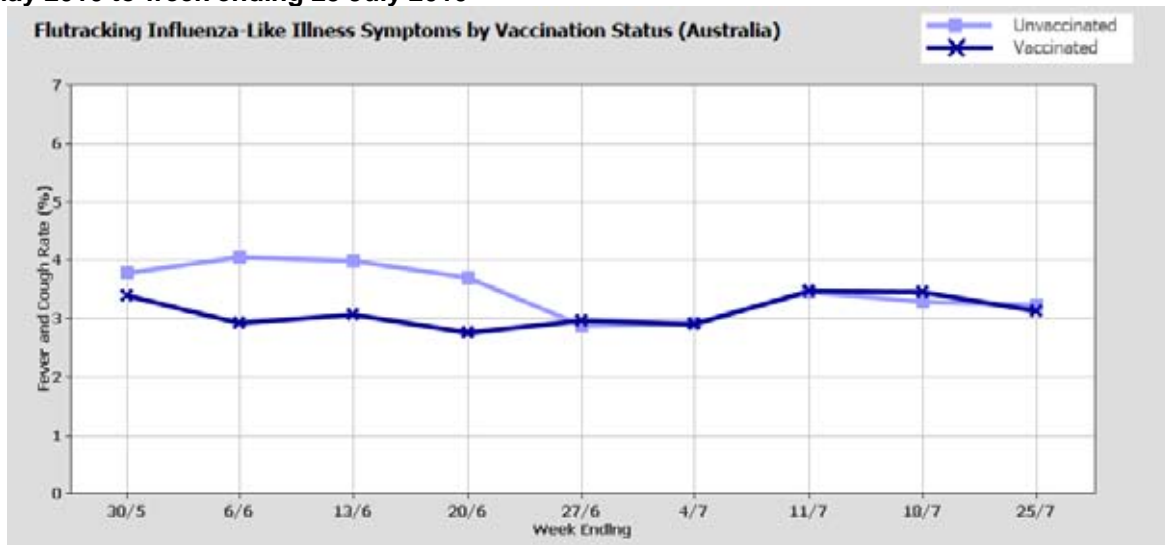


Source: NSW Health 'Influenza Weekly Epidemiology Report

## Flutracking

Flutracking, a national online system for collecting data on ILI in the community, reported that ILI levels remained low and stable in the week ending 25 July 2010 (Figure 5).

**Figure 5. Rate of ILI symptoms among Flutracking participants by week, from week ending 30 May 2010 to week ending 25 July 2010**



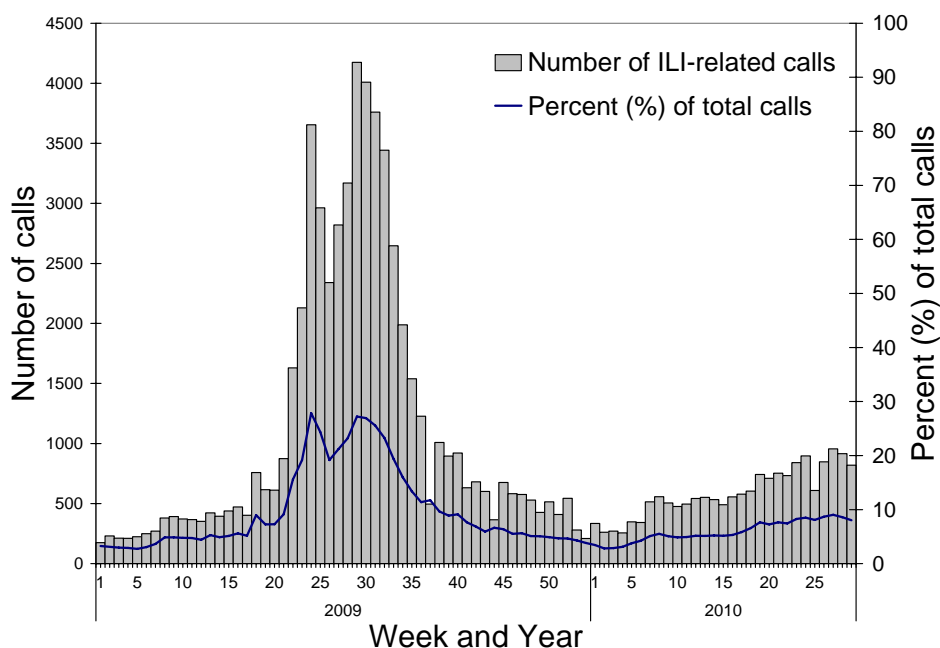
Source: Flutracking Interim Weekly Report

## National Health Call Centre Network

The number of calls to the National Health Call Centre Network (NHCCN) in this reporting period was similar to the past few weeks (Figure 6).

