The Department of Health and Ageing acknowledges the providers of the many sources of data used in this report and greatly appreciates their contribution.

KEY INDICATORS

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

<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>

SUMMARY

- Although overall influenza activity remains relatively low compared to 2011 and 2012, the steady seasonal increase has continued.

- Since the beginning of the year there have been 10,702 laboratory confirmed cases of influenza reported. Over the past fortnight there were 2,688 notifications, with almost a third reported from New South Wales (919).

- Nationally, whilst influenza A remains the predominant influenza virus type, the proportion of influenza B continues to be higher than recent seasons. During the 2012 season there were very few notifications of influenza A(H1N1)pdm09. So far in 2013 whilst the majority of influenza A reports are unsubtyped, more than 10% of overall notifications have been reported as influenza A(H1N1) pdm09.

- Across jurisdictions the distribution of influenza types and subtypes is variable. In Victoria there is a predominance of influenza type B, whereas most other states are reporting a predominance of influenza type A, with NSW reporting mostly A(H1N1)pdm09 and Western Australia mostly A(H3N2).

- Over the past few weeks there has been a continued seasonal increase in influenza associated hospitalisations. Around 10% of influenza cases have been admitted directly to ICU. The age distribution of hospital admissions shows peaks in the 0-9 and over 60 years age groups typical of seasons dominated by A(H1N1).

- The WHO has reported that influenza activity in the northern hemisphere temperate zones remains at inter-seasonal levels. In the temperate countries of South America and Southern Africa, influenza transmission peaked in late June and was primarily associated with influenza A(H1N1)pdm09.
1. Geographic Spread of Influenza Activity in Australia

In the fortnight ending 16 August 2013, the geographic spread of influenza activity reported by state and territory health departments was ‘widespread’ in New South Wales (NSW), Victoria (Vic) and central Queensland (Qld); ‘regional’ in South Australia (SA) and southern Queensland; and ‘localised’ in southern Western Australia (WA), the Australian Capital Territory (ACT) and the Northern Territory (NT) top end. All other regions reported sporadic activity (figure 1). Across Australia, influenza activity was reported as either increasing or unchanged. During this period WA, the NT, Qld and Vic reported increases in ILI activity detected in syndromic surveillance systems.

Figure 1. Map of influenza activity by state and territory, 03 August to 16 August 2013

2. Influenza-like Illness Activity

Community Level Surveillance

FluTracking

FluTracking, a national online system for collecting data on ILI in the community, noted that in the week ending 18 August 2013, fever and cough increased to 3.2% of vaccinated participants and 4.0% of unvaccinated participants (figure 2). Fever, cough and absence from normal duties were stable at 1.7% of vaccinated participants and increased to 2.4% of unvaccinated participants. Rates of ILI among FluTracking participants have reached the highest levels observed so far this year and overall are showing a later seasonal increase compared to previous years (figure 3). In the week ending 18 August 2013, 60% of participants reported having received the seasonal vaccine so far. Of the participants who identified as working face-to-face with patients, 79% have received the vaccine.

Figure 2. Proportion of cough and fever among FluTracking participants, week ending 28 April to 18 August 2013, by vaccination status and week

Source: FluTracking
Figure 3. Proportion of fever and cough among FluTracking participants, between May and October, 2009 to 2013, by week

National Health Call Centre Network

Since May 2013, ILI related calls to the National Health Call Centre Network (NHCCN) have increased. In the most recent week (ending 18 August 2013), the number of ILI related calls increased slightly but overall there continues to be around 1,100 calls per week. ILI calls during this week represented 7.7% of total calls. The proportion of ILI related calls to the NHCCN are currently tracking slightly lower than historical trends for this time of year (figure 4).

