



# AUSTRALIAN INFLUENZA SURVEILLANCE REPORT

No.11, 2009, REPORTING PERIOD:  
18 July 2009 – 24 July 2009

## Key Indicators

**Is the situation changing?** Indicated by:

- laboratory confirmed cases reported to NetEpi/NNDS
- GP Sentinel ILI Surveillance
- ED presentations of ILI at sentinel hospitals (NSW and WA)

The counting of every case of pandemic influenza is no longer feasible in the PROTECT phase. Influenza activity, including influenza like illness (ILI) activity in the community is monitored by various surveillance systems.

Laboratory data are used to determine the proportion of pandemic A H1N1 circulating in the community.

**How severe is the disease, and is severity changing?** Is indicated by: Number of hospitalisations, ICU admissions and deaths from sentinel hospital surveillance; emergence of more severe clinical picture in hospitalised cases and ICU admissions.

**Is the virus changing?** Is indicated by emergence of drug resistance or gene drift/shift from laboratory surveillance.

**What is ahead?** Forward projections of cases, morbidity mortality.

## Key Points

**Is the situation changing?**

- As of 24 July 2009, there were 17,198 confirmed cases of pandemic (H1N1) 2009 in Australia (an increase from 11,651 in the last report). It should be noted that testing is focused on those moderate to severe cases, those who are vulnerable, and those in special populations.
- Overall, current national influenza activity is similar to 2007 but is still increasing. Activity varies across jurisdictions.
  - Nationally, rates of influenza-like illness (ILI) presentations to GPs are slightly above levels seen at the same time in 2007 (the highest influenza season in recent years). Presentations in 2009 to the sentinel GP network have decreased in Victoria this reporting period but have increased in other states and territories.
  - The rate of ILI presentations to Emergency Departments in WA is, to date, tracking with previous years. ILI presentations to NSW Emergency Departments have increased and are the highest rate recorded since data became available.
  - Absenteeism rates have decreased in the last week, are higher than those seen at the same time in 2007 and 2008, but are following a similar trend.
- Available information indicates about one third of cases of ILI are not due to influenza.
- Of cases that do have influenza, type A is the predominant seasonal influenza type reported by all jurisdictions. Of the seasonal influenza A notifications, A/H3N2 is the predominant subtype reported by most jurisdictions.
- The pandemic strain appears to be replacing the current seasonal H1N1 virus: around 80% of confirmed influenza A cases have the pandemic virus.
- **How severe is the disease?**  
The number of people with pandemic (H1N1) 2009 requiring hospitalisation continues to increase. As of 24

July there were 369 people in hospital, and 105 in ICU. In total, 1876 people have been hospitalised. The highest rate of hospitalisation is in the Northern Territory.

*National number of hospitalisations, by State, and hospitalisation rate*

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
<b>Total pandemic (H1N1) 2009 hospitalisations</b>	24	707	156	338	149	31	401	70	1876
<b>% of national pandemic (H1N1) 2009 hospitalisations</b>	1.3%	37.7%	8.3%	18.0%	7.9%	1.7%	21.4%	3.7%	100%
<b>Crude rate per 100,000 population</b>	7.0	10.1	70.9	7.9	9.3	6.2	7.6	3.2	8.8

- Due to the presence of underlying chronic disease, some of which is undiagnosed, and their higher level of social disadvantage, Indigenous Australians are vulnerable to complications from the pandemic H1N1 2009 virus. Indigenous Australians are approximately 5 times more likely than non-Indigenous Australians to be hospitalised for pandemic (H1N1) 2009. In total, 195 (10.4%) of hospitalisations have been Indigenous Australians.
- Several jurisdictions have reported cases of pregnant women being admitted to hospital and ICU, reinforcing the fact that pregnancy, particularly in the second and third trimesters, is a risk factor for pandemic H1N1 2009 infection.
- In the week ending 23 July 2009 the Australian Paediatric Surveillance Unit (APSU) reported 4 notifications of children hospitalised with severe complications of influenza. Two of the four had co-morbidities.
- The number of people dying with pandemic (H1N1) 2009 continues to increase. As of 24 July, 46 people have died. The highest mortality rate is in the Northern Territory. Of the deaths, 4 (9%) are Indigenous.

*National number of deaths, by State, and mortality rate*

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
<b>Total pandemic (H1N1) 2009 deaths</b>	0	17	3	4	4	2	15	1	46
<b>% of national pandemic (H1N1) 2009 deaths</b>	0.0%	37.0%	6.5%	8.7%	8.7%	4.3%	32.6%	2.2%	100%
<b>Crude mortality rate per 100,000 population</b>	0.0	0.2	1.4	0.1	0.2	0.4	0.3	0.0	0.2

**Is the virus changing?**

- To date in Australia, all of the pandemic influenza isolates tested are sensitive to the neuraminidase inhibitors oseltamivir and zanamivir.
- The proportions of Australian seasonal influenza isolates that are resistant to oseltamivir are: 97% of seasonal A/H1N1 isolates, 0% of A/H3N2 isolates, 0% of Type B isolates. None have tested resistant to zanamivir.

**What is ahead?** Forward projections of cases, morbidity mortality

- With a 20% clinical attack rate and no intervention; it has been estimated that by the end of winter 1 in 5 Australian (4.3 million) could become infected with the pandemic virus, leading to 40 to 80,000 hospitalisations, and 6,000 deaths.
- Currently the number of hospitalisations and deaths are tracking below these estimations, suggesting that efforts to protect the vulnerable are effective.

