

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 23 January 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 51–2, 2017/18) compared with the previous four weeks (weeks 47–50) in 2017.
- A significant increase in pertussis notifications for the current four weeks (weeks 51–2, 2017/18) compared with the same four surveillance weeks in 2016/17.

Summary

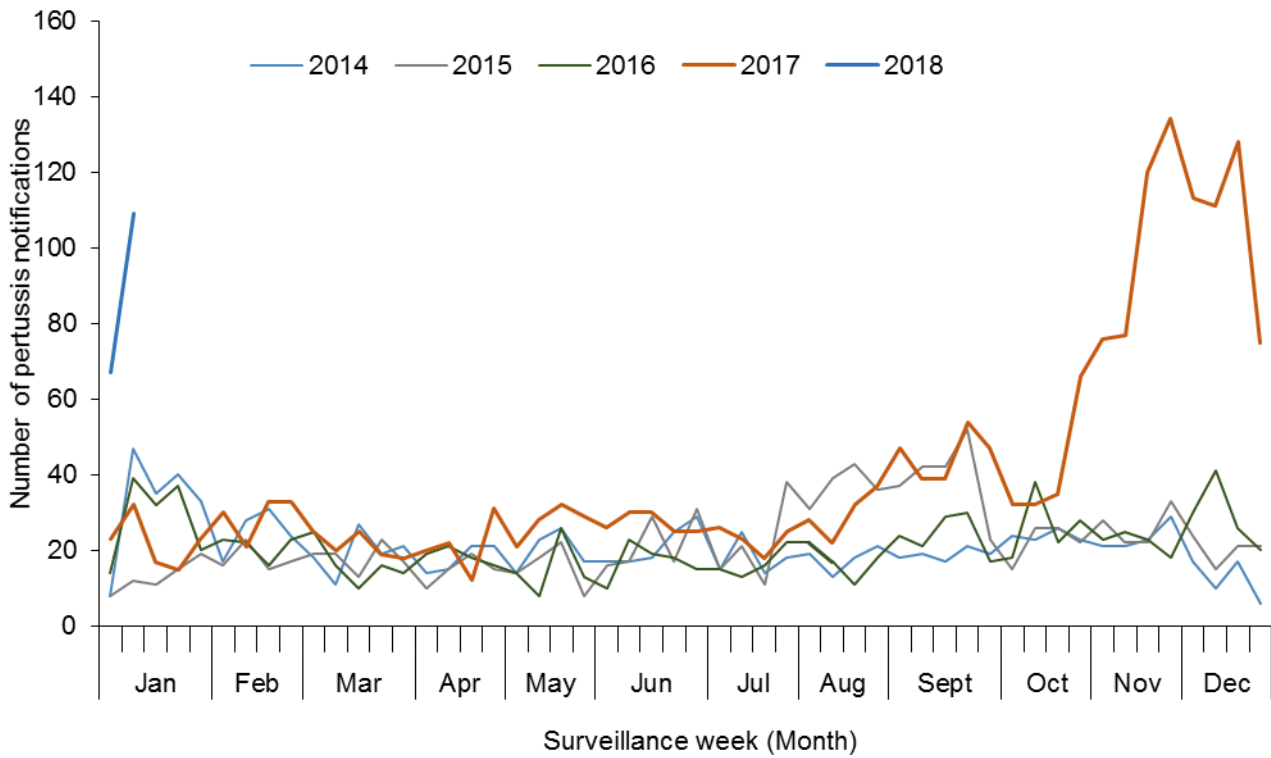
- In the past four surveillance weeks (weeks 51–2, 16 December 2017 –12 January 2018), 380 cases of pertussis were notified (128, 75, 68 and 109 cases, consecutively – Figure 1).¹ This included 250 confirmed, 123 probable, and 7 suspect cases. This is significantly higher than the 120 cases reported in the same four surveillance weeks in 2016/17 (Table 3). In the past four surveillance weeks in 2017/18, 20 (5.3%) cases were aged less than 1 year and 12 of these cases were hospitalised. Of all 380 cases, 26 cases were hospitalised and no deaths were reported.
- From 1 January–31 December 2017, there were a total of 2101 confirmed, probable and suspect cases of pertussis notified (44.8 cases per 100,000). Of the 2101 cases, 127 cases (6.0%) were aged less than 1 year, of which 66 (52.0%) were hospitalised (Table 1). Of all 2101 cases, 151 cases (7.2%) were hospitalised.
- From 1 January–31 December 2017, the highest reported pertussis rates were among the less than 1 year and 5–9 years age groups (214.4 and 90.3 per 100,000, respectively). The ethnic groups with the highest notification rates were MELAA (49.7 per 100,000, 26 cases) followed by European or Other (48.8 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (1522 cases).
- From 1 January–31 December 2017, the highest numbers of pertussis cases were reported by Canterbury (240 cases), Southern (235 cases), and Nelson Marlborough (234 cases) DHBs (Table 4). The DHB with the highest rate was Nelson Marlborough DHB (159.8 per 100,000), followed by Southern (73.7 per 100,000), and Hawke’s Bay (62.6 per 100,000, 101 cases) DHBs.
- From the beginning of the current national outbreak period (including data commencing 16 October 2017) to the end of 2017 there have been a total of 967 cases (576 confirmed, 367 probable, and 24 suspect cases). There are a further 50 cases still under investigation.
- This report summarises pertussis notifications for the period from 1 January 2017 to the 12 January 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 (16 December 2017 –12 January 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 12 January 2018) are shown in Figure 1 below.