Figure 4. Number of calls to the NHCCN related to ILI and percentage of total calls, Australia, 1 January 2009 to 18 August 2013, by week

Note: NHCCN data do not include Queensland and Victoria

Source: NHCCN

Sentinel General Practice Surveillance

In the week ending 18 August 2013, the sentinel general practitioner ILI consultation rate increased to 9.9 cases per 1,000 consultations (figure 5). The ILI consultation rate continues to increase, but is tracking lower than usual for this time of year. Of particular note this reporting week, is the increased ILI rate in urban NSW to 36 notifications per 1,000 consultations.
In the week ending 18 August 2013, specimens were collected from around 52% of Australian Sentinel Practices Research Network (ASPREN) general practitioner ILI patients. Of these patients, 26% were positive for influenza, similar to the proportion detected in the previous fortnight. The majority of these specimens were positive for influenza type A and were mostly the A(H3N2) subtype (figure 6 and table 1).

Table 1. ASPREN laboratory respiratory viral test results of ILI consultations, 1 January to 18 August 2013

<table>
<thead>
<tr>
<th></th>
<th>Fortnight (5 August – 18 August 2013)</th>
<th>YTD (1 January – 18 August 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total specimens tested</td>
<td>179</td>
<td>1366</td>
</tr>
<tr>
<td>Total Influenza Positive (%)</td>
<td>30.7</td>
<td>13.4</td>
</tr>
<tr>
<td>Influenza A (%)</td>
<td>23.5</td>
<td>9.4</td>
</tr>
<tr>
<td>A (H1N1) pdm09 (%)</td>
<td>2.8</td>
<td>3.0</td>
</tr>
<tr>
<td>A (H3N2) (%)</td>
<td>11.7</td>
<td>4.8</td>
</tr>
<tr>
<td>A (unsubtyped) (%)</td>
<td>8.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Influenza B (%)</td>
<td>6.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Other Resp. Viruses (%)</td>
<td>27.9</td>
<td>33.7</td>
</tr>
</tbody>
</table>

* Other respiratory viruses include human metapneumovirus, RSV, parainfluenza, adenovirus and rhinovirus.
Sentinel Emergency Department Surveillance

**Western Australia Emergency Departments**

The number and rate of respiratory viral presentations to WA emergency departments remains relatively steady (figure 7). The number of viral respiratory presentations is considered to be within the mid-range of levels experienced for the equivalent periods in recent years.

**Figure 7. Number of respiratory viral presentations to Western Australia emergency departments, 1 January 2009 to 18 August 2013, by week**

![Figure 7](image)

Source: WA ‘Virus Watch’ Report

**New South Wales Emergency Departments**

In the week ending 18 August 2013 the rate of patients presenting to NSW emergency departments with influenza-like illness increased further to 2.7 cases per 1,000 presentations. The presentation rate was within the usual range for this time of year (figure 8). Admissions from emergency departments to critical care units for ILI and pneumonia increased this week and were higher than the usual range for this time of year. The NSW emergency department surveillance system uses a statistic called the ‘index of increase’, with a value of 15 suggesting that influenza is circulating widely in the NSW community. Currently influenza-like illness presentations are at an index of increase value of 30, which is consistent with rising activity during an influenza season.

**Figure 8. Rate of influenza-like illness presentations to New South Wales emergency departments, between May and October, 2009 to 2013, by week**

![Figure 8](image)

Source: ‘NSW Health Influenza Surveillance Report’
Northern Territory Emergency Departments

In recent weeks the number of patients presenting to NT emergency departments with ILI has increased. Currently, the numbers of ILI presentations to NT emergency departments are within the usual range of levels observed in previous years (excluding 2009) (figure 9).

Figure 9. Number of ILI presentations to Northern Territory emergency departments, 1 January 2009 to 17 August 2013, by week

![Number of ILI presentations to Northern Territory emergency departments, 1 January 2009 to 17 August 2013, by week](image)

Source: Centre for Disease Control, Department of Health, Northern Territory Government

3. Laboratory Confirmed Influenza Activity

Notifications of Influenza to Health Departments

During the reporting period there were 2,685 laboratory confirmed influenza notifications reported to the NNDSS, continuing the rise which started in early June (figure 10). Over a third of notifications this fortnight were from NSW (1,078). Notifications reported from all other jurisdictions this fortnight were: Vic (596), Qld (412), SA (336), WA (183), ACT (53), Tas (20) and NT (7). A weekly breakdown of trends by state and territory highlights that there continues to be increased influenza activity in all jurisdictions except for NT (figure 11).

