Science for Communities
He Pūtaiao, He Tāngata

PERTUSSIS REPORT
28 December 2024–24 January 2025

This fortnightly report summarises pertussis (whooping cough) notifications for the four-week period, 28 December 2024–24 January 2025, and cumulative numbers since the onset of a national pertussis epidemic on 19 October 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 29 January 2025. 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 cases that are under investigation are still to be classified, case numbers may change in future reports.

Published 30 January 2025

Summary

- A national pertussis epidemic was declared on 22 November 2024 following an increase in cases throughout New Zealand beginning on 19 October 2024.
- There has been a significant decrease in case numbers in the 4-week period 28 December 2024–24 January 2025 compared to the prior 4-week period.
- The number of hospitalisations is lower than the prior 4-week period.

In the past four surveillance weeks (weeks 53/2024–3/2025, 28 December 2024–24 January 2025):

- there were 368 cases (277 confirmed and 91 probable) notified in EpiSurv, compared with 547 cases for the prior four weeks (weeks 49–52) This comprises 73, 110, 94 and 91 cases, respectively in weeks 53/2024–3/2025;
- 32 cases were hospitalised, compared with 44 cases in weeks 49–52; no deaths were reported;
- 24 cases (6.5%) were aged less than 1 year, of which 14 (58.3%) were hospitalised;
- notification rates were highest among infants aged less than 1 year (41.5 per 100,000, 24 cases), followed by children aged 1–4 years (29.9 per 100,000, 73 cases);
- the ethnic group with the highest notification rate was Māori (13.0 per 100,000, 116 cases), followed by Pacific peoples (6.9 per 100,000, 25 cases) and European or Other (6.5 per 100,000, 207 cases);

- Te Manawa Taki (10.0 per 100,000, 106 cases), Central (9.8 per 100,000, 97 cases) and Te Waipounamu (9.4 per 100,000, 118 cases) regions had the highest rates. Rates in the Northern region were much lower (2.3 per 100,000, 47 cases).

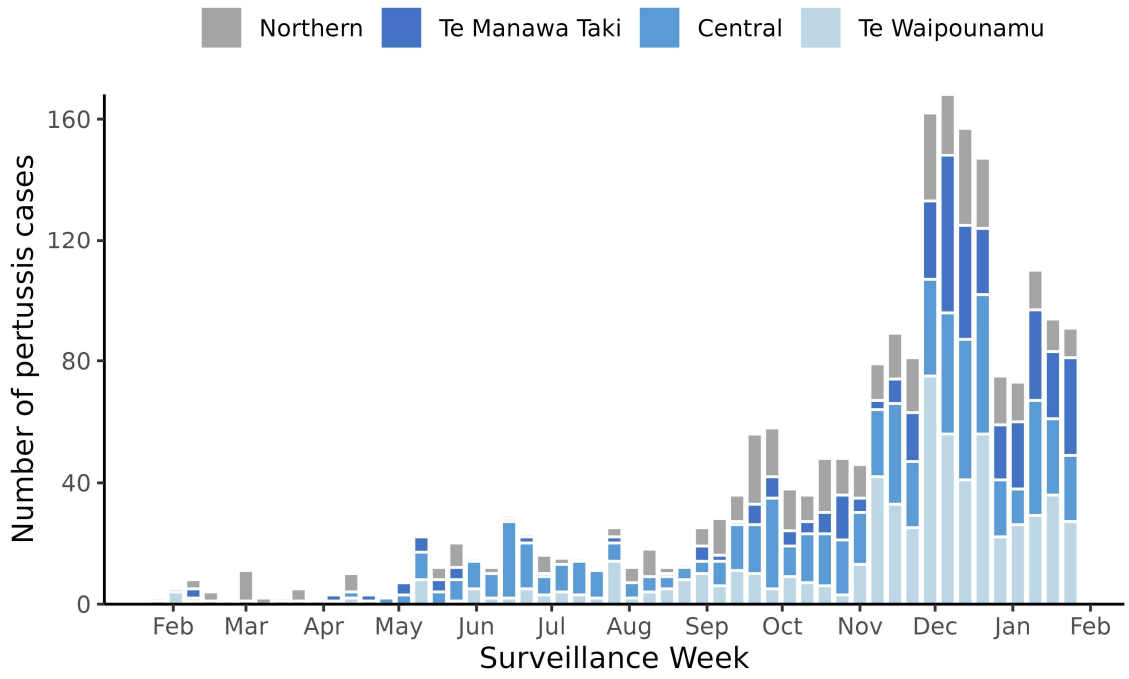
From the beginning of the current national epidemic on 19 October 2024 to 24 January 2025:

- a total of 1420 confirmed, probable and suspect cases of pertussis was notified;
- overall, 113 cases (8.0%) were hospitalised and there has been one death;
- of the 96 cases (6.8%) aged less than 1 year, 53 (55.2%) were hospitalised.

Trends in pertussis cases

A national epidemic was declared on 22 November following a sustained increase in cases throughout New Zealand beginning on 19 October 2024 (Figure 1). Numbers continued to increase in November and December, peaking in the weeks leading up to Christmas. Numbers have decreased in recent weeks.