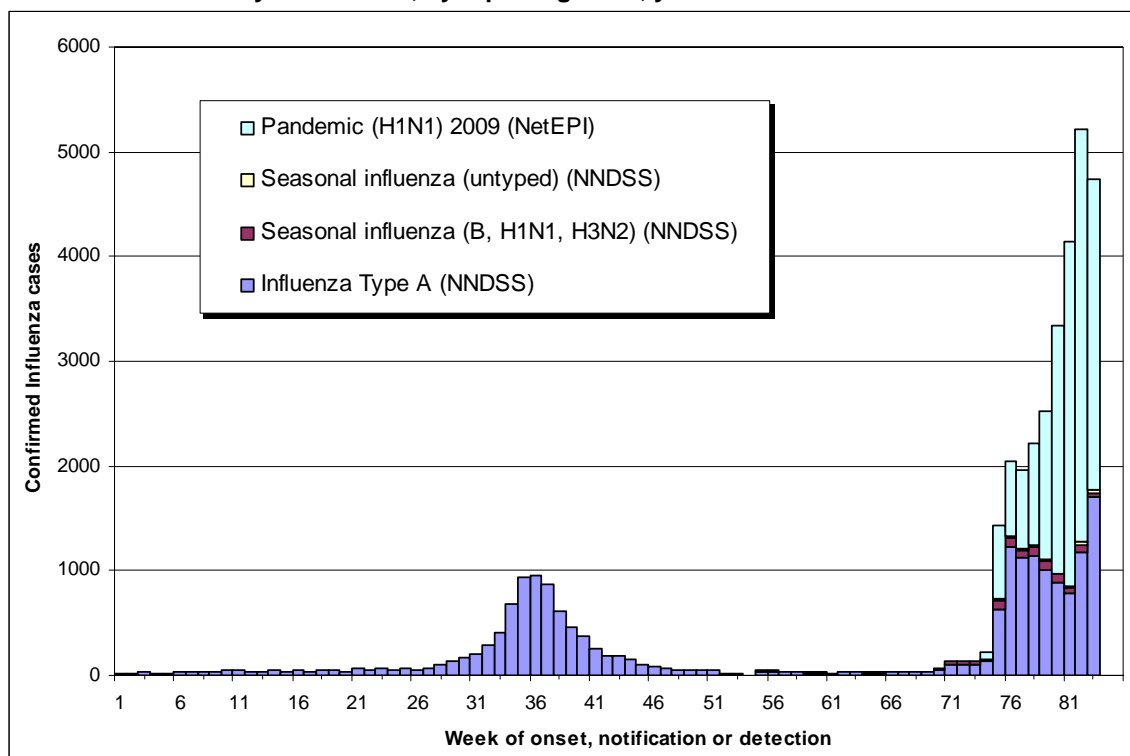
# 1. Influenza Activity in Australia

## Epidemiology of Influenza in Australia

As Figure 1 shows, influenza activity in 2009 started earlier than in 2008 and there was a rapid increase in the number of confirmed influenza cases (both seasonal and pandemic (H1N1) 2009 from week 21 (starting 16 May 2009). The high number of seasonal influenza seen during May and June are most likely due to the increase in testing for pandemic (H1N1) 2009.

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 will not reflect how many people in the community have acquired pandemic (H1N1) 2009 infection, but reflects the number of confirmed cases among those most at risk.

**Figure 1: Influenza activity in Australia, by reporting week, years 2008 and 2009\***



\* Data on pandemic (H1N1) 2009 cases is extracted from NetEPI; data on seasonal influenza is extracted from the NNDSS. A small number of pandemic (H1N1) 2009 notifications from several jurisdictions were reported in NNDSS as Influenza A. Delays in the reporting of data may cause data to change retrospectively.

Sources: NNDSS and NetEPI databases

## Proportion of pandemic (H1N1) 2009 to seasonal influenza

The proportion of pandemic (H1N1) 2009 to seasonal influenza varies across jurisdictions but has increased in recent weeks to be greater than that of seasonal influenza A. Recent reports from the National Influenza Centres (NICs) in New South Wales (57%, week ending 17 July), Victoria (90%, week ending 19 July), Western Australia (91%, week ending 26 July) and the Northern Territory (80%, week ending 26 July) showed that the average proportion of confirmed influenza in Australia which was pandemic (H1N1) 2009 was 80%.

Over the last two weeks, for the days on which surveillance testing was conducted, ASPREN GPs reported 112 people presenting with ILI. Of these, 64% (72/112) were tested for influenza. Forty-two

percent (30/72) of these cases were influenza positive; 83% (25/30) were pandemic (H1N1) 2009 10% (3/30) were influenza A unspecified, and the remaining 7% (2/30) were A/H1N1 and influenza B.

The proportion of pandemic (H1N1) 2009 compared with seasonal influenza in Australia is very similar to that reported by a number of other countries in both the Northern and Southern Hemispheres. Canada is reporting that pandemic (H1N1) 2009 represents 98.7% of all influenzas<sup>i</sup>, while Chile is reporting that 93% of the total circulating influenza viruses in people aged over 5 years are pandemic (H1N1) 2009<sup>ii</sup>. In New Zealand, pandemic (H1N1) 2009 represents 68% of influenza viruses reported from sentinel surveillance and 61% of influenza viruses reported in non-sentinel surveillance.<sup>iii</sup>

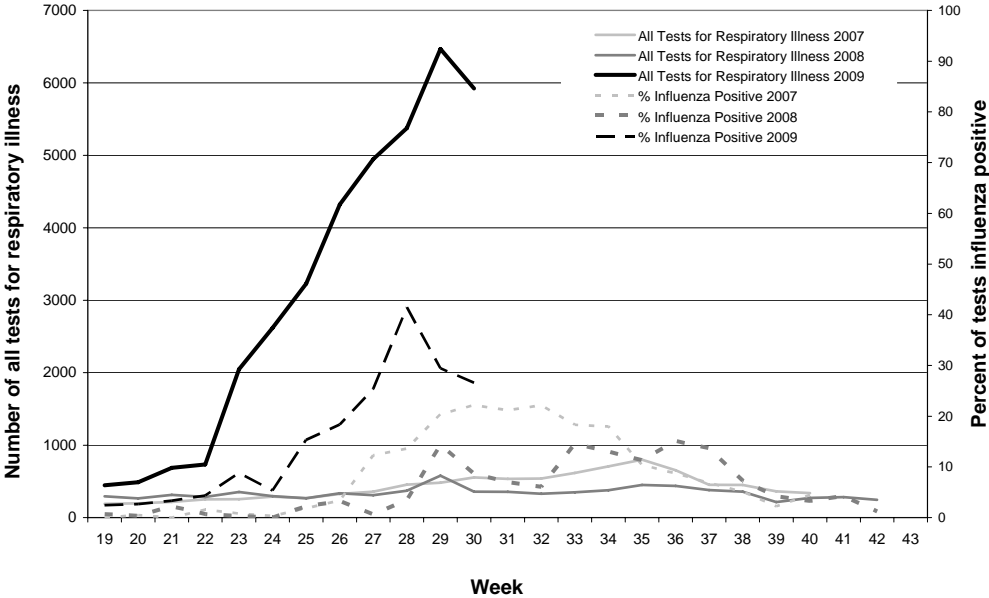
**2. Sentinel Data**

**Laboratory surveillance**

Influenza A was the most commonly detected respiratory viruses in sentinel laboratories in Victoria, South Australia and New South Wales. Respiratory syncytial virus (RSV) and picornavirus were also common.

In the week ending 17 July 2009, both the number of virology samples tested in New South Wales and the proportion of tests positive for influenza decreased. The proportion of tests positive for influenza is approximately 27% and is much higher than at the same time in 2007 and 2008 (Figure 2). The graph may be starting to reflect the expected decrease in testing as a result of the introduction of the PROTECT phase.

**Figure 2. Number of all tests for respiratory illness and percentage of tests positive for influenza, NSW, from 2007 to 17 July 2009**



SOURCE: NSW HEALTH 'NSW Influenza Surveillance Report'

The West Australian National Influenza Centre (NIC) reported that, for the week ending 26 July 2009, the proportion of tests positive for influenza was 39%.

