

PERTUSSIS REPORT

7 April–4 May 2018

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 15 May 2018. Changes made to EpiSurv data after this date will not be reflected in this report. The results presented may be further updated and should be regarded as provisional. Cases still under investigation are not included in this report.

- A national pertussis outbreak is ongoing.
- A significant decrease in pertussis notifications for the current four weeks (weeks 15–18, 2018) compared with the previous four weeks (weeks 11–14) in 2018.
- A significant increase in pertussis notifications for the current four weeks (weeks 15–18, 2018) compared with the same four surveillance weeks in 2017.

Summary

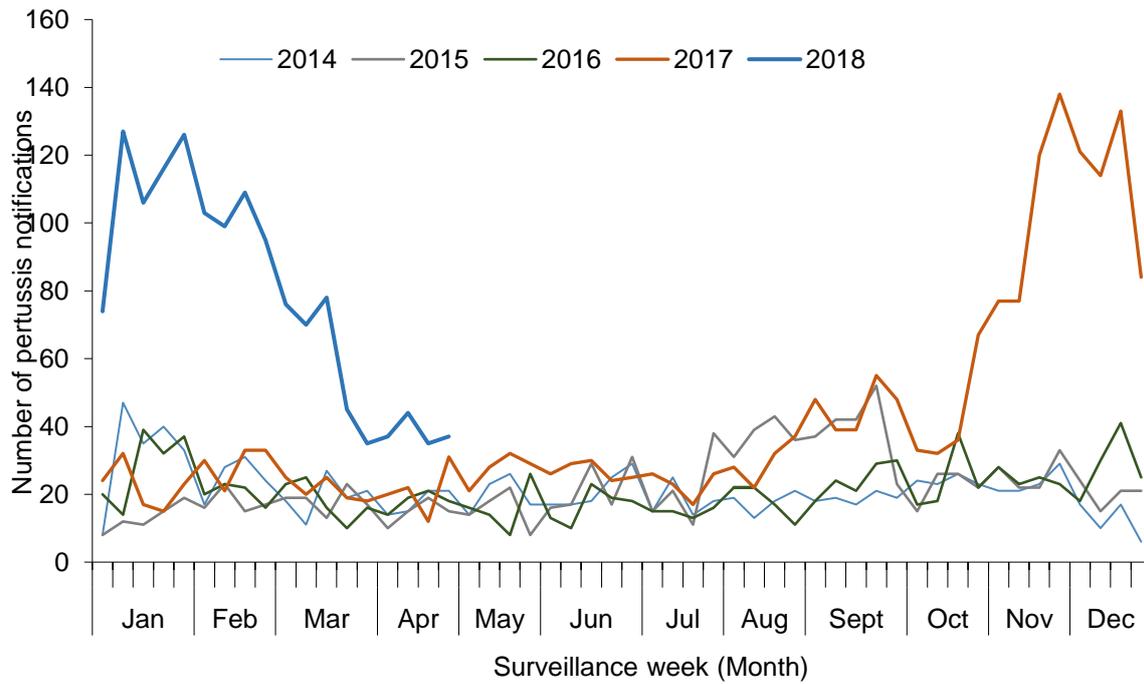
- In the past four surveillance weeks (weeks 15–18, 7 April–4 May 2018), 153 cases of pertussis were notified (37, 44, 35 and 37 cases, consecutively – Figure 1)¹. This included 92 confirmed, 57 probable, and four suspect cases. This is significantly higher than the 85 cases reported in the same four surveillance weeks in 2017 (Table 3). In the past four surveillance weeks in 2018, 10 (6.5%) cases were aged less than 1 year and six of these cases were hospitalised. Of all 153 cases, 15 cases were hospitalised and no deaths were reported.
- From 1 January–4 May 2018, there was a total of 1412 confirmed, probable and suspect cases of pertussis notified (29.5 cases per 100,000). Of the 1412 cases, 77 cases (5.5%) were aged less than 1 year, of which 37 (48.1%) were hospitalised (Table 1). Of all 1412 cases, 94 cases (6.7%) were hospitalised.
- From 1 January–4 May 2018, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (127.1 and 79.1 per 100,000, respectively). The ethnic groups with the highest notification rates were Māori (37.3 per 100,000, 260 cases) followed by European or Other (32.7 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (1020 cases).
- From 1 January–4 May 2018, the highest numbers of pertussis cases were reported by Nelson Marlborough (198 cases), Bay of Plenty (166 cases) and Waikato (163 cases) DHBs (Table 3). The DHB with the highest rate was West Coast (135.4 per 100,000, 44 cases), followed by Nelson Marlborough (133.1 per 100,000), Wairarapa (76.4 per 100,000, 34 cases), and Bay of Plenty (71.6 per 100,000) DHBs.
- From the beginning of the current national outbreak period (commencing 16 October 2017) to the end of 2017 there was a total of 999 cases (592 confirmed, 385 probable, and 22 suspect cases). There are still 2 cases under investigation.
- This report summarises pertussis notifications for the period from 1 January 2018 to 4 May 2018 (a cumulative summary). It includes the distribution of cases by time, age, prioritised ethnicity and DHB. A summary of the cases from the current four-week period (7 April–4 May 2018) is also provided.

