

PERTUSSIS REPORT

May 2010 (Weeks 19-20)

This report includes cases of pertussis reported in EpiSurv up to midnight 14 May 2010. Data was extracted from EpiSurv at 10.00am 18 May 2010.

In the past two weeks, 32 (15 and 17 consecutively) new cases of pertussis were notified, including 13 confirmed cases, 13 probable cases, one suspect case, and five cases under investigation. One and three hospitalisations were reported in weeks 19 and 20, respectively. There have been a total of 394 pertussis notifications reported in EpiSurv since 26 December 2009 (the beginning of surveillance week 1 for 2010), including 235 confirmed cases, 138 probable cases, eight suspect cases, and 13 cases under investigation. Forty-one cases were hospitalised. There have been no deaths reported.

This report incorporates the temporal distribution of cases, and the distribution of cases by age, ethnicity (prioritised), and district health board (DHB), as well as hospitalisations. The case classification used in this report is specified in the appendix.

Temporal distribution of cases

Figure 1 shows the epidemic curve of total pertussis notifications for 2008, 2009 and 2010 (to date). After an initial peak in week 3, notifications have generally followed the 2009 trend but at slightly lower levels. However, the total number of notifications may change as cases are investigated. Substantial increase in notifications, with weekly fluctuations, can be clearly seen in 2009 compared to 2008.

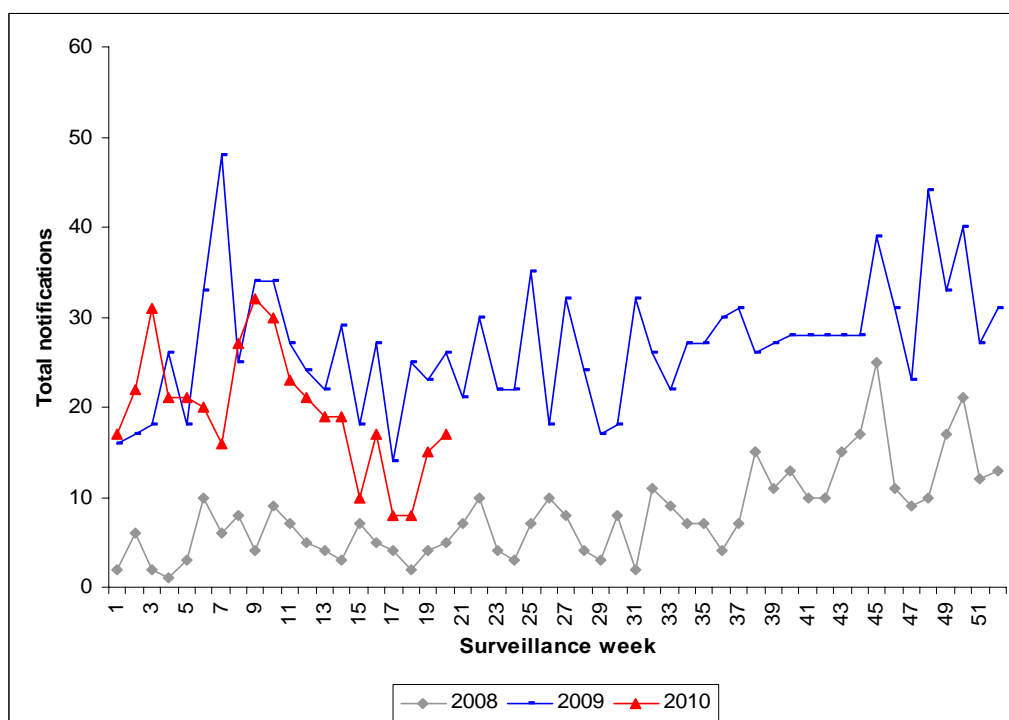


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2008, 2009 and 2010 (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

Pertussis notifications and associated age-specific rates, including new cases for the past two weeks, are shown in Table 1. For the last two weeks, children aged less than one year had the highest age-specific rate (4.8 per 100 000 population, 3 case). Of the total cases since 26 December 2009, the age-specific rate was highest in the less than one year age group (57.1 per 100 000 population, 36 cases), followed by the 1 to 4 (26.8 per 100 000 population, 65 cases) and 5 to 9 (13.9 per 100 000 population, 40 cases) year age groups.

Table 1: Pertussis cases and rates by age group since 26 December 2009, including new cases in the last two weeks

Age group (Years)	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
<1	36	57.1	26	3	4.8	2
1 to 4	65	26.8	4	7	2.9	1
5 to 9	40	13.9	0	3	1.0	0
10 to 14	24	8.1	3	0	0.0	0
15 to 19	29	9.0	2	2	0.6	0
20 to 29	31	5.3	1	2	0.3	0
30 to 39	48	8.3	1	2	0.3	1
40 to 49	53	8.3	1	4	0.6	0
50 to 59	32	6.0	1	4	0.8	0
60 to 69	29	7.4	2	4	1.0	0
70+	7	1.8	0	1	0.3	0
Unknown	0		0	0		0
Overall	394	9.1	41	32	0.7	4

¹Age specific rate per 100,000 population, calculated using 2009 mid-year population estimates

² Cumulative notifications between 26 December 2009 and 14 May 2010

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Ethnicity

Pertussis notifications and rates by ethnicity are shown in Table 2. Of the 382 cases with a known ethnicity, Maori had the highest rate (11.3 per 100 000 population, 64 cases), followed by Pacific Peoples (10.6 per 100 000 population, 24 cases). In the last two weeks, Europeans had the highest rate (0.9 per 100 000 population, 24 cases).

