

PERTUSSIS REPORT

June 2010 (Weeks 25-26)

This report includes cases of pertussis reported in EpiSurv up to midnight 25 June 2010. Data was extracted from EpiSurv at 10.00 am 29 June 2010.

In the past two weeks, 36 (20 and 16 consecutively) new cases of pertussis were notified, including 10 confirmed cases, 15 probable cases, four suspect cases, and seven cases still under investigation. Two hospitalisations were reported in the last two weeks. There have been a total of 489 pertussis notifications reported in EpiSurv since 26 December 2009 (the beginning of surveillance week 1 for 2010), including 265 confirmed cases, 195 probable cases, 15 suspect cases, and 14 cases still under investigation. Forty-six hospitalisations and no deaths have been reported during this period.

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.

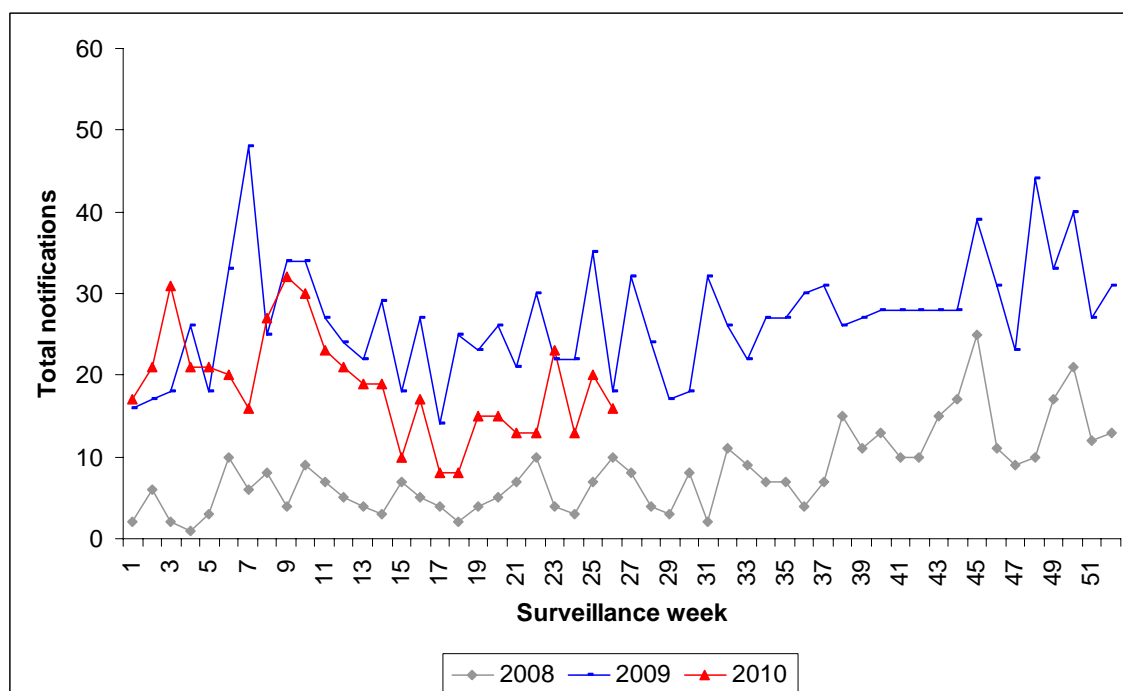


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2008, 2009 and 2010 (surveillance week = Saturday to Friday inclusive).

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 (6.3 per 100 000 population, 4 cases). This predominance in the youngest age group is the same as for the total cases since 26 December 2009, (65.0 per 100 000 population, 41 cases), and is followed by the 1 to 4 (32.2 per 100 000, 78 cases) and 5 to 9 (17.4 per 100 000, 50 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	41	65.0	29	4	6.3	1
1 to 4	78	32.2	4	4	1.6	0
5 to 9	50	17.4	0	5	1.7	0
10 to 14	27	9.1	3	3	1.0	0
15 to 19	33	10.2	2	1	0.3	0
20 to 29	42	7.2	3	3	0.5	1
30 to 39	67	11.6	1	7	1.2	0
40 to 49	65	10.2	1	3	0.5	0
50 to 59	38	7.2	1	1	0.2	0
60 to 69	33	8.4	2	2	0.5	0
70+	15	3.9	0	3	0.8	0
Unknown	0	-	0	0	-	0
Overall	489	11.3	46	36	0.8	2

