

# PERTUSSIS REPORT

## 12 October–08 November 2024

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This fortnightly report summarises pertussis notifications for the current four-week period, 12 October–08 November, and cumulative numbers since 01 January 2024. It includes the distribution of cases by time, region, district, age group and prioritised ethnicity. Four-weekly rates are presented to enable comparisons between groups and over time. This report supplements the [Pertussis dashboard](#) which is updated weekly.

Data contained within this report is based on information recorded in EpiSurv as at 11am on 13 November 2024. Changes made to EpiSurv after this time will not be reflected here. Data presented may be further updated and should be regarded as provisional. Cases still under investigation are not included in this report. Because these cases are still to be classified, case numbers may change in future reports.

This report published 14 November 2024

## Summary

Pertussis activity in New Zealand has returned to pre-COVID-19 pandemic levels in 2024 after four years with very low activity. There is a high risk of a pertussis epidemic occurring this year due to reduced population immunity. Pertussis epidemics historically occur every 3–5 years in New Zealand (with the last epidemic ending in 2019).

In the past four surveillance weeks (weeks 42–45, 12 October–08 November 2024):

- there were 215 cases (164 confirmed, 48 probable and 3 suspect) notified in EpiSurv, compared with 188 cases for the prior four weeks (weeks 38–41) This comprises 48, 48, 47 and 72 cases respectively in weeks 42–45;
- 20 cases were hospitalised, compared with 17 cases in weeks 38–41; no deaths were reported;
- 12 cases (5.6%) were aged less than 1 year, of which nine (75.0%) were hospitalised including two under two months old;
- notification rates were highest among infants aged less than 1 year (21.0 per 100,000, 12 cases), followed by children aged 1–4 years (13.9 per 100,000, 34 cases);
- the ethnic group with the highest notification rate was Middle Eastern/Latin American/African (11.8 per 100,000, 9 cases), followed by Māori (6.8 per 100,000, 59 cases), and European or Other (4.0 per 100,000, 125 cases);
- the Central region had the highest rate (7.6 per 100,000, 75 cases) followed by Te Waipounamu (5.2 per 100,000, 64 cases), Te Manawa Taki (2.8 per 100,000, 29 cases), and Northern (2.4 per 100,000, 47 cases).

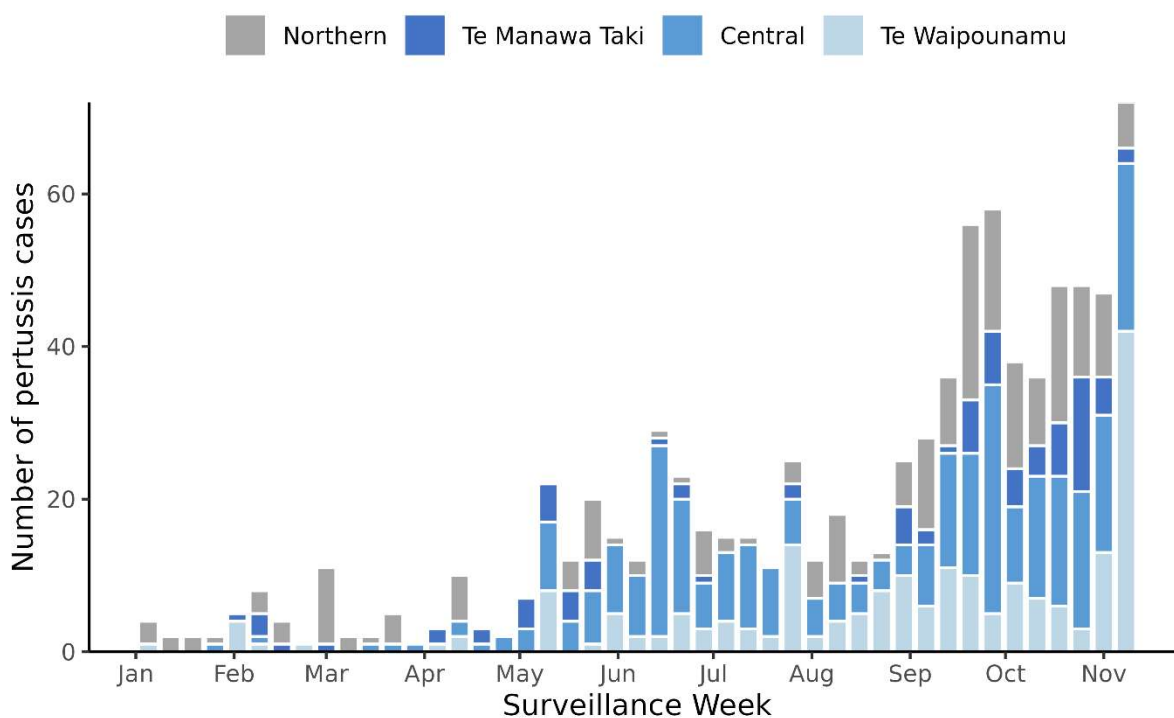
From 01 January to 08 November 2024:

- a total of 836 confirmed, probable and suspect cases of pertussis were notified;
- overall, 88 cases (10.5%) were hospitalised and there have been no deaths;
- of the 55 cases (6.6%) aged less than 1 year, 40 (72.7%) were hospitalised.

