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# Community and Hospital Surveillance

## ILI, SARI, Influenza and Respiratory Pathogens

2017 Influenza Season, Week 39, ending 1 October 2017

### SUMMARY

- Influenza-like illness (ILI) consultation rates decreased compared to the previous week, and were below the seasonal threshold level.
- Influenza - associated severe acute respiratory illness (SARI) hospitalisation rates were similar to last week, at a low level and below the seasonal threshold level.
- Influenza A(H3N2) are the predominant viruses in New Zealand this year.
- Influenza B/Victoria lineage viruses also co-circulated with B/Yamagata lineage viruses with more B/Yamagata viruses this year.
- Rhinovirus and respiratory syncytial virus (RSV) are the most commonly detected non-influenza viruses this week, with numbers remaining high.

The surveillance for community-based influenza-like illness (ILI) and hospital-based severe acute respiratory illness (SARI) provides evidence to inform public health and clinical practice to reduce the impact of influenza virus infection and other important respiratory pathogens. This weekly report summarises data obtained from the ILI and SARI surveillance platforms. The report includes incidence, demographic characteristics, clinical outcomes and aetiologies for community ILI cases as well as hospital SARI cases including ICU admissions and deaths for the past week as well as the cumulative period since 2 January 2017.

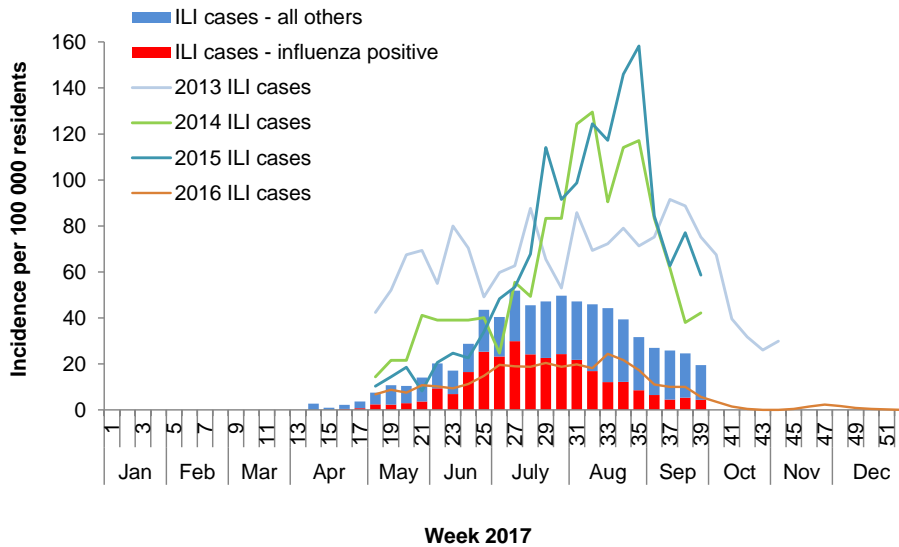
Note: Data in this report are provisional and may change as more cases are assessed and information is updated. Data were extracted on 4 October 2017.

# INFLUENZA-LIKE ILLNESS and SEVERE ACUTE RESPIRATORY ILLNESS

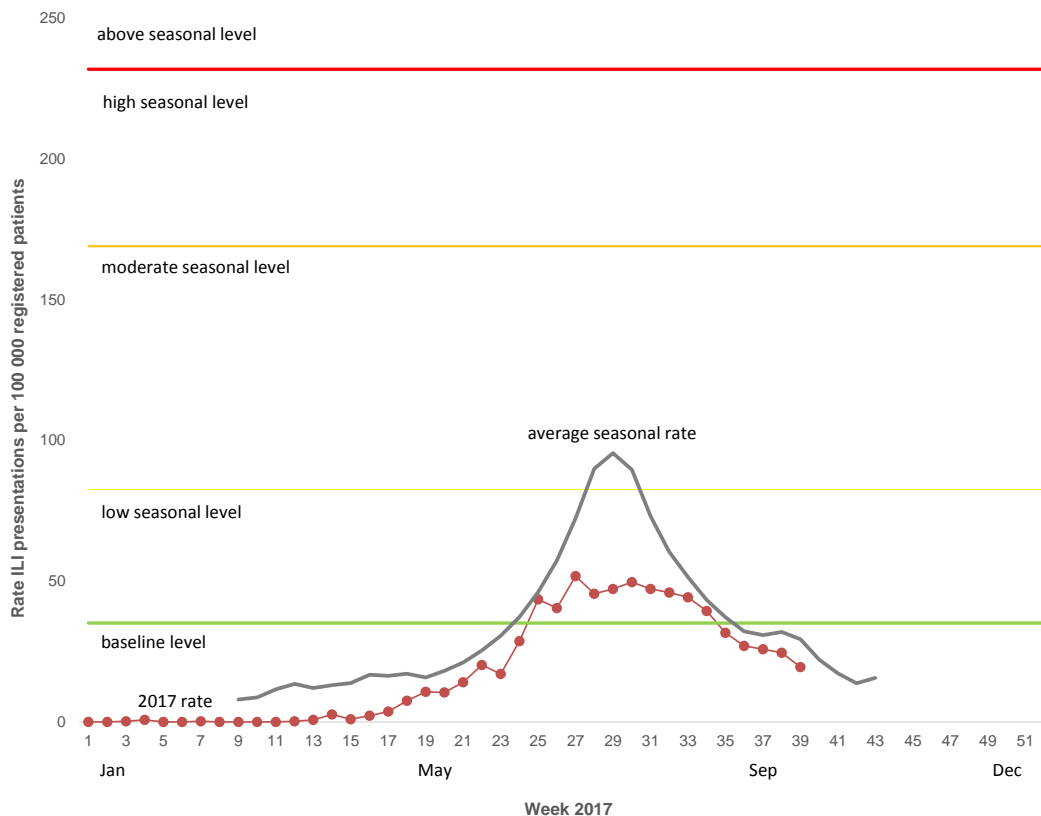
## Influenza-like illness (ILI)

During week 39, ending 1 October 2017, 80 patients with influenza-like illness consulted sentinel general practices in 20 DHBs. The weekly ILI incidence was 19.5 per 100 000 patient population (Figures 1 and 2). Of the 36 tested ILI cases, eight were positive for influenza viruses. This gives an ILI related influenza incidence (adjusted) of 4.3 per 100 000 patient population.