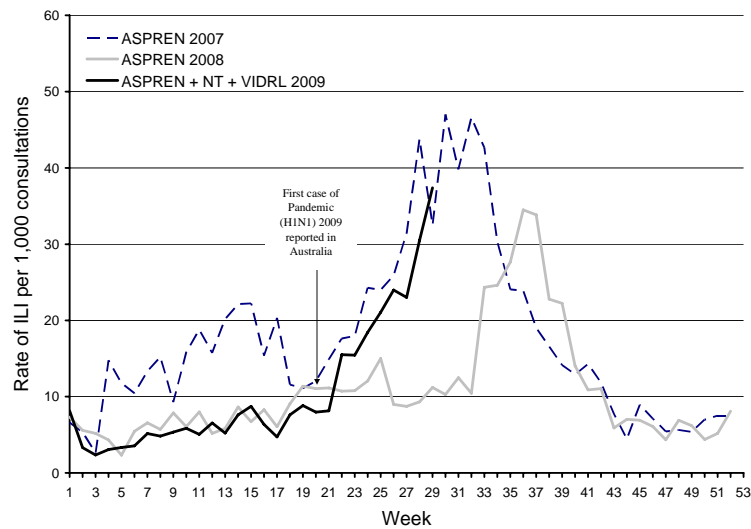
## Sentinel General Practice

Data available from the Australian Sentinel Practices Research Network (ASPREN), the Northern Territory GP surveillance system and VIDRL, up until 19 July 2009, show that, nationally, influenza like illness (ILI) consultation rates are comparable to levels seen in 2007 (Figure 3). In the last week, the presentation rate to sentinel GPs in Australia was approximately 37 cases per 1,000 patients seen.

Figure 4a does not include GPs from Victoria reporting to ASPREN or VIDRL. Consultation rates of ILI (excluding Victoria) are significantly higher than in 2007 and 2008, demonstrating the impact of the Victorian data. Table 4b shows that the ILI presentation rates may have peaked in Victoria, noting that reporting by VIDRL showed a small increase this reporting period.

As data from the Northern Territory and the VIDRL surveillance systems are combined with ASPREN data, rates may not be directly comparable across 2007, 2008 and 2009.

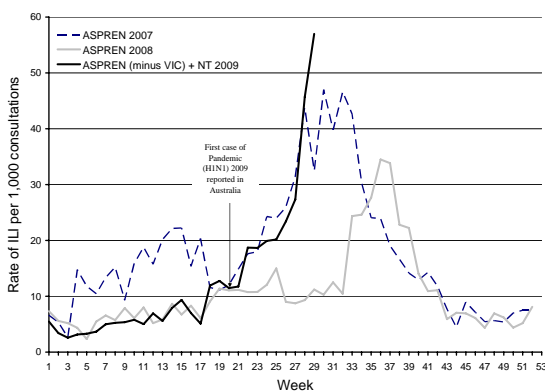
**Figure 3. Rate of ILI reported from GP ILI surveillance systems from 2007 to 19 July 2009 by week\***



\* Delays in the reporting of data may cause data to change retrospectively.

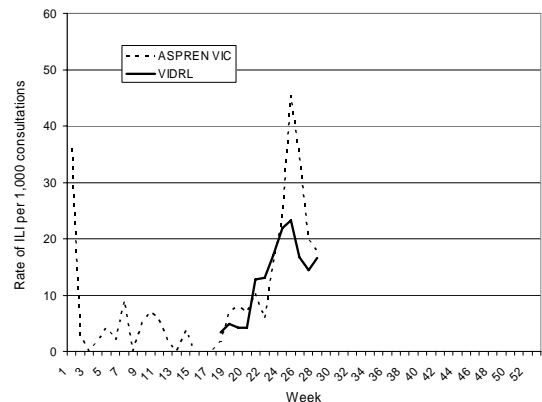
SOURCE: ASPREN, NT, VIDRL

**Figure 4a. Rate of ILI reported from ASPREN and NT (excluding VIC) from 2007 to 19 July 2009 by week**



SOURCE: ASPREN, NT

**Figure 4b. Rate of ILI reported from VIC GPs reporting to ASPREN and VIDRL up to 19 July 2009 by week**

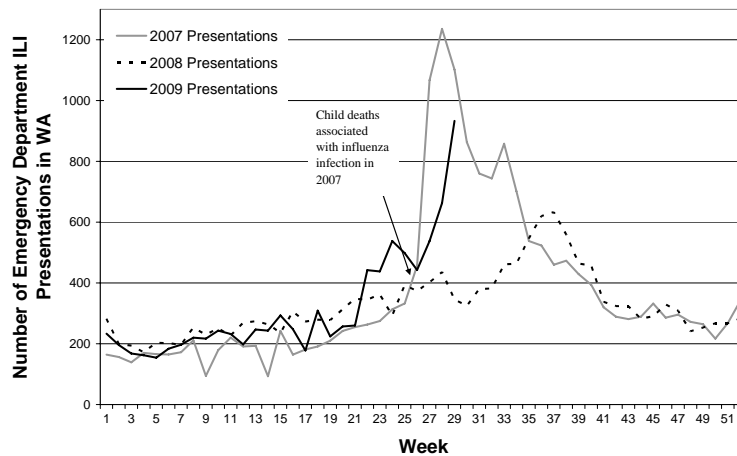


SOURCE: ASPREN (VIC) & VIDRL

## Emergency departments

The number of ILI presentations reported in Western Australia EDs has increased in the week ending 19 July 2009, but is lower than in 2007 (Figure 5). The number of persons presenting with respiratory viral illnesses increased in the week ending 19 July 2009 to its highest point this year. The proportion of ILI presentations admitted to hospital fell from 5.6% to 4.3%.

**Figure 5. Number of Emergency Department presentations due to ILI in Western Australia from 1 January 2007 to 19 July 2009 by week**

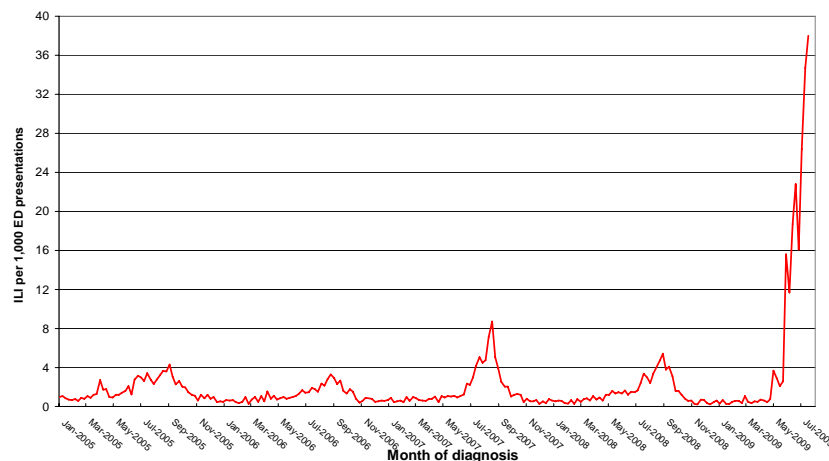


In early July 2007 (week 26), several deaths associated with influenza infection were reported in children from Western Australia. The public response to these deaths could account for the sudden increase in ILI presentations to Perth EDs in 2007.

SOURCE: WA 'Virus Watch' Report

In the week ending 17 July 2009, ILI presentations to New South Wales EDs continued to increase and are at the highest rate recorded since data became available (2002) (rate 38 per 1,000 presentations) (Figure 6). Presentations were mainly for mild illnesses and 8% of presentations with ILI were admitted.