¹ Cases still under investigation are not included in this report. Because cases under investigation have still to be classified (as confirmed, probable, suspect or not a case), the total case counts for surveillance weeks may change in future reports.

Trends in pertussis notifications

Total pertussis notifications by week for 2014–2018 (to week ending 4 May 2018) are shown in Figure 1 below.

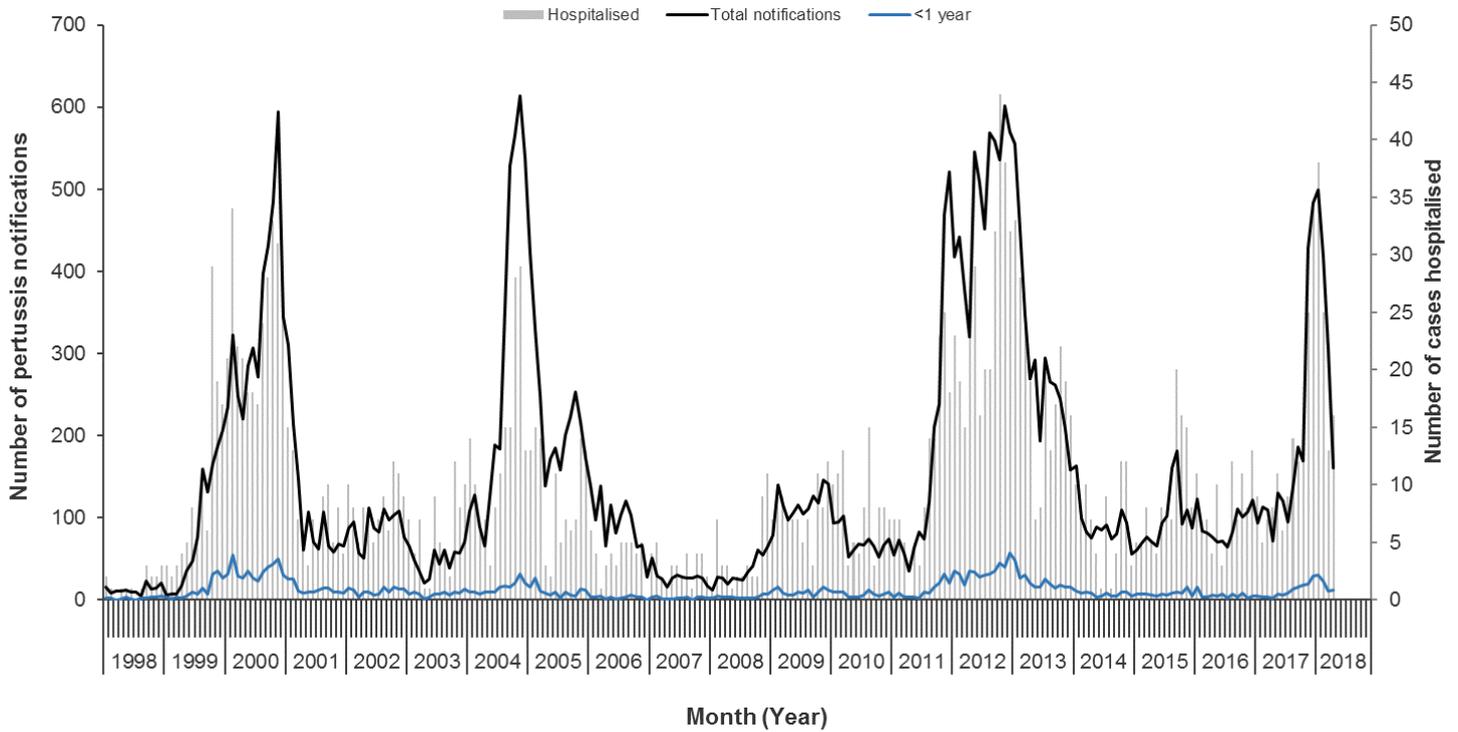
Figure 1: Number of pertussis notifications by week reported, 2014–2018



