1. Influenza Notifications in Queensland

![Influenza Notifications in Queensland by Onset Week and Type from 1st January 2011 to 17th April 2011](Figure 1)

Figure 1: Influenza notifications in Queensland by onset week for week and type from 1st January 2011 to 17th April 2011

Data Source: Queensland Health Notifiable Conditions Register 18/04/2011

Year to date (YTD) there have been 1406 notifications of influenza in Queensland. Subtype is recorded for 578 of the 1277 notifications of influenza A, comprising 327 pandemic (H1N1)2009 and 251 H3N2. There have been 128 notifications of influenza B. Figure 1 shows notifications for influenza A and B by week of onset.

The YTD notification count is 8.2 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 evidence to suggest that notifications are declining. Recent week notification data will always be an under estimate in data presented by date of disease onset.
Figure 2: Age and gender profile of Influenza notifications in Queensland (2011) to 17th April

Data Source: Queensland Health Notifiable Conditions Register 18/04/2011

Figure 2 shows 2011 influenza notifications by age group and gender. The 20-39 year age group accounted for 31% of notifications. 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 17th April 2011

Data Source: Queensland Health Notifiable Conditions Register 18/04/2011

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
18 April 2011
YTD 2011, influenza notifications ranged from 437 (31%) in the Townsville PHU area to 44 (3%) in the West Moreton PHU area. Cairns, Townsville, Rockhampton and Wide Bay, together, accounted for 646 (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 17th April 2011

YTD 2011, influenza notifications by HSD ranged from 188.6 per 100,000 in Cape York to 12.6 per 100,000 in the Gold Coast. The notification rates in Cape York are approximately 14.9 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 19th March to 1st April, 2011)£

- Levels of influenza-like illness (ILI) in the community remained low based on data from a range of surveillance systems. However, the number of laboratory confirmed notifications has been unusually high during the 2010-11 inter-seasonal period.
- There were 319 laboratory confirmed influenza notifications, including 54 cases of pandemic (H1N1) 2009 and 210 cases of unsubtyped influenza A. Queensland reported the highest number of notifications.
- All jurisdictions are reporting unusually high numbers of notifications for this time of the year, especially in the Northern Territory and Queensland. Based on sub-typing information, Queensland are reporting circulation of mostly pandemic (H1N1) 2009 and type A/H3N2. The majority of the Northern Territory cases have been type A/H3N2.

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Division of the Chief Health Officer
EPI@health.qld.gov.au
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• As at 1 April 2011, there have been 2,532 confirmed cases of influenza reported to the National Notifiable Diseases Surveillance System (NNDSS) in 2011, compared with 451 for the same period in 2010.

3. International Influenza Activity (reporting period 19th March to 1st April, 2011)

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 71 countries report 70% of specimens reported as influenza positive were influenza type A and 30% were influenza type B. Of the sub-typed influenza A viruses, 77% were influenza A(H1N1) 2009 and 23% were influenza A(H3N2).

4. Virology

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

From 1st January to 3rd April 2011, there were 298 Australian influenza isolates processed by the WHO CC, with 83% (246/298) type A and 17% (52/298) type B. Subtyping of influenza A isolates indicated that 53% (131/246) were pandemic (H1N1) 2009 and 47% (115/246) were A/H3N2 (Table 1).

Table 1: Typing of influenza isolates from the WHO Collaborating Centre, from 1 January 2011 to 3 April 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>1</td>
<td>26</td>
<td>85</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>5</td>
<td>131</td>
</tr>
<tr>
<td>A(H3N2)</td>
<td>0</td>
<td>1</td>
<td>41</td>
<td>68</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>115</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>31</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>2</td>
<td>98</td>
<td>171</td>
<td>0</td>
<td>2</td>
<td>19</td>
<td>6</td>
<td>298</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 3 April 2011, one isolate (out of 547 tested) has shown resistance to oseltamivir or zanamivir by enzyme inhibition assay (EIA) and no isolates (out of 547 tested) have shown the H275Y mutation known to confer resistance to oseltamivir.

Reference