**Figure 6. Rate of ILI diagnosed in people presenting to selected Emergency Departments, NSW 1 January 2005 to 17 July 2009 by month\***



\* Emergency department data are preliminary and may be updated in later weeks.

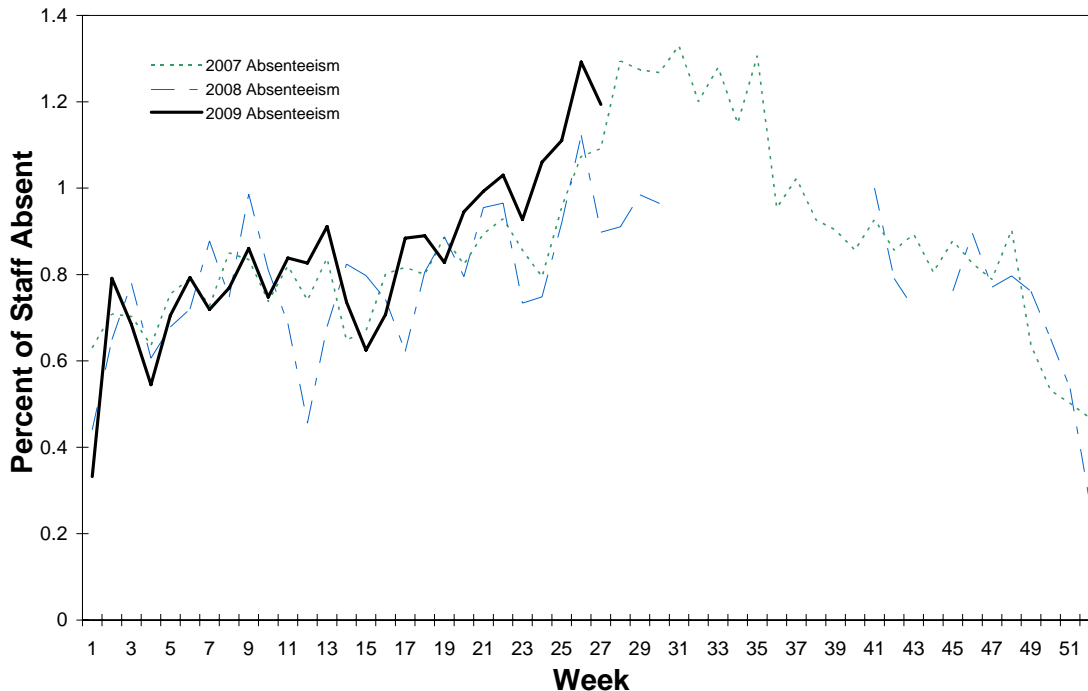
SOURCE: NSW HEALTH 'NSW Influenza Surveillance Report'

ILI presentations to South Australian EDs increased this reporting period from 170 to 180, while the number of admissions declined slightly from 8 to 7.

## Absenteeism

Absenteeism rates have decreased in the last week but are still higher than at the same time in 2007 and 2008 (Figure 7).

**Figure 7. Rates of absenteeism of greater than 3 days absent, National employer, 1 January 2007 to 8 July 2009, by week.**



SOURCE: Absenteeism data

## Paediatric hospital admissions

In the last week up to 23 July 2009, the APSU reported four notifications of children, aged 15 years and under, hospitalised with severe complications of influenza. Two had underlying conditions and all were discharged from hospital.

Since reporting began in 2009, 43 children have been reported as hospitalised with complications from influenza. Of the 32 cases for which data is available, the average age of children admitted to hospital was three years, with an age range from one month to 16 years. Complications were mostly pneumonia and encephalitis. Thirteen of the 24 (54%) cases for which data is available had underlying conditions.

## Mortality

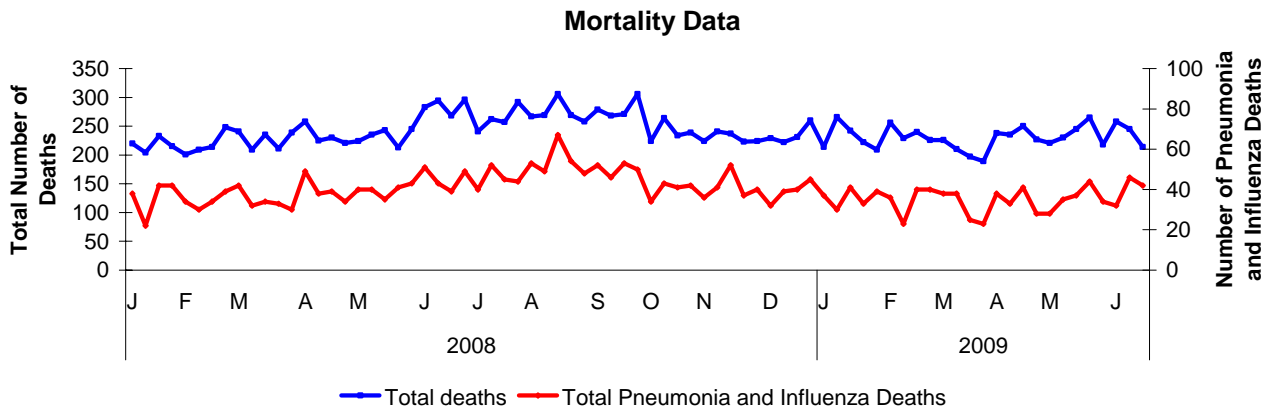
There are difficulties estimating the number of deaths due to influenza in Australia. Deaths coded as being due to laboratory confirmed influenza are known to underestimate the true number. Influenza may not be listed on the death certificate if it wasn't recognised as the underlying cause. Coding of pneumonia and influenza provides an additional measure, although this will overestimate the number of deaths, as it will include other causes of pneumonia.

The median number of annual deaths in Australia, for the years 2001 to 2006, from influenza and pneumonia is 3,089. Forty Australians who died had laboratory diagnosed influenza. In 2007 (the

latest year for which data has been released) there were 2,623 deaths attributed to influenza and pneumonia as the underlying cause of death. In 2007, influenza and pneumonia was the 13th leading cause of death in Australia (Source: ABS, Causes of Death 2007.). Mortality figures are likely to be an underestimate due to inherent difficulties in assigning causes of death and therefore appropriate ICD codes. ABS mortality data are released two years in arrears.

In Western Australia, in the final week of June, pneumonia and influenza deaths accounted for 19.6% of all deaths compared to 14.5% for the same time in 2008 (Figure 8).

