

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 5 December 2017. 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 increase in pertussis notifications for the current four weeks (weeks 44–47) compared with the previous four weeks (weeks 40–43) in 2017.
- A significant increase in pertussis notifications for the current four weeks (28 October–24 November 2017) compared with the same four surveillance weeks in 2016.

Summary

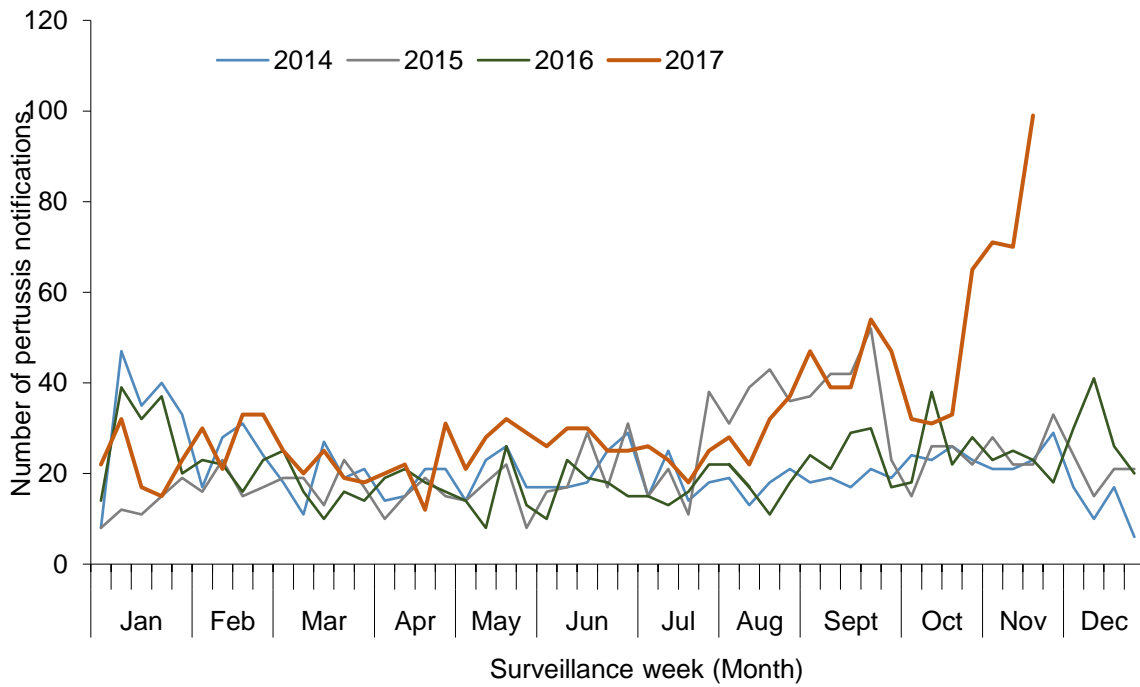
- In the past four surveillance weeks (weeks 44–47, 28 October–24 November 2017), 305 cases of pertussis were notified (65, 71, 70 and 99 cases, consecutively – Figure 1).¹ This included 182 confirmed, 117 probable, and six suspect cases. This is significantly higher than the 99 cases reported in the same four surveillance weeks in 2016 (Table 2). In the past four surveillance weeks in 2017, 14 (4.6%) cases were aged less than 1 year and six of these cases were hospitalised. Of all 305 cases, 19 cases were hospitalised and no deaths were reported.
- From 1 January–24 November 2017, there were a total of 1502 confirmed, probable and suspect cases of pertussis notified (32.0 cases per 100,000). Of the 1502 cases, 92 cases (6.1%) were aged less than 1 year, of which 47 (51.1%) were hospitalised (Table 1). Of all 1502 cases, 114 cases (7.6%) were hospitalised.
- From 1 January–24 November 2017, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (155.3 and 66.0 per 100,000, respectively). The ethnic groups with the highest notification rates were MELAA (40.2 per 100,000, 21 cases) followed by European or Other (35.2 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (1097 cases).
- From 1 January–24 November 2017, the highest numbers of pertussis cases were reported by Southern (187 cases), Canterbury (180 cases), and Waitemata (147 cases) DHBs (Table 3). The DHB with the highest rate was Nelson Marlborough DHB (64.2 per 100,000, 94 cases), followed by Southern (58.6 per 100,000), Hawke's Bay (55.1 per 100,000, 89 cases) and Taranaki (46.2 per 100,000, 54 cases) DHBs.
- This report summarises pertussis notifications for the period from 1 January–24 November 2017 (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 (28 October–24 November 2017) 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 2014–2017 (to week ending 24 November 2017) are shown in Figure 1 below.

