

PERTUSSIS REPORT

July 2010 (Weeks 27-28)

This report includes cases of pertussis reported in EpiSurv up to midnight 9 July 2010. Data was extracted from EpiSurv at 10.00 am 13 July 2010.

In the past two weeks, 32 (9 and 23 consecutively) new cases of pertussis were notified, including 16 confirmed cases, 12 probable cases, one suspect case, and three cases still under investigation. Three hospitalisations were reported in the last two weeks. There has been a total of 518 pertussis notifications reported in EpiSurv since 26 December 2009 (the beginning of surveillance week 1 for 2010), including 284 confirmed cases, 212 probable cases, 14 suspect cases, and eight cases still under investigation. Fifty 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.

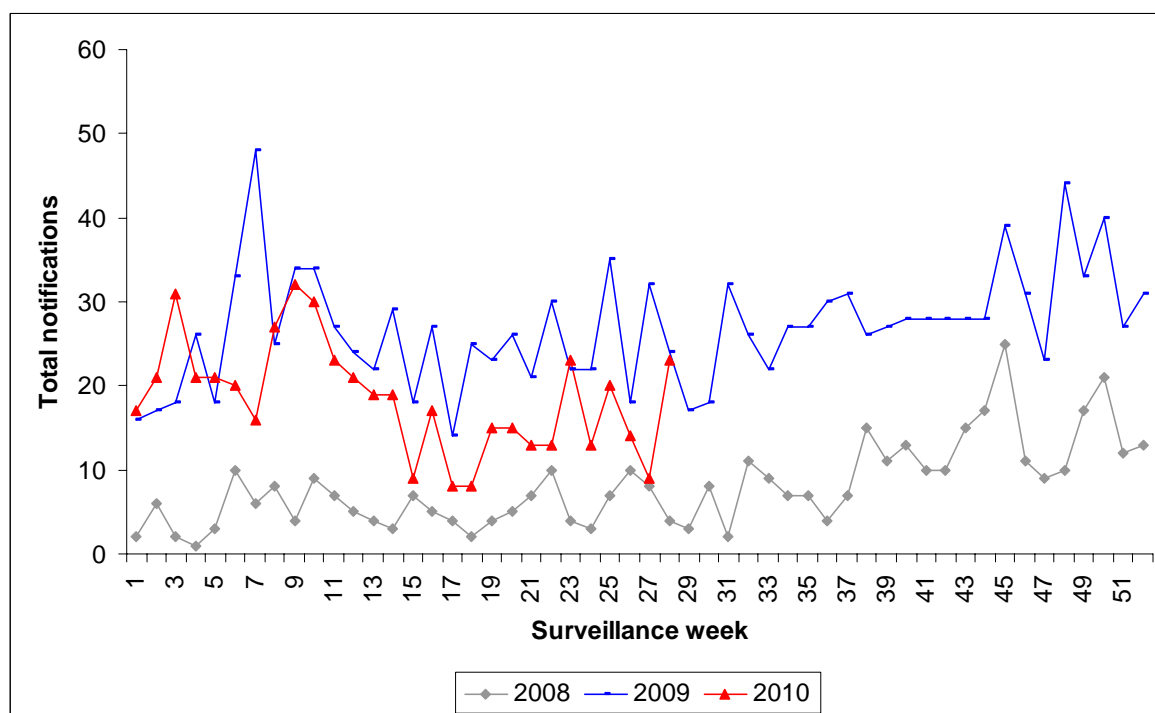


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2008, 2009 and 2010 (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

Pertussis notifications and associated rates by age, including new cases for the past two weeks, are shown in Table 1. Of the 32 cases notified in the last two weeks, 40.6% (13/32) were children under 10 years old. Children aged less than one year had the highest cumulative incidence of pertussis cases since 26 December 2009, (69.8 per 100 000 population, 44 cases), followed by the 1 to 4 (34.2 per 100 000, 83 cases) and 5 to 9 (19.1 per 100 000, 55 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 ³	
	Cases	Rates ¹	Hosp	New cases	Hosp
<1	44	69.8	32	4	3
1 to 4	83	34.2	4	4	0
5 to 9	55	19.1	0	5	0
10 to 14	29	9.7	3	2	0
15 to 19	36	11.1	2	3	0
20 to 29	47	8.0	3	5	0
30 to 39	68	11.8	1	3	0
40 to 49	68	10.7	1	3	0
50 to 59	39	7.3	2	2	0
60 to 69	34	8.7	2	1	0
70+	15	3.9	0	0	0
Unknown	0		0	0	0
Overall	518	12.0	50	32	3

