

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 1 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 13–16, 2018) compared with the previous four weeks (weeks 9–12) in 2018.
- A significant increase in pertussis notifications for the current four weeks (weeks 13–16, 2018) compared with the same four surveillance weeks in 2017.

Summary

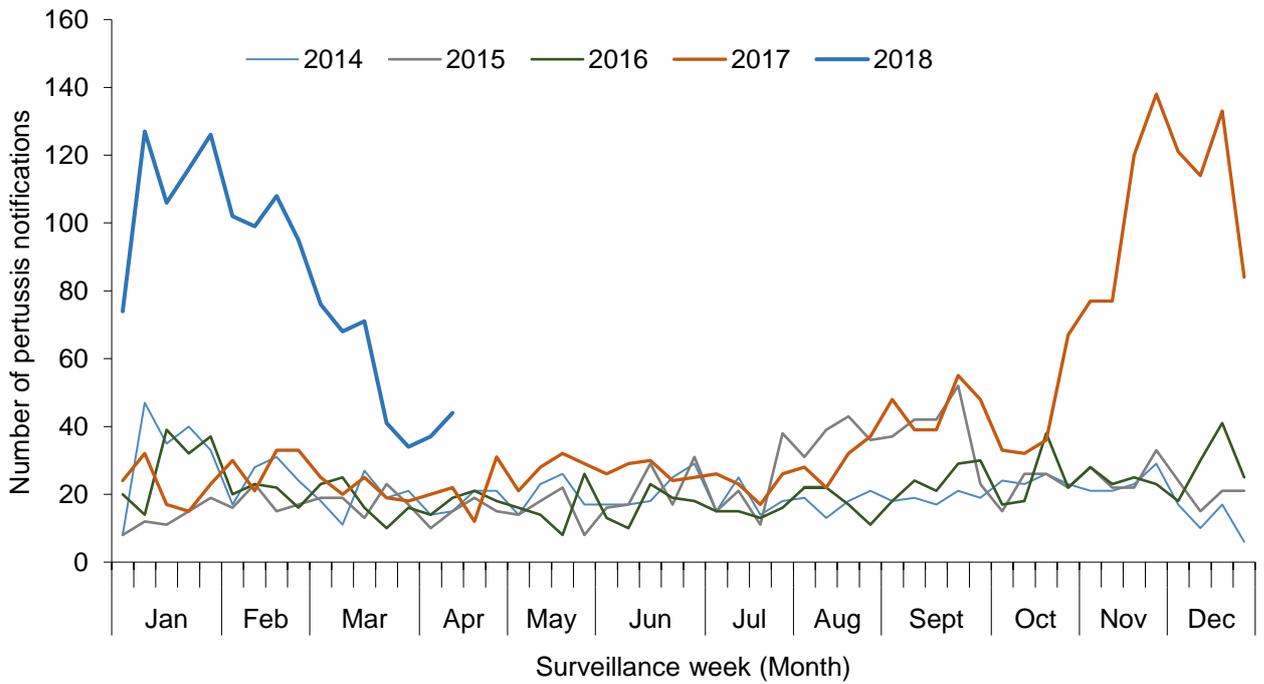
- In the past four surveillance weeks (weeks 13–16, 24 March–20 April 2018), 156 cases of pertussis were notified (41, 34, 37 and 44 cases, consecutively – Figure 1)¹. This included 89 confirmed, 62 probable, and 5 suspect cases. This is significantly higher than the 79 cases reported in the same four surveillance weeks in 2017 (Table 3). In the past four surveillance weeks in 2018, 11 (7.1%) cases were aged less than 1 year and three of these cases were hospitalised. Of all 156 cases, 14 cases were hospitalised and no deaths were reported.
- From 1 January–20 April 2018, there was a total of 1324 confirmed, probable and suspect cases of pertussis notified (27.6 cases per 100,000). Of the 1324 cases, 72 cases (5.4%) were aged less than 1 year, of which 34 (47.2%) were hospitalised (Table 1). Of all 1324 cases, 88 cases (6.6%) were hospitalised.
- From 1 January–20 April 2018, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (118.9 and 75.0 per 100,000, respectively). The ethnic groups with the highest notification rates were Māori (35.3 per 100,000, 246 cases) followed by European or Other (30.7 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (958 cases).
- From 1 January–20 April 2018, the highest numbers of pertussis cases were reported by Nelson Marlborough (182 cases), Bay of Plenty (157 cases) and Waikato (156 cases) DHBs (Table 3). The DHB with the highest rate was West Coast (132.3 per 100,000, 43 cases), followed by Nelson Marlborough (122.3 per 100,000), Wairarapa (74.2 per 100,000, 33 cases), and Bay of Plenty (67.7 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 20 April 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 (24 March –20 April 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 20 April 2018) are shown in Figure 1 below.