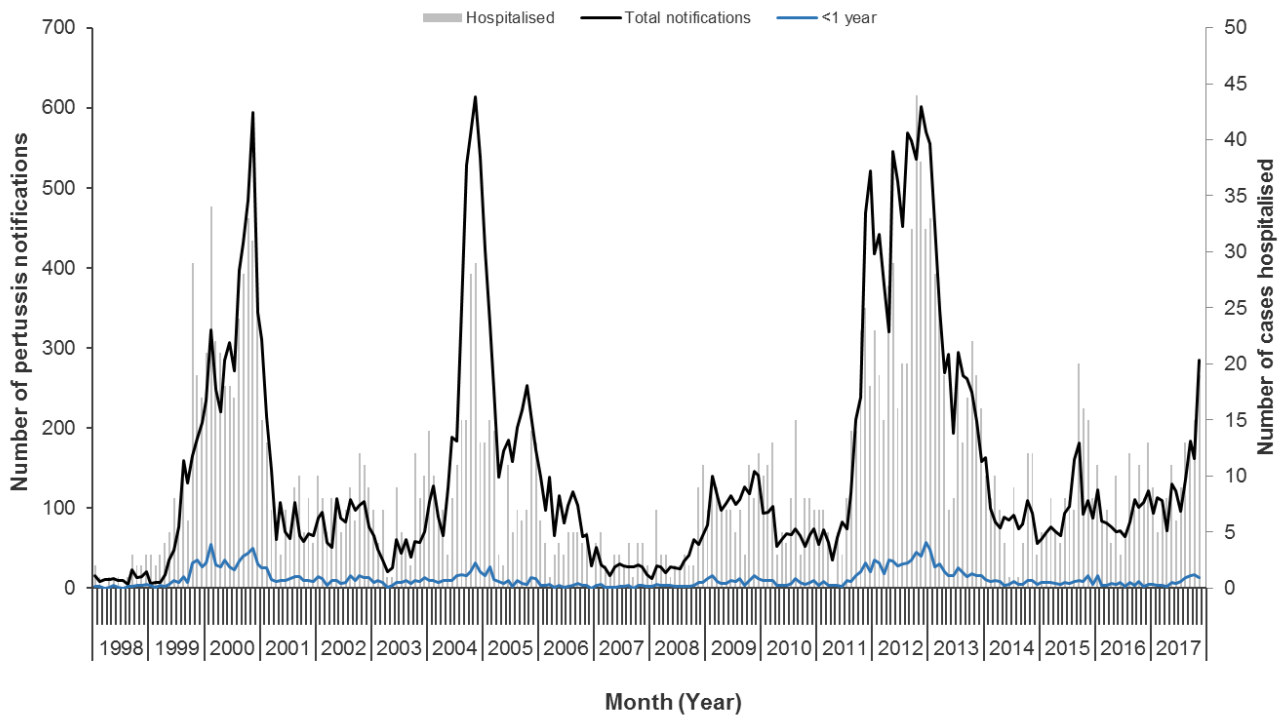
Figure 1: Number of pertussis notifications by week reported, 2014–2017



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 November 2017. A four-to- five-year cycle can be seen with large peaks in notifications in years 2000 and 2004 and 2011/12.