**Figure 1. Weekly resident ILI and influenza incidence since 2 January 2017**

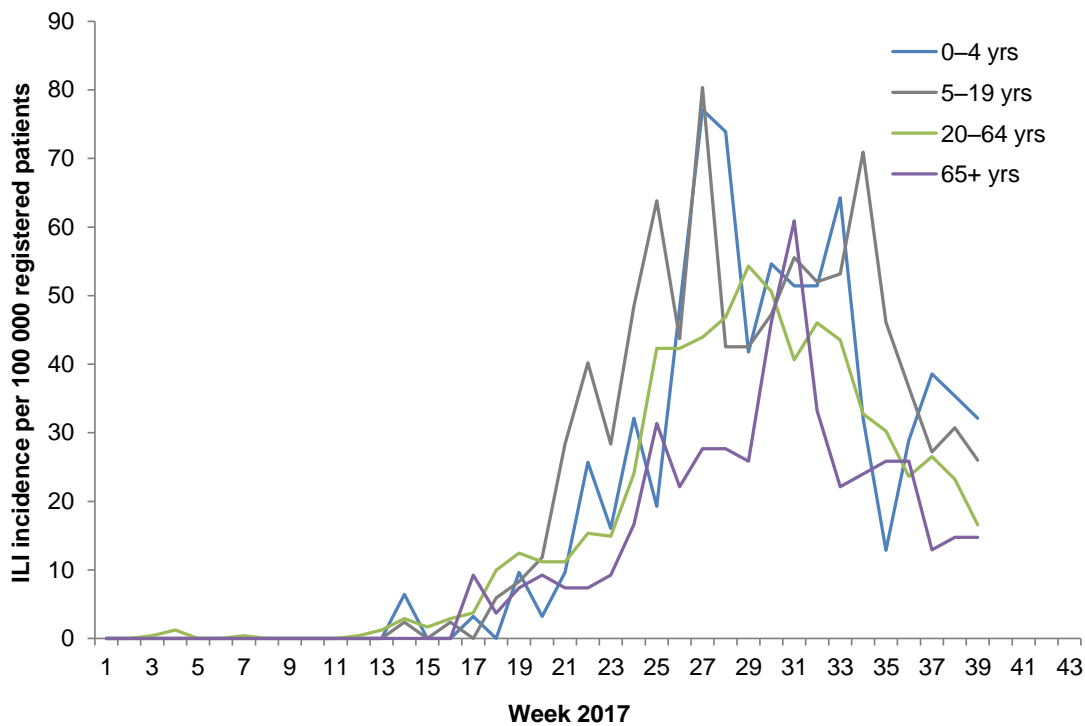


**Figure 2. Comparison of 2017 rate with average seasonal rate, and historical thresholds**



The weekly consultation rates for influenza-like illness by different age groups and ethnicities are shown in Figures 3 and 4.

**Figure 3. Weekly ILI incidence by age group since 2 January 2017**



**Figure 4. Weekly ILI incidence by ethnicity since 2 January 2017**

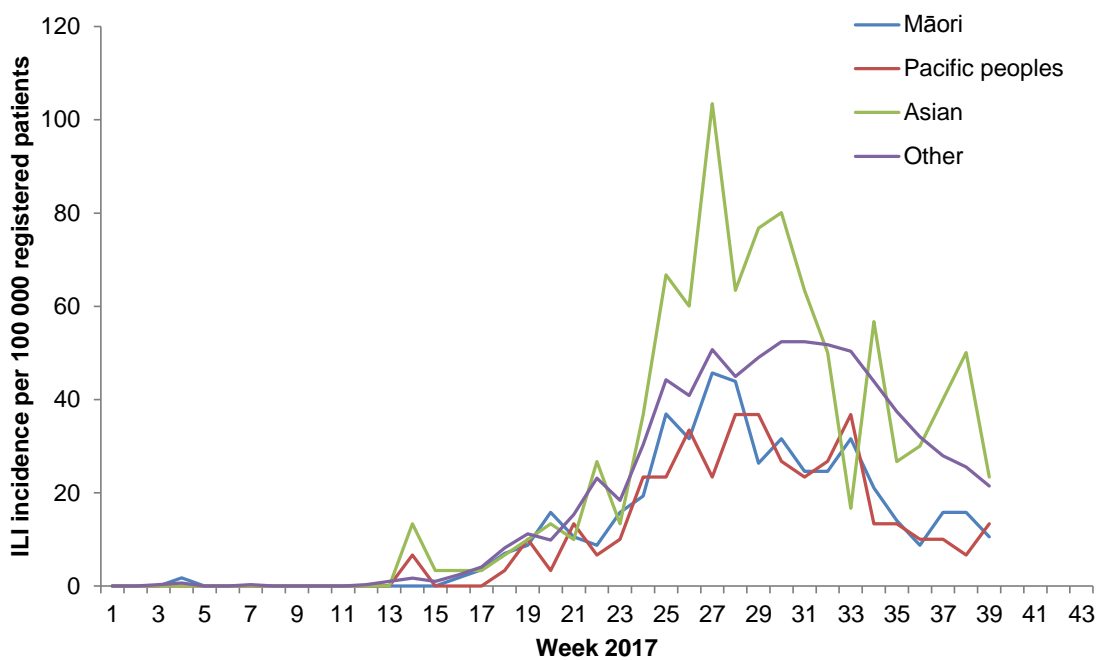
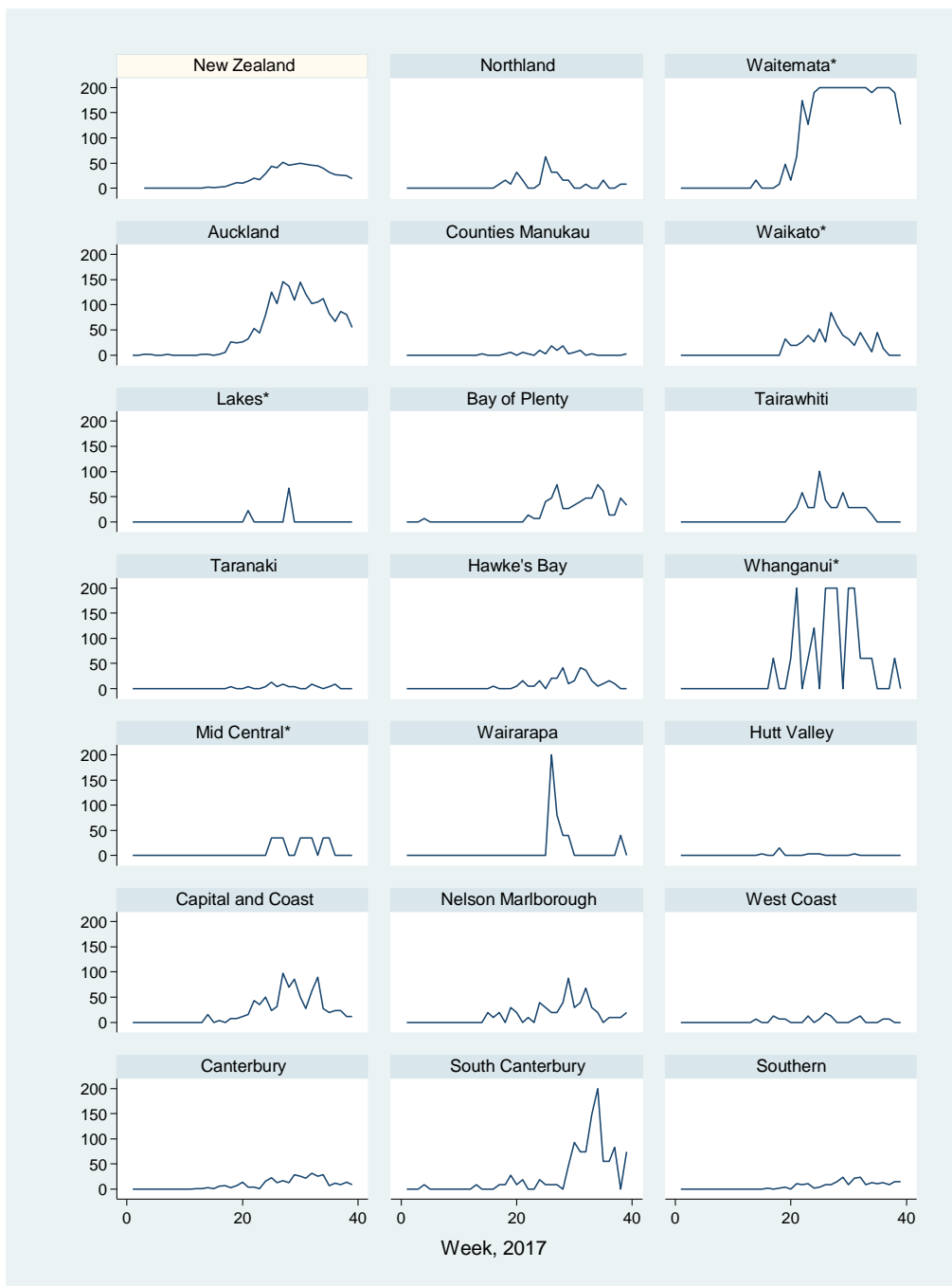


