SUMMARY

- Nationally, influenza activity continued to decrease this fortnight with no regions reporting widespread activity.
- As at 10 October 2014, there have been 62,918 cases of laboratory confirmed influenza reported, which is almost three times the notifications received for the same period in 2013.
- Over the 2013-14 interseasonal period, higher than usual numbers of influenza notifications were reported from most jurisdictions. Rates of interseasonal influenza have been generally increasing since the 2009 influenza pandemic. Notification data trends for 2014, show a sharp increase in mid-July, a peak in mid-August followed by a rapid decline to interseasonal levels in early October. Overall influenza activity remained elevated for approximately 12 weeks. Nationally, the timing of the season peak was similar to 2013 and 2011.
- Across jurisdictions, influenza activity peaked in mid to late August and was followed by rapid declines. However in South Australia (SA) and Victoria (Vic), there was sustained peak activity for up to five weeks. While the majority of notifications this year were from New South Wales (NSW) (31%) and Queensland (Qld)(27%), two of the most populous jurisdictions, notification rates were highest in SA.
- Nationally influenza A was the predominant influenza virus type, however the distribution of influenza types and subtypes was variable between jurisdictions and changed as the season progressed. Influenza A(H1N1)pdm09 predominated across most jurisdictions throughout the season, however influenza A(H3N2) was predominant in New South Wales and the Australian Capital Territory*, with late season increases noted in Qld, Western Australia (WA), the Northern Territory (NT) and Tasmania (Tas). In recent weeks, the typical, late season increase in influenza B infections has also been noted.
- Notification rates have had a bimodal age distribution trend, with rates highest in those aged less than 5 years and in those aged 80 years and over, with a smaller peak among those aged 30-44 years. This age distribution trend, especially in the younger to middle aged populations is consistent with previous years dominated by influenza A(H1N1)pdm09, whereas infections in older age groups is typical of influenza A(H3N2).
- The rate of influenza associated hospitalisations has declined steadily over the past month. The overall rate of influenza cases admitted directly to ICU was 10% which was less than the rate from 2012 and 2013 (around 12%). The majority of influenza associated hospitalisations in 2014 were due to influenza A infections, with very few associated with influenza B infection. Three quarters of hospitalisations had known medical co-morbidities reported. In Australia it has been estimated that there have been over 8,500 adult influenza-associated hospitalisations since April 2014. The age distribution of hospital admissions shows a peak in the 0-4 year age group, with hospitalisations increasing with increasing age, especially among those aged 65 years and over.
- The severity of the 2014 influenza season was moderate across most jurisdictions. However, more severe activity was noted in NSW, where influenza A(H3N2) circulated at higher levels and affected people in older age-groups, which has led to a substantial number of outbreaks in aged care facilities.
- The WHO has reported that the southern hemisphere influenza season seems to be coming to an end, with areas of high activity persisting in Oceania. Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

* These subtyped ACT influenza cases have been reported as A(H3). Based on nationally available subtyping and characterisation data, these cases are assumed to be A(H3N2).
The Australian Influenza Vaccine Committee (AIVC) agreed to adopt the WHO recommendations for the composition of the 2015 southern hemisphere influenza season vaccine.

This will be the final Australian Influenza Surveillance Report for 2014, unless unusual activity becomes apparent over the summer months.

Figure 1. Notifications of laboratory confirmed influenza, Australia, 1 January 2009 to 10 October 2014, by week.

![Notifications of Laboratory Confirmed Influenza](source: NNDSS)

KEY INDICATORS

Influenza activity and severity in the community is monitored using the following indicators and surveillance systems:

<table>
<thead>
<tr>
<th>Is the situation changing?</th>
<th>Indicated by trends in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>laboratory confirmed cases reported to the National Notifiable Diseases Surveillance System (NNDSS);</td>
</tr>
<tr>
<td></td>
<td>influenza associated hospitalisations;</td>
</tr>
<tr>
<td></td>
<td>emergency department (ED) presentations for influenza-like illness (ILI);</td>
</tr>
<tr>
<td></td>
<td>general practitioner (GP) consultations for ILI;</td>
</tr>
<tr>
<td></td>
<td>ILI-related call centre calls and community level surveys of ILI; and</td>
</tr>
<tr>
<td></td>
<td>sentinel laboratory test results.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How severe is the disease, and is severity changing?</th>
<th>Indicated by trends in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hospitalisations, intensive care unit (ICU) admissions and deaths; and</td>
</tr>
<tr>
<td></td>
<td>clinical severity in hospitalised cases and ICU admissions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is the virus changing?</th>
<th>Indicated by trends in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>drug resistance; and</td>
</tr>
<tr>
<td></td>
<td>antigenic drift or shift of the circulating viruses.</td>
</tr>
</tbody>
</table>

