

INFLUENZA WEEKLY UPDATE

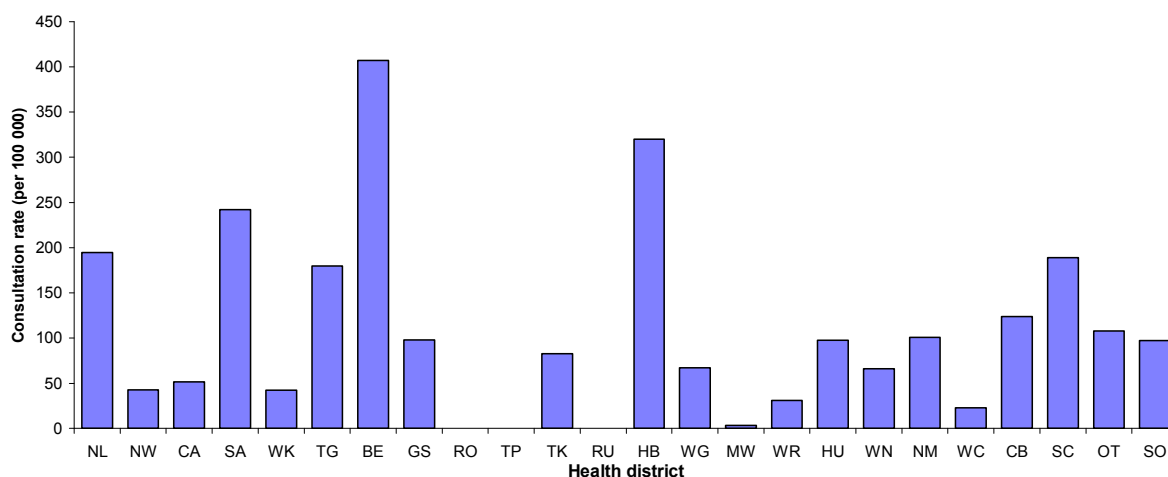
2008/34: 18-22 August 2008

In the past week, a total of 316 consultations for influenza-like illness were reported from 82 general practices in all of the 24 health districts. This gives a weekly consultation rate of 93.1 per 100 000 patient population.

Figure 1 compares the consultation rates for influenza-like illness for each health district over the past week. Eastern Bay of Plenty had the highest consultation rate (406.9 per 100 000), followed by Hawke's Bay (320.2 per 100 000).

Figure 1

Figure 1: Weekly consultation rates for influenza-like illness by health district week ending 22 August 2008



Sixty swabs were sent from the sentinel surveillance in the past week. Seventy-three swabs were received by virology laboratories. Of these, 59 influenza viruses were identified, 35 B (not antigenically typed), eight A H3N2 (not antigenically sub-typed), six B/Malaysia/2506/2004 – like, five influenza A (yet to be sub-typed), four B/Florida/4/2006 – like, and one A/Brisbane/10/2007 (H3N2) – like. The distribution by health district is shown in Table 1.

Table 1

Antigenic Strain	NL	NW	CA	SA	WK	TG	BE	GS	TP	HB	WG	WR	WN	HU	NM	CB	SC	OT	SO	Total
A (yet to be sub-typed)	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5
A H3N2 (not antigenically sub-typed)	1	0	0	0	0	0	1	1	0	0	1	1	1	0	2	0	0	0	0	8
A/Brisbane/10/2007 (H3N2) - like	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
B (not antigenically typed)	0	2	8	0	1	2	1	1	1	4	1	0	2	2	1	2	2	4	1	35
B/Florida/4/2006 - like	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	4
B/Malaysia/2506/2004 - like	0	0	0	0	1	1	1	0	0	0	0	0	2	0	0	0	0	1	0	6
Total	1	2	10	1	2	3	3	2	1	4	2	1	6	4	3	5	2	6	1	59

In addition, 55 influenza viruses were reported this week from the laboratory-based (non-sentinel) surveillance, 45 B (not antigenically typed) and 10 influenza A (yet to be sub-typed). The distribution by health district is shown in Table 2.