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Figure 2 shows pertussis notifications and hospitalisations by calendar month, and notifications in those aged less than 1 year between January 1998 and April 2018. A four-to-five-year cycle can be seen with large peaks in the number of notifications in years 2000, 2004, 2011/12 and at the end of 2017/early 2018.

Figure 2: Number of pertussis notifications and hospitalisations by month and year, 1998–2018



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Age

The number of pertussis notifications, rates and hospitalisations by age group are shown in Table 1 (cumulative total for 2018). Table 2 shows the number of notifications and hospitalisations during the current four surveillance weeks in 2018 compared with the same four surveillance weeks in 2017.

Table 1: Number of (confirmed, probable and suspect) pertussis notifications, rates (cases per 100,000 population) and hospitalisations by age group, 1 January–4 May 2018

Age group (years)	Total for 2018 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	77	127.1	37	48.1
1–4	194	79.1	13	6.7
5–9	190	58.2	5	2.6
10–14	136	45.1	3	0.7
15–19	79	25.0	3	3.8
20+	736	20.8	35	4.8
All ages	1412	29.5	94	6.7

¹ Cumulative total 1 January–4 May 2018

² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

Table 2: Number of (confirmed, probable and suspect) pertussis notifications and hospitalisations in surveillance weeks 15–18 in 2018, compared with the same period in 2017

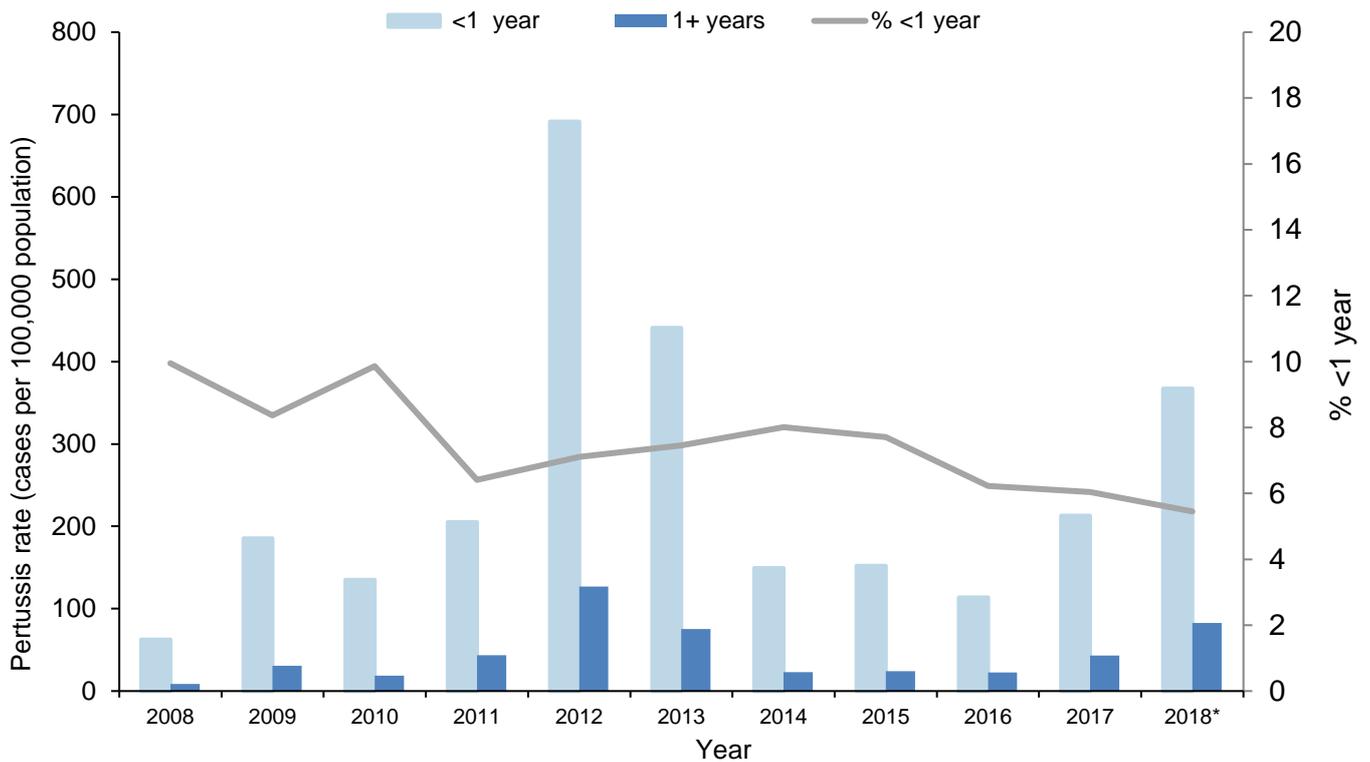
Age group (years)	Recent four surveillance weeks in 2018 (weeks 15–18) ¹		Same four surveillance weeks in 2017 (weeks 15–18) ²	
	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	10	6	4	2
1–4	13	4	13	0
5–9	23	1	11	1
10–14	14	0	8	0
15–19	6	0	8	0
20+	87	4	41	5
All ages	153	15	85	8