Although ILI-related calls have been increasing gradually since the start of 2010, the number of ILI calls, and percent of total calls, are only slightly above levels seen in late 2009. Call numbers cannot be compared between early 2009 and early 2010 as not all call centres were online in early 2009. The difference in operating call centre numbers accounts for this 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 23 July 2010**

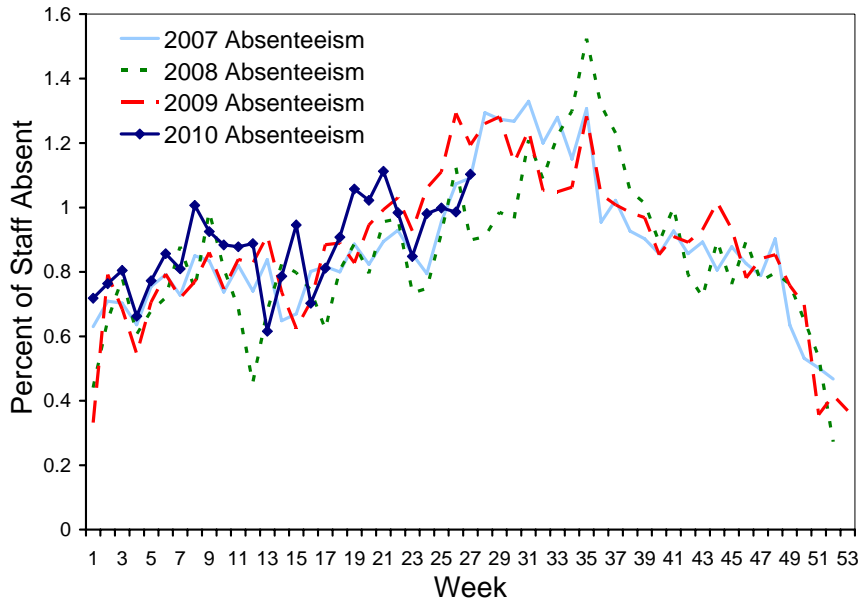


Note: national data does not include QLD and VIC  
Source: NHCCN data

## Absenteeism

In the week ending 14 July 2010, absenteeism increased to 1.1% (Figure 7). Overall there has been a gradual increasing trend since the beginning of 2010.

**Figure 7. Rates of absenteeism (greater than 3 days absent on sick leave), national employer, from 28 January 2007 to 14 July 2010, by week**



