The annual increase in influenza activity has begun.

Influenza notifications are higher compared with the same time in previous years. However, the overall scale and clinical severity of this year’s influenza season will become apparent as the season progresses.

Influenza notification rates have been highest among those aged over 85 years with a secondary peak in those aged between 5 and 9 years.

Influenza B has been circulating at increasing levels nationally and is the predominant influenza virus type circulating in the most recent fortnight.

Influenza associated hospitalisations to sentinel sites have increased in the recent fortnight, with less than 10% of patients admitted directly to ICU. The majority of hospital admissions have been associated with influenza B infections.

Systems that monitor influenza-like illness (ILI) are reporting variable ILI activity which is not unusual at this point in the season. Influenza viruses are increasingly causing ILI in the community, with other respiratory viruses like Rhinovirus and RSV circulating at similar levels.

The seasonal influenza vaccines appear to be a good match for circulating strains.

Figure 1. Notifications of laboratory confirmed influenza, Australia, 1 January 2011 to 03 July 2015, by week.
KEY INDICATORS

Influenza activity and severity in the community are 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 3 July 2015, influenza activity was reported as decreasing in the Pilbara/Kimberley regions of Western Australia (WA) and the Centre region of the Northern Territory (NT) and stable or increasing across the remaining regions. The geographic spread of influenza activity reported by state and territory health departments was ‘sporadic’ in the tropical region of Queensland (Qld) and the NT; ‘localised’ in the Australian Capital Territory (ACT), Tasmania (Tas) and the Pilbara/Kimberley regions of WA; ‘regional’ in the southern and central regions of Qld, Victoria (Vic) and New South Wales (NSW), ‘widespread’ in the metropolitan Perth region of WA and South Australia (SA) (Figure 2). ILI activity reported from syndromic surveillance systems was unchanged compared with the previous reporting period in the NT, Qld and Vic.

Figure 2. Map of influenza activity by state and territory, Australia, 20 June to 03 July 2015.
2. Influenza-like Illness Activity

Community Level Surveillance

FluTracking

FluTracking, a national online system for collecting data on ILI in the community, indicated that rates of ILI among participants so far this year have been low to moderate and within the range of recent seasons (Figure 3). In the week ending 5 July 2015, rates of fever and cough were stable at 2.9% of all participants (2.7% of vaccinated participants and 2.8% of unvaccinated participants). Fever, cough and absence from normal duties were reported by 1.7% of all participants (1.7% of vaccinated participants and 1.5% of unvaccinated participants)\(^1\). In the week ending 5 July 2015, 61.9% of participants reported having received the 2015 influenza vaccine. Of the 3,635 participants who identified as working face-to-face with patients, 2,923 (80.4%) have received the vaccine.

Figure 3. Proportion of fever and cough among FluTracking participants, Australia, between May and October, 2011 to 2015, by week.

National Health Call Centre Network

ILI related calls to the National Health Call Centre Network (NHCCN) have been steadily increasing since the beginning of the year. The proportion of ILI related calls to the NHCCN are currently tracking higher than 2014, but 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 2011 to 5 July 2015, by week.
Sentinel General Practice Surveillance

In the fortnight ending 28 June 2015, the sentinel general practitioner ILI consultation rate increased to 9.5 per 1,000 consultations. The rate of ILI consultations so far this year has been variable and is currently towards the higher end of the range observed in previous years (Figure 5).

Figure 5. Weekly rate of ILI reported from GP ILI surveillance systems, Australia, 1 January 2011 to 28 June 2015, by week.

Sentinel Emergency Department Surveillance

Western Australia Emergency Departments

Viral respiratory presentations to WA emergency departments increased this fortnight. The current rates of presentations are approaching the peak rates of recent seasons but remain below the peak observed in 2012, a moderately severe season (Figure 6).

Figure 6. Rate of respiratory viral presentations to Western Australia emergency departments, 1 January 2011 to 5 July 2015, by week.

New South Wales Emergency Departments

In the week ending 28 June 2015, the proportion of ILI presentations to all NSW emergency departments remained steady at 1.0 per 1,000 presentations and was within the usual range of activity for this time of year.
years (Figure 7). ILI and pneumonia admissions to critical care wards increased slightly this week and remain
above the usual range seen 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 of increase for ILI presentations increased
to 18.6 from 9.9 on 21 June, consistent with the start of the influenza season.

**Figure 7.** Rate of influenza-like illness presentations to New South Wales emergency departments, between May and October, 2011 to 2015, by week.

Northern Territory Emergency Departments

During the current reporting period, the overall rate of ILI presentations to NT emergency departments was
steady and remains low (Figure 8).

**Figure 8.** Rate of influenza-like illness presentations to Northern Territory emergency departments, 1 January 2011 to 27 June 2015, by week.

Source: 'NSW Health Influenza Surveillance Report'
3. Laboratory Confirmed Influenza Activity

Notifications of Influenza to Health Departments

For the year to 3 July, there were 14,567 laboratory confirmed notifications of influenza: 4,097 in Qld; 2,909 in NSW; 2,792 in SA; 2,590 in Victoria; 1,673 in WA; 245 in the ACT; 175 in the Tas and 86 in NT (Figure 9).

