

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 3 April 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 9–12, 2018) compared with the previous four weeks (weeks 5–8) in 2018.
- A significant increase in pertussis notifications for the current four weeks (weeks 9–12, 2018) compared with the same four surveillance weeks in 2017.

Summary

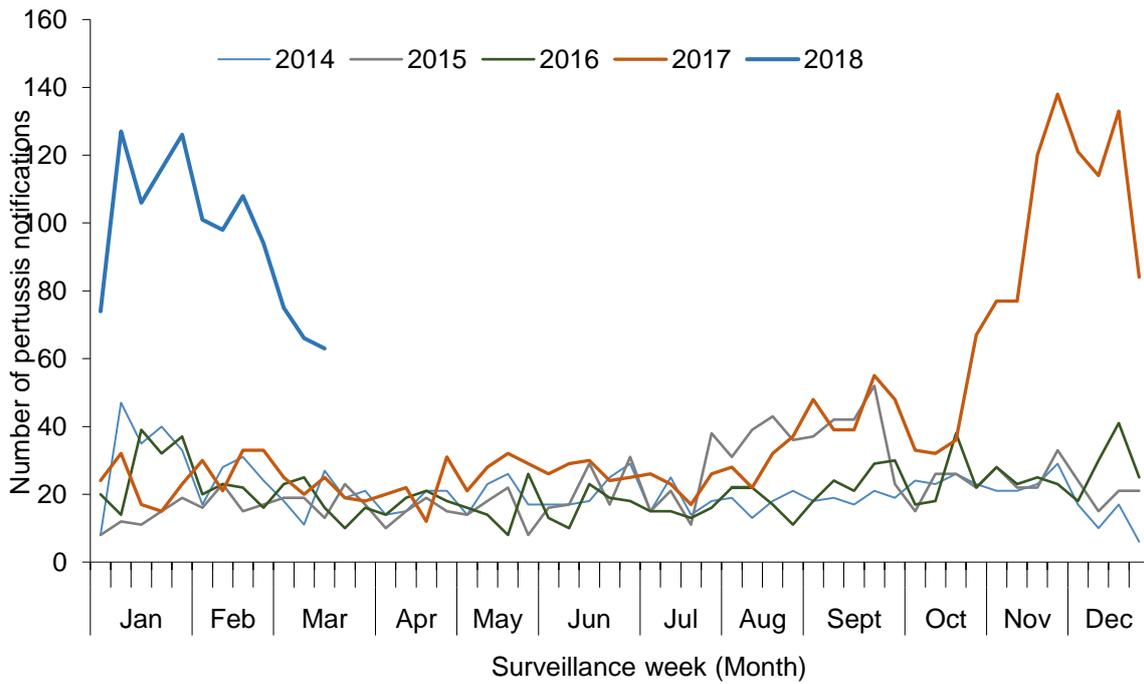
- In the past four surveillance weeks (weeks 9–12, 24 February–23 March 2018), 298 cases of pertussis were notified (94, 75, 66 and 63 cases, consecutively – Figure 1)¹. This included 166 confirmed, 112 probable, and 20 suspect cases. This is significantly higher than the 103 cases reported in the same four surveillance weeks in 2017 (Table 3). In the past four surveillance weeks in 2018, 12 (4.0%) cases were aged less than 1 year and five of these cases were hospitalised. Of all 298 cases, 13 cases were hospitalised and no deaths were reported.
- From 1 January–23 March 2018, there was a total of 1154 confirmed, probable and suspect cases of pertussis notified (24.1 cases per 100,000). Of the 1154 cases, 61 cases (5.3%) were aged less than 1 year, of which 31 (50.8%) were hospitalised (Table 1). Of all 1154 cases, 72 cases (6.2%) were hospitalised.
- From 1 January–23 March 2018, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (100.7 and 67.6 per 100,000, respectively). The ethnic groups with the highest notification rates were Māori (30.8 per 100,000, 215 cases) followed by European or Other (25.7 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (801 cases).
- From 1 January–23 March 2018, the highest numbers of pertussis cases were reported by Nelson Marlborough (159 cases), Waikato (144 cases) and Bay of Plenty (134 cases) DHBs (Table 3). The DHB with the highest rate was West Coast (107.7 per 100,000, 35 cases), followed by Nelson Marlborough (106.9 per 100,000), Wairarapa (67.4 per 100,000, 30 cases), and Bay of Plenty (57.8 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 23 March 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 February –23 March 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 23 March 2018) are shown in Figure 1 below.