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

² Cumulative notifications between 26 December 2009 and 25 June 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. Europeans have consistently had the highest rates and numbers of pertussis cases in NZ (0.9 per 100 000 population, 25 cases in the last two weeks). Of the total notifications since 26 December 2009, the ethnic-specific rate and number of cases were both highest in Europeans (13.8 per 100 000, 371 cases), followed by Maori (12.0 per 100 000, 68 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	68	12.0	16	2	0.4	0
Pacific Peoples	26	11.5	12	2	0.9	1
Other	8	2.1	0	0	0.0	0
European	371	13.8	17	25	0.9	0
Unknown	16	-	1	7	-	1
Overall	489	12.1	46	36	0.9	2

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

² Cumulative notifications between 26 December 2009 and 25 June 2010

Hosp: hospitalisation counts

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

Hospitalisations

While two hospitalisations were recorded in the last two weeks, there have been 46 hospitalisations reported in EpiSurv since 26 December 2009, and twenty-nine (63.0%) of the 46 hospitalisations were children aged less than one year. Counties Manukau and Waitemata DHBs had the highest number of cumulative hospitalisations (10 and 7, respectively). The distribution of hospitalisations by age group, ethnicity, and DHB are described in Table 1, Table 2 and Table 3 respectively. Based on notifications with known hospitalisation status since end-December 2009, the proportion of hospitalisations was highest in Pacific Peoples (52.2%, 12/23) compared to Maori (24.6%, 16/65) and Europeans (5.0%, 17/341).

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 Capital and Coast DHB (12 cases), followed by Canterbury DHB (8 cases). The highest cumulative rate since 26 December 2009 was recorded in Capital and Coast DHB (28.1 per 100 000 population, 81 cases), followed by Canterbury (22.1 per 100 000, 111 cases), Hutt Valley (21.7 per 100 000, 31 cases), and Taranaki (21.2 per 100 000, 23 cases) DHBs. Canterbury DHB reported the highest number of notifications (111 cases) over this period followed by Capital and Coast DHB (81 cases).