In the fortnight ending 3 July 2015 there were 2,700 notifications reported to the NNDSS (Figure 9). Qld (744), Vic (553) and SA (541) together contributed 68% of notifications this fortnight, followed by NSW (463), WA (282), ACT (73), Tas (39), and NT (5). In recent weeks, influenza notifications have been increasing across all jurisdictions, except the NT, in line with the expected seasonal increase in influenza activity (Figure 10).

Figure 9. Notifications of laboratory confirmed influenza, Australia, 1 January to 3 July 2015, by state or territory and week.

Figure 10. Notifications of laboratory confirmed influenza, 1 January to 3 July 2015, by state or territory and week.

Source: NNDSS
So far in 2015, notification rates have been highest among those aged over 85 years with a secondary peak in those aged between 5 and 9 years (Figure 11). This age distribution trend is consistent with influenza B infections being prevalent in school aged children and influenza A affecting older age groups.

Figure 11. Rate of notifications of laboratory confirmed influenza, 1 January to 3 July 2015, by subtype and age group.

Of the 2,700 influenza notifications reported to the NNDSS this reporting period, 64% were influenza B, 36% were influenza A (30% A(unsubtyped), 4% A(H3N2) and 2% A(H1N1)pdm09) and less than 1% were influenza A&B co-infections or were untyped (Figure 12).

The distribution of the influenza virus types and subtypes has been variable between jurisdictions this reporting fortnight. Influenza B was the dominating circulating strain in all jurisdictions, except Tas and the ACT where overall activity remains low.

For the calendar year to 3 July 2015, 56% of cases were reported as influenza A (44% A(unsubtyped), 10% A(H3N2) and 2% A(H1N1)pdm09) and 43% were influenza B. Less than 1% were reported as either influenza A&B co-infections, influenza C or were untyped (Figure 12).
Sentinel Laboratory Surveillance

Results from sentinel laboratory surveillance systems show that Respiratory Syncytial Virus and influenza virus were major causes of influenza-like illness this reporting fortnight. Overall, 13% of the respiratory viral tests conducted over this period were positive for influenza, an increase from 11% reported the previous fortnight (Table 1). Influenza B was the most common influenza type reported this fortnight. For the influenza A viruses for which subtyping data was available, the proportion of A(H3N2) continues to exceeded that of A(H1N1)pdm09, which is consistent with laboratory confirmed notification data (Figure 13).

Table 1. Sentinel laboratory respiratory virus testing results, 20 June to 3 July 2015.

<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>566</td>
<td>1045</td>
<td>192</td>
<td>277</td>
</tr>
<tr>
<td>Total influenza positive</td>
<td>17</td>
<td>196</td>
<td>30</td>
<td>26</td>
</tr>
<tr>
<td>Positive influenza A</td>
<td>10</td>
<td>47</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>A(H1N1)pdm09</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>2</td>
<td>43</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>A(unsutyped)</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Positive influenza B</td>
<td>7</td>
<td>149</td>
<td>19</td>
<td>8</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>3.0%</td>
<td>18.8%</td>
<td>15.6%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Most common respiratory virus detected</td>
<td>RSV</td>
<td>Influenza B Virus</td>
<td>Influenza B Virus</td>
<td>RSV</td>
</tr>
</tbody>
</table>

Source: National Influenza Centres (WA, NSW) and Tasmanian public hospital laboratory PCR testing
In the last fortnight, the Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system reported 76 admissions with confirmed influenza, a 65% increase on the admissions reported in the previous fortnight. Since 1 April 2015, 8.5% of influenza patients have been admitted directly to ICU and the majority of overall influenza admissions have been due to influenza B infection (53%) (Figure 14). Around 42% of the cases are aged 65 years or older (median age 55 years) and 71% of all cases had significant risk factors present on admission.

**Hospitalisations**

**Influenza Complications Alert Network (FluCAN)**

In the last fortnight, the Influenza Complications Alert Network (FluCAN) sentinel hospital surveillance system reported 76 admissions with confirmed influenza, a 65% increase on the admissions reported in the previous fortnight. Since 1 April 2015, 8.5% of influenza patients have been admitted directly to ICU and the majority of overall influenza admissions have been due to influenza B infection (53%) (Figure 14). Around 42% of the cases are aged 65 years or older (median age 55 years) and 71% of all cases had significant risk factors present on admission.

**Figure 14. Number of influenza hospitalisations at sentinel hospitals, 1 April to 3 July 2015, 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 5 July 2015, there were 261 admissions, including 25 to intensive care units (Figure 15). The majority of hospital admissions have been associated with influenza B infections (62%), and of those influenza A infections that have been subtyped, these have mostly been A(H3N2)\(^4\). In the year to date, there is a broad age distribution of influenza-associated hospitalisations with high numbers in the 0-9 and over 50 year age group. The median age of hospitalised cases is 55 years with a range of less than one to 94 years.

Figure 15. Number of influenza admissions to Queensland public hospitals, with onset from 1 January to 21 June 2015, 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. Data collection for 2015 commenced on 1 July 2015. Between 1 July 2015 and 3 July 2015, there have been no hospitalisations associated with severe complications of influenza reported.