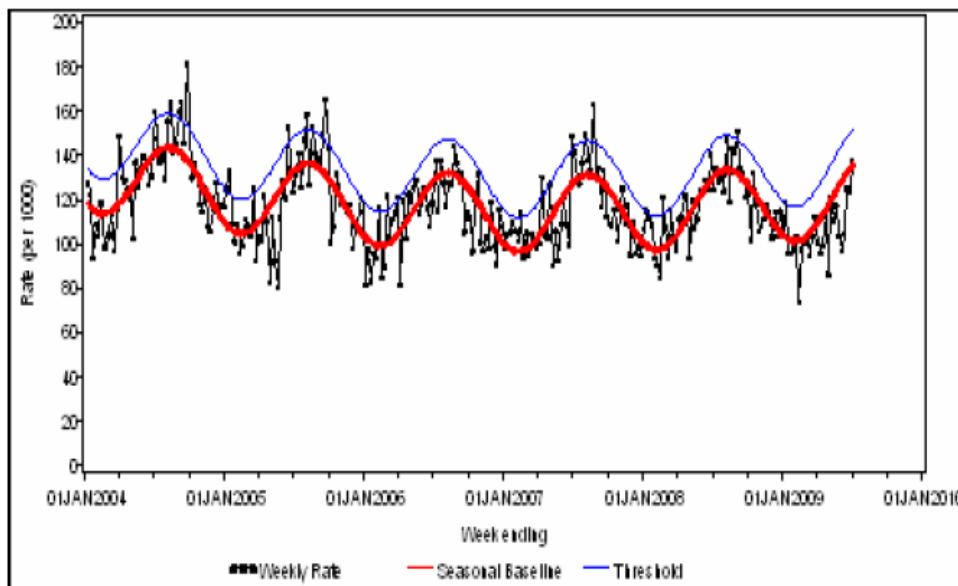
**Figure 8: Total number of deaths classified as influenza and pneumonia, WA Registry of Births, Deaths and Marriages, 1 January 2008 to 27 June 2009**



SOURCE: WA 'Virus Watch' Report

In NSW, death certificate data as of 3 July 2009 show that there were 138 influenza or pneumonia deaths per 1,000 deaths (13.8%) in NSW, which was below the expected seasonal threshold for this time of year of 151 per 1,000.

**Figure 9: Rates of deaths classified as influenza and pneumonia, NSW Registry of Births, Deaths and Marriages, 1 January 2004 to 3 July 2009**



SOURCE: NSW Health 'Weekly Influenza Epidemiology Report'

### 3. Pandemic (H1N1) 2009 activity in Australia

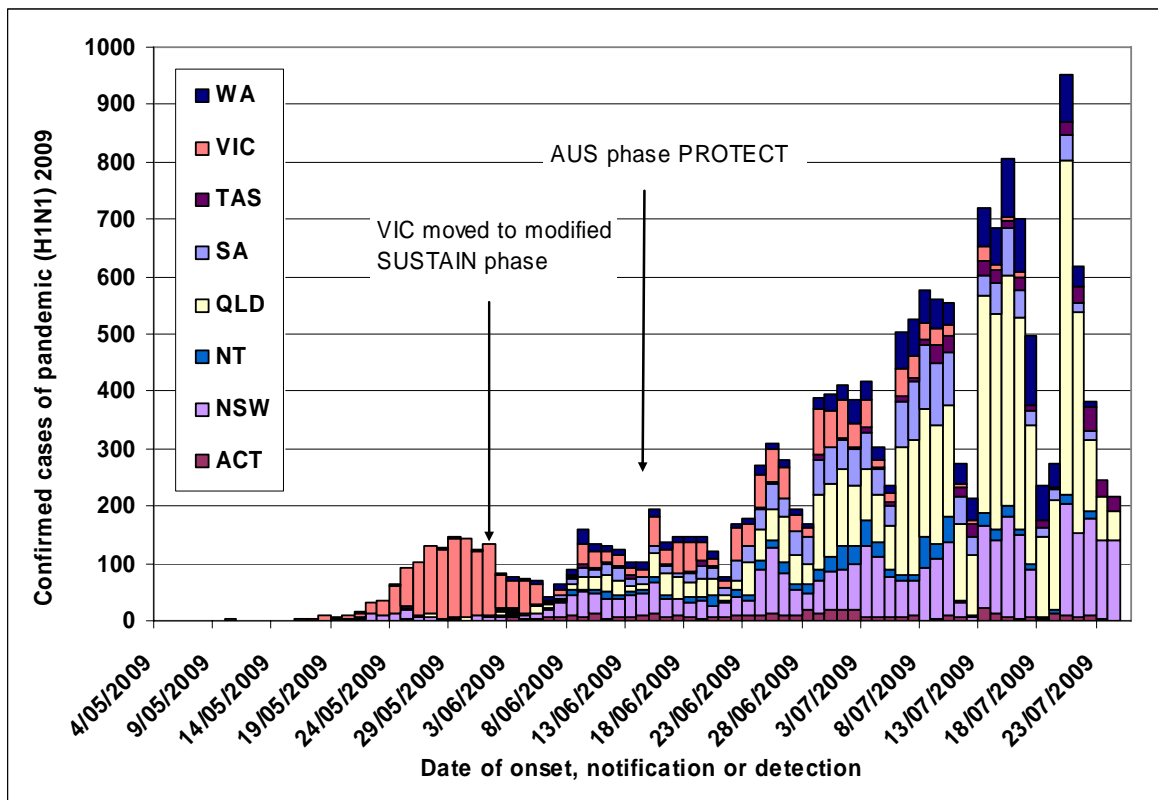
#### Epidemiology of H1N1 Influenza in Australia

As of 24 July 2009 there were 17,198 confirmed cases of pandemic (H1N1) 2009 in Australia, including 46 deaths. Since the PROTECT phase commenced on 17 June 2009 there have been 14,424 confirmed cases.

#### Distribution of cases over time

The national epidemic curve shows the jurisdictional distribution of confirmed cases of pandemic (H1N1) 2009 over time in Australia (Figure 8). The epidemic curve shows several peaks, however the pattern is a surveillance artefact due to a change in testing policy. The majority of earlier confirmed cases occurred in Victoria, where case reporting peaked in late May before declining rapidly in early June. This change was due to targeted laboratory testing implemented on 3 June 2009 as part of the modified SUSTAIN phase.

Figure 10. Laboratory confirmed cases of pandemic (H1N1) 2009 in Australia, to 24 July 2009 by jurisdiction



Source: NetEPI database

## Summary of cases

Table 1 provides a summary of notifications of confirmed cases, hospitalisations, deaths and proportion of pandemic (H1N1) notifications among all influenzas for each state and territory.