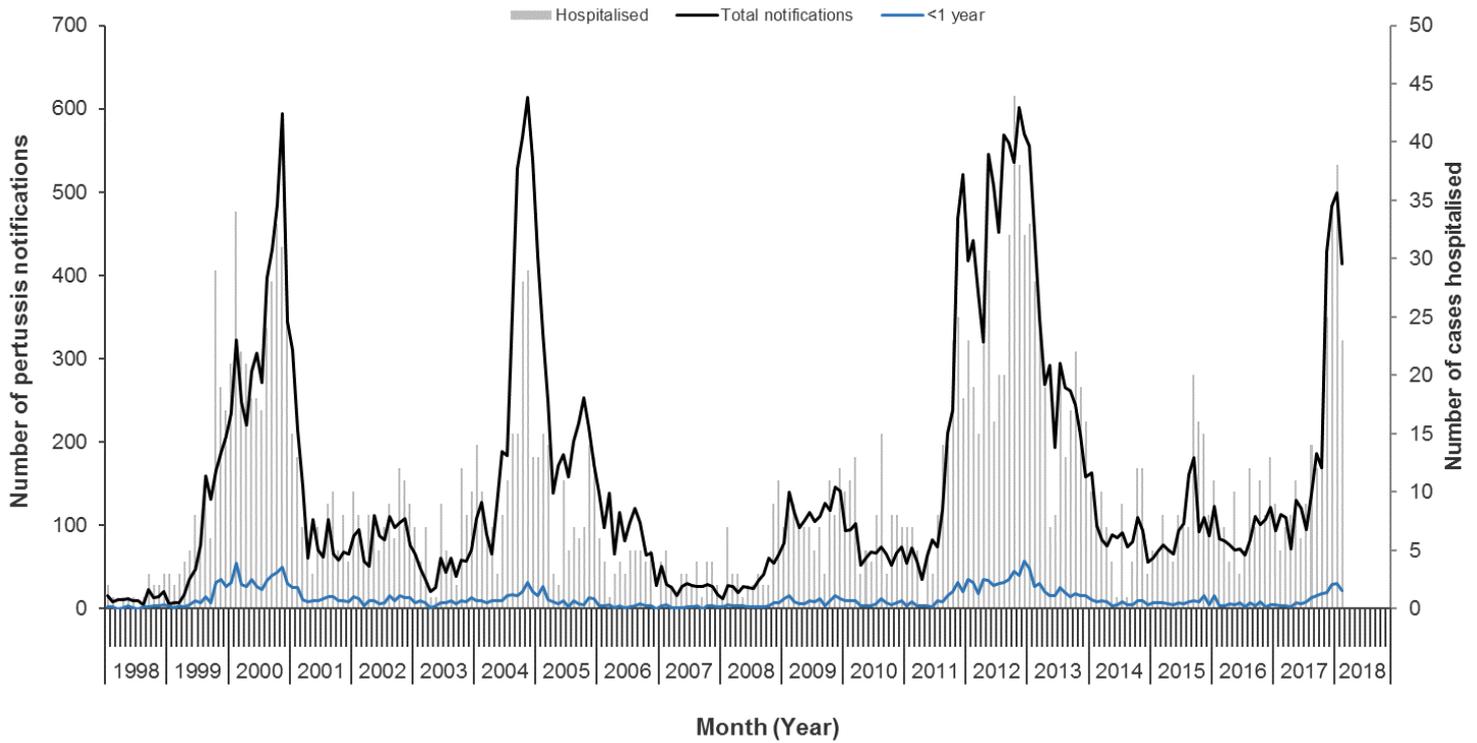
Figure 1: Number of pertussis notifications by week reported, 2014–2018