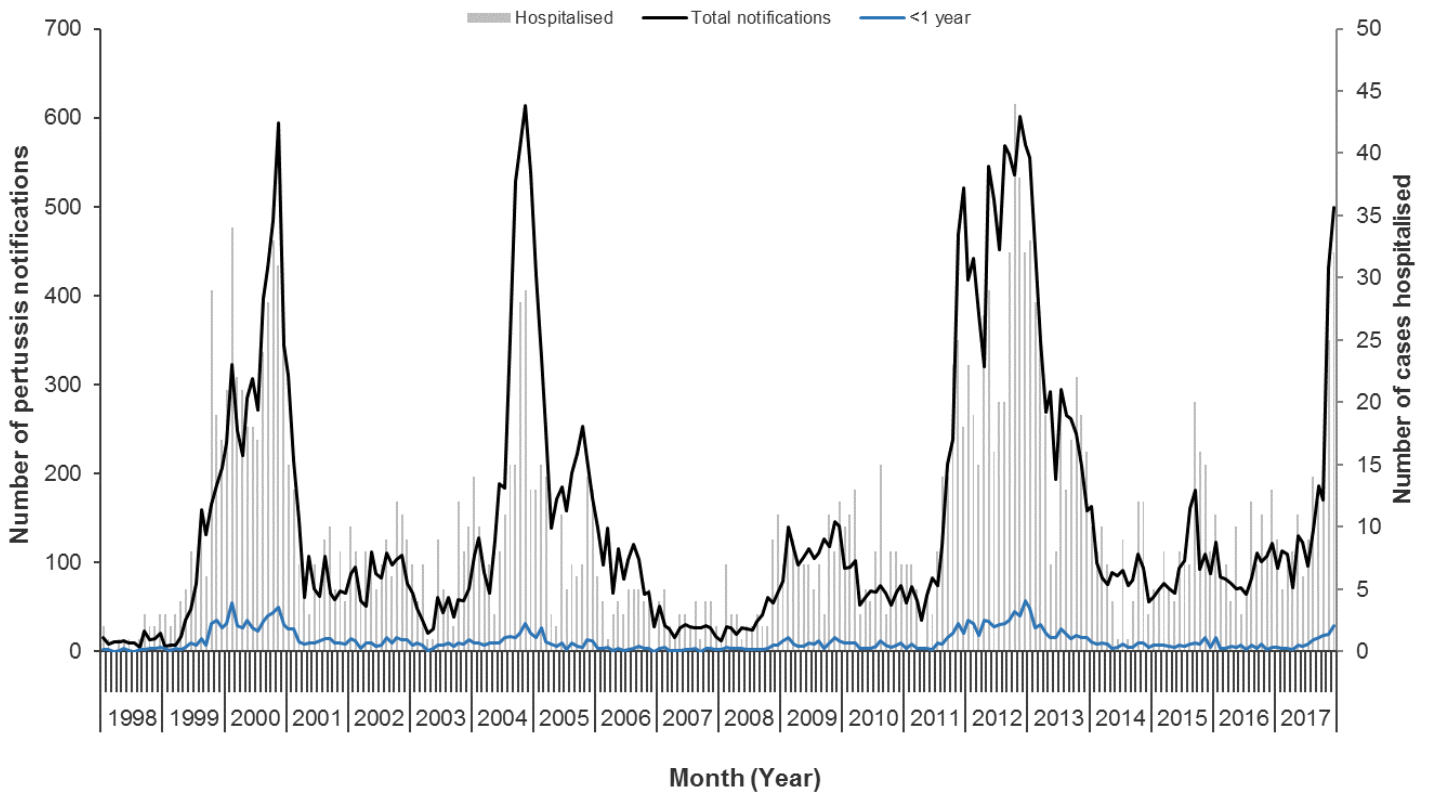
Figure 1: Number of pertussis notifications by week reported, 2014–2018