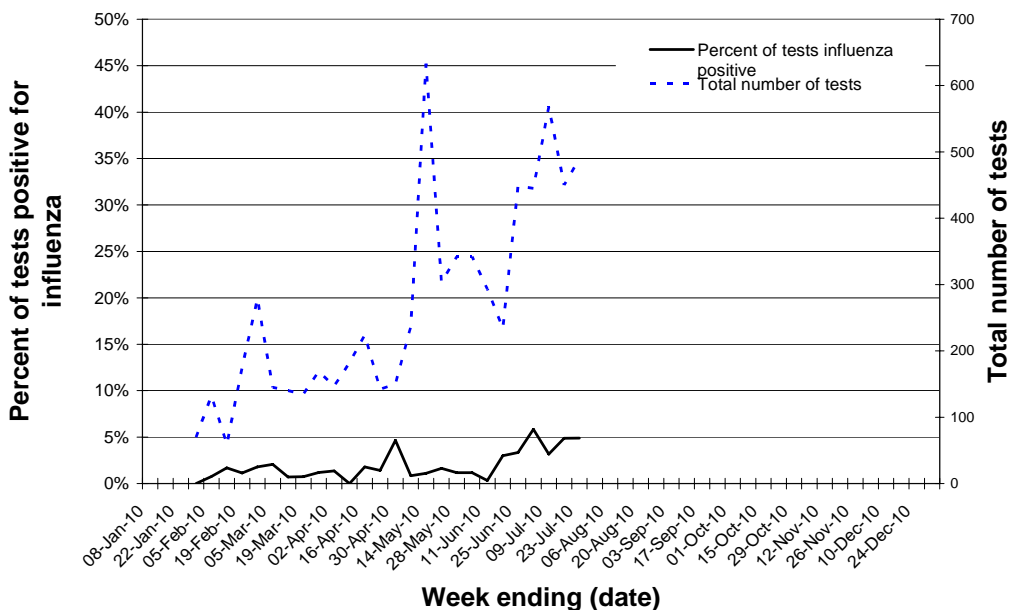
SOURCE: Absenteeism data

## Laboratory confirmed influenza

### Sentinel Laboratory Surveillance

Results from sentinel laboratory surveillance systems for this reporting period show that 4.9% (24/490) of the respiratory tests conducted over this period were positive for influenza, which is the same as last reporting period (Figure 8).

**Figure 8. Total number of specimens tested by sentinel laboratories, and proportion positive, 1 January 2010 to 23 July 2010, by week**



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

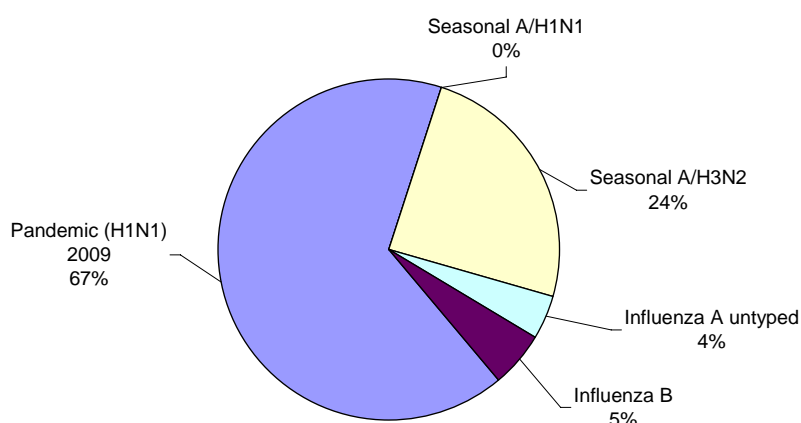
Sentinel laboratories reported 24 specimens positive for influenza during this period, of which 22 were pandemic (H1N1) 2009, 1 was A/H3N2 and 1 was influenza A untyped (Table 1).

**Table 1. Laboratory respiratory tests that tested positive for influenza**

	ASPREN – national	NSW NIC	WA NIC	NT (Reported by WA NIC)	VIC NIC	TAS laboratories
<b>Total specimens tested</b>	23	124	201	N/A	110	32
<b>Positive Influenza A</b>	<b>3</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>
<i>Pandemic (H1N1) 2009</i>	3	4	13	0	2	0
<i>Seasonal A/H1N1</i>	0	0	0	0	0	0
<i>Seasonal A/H3N2</i>	0	0	1	0	0	0
<i>Influenza A untyped</i>	0	0	1	0	0	0
<b>Positive Influenza B</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>The most common respiratory virus detected</b>	<b>Rhinovirus</b>	<b>RSV</b>	<b>RSV</b>	<b>N/A</b>	<b>Picornavirus</b>	<b>N/A</b>

In 2010, a total of 168 specimens have been positive for influenza (of 6,935 specimens tested), of which 67% were pandemic (H1N1) 2009 and 24% were A/H3N2 (Figure 9). Sentinel laboratory data are used in addition to NNDSS data to understand the strains circulating in Australia, as approximately 71% of NNDSS notifications are influenza A (untyped).