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 February 2018. 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, 1998–2018



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–23 March 2018

| Age group (years) | Total for 2018 ¹ | | Hospitalised ¹ | |
|-------------------|-----------------------------|-------------------|---------------------------|-------------|
| | Number of cases | Rate ² | Number of cases | Percent (%) |
| <1 | 61 | 100.7 | 31 | 50.8 |
| 1–4 | 166 | 67.6 | 9 | 5.4 |
| 5–9 | 144 | 44.1 | 4 | 2.8 |
| 10–14 | 113 | 37.5 | 1 | 0.9 |
| 15–19 | 68 | 21.5 | 2 | 2.9 |
| 20+ | 602 | 17.0 | 25 | 4.2 |
| All ages | 1154 | 24.1 | 72 | 6.2 |

¹ Cumulative total 1 January–23 March 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 9–12 in 2018, compared with the same period in 2017

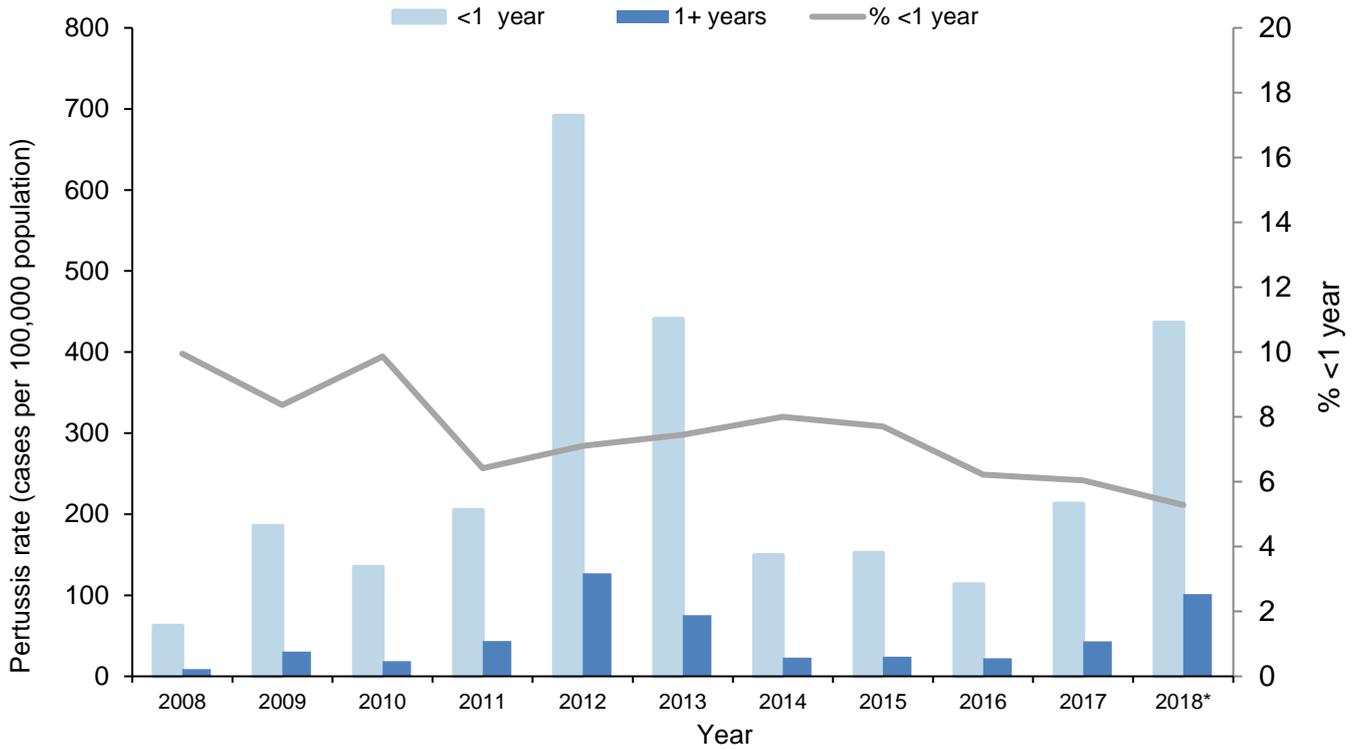
| Age group (years) | Recent four surveillance weeks in 2018 (weeks 9–12) ¹ | | Same four surveillance weeks in 2017 (weeks 9–12) ² | |
|-------------------|--|--------------------|--|--------------------|
| | Number of cases | Cases hospitalised | Number of cases | Cases hospitalised |
| <1 | 12 | 5 | 3 | 1 |
| 1–4 | 42 | 2 | 8 | 2 |
| 5–9 | 34 | 1 | 16 | 1 |
| 10–14 | 22 | 0 | 8 | 0 |
| 15–19 | 26 | 0 | 15 | 0 |
| 20+ | 162 | 5 | 53 | 5 |
| All ages | 298 | 13 | 103 | 9 |