Figure 10. Notifications of laboratory confirmed influenza, Australia, 1 January to 16 August 2013, by state or territory and week

![Notifications of laboratory confirmed influenza, Australia, 1 January to 16 August 2013, by state or territory and week](image)

Source: NNDSS
Up to 16 August, there have been 10,702 laboratory confirmed notifications of influenza diagnosed during 2013 (figure 12). Of these notifications, there have been 3,183 in NSW, 2,381 in Qld, 2,198 in Vic, 1,512 in SA, 962 in WA, 186 in NT, 217 in ACT and 63 in Tas. Over the 2012-13 inter-seasonal period, higher than usual numbers of influenza notifications were reported from most jurisdictions.

Of the 2,685 influenza notifications reported to the NNDSS this reporting period, 1617 (60%) were influenza A (1,025 (38%) A(unsubtyped), 460 (17%) A(H1N1)pdm09 and 132 (5%) A(H3N2)), 1,052 (39%) were influenza B, 8 (<1%) were influenza A&B co-infections and 8 (<1%) were un-typed (figure 13).
This reporting period, influenza A remains the predominant influenza virus type nationally, with the distribution of the influenza A(H1N1)pdm09 and A(H3N2) subtypes varying by jurisdiction. In WA there continues to be an increasing proportion of A(H3N2), whereas in NSW there is a higher proportion of influenza A(H1N1)pdm09 being reported. Over the past fortnight the proportion of influenza B has remained relatively stable (39%). Victoria’s proportion of influenza B notifications has remained high (64%), and represents over a third of national influenza B notifications for this period.

For the calendar year to 16 August 2013, 66% of cases were reported as influenza A (47% A(unsubtyped), 13% A(H1N1)pdm09 and 6% A(H3N2)) and 33% were influenza B. Less than 1% were reported as either influenza type A&B or untyped (figure 11). Whilst the majority of influenza A reports are unsubtyped, so far in 2013 more than 10% of overall notifications have been reported as influenza A(H1N1) pdm09, compared with less than 1% in 2012.

**Figure 13. Notifications of laboratory confirmed influenza, Australia, 1 January to 16 August 2013, by sub-type and week**

| Source: NNDSS |

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**Sentinel Laboratory Surveillance**

Results from sentinel laboratory surveillance systems for this reporting period show that 15.4% of the respiratory viral tests conducted over this period were positive for influenza (table 2), an increase from 11% in the previous fortnight. Across these sentinel laboratory sites, there continues to be a mixed distribution of the influenza types and subtypes. Figure 14 shows a breakdown of subtypes within this positive proportion by fortnight. For the first reporting period this year, influenza virus is the most commonly detected respiratory virus.

**Table 2. Sentinel laboratory respiratory virus testing results, 03 August to 16 August 2013**

<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>362</td>
<td>950</td>
<td>203</td>
<td>156</td>
</tr>
<tr>
<td>Total influenza positive</td>
<td>67</td>
<td>157</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td>Positive influenza A</td>
<td>53</td>
<td>140</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>A(H1N1) pdm09</td>
<td>43</td>
<td>29</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>3</td>
<td>108</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>A(unsubtyped)</td>
<td>7</td>
<td>2</td>
<td>1*</td>
<td>6</td>
</tr>
<tr>
<td>Positive influenza B</td>
<td>14</td>
<td>17</td>
<td>17</td>
<td>2</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><strong>Proportion Influenza Positive (%)</strong></td>
<td><strong>18.5%</strong></td>
<td><strong>16.5%</strong></td>
<td><strong>14.3%</strong></td>
<td><strong>9.6%</strong></td>
</tr>
<tr>
<td><strong>Most common respiratory virus detected</strong></td>
<td>Influenza</td>
<td>Influenza</td>
<td>Influenza</td>
<td>RSV and Rhinovirus</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, 03 August to 16 August 2013, by subtype and fortnight

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

Hospitalisations

Influenza Complications Alert Network (FluCAN)

The Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system has reported that over the last fortnight there have been 40 admissions with confirmed influenza. Since 30 March 2013, 10.3% of influenza patients have been admitted directly to ICU and the majority of overall admissions have been with influenza A, with 32% of cases due to influenza B (figure 15). Around 35% of the cases are aged 65 years and over (median age 55 years) and 79% of all cases had known medical co-morbidities reported. Overall there appears to be a steady increase in influenza associated hospitalisations, noting that there may be delays in reporting of cases by up to two weeks.