**Figure 9. Percentage of specimens tested by sentinel laboratories influenza positive, 1 January 2010 to 23 July 2010, by subtype**



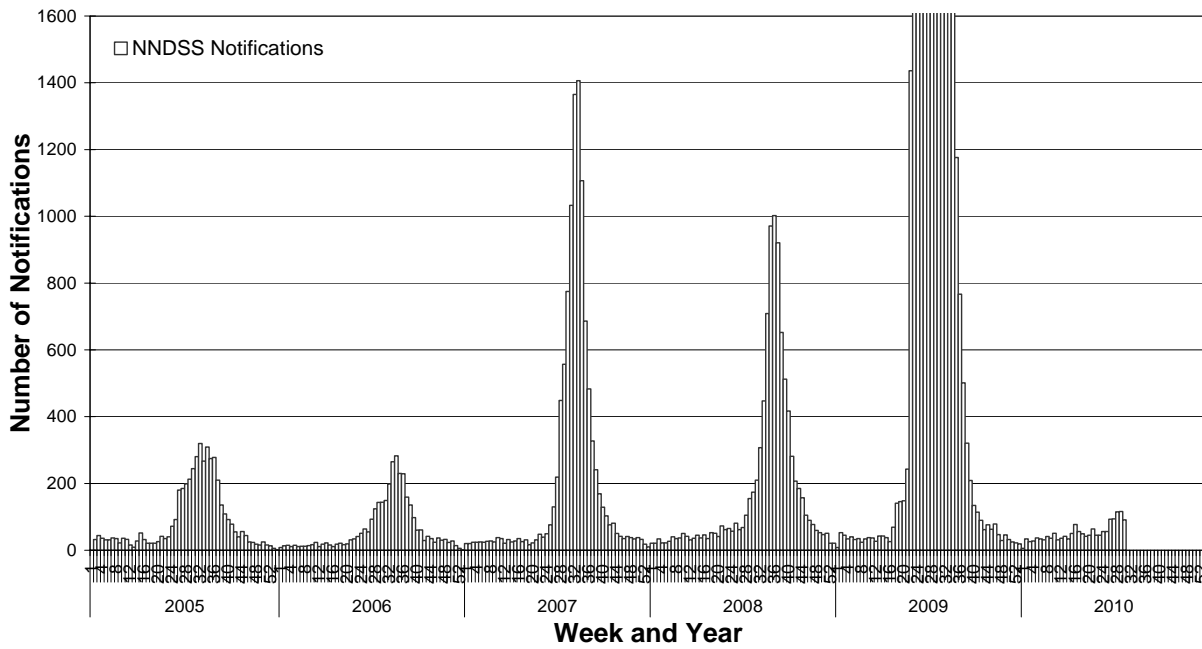
SOURCE: Sentinel laboratory data from ASPREN, NSW NIC, WA NIC, VIC NIC & TAS Labs

### Laboratory Confirmed Cases Notified to Health Departments

During this reporting period, 91 confirmed cases of influenza were notified (3 in ACT, 3 in NSW, 3 in NT, 60 in QLD, 12 in SA, 2 in VIC and 8 in WA). They included 28 pandemic (H1N1) 2009, 2 influenza A/H3N2, 48 of influenza A (not sub-typed) and 13 of influenza B. Pandemic influenza activity remains low, and sporadic cases of pandemic influenza continue to be reported without evidence of sustained community transmission.

There have been 1,561 confirmed cases of influenza of all types diagnosed during 2010 up to 23 July (Figure 10). Of those, 284 (18%) have been sub-typed as pandemic (H1N1) 2009, 1,101 (71%) as influenza type A not sub-typed, 11 (1%) as A/H3N2 and 9 (1%) as type A&B. A further 137 (9%) have been characterised as influenza type B and 19 (1%) have been untyped.