**Table 1. Summary of notifications confirmed cases, hospitalisations, deaths and influenzas by state and territory**

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
<b>Total pandemic (H1N1) 2009 notifications*</b>	415	3561	663	6158	1800	504	2464	1476	17198
<b>% of national pandemic (H1N1) 2009 notifications</b>	2.4%	20.7%	3.9%	35.8%	10.5%	2.9%	14.3%	8.6%	100%
<b>Age standardised rate per 100,000 population</b>	122.1	51.7	308.4	147.3	113.6	102	47.3	70.1	81.8
<b>Total proportion of pandemic (H1N1) 2009 notifications among all influenzas</b>	n/a	59%	80%	n/a	n/a	n/a	90%	91%	80%
<b>Total pandemic (H1N1) 2009 hospitalisations</b>	24	707	156	338	149	31	401	70	1876
<b>% of national pandemic (H1N1) 2009 hospitalisations</b>	1.3%	37.7%	8.3%	18.0%	7.9%	1.7%	21.4%	3.7%	100%
<b>Crude rate per 100,000 population</b>	7.0	10.1	70.9	7.9	9.3	6.2	7.6	3.2	8.8
<b>Total pandemic (H1N1) 2009 deaths</b>	0	17	3	4	4	2	15	1	46
<b>% of national pandemic (H1N1) 2009 deaths</b>	0.0%	37.0%	6.5%	8.7%	8.7%	4.3%	32.6%	2.2%	100%
<b>Crude rate per 100,000 population</b>	0.0	0.2	1.4	0.1	0.2	0.4	0.3	0.0	0.2
<b>% of Australian population</b>	1.6%	32.6%	1.0%	20.0%	7.5%	2.3%	24.8%	10.1%	100%

\*157 confirmed cases do not have a state identifier

Source: NetEPI database, Jurisdictions, National Influenza Centres

## Severe cases and hospitalisations of pandemic (H1N1) 2009, in Australia

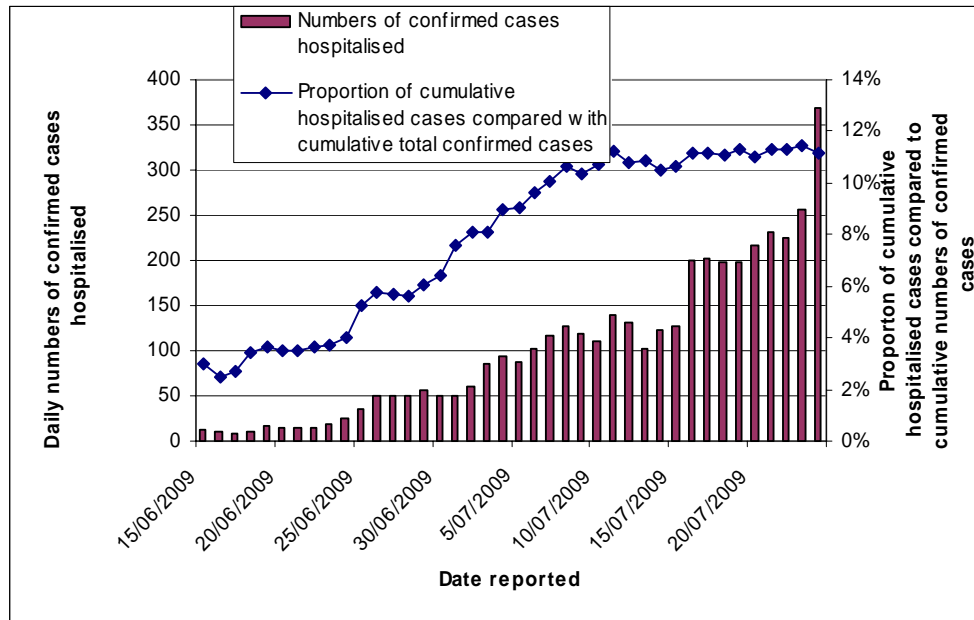
As of 24 July 2009, the jurisdictions have reported that 1,876 confirmed cases of pandemic (H1N1) 2009 have been hospitalised, this will include people who are hospitalized for co-morbidities. The number of cases per day requiring hospitalisation has been increasing since mid June and 544 additional cases have been hospitalised over the last week.<sup>1</sup>

Indigenous Australians are approximately 5 times more likely than non-Indigenous Australians to be hospitalised for pandemic (H1N1) 2009. The states and territories have reported that 195 (10%) of all 1,876 cases hospitalised since the beginning of the outbreak were Aboriginal and/or Torres Strait Islander.

The proportion of cumulative cases requiring hospitalisation compared with the total number of confirmed cases increased from 3% on 15 June 2009 to an average of 11% since 8 July 2009. This figure has remained constant for the last couple of weeks and reflects the change to the response phase PROTECT where laboratory testing is directed towards people with moderate or severe illness or those more vulnerable to severe illness who are more likely to require hospitalization (Figure 11).

For comparative purposes, for the period 2000-01 to 2006-07, an average of 1,925 people with influenza were admitted to hospital each year. For all influenzas<sup>2</sup> and pneumonias<sup>3</sup>, for the same period, an average of 73,271 people were admitted to hospital.<sup>4</sup>

**Figure 11. Hospitalisations of pandemic (H1N1) 2009 and proportion of cumulative hospitalised cases compared with cumulative number of cases, 15 June 2009 to 24 July 2009, Australia**



\*The jurisdictions report directly to the National Incident Room, Commonwealth Department of Health and Ageing, on hospitalisations and numbers admitted to ICUs.

Source: Jurisdictions

<sup>1</sup> The numbers hospitalised should be treated with caution as there may be case ascertainment bias in the reporting of confirmed cases being hospitalized. All paediatric cases admitted to hospital are being tested for pandemic (H1N1) 2009 while not all adults are tested. There may be a significant underestimation of the numbers of adults hospitalized from pandemic (H1N1) 2009 due to limited testing.

<sup>2</sup> ICD10-AM codes J10, J11

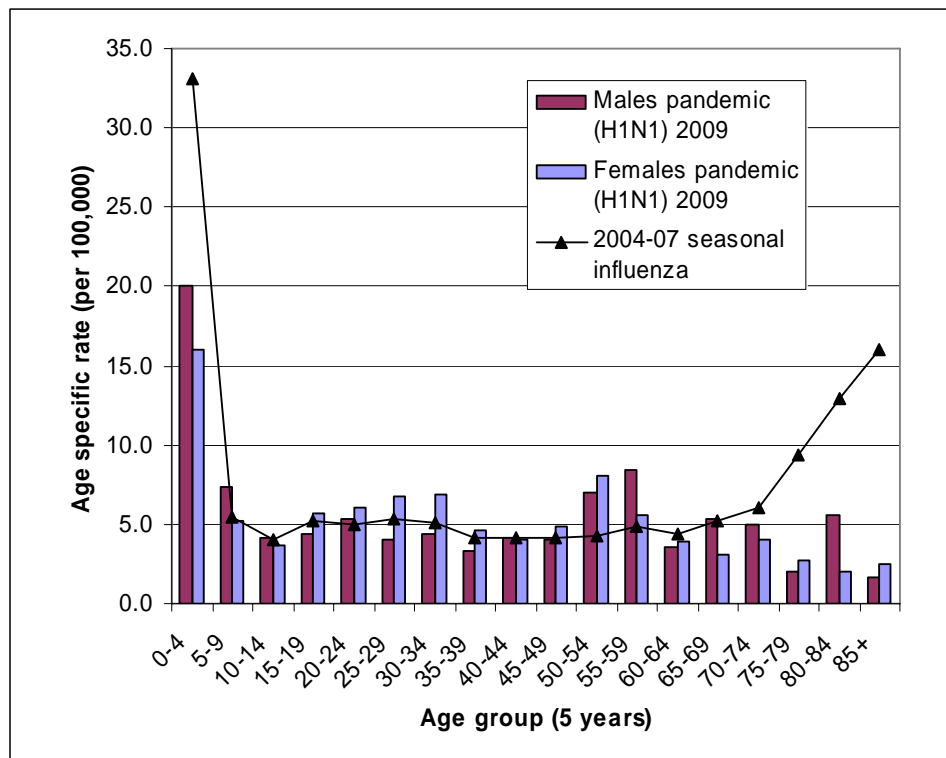
<sup>3</sup> ICD10-AM codes J12-J18

## Age and sex distribution of hospitalised confirmed cases

Limited further information is available for 1,260 (67%) of the 1,876 hospitalised confirmed cases. Of these cases, the highest hospitalisation rates are in males aged less than 5 years of age (20 per 100,000 population). Figure 12 illustrates that the age distribution of hospitalized cases of pandemic (H1N1) 2009 is different to previous influenza seasons. Young children aged less than 5 years of age continue to be hospitalised at a higher rate than other age groups but for pandemic (H1N1) 2009 there is a peak in the 50 to 60 years age group and a marked decrease in those aged more than 75 years.