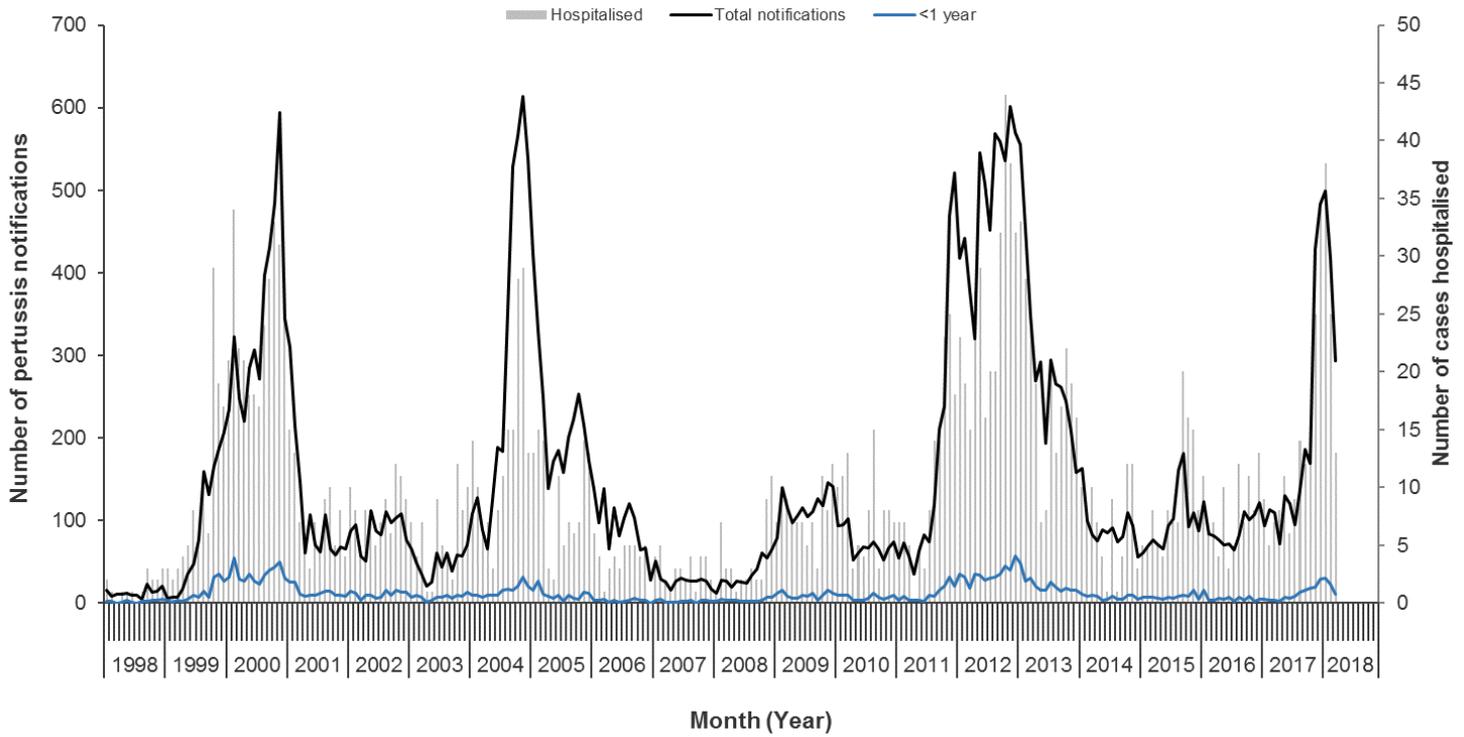
Figure 1: Number of pertussis notifications by week reported, 2014–2018



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 March 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–20 April 2018

Age group (years)	Total for 2018 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	72	118.9	34	47.2
1–4	184	75.0	13	7.1
5–9	174	53.3	4	2.3
10–14	129	42.8	1	0.8
15–19	75	23.7	3	4.0
20+	690	19.5	33	4.8
All ages	1324	27.6	88	6.6