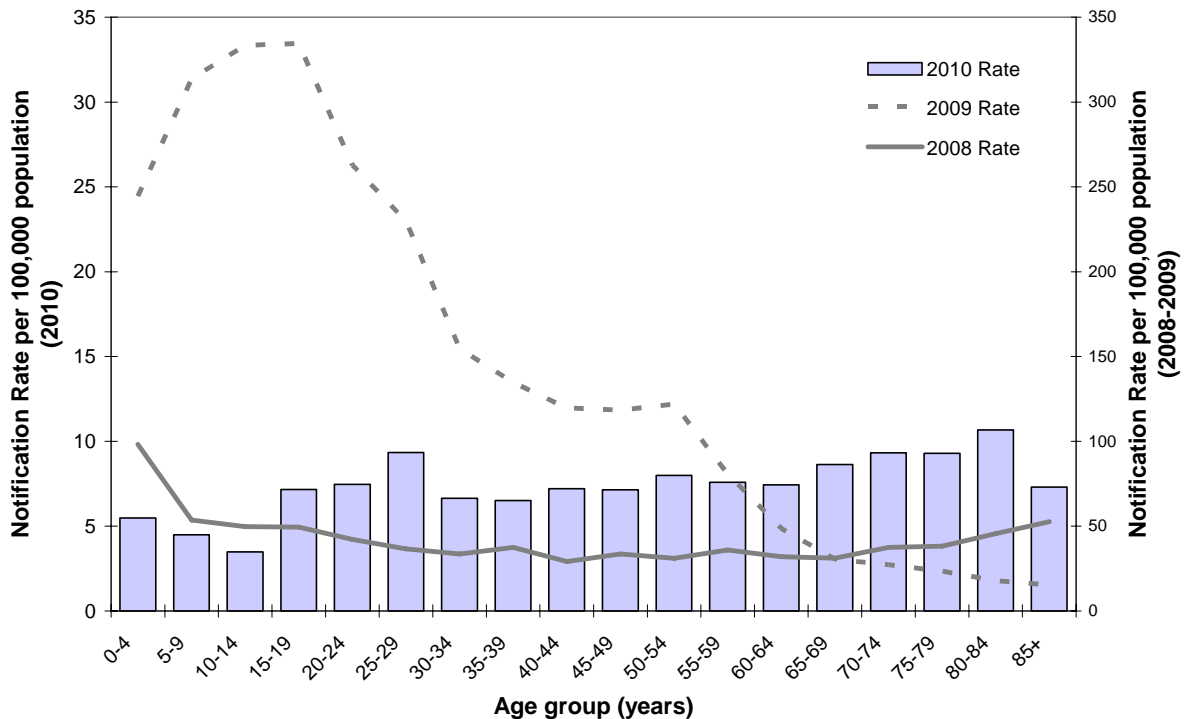
**Figure 10. Laboratory confirmed cases of influenza in Australia, 1 January 2005 to 23 July 2010**



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.

In 2010, the distribution of influenza notifications is reasonably consistent across age groups and similar to distributions observed in 2008 (Figure 11). 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 11. Laboratory confirmed cases of influenza (pandemic (H1N1) 2009 and seasonal) in Australia, 1 January 2008 to 23 July 2010, by age group**



Source: NNDSS and NetEpi (NSW).

## 2. Influenza severity to 23 July 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 who experience it. Figures of hospitalisations, ICU admissions and deaths are currently used as indicators of the severity of the disease in Australia (Table 2).

Pandemic (H1N1) data for 2009 are currently 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 37,920 confirmed cases of pandemic (H1N1) 2009 in Australia as at 23 July 2010. Of these, 37,636 cases were reported in 2009 and 284 cases were reported in 2010. A total of 192 pandemic influenza-associated deaths have been reported, including 191 in 2009. In 2010, one pandemic influenza related death has been reported in a 49 year old female from May.

**Table 2. Summary of severity indicators of pandemic (H1N1) in Australia, 2009 and 2010 (up to 23 July 2010)**

	2009 <sup>#</sup>				2010 <sup>a</sup>
	Confirmed pandemic (H1N1) 2009 cases	Hospitalised cases	ICU cases	Deaths	Confirmed (H1N1) 2009 cases
Total number	37,636	13% (4,992/37,636) confirmed cases)	14% (681/4,992 hospitalisations)	191	284
Crude rate per 100,000 population	172.1	22.8	3.1	0.9	1.3
Median age (years)	21	31	44	53	28
Females	51% (19,139/37,636)	51% (2,528/4,992)	53% (364/681)	44%	48% (136/285)
Vulnerable groups (Indigenous persons, pregnant women & individuals with at least 1 co-morbidity)	n/a	58% (2,892/4,992)	74% (504/681)	67%	n/a
Indigenous people~	11% (3,877/34,750)	20% (808/4,048)	19% (102/533)	13%	9% (18/205)
Pregnant women*	n/a	27% (287/1,056 hospitalised females aged 15-44 years)	16% (47/289) hospitalised pregnant women)	4%	n/a
Cases with at least 1 co-morbidity	n/a	46% (2,303/4,992)	67% (457/681)	62%	n/a

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

<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.