¹ 7 April–4 May 2018

² 8 April–5 May 2017

Pertussis rates by age group (<1 year and 1+ years) are shown in Figure 3.

Figure 3: Pertussis rate (cases per 100,000 population) by age group (<1 year vs. 1+ years), and % < 1 year olds, 2008–2018



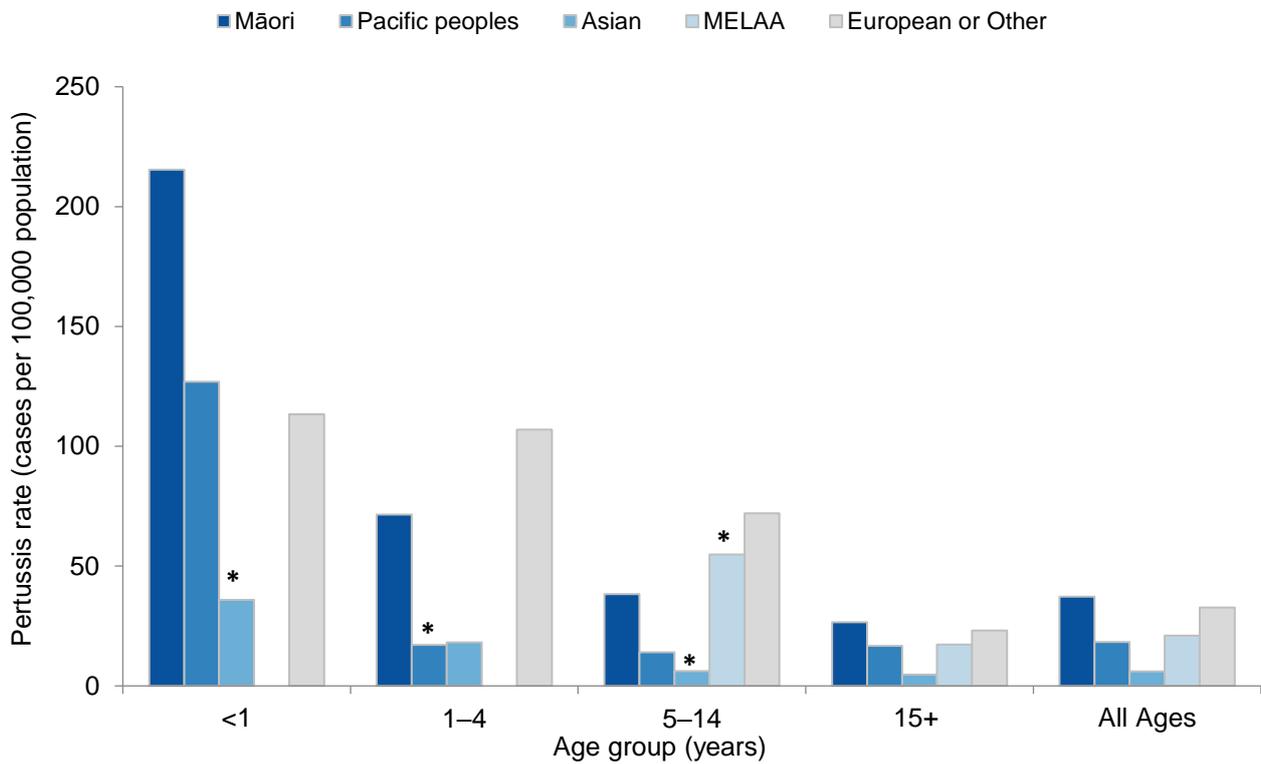
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

