

INFLUENZA WEEKLY UPDATE

2015/37: 7–13 September 2015

The national influenza surveillance system in New Zealand is an essential public health component for assessing and implementing strategies to control influenza. This report summarises the data collected from sentinel general practice (GP) surveillance and non-sentinel surveillance for week 37 (7–13 September 2015).

Summary

- Influenza-like illness (ILI) through sentinel surveillance was reported from 18 out of 20 District Health Boards (DHB) with a national consultation rate of 48.4 per 100,000 (154 ILI consultations).
- A total of 903 swabs were received from sentinel (45) and non-sentinel (858) surveillance.
- 288 influenza viruses were identified: B (not lineage-typed) (199), A (not sub-typed) (42), A(H3N2) (33) including two A/Switzerland/9715293/2013 (H3N2)-like, B/Yamagata lineage (8) including one B/Phuket/3073/2013-like, B/Victoria lineage (4) including two B/Brisbane/60/2008-like, and A(H1N1)pdm09 (2) including one A/California/7/2009 (H1N1)-like.

INFLUENZA-LIKE ILLNESS SURVEILLANCE

In the past week, a total of 154 consultations for influenza-like illness were reported from 58 general practices in 18 out of 20 DHBs. This gives a weekly consultation rate of 48.4 per 100,000 patient population. Figure 1 shows the weekly national consultation rate for 2015 in comparison to the average seasonal curve in 2000–2013 (excluding 2009). For more details on threshold definitions, see Appendix. The current rate of influenza-like illness is below the alert threshold.

Figure 1. Weekly consultation rates for influenza-like illness in New Zealand in 2015 in comparison to the average seasonal curve in 2000–2013 (excluding 2009)

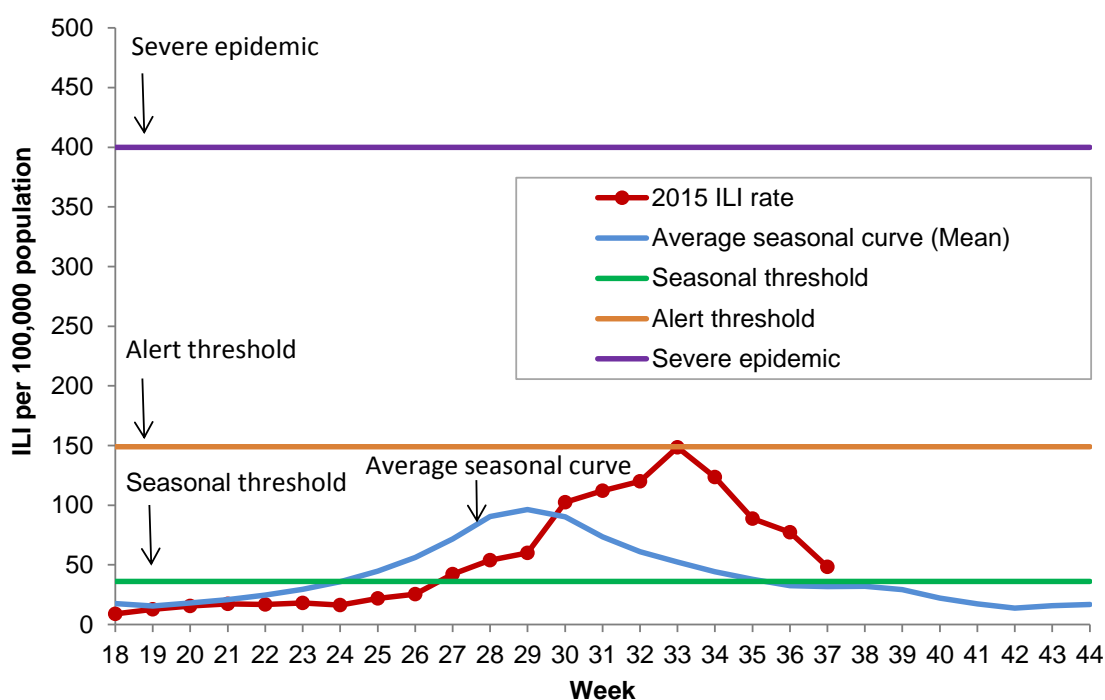


Figure 2 shows the weekly national consultation rate for 2015 in comparison to the previous years 2009–2014.