¹Rate of pertussis cases per 100 000 population calculated using 2009 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

²Cumulative notifications between 26 December 2009 and 9 July 2010

³Rates for the last two weeks were not calculated because of small numbers (<5 cases) in majority of the categories

Hosp: hospitalisation counts

Ethnicity

Pertussis notifications and rates by ethnicity are shown in Table 2. Of the 26 pertussis cases with known ethnicity in the past two weeks, Europeans had the highest numbers of cases (16 cases), followed by Pacific peoples (8 cases). Of the total notifications since 26 December 2009, the ethnic-specific rate was highest in pacific peoples (15.0 per 100 000, 34 cases), followed by Europeans (14.4 per 100 000, 387 cases), and Maori (12.2 per 100 000, 69 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 ³	
	Cases	Rates ¹	Hosp	New cases	Hosp
Maori	69	12.2	16	1	0
Pacific Peoples	34	15.0	13	8	1
Other	9	2.4	1	1	1
European	387	14.4	19	16	1
Unknown	19		1	6	0
Overall	518	12.9	50	32	3

¹Rate of pertussis cases per 100 000 population calculated using 2009 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

²Cumulative notifications between 26 December 2009 and 9 July 2010

³Rates for the last two weeks were not calculated because of small numbers (<5 cases) in majority of the categories

Hosp: hospitalisation counts

Hospitalisations

Three hospitalisations were recorded in the last two weeks; all were aged under one year old. There have been 50 hospitalisations reported in EpiSurv since 26 December 2009, and thirty-two (64.0%) of these were children aged less than one year. Counties Manukau and Waitemata DHBs had the highest number of cumulative hospitalisations (11 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 confirmed cases with known hospitalisation status since end-December 2009, the proportion of hospitalisations was highest in Pacific Peoples (66.7%, 10/15) compared to Maori (37.5%, 15/40), Other (20%, 1/5) and Europeans (8.0%, 16/199).

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 Counties Manukau DHB (11 cases). The highest cumulative rate since 26 December 2009 was recorded in West Coast DHB (27.6 per 100 000 population, 9 cases), followed by Capital and Coast (27.4 per 100 000 population, 79 cases), Canterbury (22.9 per 100 000, 115 cases), and Hutt Valley (21.7 per 100 000, 31 cases) DHBs. Canterbury DHB reported the highest number of notifications (115 cases) over this period followed by Capital and Coast DHB (79 cases).