As a comparison with hospitalised confirmed cases in the United Kingdom (n=840) to 23 July 2009, identical proportions have been hospitalised in those aged less than 5 years of age (20%); Australia has higher proportions in the 16-64 year age group (61% compared with 52%); and only 8% of Australian hospitalised cases are aged 65+ years compared with 18% in the United Kingdom.

**Figure 12. Age specific rates of hospitalised confirmed cases of pandemic (H1N1) 2009 to 24 July 2009, compared with average annual age specific rates of hospitalisations from seasonal influenza 2004-05 to 2006-07\*, Australia**



\*The rates for pandemic (H1N1) 2009 are for a six week period 15 June to 24 July 2009 whereas the rates for seasonal influenza are averaged annual rates (i.e. for a full influenza season).

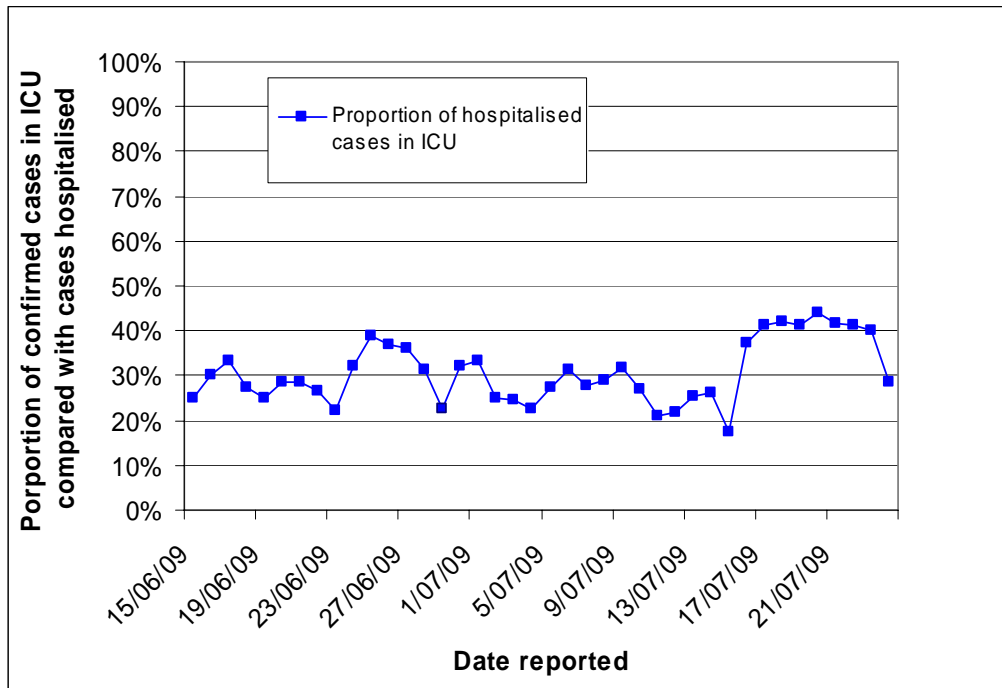
Source: NETEPI database

## Confirmed cases requiring intensive care

In Week 30 (week ending 24 July 2009), an average of 94 hospitalised cases required intensive care on any given day. This was more than double the previous week where an average of 42

cases required intensive care on any given day<sup>4</sup>. The length of stay in an ICU will differ depending on the severity of a particular case. Over the last week, the average proportion of hospitalised cases in an ICU<sup>5</sup> on any day was 40% (Figure 13). This is much higher than figures from the United Kingdom for 22 July 2009 where 8% of hospitalised cases required critical care beds<sup>5</sup>.

**Figure 13. Proportion of hospitalised pandemic (H1N1) 2009 confirmed cases admitted to ICU compared with cases hospitalised\*, 15 June 2009 to 24 July 2009, Australia**



\*The jurisdictions report directly to the National Incident Room, Commonwealth Department of Health and Ageing, on hospitalisations and numbers admitted to ICUs.

Source: Jurisdictions

## Deaths

Forty six people in Australia<sup>6</sup> with confirmed pandemic (H1N1) 2009 infection died between 19 June 2009 and 24 July 2009, with 15 reported in Victoria, 17 in New South Wales, four in both South Australia and Queensland, three in the Northern Territory, two in Tasmania and one in Western Australia. Further information was available on 45 of the 46 deaths. The median age of confirmed cases that died was 51 years (range 3-86 years of age). As illustrated in Figure 14, the majority of deaths have occurred in confirmed cases aged between 25 to 75 years of age. Sixty four percent (n=29) of deaths were in males. The age pattern of deaths is very different to the age pattern of all notifications. Reports from the jurisdictions in Australia indicate that most of the cases had underlying medical conditions; including cancer, diabetes mellitus and morbid obesity.

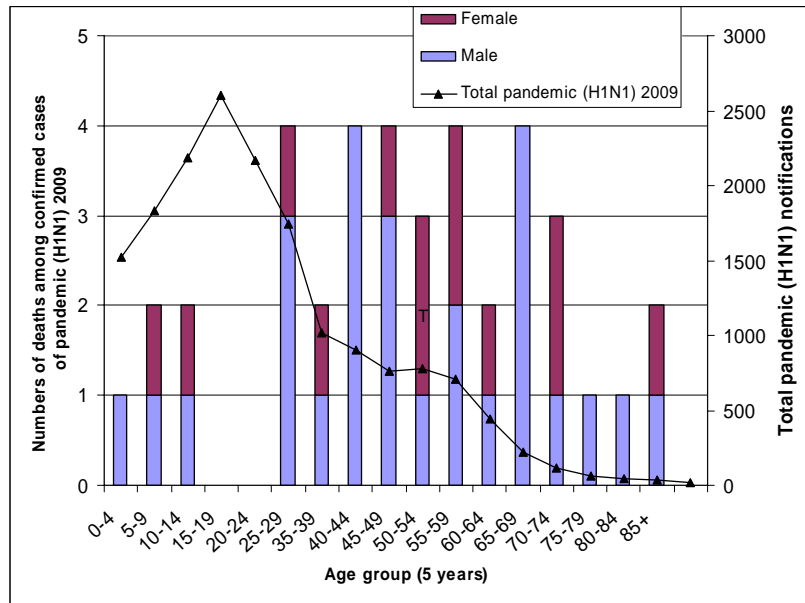
This age and sex distribution of Australian deaths is very similar to that reported in Chile, where 68% of deaths (n=79) are in males and the median age is 46 years<sup>6</sup>. Fifty three percent of deaths in Chile had co-morbidities. Canada reported that the median age for deaths (n=49) was 52 years and 61% were females.<sup>7</sup>

<sup>4</sup> This does not represent the number of new cases requiring admittance to an Intensive Care Unit (ICU) but is a repeated measure of the prevalence of confirmed cases in an ICU on a particular day.