Figure 2. Weekly consultation rates for influenza-like illness in New Zealand, 2009–2015

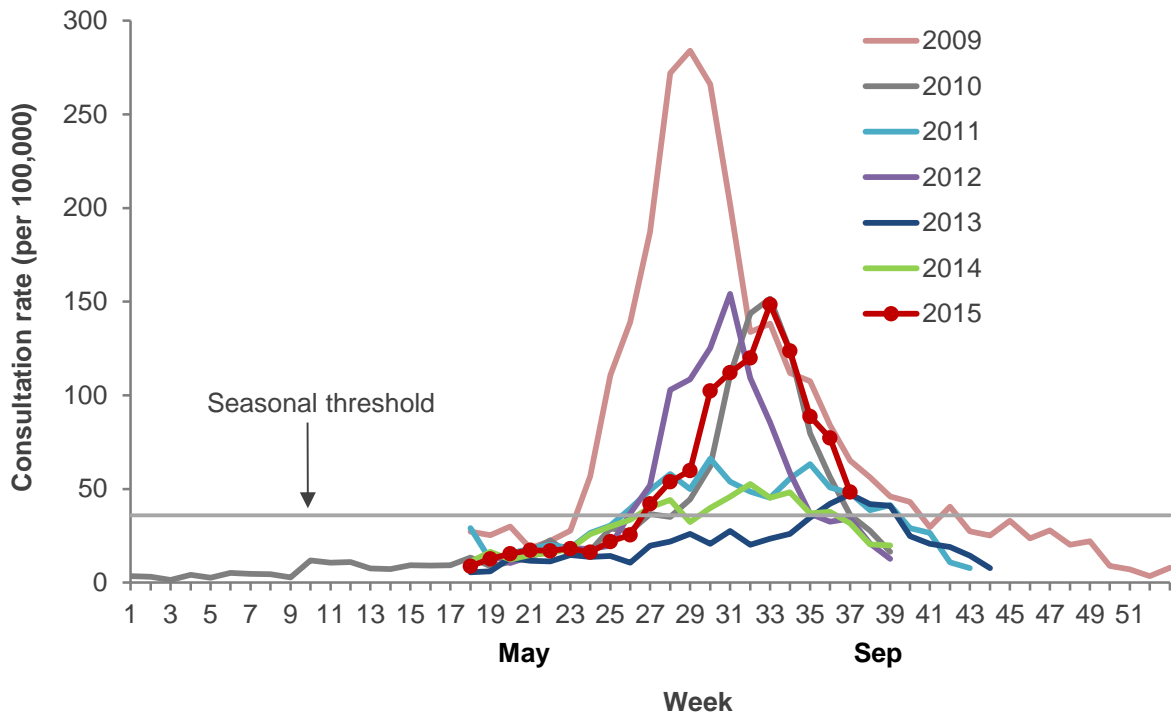
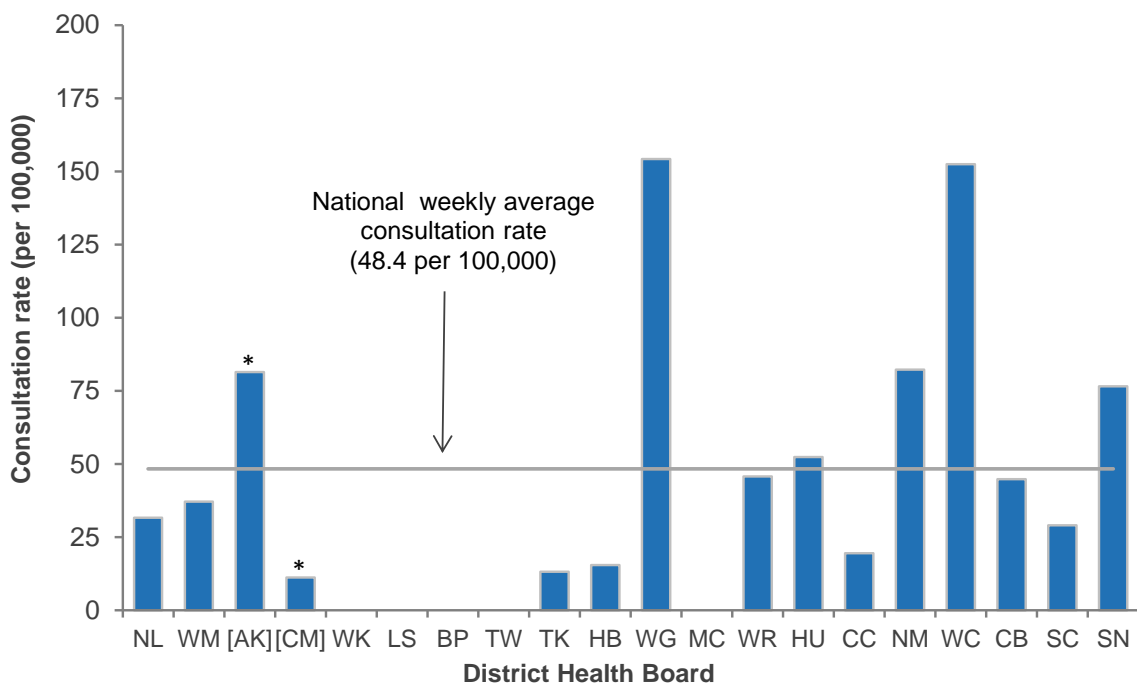