Table 2

Antigenic Strain	NW	CA	SA	WK	HB	CB	Total
A (yet to be sub-typed)	0	1	0	0	0	9	10
B (not antigenically typed)	1	9	3	4	3	25	45
Total	1	10	3	4	3	34	55

Figure 2 show the cumulative total of influenza viruses confirmed (sentinel and laboratory-based surveillance) to the end of week 34, 22 August 2008. A total of 680 influenza viruses were identified, 172 influenza A (yet to be sub-typed), 131 A/Brisbane/10/2007 (H3N2) – like, 54 A H3N2 (not antigenically sub-typed), one A H1N1 (not antigenically sub-typed), 266 influenza B (not antigenically typed), 41 B/Florida/4/2006 – lineage, and 15 B/Malaysia/2506/2004 – like.

Figure 2

Figure 2: Cumulative laboratory-confirmed isolates by health district to 22 August 2008

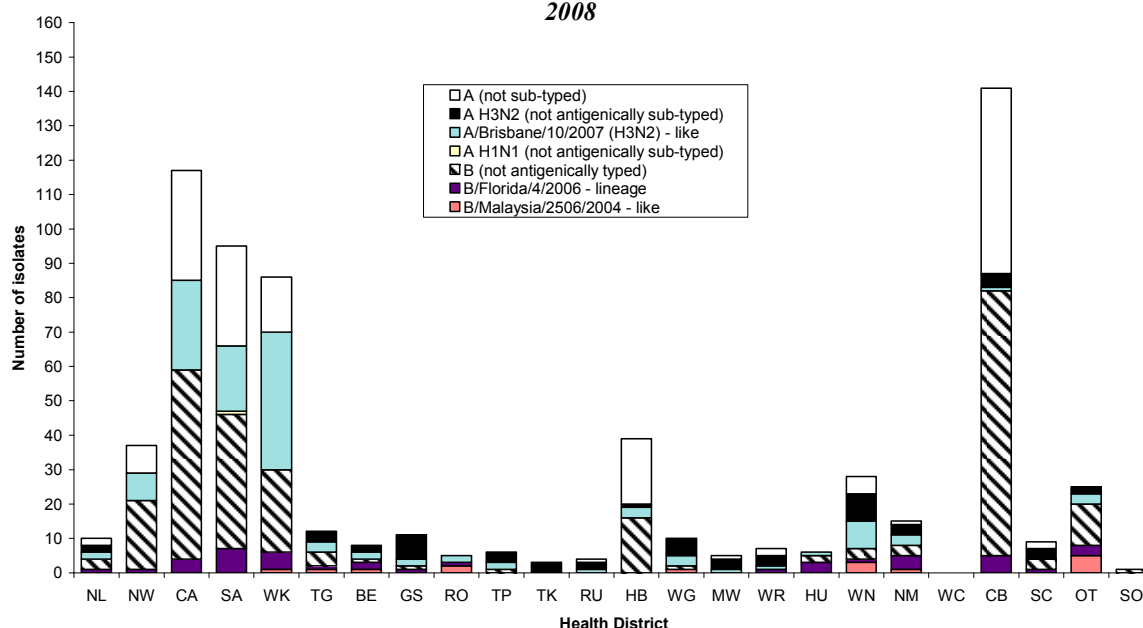


Figure 3 shows the weekly national consultation rates for 2006 and 2007 seasons, and 2008 so far. The current rate of influenza is higher than at the same time last year.

Figure 3

Figure 3: Weekly consultation rates for influenza-like illness in New Zealand, 2006, 2007 and 2008