Figure 15. Number of influenza hospitalisations at sentinel hospitals, 30 March to 16 August 2013, by week and influenza subtype

Source: FluCAN Sentinel Hospitals

Queensland Public Hospital Admissions (EpiLog)

Admissions to public hospitals in Queensland of confirmed influenza are detected through the EpiLog system. Up to 18 August 2013, there have been 188 admissions of confirmed influenza this year, including 24 to intensive care units (figure 16). Twenty-eight (15%) of these admissions have occurred in the past fortnight. The age distribution of confirmed influenza admissions in 2013 shows a peak in the 0-9 year age group followed by a peak in the 70 years and over age group, with very few admissions reported in the 10-19 and 20-29 years age groups.
Paediatric Severe Complications of Influenza

The Australian Paediatric Surveillance Unit conducts seasonal surveillance of children aged 15 years and under who are hospitalised with severe complications of influenza. Between 03 August and 16 August 2013, there were three hospitalisations associated with severe complications of influenza reported including one ICU admission. Two of the hospitalisations were associated with influenza A infections. All cases so far this year have occurred in children aged less than two years.

Deaths Associated with Influenza and Pneumonia

Nationally Notified Influenza Associated Deaths

So far in 2013, 13 influenza associated deaths have been notified to the NNDSS, with a median age of 77 years (range 31 to 97 years). The majority of these cases were reported as having an influenza type A infection. 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 do not represent the true mortality impact associated with this disease.

4. Virological Surveillance

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

From 1 January to 23 August 2013, there were 484 Australian influenza viruses subtyped by the WHO CC with 43% being A(H1N1) pdm09, 25% influenza A(H3N2) and the remainder influenza B. The majority of influenza B viruses were from the Yamagata lineage (table 2).

Table 3. Australian influenza viruses typed by HI or PCR from the WHO Collaborating Centre, 1 January to 12 August 2013

<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>5</td>
<td>25</td>
<td>22</td>
<td>73</td>
<td>25</td>
<td>8</td>
<td>29</td>
<td>21</td>
<td>208</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>3</td>
<td>14</td>
<td>9</td>
<td>24</td>
<td>6</td>
<td>1</td>
<td>40</td>
<td>23</td>
<td>120</td>
</tr>
<tr>
<td>B/Victoria lineage</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>11</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>B/Yamagata lineage</td>
<td>4</td>
<td>23</td>
<td>0</td>
<td>15</td>
<td>8</td>
<td>2</td>
<td>72</td>
<td>10</td>
<td>134</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>65</td>
<td>31</td>
<td>123</td>
<td>43</td>
<td>11</td>
<td>142</td>
<td>55</td>
<td>484</td>
</tr>
</tbody>
</table>

SOURCE: WHO CC

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 23 August 2013, two influenza viruses (out of 432 tested) have shown reduced inhibition to the neuraminidase inhibitor oseltamivir by enzyme inhibition assay. These were A(H1N1)pdm09 viruses with a H275Y mutation in the neuraminidase gene, which is known to confer resistance to oseltamivir.

2013-14 Northern Hemisphere Vaccine

In February 2013, the WHO recommended\(^5\) that trivalent vaccines for use in the 2013-14 northern hemisphere influenza season contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011;
- a B/Massachusetts/2/2012-like virus.