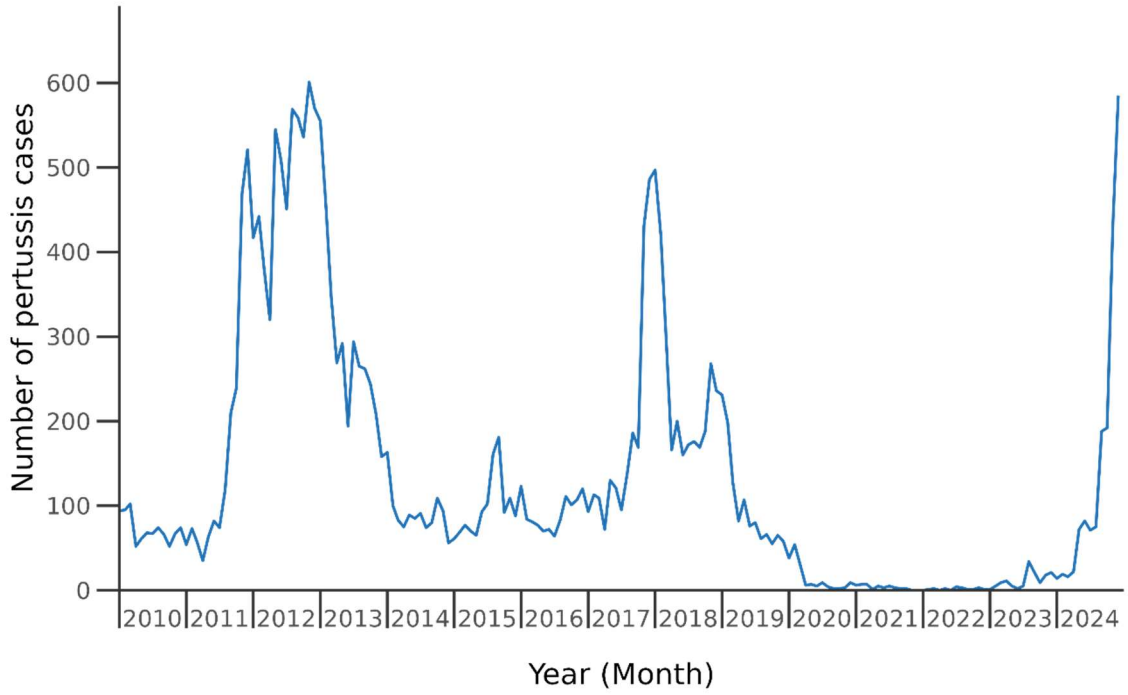
Figure 1. Pertussis cases by week and region, 19 October 2024–24 January 2025



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

Figure 2 shows monthly pertussis cases since 2010. This shows the current epidemic with case numbers in December equalling or exceeding the highest months seen during the two previous epidemics in 2011–2013, and 2017–2019.

Figure 2. Pertussis cases by month, January 2010–December 2024



Note: Data for January 2025 are not presented as the month is not yet complete.

Cases by age

In the past four weeks, notification rates were highest among infants aged less than 1 year, followed by children aged 1–4 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.

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

Age Group (years)	Past 4 weeks			National epidemic to date	
	28 December 2024–24 January 2025			19 October 2024–24 January 2025	
	Cases[1]	Rate[2]	Hospitalised	Cases[1]	Hospitalised
<1	24	41.5	14 (58.3%)	96	53 (55.2%)
1–4	73	29.9	2 (2.7%)	229	19 (8.3%)
5–9	53	16.1	2 (3.8%)	246	6 (2.4%)
10–14	40	11.5	2 (5.0%)	229	6 (2.6%)
15–19	25	7.3	0 (0.0%)	114	1 (0.9%)
20–64	134	4.3	9 (6.7%)	443	19 (4.3%)
65+	19	2.1	3 (15.8%)	63	9 (14.3%)
Total	368	6.9	32 (8.7%)	1,420	113 (8.0%)

[1] Includes confirmed, probable and suspect cases only

[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

Cases by Ethnicity

In the past four weeks, the ethnic group with the highest notification rate was Māori (13.0 per 100,000), followed by Pacific peoples (6.9 per 100,000), and European or Other (6.5 per 100,000) (Table 2).

Hospitalisation rates since 19 October were highest among Pacific peoples and Māori. Most pertussis hospitalisations occur in young infants, and the difference in hospitalisations by ethnicity is in part driven by a higher proportion of infant cases in Māori and Pacific peoples.

Breakdowns of case numbers by age and ethnicity are available on the ESR Pertussis dashboard.

Table 2: Number and rate of pertussis cases by ethnicity

Ethnicity	Past 4 weeks		National epidemic to date			
	28 December 2024–24 January 2025		19 October 2024–24 January 2025			
	Cases[1]	Rate[2]	Cases[1]	Hospitalised	Cases <1yr	Hospitalised <1yr
Māori	116	13.0	439	57 (13.0%)	54	35 (64.8%)
Pacific peoples	25	6.9	81	17 (21.0%)	8	6 (75.0%)
Asian	8	1.0	40	2 (5.0%)	4	1 (25.0%)
European or Other	207	6.5	845	36 (4.3%)	28	10 (35.7%)
Unknown	12	-	15	1 (6.7%)	2	1 (50.0%)

Note: Ethnicity is prioritised. European and Other includes the formerly separate MELAA category.