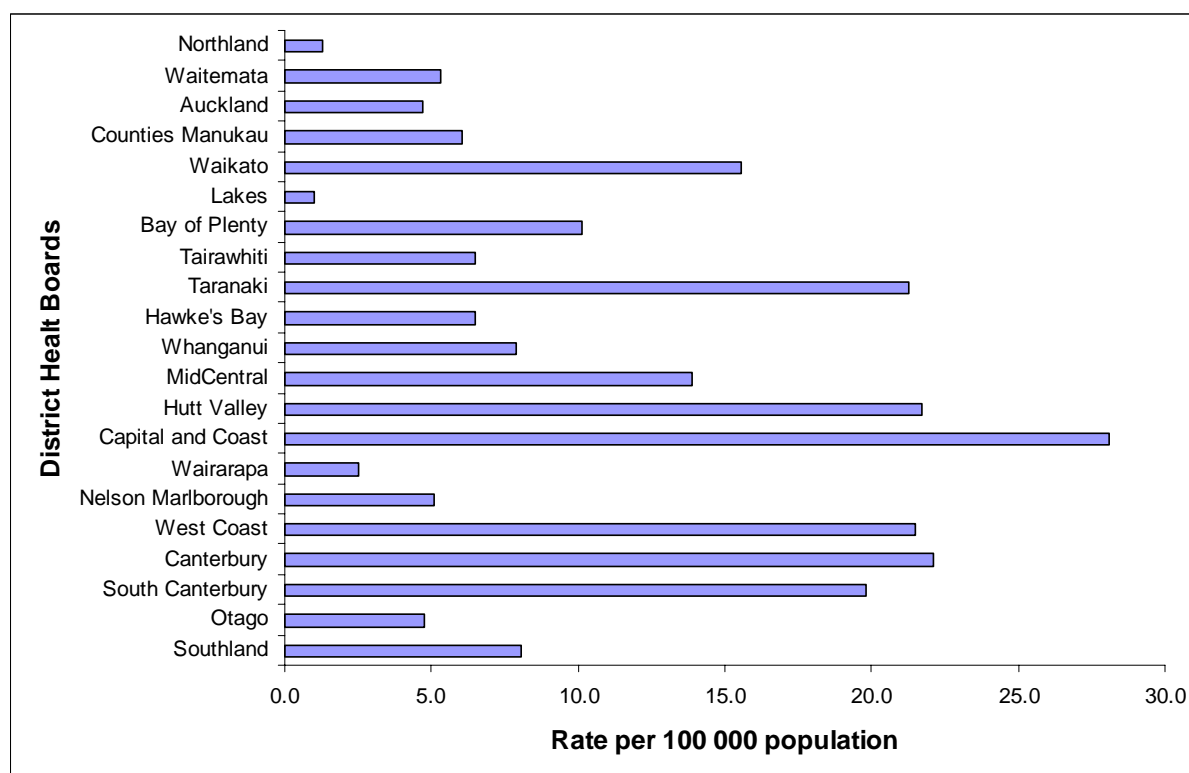


Figure 2: Geographical distribution of pertussis crude rates (cases per 100 000 population) since 26 December 2009.

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	2	1.3	0	0	0.0	0
Waitemata	28	5.3	7	3	0.6	0
Auckland	21	4.7	3	4	0.9	1
Counties Manukau	29	6.0	10	2	0.4	1
Waikato	56	15.6	2	2	0.6	0
Lakes	1	1.0	0	0	0.0	0
Bay of Plenty	21	10.1	5	1	0.5	0
Tairāwhiti	3	6.5	1	0	0.0	0
Taranaki	23	21.2	4	0	0.0	0
Hawke's Bay	10	6.5	2	1	0.6	0
Whanganui	5	7.9	0	0	0.0	0
MidCentral	23	13.9	3	1	0.6	0
Hutt Valley	31	21.7	1	1	0.7	0
Capital and Coast	81	28.1	2	12	4.2	0
Wairarapa	1	2.5	1	0	0.0	0
Nelson Marlborough	7	5.1	0	0	0.0	0
West Coast	7	21.5	0	1	3.1	0
Canterbury	111	22.1	3	8	1.6	0
South Canterbury	11	19.8	1	0	0.0	0
Otago	9	4.8	1	0	0.0	0
Southland	9	8.0	0	0	0.0	0
Total	489	11.3	46	36	0.8	2

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

²Cumulative notifications between 26 December 2009 and 25 June 2010

Hosp: hospitalisation counts

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

Immunisation status

The immunisation status for confirmed pertussis cases is shown in Table 4 and Table 5. Of the 10 confirmed cases reported in the last two weeks, seven (70.0%) had a known vaccination status. Of these seven cases, six were not vaccinated, and one case had received two doses of vaccine.

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		Unknown
							(no dose info)	Not vaccinated	
<6wks	0	0	0	0	0	0	0	0	0
6wks - 2mths	0	0	0	0	0	0	0	0	0
3 - 4 mths	2	0	1	0	0	0	0	1	0
5mths - 3yrs	0	0	0	0	0	0	0	0	0
4 - 10yrs	2	0	0	0	0	0	0	2	0
11+ yrs	6	0	0	0	0	0	0	3	3
Total	10	0	1	0	0	0	0	6	3

Of the 265 confirmed cases reported since 26 December 2009, 181 (68.3%) had a known vaccination status. Of these 181 cases, 92 were not vaccinated including five cases aged less than six weeks and therefore not eligible for vaccination. Nineteen cases had received one dose of vaccine, six cases had received two doses of vaccine, 24 cases had received three doses of vaccine, eight cases had received four doses, and eight cases reported having completed pertussis vaccination. A further 24 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	5	0	0	0	0	0	9	0
3-4 mths	11	4	3	0	0	0	1	2	1
5mths - 3yrs	41	1	3	12	0	0	4	18	3
4 - 10yrs	46	4	0	3	5	2	1	26	5
11+ yrs	147	5	0	9	3	6	18	32	74
Total	265	19	6	24	8	8	24	92	84

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