1. Geographic Spread of Influenza Activity in Australia

In the fortnight ending 10 October 2014, influenza activity was reported as stable or declining across all regions. The geographic spread of influenza activity reported by state and territory health departments was ‘regional’ in Tasmania (Tas), South Australia (SA), metropolitan Perth and the central region of the Northern Territory (NT); ‘localised’ in New South Wales (NSW), the Australian Capital territory (ACT), the Top End region of the NT and the Pilbara/Kimberley and the country-south regions of Western Australia; and ‘sporadic’ in Queensland (Qld) and Victoria (Vic). No ILI activity was reported from syndromic surveillance systems.
2. Influenza-like Illness Activity

Community Level Surveillance

FluTracking

FluTracking, a national online system for collecting data on ILI in the community, indicated that in the week ending 12 October 2014, fever and cough continued to decrease and was reported by 1.7% of vaccinated participants and 1.3% of unvaccinated participants. Similarly, rates of fever, cough and absence from normal duties reduced during the period and was reported by 0.9% of vaccinated participants and 0.6% of unvaccinated participants. Rates of fever and cough among participants this year have peaked close to the peak rate observed in 2012. Currently activity has returned to levels that are within the range for this time of year (figure 3). In the week ending 12 October 2014, 59% of participants reported having received the 2014 influenza vaccine which is similar to the corresponding period in 2013.

Figure 3. Proportion of fever and cough among FluTracking participants, between May and October, 2010 to 2014, by week.
National Health Call Centre Network

The number and proportion of ILI-related calls to the National Health Call Centre Network (NHCCN) reached an extended seasonal peak during the middle of August. This year’s peak call rate occurred later than in recent years and was above the peak observed in 2013, but below the 2012 peak. Following the peak, ILI-related call activity has steadily declined and remains within the range reported in previous years (figure 4).

Figure 4. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2010 to 12 October 2014, by week.

Sentinel General Practice Surveillance

In the fortnight ending 12 October 2014, the sentinel general practitioner ILI consultation rate continued to decrease. The rate of ILI consultations had a sustained peak during August, which was similar to the peak levels observed in 2012. Currently, the rate of ILI consultations is within the interseasonal range (figure 5).

Figure 5. Weekly rate of ILI reported from GP ILI surveillance systems, 1 January 2010 to 12 October 2014, by week.
In the fortnight ending 12 October 2014, specimens were collected from around 23% of Australian Sentinel Practices Research Network (ASPREN) general practitioner ILI patients. Of these patients, 18% were positive for influenza, compared with 23% in the previous fortnight. Influenza B viruses are the predominant subtype for the first time this year (figure 6 and table 1). The proportion of ILI patients positive for other respiratory viruses increased slightly to 21%, with human metapneumovirus and rhinovirus detected most commonly.

**Table 1.** ASPREN laboratory respiratory viral test results of ILI consultations, 1 January to 12 October 2014.

<table>
<thead>
<tr>
<th></th>
<th>Fortnight (29 September – 12 October 2014)</th>
<th>YTD (1 January – 12 October 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total specimens tested</td>
<td>62</td>
<td>2833</td>
</tr>
<tr>
<td>Total Influenza Positive (%)</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Influenza A (%)</td>
<td>6.5</td>
<td>23</td>
</tr>
<tr>
<td>A (H1N1) pdm09 (%)</td>
<td>3.2</td>
<td>12</td>
</tr>
<tr>
<td>A (H3N2) (%)</td>
<td>1.6</td>
<td>10</td>
</tr>
<tr>
<td>A (unsubtyped) (%)</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Influenza B (%)</td>
<td>11</td>
<td>3.7</td>
</tr>
<tr>
<td>Other Resp. Viruses (%)*</td>
<td>21</td>
<td>28</td>
</tr>
</tbody>
</table>

* Other respiratory viruses include human metapneumovirus, RSV, parainfluenza, adenovirus and rhinovirus.