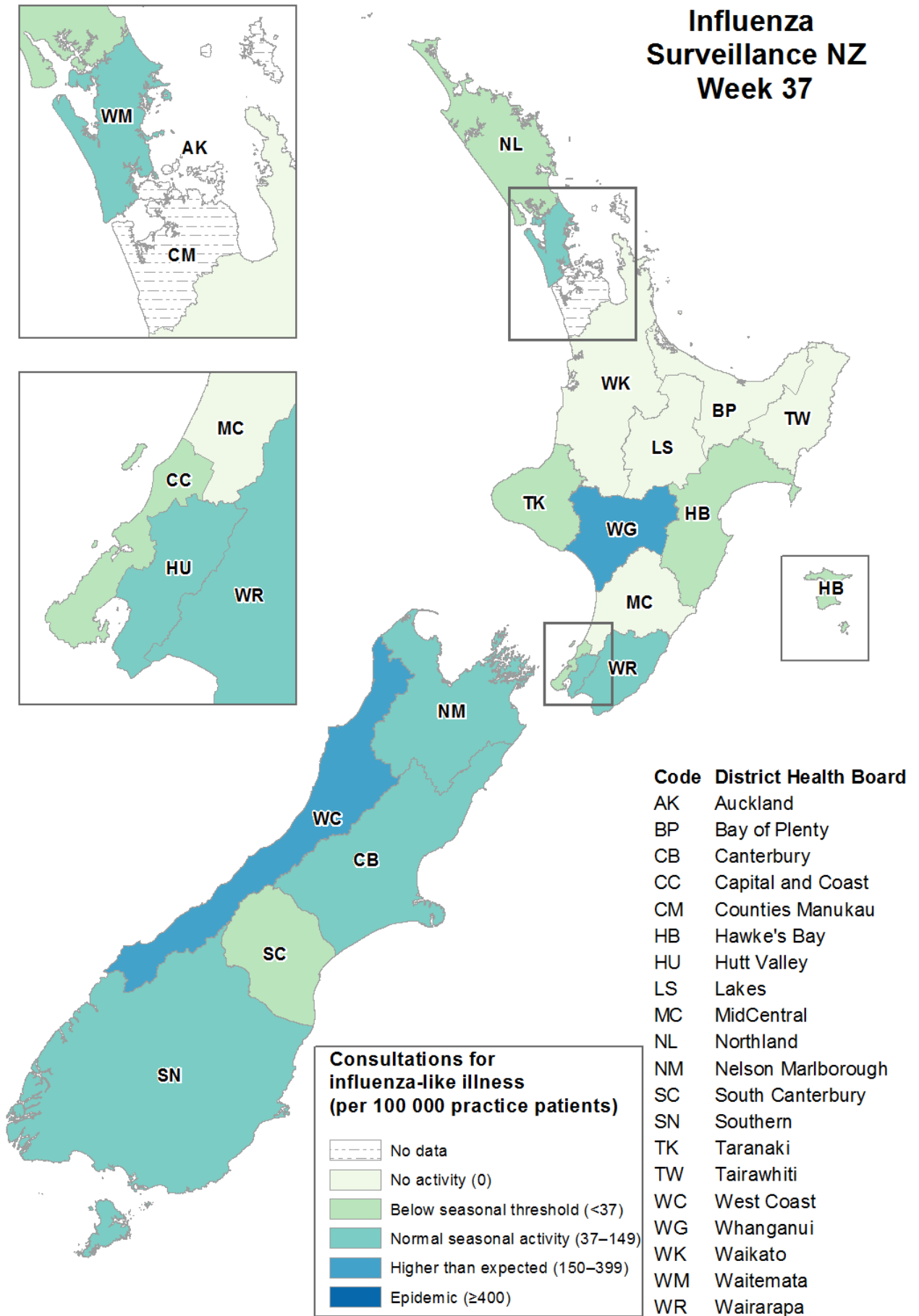
Figure 3 compares the consultation rates for influenza-like illness for each DHB over the past week. Whanganui (154.2 per 100,000, 8 cases) and West Coast (152.5 per 100,000, 24 cases) DHBs had the highest consultation rates.

