1. Influenza Notifications and ASPREN Influenza Like Illness

Figure 1: Laboratory confirmed influenza notifications in Queensland from 1st January 2010 to 3rd October 2010, by onset week and type. Also, Consultation rates for influenza like illness in Queensland reported to the ASPREN sentinel network 1st January 2009 to 3rd October 2010.

Data Sources: Queensland Health Notifiable Conditions Register 04/10/2010 and ASPREN website 04/10/2010

Influenza Notifications
Year to date 1910 cases of influenza (1776 type A, 131 type B and 3 untyped) have been notified to Queensland Health. 786 of the influenza A notifications are confirmed as pandemic (H1N1) 2009 infection while 95 have been H3N2. Figure 1 shows notifications for influenza A and B by week of onset. An increasing trend in notifications is noted from around week 29. The number of laboratory confirmed cases has decreased slightly since week 35 and seems to have reached a plateau. The recent week’s data (week 40) may be incomplete.
Figure 2: Age and gender profile of Influenza notifications in Queensland (2010) to 3rd October

Notifications are highest in the 20 – 39 age group for both males and females (Figure 2)

ASPREN
ASPREN is a national syndromic surveillance program co-ordinated by the Discipline of General Practice at the University of Adelaide and The Royal Australian College of General Practitioners. One of the conditions under surveillance is influenza like illness (ILI).

General practitioners (GP) participating in the ASPREN program contribute data on the proportion of consultations which are ILI related. Currently there are 20 Queensland GPs participating in the program.

Figure 1 shows ILI rates for consultations with Queensland GPs participating in the ASPREN program. There is rising trend from week 30 to 36 which is consistent with the rise in laboratory confirmed influenza notifications. The highest rate of ILI presentation was 23.3 per 1000 consultations in week 38. Recent week’s data may be incomplete.
2. Hospital Admissions in Queensland

Table 1: Hospital admissions in Queensland due to confirmed pandemic (H1N1) 2009 cases by Health Service District, from 1st January to 3rd October, 2010

<table>
<thead>
<tr>
<th>Health Service District</th>
<th>Cumulative Admissions (since 01/01/2010)</th>
<th>Currently Admitted (03/10/2010)</th>
<th>Cumulative ICU Admissions (since 01/01/2010)</th>
<th>Currently in ICU (03/10/2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cairns and Hinterland</td>
<td>12</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Cape York</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Queensland</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central West</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Children’s Health Services</td>
<td>11</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Darling Downs-West Moreton</td>
<td>28</td>
<td>2</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>27</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Mackay</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Metro North</td>
<td>31</td>
<td>8</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Metro South</td>
<td>24</td>
<td>3</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Mt Isa</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>South West</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sunshine Coast-Wide Bay</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Torres Strait-Northern Peninsula</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Townsville</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Private Hospitals §</td>
<td>15</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>167</strong></td>
<td><strong>19</strong></td>
<td><strong>44</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

*Data extracted from Epilog at 09:30 04/10/2010 and was correct at time of extract
†Accuracy of counts from public hospitals depends on the timeliness of data entry and may underestimate admission depending on the time of data extract.
§ Private hospital data last updated 27/09/2010

Epilog is a web based application which is used to store data related hospitalisation due to pandemic (H1N1)2009 infection in Queensland public hospitals and selected private hospitals. Analysis and reporting of data helps to inform strategies for optimizing health services and providing the best possible care for hospitalised cases.

Cumulative and current confirmed pandemic (H1N1) 2009 influenza admissions to hospital generally, and ICU specifically, are summarized in Table 1 by Health Service District (HSD).

Fifty one percent (78/152) of patients admitted to public hospitals (overall) were male compared with 61% (22/36) admitted to ICU. The number of hospitalisations is highest in the 0-4 age group. Hospitalisation of females in the 20-29 year age group was approximately four times higher than males in the same group. Males above forty years show a higher frequency of hospitalisation compared with females of similar age (Figure 3).
Figure 3: Age and gender profile of confirmed pandemic (H1N1) 2009 influenza cases admitted to public hospitals in Queensland 1st January to 3rd October 2010

Figure 4: Confirmed pandemic (H1N1) 2009 influenza cases admitted to public hospitals in Queensland by day of admission 1st July to 3rd October 2010
Pandemic (H1N1) 2009 influenza admissions have been steadily increasing since week 34. A decreasing trend is apparent from week 39. ICU admissions show a similar pattern to admissions overall (Figure 4). There have been two deaths attributed to Pandemic (H1N1) 2009 influenza since 1st January 2010.

Figure 5: Hospital Bed Occupancy of confirmed pandemic (H1N1) 2009 influenza cases admitted to public hospitals in Queensland 1st July to 3rd October 2010

Total bed occupancy, due to confirmed pandemic (H1N1) 2009 influenza, showed a peak on 17th September followed by a sustained decreasing trend (Figure 5).
3. Antiviral Courses Dispensed (from the National Stockpile) by Community Pharmacies

![Graph showing weekly courses of oseltamivir dispensed by community pharmacies from 1st January to 3rd October, 2010, with monthly moving average.]