Figure 6. Proportion of respiratory viral tests positive for influenza in ASPREN ILI patients and ASPREN ILI consultation rate, 1 January to 12 October 2014, by week.

**Sentinel Emergency Department Surveillance**

**Western Australia Emergency Departments**

The rate of viral respiratory presentations to WA emergency departments decreased this week and is currently within the mid-range of values observed in recent years. The apparent peak for the season extended from mid-July through to late August, with overall activity similar to previous years and below the peak of activity observed during 2012 (figure 7).
New South Wales Emergency Departments

In the week ending 12 October 2014, the number and proportion of ILI presentations to NSW emergency departments continued to decrease and have returned to within the usual range for this time of year (figure 8). ILI and pneumonia admissions to critical care wards also decreased and are currently within the usual range for this time of year.

The NSW emergency department surveillance system uses a statistic called the ‘index of increase’ to indicate when ILI presentations are increasing at a statistically significant rate. An index value greater than 15 suggests that influenza is circulating widely in the NSW community. The index crossed the season threshold of 15 on 1 July 2014, and peaked at 50.7 in the week ending 13 August 2014. Currently this index is 4.2, which is below the seasonal activity threshold. Rates of ILI presentations to NSW emergency departments peaked at levels much higher than those observed in recent years.
Northern Territory Emergency Departments

The rate of ILI presentations to NT emergency departments peaked at 134 ILI cases per 1,000 ED presentations in the week ending 6 September and in the most recent week increased slightly to 83 ILI cases per 1,000 ED presentations. The rate of ILI presentations since July have been similar to the trend observed in 2011 (figure 9).

Figure 9. Rate of influenza-like illness presentations to Northern Territory emergency departments, 1 January 2010 to 11 October 2014, by week.

Source: Centre for Disease Control, Department of Health, Northern Territory Government
3. Laboratory Confirmed Influenza Activity

Notifications of Influenza to Health Departments

For the year to date to 10 October, there were 62,918 laboratory confirmed notifications of influenza: 19,887 in NSW; 16,755 in Qld; 9,923 in SA; 8,958 in Vic; 4,756 in WA; 1,167 in the ACT; 735 in the NT and 637 in Tas.

The 2014 seasonal rise in notifications appears to have started in mid-June 2014 and peaked during the week ending 22 August 2014. The majority of notifications this year have been from NSW (31%) and Qld (27%), two of the most populous jurisdictions; however notifications rates have been highest in SA (594 per 100,000 population). Conversely, notification rates were lowest in Tas, Vic and WA (124, 156 and 189 per 100,000 population).

In the fortnight ending 10 October 2014 there were 2,576 notifications reported to the NNDSS (figure 10). Qld (731), SA (700) and NSW (431), and together contributed approximately three-quarters (72%) of notifications this fortnight, followed by Vic (386), WA (225), ACT (36), NT (36) and Tas (31). A weekly breakdown of notification trends by jurisdiction shows that influenza notifications continue to decline steadily across all jurisdictions (figure 11).

Figure 10. Notifications of laboratory confirmed influenza, Australia, 1 January to 10 October 2014, by state or territory and week.

Source: NNDSS
So far in 2014, notification rates have had a bimodal age distribution trend, with rates highest in those aged less than 5 years and in those aged 80 years and over, with a smaller peak among those aged 30-44 years. This age distribution trend, especially in the younger to middle aged populations is consistent with previous years dominated by influenza A(H1N1)pdm09, whereas infections in older age groups is typical of influenza A(H3N2).

Figure 12. Rates for laboratory confirmed influenza, 1 January to 10 October 2014, by subtype* and age group.

Source: NNDSS

* No subtype data available for Vic for this report period.
Of the 2,576 influenza notifications reported to the NNDSS this reporting period, 75% were influenza A (66% A(unsubtyped), 5% A(H3N2) and 4% A(H1N1)pdm09), 19% were influenza B and 6% were untyped or influenza A&B co-infections (figure 13).