~The denominator for this row is the number of confirmed cases for which Indigenous status is known. In 2010, 80 cases had Indigenous status unknown.

\* Includes women in the post-partum period.

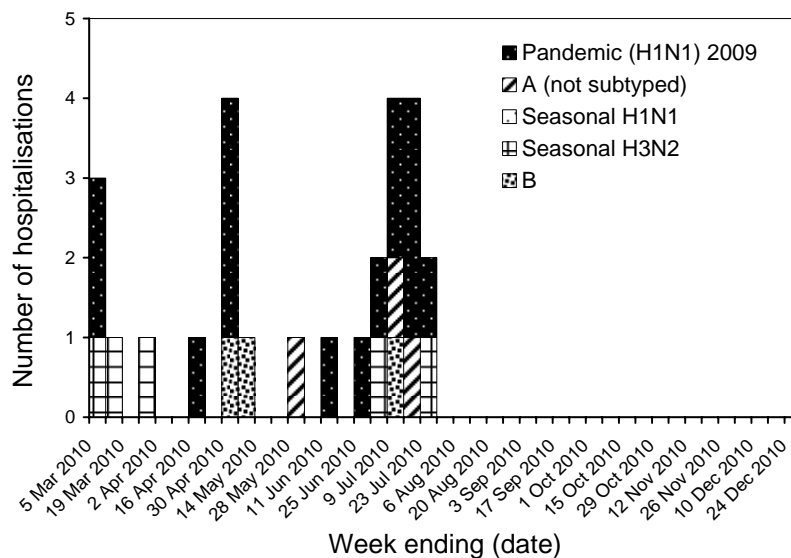
<sup>1</sup> Note that while the analysis of severity is on-going, updates are presented as required when there are significant changes detected. With the current low levels of pandemic (H1N1) 2009 influenza activity in Australia it is anticipated that the indicators of pandemic associated severity will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



## Influenza Hospitalisations

The Influenza Complications Alert Network (FluCAN) reported one influenza A (H3N2) and one pandemic (H1N1) 2009 hospitalisation from sentinel hospitals for the week ending 23 July 2010. For the period of 1 March to 23 July 2010, FluCAN has reported a total of 26 influenza hospitalisations (Figure 12). Of those, 15 have been associated with pandemic (H1N1) 2009, including 3 with ICU admission.

**Figure 12. Number of influenza hospitalisations, sentinel hospitals, Australia, 1 March to 23 July 2010**



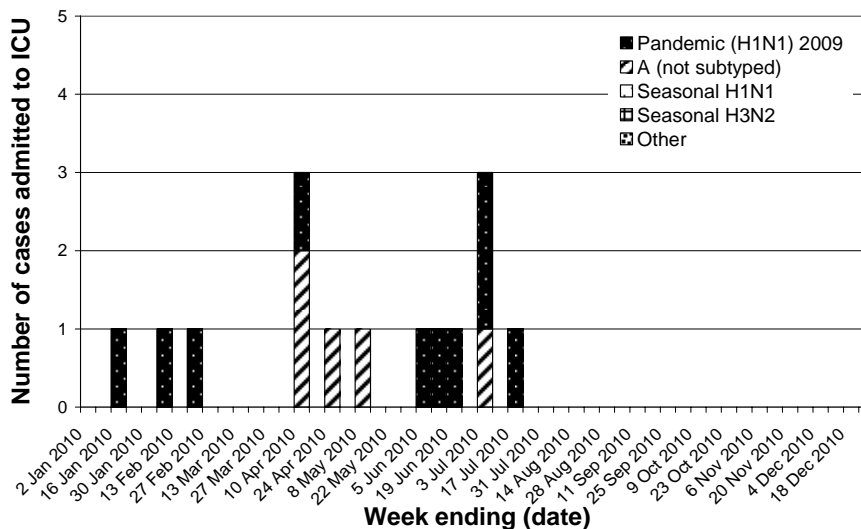
Source: Influenza Complications Alert Network (FluCAN). Data from 14 sentinel hospitals from all jurisdictions.