Figure 5 compares the consultation rates for influenza-like illness for each DHB over the past week. Waitemata (126.6 per 100 000, 16 cases), South Canterbury (74.2 per 100 000, 8 cases), and Auckland (54.6 per 100 000, 31 cases) DHBs had the highest consultation rates.

**Figure 5. Rate of ILI consultations per 100 000 registered by DHB per week since 2 January 2017**



\*Results that have some uncertainty, with less than 5% of the DHB population covered (see Notes on Interpretation).  
 Note: Outliers have been omitted from this graph.

ILI consultation rates for any particular DHB should be treated with caution as they may not be representative of the real situation for a particular community or setting, especially if the surveillance system has a small number of participating General Practices in the DHB, or the GP enrolled patient population is small, the calculated ILI rates are subject to greater fluctuation.

Since 2 January 2017, a total of 2893 ILI cases were identified. This gives a cumulative ILI incidence of 703.7 per 100 000 patient population (Table 1). Among the 2325 tested ILI cases, 963 (41.4%) were positive for influenza viruses. This gives an ILI related (adjusted) influenza incidence of 291.5 per 100 000 patient population.

**Table 1. Demographic characteristics of ILI and influenza cases, since 2 January 2017**

Characteristics	ILI & influenza cases among sentinel practices				
	ILI cases	Influenza cases	Prop Influenza positive <sup>1</sup> (%)	ILI incidence (per 100 000)	Influenza incidence <sup>2</sup> (per 100 000)
<b>Overall</b>	<b>2893</b>	<b>963</b>	<b>41.4 (100.0)</b>	<b>703.7</b>	<b>291.5</b>
<b>Age group (years)</b>					
<1	41	3	8.8 (0.3)	620.3	54.7
1–4	198	39	25.2 (4.0)	807.8	203.3
5–19	757	311	50.7 (32.3)	894.7	453.9
20–34	467	140	36.5 (14.5)	543.6	198.2
35–49	668	240	44.9 (24.9)	814.9	365.6
50–64	499	152	37.9 (15.8)	680.5	257.9
65–79	220	60	35.9 (6.2)	538.7	193.6
>80	43	18	50.0 (1.9)	321.9	161.0
Unknown	0	0	0.0		
<b>Ethnicity</b>					
Māori	271	86	40.8 (8.9)	476.2	194.1
Pacific peoples	123	43	46.2 (4.5)	411.4	190.2
Asian	284	130	51.2 (13.5)	947.9	485.1
European and Other	2213	704	39.9 (73.1)	753.6	300.4
Unknown	2	0	0.0	0.0	
<b>Sex</b>					
Female	1646	535	40.7 (55.6)	771.2	314.0
Male	1243	428	42.3 (44.4)	628.7	266.2
Unknown	4	0	0.0		

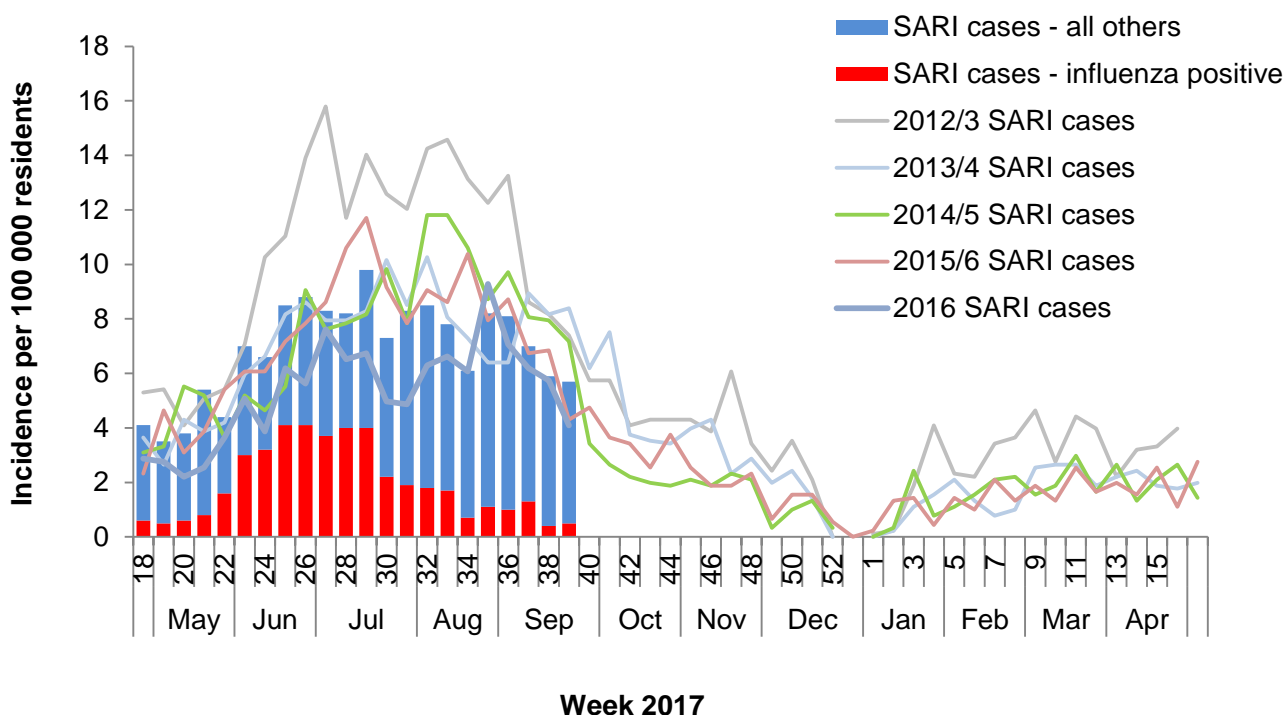
<sup>1</sup>Proportion of cases tested which were positive for influenza viruses