The distribution of the influenza virus types and subtypes has been variable between jurisdictions. Throughout the season, influenza A was predominant, with increasing proportions of influenza B noted towards the end of the season. Of the influenza A viruses where subtyping data were available, influenza A(H1N1)pdm09 predominated across most jurisdictions throughout the season. However influenza A(H3N2) was predominant in NSW and the ACT\(^1\) throughout the season, with increases evident in Qld, WA the NT and Tas in recent weeks.

For the calendar year to 10 October 2014, 89% of cases were reported as influenza A (70% A(unsubtyped), 11% A(H1N1)pdm09 and 8% A(H3N2)) and 11% were influenza B. Less than 1% were reported as either influenza A&B co-infections, influenza type C or were untyped (figure 13).

Figure 13. Notifications of laboratory confirmed influenza, Australia, 1 January to 10 October 2014, by sub-type* and week.

![Graph showing influenza notifications by subtype and week](image)

Source: NNDSS

* No subtype data were available for Victoria for this period.

**Sentinel Laboratory Surveillance**

Results from sentinel laboratory surveillance systems for this reporting period show that approximately 12% of the respiratory viral tests conducted over this period were positive for influenza (table 2). Influenza A was the most common type, with the proportion of A(H3N2) exceeding that of A(H1N1)pdm09 for the first time this year (figure 14). Influenza remained the most commonly detected respiratory virus overall. Influenza virus subtyping data was not available for NSW for this reporting period.

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\(^1\) Subtyped ACT influenza cases are notified as A(H3). These cases are assumed to be A(H3N2) based on national subtyping and virus characterisation data.
Table 2. Sentinel laboratory respiratory virus testing results, 27 September to 10 October 2014.

<table>
<thead>
<tr>
<th></th>
<th>NSW NIC</th>
<th>WA NIC</th>
<th>VIC NIC</th>
<th>TAS (PCR testing data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total specimens tested</td>
<td>410</td>
<td>925</td>
<td>240</td>
<td>167</td>
</tr>
<tr>
<td>Total influenza positive</td>
<td>22</td>
<td>135</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Positive influenza A</td>
<td>10</td>
<td>96</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>A(H1N1)pdm09</td>
<td>0</td>
<td>40</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>0</td>
<td>45</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>A(unsubtyped)</td>
<td>22</td>
<td>11</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Positive influenza B</td>
<td>13</td>
<td>39</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Positive influenza A&amp;B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Proportion Influenza Positive (%)</td>
<td>5.4%</td>
<td>14.6%</td>
<td>13.3%</td>
<td>13.8%</td>
</tr>
</tbody>
</table>

Most common respiratory virus detected

<table>
<thead>
<tr>
<th></th>
<th>Rhinovirus</th>
<th>Influenza</th>
<th>Influenza A</th>
<th>Influenza B</th>
</tr>
</thead>
</table>

Source: National Influenza Centres (WA, NSW) and Tasmanian public hospital laboratory PCR testing

Figure 14. Proportion of sentinel laboratory tests positive for influenza, 4 July to 10 October 2014, by subtype and fortnight.

Hospitalisations

Influenza Complications Alert Network (FluCAN)

In the last fortnight, the Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system reported 82 admissions with confirmed influenza. Since 7 April 2014, 10% of influenza patients have been admitted directly to ICU and the majority of overall influenza admissions have been with influenza A (94%) (figure 15). This season very few admissions associated with influenza B were reported. Hospitalisations were highest in the 0-4 year age group, with hospitalisations generally increasing with age, especially among those aged 60 years and over. Three quarters of all cases had known medical co-morbidities.
Figure 15. Number of influenza hospitalisations at sentinel hospitals, 7 April to 10 October 2014, by week and influenza subtype.

Queensland Public Hospital Admissions (EpiLog)
Admissions to public hospitals in Queensland with confirmed influenza are detected through the EpiLog system. Up to 12 October 2014, there were 2,097 admissions, including 259 to intensive care units (figure 16). The majority of hospital admissions have been associated with influenza A infections, and of those infections that have been subtyped, these have mostly been A(H1N1)pdm09. In the year to date, the age distribution of influenza-associated hospitalisations shows a peak in the 0-9 years age group, especially among those aged 1-4 years, and the over 50 years age group. The median age of hospitalised cases is 51 years with a range of less than one to 97 years.