¹ Cumulative total 1 January–20 April 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 13–16 in 2018, compared with the same period in 2017

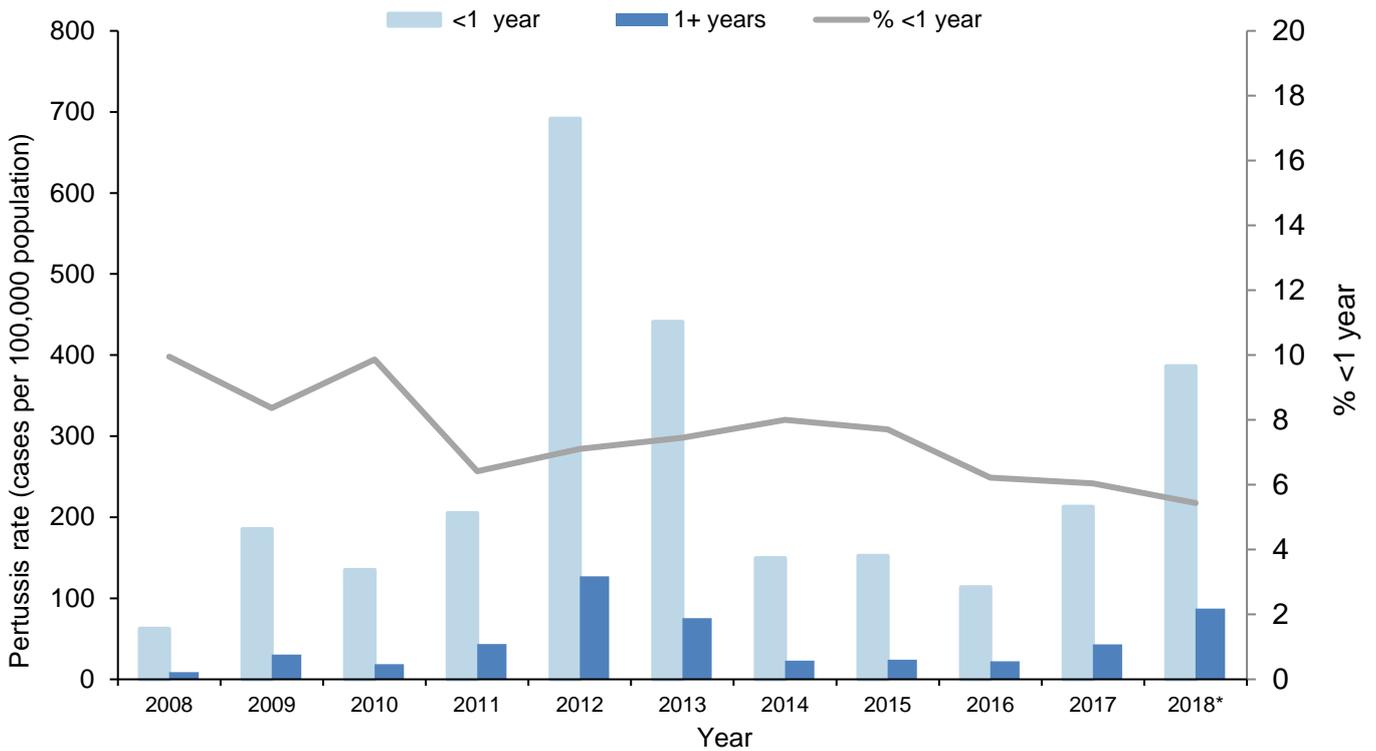
Age group (years)	Recent four surveillance weeks in 2018 (weeks 13–16) ¹		Same four surveillance weeks in 2017 (weeks 13–16) ²	
	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	11	3	3	1
1–4	16	4	14	1
5–9	26	0	8	0
10–14	14	0	8	0
15–19	7	1	6	0
20+	82	6	40	4
All ages	156	14	79	6