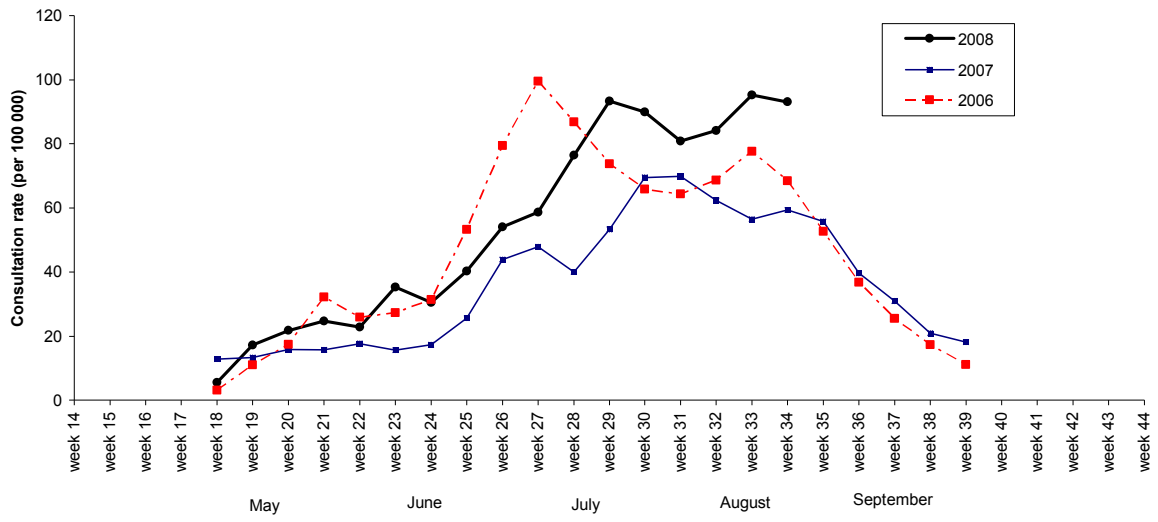
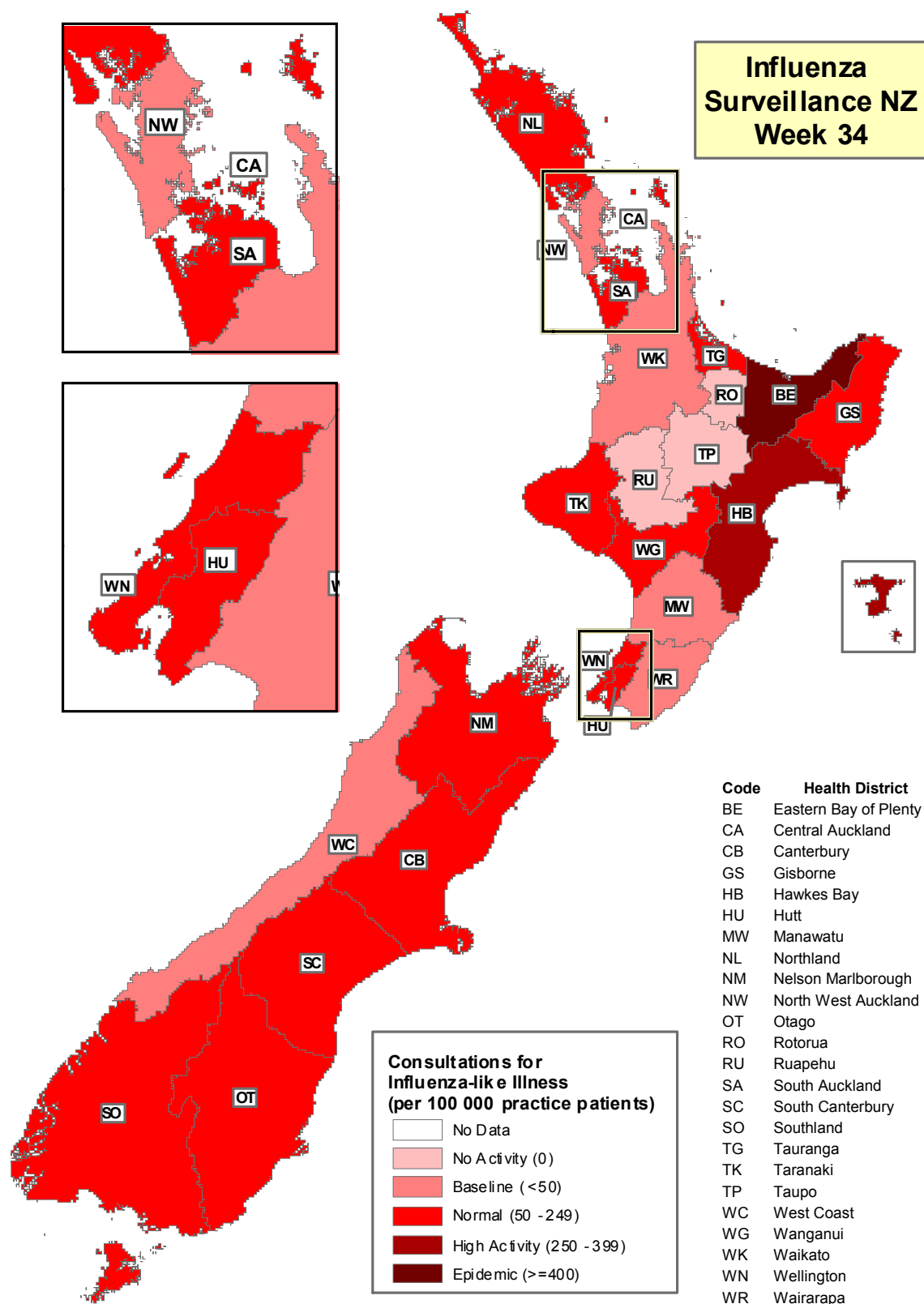


Figure 4 illustrates consultation rates for influenza-like illness mapped by health district for week 34, 2008.