* Rate for 2018 is an annualised rate. As this is an estimate for the year based on currently available data, it may differ from non-annualised rates presented elsewhere in this report for these age groups.

Ethnicity

Pertussis rates by age group and ethnicity are shown in Figure 4.

Figure 4: Pertussis rate (cases per 100,000 population) by age group and ethnicity, 1 January–4 May 2018



Note: Notifications 1 January–4 May 2018, includes confirmed, probable and suspect cases only. Ethnicity is prioritised. Denominator data used to determine disease rates for ethnic groups are based on the proportion of people in each ethnic group from the estimated resident 2013 Census population applied to the 2016 mid-year population estimates from Statistics New Zealand.

MELAA: Middle Eastern/Latin American/African.

* Rate based on fewer than five cases.

District health board

The numbers and rates of pertussis notifications by DHB are shown in Table 4 below.

Table 3: Number of (confirmed, probable and suspect) pertussis notifications, rate (cases per 100,000 population) and hospitalisations by district health board, 2018

District health board	Total for 2018 ¹					7 April–4 May 2018 (weeks 15-18)		
	Cases	Rate ²	Hosp ³	Cases ⁴	% ⁵	Cases	Hosp ³	<1 year old ⁴
Northland	52	29.6	4	8	15.4	8	0	0
Waitemata	108	17.8	13	4	3.7	15	1	0
Auckland	95	18.1	12	3	3.2	7	1	0
Counties Manukau	83	15.2	18	7	8.4	6	4	1
Waikato	163	39.9	12	8	4.9	11	1	0
Lakes	61	56.2	1	0	0.0	6	0	0
Bay of Plenty	166	71.6	4	3	1.8	21	0	1
Tairāwhiti	9	18.6	0	0	0.0	1	0	0
Taranaki	6	5.1	0	0	0.0	0	0	0
Hawke's Bay	64	39.0	3	5	7.8	7	0	0
Whanganui	6	9.4	1	1	16.7	3	1	0
MidCentral	32	18.1	7	6	18.8	6	2	1
Hutt Valley	45	30.4	1	0	0.0	5	0	0
Capital & Coast	91	29.1	6	7	7.7	7	0	1
Wairarapa	34	76.4	0	0	0.0	2	0	0
Nelson Marlborough	198	133.1	2	13	6.6	25	0	2
West Coast	44	135.4	2	1	2.3	6	0	0
Canterbury	87	15.8	4	7	8.0	11	4	4
South Canterbury	12	20.1	2	1	8.3	2	1	0
Southern	56	17.3	2	3	5.4	4	0	0
Overall	1412	29.5	94	77	5.5	153	15	10

¹ Cumulative notifications 1 January–4 May 2018.