Figure 16. Number of influenza admissions to Queensland public hospitals, with onset from 1 January to 12 October 2014, by week and type of admission.
Paediatric Severe Complications of Influenza

The Australian Paediatric Surveillance Unit conducts seasonal surveillance between July and October annually of children aged 15 years and under who are hospitalised with severe complications of influenza. Between 1 July 2014 and 30 September 2014, there have been 71 hospitalisations associated with severe complications of influenza reported, with 19 of these cases in the most recent fortnight. The median age of these cases was 3 years. Almost all (97%) of cases were associated with influenza A infections, including one influenza A&B co-infection; 32% admitted to ICU; and 31% were reported as having underlying chronic conditions.

Deaths Associated with Influenza and Pneumonia

Nationally Notified Influenza Associated Deaths

So far in 2014, 72 influenza associated deaths have been notified to the NNDSS, with a median age of 72 years (range 5 to 97 years). Influenza type A infection was reported in all of the influenza associated deaths. Influenza A(H1N1)pdm09 was associated with deaths in younger age groups whereas A(H3N2) tended to be relevant in the older age groups. The number of influenza associated deaths reported to the NNDSS is reliant on the follow up of cases to determine the outcome of their infection and most likely does not represent the true mortality impact associated with this disease.

4. Virological Surveillance

Typing and Antigenic Characterisation

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

From 1 January to 13 October 2014 there were 1,490 Australian influenza viruses subtyped by the WHO CC, with 68% being A(H1N1)pdm09, 23% influenza A(H3N2) and 10% influenza B. The majority of influenza B viruses were from the B/Yamagata lineage (table 3).

Table 3. Australian influenza viruses typed by HI or PCR from the WHO Collaborating Centre, 1 January to 13 October 2014.

<table>
<thead>
<tr>
<th>Type/Subtype</th>
<th>ACT</th>
<th>NSW</th>
<th>NT</th>
<th>QLD</th>
<th>SA</th>
<th>TAS</th>
<th>VIC</th>
<th>WA</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(H1N1) pdm09</td>
<td>36</td>
<td>87</td>
<td>25</td>
<td>337</td>
<td>113</td>
<td>47</td>
<td>283</td>
<td>80</td>
<td>1008</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>38</td>
<td>108</td>
<td>0</td>
<td>57</td>
<td>49</td>
<td>10</td>
<td>53</td>
<td>21</td>
<td>336</td>
</tr>
<tr>
<td>B/Victoria lineage</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>B/Yamagata lineage</td>
<td>2</td>
<td>31</td>
<td>13</td>
<td>46</td>
<td>24</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>132</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>228</td>
<td>38</td>
<td>446</td>
<td>187</td>
<td>59</td>
<td>343</td>
<td>113</td>
<td>1490</td>
</tr>
</tbody>
</table>

Note: Viruses tested by the WHO CC are not necessarily a random sample of all those in the community. State indicates the location the sample originated from, not the submitting laboratory. There may be up to a month delay on reporting of samples.

Antiviral Resistance

The WHO CC has reported that from 1 January to 13 October 2014, one influenza virus (out of 1,490 tested) has shown reduced sensitivity to the neuraminidase inhibitor oseltamivir by enzyme inhibition assay. This virus was a A(H1N1)pdm09 virus.

2015 Australian Influenza Vaccine

In October 2014, the Therapeutic Goods Administration (TGA) accepted the Australian Influenza Vaccine Committee recommendation to adopt the WHO recommendations regarding the composition of the 2015 southern hemisphere influenza trivalent vaccine. The formulation for the 2015 Australian influenza season will be:

- A (H1N1): an A/California/7/2009 (H1N1) - like virus
- A (H3N2): an A/Switzerland/9715293/2013 (H3N2) - like virus
- B: a B/Phuket/3073/2013 - like virus

Further, the TGA has accepted the WHO recommendation that quadrivalent vaccines include an additional influenza B virus (B/Brisbane/60/2008-like virus) intended to provide vaccine coverage for both influenza B lineages.

5. International Influenza Surveillance
The WHO has reported that as at 6 October 2014, the southern hemisphere influenza season seems to be coming to an end, with high activity persisting in Oceania. Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

In Europe and North America, influenza activity remained at inter-seasonal levels. In tropical countries of the Americas, influenza B co-circulated with respiratory syncytial virus (RSV). In eastern Asia, influenza activity in most countries remained low or decreased following influenza A(H3N2) activity in August and September.