[1] Includes confirmed, probable and suspect cases only

[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

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Cases by district

Tairāwhiti District reported the highest rate (26.3 per 100,000) in the past four weeks, followed by Lakes (19.1 per 100,000). Rates in the Northern Region districts (Northland, Waitematā, Auckland and Counties Manukau) are lower than for most other districts (Table 3).

Table 3: Number of pertussis cases, rate and hospitalisations by health district

District	Past 4 weeks			National epidemic to date	
	28 December 2024–24 January 2025			19 October 2024–24 January 2025	
	Cases[1]	Rate[2]	Hospitalised	Cases[1]	Hospitalised
Northland	8	3.9	0	77	4
Waitematā	14	2.1	2	65	11
Auckland	10	2.0	2	45	5
Counties Manukau	15	2.3	4	48	10
Waikato	14	3.0	1	70	9
Lakes	23	19.1	1	46	3
Bay of Plenty	38	13.5	5	124	13
Tairāwhiti	14	26.3	1	22	1
Taranaki	17	13.0	4	47	9
Hawke's Bay	33	17.8	3	99	10
Whanganui	4	-	0	28	7
MidCentral	27	13.9	0	63	1
Hutt Valley	9	5.5	1	52	5
Capital and Coast	20	6.2	1	122	5
Wairarapa	4	-	0	28	3
Nelson Marlborough	8	4.8	0	33	0
West Coast	6	17.2	1	44	5
Canterbury	57	9.1	4	178	6
South Canterbury	3	-	1	15	3
Southern	44	12.0	1	214	3

[1] Includes confirmed, probable and suspect cases only.
[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

Vaccination status of cases aged <12 months

Pertussis vaccination is funded in New Zealand during every pregnancy and as part of the childhood immunisation schedule. The primary series is given at 6 weeks, 3 months and 5 months. Together with the antenatal vaccine, this schedule aims to protect infants against pertussis infection, severe disease requiring hospitalisation, and death.

Table 4 shows the vaccination status of infant pertussis cases notified since the beginning of the national pertussis epidemic and whether they were hospitalised. All hospitalised cases are either aged <4 months or have not received all age-appropriate pertussis vaccine doses.

Table 4: Vaccination status of cases aged <12 months, by age and hospitalisation, 19 October 2024–24 January 2025

Age Group	Hospitalised		Not Hospitalised	
	Not vaccinated for age[1]	Vaccinated for Age[1]	Not vaccinated for age[1]	Vaccinated for Age[1]
<2mths[2]		18		5
2–3mths	15	4	2	2
4–5mths	4	0	2	0
6–11mths	11	0	17	8

Note: table excludes 5 cases where vaccination status is unknown and 5 cases where hospitalisation status is unknown.
Source: EpiSurv
[1] A case is considered to have received age-appropriate vaccine doses if they have received at minimum: 1 dose for cases 2 to <4 months; 2 doses for cases 4 to <6 months and 3 doses for cases 6-<12 months.
[2] Vaccination information is not provided for infants <2 months as the first infant dose is offered at 6 weeks and protection takes 14 days to develop.
Note: Vaccine doses given <14 days prior to date of illness onset are excluded from this analysis as protection is expected to take 14 days to develop.

Appendix – Case definition

Note: The pertussis case definition was revised on 18 December 2024. The suspect case definition has been retired and the probable case definition has been amended to include cases who would have previously met the suspect classification (during an epidemic). Confirmed, probable and suspect cases are combined in this report and so it is expected that this change will not affect the reported numbers.

A 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 criteria

A clinically compatible illness is characterised by a new onset cough without a clear alternative cause and one or more of the following features:

- paroxysms of coughing
- cough ending in vomiting
- inspiratory whoop
- apnoea or cyanosis (in infants aged under 12 months).

Epidemiological criteria

An epidemiological link is established when there is contact between two people at a time when one of them is likely to be infectious AND the other has an illness which starts within 5 to 21 days after this contact AND at least one case in the chain of epidemiologically linked cases (which may involve many cases) has laboratory definitive evidence of pertussis.

Laboratory criteria

Laboratory definitive evidence: Detection of *Bordetella pertussis* nucleic acid by polymerase chain reaction (PCR), OR Isolation of *B. pertussis*

Case classification

- **Confirmed**: a person who has laboratory definitive evidence; OR a person who has a clinically compatible illness AND who has an epidemiological link to a confirmed case.
- **Probable**: a person who has a clinically compatible illness AND either has a cough lasting 14 days or more OR exposure as part of an outbreak[1]

  [1]an institutional outbreak or community-wide outbreak (when there is limited access to testing)
- **Under investigation**: a person who has been notified, but information is not yet available to classify further.
- **Not a case**: a person who has been investigated and subsequently found not to meet the case definition.