## Trends in pertussis cases

Since returning to pre-COVID-19 levels in early May, weekly pertussis case numbers were fairly stable until August and increased each week throughout September. Weekly case numbers fell during the first few weeks of October, coinciding with school holidays, but have increased in the last week above the previous peak in September (Figure 1).

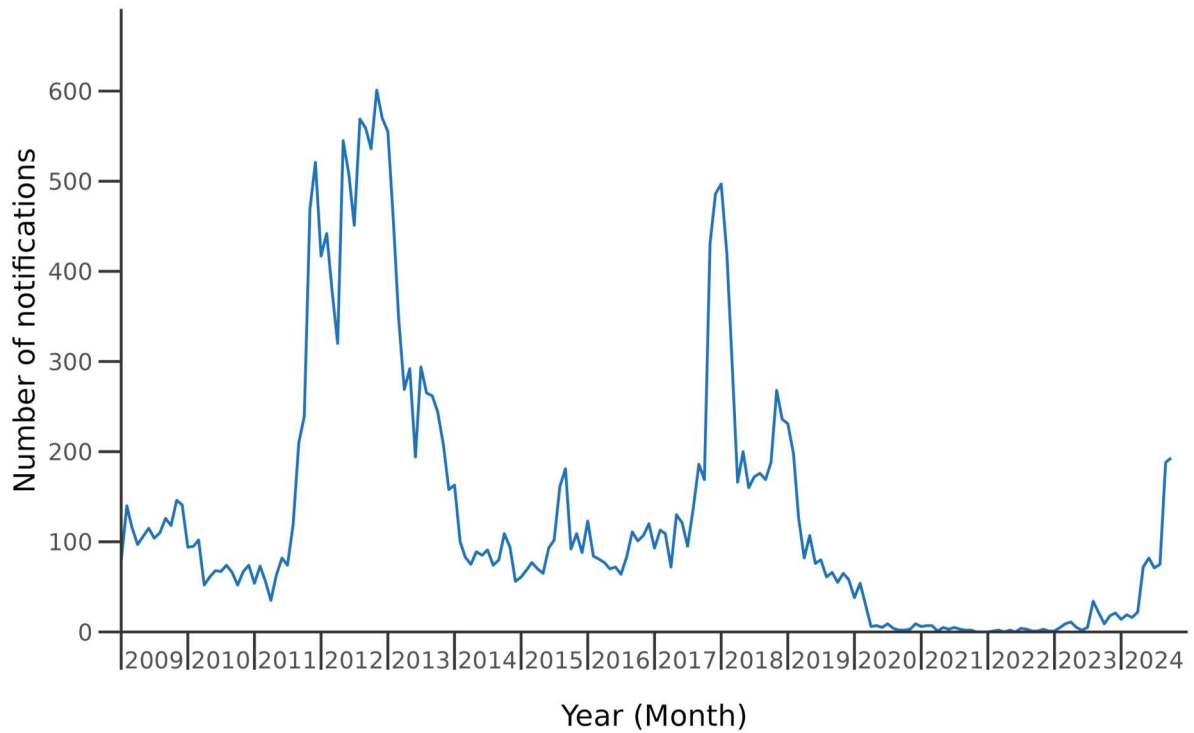
**Figure 1. Pertussis cases by week and region, 01 January–08 November 2024**



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

Figure 2 shows monthly pertussis cases since 2009. This shows two national outbreaks occurring in 2011–2013, and 2017–2019. National outbreaks have historically occurred every 3–5 years in New Zealand. Pertussis activity reduced as a result of COVID-19 response measures in 2020–2022, returning to pre-pandemic levels in 2024 as seen overseas. Case numbers in October 2024 were high compared with pre-pandemic baseline activity.

**Figure 2. Pertussis cases by month, January 2009–October 2024**



Note: Data for November are not yet presented as the month is not yet complete.

## Cases by age

In the past four weeks, rates were highest among infants aged less than 1 year followed by children aged 1–4, 5–9 and 10–14 years (Table 1). Infants aged less than 1 year are most vulnerable to severe disease, with a high proportion requiring hospitalisation. Among infants, those aged less than 2 months are at highest risk of severe disease and death. Further age breakdown of the cases aged less than 1 year is provided in Table 2.