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 December 2017. A four-to- five-year cycle can be seen with large peaks in notifications in years 2000, 2004, 2011/12 and at the end of 2017.

Figure 2: Number of pertussis notifications and hospitalisations by month and year, 1998–2017



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 below in Table 1 (cumulative total for 2017). Table 2 shows the number of notifications and hospitalisations during the current four surveillance weeks in 2017 compared with the same four surveillance weeks in 2016.

Table 1: Number of (confirmed, probable and suspect) pertussis notifications, rates (cases per 100,000 population) and hospitalisations by age group, 1 January–31 December 2017

Age group (years)	Total for 2017 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	127	214.4	66	52.0
1–4	220	89.7	15	6.8
5–9	291	90.3	4	1.4
10–14	260	88.3	2	0.8
15–19	197	61.9	3	1.5
20+	1006	29.1	61	6.1
All ages	2101	44.8	151	7.2

¹ Cumulative total 1 January–31 December 2017

² Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Where fewer than five cases have been notified a rate has not been calculated.

Table 2: Number of (confirmed, probable and suspect) pertussis notifications, rates (cases per 100,000 population) and hospitalisations by age group, 1–12 January 2018

Age group (years)	Total for 2018 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	8	13.5	6	75.0
1–4	20	8.2	1	5.0
5–9	27	8.4	0	0.0
10–14	17	5.8	0	0.0
15–19	15	4.7	0	0.0
20+	89	2.6	3	3.4
All ages	176	3.8	10	5.7

¹ Cumulative total 1–12 January 2018

² Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Where fewer than five cases have been notified a rate has not been calculated.

Table 3: Number of (confirmed, probable and suspect) pertussis notifications and hospitalisations in surveillance weeks 50–52 in 2017 to weeks 1–2 in 2018, compared with the same period in 2016/17