<sup>2</sup>Adjusted to positivity of tested cases

## Severe acute respiratory illness (SARI)

There were 2894 acute admissions to ADHB and CMDHB hospitals during week 39, ending 1 October 2017. A total of 110 patients with acute respiratory illness were assessed in these hospitals. Of these, 63 (57.3%) patients met the SARI case definition. Four cases were admitted to ICU and no SARI related deaths were reported this week. Of the 47 tested residents with SARI, four were positive for influenza viruses, giving a SARI related influenza incidence of 0.5 per 100 000 population this week.

**Figure 6. Weekly resident SARI and influenza incidence since 2 May 2017 and previous seasons SARI incidence**



Since 1 May 2017, a total of 1743 SARI cases were identified. This gives a SARI proportion of 27.9 per 1000 acute hospitalisations (Table 2). One hundred and twenty-two SARI cases have been admitted to ICU and 29 SARI related deaths were reported during this period.

Of the 1743 SARI cases, 1369 were ADHB and CMDHB residents, giving a SARI incidence of 151.2 per 100 000 population (Table 2). Among the 1249 tested SARI cases who were ADHB and CMDHB residents, 354 (28.3%) had positive influenza virus results. This gives a SARI (adjusted) related influenza incidence of 42.8 per 100 000 population.

**Table 2. Demographic characteristics of SARI cases and related influenza cases, since 1 May 2017**

Characteristics	Admissions	Assessed	SARI & influenza cases among all hospital patients			SARI & influenza cases among ADHB & CMDHB residents			
			SARI Cases (%)	Cases per 1000 hospitalisations	Influenza positive <sup>1</sup> (%)	SARI cases	SARI incidence (per 100 000)	Influenza Cases	Influenza incidence (per 100 000)
<b>Overall</b>	<b>62439</b>	<b>3168</b>	<b>1743 (55.0)</b>	<b>27.9</b>	<b>377 (28.5)</b>	<b>1369</b>	<b>151.2</b>	<b>354</b>	<b>42.8</b>
<b>Age group (years)</b>									
<1	2506		329	131.3	25 (8.7)	312	2310.1	24	200.9
1–4	4251		214	50.3	34 (19.4)	192	363.1	32	73.5
5–19	7367		94	12.8	21 (27.6)	79	41.0	15	9.6
20–34	11754		86	7.3	30 (36.1)	83	39.8	29	14.4
35–49	9088		98	10.8	34 (36.6)	91	47.6	32	17.7
50–64	10614		195	18.4	82 (44.1)	190	126.2	80	55.8
65–79	10164		258	25.4	82 (33.3)	246	336.6	75	107.4
>80	6695		179	26.7	69 (39.9)	175	746.9	67	296.1
Unknown	0		290			1		0	
<b>Ethnicity</b>									
Māori	8528		299	35.1	53 (19.6)	271	272.4	48	53.4
Pacific peoples	13310		509	38.2	125 (26.9)	494	358.0	118	94.1
Asian	10489		119	11.3	38 (36.5)	114	54.2	37	19.5
European and Other	29681		527	17.8	161 (33.3)	490	122.0	151	40.8
Unknown	431		289	670.5		0		0	
<b>Hospitals</b>									
ADHB	36447	1154	833 (72.2)	22.9	187 (34.6)	536	122.8	169	43.1
CMDHB	25992	2014	910 (45.2)	35.0	190 (24.3)	833	177.5	185	42.8
<b>Sex</b>									
Female	33171		743	22.4	196 (29.1)	695	149.4	186	43.6
Male	29265		707	24.2	179 (27.8)	671	152.3	167	41.8
Unknown	3		293			3		1	

<sup>1</sup>Proportion of cases tested which were positive for influenza viruses

Note. A specimen may be positive for more than one virus; a patient may have more than one specimen tested.

## RESPIRATORY PATHOGEN SURVEILLANCE

### Influenza virus

During week 39, 36 ILI specimens were tested; eight were positive for influenza viruses. In addition, 54 SARI specimens were tested; four were positive for influenza viruses.

Since 1 May 2017, 2310 ILI specimens were tested, 962 (41.6%) were positive for influenza with the following viruses. In addition, 1495 SARI specimens were tested, 415 (27.8%) were positive for influenza viruses (see Table 3).

**Table 3. Influenza viruses among ILI and SARI cases since 1 May 2017**

<i>Influenza viruses</i>	ILI	SARI	SARI and non-SARI	
	Cases (%)	Cases (%)	ICU (%)	Deaths (%)
No. of specimens tested	2310	1495	274	33
No. of positive specimens (%) <sup>1</sup>	962 (41.6)	415 (27.8)	24 (8.8)	13 (39.4)
<b>Influenza A</b>	<b>552</b>	<b>302</b>	<b>15</b>	<b>8</b>
A (not subtyped)	11	117	5	1
A(H1N1)pdm09	73	40	3	0
A(H1N1)pdm09 by PCR	53	35	2	0
A/Michigan/45/2015 (H1N1)pdm09 - like	16	5	1	0
A/California/7/2009 (H1N1)pdm09 - like	4	0	0	0
A(H3N2)	468	145	7	7
A(H3N2) by PCR	415	140	6	7
A/Hong Kong/4801/2014 (H3N2) - like	53	5	1	0
<b>Influenza B</b>	<b>410</b>	<b>113</b>	<b>9</b>	<b>5</b>
B (lineage not determined)	16	57	7	3
B/Yamagata lineage	379	55	2	2
B/Yamagata lineage by PCR	179	28	2	2
B/Phuket/3073/2013 - like	200	27	0	0
B/Victoria lineage	15	1	0	0
B/Victoria lineage by PCR	7	1	0	0
B/Brisbane/60/2008 - like	8	0	0	0
<b>Influenza and non-influenza co-detection (% +ve)</b>	<b>56 (5.8)</b>	<b>30 (7.2)</b>	<b>3 (12.5)</b>	<b>1 (7.7)</b>

<sup>1</sup>Number of specimens positive for at least one of the listed viruses

Note. A specimen may be positive for more than one virus; a patient may have more than one specimen tested.