¹ 24 March–20 April 2018

² 25 March–21 April 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



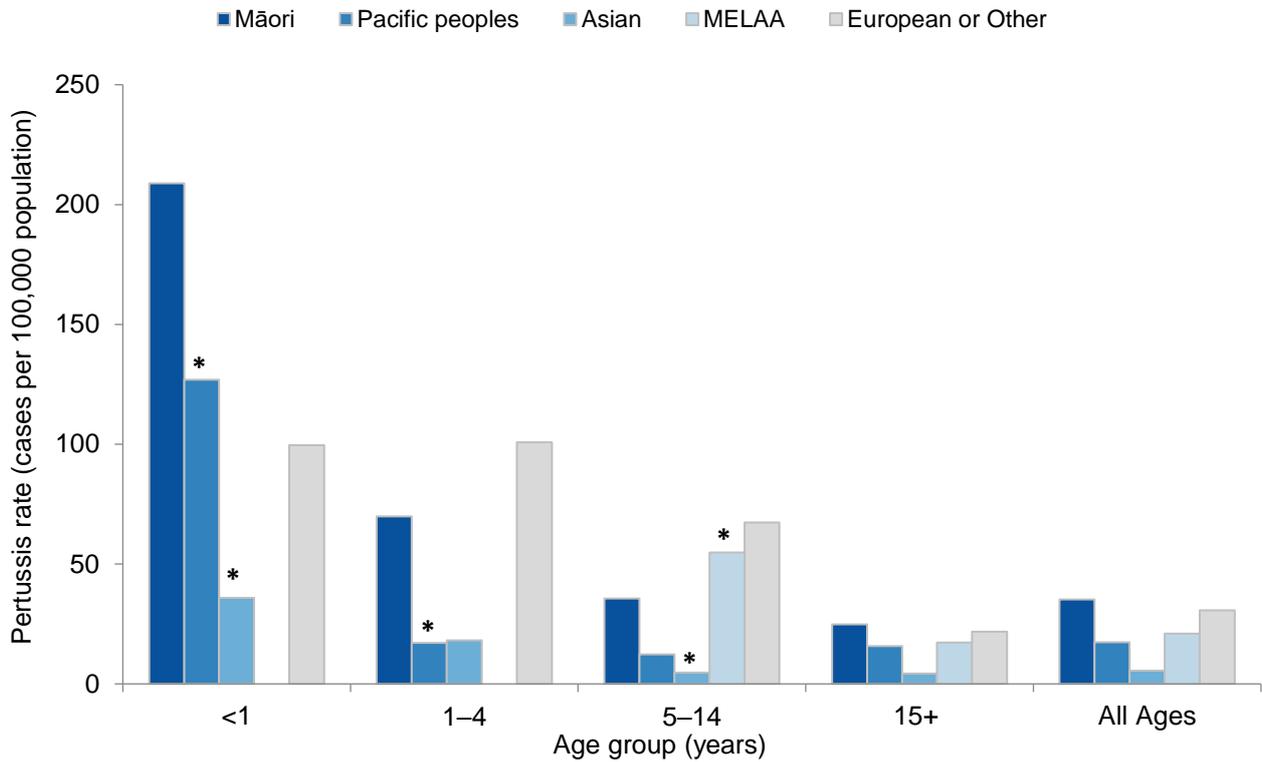
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

* 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–20 April 2018



Note: Notifications 1 January–20 April 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					24 March–20 April 2018 (weeks 11–14)		
	Cases	Rate ²	Hosp ³	Cases ⁴	% ⁵	Cases	Hosp ³	<1 year old ⁴
Northland	49	27.9	4	8	16.3	8	0	1
Waitemata	96	15.8	13	4	4.2	22	4	0
Auckland	86	16.4	11	3	3.5	5	0	0
Counties Manukau	77	14.1	17	7	9.1	4	4	1
Waikato	156	38.2	12	8	5.1	10	2	0
Lakes	60	55.3	1	0	0.0	7	0	0
Bay of Plenty	157	67.7	4	3	1.9	21	0	1
Tairāwhiti	9	18.6	0	0	0.0	1	0	0
Taranaki	6	5.1	0	0	0.0	1	0	0
Hawke's Bay	60	36.6	3	5	8.3	4	0	0
Whanganui	5	7.8	1	1	20.0	3	1	1
MidCentral	31	17.6	7	6	19.4	5	2	1
Hutt Valley	40	27.0	1	0	0.0	2	0	0
Capital & Coast	89	28.5	6	6	6.7	15	0	1
Wairarapa	33	74.2	0	0	0.0	3	0	0
Nelson Marlborough	182	122.3	2	12	6.6	19	0	2
West Coast	43	132.3	2	1	2.3	8	0	0
Canterbury	80	14.5	1	4	5.0	9	1	2
South Canterbury	11	18.5	1	1	9.1	2	1	0
Southern	54	16.7	2	3	5.6	7	0	1
Overall	1324	27.6	88	72	5.4	156	14	11

¹ Cumulative notifications 1 January–20 April 2018.