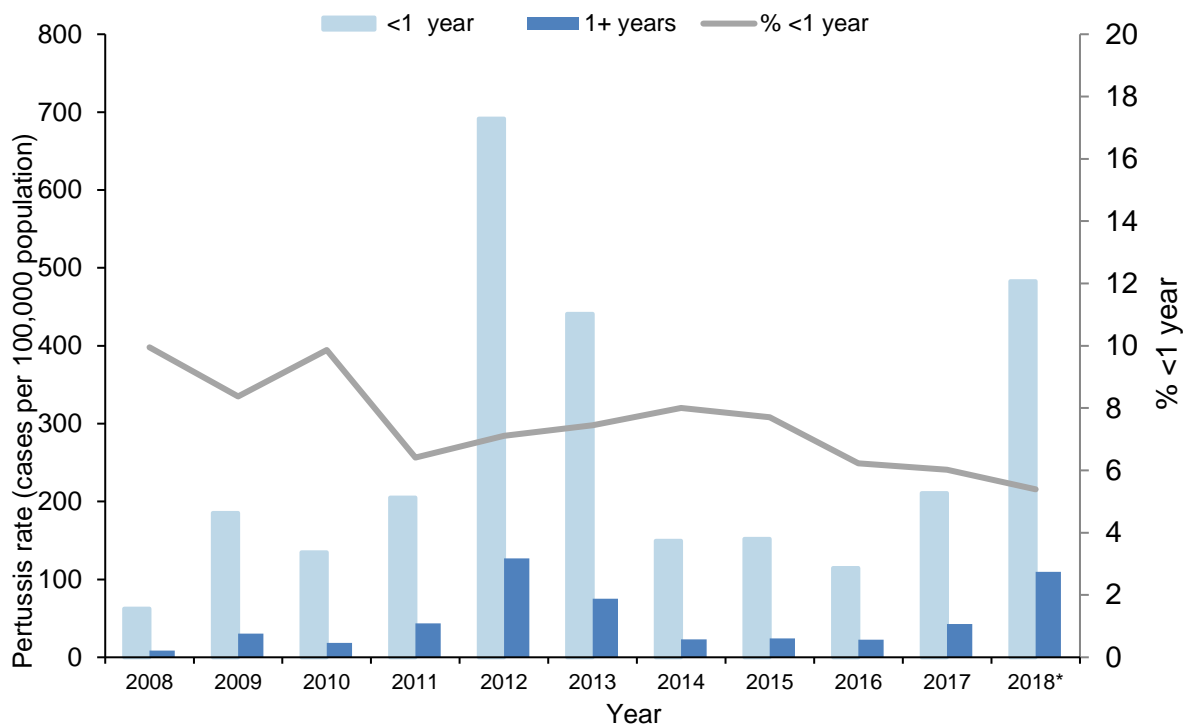
Age group (years)	Recent four surveillance weeks in 2017/18 (weeks 51–2) ¹		Same four surveillance weeks in 2016/17 (weeks 51-2) ²	
	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	20	12	7	2
1–4	43	5	15	0
5–9	59	0	14	0
10–14	50	0	17	0
15–19	24	0	5	1
20+	184	9	62	4
All ages	380	26	120	7

¹ 16 December 2017–12 January 2018

² 17 December 2016–13 January 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