The recommended influenza vaccine formulation for trivalent vaccine for New Zealand in 2017 is:

- A(H1N1) an A/Michigan/45/2015 (H1N1)pdm09-like virus
- A(H3N2) an A/Hong Kong/4801/2014 (H3N2)-like virus
- B a B/Brisbane/60/2008-like virus (belonging to B/Victoria lineage)

Quadrivalent vaccines contain the above three viruses plus one more vaccine component: B/Phuket/3073/2013-like virus (belonging to B/Yamagata lineage)

Note: Antigenic characterization of the current A(H3N2) viruses have been technically challenging because many viruses had low or undetectable haemagglutination activity. This phenomenon has been well recognized globally and documented in WHO's Weekly Epidemiological Record:

<http://apps.who.int/iris/bitstream/10665/254756/1/WER9211.pdf?ua=1>



## Non-influenza respiratory pathogens

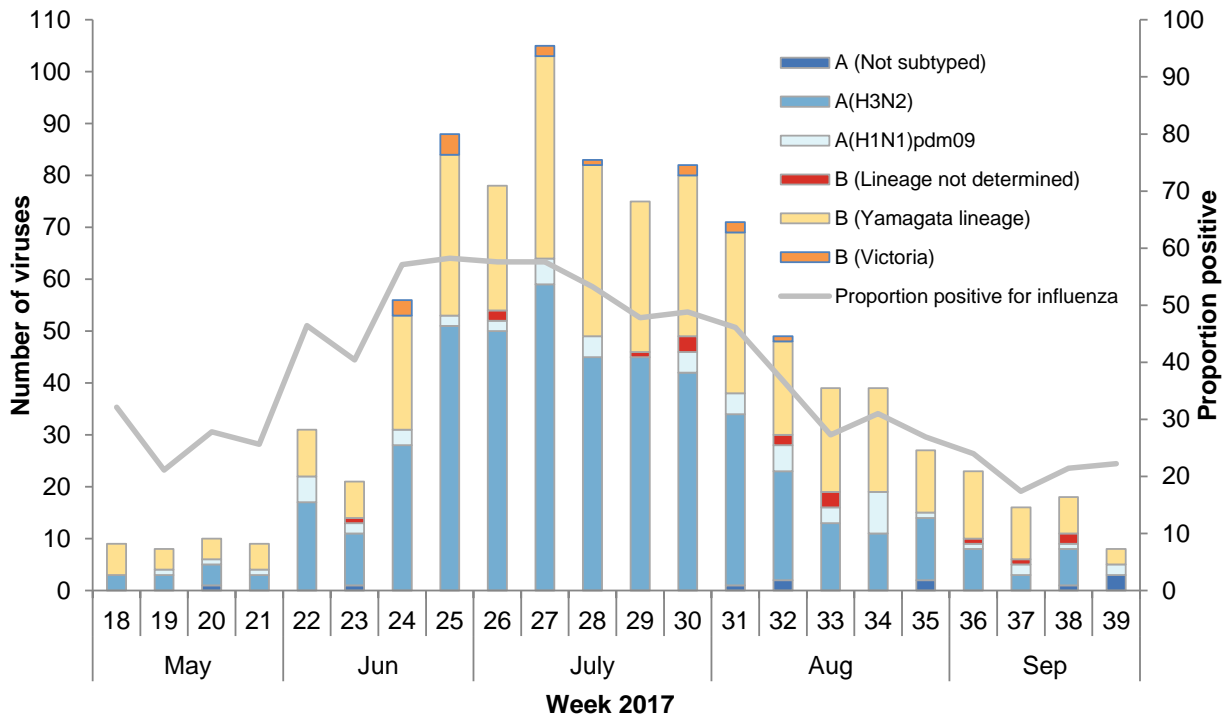
Since 1 May 2017, 2251 ILI specimens were tested for non-influenza viruses, 523 (23.2%) were positive with the following viruses. One thousand, three hundred and seventy-one SARI specimens were tested for non-influenza viruses, 503 (36.7%) were positive with the following viruses (see Table 4).

**Table 4. Non-influenza viruses among ILI and SARI cases since 1 May 2017<sup>1</sup>**

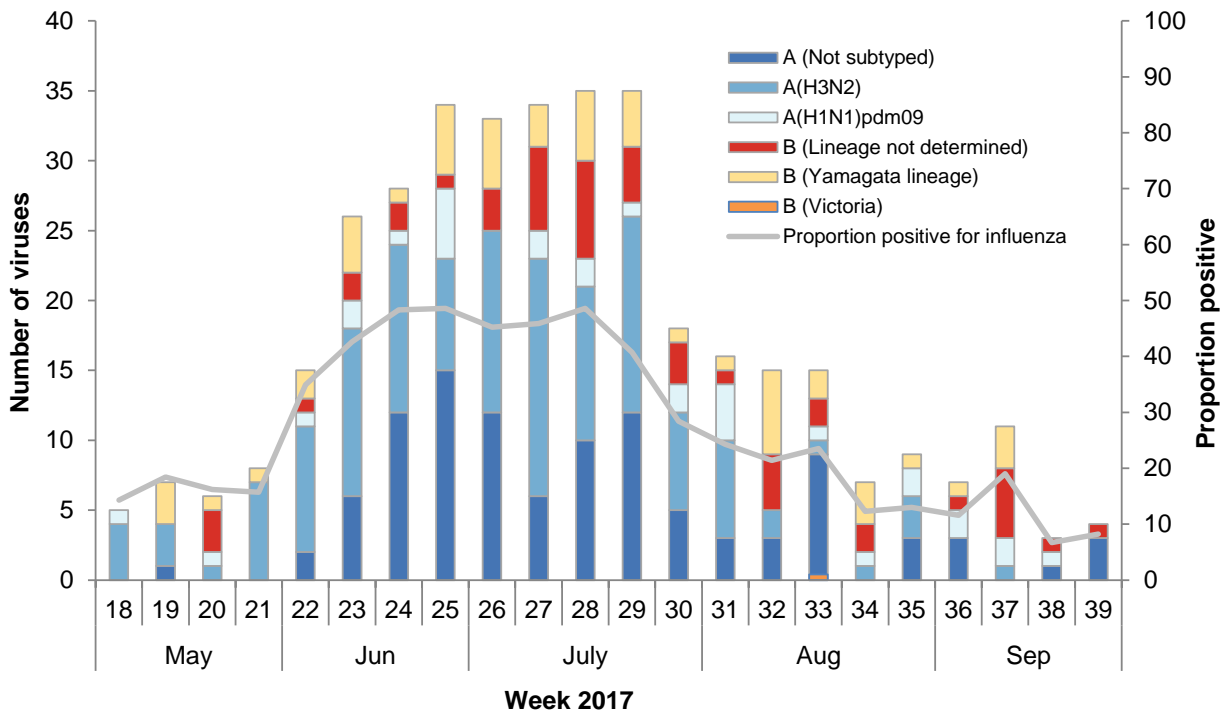
<i>Non-influenza respiratory viruses</i>	ILI	SARI	SARI and non-SARI	
	Cases (%)	Cases (%)	ICU (%)	Deaths (%)
No. of specimens tested	2251	1371	213	32
No. of positive specimens (%) <sup>1</sup>	523 (23.2)	503 (36.7)	137 (64.3)	3 (9.4)
Respiratory syncytial virus (RSV)	134	258	70	2
Parainfluenza 1 (PIV1)	6	1	0	0
Parainfluenza 2 (PIV2)	24	18	4	0
Parainfluenza 3 (PIV3)	66	58	13	0
Rhinovirus (RV)	173	164	61	1
Adenovirus (AdV)	62	53	14	0
Human metapneumovirus (hMPV)	53	40	5	1
Enterovirus	40	33	11	0
Single virus detection (% of positives)	492 (94.1)	397 (78.9)	101 (73.7)	0 (-)
Multiple virus detection (% of positives)	31 (5.9)	106 (21.1)	36 (26.3)	0 (-)

