SUMMARY

- Across almost all jurisdictions, seasonal influenza activity appears to have peaked in recent weeks with the exception of South Australia where activity has been plateauing.
- As at 12 September 2014, there have been 52,746 cases of laboratory confirmed influenza reported, with 9,088 notifications occurring during the report fortnight.
- Nationally influenza A is the predominant influenza virus type. Of those viruses where subtyping data are available, A(H1N1)pdm09 remains the predominant influenza virus type in most jurisdictions. In New South Wales and the Australian Capital Territory* influenza A(H3N2) is the most common virus type.
- The influenza vaccine is likely to provide good coverage against the currently circulating viruses.
- The rate of influenza associated hospitalisations has remained stable over the past fortnight, with around 10% of cases admitted directly to ICU. The majority of hospital admissions have been associated influenza A infections and the median age of cases is 50 years.
- The severity of the 2014 influenza season appears to be moderate across most jurisdictions. However, more severe activity is noted in NSW, where influenza A(H3N2) is circulating at higher levels and affecting people in older age-groups, which has led to a substantial number of outbreaks in aged care facilities.
- The WHO has reported that globally influenza activity has continued in the southern hemisphere and has remained low elsewhere.

Figure 1. Notifications of laboratory confirmed influenza, Australia, 1 January 2009 to 12 September 2014, by week.

Source: NNDSS

*These subtyped ACT influenza cases have been reported as A(H3). Based on nationally available subtyping and charaterisation data, these cases are assumed to be A(H3N2).
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 12 September 2014, influenza activity was stable or declining in all regions except the Northern Territory (NT) and South Australia (SA). The geographic spread of influenza activity reported by state and territory health departments was ‘widespread’ in the Australian Capital Territory (ACT), New South Wales (NSW), the NT, SA, Tasmania (Tas), Victoria (Vic) and the metropolitan Perth area of Western Australia (WA). ‘Regional’ activity was reported in central and southern Queensland (Qld), the Pilbara/Kimberley and the country-south regions of WA. Tropical north Qld has recorded sporadic activity. ILI activity monitored through syndromic surveillance systems was reported as increased in NSW, Qld, the NT and SA.

Figure 2. Map of influenza activity by state and territory, 30 August to 12 September 2014.
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 14 September 2014, fever and cough was reported by 3.3% of both vaccinated and unvaccinated participants. Fever, cough and absence from normal duties were reported by 2.1% of vaccinated participants and 2.3% of unvaccinated participants. Rates of fever and cough among participants this year have peaked close to the peak rate observed in 2012. Currently activity continues to decline but remains high (figure 3). In the week ending 14 September 2014, 59% of participants reported having received the 2014 influenza vaccine.

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

National Health Call Centre Network

ILI related calls to the National Health Call Centre Network (NHCCN) reached an apparent season peak during the week ending 24 August, and have continued to decrease sharply in recent weeks. The proportion of ILI related calls to the NHCCN is within the range observed in recent years (figure 4).

Figure 4. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2010 to 14 September 2014, by week.

Source: NHCCN

Note: NHCCN data do not include Queensland and Victoria
Sentinel General Practice Surveillance

In the fortnight ending 14 September 2014, the sentinel general practitioner ILI consultation rate plateaued. Currently, the rate of ILI consultations is similar to the 2013 peak rate, but remains within the range observed in recent years (figure 5).

Figure 5. Weekly rate of ILI reported from GP ILI surveillance systems*, 1 January 2010 to 14 September 2014, by week.

In the fortnight ending 14 September 2014, specimens were collected from around 36% of Australian Sentinel Practices Research Network (ASPREN) general practitioner ILI patients. Of these patients, 30% were positive for influenza, compared with 36% in the previous fortnight. Influenza A(H1N1)pdm09 viruses are the predominant subtype (figure 6 and table 1). The proportion of ILI patients positive for other respiratory viruses increased slightly to 17%, with rhinovirus detected most commonly.

Table 1. ASPREN laboratory respiratory viral test results of ILI consultations, 1 January to 14 September 2014.