Additionally, WHO recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

In comparison to the current 2013 southern hemisphere vaccine, this recommendation changed the B component and also recommended a change in the virus used as an A/Victoria/361/2011(H3N2)-like virus. The WHO noted that whilst the B component continued to be of the B/Yamagata lineage, the HA genes of most viruses of the B/Yamagata lineage fell within two genetic clades that were antigenically distinct. As the proportion of viruses in clade 2 (represented by B/Massachusetts/2/2012) markedly increased over viruses in clade 3 (represented by B/Wisconsin/1/2010) in the lead up to the February 2013 assessment, the WHO expert group therefore recommended the change to the B component. Whilst most of the circulating viruses have remained antigenically like the cell-propagated A/Victoria/361/2011(H3N2) virus, the egg propagated vaccine virus had antigenic changes that induced antibodies that reacted less well to recently circulating cell-propagated viruses.\(^6\)

5. International Influenza Surveillance

The WHO\(^7\) has reported that as at 16 August 2013, influenza activity in the northern hemisphere temperate zones remains at inter-seasonal levels. Across most regions of tropical Asia activity decreased, including Cambodia, Thailand and Viet Nam that showed a decreasing trend after several weeks of higher activity. Both influenza A(H3N2) virus and influenza A(H1N1)pdm09 were reported in this area. In Central America and the Caribbean regions, influenza activity was decreasing after recent localised increases. In the temperate countries of South America and Southern Africa, influenza transmission peaked in late June and was primarily associated with influenza A(H1N1)pdm09.

In New Zealand\(^8\), through sentinel surveillance the national ILI consultation rate was 23.4 per 100,000 patient population for the week ending 18 August 2013. The current rate of ILI remains below the baseline level of activity (50 ILI consultations per 100,000 patient population). Virological surveillance through both sentinel and non-sentinel laboratories shows that so far this year, 53% have been influenza type B viruses, 25% influenza A(H3N2), 13% were influenza A(unsubtyped) and 9% were A(H1N1)pdm09 virus detections.

National Influenza Centres (NICs) and other national influenza laboratories from 70 countries, areas or territories reported that for the period 21 July to 3 August 2013, a total of 1,561 specimens were positive for influenza viruses with 88% being influenza A and 12% influenza B. Of the sub-typed influenza A viruses, 52% were influenza A(H1N1)pdm09 and 48% were influenza A(H3N2).\(^9\)

Human infection caused by the avian influenza A (H7N9) virus - China\(^10,11,12,13\)

There have been no further cases of influenza A(H7N9) reported to the WHO since 11 August 2013 (Figure 17). Since March 2013, a total of 135 laboratory-confirmed cases of human infection with avian influenza A(H7N9) have been reported to WHO, including 44 deaths. All of the cases were acquired in China with one case exported to Taiwan. This outbreak represents the first time that human infection with the avian influenza A(H7N9) subtype had been detected.
Most cases have occurred in middle-aged or older men and most cases have been considered severe. Human infection appears to be related to exposure to live poultry or contaminated environments, however investigations are ongoing regarding the animal reservoir(s) which the virus is circulating in, the main exposures and routes of transmission, and the scope of the virus spread among people and animals.

Whilst four small human clusters have been reported, evidence does not support sustained human-to-human transmission. A recent serology study on members of the general public and poultry workers in Zhejiang province (China) found no evidence of antibodies in the general population. In comparison 6.3% of poultry workers had evidence of asymptomatic or mild infections. This study supports suspicions that poultry are the source of the outbreak and mild or asymptomatic cases are more common than initially thought.

**Figure 17. Epidemiological curve of confirmed cases of avian influenza A(H7N9) reported to WHO, 2013, by day**

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

There have been no further cases of influenza A(H3N2) variant virus (A(H3N2)v) infection reported in the United States, since 2 August 2013. At this stage, no ongoing human-to-human transmission has been identified and all 16 cases have reported close contact with swine in the week prior to illness onset. So far in 2013 there has been one hospitalisation and no deaths reported.

The variant virus is a mixture of an influenza A(H3N2) virus, already present in pigs in North America, with the matrix (M) gene from the A(H1N1)pdm09 virus; and was first detected in humans in 2011. In 2011, 12 cases of A(H3N2)v infection were detected in the United States, and the virus was associated with a multi-state outbreak in 2012 with a further 309 cases, including 16 hospitalisations and one death.