Table 2: Pertussis cases and rates by ethnicity (prioritised) since 26 December 2009, including new cases in the last two weeks

Ethnicity	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
Maori	64	11.3	15	3	0.5	2
Pacific Peoples	24	10.6	11	1	0.4	1
Other	5	1.3	0	0	0.0	0
European	289	10.7	13	24	0.9	0
Unknown	12		2	4		1
Overall	394	9.8	41	32	0.8	4

¹Ethnic specific rates computed using the 2006 usually resident census population

² Cumulative notifications between 26 December 2009 and 14 May 2010

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Hospitalisations

There have been 41 hospitalisations reported in EpiSurv since 26 December 2009, with four hospitalisations recorded in the last two weeks. Twenty-six (63.4%) of the 41 hospitalisations were children aged less than one year of age. Counties Manukau and Waitemata DHBs had the highest number of cumulative hospitalisations (8 and 7, respectively). The distributions of hospitalisations by age group, ethnicity, and DHB are described in Table 1, Table 2, and Table 3, respectively.

Geographical distribution

The rates of pertussis notifications by DHB can be seen in Figure 2 and Table 3. In the last two weeks, the highest number of notifications was reported in Canterbury DHB (13 cases), followed by Bay of Plenty and Waikato DHBs (3 cases each). The highest cumulative rate since 26 December 2009 was recorded in Taranaki DHB (20.3 per 100 000 population, 22 cases), followed by South Canterbury (19.8 per 100 000 population, 11 cases) and Hutt Valley (19.6 per 100 000 population, 28 cases) DHBs. Canterbury DHB reported the highest number of notifications (87 cases) over this period followed by Capital and Coast DHB (53 cases).

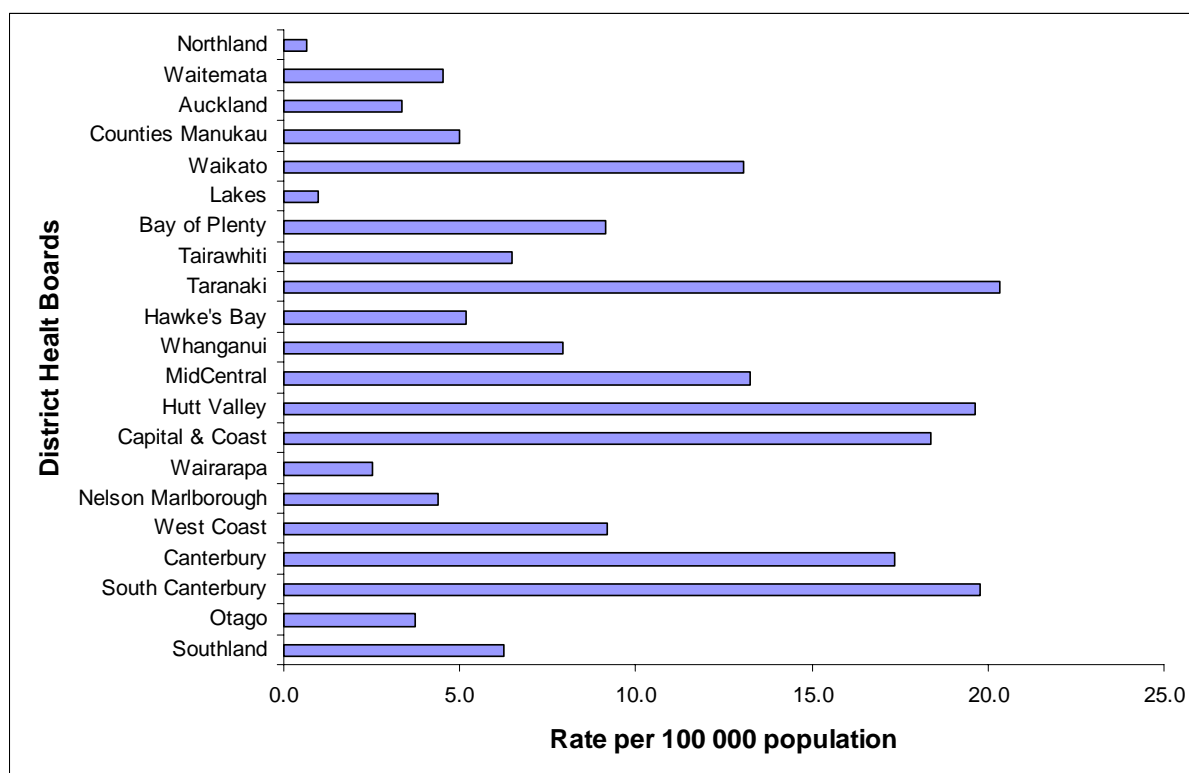


Figure 2: Geographical distribution of pertussis crude rates (cases per 100 000 population) since 26 December 2009.