Figure 4



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Appendix: Characterisation of the influenza B virus in 2008

Two distinct lines of influenza B have co-circulated in many countries during recent years. This dates from the late 1980's when the B/Panama/45/90 variant of influenza B was first observed. This strain and its further variants-B/Yamagata16/88-lineage (most recently representative strain-B/Florida/4/2006-like virus) spread worldwide whereas strains of the previous B/Victoria/2/87-lineage viruses continued to circulate in Asia and subsequently underwent independent evolution as an antigenically distinct lineage (most recent representative strain-B/Malaysia/2504/2004-like virus). For reasons not wholly understood, B/Victoria/2/87-lineage viruses remained geographically restricted to Asia until 2001. Therefore, B/Yamagata-lineage was the only lineage virus circulating in New Zealand till 2001.

In 2002, the B/Victoria/2/87-lineage viruses managed to spread to New Zealand and completely replaced B/Yamagata-lineage virus during that year. Since 2003, New Zealand has been facing a new situation where two lineages of influenza B viruses co-circulating in the community (For details, please see the table below). The table showed the circulation of influenza B viruses with various activities from 2001 to 2008. New Zealand experienced the highest influenza B activity in 2005 with B/Victoria/2/87 lineage virus (550) as the predominant strain (Huang et al, NZ Med J 2007;120:U2581). The highest number (230) of the influenza B/Yamagata/16/88 lineage virus was reported in 2001. In 2008, from week 18 (28 April to 2 May) to week 33 (11-15 August), 232 of influenza B viruses were reported with 36 of B/Florida/4/2006-like viruses and 2 of B/Malaysia/2504/2004-like viruses. From week 18 to week 34 (18-22 August), a total of 322 influenza viruses were reported with 41 of B/Florida/4/2006-like viruses and 15 of B/Malaysia/2504/2004-like viruses. More B/Malaysia/2504/2004-like viruses were reported in week 34.

Number of influenza viruses	2001	2002	2003	2004	2005	2006	2007	2008 week 18-33	2008 week 18-34
A H3N2	48	325	911	658	83	384	282	175	185
A H1N1	331	2	1	1	18	56	201	1	1
B-not antigenically typed				12	60	1	19	194	266
B/Yamagata/16/88 lineage	230		2	61	124	2	142	36	41
B/Victoria/2/87-lineage		151	1	1	550	3	2	2	15
Subtotal B	230	151	3	74	734	6	163	232	322
Total No.	609	478	915	733	835	446	646	408	508

Influenza vaccine contains 3 components: Influenza A(H1N1), A(H3N2) and B. The two lineages of influenza B viruses have some low level of cross-protection (roughly 20-30%). In October 2007, the Australian Influenza Vaccine Committee (AIVC), with a NZ representative, made recommendation on influenza vaccine composition for 2008 for New Zealand, Australia and South Africa. B/Florida/4/2006-like strain was chosen as the B component of the vaccine based on all epidemiological, antigenic, genetic and serological evidence. The great majority of influenza B viruses isolated in 2007 in New Zealand were antigenically closely related to B/Florida/4/2006-like strain.

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 when the susceptible population against influenza B increases. In addition, the antigenic typing results from the WHO National Influenza Centre at ESR and the WHO Collaborating Centre at Melbourne indicated drifting trends for both of influenza B/Florida/4/2006-like and B/Malaysia/2504/2004-like strains. These factors could explain the current school outbreaks in Auckland and Wellington regions.

In general, influenza B causes less severe diseases compared with influenza A. For example, the frequency of serious influenza B infection requiring hospitalisation is about 4-fold less than that of influenza A virus. Gastrointestinal symptoms and muscle inflammation (Myositis) are more common manifestations of influenza B than influenza A.

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