<sup>1</sup>Number of specimens positive for at least one of the listed viruses; note a specimen may be positive for more than one virus

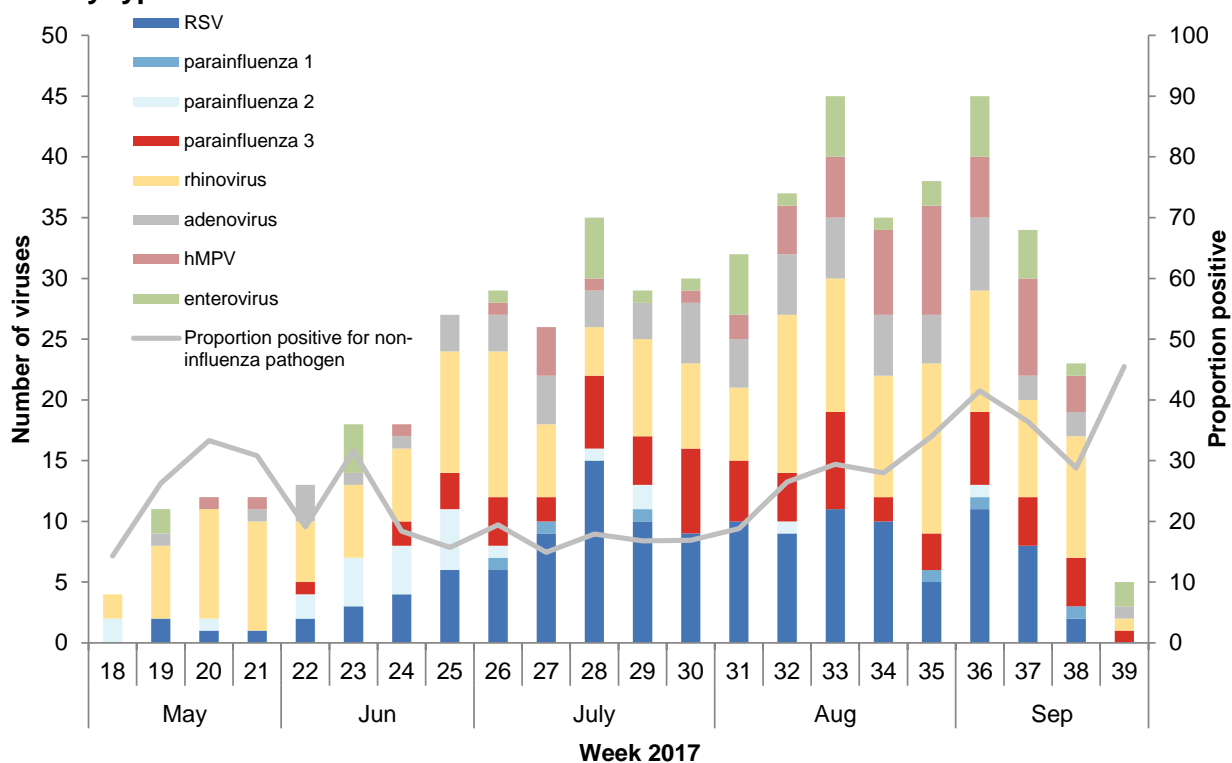
**Figure 7. Temporal distribution of the number and proportion of influenza viruses from ILI specimens by type and week<sup>1</sup>**



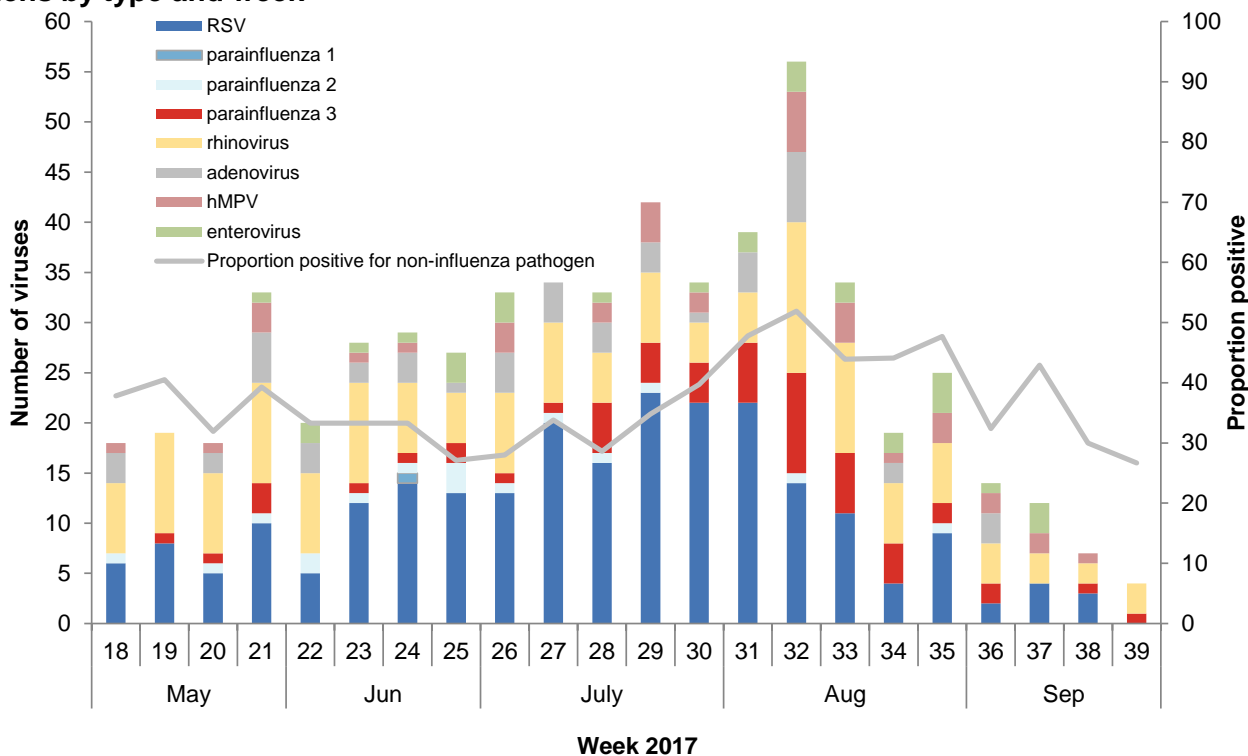
**Figure 8. Temporal distribution of the number and proportion of influenza viruses from SARI specimens by type and week<sup>1</sup>**