In New Zealand, through sentinel surveillance, the national ILI consultation rate has increased from 20.5 in the previous week to 42.1 per 100,000 patient population for the week ending 14 September 2014, which is above the seasonal threshold. Virological surveillance through both sentinel and non-sentinel laboratories shows that for the year to date, 83% have been influenza type A viruses. Of the influenza A viruses, 81% were A(H1N1)pdm09, 11% were A(H3N2) and the remainder were A(unsubtyped). Of the influenza B viruses, 94% were identified as B/Yamagata lineage, 3.5% were B/Victoria lineage, and the remainder were not antigenically typed.

National Influenza Centres and other national influenza laboratories from 50 countries, areas or territories reported that for the period 7 September 2014 to 20 September 2014, a total of 1,540 specimens were positive for influenza viruses with 68% being influenza A and 32% influenza B. Of the subtyped influenza A viruses, 39% were influenza A(H1N1)pdm09 and 61% were influenza A(H3N2). Of the characterised B viruses, 96% belong to the B/Yamagata lineage and 3.7% to the B/Victoria lineage.

**Human infection caused by the avian influenza A (H7N9) virus - China**

On 31 March 2013, the Chinese Government notified the WHO of human infections with avian influenza A(H7N9). This was the first time that H7N9 had been identified in humans. Up to 2 September 2014, there have been 452 laboratory-confirmed human cases with avian influenza A(H7N9) virus reported to the WHO. Of these cases, 38% have been fatal. All of the cases have been acquired in China, with 15 cases exported to Taiwan, Hong Kong and Malaysia.

Human infection appears to be associated with exposure to infected live poultry or contaminated environments, including markets where live poultry are sold. Current evidence suggests that this virus does not transmit easily from human to human, and does not support sustained human-to-human transmission.

### 6. State and Territory Surveillance Reports

For further information regarding current influenza activity at the jurisdictional level, please refer to the following State and Territory departments of health surveillance reports:


**New South Wales:** [Influenza Surveillance Report](http://www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx)


**South Australia:** [Weekly Epidemiological Summary (Influenza section)](http://www.sahealth.sa.gov.au/SurveillanceNotifiableConditions)

**Tasmania:** [fluTAS](http://www.dhhs.tas.gov.au/peh/communicable_diseases_prevention_unit)

**Victoria:** [VIDRL Influenza Surveillance Reports](http://www.vidrl.org.au/surveillance/influenza-surveillance)

**Western Australia:** [Virus Watch](http://www.public.health.wa.gov.au/3/487/3/virus_watch.pm)

### 7. Data Considerations

*The information in this report is reliant on the surveillance sources available to the Department of Health. As access to sources increase as the season progresses, this report will be include additional information.*

This report aims to increase awareness of influenza activity 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 Surveillance Team (flu@health.gov.au).

**Geographic Spread of Influenza Activity**

<table>
<thead>
<tr>
<th>Activity level</th>
<th>Laboratory notifications</th>
<th>Influenza outbreaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sporadic</td>
<td>Small numbers of lab confirmed influenza detections, not above expected background level.</td>
<td>AND No outbreaks.</td>
</tr>
<tr>
<td>Localised</td>
<td>Lab confirmed influenza detections above background level** in less than 50% of the influenza surveillance regions within the jurisdiction or area.</td>
<td>OR Single outbreak only.</td>
</tr>
<tr>
<td>Regional</td>
<td>Significant*** numbers of lab confirmed influenza detections above background level in less than 50% of the influenza surveillance regions within the jurisdiction or area.</td>
<td>OR &gt;1 outbreaks occurring in less than 50% of the influenza surveillance regions within the jurisdiction or area**.</td>
</tr>
<tr>
<td>Widespread</td>
<td>Significant**** numbers of lab confirmed influenza detections above background level in equal to or greater than 50% of the influenza surveillance regions within the jurisdiction or area.</td>
<td>OR &gt;1 outbreaks occurring in equal to or greater than 50% of the influenza surveillance regions within the jurisdiction or area**.</td>
</tr>
</tbody>
</table>

+ Expected background level - defined by jurisdictional epidemiologists; represents the expected low level influenza activity that occurs outside of jurisdictional seasonal activity and is the baseline against which comparisons of change can be based.