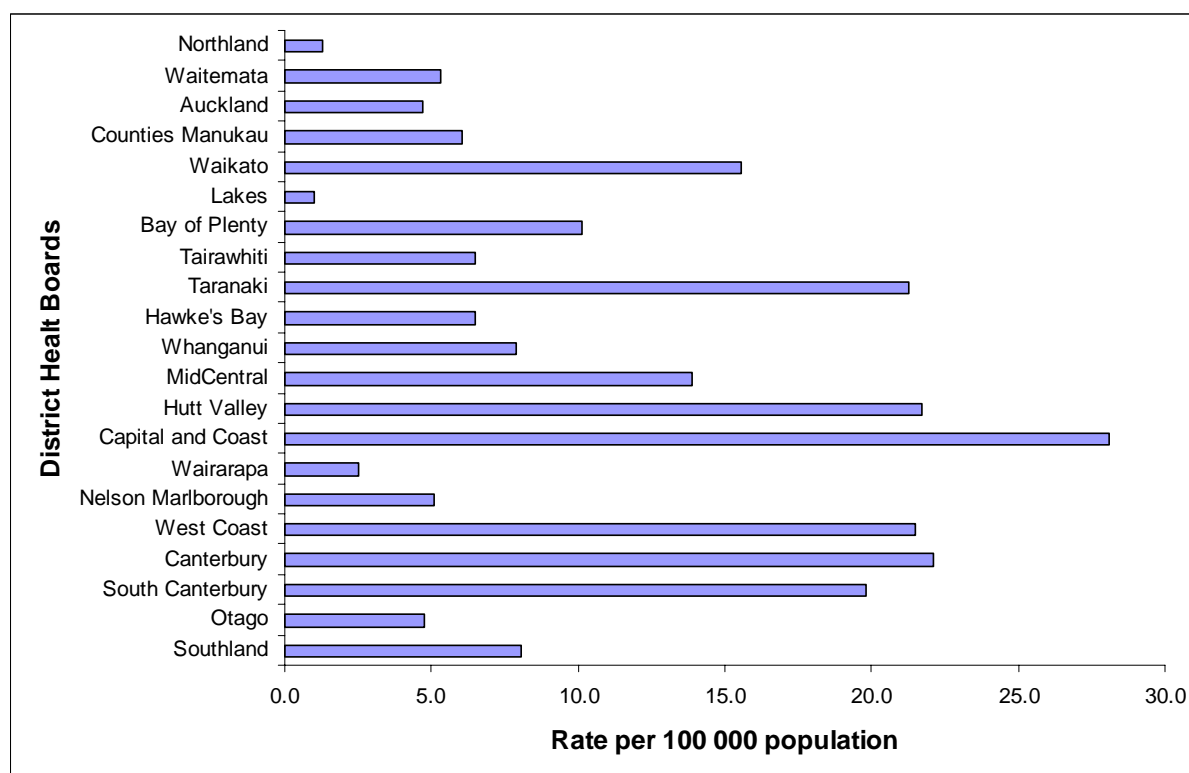


Figure 2: Geographical distribution of pertussis crude rates (cases per 100 000 population) since 26 December 2009.

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 ³	
	Cases	Rates ¹	Hosp	Cases	Hosp
Northland	2	1.3	0	0	0
Waitemata	30	5.7	7	2	0
Auckland	23	5.2	3	2	0
Counties Manukau	40	8.3	11	11	1
Waikato	58	16.1	2	2	0
Lakes	1	1.0	0	0	0
Bay of Plenty	24	11.6	5	3	0
Tairāwhiti	3	6.5	1	0	0
Taranaki	24	22.2	5	1	1
Hawke's Bay	10	6.5	2	0	0
Whanganui	5	7.9	0	0	0
MidCentral	23	13.9	3	0	0
Hutt Valley	31	21.7	1	0	0
Capital and Coast	79	27.4	2	0	0
Wairarapa	2	5.0	1	1	0
Nelson Marlborough	8	5.8	0	2	0
West Coast	9	27.6	1	2	0
Canterbury	115	22.9	4	4	1
South Canterbury	11	19.8	1	0	0
Otago	11	5.8	1	2	0
Southland	9	8.0	0	0	0
Total	518	12.0	50	32	3

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²Cumulative notifications between 26 December 2009 and 9 July 2010

³Rates for the last two weeks were not calculated because of small numbers (<5 cases) in majority of the categories.

Hosp: hospitalisation counts

Immunisation status

The immunisation status for confirmed pertussis cases is shown in Table 4 and Table 5. Of the 16 confirmed cases reported in the last two weeks, 11 (68.8%) had a known vaccination status. Of these 11 cases, six were not vaccinated including one case aged less than six weeks and therefore not eligible for vaccination; four cases had received one dose of vaccine, 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		Unknown
							(no dose info)	Not vaccinated	
<6wks	1	0	0	0	0	0	0	1	0
6wks - 2mths	1	1	0	0	0	0	0	0	0
3-4 mths	0	0	0	0	0	0	0	0	0
5mths - 3yrs	1	0	0	0	0	0	0	1	0
4 - 10yrs	6	2	0	0	0	1	0	2	1
11+ yrs	7	1	0	0	0	0	0	2	4
Total	16	4	0	0	0	1	0	6	5

Of the 284 confirmed cases reported since 26 December 2009, 193 (68.0%) had a known vaccination status. Of these 193 cases, 98 were not vaccinated including six cases aged less than six weeks and therefore not eligible for vaccination. Twenty-four 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 nine 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	Vaccinated					Vaccinated (no dose info)	Not vaccinated	Unknown
		One dose	Two doses	Three doses	Four doses	Five doses			
<6wks	7	0	0	0	0	0	0	6	1
6wks - 2mths	15	6	0	0	0	0	0	9	0
3-4 mths	11	4	3	0	0	0	1	2	1
5mths - 3yrs	42	1	3	12	0	0	4	19	3
4 - 10yrs	52	6	0	3	5	3	1	28	6
11+ yrs	157	7	0	9	3	6	18	34	80
Total	284	24	6	24	8	9	24	98	91

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