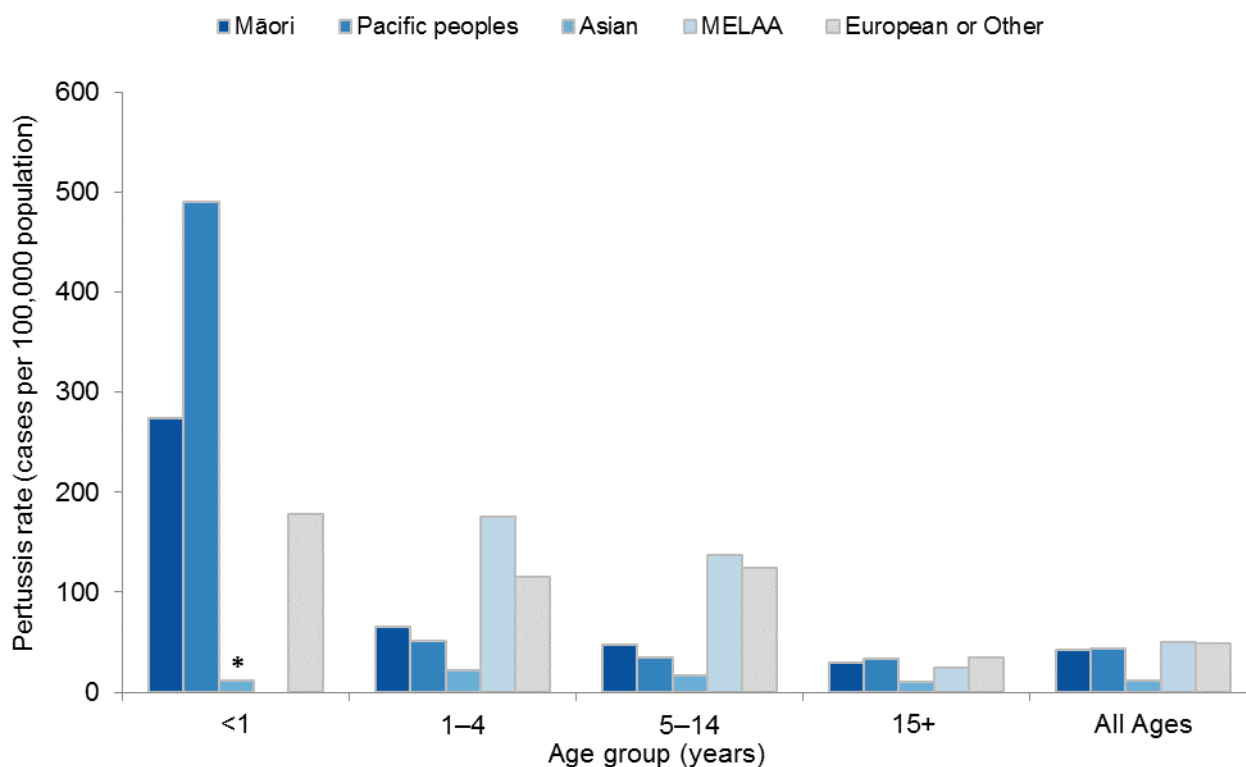
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using mid-year population estimates.

*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–31 December 2017



Note: Notifications 1 January–31 December 2017, 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 4: Number of (confirmed, probable and suspect) pertussis notifications, rate (cases per 100,000 population) and hospitalisations by district health board, 2017/18

District health board	Total for 2017 ¹			<1 year old ¹		16 December 2017 – 12 January 2018		
	Cases	Rate ²	Hosp ³	Cases ⁴	% ⁵	Cases	Hosp ³	<1 year old ⁴
Northland	68	39.7	2	5	7.4	13	2	3
Waitemata	195	33.0	25	17	8.7	20	4	0
Auckland	164	32.3	13	7	4.3	12	0	0
Counties Manukau	113	21.2	31	15	13.3	19	2	2
Waikato	194	48.6	13	14	7.2	46	4	5
Lakes	49	46.0	2	4	8.2	11	0	1
Bay of Plenty	128	56.5	12	9	7.0	35	2	0
Tairāwhiti	18	37.7	5	5	27.8	4	1	1
Taranaki	57	48.8	0	0	0.0	3	0	0
Hawke's Bay	101	62.6	7	6	5.9	16	2	1
Whanganui	20	31.7	3	4	20.0	6	0	1
MidCentral	38	21.8	2	2	5.3	9	1	1
Hutt Valley	56	38.4	2	1	1.8	8	1	0
Capital & Coast	156	50.9	3	7	4.5	15	2	1
Wairarapa	11	25.2	1	0	0.0	14	1	0
Nelson Marlborough	234	159.8	3	11	4.7	65	2	3
West Coast	10	30.8	0	0	0.0	4	0	0
Canterbury	240	44.5	7	6	2.5	35	0	0
South Canterbury	14	23.6	0	0	0.0	1	0	0
Southern	235	73.7	20	14	6.0	44	2	1
Overall	2101	44.8	151	127	6.0	380	26	20

¹ Cumulative notifications 1 January–31 December 2017.