Rates were calculated using 2009 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Table 3 Pertussis cases and rates by DHB since 26 December 2009, including new cases in the last two weeks

DHB	Cumulative notifications			Last two weeks		
	Cases	Rates ¹	Hosp	Cases	Rates ¹	Hosp
Northland	1	0.6	0	0	0.0	0
Waitemata	24	4.5	7	2	0.4	0
Auckland	15	3.4	2	2	0.5	0
Counties Manukau	24	5.0	8	2	0.4	1
Waikato	47	13.1	2	3	0.8	0
Lakes	1	1.0	0	0	0.0	0
Bay of Plenty	19	9.1	4	3	1.4	1
Tairāwhiti	3	6.5	1	0	0.0	0
Taranaki	22	20.3	4	1	0.9	0
Hawke's Bay	8	5.2	2	0	0.0	0
Whanganui	5	7.9	0	0	0.0	0
MidCentral	22	13.3	3	0	0.0	0
Hutt Valley	28	19.6	1	0	0.0	0
Capital and Coast	53	18.4	2	1	0.3	0
Wairarapa	1	2.5	1	0	0.0	0
Nelson						
Marlborough	6	4.4	0	0	0.0	0
West Coast	3	9.2	0	2	6.1	0
Canterbury	87	17.3	3	13	2.6	1
South Canterbury	11	19.8	0	0	0.0	0
Otago	7	3.7	1	2	1.1	1
Southland	7	6.3	0	1	0.9	0
Total	394	9.1	41	32	0.7	4

¹Rate of confirmed and probable pertussis cases per 100,000 population calculated using 2009 mid-year population estimates.

² Cumulative notifications between 26 December 2009 and 14 May 2010

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Immunisation status

The immunisation status as reported to Public Health Service staff for confirmed pertussis cases is shown in Table 4 and Table 5.

Of the 13 confirmed cases reported in the last two weeks, seven (53.8%) had a known vaccination status. Of these seven cases, three were not vaccinated, one case had received one dose of vaccine, two cases had received three doses, and one case reported having completed pertussis vaccination.

Table 4: Immunisation status of pertussis cases (confirmed) notified in the last two weeks

Age Group	Total cases	One dose	Two doses	Three doses	Four doses	Five doses	Vaccinated (no dose info)	Not vaccinated	Unknown
<6wks	1	0	0	0	0	0	0	0	1
6wks - 2mths	1	0	0	0	0	0	0	1	0
3-4 mths	1	1	0	0	0	0	0	0	0
5mths - 3yrs	3	0	0	1	0	0	0	1	1
4 - 10yrs	1	0	0	0	0	0	0	1	0
11+ yrs	6	0	0	1	0	1	0	0	4
Total	13	1	0	2	0	1	0	3	6

Of the 235 confirmed cases reported since 26 December 2009, 154 (65.5%) had a known vaccination status. Of these 154 cases, 77 were not vaccinated including five cases aged less than six weeks and therefore not eligible for vaccination. Seventeen cases had received one dose of vaccine, five cases had received two doses of vaccine, 23 cases had received three doses of vaccine, six cases had received four doses and seven cases reported having completed pertussis vaccination. A further 19 cases reported being vaccinated but no dose information was available.

Table 5: Immunisation status of pertussis cases (confirmed) notified since 26 December 2009

Age Group	Total cases	One dose	Two doses	Three doses	Four doses	Five doses	Vaccinated (no dose info)	Not vaccinated	Unknown
<6wks	6	0	0	0	0	0	0	5	1
6wks - 2mths	14	4	0	0	0	0	0	8	2
3-4 mths	8	3	2	0	0	0	1	1	1
5mths - 3yrs	39	1	3	11	0	0	3	17	4
4 - 10yrs	41	4	0	3	4	1	1	23	5
11+ yrs	127	5	0	9	2	6	14	23	68
Total	235	17	5	23	6	7	19	77	81

Appendix

Case classification for pertussis notification in New Zealand

Confirmed	A clinically compatible illness that is laboratory confirmed by isolation of <i>Bordetella pertussis</i> from a pernasal swab, or epidemiologically linked to a confirmed case.
Probable	Cough lasting longer than two weeks and one or more of the following: <ul style="list-style-type: none"> • Paroxysmal cough • Cough ending in vomiting or apnoea • Inspiratory whoop for which there is no other known cause.
Suspect	In children under five years of age any paroxysmal cough with whoop, vomiting or apnoea for which there is no other known cause.
Other	Status recorded as <i>under investigation</i> or suspect case.
Notifications	Include confirmed cases, probable, and other as specified above.

This report is available on the internet from www.surv.esr.cri.nz