**Figure 9. Temporal distribution of the number and proportion of non-influenza viruses from ILI specimens by type and week<sup>1</sup>**



**Figure 10. Temporal distribution of the number and proportion of non-influenza viruses from SARI specimens by type and week<sup>1</sup>**



<sup>1</sup>Figures for recent weeks will be underestimates due to time lag in receiving laboratory test results.



## APPENDIX

Table 5. Influenza-like illness count by DHB by week 18–39, 2017

DHB	Week																					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Auckland	15	14	15	18	30	25	45	71	58	83	78	62	82	69	58	60	64	47	38	49	46	31
Bay of Plenty	0	0	0	0	2	1	1	6	7	11	4	4	5	6	7	7	11	9	2	2	7	5
Canterbury	2	5	10	3	3	1	11	16	9	12	9	20	18	15	22	18	20	5	8	6	10	6
Capital and Coast	2	2	3	4	11	9	13	6	8	25	18	22	13	7	16	23	7	5	6	6	3	3
Counties Manukau	1	2	0	2	1	0	3	1	6	3	6	1	2	3	0	1	0	0	0	0	0	1
Hawke's Bay	0	0	1	3	1	1	3	0	4	4	8	2	3	8	7	3	1	2	3	2	0	0
Hutt Valley	4	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Lakes	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
MidCentral	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	1	1	0	0	0	0
Nelson Marlborough	0	3	2	0	1	0	4	3	2	2	4	9	3	4	7	3	2	0	1	1	1	2
Northland	2	1	4	2	0	0	1	8	4	4	2	2	0	0	1	0	0	2	0	0	1	1
South Canterbury	1	3	1	2	0	0	2	1	1	1	0	5	10	8	8	16	23	6	6	9	0	8
Southern	1	2	0	5	4	5	1	2	4	4	7	11	4	10	11	4	6	5	6	4	7	7
Tairāwhiti	0	0	1	2	4	2	2	7	3	2	2	4	2	2	2	2	1	0	0	0	0	0
Taranaki	1	0	0	1	0	0	1	3	1	2	1	1	0	0	2	1	0	1	2	0	0	0
Waikato	0	5	3	3	4	6	4	8	4	13	9	6	5	3	7	4	1	7	2	0	0	0
Wairarapa	0	0	0	0	0	0	0	0	5	2	1	1	0	0	0	0	0	0	0	0	1	0
Waitemata	1	6	2	8	22	16	24	44	41	37	30	44	50	52	37	39	24	40	36	26	24	16
West Coast	1	1	0	0	0	2	0	1	3	2	0	0	0	1	2	0	0	0	1	1	0	0
Whanganui	0	0	1	4	0	1	2	0	5	5	5	0	6	4	1	1	1	0	0	0	1	0
<b>New Zealand</b>	<b>31</b>	<b>44</b>	<b>43</b>	<b>58</b>	<b>83</b>	<b>70</b>	<b>118</b>	<b>179</b>	<b>166</b>	<b>213</b>	<b>187</b>	<b>194</b>	<b>204</b>	<b>194</b>	<b>189</b>	<b>182</b>	<b>162</b>	<b>130</b>	<b>111</b>	<b>106</b>	<b>101</b>	<b>80</b>