<table>
<thead>
<tr>
<th></th>
<th>Fortnight (01 September–14 September 2014)</th>
<th>YTD (1 January–14 September 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total specimens tested</td>
<td>223</td>
<td>2536</td>
</tr>
<tr>
<td>Total Influenza Positive (%)</td>
<td>30</td>
<td>26</td>
</tr>
<tr>
<td>Influenza A (%)</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>A (H1N1) pdm09 (%)</td>
<td>6.7</td>
<td>11</td>
</tr>
<tr>
<td>A (H3N2) (%)</td>
<td>4.5</td>
<td>9.7</td>
</tr>
<tr>
<td>A (unsubtyped) (%)</td>
<td>13</td>
<td>1.7</td>
</tr>
<tr>
<td>Influenza B (%)</td>
<td>5.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Other Resp. Viruses (%)*</td>
<td>17</td>
<td>27</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 14 September 2014, by week*.

SOURCE: ASPREN and WA SPN

*No ILI or consultation data were available from the NT for this reporting period.

Sentinel Emergency Department Surveillance

Western Australia Emergency Departments³

Viral respiratory presentations to WA emergency departments continue to decrease following an apparent peak period between mid-July and late August. The current presentation rates are within the range reported in recent seasons (figure 7).

Figure 7. Number of respiratory viral presentations to Western Australia emergency departments, 1 January 2010 to 14 September 2014, by week.

Source: WA Department of Health
New South Wales Emergency Departments

In the week ending 14 September 2014, the number and proportion of ILI presentations to NSW emergency departments decreased further this week to moderate levels (figure 8). ILI and pneumonia admissions to critical care wards increased slightly this week but were within the usual range.

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 13.1, which is below the seasonal threshold.

Figure 8. Rate of influenza-like illness presentations to New South Wales emergency departments, between May and October, 2010 to 2014, by week.

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 decreased to 121 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 13 September 2014, by week.
3. Laboratory Confirmed Influenza Activity

Notifications of Influenza to Health Departments

For the year to date to 12 September, there were 52,746 laboratory confirmed notifications of influenza: 17,734 in NSW; 14,480 in Qld; 7,354 in SA; 7,027 in Vic; 3,974 in WA; 1,024 in the ACT; 608 in the NT and 545 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.

In the fortnight ending 12 September 2014 there were 9,088 notifications reported to the NNDSS (figure 10). NSW (2,323), Qld (2,371), and SA (2,278) together contributed over three-quarters (77%) of notifications this fortnight, followed by Vic (1,157), WA (543), ACT (207), Tas (104) and NT (105). A weekly breakdown of notification trends by jurisdiction shows that influenza notifications may have started to decline in most jurisdictions, except in SA where activity has plateaued in recent weeks (figure 11).

Figure 10.Notifications of laboratory confirmed influenza, Australia, 1 January to 12 September 2014, by state or territory and week.

Figure 11. Notifications of laboratory confirmed influenza, 1 January to 12 September 2014, by state or territory and week.

Source: NNDSS
So far in 2014, notifications have been highest among those aged less than 5 years with a secondary peak in those aged between 30 and 44 years (figure 12). This age distribution trend is consistent with previous years dominated by influenza A(H1N1)pdm09, in which there were very few notifications in older age groups. In contrast, influenza seasons not dominated by influenza A(H1N1)pdm09, have an age distribution that is typically characterised by high rates of influenza in the elderly and in children aged less than 5 years.

**Figure 12.** Notifications of laboratory confirmed influenza, 1 January to 12 September 2014, by subtype and age group.

Of the 9,088 influenza notifications reported to the NNDSS this reporting period, 88% were influenza A (76% A(unsubtyped), 6% A(H1N1)pdm09 and 6% A(H3N2)), 12% were influenza B and <1% were untyped or influenza A&B co-infections (figure 13).

Of the two main virus types, influenza A and influenza B, influenza A remains the predominant influenza virus type nationally. Of those influenza A viruses where subtyping data are available, influenza A(H1N1)pdm09 and A(H3N2) are currently co-circulating at similar levels nationally. However this distribution is variable between jurisdictions. Influenza A(H3N2) is currently dominant in NSW and the ACT*, whereas influenza A(H1N1)pdm09 is dominant in the majority of other states and territories.

For the calendar year to 12 September 2014, 90% of cases were reported as influenza A (70% A(unsubtyped), 12% A(H1N1)pdm09 and 9% A(H3N2)) and 10% were influenza B. Less than 1% were reported as either influenza A&B co-infections, influenza type C or were untyped (figure 13).