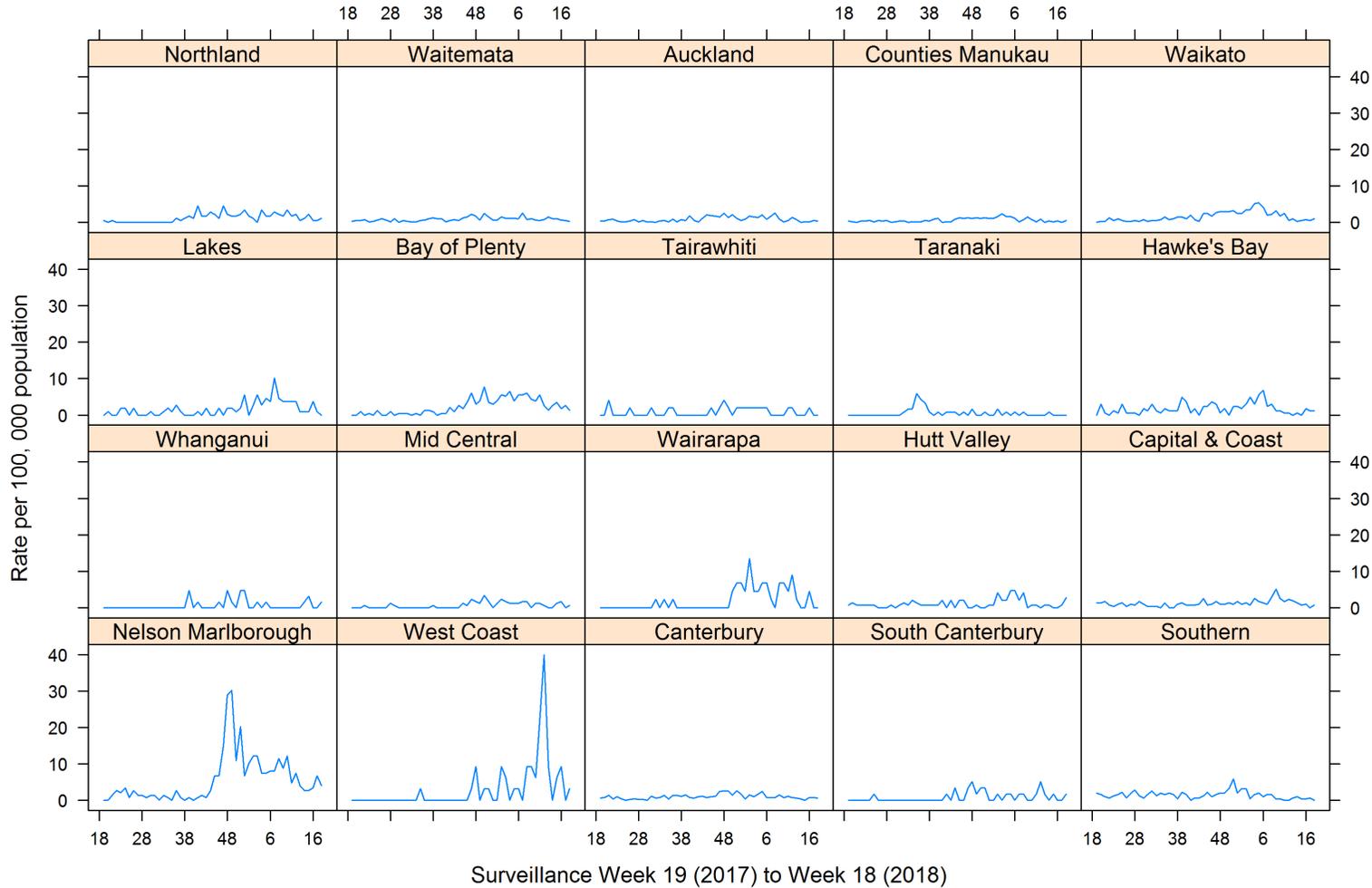
² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

³ Number of notifications that were hospitalised.

⁴ Number of notifications in the <1 year age group.

⁵ Percentage of notifications that were <1 year age group.

Figure 4: Pertussis rates per 100,000 population by DHB, surveillance week 19 of 2017 to week 18 of 2018



Note: Notifications 6 May 2017–4 May 2018, includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

This report is available at: <http://www.surv.esr.cri.nz/surveillance/PertussisRpt.php>