1. Influenza Notifications in Queensland

![Figure 1: Influenza notifications in Queensland by onset week for week and type from 1st January 2011 to 24th April 2011](image)

Data Sources: Queensland Health Notifiable Conditions Register 27/04/2011

Year to date (YTD) there have been 1479 notifications of influenza in Queensland. Subtype is recorded for 606 of the 1344 notifications of influenza A, comprising 344 pandemic (H1N1)2009 and 262 H3N2. There have been 134 notifications of influenza B. Figure 1 shows notifications for influenza A and B by week of onset. The decrease in notifications in week 17 may be an artefact of reporting delays.

The YTD notification count is 7.9 times the five year mean for the same period. The reason for this unusually high activity is not clear but does not appear to be an artefact of increased testing. Although the start of the flu season is variable from year to year, a seasonal increasing trend in Queensland notifications would be expected from around the end of May. There is no reason to believe that notification numbers are declining. Recent week notification data will always be underestimated in data presented by date of disease onset.
Figure 2: Age and gender profile of Influenza notifications in Queensland (2011) to 24th April

Data Sources: Queensland Health Notifiable Conditions Register 27/04/2011

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 accounted for 3%. Median age of notifications is 32 years and the age range is <1 to 91 years. Influenza notifications were 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 24th April 2011

Data Sources: Queensland Health Notifiable Conditions Register 27/04/2011

Compiled by the Epidemiology, Surveillance and Research Unit
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25 April 2011
YTD 2011, influenza notifications ranged from 460(31%) in the Townsville PHU area to 47(3%) in the West Moreton PHU area. Cairns, Townsville, Rockhampton and Wide Bay, together, accounted for 676 (46%) 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 24th April 2011

Data Sources: Queensland Health Notifiable Conditions Register 27/04/2011
*The Estimated Resident Population – (ERP), 2009 was used

YTD 2011, influenza notifications by HSD ranged from 196.1 per 100,000 in Cape York to 13.4 per 100,000 in the Gold Coast. The notification rates in Cape York are approximately 14.6 times higher than the rates in Gold Coast and 1.2 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 2nd April to 15th April, 2011)¹

- Levels of influenza-like illness (ILI) in the community remained low through all surveillance systems this reporting period. However, the number of laboratory confirmed notifications that have occurred during the 2010-11 inter-seasonal period has been higher than usually seen.
- During this reporting period there were 267 laboratory confirmed notifications of influenza, which included 166 cases of influenza A untyped and 46 cases of pandemic (H1N1) 2009. Queensland reported the highest number of notifications.
- All jurisdictions have been reporting higher than usual numbers of notifications over the summer months, however in recent weeks there has been a decline in the number of notifications in most jurisdictions.
As at 15 April 2011, there have been 2,879 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 614 for the same period in 2010. The WHO has reported that influenza activity is continuing to decline in most parts of the Northern Hemisphere.

3. International Influenza Activity (reporting period 2nd April to 15th April, 2011)\(^1\)

Most areas within the northern hemisphere have past their peak influenza activity and are now showing a decreasing trend in notifications. The United States is currently reporting pneumonia and influenza mortality levels above the epidemic threshold, with many states reporting widespread activity. Reports from National Influenza Centres from 76 countries report 63% of specimens reported as influenza positive were influenza type A and 37% were influenza type B. Of the sub-typed influenza A viruses, 68% were influenza A(H1N1) 2009 and 32% 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 18\(^{th}\) April 2011, there were 332 Australian influenza isolates processed by the WHO CC, with 83% (275/332) type A and 17% (57/332) type B. Subtyping of influenza A isolates indicated that 55% (150/275) were pandemic (H1N1) 2009 and 45% (125/275) 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>
<td>0</td>
<td>1</td>
<td>28</td>
<td>85</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>21</td>
<td>150</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>0</td>
<td>1</td>
<td>43</td>
<td>68</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>125</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>32</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>2</td>
<td>103</td>
<td>171</td>
<td>0</td>
<td>2</td>
<td>20</td>
<td>34</td>
<td>332</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 18 April 2011, one isolate (out of 547 tested) has shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and one isolate (out of 7 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

**Reference**