¹ 24 February–23 March 2018

² 25 February–24 March 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



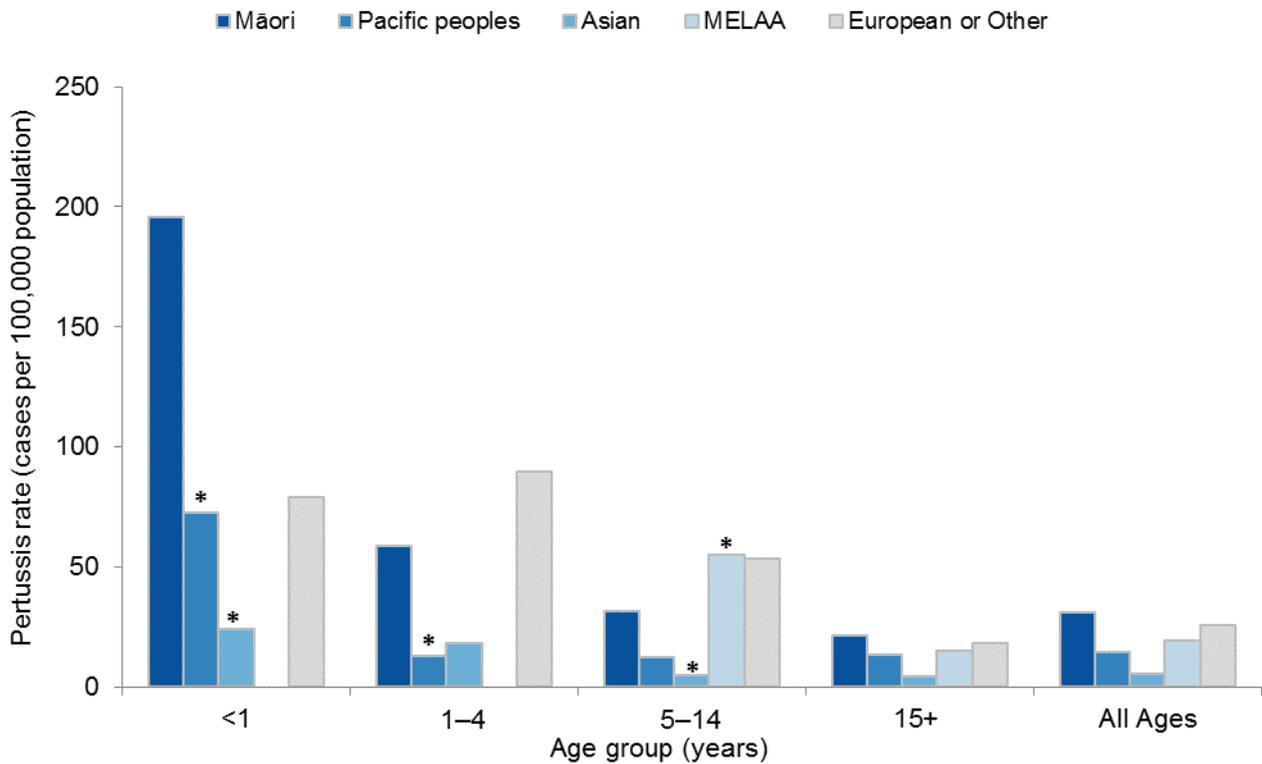
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