Deaths Associated with Influenza and Pneumonia
Nationally Notified Influenza Associated Deaths
So far in 2015, 36 influenza associated deaths have been notified to the NNDSS, with a median age of 85 years (range 49 to 102 years). Influenza A infection was reported in all but five of the influenza associated deaths. Influenza A(H3N2) continues to be associated with deaths in 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 6 July 2015 there were 330 Australian influenza viruses subtyped by the WHO CC, with 37% influenza A(H3N2), 14% A(H1N1)pdm09 and 48% influenza B. The majority of influenza B viruses were from the B/Yamagata lineage (Table 3).
Table 3. Australian influenza viruses typed by HI from the WHO Collaborating Centre, 1 January to 22 June 2015.

<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>2</td>
<td>11</td>
<td>3</td>
<td>20</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>7</td>
<td>18</td>
<td>0</td>
<td>51</td>
<td>26</td>
<td>1</td>
<td>15</td>
<td>5</td>
<td>123</td>
</tr>
<tr>
<td>B/Victoria lineage</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>14</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>B/Yamagata lineage</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>64</td>
<td>34</td>
<td>0</td>
<td>8</td>
<td>12</td>
<td>130</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>42</td>
<td>6</td>
<td>149</td>
<td>69</td>
<td>1</td>
<td>32</td>
<td>19</td>
<td>330</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.

Of the limited number of isolates that have been further characterised for similarity with the vaccine components, influenza A viruses appear to be well matched. Over 80% of the influenza B viruses characterised are a match to the trivalent vaccine strain; the remaining influenza B viruses match the additional strain in the quadrivalent vaccine.

**Antiviral Resistance**

The WHO CC has reported that from 1 January to 6 July 2015, all influenza viruses (out of 351 tested) have shown sensitivity to the neuraminidase inhibitor oseltamivir and zanamivir by enzyme inhibition assay.

**5. International Influenza Surveillance**

The WHO\(^6\) has reported that as at 29 June 2015, globally influenza activity has decreased from its peak in early 2015 to low levels in the Northern Hemisphere while there were increases in activity in the Southern Hemisphere.

In Europe and North America, influenza activity was at low or inter-seasonal levels. Influenza B continued to be the predominant strain in circulation in recent weeks. In tropical countries of the Americas, low inter-seasonal levels of influenza activity were reported in most countries except Peru where low levels of influenza A circulation was detected.

In tropical Asia, increased influenza activity was reported from Hong Kong (Special Administrative Region, China), Singapore, southern China, Viet Nam, and Sri Lanka with influenza A viruses predominating in recent weeks.

In New Zealand\(^6\), through sentinel surveillance, the national ILI consultation rate was increased markedly from 21.9 per 100,000 patient population for the week ending 21 June 2015 to 42.1 for the week ending 5 July. Virological surveillance through both sentinel and non-sentinel laboratories shows that for the year to date, 72% of tested specimens have been influenza A viruses. Of the influenza A viruses, 54% were A(H3N2), 4.7% were A(H1N1)pdm09 and the remainder were A(unsubtyped). Of the influenza B viruses, 18% were identified as B/Yamagata lineage, 2% were B/Victoria lineage, and the remainder were not antigenically typed.

National Influenza Centres and other national influenza laboratories from 53 countries, areas or territories reported that for the period 31 May 2015 to 13 June 2015, a total of 1,620 specimens were positive for influenza viruses with 69% being influenza A. Of the subtyped influenza A viruses, 77% were influenza A(H3N2) and 23% were influenza A(H1N1)pdm09. Of the characterised B viruses, 83% belong to the B/Yamagata lineage and 17% to the B/Victoria lineage.\(^7\)

**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:


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 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</td>
</tr>
<tr>
<td>Localised</td>
<td>Lab confirmed influenza detections above background level“+” in less than 50% of the influenza surveillance region*.</td>
<td>OR</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 region*.</td>
<td>OR</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 region*.</td>
<td>OR</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>Evidence of increase in ILI via syndromic surveillance systems</td>
</tr>
<tr>
<td>Evidence of unchanged activity in ILI via syndromic surveillance systems</td>
</tr>
<tr>
<td>Evidence of a decrease 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-related symptoms and health seeking behaviour in communities. For further information refer to the FluTracking website (www.flutracking.net).

**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 2010 and 2015 consists of two main general practitioner schemes, the Australian Sentinel Practices Research Network (ASPREN) (incorporating the Sentinel Practitioners Network of Western Australia) 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 2015 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 20% of all ILI patients presenting to ASPREN sentinel GPs are swabbed for laboratory testing. Samples are tested for a range of respiratory viruses including influenza A, influenza B, rhinovirus, respiratory syncytial virus, parainfluenza, adenovirus, human metapneumovirus, Mycoplasma pneumonia and Bordetella pertussis. 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.victorianflusurveillance.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, Fiona Stanley 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. The denominator for rate calculations is not the total ED consultations for that day but a proportion of those which are uploaded into the data warehouse for surveillance purposes. This may change in the future.
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-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 University 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

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