<sup>5</sup> Most cases admitted to an ICU would be ventilated.

<sup>6</sup> For the most recent figures on hospitalisations and deaths please access the latest Situation Report at <http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/updates>

**Figure 14. Numbers of deaths among confirmed cases of pandemic (H1N1) 2009, by age group and sex, compared with total pandemic (H1N1) 2009 notifications by age group, to 24 July 2009, Australia**



Source: NETEPI database

## 4. Seasonal Influenza Activity in Australia

### Laboratory Confirmed Influenza

While total influenza activity in NNDSS in 2009 is 10.6 times higher than the 5-year weekly rolling mean, it is not possible to determine accurately the number of notifications due to seasonal influenza.

Increasingly, not all influenza viruses are subtyped and the large proportion of influenza A (10,803 notifications) reported to NNDSS could be either pandemic (H1N1) 2009 or seasonal influenza. Laboratory reports in recent weeks estimate that 80% of all influenza positive tests are due to pandemic (H1N1) 2009 but this has varied since the start of the pandemic.

Of those Type A notifications for which there is subtyping information in NNDSS, 1.6% (171) are seasonal H1N1 and 3.6% (391) are H3N2.

Of subtyped notifications reported in NNDSS, ACT, NT, TAS, VIC and WA reported a higher proportion of influenza A(H3N2) than influenza A(H1N1). NSW and QLD reported higher proportions of influenza A(H1N1) and SA had no subtyping data (Table 2).

**Table 2. Number of laboratory-confirmed influenza notifications not identified as pandemic influenza, by type and subtype, by jurisdiction, NNDSS, 1 January 2009 to 24 July 2009**

<b>State</b>	<b>A</b>	<b>H1N1</b>	<b>H3N2</b>	<b>B</b>
ACT	239	0	13	12
NSW	1,170	58	11	130
NT	93	27	258	6
QLD	4,034	71	67	119
SA	1,068	nd	nd	17
TAS	179	14	28	0
VIC	3,644	1	7	15
WA	376	0	7	43
<b>AUS</b>	<b>10,803</b>	<b>171</b>	<b>391</b>	<b>342</b>

nd = no subtyping data

Source: NNDSS

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## 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. Please note, the pandemic (H1N1) 2009 and seasonal influenza elements of this report are based on data available as at 27 July 2009. 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).*

### **NetEpi**

All jurisdictions except QLD are reporting pandemic (H1N1) 2009 cases using NetEpi, a web-based outbreak case reporting system. Data from jurisdictional systems are being imported into NetEpi by VIC, NSW and WA, the remainder are entering directly into NetEpi. Qld ceased reporting into NetEpi on 6 July 2009.

Analyses of Australian cases are based on clinical onset date, if this information is available. Where an onset date is not available, notification date has been used. Victorian cases use a calculated onset date which is the earliest available date calculated from specimen date, onset date, notification date or detection date. This assumption was made for all calculations and data on which the figures are based.

### **State and Territory reporting**

The jurisdictions report directly to the National Incident Room, Commonwealth Department of Health and Ageing, on hospitalisations, numbers admitted to ICUs and deaths.

### **National Notifiable Diseases Surveillance System (NNDSS)**

NNDSS comprises of notifications from jurisdictions of laboratory-confirmed influenza cases. Laboratory confirmed influenza is notifiable in all jurisdictions in Australia. Confirmed pandemic (H1N1) 2009 cases are being received from all jurisdictions through NNDSS except for Victoria and New South Wales. The Northern Territory and Tasmania are currently unable to distinguish between seasonal and pandemic (H1N1) 2009 cases and are reported as Influenza A.

### **Laboratory Surveillance data**

Laboratory testing data are extracted from the 'NSW Influenza Report,' 'The 2009 Victorian Influenza Vaccine Effectiveness Audit Report' (VIDRL) and the 'South Australian Seasonal Influenza Report'. These reports are provided weekly.

### **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 influenza-like-illness (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 2009 may be different from that of previous years. ASPREN data are sent to the Surveillance Branch on a weekly basis. Northern Territory GP surveillance data are sent to the Surveillance Branch on a weekly basis. VIDRL influenza surveillance data are sent to the Surveillance Branch on a weekly basis.

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A new testing protocol introduced through ASPREN requires GPs to test all patients presenting with an ILI on one day of the week. These data should provide a cross section of age, sex and severity of patients who seek GP assistance for ILI. This system is in the early stages of implementation and will be further developed over coming weeks.

#### **Sentinel Emergency Department (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 8 Perth Emergency Departments (EDs).

NSW - ED surveillance data are extracted from the 'NSW Influenza Surveillance Report'. This report is provided weekly. The New South Wales Influenza Surveillance Program collects data from 49 EDs across New South Wales.

SA – ED surveillance data are extracted from the 'South Australian Seasonal Influenza Report'. This report is provided weekly. The South Australian Influenza Surveillance Program collects data from 4 EDs in South Australia.

#### **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.

#### **Mortality data**

Mortality data are extracted from the NSW Health 'Weekly Influenza Epidemiology Report' and the WA 'Virus Watch' Report.

#### **Paediatric hospital admissions data**

Reports of ICU admissions are provided to the Surveillance Branch on a weekly basis by the Australian Paediatric Surveillance Unit. APSU conducts surveillance of severe complications of influenza in children aged 15 years and under. Surveillance began on 1 June 2009.

## **References**

<sup>1</sup> Canada Public Health Agency, Flu Watch: <http://www.phac-aspc.gc.ca/fluwatch/08-09/>. Accessed 17 July 2009.

<sup>2</sup> Sociedad Chilena de Infectologia. Available at <http://www.sochinf.cl/sitio/>. Accessed 30 July 2009.

<sup>3</sup> New Zealand Public Health Surveillance, Influenza Weekly Updates. Available at: [http://www.surv.esr.cri.nz/virology/influenza\\_weekly\\_update.php](http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php). Accessed 30 July 2009.

<sup>4</sup> Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database. Available at: <http://www.aihw.gov.au/hospitals/datacubes/index.cfm>

<sup>5</sup> Letter 'Pandemic Flu Service' from CMO, 23 July 2009. UK Department of Health.

<sup>6</sup> Chile Ministry of Health, Weekly report on Influenza A(H1N1) Available from : <http://www.redsalud.gov.cl/minsaludios/reporte21julio.pdf> Accessed on 28 July 2009.

<sup>7</sup> Canada Public Health Agency, Flu Watch: <http://www.phac-aspc.gc.ca/fluwatch/08-09/>. Accessed 17 July 2009.