* 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–23 March 2018



Note: Notifications 1 January–23 March 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 February–23 March 2018 (weeks 9–12) | | |
|-----------------------|-----------------------------|-------------------|-------------------|--------------------|----------------|---|-------------------|--------------------------|
| | Cases | Rate ² | Hosp ³ | Cases ⁴ | % ⁵ | Cases | Hosp ³ | <1 year old ⁴ |
| Northland | 40 | 22.8 | 4 | 7 | 17.5 | 15 | 0 | 1 |
| Waitemata | 71 | 11.7 | 8 | 4 | 5.6 | 12 | 2 | 0 |
| Auckland | 80 | 15.3 | 11 | 3 | 3.8 | 12 | 0 | 0 |
| Counties Manukau | 72 | 13.2 | 13 | 6 | 8.3 | 15 | 5 | 3 |
| Waikato | 144 | 35.2 | 9 | 8 | 5.6 | 31 | 3 | 2 |
| Lakes | 53 | 48.8 | 1 | 0 | 0.0 | 16 | 0 | 0 |
| Bay of Plenty | 134 | 57.8 | 4 | 2 | 1.5 | 36 | 0 | 0 |
| Tairāwhiti | 8 | 16.5 | 0 | 0 | 0.0 | 2 | 0 | 0 |
| Taranaki | 5 | 4.2 | 0 | 0 | 0.0 | 0 | 0 | 0 |
| Hawke's Bay | 56 | 34.2 | 3 | 5 | 8.9 | 6 | 0 | 0 |
| Whanganui | 2 | - | 0 | 0 | 0.0 | 0 | 0 | 0 |
| MidCentral | 26 | 14.7 | 5 | 5 | 19.2 | 5 | 0 | 1 |
| Hutt Valley | 38 | 25.7 | 1 | 0 | 0.0 | 2 | 0 | 0 |
| Capital & Coast | 75 | 24.0 | 6 | 6 | 8.0 | 37 | 1 | 2 |
| Wairarapa | 30 | 67.4 | 0 | 0 | 0.0 | 11 | 0 | 0 |
| Nelson Marlborough | 159 | 106.9 | 2 | 9 | 5.7 | 46 | 0 | 1 |
| West Coast | 35 | 107.7 | 2 | 1 | 2.9 | 25 | 1 | 0 |
| Canterbury | 70 | 12.7 | 0 | 2 | 2.9 | 21 | 0 | 1 |
| South Canterbury | 9 | 15.1 | 1 | 1 | 11.1 | 4 | 1 | 1 |
| Southern | 47 | 14.5 | 2 | 2 | 4.3 | 2 | 0 | 0 |
| Overall | 1154 | 24.1 | 72 | 61 | 5.3 | 298 | 13 | 12 |

¹ Cumulative notifications 1 January–23 March 2018.