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–24 November 2017

Age group (years)	Total for 2017 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	92	155.3	47	51.1
1–4	162	66.0	10	6.2
5–9	205	63.6	4	2.0
10–14	165	56.1	0	0.0
15–19	148	46.5	3	2.0
20+	730	21.1	50	6.8
All ages	1502	32.0	114	7.6

¹ Cumulative total 1 January–24 November 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 and hospitalisations in surveillance weeks 44–47 in 2017, compared with the same period in 2016

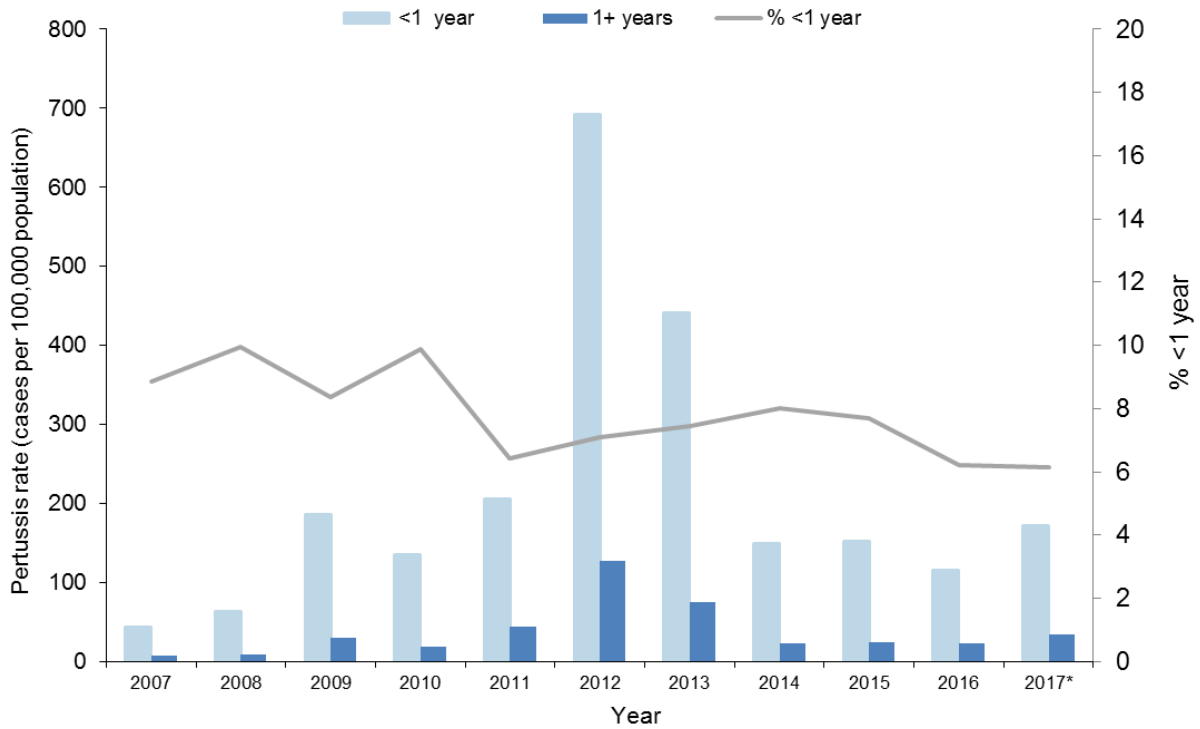
Age group (years)	Recent four surveillance weeks in 2017 (weeks 44–47) ¹		Same four surveillance weeks in 2016 (weeks 44–47) ²	
	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	14	6	3	3
1–4	24	1	7	0
5–9	46	0	8	0
10–14	46	0	15	0
15–19	38	1	7	0
20+	137	11	59	4
All ages	305	19	99	7