++ Above background level - above the expected background level threshold as defined by jurisdictional epidemiologists.

* Influenza surveillance region within the jurisdiction/area as defined by jurisdictional epidemiologists.

*** Significant numbers - a second threshold to be determined by the jurisdictional epidemiologists to indicate the level is significantly above the expected background level.

** Areas to be subdivisions of the NT (2 regions), WA (3 regions) and QLD (3 regions) that reflect significant climatic differences within those jurisdictions that result in differences in the timing of seasonal flu activity on a regular basis.

**Change in activity level**

The change in influenza activity level is based on a comparison of the activity level identified in the current reporting period with the previous period.

**Syndromic Surveillance Activity**

<table>
<thead>
<tr>
<th>Syndromic surveillance systems*</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>No evidence of increase in ILI via syndromic surveillance systems</td>
<td></td>
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<tr>
<td>Evidence of increase in ILI via syndromic surveillance systems</td>
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</tbody>
</table>

* Syndromic surveillance systems include GP ILI sentinel surveillance, ED ILI surveillance and Flu tracking. The activity indicated by ILI based syndromic surveillance systems may be due to a variety of respiratory viruses. Therefore the report should indicate if other evidence suggests that the increase is suspected to be influenza activity or due to another respiratory pathogen. Syndromic surveillance is reported on a jurisdiction wide basis only.

**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. For further information refer to the FluTracking website (www.flutracking.net/index.html).

**National Health Call Centre Network**

The National Health Call Centre Network (NHCCN) provides a nationally consistent approach for telephone based health advice to the community through registered nurses and is supported by electronic decision support algorithms. Data collected through the NHCCN is provided to the Department to enable monitoring of the number and proportion of calls relating to predefined patient guidelines. These guidelines have been grouped to create an influenza-like illness syndrome to enable monitoring of community disease activity. These data currently do not include Queensland or Victoria. For further information refer to the Health Direct website (http://www.healthdirect.org.au).
Sentinel General Practice Surveillance

The sentinel general practice ILI surveillance data between 2009 and 2013 consists of two main general practitioner schemes, the Australian Sentinel Practices Research Network (ASPREN) and a Victorian Infectious Disease Reference Laboratory (VIDRL) coordinated sentinel GP ILI surveillance program. Additionally, between 2008 and 2009 a Northern Territory surveillance scheme also operated, however this scheme has since been incorporated into the ASPREN scheme. The national case definition for ILI is presentation with fever, cough and fatigue.

The ASPREN currently has sentinel GPs who report ILI presentation rates in NSW, NT, SA, ACT, VIC, QLD, TAS and WA. The VIDRL scheme operates in metropolitan and rural general practice sentinel sites throughout Victoria and also incorporates ILI presentation data from the Melbourne Medical Deputising Service. As jurisdictions joined ASPREN at different times and the number of GPs reporting has changed over time, the representativeness of sentinel general practice ILI surveillance data in 2013 may be different from that of previous years.

ASPREN ILI surveillance data are provided to the Department on a weekly basis throughout the year, whereas data from the VIDRL coordinated sentinel GP ILI surveillance program is provided between May and October each year.

Approximately 30% of all ILI patients presenting to ASPREN sentinel GPs are swabbed for laboratory testing. Please note the results of ASPREN ILI laboratory respiratory viral tests now include Western Australia.

Further information on ASPREN is available at the ASPREN website (www.dmac.adelaide.edu.au/aspren) and information regarding the VIDRL coordinated sentinel GP ILI surveillance program is available at from the VIDRL website (www.victorianinflusurveillance.com.au).

Sentinel Emergency Department Data

(i) Western Australia – Emergency Department ILI cases are determined from presentations coded as upper respiratory tract infection [J06.9] or viraemia [B34.9]), and are extracted from the Western Australian Emergency Department Information System (EDIS). These EDIS diagnostic codes were chosen as they best correlated with notification and laboratory detection data for influenza virus. The EDIS system incorporates ICD-10 clinical-coded presentation and admission data from the most significant public or public/private hospitals with emergency department services in the greater Perth metropolitan area (Royal Perth Hospital, Sir Charles Gairdner Hospital, Fremantle Hospital, Princess Margaret Hospital, King Edward Memorial Hospital, Armadale-Kelmscott Memorial Hospital, Joondalup Health Campus, Swan District Hospital and Rockingham General Hospital), plus Bunbury Regional Hospital from the Southwest city of Bunbury. For further information, please refer to the Western Australian Department of Health Virus WAtch website (www.public.health.wa.gov.au/3/487/3/virus_watch.pm).