**Table 6. Influenza-like illness rate by DHB by week 18–39, 2017**

DHB	Rate per 100 000																					
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Auckland	26.4	24.7	26.4	31.7	52.8	44.0	79.2	125.0	102.1	146.2	137.4	109.2	144.4	121.5	102.1	105.7	112.7	82.8	66.9	86.3	81.0	54.6
Bay of Plenty	0.0	0.0	0.0	0.0	13.5	6.7	6.7	40.4	47.1	74.1	26.9	26.9	33.7	40.4	47.1	47.1	74.1	60.6	13.5	13.5	47.1	33.7
Canterbury	2.8	7.1	14.2	4.3	4.3	1.4	15.6	22.8	12.8	17.1	12.8	28.4	25.6	21.3	31.3	25.6	28.4	7.1	11.4	8.5	14.2	8.5
Capital and Coast	7.8	7.8	11.7	15.6	42.8	35.0	50.6	23.4	31.2	97.3	70.1	85.7	50.6	27.3	62.3	89.6	27.3	19.5	23.4	23.4	11.7	11.7
Counties Manukau	3.0	6.0	0.0	6.0	3.0	0.0	9.0	3.0	18.0	9.0	18.0	3.0	6.0	9.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0
Hawke's Bay	0.0	0.0	5.2	15.7	5.2	5.2	15.7	0.0	20.9	20.9	41.7	10.4	15.7	41.7	36.5	15.7	5.2	10.4	15.7	10.4	0.0	0.0
Hutt Valley	15.2	0.0	0.0	0.0	0.0	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lakes*	0.0	0.0	0.0	22.3	0.0	0.0	0.0	0.0	0.0	0.0	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MidCentral*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5	35.5	35.5	0.0	0.0	35.5	35.5	35.5	0.0	35.5	35.5	0.0	0.0	0.0	0.0
Nelson Marlborough	0.0	29.2	19.5	0.0	9.7	0.0	39.0	29.2	19.5	19.5	39.0	87.7	29.2	39.0	68.2	29.2	19.5	0.0	9.7	9.7	9.7	19.5
Northland	15.7	7.9	31.5	15.7	0.0	0.0	7.9	62.9	31.5	31.5	15.7	15.7	0.0	0.0	7.9	0.0	0.0	15.7	0.0	0.0	7.9	7.9
South Canterbury	9.3	27.8	9.3	18.6	0.0	0.0	18.6	9.3	9.3	9.3	0.0	46.4	92.8	74.2	74.2	148.5	213.4	55.7	55.7	83.5	0.0	74.2
Southern	2.2	4.4	0.0	10.9	8.7	10.9	2.2	4.4	8.7	8.7	15.3	24.0	8.7	21.8	24.0	8.7	13.1	10.9	13.1	8.7	15.3	15.3
Tairāwhiti	0.0	0.0	14.4	28.9	57.7	28.9	28.9	101.0	43.3	28.9	28.9	57.7	28.9	28.9	28.9	28.9	14.4	0.0	0.0	0.0	0.0	0.0
Taranaki	4.4	0.0	0.0	4.4	0.0	0.0	4.4	13.1	4.4	8.7	4.4	4.4	0.0	0.0	8.7	4.4	0.0	4.4	8.7	0.0	0.0	0.0
Waikato*	0.0	32.5	19.5	19.5	26.0	39.0	26.0	52.1	26.0	84.6	58.6	39.0	32.5	19.5	45.5	26.0	6.5	45.5	13.0	0.0	0.0	0.0
Wairarapa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	200.0	80.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0
Waitematā*	7.9	47.5	15.8	63.3	174.0	126.6	189.8	348.0	324.3	292.7	237.3	348.0	395.5	411.3	292.7	308.5	189.8	316.4	284.7	205.6	189.8	126.6
West Coast	6.3	6.3	0.0	0.0	0.0	12.7	0.0	6.3	19.0	12.7	0.0	0.0	0.0	6.3	12.7	0.0	0.0	0.0	6.3	6.3	0.0	0.0
Whanganui*	0.0	0.0	60.2	241.0	0.0	60.2	120.5	0.0	301.2	301.2	301.2	0.0	361.4	241.0	60.2	60.2	60.2	0.0	0.0	0.0	60.2	0.0
<b>New Zealand</b>	<b>7.5</b>	<b>10.7</b>	<b>10.5</b>	<b>14.1</b>	<b>20.2</b>	<b>17.0</b>	<b>28.7</b>	<b>43.5</b>	<b>40.4</b>	<b>51.8</b>	<b>45.5</b>	<b>47.2</b>	<b>49.6</b>	<b>47.2</b>	<b>46.0</b>	<b>44.3</b>	<b>39.4</b>	<b>31.6</b>	<b>27.0</b>	<b>25.8</b>	<b>24.6</b>	<b>19.5</b>

\*Results that have some uncertainty, with less than 5% of the DHB population covered (see Notes on Interpretation).



Recent global experience with pandemic influenza A(H1N1)pdm09 highlights the importance of monitoring severe and mild respiratory disease to support pandemic preparedness as well as seasonal influenza prevention and control. Two active, prospective, population-based surveillance systems were used to monitor influenza and other respiratory pathogens: 1) among those registered patients seeking consultations with influenza-like illness (ILI) at sentinel general practices nation-wide; 2) among those hospitalized patients with severe acute respiratory illness (SARI) in Auckland and Counties Manukau District Health Boards (ADHB and CMDHB).

The aims of ILI and SARI surveillance are: 1) to measure the burden of severe and moderate disease caused by influenza and other respiratory pathogens; 2) to monitor trends in severe and moderate disease caused by influenza and other respiratory pathogens; 3) to identify high risk groups that should be prioritized for prevention and treatment; 4) to monitor antigenic, genetic and antiviral characteristics of influenza viruses associated with severe and mild disease. 5) to provide a study base to estimate the effectiveness of influenza vaccine.

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## DESCRIPTION OF ILI ACTIVITY THRESHOLDS

The values for the different intensity levels for 2017 are listed in the table below. This is based on New Zealand’s consultation rates from 2000–2015 (excluding the pandemic year, 2009) and WHO’s interim guidance severity assessment

Below seasonal level (baseline, per 100,000)	Seasonal level (per 100,000)			Above seasonal level (per 100,000)
	low	moderate	high	
<35.1	35.1-82.5	82.5-168.9	168.9-231.8	>231.8

- The baseline threshold indicates the level of influenza activity that signals the start and end of the annual influenza season and it is based on the Moving Epidemic Method (MEM) (*Vega et al. Influenza and other respiratory viruses 2013;7(4):546-558*).
- Seasonal levels (low, moderate and high) are estimated as the upper limits of the 40%, 90% and 97.5% one-sided confidence intervals of the geometric mean of 30 highest epidemic weekly rates using the MEM method. As many other countries use this method, it allows the NZ data to be interpreted not just at the country level but also comparable with other countries.
- The average seasonal curve indicates the usual seasonal 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](http://www.who.int/influenza/resources/documents/WHO_Epidemiological_Influenza_Surveillance_Standards_2014.pdf)).

## NOTES ON INTERPRETATION

- SARI case definition: “An acute respiratory illness with a history of fever or measured fever of  $\geq 38^{\circ}\text{C}$ , AND cough, AND onset within the past 10 days, AND requiring inpatient hospitalisation (defined as a patient who is admitted under a medical team and to a hospital ward or assessment unit)”. A non-SARI case is a hospitalised respiratory patient who does not meet the SARI case definition.
- ILI case definition: “An acute respiratory illness with a history of fever or measured fever of  $\geq 38^{\circ}\text{C}$ , AND cough, AND onset within the past 10 days, AND requiring GP consultation”.
- ILI sentinel general practices: a total of 74 sentinel general practices have agreed to participate in community ILI surveillance. These practices have ~400 000 registered patients, covering roughly 9% of the NZ population.
- SARI sentinel hospitals serving a population of 906 000 people: Auckland City Hospital and the associated Starship Children’s Hospital (ADHB), and Middlemore Hospital and the associated Kidz First Children’s Hospital (CMDHB).
- The real-time PCR assay for influenza virus uses CDC’s protocol ([http://www.accessdata.fda.gov/cdrh\\_docs/pdf8/k080570.pdf](http://www.accessdata.fda.gov/cdrh_docs/pdf8/k080570.pdf));
- The real-time PCR assay for non-influenza respiratory viruses (respiratory syncytial virus, parainfluenza virus types 1-3, human metapneumovirus, rhinovirus and adenovirus) uses CDC’s protocol. Note: The rhinovirus PCR detects mostly rhinovirus with slight cross-reactivity against enterovirus.
- The surveillance week is Monday to Sunday inclusive, and data are extracted on the subsequent Tuesday. Results from previous weeks will be revised as data are updated (laboratory test results in particular may be delayed).
- ILI consultation rates for any particular DHB should be treated with caution. If the surveillance system has a small number of participating General Practices in the DHB, or the GP enrolled patient population is small, the calculated ILI rates are subject to greater fluctuation.

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