¹ 28 October–24 November 2017

² 29 October–25 November 2016

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, 2007–2017



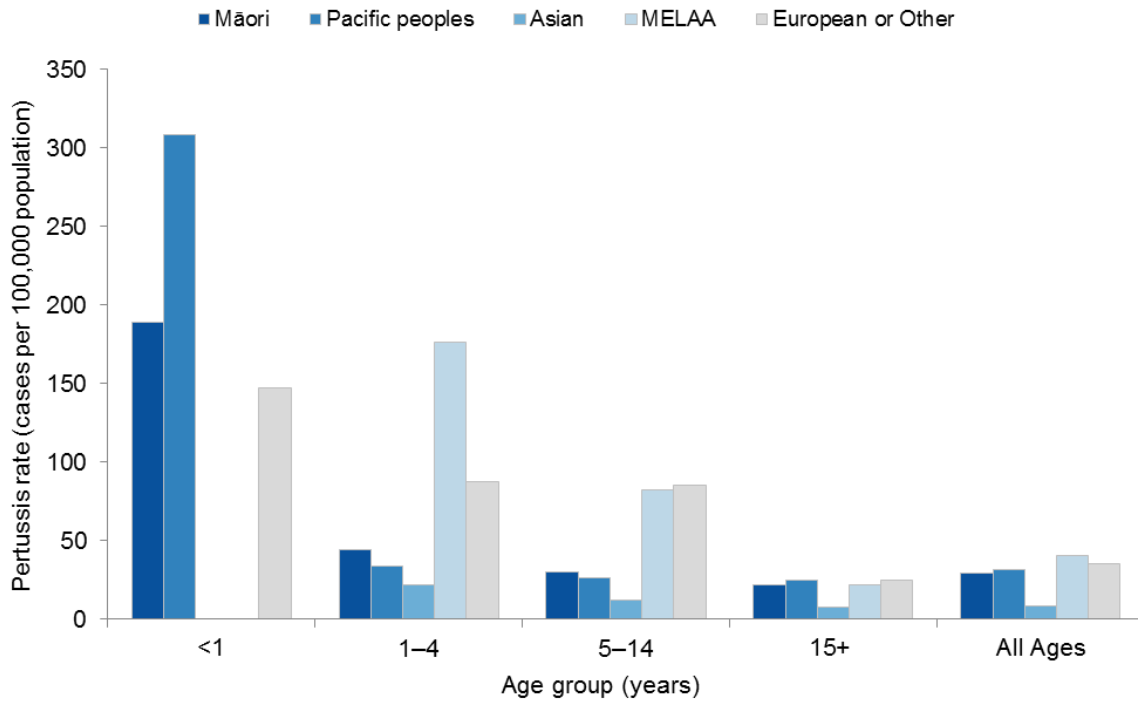
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using mid-year population estimates.

*Rate for 2017 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–24 November 2017



Note: Notifications 1 January–24 November 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.

District health board

The numbers and rates of pertussis notifications by DHB are shown in Table 3 below.

Table 3: Number of (confirmed, probable and suspect) pertussis notifications, rate (cases per 100,000 population) and hospitalisations by district health board, 2017

District health board	Total for 2017 ¹			<1 year old ¹		28 October–24 November 2017		
	Cases	Rate ²	Hosp ³	Cases ⁴	% ⁵	Cases	Hosp ³	<1 year old ⁴
Northland	45	26.3	1	3	6.7	14	1	2
Waitemata	147	24.9	18	13	8.8	27	0	1
Auckland	121	23.9	10	6	5.0	30	0	0
Counties Manukau	80	15.0	24	9	11.3	21	5	2
Waikato	134	33.5	10	10	7.5	37	3	3
Lakes	36	33.8	2	3	8.3	2	0	0
Bay of Plenty	80	35.3	9	8	10.0	32	1	0
Tairāwhiti	13	27.2	3	3	23.1	2	1	1
Taranaki	54	46.2	0	0	0.0	2	0	0
Hawke's Bay	89	55.1	4	4	4.5	19	1	0
Whanganui	10	15.9	3	3	30.0	1	1	0
MidCentral	24	13.8	1	1	4.2	7	1	0
Hutt Valley	54	37.0	2	1	1.9	6	0	1
Capital & Coast	137	44.7	2	6	4.4	17	0	0
Wairarapa	3	-	0	0	0.0	0	0	0
Nelson Marlborough	94	64.2	2	4	4.3	38	0	2
West Coast	5	15.4	0	0	0.0	1	0	0
Canterbury	180	33.4	6	6	3.3	28	1	1
South Canterbury	9	15.2	0	0	0.0	3	0	0
Southern	187	58.6	17	12	6.4	18	4	1
Overall	1502	32.0	114	92	6.1	305	19	14

¹ Cumulative notifications 1 January–24 November 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

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