Figure 3. Weekly consultation rates for influenza-like illness by DHB week ending 13 September 2015



Note: Auckland (AK) and Counties Manukau (CM) DHBs follow the Southern Hemisphere Influenza and Vaccine Effectiveness Research and Surveillance (SHIVERS) case definition which is different from this sentinel surveillance. Based on the SHIVERS weekly report, the ILI incidence for Auckland and Counties Manukau DHBs for week 37 were 81.4 per 100,000 and 11.2 per 100,000 patient populations, respectively. For more details, please refer to the website: <http://www.esr.cri.nz/health-science/our-work/shivers/reports/>

Figure 4. Consultation rates for influenza-like illness mapped by DHB for week 37, 2015



VIROLOGICAL SURVEILLANCE

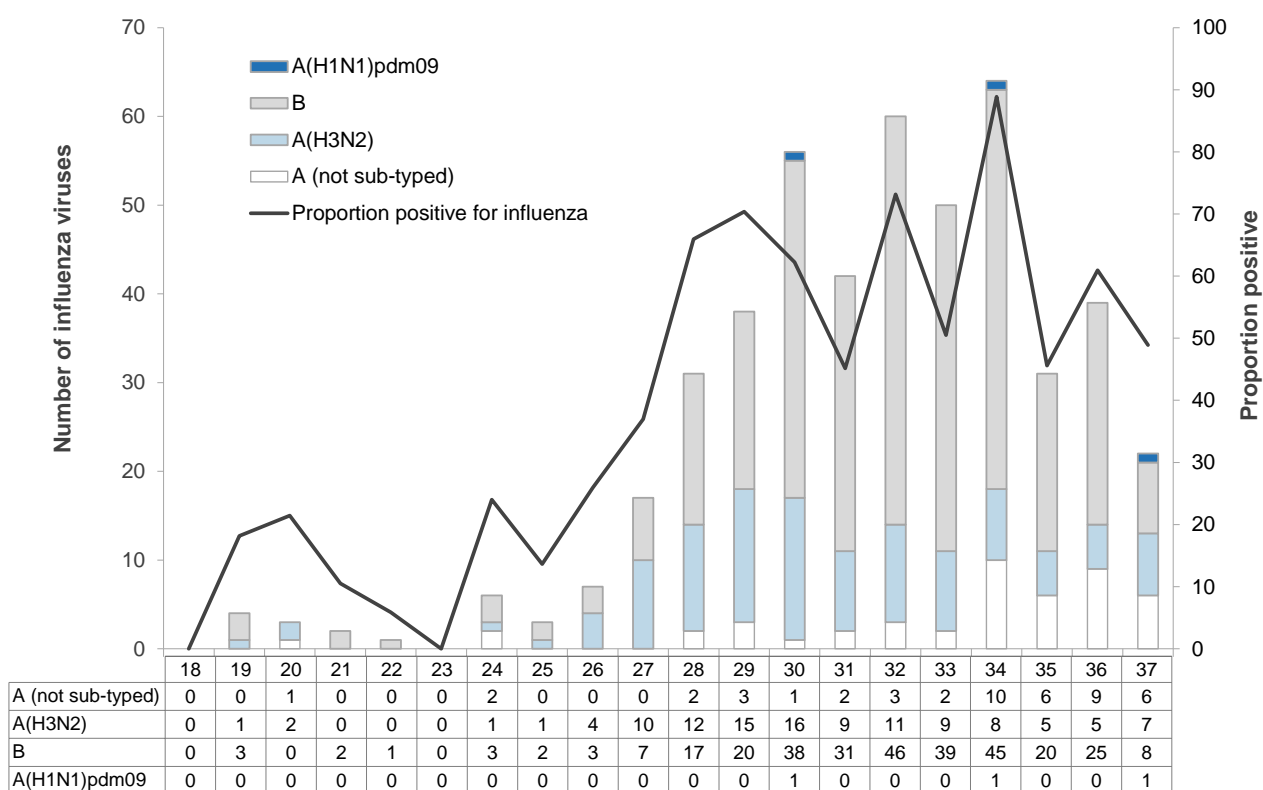
A total of 45 swabs were received from sentinel surveillance. Of these, 22 influenza viruses were identified: B (not lineage-typed) (8), A(H3N2) (7), A (not sub-typed) (6), and A(H1N1)pdm09 (1). The distribution by DHB is shown in Table 1.