**Figure 6:** Weekly courses of oseltamivir (Tamiflu®) dispensed by community pharmacies from 1st January to 3rd October, 2010, with monthly moving average.

Source: Pharmacy Guild of Queensland 03/10/2010

Figure 6 shows a sharp rise in the number of weekly courses of oseltamivir dispensed by community pharmacies between week 33 and week 37, followed by decreasing trend during weeks 38 and 39. Courses dispensed in the most recent week (week 40) show a slight increase.

4. Influenza Activity in Australia (reporting period 18th September to 24th September, 2010)

- Levels of influenza-like illness (ILI) in the community have continued to increase through most surveillance systems this reporting period. Local, regional and widespread activity was reported within jurisdictions. The number of laboratory confirmed notifications has also increased.
- There were 933 laboratory confirmed notifications of influenza during this reporting period, including 732 pandemic (H1N1) 2009 cases. Notifications of laboratory confirmed influenza were highest in SA.
- Results from sentinel laboratory surveillance systems for this reporting period show that 17% of the respiratory tests conducted over this period were positive for influenza, which is a slight increase from the last reporting period (14%). In 2010, a total of 973 specimens have been positive for influenza (of 12,228 specimens tested), of which 69% were pandemic (H1N1) 2009, 9% were A/H3N2 and 19% were influenza B.
• There have been 7,138 confirmed cases of influenza diagnosed in 2010 up to 24 September. A total of 41,715 confirmed cases of pandemic (H1N1) 2009 have occurred in Australia since May 2009.
• Sentinel hospitals reported a decrease in the number of influenza associated hospitalisations compared to previous weeks, with 18 admissions during the reporting period, including 13 for pandemic (H1N1) 2009. ANZICS reported 12 ICU admissions for influenza and the APSU reported three cases of influenza complications in children (<15 years) this reporting period.

Source: Australian Influenza Surveillance Report No. 38, 18 September 2010 – 24 September 2010

5. International Influenza Activity (reporting period 18th September to 24th September, 2010)
The WHO has advised that the world is no longer in phase 6 of influenza pandemic alert, and has moved into the post pandemic period. As of 1 August 2010 there have been over 18,449 deaths associated with pandemic (H1N1) 2009 influenza worldwide since April 2009.

Mexico has reported an increase in ILI and laboratory confirmed influenza notifications over the past two weeks. Of the laboratory confirmed samples, 98% were H3N2. This marks the beginning of a seasonal influenza period – six weeks earlier than expected.

In New Zealand, the ILI consultation rate peaked in early August and has now returned to below baseline levels. Of the influenza viruses identified through sentinel and non-sentinel swab testing in the past week, 83% were pandemic (H1N1) 2009 influenza.

Source: Australian Influenza Surveillance Report No. 38, 18 September 2010 – 24 September 2010

6. Virology

Typing and antigenic characterisation – WHO Collaborating Centre for Reference & Research on Influenza (WHO CC) in Melbourne

From 1 January to 26 September 2010, there were 731 Australian influenza isolates subtyped by the WHO CC.

<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)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pandemic (H1N1)2009</td>
<td>16</td>
<td>33</td>
<td>105</td>
<td>132</td>
<td>77</td>
<td>1</td>
<td>198</td>
<td>94</td>
<td>656</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>16</td>
<td>35</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>15</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>38</td>
<td>75</td>
<td>139</td>
<td>82</td>
<td>3</td>
<td>188</td>
<td>85</td>
<td>731</td>
</tr>
</tbody>
</table>

SOURCE: WHO CC
Please note: There may be up to a month delay on reporting of samples. Isolates tested by the WHO CC are not necessarily a random sample of all those in the community, hence proportions of pandemic (H1N1) 2009 to seasonal are not representative of the proportions circulating.
Antigenic characterisation of 422 pandemic (H1N1) 2009 isolates has shown 382 to be the A/California/7/2009-like strain and 4 a low reactor version of this strain. Antigenic characterisation of 27 type A/H3N2 isolates has shown 21 to be the A/Perth/16/2009-like and 6 to be the A/Perth/16/2009-like low reactor versions of the strain. One isolate was antigenically characterised as a low-reactor version of B/Florida/4/2006-like and 8 were characterised as B/Brisbane/60/2008-like.

Source: Australian Influenza Surveillance Report No. 38, 18 September 2010 – 24 September 2010

**Antiviral Resistance**

**Pandemic (H1N1) 2009**

The WHO Collaborating Centre in Melbourne has reported that from 1 January 2010 to 26 September 2010, no isolates (out of 443 tested) have shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and two pandemic (H1N1) 2009 isolates (out of 41 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

**2011 Southern Hemisphere Vaccine**

The WHO announced this week that the recommended vaccines for use in the 2011 influenza season (southern hemisphere winter) contain the following:

- an A/California/7/2009 (H1N1)-like virus;
- an A/Perth/16/2009 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus

Source: Australian Influenza Surveillance Report No. 38, 18 September 2010 – 24 September 2010