Update on seasonal influenza in the Southern Hemisphere in 2011-2

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The Melbourne WHO Collaborating Centre for Reference and Research on Influenza is supported by the Australian Government Department of Health and Ageing
Ways to get an update on influenza activity

- **WHO websites**
  - WHO Vaccine formulation meetings (Feb/Sep each year) [http://www.who.int/influenza/vaccines/virus/en/](http://www.who.int/influenza/vaccines/virus/en/)

- **Google Flu trends** - [http://www.google.org/flutrends/](http://www.google.org/flutrends/)

- **Collaborating Centre Web sites**
  - CDC Atlanta - [http://www.cdc.gov/flu/](http://www.cdc.gov/flu/)

- **Situation reports (mainly during influenza season)**

- **CDC International Influenza** - [http://www.cdc.gov/flu/international/](http://www.cdc.gov/flu/international/)


- **Email a Collaborating Centre and ask!!**
Influenza virus activity in the world

11 May 2012

Source: Laboratory confirmed data from the Global Influenza Surveillance and Response System (GISRS).

Influenza A(H1N1)pdm09 and 1,954 (36.9%) as influenza B. Of the subtyped influenza A viruses, 306 (13.4%) were influenza A(H1N1)pdm09 and 1,952 (86.6%) were influenza A(H3N2). Of the characterized B viruses, 85 (37.6%) belonged to the B-Yamagata lineage and 141 (62.4%) to the B-Victoria lineage.

Summary

During weeks 16 and 17 in 2012, laboratory confirmed influenza activity in general was low worldwide. Activity continued to decline in the northern hemisphere.

Influenza A(H3N2) remained the predominant virus subtype detected globally at low levels except in a number of countries where influenza B was dominant virus. Influenza A(H1N1)pdm09 virus was detected to a lesser extent.

In Europe, the number of virus detections declined. Influenza A(H3N2) continued to be the dominant virus in circulation, followed by influenza B.

In North America, influenza A(H3N2) remained the predominant virus subtype in the United States of America, with an increasing proportion of B viruses relative to influenza A viruses observed in recent weeks. Influenza B continued to be the main virus detected in Canada. In Central America influenza activity was low, except in the Dominican Republic where outbreaks of influenza A(H3N2) virus continued to
Southern Hemisphere activity – WHO Flunet

Number of specimens positive for influenza by subtype

Up to 20 May 2012

H1pdm, H3, B’s

Wk 39: 23-29 Sep 2011

WHO data by country - Australia

Number of specimens positive for influenza by subtype

Aug 19-25

H3, B’s
WHO Influenza transmission zones

http://www.who.int/csr/disease/swineflu/Influenza_transmission_zones.pdf
WHO data for Southern African zone

Number of specimens positive for influenza by subtype

B’s
WHO data for Temperate South America zone

Number of specimens positive for influenza by subtype

July 15-21

Argentina
Chile
Falkland Islands (Malvinas)
Paraguay
Uruguay

H1pdm, H3, B’s
Explore flu trends around the world

We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more »
South America – Google flu trends

Explore flu trends - Chile
We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more.

Explore flu trends - Argentina (Experimental)
We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more.

Estimates were made using a model that proved accurate when compared to historic official flu activity data. Data current through May 21, 2012.

Experimental estimates were made using a model that has not been compared to historic official flu activity data. Data current through May 21, 2012.
Australia & NZ – Google flu trends

Explore flu trends - Australia
We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more.

Explore flu trends - New Zealand
We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more.

Estimates were made using a model that proved accurate when compared to historic official flu activity data. Data current through May 21, 2012.
Google trends data can be followed back for up to 6 years

Australia
2011 Australian Influenza season

• Average-Low “Influenza” season
  – High levels of lab confirmed influenza by NNDSS early (Jan-May)
  – During influenza season ILI levels generally low
  – Lab confirmed influenza – highest year (except 09)
    • 27,060 notifications in 2011 vs 13,491 in 2010
  – Main season: late June, peaked in wk 32 (w/b 8/8), ended Nov