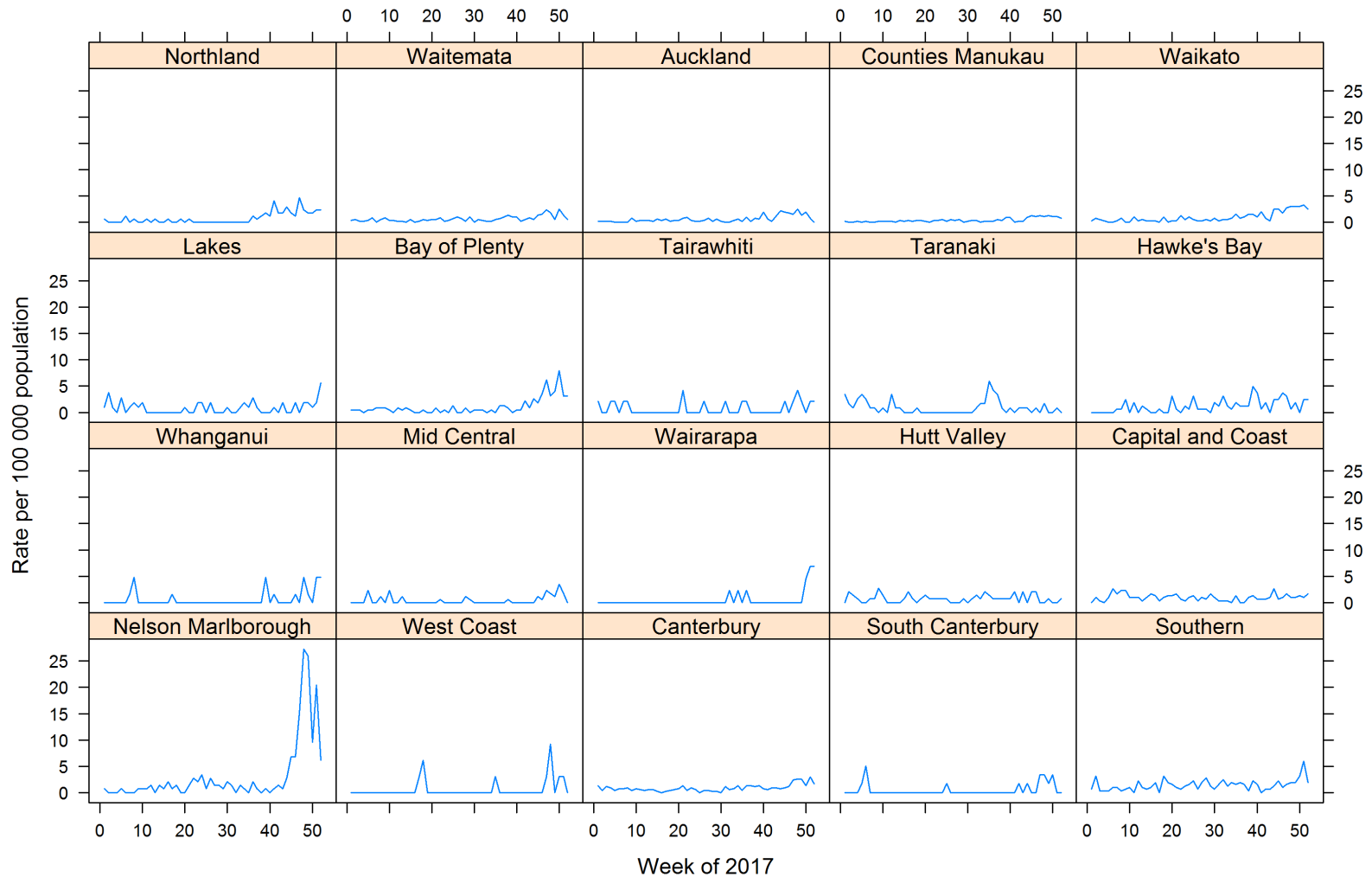
² Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

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 weeks 1-52 of 2017



Note: Notifications 1 January–31 December 2017, includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

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