**Table 1: Number and rate of pertussis cases and hospitalisations by age group**

Age Group (years)	12 October–08 November			01 January to 08 November 2024	
	Cases <sup>1</sup>	Rate <sup>2</sup>	Hospitalised	Cases <sup>1</sup>	Hospitalised
<1	12	21.0	9 (75.0%)	55	40 (72.7%)
1–4	34	13.9	4 (11.8%)	111	11 (9.9%)
5–9	38	11.8	1 (2.6%)	129	3 (2.3%)
10–14	38	11.1	0 (0.0%)	145	5 (3.4%)
15–19	22	6.7	0 (0.0%)	83	1 (1.2%)
20–64	61	2.0	2 (3.3%)	280	17 (6.1%)
65+	10	1.2	4 (40.0%)	33	11 (33.3%)
Total	215	4.1	20 (9.3%)	836	88 (10.5%)

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

**Table 2: Number of pertussis cases and hospitalisations aged less than 1 year**

Age Group	12 October–08 November		01 January to 08 November 2024	
	Cases	Hospitalised	Cases	Hospitalised
<2 months	2	2 (100.0%)	13	12 (92.3%)
2–5 months	6	5 (83.3%)	21	17 (81.0%)
6–12 months	4	2 (50.0%)	21	11 (52.4%)

## Cases by Ethnicity

The ethnic group with the highest notification rate in the past four weeks was Middle Eastern/Latin American/African (11.8 per 100,000, 9 cases), followed by Māori (6.8 per 100,000, 59 cases) (Table 3). Hospitalisation rates since 1 January were highest among Pacific peoples and Asian. Most pertussis hospitalisations occur in young infants and the difference in hospitalisations by ethnicity is in part driven by the proportion of infant cases. Case numbers by age and ethnicity are available on the [ESR Pertussis dashboard](#).

**Table 3: Number and rate of pertussis cases by ethnicity**

Ethnicity	12 October–08 November		01 January to 08 November 2024	
	Cases <sup>1</sup>	Rate <sup>2</sup>	Cases <sup>1</sup>	Hospitalised
Māori	59	6.8	188	31 (16.5%)
Pacific peoples	12	3.4	72	21 (29.2%)
Asian	5	0.6	30	6 (20.0%)
Middle Eastern/Latin American/African	9	11.8	18	3 (16.7%)
European or Other	125	4.0	517	27 (5.2%)
Unknown	5	-	11	0 (0.0%)

Note: Ethnicity is prioritised.

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

## Cases by district

Cases were notified from all districts except Tairāwhiti, West Coast and South Canterbury in the past four weeks. Wairarapa District reported the highest rate (25.4 per 100,000), followed by Southern and Whanganui districts (11.6 and 11.4 per 100,000 respectively). The highest number of hospitalisations since 1 January was in Counties Manukau District.

**Table 4: Number of pertussis cases, rate and hospitalisations by health district**

District	12 October–08 November			01 January to 08 November 2024	
	Cases <sup>1</sup>	Rates <sup>2</sup>	Hospitalised	Cases <sup>1</sup>	Hospitalised
Northland	14	6.9	3	36	6
Waitemata	18	2.8	4	49	8
Auckland	13	2.6	0	64	6
Counties Manukau	2	-	1	70	16
Waikato	12	2.6	5	29	13
Lakes	4	-	0	8	0
Bay of Plenty	12	4.3	1	24	3
Tairāwhiti	0	-	0	4	1
Taranaki	1	-	0	29	2
Hawke's Bay	11	6.0	0	79	2
Whanganui	8	11.4	1	11	1
MidCentral	5	2.6	0	13	1
Hutt Valley	4	-	0	36	6
Capital and Coast	34	10.4	1	99	10
Wairarapa	13	25.4	1	85	3
Nelson Marlborough	2	-	0	11	1
West Coast	0	-	0	1	0
Canterbury	20	3.3	2	128	6
South Canterbury	0	-	0	6	1
Southern	42	11.6	1	54	2

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

## Appendix – Case definition

An abbreviated version of the case definition in place at the time of preparing this report is provided below. The current case classification used in Aotearoa New Zealand can be found on the [Health New Zealand | Te Whatu Ora Communicable Disease Control Manual](#) site.

### *Clinical description*

A clinically compatible case characterised by cough and one or more of: paroxysms of cough, cough ending in vomiting, cyanosis or apnoea, or inspiratory whoop.

### *Laboratory test for diagnosis*

Laboratory definitive evidence for a confirmed case requires isolation of *Bordetella pertussis* or detection of *B. pertussis* nucleic acid, preferably from a nasopharyngeal swab.

Laboratory suggestive evidence for a probable case requires: *B. pertussis* toxin IgG test of >100 IU/ml or a significant increase in antibody levels between paired sera at the same laboratory. Serology should only be requested for public health purposes after consultation between the Medical Officer of Health and the local microbiologist.

### *Case classification*

- **Under investigation:** a case that has been notified, but information is not yet available to classify it as suspect, probable or confirmed.
- **Suspect (in children under 5 years of age):** any paroxysmal cough with whoop, vomit or apnoea for which there is no other known cause.
- **Probable:** a clinically compatible illness where the cough is lasting longer than 2 weeks. However, in situations where serology has been requested after consultation between the Medical Officer of Health and the local microbiologist, a clinically compatible illness with laboratory suggestive evidence will also be considered as probable.
- **Confirmed:** a clinically compatible illness accompanied by laboratory definitive evidence, or is epidemiologically linked to a confirmed case.
- **Not a case:** a case that has been investigated and subsequently found not to meet the case definition.