* 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).
Figure 13. Notifications of laboratory confirmed influenza, Australia, 1 January to 12 September 2014, by sub-type and week.

Sentinel Laboratory Surveillance

Results from sentinel laboratory surveillance systems for this reporting period show that approximately 24% of the respiratory viral tests conducted over this period were positive for influenza (table 2). Influenza A was the most common type, with WA reporting a higher proportion of A(H1N1)pdm09 compared to A(H3N2), and Vic and Tas reporting similar proportions of these influenza A subtypes (figure 14). Influenza was the most commonly detected respiratory virus overall. Influenza virus subtyping data was not available for NSW for this reporting period.

Table 2. Sentinel laboratory respiratory virus testing results, 30 August to 12 September 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>695</td>
<td>1385</td>
<td>341</td>
<td>342</td>
</tr>
<tr>
<td>Total influenza positive</td>
<td>116</td>
<td>373</td>
<td>84</td>
<td>92</td>
</tr>
<tr>
<td>Positive influenza A</td>
<td>100</td>
<td>320</td>
<td>84</td>
<td>78</td>
</tr>
<tr>
<td>A(H1N1)pdm09</td>
<td>-</td>
<td>188</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>-</td>
<td>106</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>A(unsubtyped)</td>
<td>100</td>
<td>25</td>
<td>46</td>
<td>27</td>
</tr>
<tr>
<td>Positive influenza B</td>
<td>16</td>
<td>53</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Positive influenza A&amp;B</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Proportion Influenza Positive (%)</td>
<td>16.7%</td>
<td>26.9%</td>
<td>24.6%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Most common respiratory virus detected</td>
<td>Influenza A</td>
<td>Influenza</td>
<td>Influenza A</td>
<td>Influenza A</td>
</tr>
</tbody>
</table>

Source: National Influenza Centres (WA, Vic, NSW) and Tasmanian public hospital laboratory PCR testing.
Figure 14. Proportion of sentinel laboratory tests positive for influenza, 4 July to 12 September 2014, by subtype and fortnight.

Source: National Influenza Centres (WA, Vic, NSW) and Tasmanian laboratories (PCR testing)

Hospitalisations

Influenza Complications Alert Network (FluCAN)

In the last fortnight, the Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system reported 224 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 (75%) (figure 15). Around 44% of the cases are aged between 16 and less than 65 years (median age 50 years) and 72% of all cases had known medical co-morbidities reported.

Figure 15. Number of influenza hospitalisations at sentinel hospitals, 7 April to 12 September 2014, by week and influenza subtype.

Source: FluCAN Sentinel Hospitals
Queensland Public Hospital Admissions (EpiLog)

Admissions to public hospitals in Queensland with confirmed influenza are detected through the EpiLog system. Up to 14 September 2014, there were 1,867 admissions, including 225 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\(^5\). 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 60-69 years age group. The median age of hospitalised cases is 50 years with a range of less than one to 96 years.

Figure 16. Number of influenza admissions to Queensland public hospitals, with onset from 1 January to 14 September 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 14 September 2014, there have been 56 hospitalisations associated with severe complications of influenza reported, with 29 of these cases in the most recent fortnight. The median age of these cases was 3 years. All of the cases were associated with influenza A infections, including one A&B co-infection, with 36% admitted to ICU and 42% having underlying chronic conditions.

Deaths Associated with Influenza and Pneumonia

Nationally Notified Influenza Associated Deaths

So far in 2014, 49 influenza associated deaths have been notified to the NNDSS, with a median age of 67 years (range 12 to 96 years). Influenza type A infection was reported in all of the influenza associated deaths. 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.

New South Wales Influenza and Pneumonia Death Registrations\(^5\)

Please note, updated influenza and pneumonia death registration data have not been available since early June 2014. Death registration data for the week ending 6 June 2014 show that there were 1.02 pneumonia or influenza associated deaths per 100,000 population in NSW, which is below the epidemic threshold of 1.45 per 100,000 NSW population (figure 17). Up to 6 June 2014, out of 21,199 deaths in NSW, five death certificates
noted influenza and 1,866 noted pneumonia. The majority of the death certificates mentioning influenza were in elderly people.

Figure 17. Rate of deaths classified as influenza and pneumonia from the NSW Registered Death Certificates, 1 January 2009 to 6 June 2014.