## Intensive care admissions

The Australian and New Zealand Intensive Care Society (ANZICS) has reported a total of 15 ICU admissions for influenza in 2010, of which one occurred during this reporting period. In total, 10 ICU admissions have been associated with pandemic (H1N1) 2009 and 5 with influenza A (not subtyped) (Figure 13).

Of the 10 pandemic (H1N1) 2009 ICU admissions in 2010, 8 had known co-morbidities and the median age at admission was 53 years (range 19-59).

**Figure 13. Number of ICU admissions for influenza, ANZICS, Australia, 1 January to 24 July 2010**

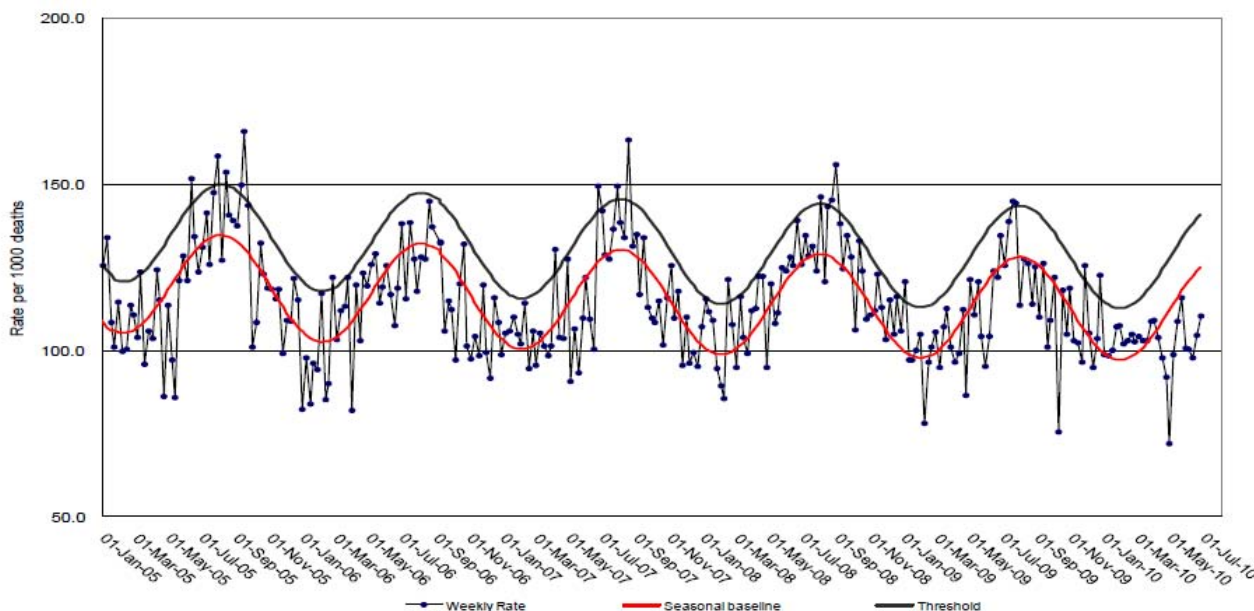


Source: Australian and New Zealand Intensive Care Society (ANZICS) data base

## Deaths associated with influenza and pneumonia

Death registration data show that for the week ending 2 July 2010, there were 110 pneumonia or influenza associated deaths per 1,000 deaths in NSW, which is below the seasonal threshold of 125 per 1,000 (Figure 14).

**Figure 14. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 2005 to 25 June 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 25 July 2010, there were 103 Australian influenza isolates subtyped by the WHO CC (Table 3).

**Table 3. Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2010 to 25 July 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	1	1	44	11	0	1	11	11	80
A(H3N2)	1	0	0	2	0	0	4	4	11
B	0	2	0	0	0	0	9	1	12
<b>Total</b>	<b>2</b>	<b>3</b>	<b>44</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>23</b>	<b>16</b>	<b>103</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 34 pandemic (H1N1) 2009 isolates has shown 33 to be the A/California/7/2009-like strain and one a low reactor version of this strain. Antigenic characterisation of 8 type A/H3N2 isolates has shown one to be the A/Perth/16/2009-like and 7 to be the A/Perth/16/2009-like low reactor version of the strain. One isolate was antigenically characterised a low-reactor version of B/Florida/4/2006-like.