• Characteristics of season
  – Mainly Pandemic H1N1 and B viruses in Aus (& NZ) late run H3N2
  – FluCan data; some hospital admissions (246*), few ICU (34*)
  – Some vaccine breakthroughs recorded (mainly H3N2)
  – Lower out of season influenza notifications for 2011-12 vs 2010-11

* 1 May – 13 October 2011
Australian ILI and lab diagnosed influenza

ILI

Lab confirmed influenza
Types, subtypes, B-lineages in Australia 2011-2
(influenza viruses received at the WHO CC Melbourne)

Australia 2011

- Type A(H1): 22%
- Type A(H3): 36%
- Type B: 42%

Australia 2012*

- Type A(H3): 37%
- Type A(H1): 4%
- Type B: 59%

*up to May 21

B Viruses

2011

- B/Victoria-lineage: 98%
- B/Yamagata-lineage: 2%

2012*

- B/Victoria-lineage: 81%
- B/Yamagata-lineage: 19%
Influenza viruses received & analysed at Melbourne CC
1.7.2011–25.5.2012

Countries supplying samples in 2011

- Type A(H3)  
- Type A(H1)  
- Type B  
- Pandemic (H1N1) 2009
## Sample types analysed at the WHO CC Melbourne

<table>
<thead>
<tr>
<th>Year</th>
<th>OCS</th>
<th>Virus Isolates</th>
<th>Ratio Isolates:OCS</th>
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<tbody>
<tr>
<td>2006</td>
<td>221</td>
<td>802</td>
<td>3.6</td>
</tr>
<tr>
<td>2007</td>
<td>440</td>
<td>1355</td>
<td>3.1</td>
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<tr>
<td>2008</td>
<td>280</td>
<td>1413</td>
<td>5.1</td>
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<td>2009</td>
<td>1944</td>
<td>1210</td>
<td>0.62</td>
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<tr>
<td>2010</td>
<td>1235</td>
<td>1013</td>
<td>0.82</td>
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<tr>
<td>2011</td>
<td>2403</td>
<td>1757</td>
<td>0.73</td>
</tr>
<tr>
<td>2012*</td>
<td>(179)</td>
<td>(415)</td>
<td>(2.3)</td>
</tr>
</tbody>
</table>

*to May 2012
Influenza vaccines used in Australia and NZ in 2011
(same vaccine to be used in 2012)

- H1N1pdm – A/California/7/2009
  (circulating strain: A/California/7/2009-like)

- H3 – A/Perth/16/2009
  (circulating strain: A/Perth/16/2009-like but some drift and vaccine breakthroughs)

- B - B/Brisbane/60/2008 (B/Victoria lineage)
  (circulating strain: B/Brisbane/60/2008-like – >99% of the B/Victoria lineage, <1% B/Yamagata lineage)
To the Editor: The influenza A pandemic (H1N1) 2009 virus rapidly created a global pandemic among humans and also appears to have strong infectivity for a broad range of animal species (1–3). The virus has been found repeatedly in swine and has been detected in a dog, cats, turkeys, and domestic ferrets and in nondomestic animals, including skunks, cheetahs, and giant anteaters (2–4). In some cases, animal-to-animal transmission may have occurred, raising concern about the development of new wildlife reservoirs (2).
New advice from Hollywood for the next pandemic?

DON’T TALK TO ANYONE
DON’T TOUCH ANYONE
Summary of influenza activity 2011-12

- Normal season (impact and timing) in Aus/NZ in 2011
- Few hospitalizations, ICU admissions, deaths
- Pandemic H1N1 & influenza B predominated, some H3
- Fewer “out of season” influenza notifications
- Vaccine match – excellent in 2 viruses, good/OK? in 1 (H3); some vaccine breakthroughs occurred mainly in A(H3N2)
- No increase in adverse events in vaccinated children
- An outbreak of oseltamivir resistant H1N1pdm in Newcastle (Aus) in 2011

- Influenza activity in Sth Hemisphere low so far in 2012
- B & A(H3N2) predominating in Australia in 2012 so far (reduced H1N1pdm)
- Some increase in B/Yamagata lineage viruses but B/Victoria viruses are still in majority so far in 2012
- Unlike the 2012-3 Nth Hemisphere influenza vaccine, the 2012 Sth Hemisphere vaccine is unchanged (No H3N2 update or B/Yam virus included)