4. Virological Surveillance

Typing and Antigenic Characterisation

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

From 1 January to 15 September 2014 there were 1,224 Australian influenza viruses subtyped by the WHO CC, with 71% being A(H1N1)pdm09, 18% 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 15 September 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>79</td>
<td>19</td>
<td>310</td>
<td>102</td>
<td>31</td>
<td>217</td>
<td>80</td>
<td>874</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>38</td>
<td>73</td>
<td>0</td>
<td>16</td>
<td>44</td>
<td>10</td>
<td>24</td>
<td>19</td>
<td>224</td>
</tr>
<tr>
<td>B/Victoria lineage</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>B/Yamagata lineage</td>
<td>2</td>
<td>31</td>
<td>12</td>
<td>35</td>
<td>23</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>115</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>76</td>
<td>184</td>
<td>31</td>
<td>366</td>
<td>170</td>
<td>43</td>
<td>244</td>
<td>110</td>
<td>1224</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 15 September 2014, one influenza virus (out of 1,187 tested) has shown reduced sensitivity to the neuraminidase inhibitor oseltamivir by enzyme inhibition assay. This virus was a A(H1N1)pdm09 virus.

5. International Influenza Surveillance

The WHO has reported that as at 8 September 2014, globally the influenza season is ongoing in the southern hemisphere. Elsewhere influenza activity remained low. In Europe and North America, overall influenza activity remains at inter-seasonal levels.

In eastern Asia, influenza activity remained low in most countries with influenza A(H3N2) the main detected virus subtype. Influenza A(H3N2) and some influenza B activity continued in south China.
In New Zealand, through sentinel surveillance, the national ILI consultation rate remained above the seasonal threshold at 61.7 per 100,000 patient population for the week ending 14 September 2014. Virological surveillance through both sentinel and non-sentinel laboratories shows that since 28 April, 83% have been influenza type A viruses. Of the influenza A viruses, 79% were A(H1N1)pdm09, 8.5% were A(H3N2) and 12% were A(unsubtyped). Of the influenza B viruses, 60% were identified as B/Wisconsin/1/2010-like viruses (B/Yamagata lineage), 2.4% were B/Brisbane/6/2008-like viruses (B/Victoria lineage), and the remainder were not antigenically typed.

National Influenza Centres and other national influenza laboratories from 51 countries, areas or territories reported that for the period 10 August 2014 to 23 August 2014, a total of 3,222 specimens were positive for influenza viruses with 82% being influenza A and 18% influenza B. Of the sub-typed influenza A viruses, 18% were influenza A(H1N1)pdm09 and 82% were influenza A(H3N2). Of the characterised B viruses, 99% belong to the B/Yamagata lineage and 1% to the B/Victoria lineage.6

**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.

**Influenza A(H3N2) variant virus outbreak – United States of America**

On 18 August 2014, the US Centers for Disease Control and Prevention reported the first human case of a novel influenza A (H3N2) variant virus in Ohio. Genetic sequencing showed that the virus has the nucleoprotein and matrix gene from the (H1N1)pdm09 virus, which is a slightly different combination of internal genes than A(H3N2)v viruses reported in previous years. Infection with A(H3N2)v viruses is associated with close contact with swine and symptoms are similar to those of seasonal influenza viruses.

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/wps/wcm/connect/Public+Content/SA+Health+Internet/About+us/Health+statistics/Surveillance+of+notifiable+conditions)
- **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)
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 include additional information.

Data Considerations

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. AND No outbreaks.</td>
<td></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. OR Single outbreak only.</td>
<td></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. OR &gt;1 outbreaks occurring in less than 50% of the influenza surveillance regions* within the jurisdiction or area.</td>
<td></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. OR &gt;1 outbreaks occurring in equal to or greater than 50% of the influenza surveillance regions* within the jurisdiction or area.</td>
<td></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>
</tr>
</thead>
<tbody>
<tr>
<td>No evidence of increase in ILI via syndromic surveillance systems</td>
</tr>
<tr>
<td>Evidence of increase in ILI via syndromic surveillance systems</td>
</tr>
</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 in to 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 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-surveil-ndss-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 Westmead¹;
- 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 Hospital¹.

¹Paediatric 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


10. CDC Influenza A (H3N2) Variant Virus. Available from the US CDC website (www.cdc.gov/flu/swineflu/h3n2v-cases.htm) [Accessed 4 September 2014]