1. Influenza Notifications in Queensland

Year to date (YTD) there have been 1592 notifications of influenza in Queensland. Subtype is recorded for 676 of the 1445 notifications of influenza A, comprising 379 pandemic (H1N1)2009 and 297 H3N2. There have been 145 notifications of influenza B. Figure 1 shows notifications for influenza A and B by week of onset.

The YTD notification count is 7.4 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. Notification counts from week 17 do appear to show a decreasing trend but this should be interpreted with caution at this stage. The reason for this 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 1: Influenza notifications in Queensland by onset week for week and type from 1st January 2011 to 8th May 2011

Data Sources: Queensland Health Notifiable Conditions Register 10/05/2011

Compiled by the Epidemiology, Surveillance and Research Unit
Communicable Diseases Branch
Health Protection Directorate
Division of the Chief Health Officer
EPI@health.qld.gov.au
9 May 2011
Figure 2: Age and gender profile of Influenza notifications in Queensland (2011) to 8th May

Data Sources: Queensland Health Notifiable Conditions Register 10/05/2011

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 8th May 2011

Data Sources: Queensland Health Notifiable Conditions Register 10/05/2011

Compiled by the Epidemiology, Surveillance and Research Unit
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9 May 2011
YTD 2011, influenza notifications range from 483(30 %) in the Townsville PHU area to 52(3%) in the West Moreton PHU area. Cairns, Townsville, Rockhampton and Wide Bay, together, account for 710 (45 %) of notifications.

![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 8th May 2011](image)

Data Sources: Queensland Health Notifiable Conditions Register 10/05/2011
*The Estimated Resident Population – (ERP), 2009 was used

YTD 2011, influenza notifications by HSD ranged from 196.1 per 100,000 in Cape York to14.8 per 100,000 in the Gold Coast. The notification rates in Cape York are approximately 13.3 times higher than the rates 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 16th April to 29th April, 2011)1

- Levels of influenza-like illness (ILI) in the community have shown a slight increase compared with recent weeks, however the overall pattern is one of low activity through the majority of ILI surveillance systems this reporting period.
- All jurisdictions have reported higher than expected numbers of laboratory confirmed influenza notifications over the summer months, however in recent weeks there has been a decline in the number of notifications in most jurisdictions.
- During this reporting period there were 175 laboratory confirmed notifications of influenza, which included 103 cases of influenza A unsubtyped, 31 cases of pandemic (H1N1) 2009, 3 of A/H3N2 and 37 cases of influenza B. Queensland reported the highest number of notifications.
- As at 29 April 2011, there have been 3,141 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 651 for the same period in 2010.
3. International Influenza Activity (reporting period 16th April to 29th April, 2011)\(^1\)

The WHO has reported that influenza activity in the Northern Hemisphere temperate regions has returned to baseline levels in most areas, indicating the season is now ending. In countries in the tropical zone, influenza activity is generally low with localised transmission of influenza A/H3N2 in central Africa. Reports from National Influenza Centres from 69 countries report that from 27 March – 9 April 2011, 51% of specimens reported as influenza positive were influenza type A and 49% were influenza type B. Of the sub-typed influenza A viruses, 60% were pandemic (H1N1) 2009 and 40% 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 1\(^{st}\) May 2011, there were 377 Australian influenza isolates processed by the WHO CC, with 84% (316/377) type A and 16% (61/377) type B. Subtyping of influenza A isolates indicated that 54% (170/316) were pandemic (H1N1) 2009 and 46% (146/316) were A/H3N2 (Table 1).

<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>
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<td>5</td>
<td>28</td>
<td>102</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>20</td>
<td>170</td>
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<tr>
<td>A(H3N2)</td>
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<td>45</td>
<td>85</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>146</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>3</td>
<td>32</td>
<td>19</td>
<td>0</td>
<td>0</td>
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<td>105</td>
<td>206</td>
<td>0</td>
<td>2</td>
<td>21</td>
<td>34</td>
<td>377</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 1 May 2011, one isolate (out of 668 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**