(ii) New South Wales – Emergency Department ILI surveillance data are extracted from the ‘NSW Health Influenza Surveillance Report’. NSW Health Public Health Real-time Emergency Department Surveillance System (PHREDSS) managed by the Centre for Epidemiology and Evidence, NSW Ministry of Health. Data from 59 NSW emergency departments (ED) are included. Comparisons are made with data for the preceding five years. Recent counts are subject to change. For further information, please refer to the NSW Health Influenza Surveillance website (www.health.nsw.gov.au/Infectious/Influenza/Pages/reports.aspx).

(iii) Northern Territory – This syndromic surveillance system collects data from all the public hospitals in the Northern Territory: Royal Darwin, Gove District, Katherine District, Tennant Creek and Alice Springs. The definition of ILI is presentation to ED in the NT with one of the following presentations: febrile illness, cough, respiratory infection, or viral illness.

National Notifiable Diseases Surveillance System (NNDSS)

Laboratory confirmed influenza (all types) is notifiable under public health legislation in all jurisdictions in Australia. Confirmed cases of influenza are notified through the NNDSS by all jurisdictions. The national case definition is available from the Department of Health’s website (www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveillance-nndss-casedefs-cd_flu.htm). Analyses of Australian notifications are based on the diagnosis date, which is the earliest of the onset date, specimen date or notification date.

Sentinel Laboratory Surveillance data

Laboratory testing data are provided weekly directly from PathWest (WA), VIDRL (VIC), ICPMR (NSW), and Tasmanian public hospital laboratory PCR testing results. For Tasmania, the PCR results represent testing at a major Tasmanian public hospital laboratory, which also accepts referred specimens from all departments of emergency medicine and hospital inpatients from across the state.
Influenza Complications Alert Network (FluCAN)

The Influenza Complications Alert Network (FluCAN) sentinel hospital system monitors influenza hospitalisations at the following sites:

- Australian Capital Territory – the Canberra Hospital and Calvary Hospital;
- New South Wales – John Hunter Hospital, Westmead Hospital and Children’s Hospital at Westmead*;
- Northern Territory – Alice Springs Hospital;
- Queensland – the Mater Hospital, Princess Alexandra Hospital and Cairns Base Hospital;
- South Australia – Royal Adelaide Hospital;
- Tasmania – Royal Hobart Hospital;
- Victoria – Geelong Hospital, Royal Melbourne Hospital, Monash Medical Centre and Alfred Hospital;
- Western Australia – Royal Perth Hospital and Princess Margaret Hospital*.

*=Paediatric hospital site

Influenza counts are based on active surveillance at each site for admissions with PCR-confirmed influenza in adults. Some adjustments may be made in previous periods as test results become available. ICU status is as determined at the time of admission and does not include patients subsequently transferred to ICU. Dates listed as date of admission except for patients where date of test is more than 7 days after admission. Admissions listed as influenza A includes untyped and seasonal strains and may include H1N1/09 strains if not typed.

Queensland Public Hospital Admissions (EpiLog)

EpiLog is a web based application developed by Queensland Health. This surveillance system generates admission records for confirmed influenza cases through interfaces with the inpatient information and public laboratory databases. Records are also able to be generated manually. Admissions data reported are based on date of reported onset. For further information refer to Qld Health’s Influenza Surveillance website (www.health.qld.gov.au/ph/cdb/sru_influenza.asp).

Deaths associated with influenza and pneumonia

Nationally reported influenza associated deaths are notified by jurisdictions to the NNDSS, which is maintained by the Department of Health. Notifications of influenza associated deaths are likely to underestimate the true number of influenza associated deaths occurring in the community.

WHO Collaborating Centre for Reference & Research on Influenza

Data on Australian influenza viruses are provided weekly to the Department from the WHO Collaborating Centre for Reference & Research on Influenza based in Melbourne, Australia.

8. References


