1. Influenza Notifications in Queensland

Figure 1: Influenza notifications in Queensland by onset week for week and type from 1st January 2011 to 22nd May 2011

Data Sources: Queensland Health Notifiable Conditions Register 23/05/2011

Year to date (YTD) there have been 1695 notifications of influenza in Queensland. Subtype is recorded for 726 of the 1538 notifications of influenza A, comprising 416 pandemic (H1N1)2009 and 310 H3N2. There have been 155 notifications of influenza B. Figure 1 shows notifications for influenza A and B by week of onset.

The YTD notification count is 7.0 times the five year mean for the same period. The trend is difficult to interpret given the unseasonably high activity in the early weeks of 2011 and the expectation that a seasonal increasing trend in Queensland notifications would be seen from around the end of May. Data should be interpreted with caution at this stage. The reason for the unusually high activity earlier in the year is not clear but it does not appear to be an artefact of increased testing.

Recent week notification data will usually be under estimated in data presented by date of disease onset.
Figure 2: Age and gender profile of Influenza notifications in Queensland (2011) to 22nd May

Data Sources: Queensland Health Notifiable Conditions Register 23/05/2011

Figure 2 shows 2011 influenza notifications by age group and gender. The 20-39 year age group accounted for 31% of notifications and <1 year age group accounted for 3%. The median age of notification was 32 years with an age range of <1 to 91 years. Influenza notifications were slightly higher in females (53%) than males (47%).

Figure 3: Influenza notifications in Queensland by Public Health Unit (PHU) in geographical order from north (left) to south (right) as at 22nd May 2011

Data Sources: Queensland Health Notifiable Conditions Register 23/05/2011

Compiled by the Epidemiology, Surveillance and Research Unit
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23 May 2011
YTD 2011, influenza notifications ranged from 497 (29%) in the Townsville PHU area to 56 (3%) in both West Moreton and Wide Bay PHU areas. Cairns, Townsville, Rockhampton and Wide Bay, together, accounted for 738 (44%) of notifications.

![Influenza Notification Rates per 100,000 Population](chart)

**Figure 4: Influenza notification rates per 100,000 population in Queensland by Health Service District (HSD) in geographical order from north (left) to south (right), 1st January to 22nd May 2011**

Data Sources: Queensland Health Notifiable Conditions Register 23/05/2011

YTD 2011, influenza notification rates by HSD ranged from 196.1 per 100,000 in Cape York to 15.3 per 100,000 in the Gold Coast. The notification rate in Cape York are approximately 12.8 times higher than the rate in Gold Coast and 1.1 times higher than Townsville. Comparison of crude rates can be misleading due to differences in underlying population structures in the areas being compared. Please interpret data cautiously.

2. **Influenza Activity in Australia (reporting period 30th April to 13th May, 2011)**

- The level of influenza-like illness (ILI) in the community remains low based on the majority of ILI surveillance systems during this reporting period.
- All jurisdictions have reported unusually high numbers of laboratory confirmed influenza notifications over the summer months. However there has been a decline in the number of notifications in most jurisdictions during recent weeks.
- During this reporting period there were 225 laboratory confirmed notifications of influenza, including 147 cases of influenza A untyped, 33 cases of pandemic (H1N1) 2009, 44 cases of influenza B and 1 case of influenza A & B. Queensland reported the highest number of notifications.
- As at 29 April 2011, there have been 3,434 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 810 for the same period in 2010.

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3. International Influenza Activity (reporting period 30th April to 13th May, 2011)\(^1\)

The WHO has reported that worldwide influenza activity is low and activity in the Northern Hemisphere temperate regions has returned to baseline or pre-seasonal levels. In countries in the tropical zone, influenza activity is generally low with some transmission reported in countries of Sub-Saharan Africa. Reports from National Influenza Centres from 68 countries report that from 9 April – 23 April 2011, 39% of specimens reported as influenza positive were influenza type A and 61% were influenza type B. Of the sub-typed influenza A viruses, 47% were pandemic (H1N1) 2009 and 53% were influenza A(H3N2).

4. Virology\(^1\)

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

From 1\(^{st}\) January to 15\(^{th}\) May 2011, there were 429 Australian influenza isolates processed by the WHO CC, with 85% (366/429) type A and 15% (63/429) type B. Subtyping of influenza A isolates indicated that 55% (202/366) were pandemic (H1N1) 2009 and 45% (164/366) were A/H3N2 (Table 1).

Table 1: Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 15 May 2011

<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>Pandemic (H1N1) 2009</td>
<td>0</td>
<td>8</td>
<td>28</td>
<td>127</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>22</td>
<td>202</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>0</td>
<td>1</td>
<td>48</td>
<td>102</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>164</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>3</td>
<td>32</td>
<td>21</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>12</td>
<td>108</td>
<td>250</td>
<td>0</td>
<td>3</td>
<td>22</td>
<td>34</td>
<td>429</td>
</tr>
</tbody>
</table>

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

Antigenic characterisation indicates that influenza isolates are a close match with the composition of the 2011 southern hemisphere influenza vaccine.

**Antiviral Resistance**

The WHO Collaborating Centre in Melbourne has reported that from 1 January 2011 to 15 May 2011, one isolate (out of 706 tested) has shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA). One isolate out of a total of 7 pandemic H1N1 (2009) tested, have shown the H275Y mutation known to confer resistance to oseltamivir.

**Reference**