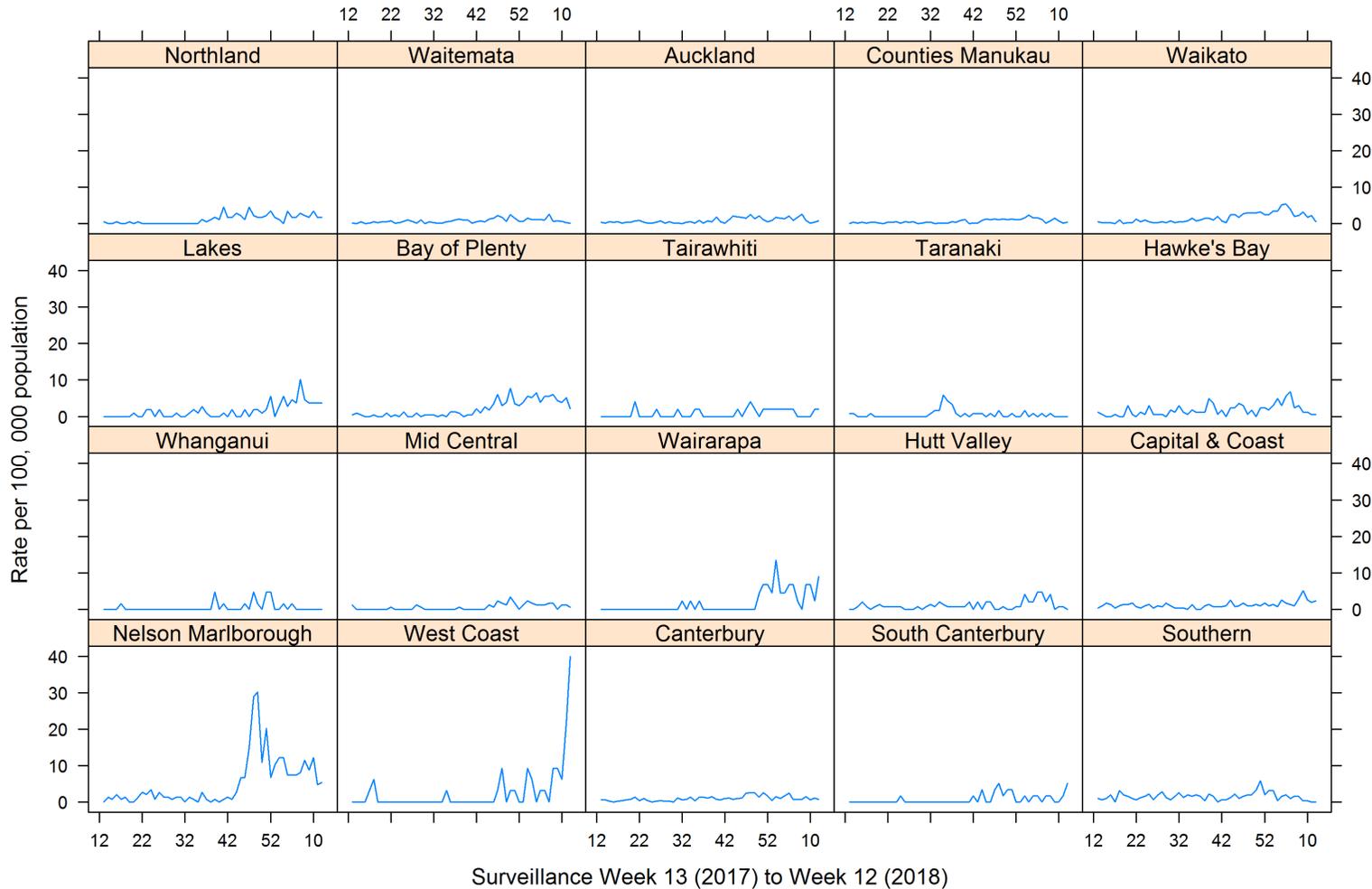
² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

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 13 of 2017 to week 12 of 2018



Note: Notifications 25 March 2017–23 March 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>