To date, all human infections have occurred in the United States and the epidemiology of the current outbreak so far appears to be consistent with the 2012 outbreak of cases.

Limited human-to-human spread of the virus had been detected in 2012, however no sustained community transmission was identified. Illness associated with influenza A(H3N2)v infection has been mostly mild with symptoms similar to seasonal influenza. Of the 16 A(H3N2)v hospitalised patients in 2012, most were at increased risk for complications of influenza due to age or the presence of an underlying medical condition.

The US CDC note that steps to make a vaccine against influenza A(H3N2)v have been taken, however currently no vaccine is available. The current northern hemisphere (and also southern hemisphere) seasonal influenza vaccines are not formulated to provide protection against influenza A(H3N2)v, however antivirals medications, oseltamivir and zanamivir, used to treat seasonal influenza can treat influenza A(H3N2)v infections. Previous serological studies have suggested that significant numbers of adults have some existing immunity against this virus, however children aged less than 10 years have little to no immunity against the influenza A(H3N2)v virus.
6. 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 as the season progresses, this report will be updated with the 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

(i) Influenza Activity Levels

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

* Small no of lab detections = not above expected background level as defined by state epidemiologists.
** Increase in lab confirmed influenza detections = above expected threshold as defined by state epidemiologists.
*** Significant recent increase in lab confirmed influenza detections above baseline in less than 50% of the influenza surveillance regions within the state or area as defined by state epidemiologists.
+++ Significant recent increase in lab confirmed influenza detections above baseline in equal to or greater than 50% of the influenza surveillance regions within the state or area.

(ii) Syndromic Surveillance Activity

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

* Syndromic surveillance systems = GP sentinel surveillance, ED ILI surveillance, Flu tracking (this may be due to a variety of respiratory viruses so the report could add a note to 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 state 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. Further information on FluTracking is available from 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. Further information about the NHCCN, please 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 the VIDRL website (www.victorianflusurveillance.com.au).

Sentinel Emergency Department Data

(i) Western Australia – Emergency Department ILI surveillance data are extracted from the Western Australian ‘Virus Watch’ Report. This report is produced weekly. Emergency Department data are provided by the Emergency Department Information System (EDIS), which incorporates data from the following hospitals: Royal Perth Hospital, Sir Charles Gairdner Hospital, Fremantle Hospital, Princess Margaret Hospital, King Edward Memorial Hospital, Bunbury Hospital, Armadale Hospital, Joondalup Health Campus, Swan District Hospital and Rockingham General Hospital. 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 sentinel program collects data from the following hospitals: 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 and Ageing’s website (www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveill-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 and Westmead Hospital;
- Northern Territory – Alice Springs Hospital;
Queensland – the Mater Hospital, Princess Alexander 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.

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.

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 and Ageing. Notifications of influenza associated deaths are likely to underestimate the true number of influenza associated deaths occurring in the community.

NSW influenza and pneumonia deaths data are collected from the NSW Registry of Births, Deaths and Marriages. Figure 16 is extracted from the ‘NSW Health Influenza Surveillance Report’. NSW Registered Death Certificates are routinely reviewed for deaths attributed to pneumonia or influenza. While pneumonia has many causes, a well-known indicator of seasonal and pandemic influenza activity is an increase in the number of death certificates that mention pneumonia or influenza as a cause of death. The predicted seasonal baseline estimates the predicted rate of influenza or pneumonia deaths in the absence of influenza epidemics. If deaths exceed the epidemic threshold, then it may be an indication that influenza is beginning to circulate widely.

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.

7. References


6  WHO, Questions and Answers, Recommended composition of influenza virus vaccines for use in the northern hemisphere 2013-2014 influenza season. Available from the WHO website


18 United States Centers for Disease Control and Prevention, First H3N2v Outbreak of 2013 Reported; CDC Continues to Urge High Risk People to Avoid Swine at Fairs. Available from the United States Centers for Disease Control and Prevention website (www.cdc.gov/flu/spotlights/h3n2v-firstcases-2013.htm) [Accessed 15 July 2013]