Table 1. Influenza viruses from sentinel surveillance for week 37 by DHB

Antigenic Strain	DHB							Total
	NL	WM	WG	WR	CC	NM	CB	
A (not sub-typed)	0	0	0	1	3	2	0	6
A(H1N1)pdm09	0	0	0	0	0	0	1	1
A(H3N2)	0	0	0	0	0	0	7	7
B (not lineage-typed)	1	1	1	2	1	0	2	8
Total	1	1	1	3	4	2	10	22

The temporal distribution of influenza viruses is shown in Figure 5 below for sentinel surveillance from week 18 (27 April–3 May 2015) to week 37 (13 September 2015). The predominant type was influenza B.

Figure 5. Total influenza viruses from sentinel surveillance by type and week reported, week 18–37 and the total percentage positive from the swabs received



In addition, 858 swabs were received by virology laboratories from non-sentinel surveillance. Of these, 266 influenza viruses were identified: B (not lineage-typed) (191), A (not sub-typed) (36), A(H3N2) (26) including two A/Switzerland/9715293/2013 (H3N2)-like, B/Yamagata lineage (8) including one B/Phuket/3073/2013-like, B/Victoria lineage (4) including two B/Brisbane/60/2008-like, and A/California/7/2009 (H1N1)-like (1). The distribution by DHB is shown in Table 2.

Table 2. Influenza viruses from non-sentinel surveillance for week 37 by DHB

Antigenic Strain	DHB															Total
	WM	AK	CM	WK	LS	BP	TK	HB	MC	HU	CC	NM	WC	CB	SN	
A (not sub-typed)	0	26	2	0	0	2	0	0	0	2	3	0	0	0	1	36
A(H3N2)	0	0	9	1	0	0	1	0	2	0	0	2	0	9	0	24
A/Switzerland/9715293/2013 (H3N2)-like	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
A/California/7/2009 (H1N1)-like	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
B (not lineage-typed)	0	68	55	9	4	14	3	1	4	5	14	0	1	13	0	191
B/Yamagata lineage	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	7
B/Phuket/3073/2013-like	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
B/Victoria lineage	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
B/Brisbane/60/2008-like	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Total	1	94	70	10	4	16	4	1	6	7	19	2	1	23	8	266

The temporal distribution of influenza viruses is shown in Figure 6 below for non-sentinel surveillance from week 18 (27 April–3 May 2015) to week 37 (13 September 2015). Overall, the predominant type was influenza A. However, since week 33 more influenza B than influenza A were detected.