## International Virology

In the week ending 10 July 2010, based on FluNet reporting by National Influenza Centres from 15 countries, 31% of positive specimens were typed as influenza B and 69% were typed as influenza A. Sporadic influenza B detections continued to be detected in some countries however, there has been a decrease in China (46.8% of all detections). In the Southern Hemisphere, there is an increasing number of influenza A virus detections with co-circulation of pandemic A(H1N1) and seasonal A(H3N2) viruses.

In China, influenza B accounted for 55.5% of all influenza viruses detected in the week to 18 July 2010. From 1 January 2010 to 18 July 2010, 3224 influenza B viruses have been antigenically characterised. Of those, 2,792 (86.6%) were B/Victoria viruses, including 46.8% (1307) related to B/Malaysia/2506/2004-like and 53.9% (1485) related to B/Brisbane/60/2008 (included in 2010 Southern Hemisphere seasonal influenza vaccine). The remaining 432 (13.4%) were B/Yamagata viruses related to B/Florida/4/2006-like.<sup>1</sup>

## Antiviral Resistance – Pandemic (H1N1) 2009

The WHO has reported four additional cases of oseltamivir resistant pandemic (H1N1) 2009 viruses this week, bringing the total to 302 since May 2009. All except one, of these isolates showed the same H275Y mutation and all remain sensitive to zanamivir.<sup>2</sup>

The WHO Collaborating Centre in Melbourne has reported that from 1 January 2010 to 25 July 2010, no isolates (out of 42 tested) have shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and two isolates (out of 35 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

## 4. International Influenza Surveillance

The WHO has reported that have been over 18,366 deaths associated with pandemic (H1N1) 2009 influenza worldwide since April 2009. Overall pandemic activity worldwide remains low.<sup>2</sup>

- Northern Hemisphere
  - Pandemic and seasonal influenza viruses have been detected sporadically or at very low levels during the past month.
  - Active circulation of pandemic influenza virus persists in the Caribbean, South and Southeast Asia, Central America and West Africa.
  - Cambodia has observed an increase in the proportion of respiratory samples testing positive for influenza, predominately pandemic and seasonal H3N2 strains.
  - In India, transmission of pandemic influenza virus remains active in the southern state of Kerala and the Western state of Maharashtra.
  - In Singapore, rates of ILI and acute respiratory infections have increased and reached the epidemic threshold. There is co-circulation of pandemic, seasonal H3N2 and influenza B viruses.
- Southern Hemisphere
  - In South Africa, a sharp increase in the levels of seasonal influenza (H3N2 and type B) viruses occurred during late June, reaching a peak detection rate of approximately 50%. By the second week of July the rate had dropped to approximately 30-40%.<sup>2</sup>
  - In El Salvador, media have reported that health authorities have issued an influenza epidemic alert, with an average of 14 000 new cases a day.<sup>3</sup>
  - In Chile and Argentina, ILI rates remained low, with reports of RSV as the predominantly circulating respiratory virus.<sup>2</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.

### 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.

### 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.

### 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.

### Sentinel Laboratory Surveillance data

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

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

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

### Sentinel General Practice Surveillance

The Australian Sentinel Practices Research Network (ASPREN) has Sentinel GPs who report ILI presentation rates in NSW, 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.

### **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.

### **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.

### **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).

### **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.

### **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.

## 6. References

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<sup>1</sup> Chinese National Influenza Centre Influenza Weekly Report 18 July 2010. Available from: <http://www.cnic.org.cn/eng/> Accessed 29 July 2010.

<sup>2</sup> WHO Pandemic (H1N1) 2009 - Update 110 & Virological Surveillance Weekly Update. Available from <http://www.who.int/csr/don/en/> Accessed 27 July 2010.

<sup>3</sup>SDPnoticias. Available from <http://sdpnoticias.com/sdp/contenido/2010/07/27/4/1085305>. Accessed 29 July 2010.