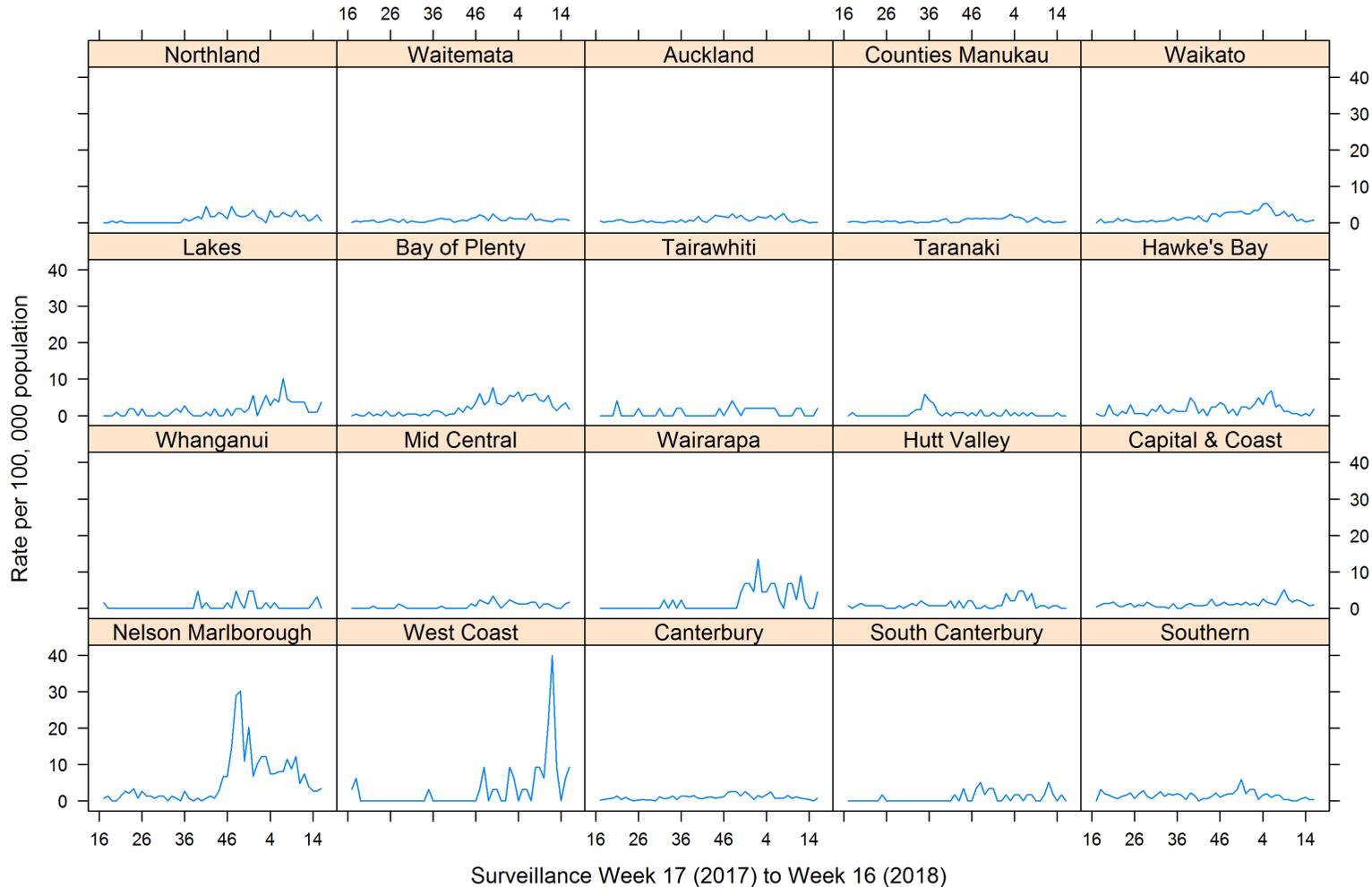
² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

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 17 of 2017 to week 16 of 2018



Note: Notifications 22 April 2017–20 April 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>