Figure 6. Total influenza viruses from non-sentinel surveillance by type and week reported, week 18–37 and the total percentage positive from the swabs received

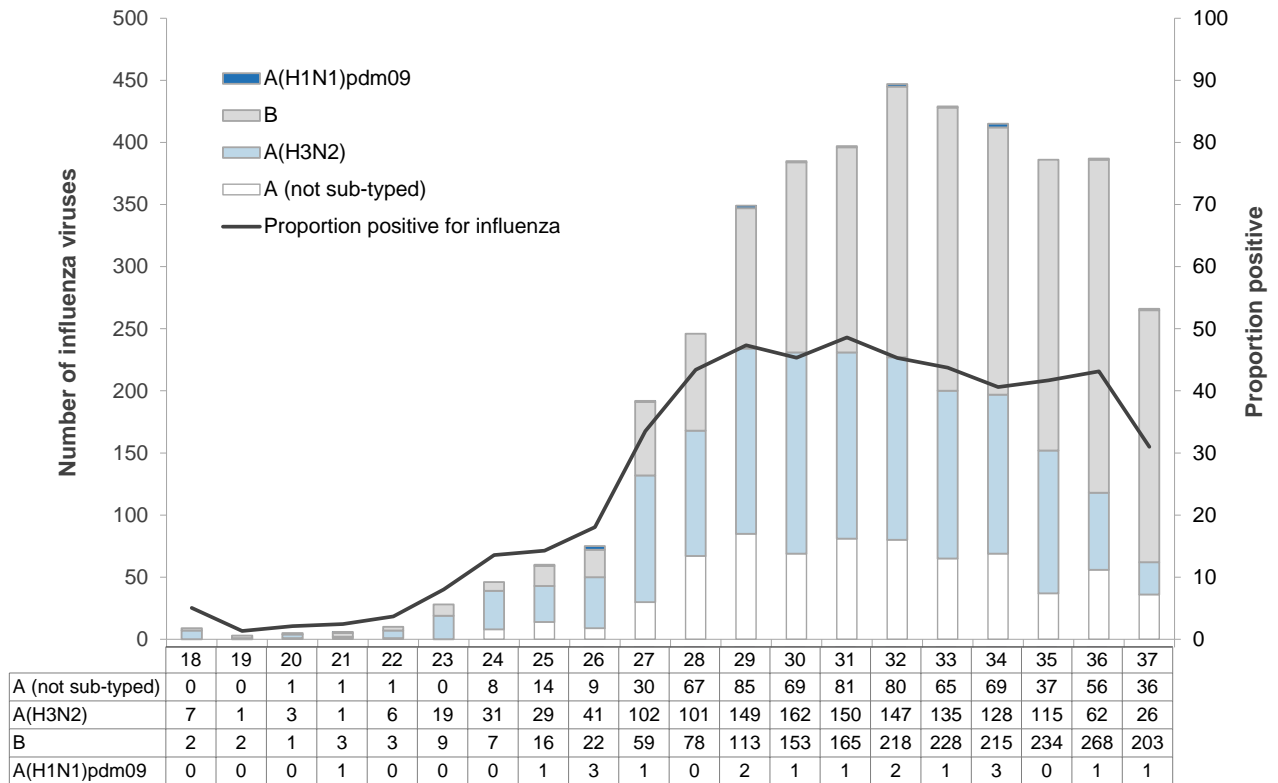


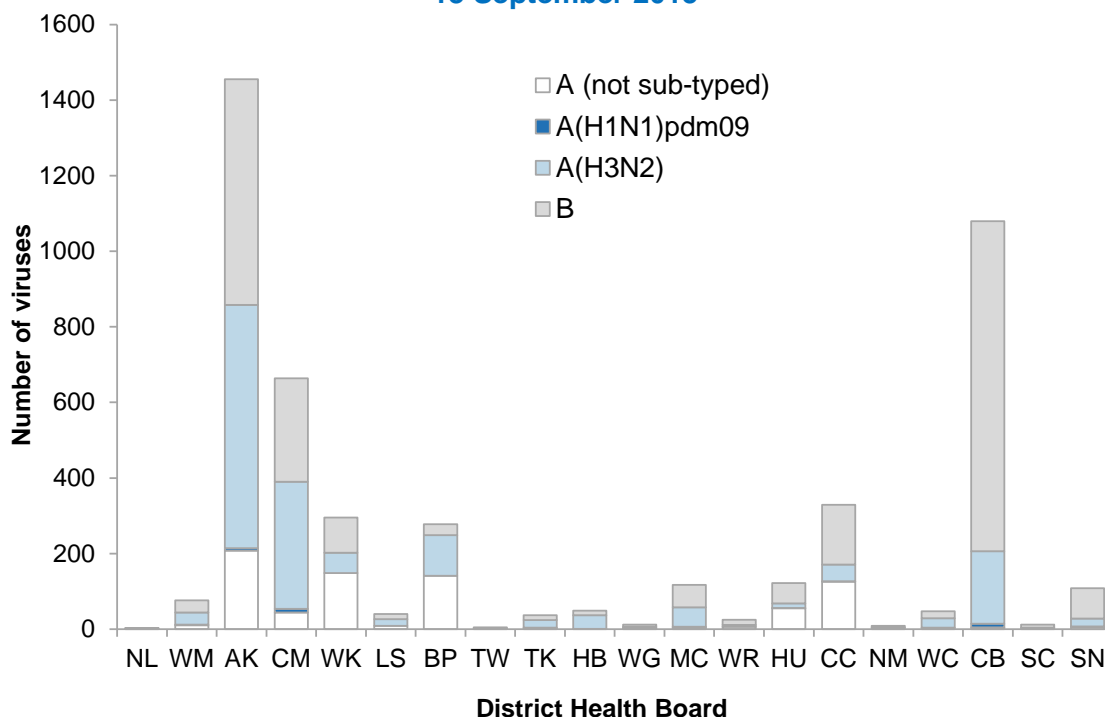
Figure 7 shows the cumulative total of influenza viruses confirmed (sentinel and non-sentinel surveillance) from week 1 to the end of week 37 (13 September 2015). A total of 4763 influenza viruses were identified: A(H3N2) (1613) including 79 A/Switzerland/9715293/2013 (H3N2)-like and 15 A/Texas/50/2012 (H3N2)-like, B/Yamagata lineage (241) including 165 B/Phuket/3073/2013-like and six B/Massachusetts/2/2012-like, B/Victoria lineage (123) including 93 B/Brisbane/60/2008-like, B (not lineage-typed) (1977), A(H1N1)pdm09 (37) including eight A/California/7/2009 (H1N1)-like, and A (not sub-typed) (772) viruses.

The recommended influenza vaccine formulation for New Zealand in 2015 is:

- A(H1N1) an A/California/7/2009 (H1N1)pdm-like virus*
- A(H3N2) an A/Switzerland/9715293/2013 (H3N2)-like virus
- B a B/Phuket/3073/2013-like virus

* Note: The A/California/7/2009 (H1N1)-like strain is an influenza A(H1N1)pdm09 strain.

Figure 7. Cumulative laboratory-confirmed viruses by DHB from week 1 to week 37, 13 September 2015



APPENDIX

* New Zealand’s ILI data during 2000–2013 (excluding 2009) was reviewed and updated:

- The average seasonal curve indicated here is the usual level of influenza activity that may occur during a typical year using the method described in “*Global epidemiological surveillance standards for influenza*” (http://www.who.int/influenza/resources/documents/WHO_Epidemiological_Influenza_Surveillance_Standards_2014.pdf).
- The seasonal threshold indicated here is the level of influenza activity that signals the start and end of the annual influenza season and it was based on the Moving Epidemic Method (Vega *et al. Influenza and other respiratory viruses* 2013;7(4):546-558). A weekly rate of 36 ILI consultations per 100,000 patient population is considered the seasonal threshold.
- Alert threshold (defined as 90% upper confidence interval) indicated here is a level above which, varying by time of year, influenza activity is higher than most years.
- The ILI rates used here to describe different level of influenza activity is based on the 25th and 75th percentiles of the ILI data. A rate of 37–149 per 100,000 patient population is considered indicative of normal seasonal influenza activity; a rate of 150–399 indicative of higher than expected influenza activity; a rate of ≥ 400 indicative of a severe epidemic level of influenza activity.

Table 3. ILI activity threshold

Term used	Consultation rate (per 100,000 population)	
Baseline	≤ 36	
Normal seasonal activity	low	37-70
	moderate	71-110
	high	111-149
Higher than expected	150-399	
Severe epidemic	≥ 400	

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