In the past week, a total of 179 consultations for influenza-like illness were reported from 83 general practices in 21 out of 24 health districts. This gives a weekly consultation rate of 55.7 per 100,000 patient population.

Figure 1 compares the consultation rates for influenza-like illness for each health district over the past week. Waikato had the highest consultation rate (148.5 per 100,000), followed by Eastern Bay of Plenty (146.3 per 100,000).

Figure 1

Weekly consultation rates for influenza-like illness by health district
week ending 27 May 2005

Forty-four swabs were sent from the sentinel surveillance in the past week. Forty-eight swabs were received by virology laboratories. Of these, eight influenza viruses were identified, four as influenza B (yet to be antigenically typed), three as B/Hong Kong/330/2001-like, and one as B/Shanghai/361/2002-like viruses. The distribution by health district is shown in Table 1.

Table 1.

<table>
<thead>
<tr>
<th></th>
<th>CA</th>
<th>SA</th>
<th>WK</th>
<th>BE</th>
<th>WN</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>B/Hong Kong/330/2001-like</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B/Shanghai/361/2002-like</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

In addition, 20 influenza viruses were reported this week from the laboratory-based (non-sentinel) surveillance. Fourteen were identified as influenza B (yet to be antigenically typed), four as influenza A (yet to be sub-typed), one each as B/Hong Kong/330/2001-like, and one as B/Shanghai/361/2002-like.
like, and B/Shanghai/361/2002-like viruses. The distribution by health district is shown in Table 2.

Table 2.

<table>
<thead>
<tr>
<th></th>
<th>CA</th>
<th>SA</th>
<th>WK</th>
<th>CB</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>B/Hong Kong/330/2001-like</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>B/Shanghai/361/2002-like</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td>20</td>
</tr>
</tbody>
</table>

Figure 2 shows the cumulative total of influenza isolates confirmed (sentinel and laboratory-based surveillance) to the end of week 21, 27 May 2005. A total of 70 isolates were identified. Of these, 31 as influenza B (yet to be antigenically typed), 12 as B/Hong Kong/330/2001-like, 11 as influenza A (yet to be sub-typed), eight as B/Shanghai/361/2002-like, three as A/Fujian/411/2002-like, two as A/California/7/2004-like, two as B/Sichuan/379/99-like, and one as A/Wellington/1/2004-like viruses.

For detailed explanations on influenza B characterisations, please see appendix.

Figure 2
Figure 3 shows the weekly national consultation rates for 2003 and 2004 seasons, and 2005 so far. The current rate of influenza is higher than at the same time last year.

Figure 3
Figure 4 illustrates consultation rates for influenza-like illness mapped by health district for week 21, 2005.

The threshold used to describe the influenza-like activity can be referred in New Zealand Public Health Report 2001, 8 (1): 9-12 “Influenza surveillance and immunisation in New Zealand, 1990-1999”

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Appendix: Influenza B strain characterisation

Two distinct lines of influenza B have been observed during recent years. The B/Panama/45/90 variant of influenza B was first observed in 1990. This strain and its further variants (most recently representative strain-B/Shanghai/361/2002) spread worldwide whereas strains of the previous B/Victoria/2/87-like viruses continued to circulate within Asia and subsequently underwent independent evolution as an antigenically distinct lineage (most recent representative strain-B/HongKong/330/2001). For reasons not wholly understood, B/HongKong lineage viruses remained geographically restricted to Asia until 2001.

In 2002 the B/HongKong/330/2001-like strains managed to spread to New Zealand and completely replaced B/Shanghai lineage virus during that year. In 2003, there were 3 influenza B isolations (one B/HongKong lineage virus in March and two B/Shanghai lineage viruses at the end of the winter season). In 2004, a total of 62 influenza B viruses were typed (61 as B/Shanghai/361/2002-like strains and 1 as B/HongKong/330/2001-like).

In 2005, influenza B circulation has three interesting features: 1) Influenza B became the predominant strain at the beginning of the influenza season. This is in contrast to the usual pattern that influenza B predominates at the tailing period of the season. 2) B/HongKong lineage virus and B/Shanghai lineage virus are co-circulating in the community, both of these strains caused school outbreaks in the Auckland and Wellington regions. 3) So far, there have been more B/HongKong lineage viruses (12) than B/Shanghai lineage viruses (10).

In October 2004, the Australian Influenza Vaccine Committee (AIVC) made influenza vaccine composition recommendations for 2005 for New Zealand, Australia and South Africa. B/Shanghai/361/2002-like strain was chosen as the B component of the vaccine based on epidemiological, antigenic, genetic and serological evidence. The great majority of influenza B isolates was antigenically closely related to B/Shanghai/361/2002-like strains. In 2004, B/Shanghai lineage viruses were the predominant influenza B viruses whereas B/Hong Kong lineage viruses circulated at a lower level.

Vaccines containing influenza B/Shanghai/361/2002 -like antigens stimulated post-immunization HI antibodies at titres >40 to the vaccine virus in the sera of 71% of adult and 76% of elderly vaccinees. For representative recent B/Shanghai/361/2002-like isolates, the titres and frequencies of antibodies were similar. For representative recent B/Hong Kong/330/2001-like viruses, the titres and frequencies of antibodies were lower: 27% of adults and 43% of elderly vaccinees had HI titres >40. (Weekly Epidemiological Record 2004 79(41): 369-376)

Because influenza B has a greater antigenic stability than influenza A, illness due to influenza B tends to occur mostly in younger age group, particularly school-age children. This could explain the current school outbreaks in the Auckland and Wellington regions. In general, influenza B causes less severe diseases compared with influenza A. For example, it has been reported the frequency of serious influenza B infection requiring hospitalisation is about 4-fold less than that of influenza A virus. In addition to the usual influenza-like symptoms, gastrointestinal symptoms and muscle inflammation (Myositis) are more common manifestations of influenza B than influenza A.

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