

PERTUSSIS REPORT

January – February 2010 (Weeks 6-7)

This report includes cases of pertussis reported in EpiSurv up to midnight 12 February 2010. Data was extracted from EpiSurv at 10.00am 16 February 2010.

There have been a total of 150 pertussis notifications reported in EpiSurv since 26 December 2009 (the beginning of surveillance week 1 for 2010), including 89 confirmed cases, 42 probable cases, three suspect case, and 16 cases under investigation. Fifteen cases were hospitalised. There have been no deaths reported. In the past two weeks, 37 (20 and 17 consecutively) new cases of pertussis were notified, including 17 confirmed cases, nine probable cases, one suspect case, and 10 cases under investigation. Two hospitalisations were reported in both week 6 and week 7.

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). A substantial increase in notifications, with weekly fluctuations is clearly visible for 2009 compared to 2008. Pertussis notifications for weeks 1 to 3 of 2010 have followed a similar trend as for the previous year but at a higher level. Since peaking in week 3, notifications have generally decreased with each consecutive week in 2010 and are now below 2009 levels. The total number of notifications may change as cases are investigated.

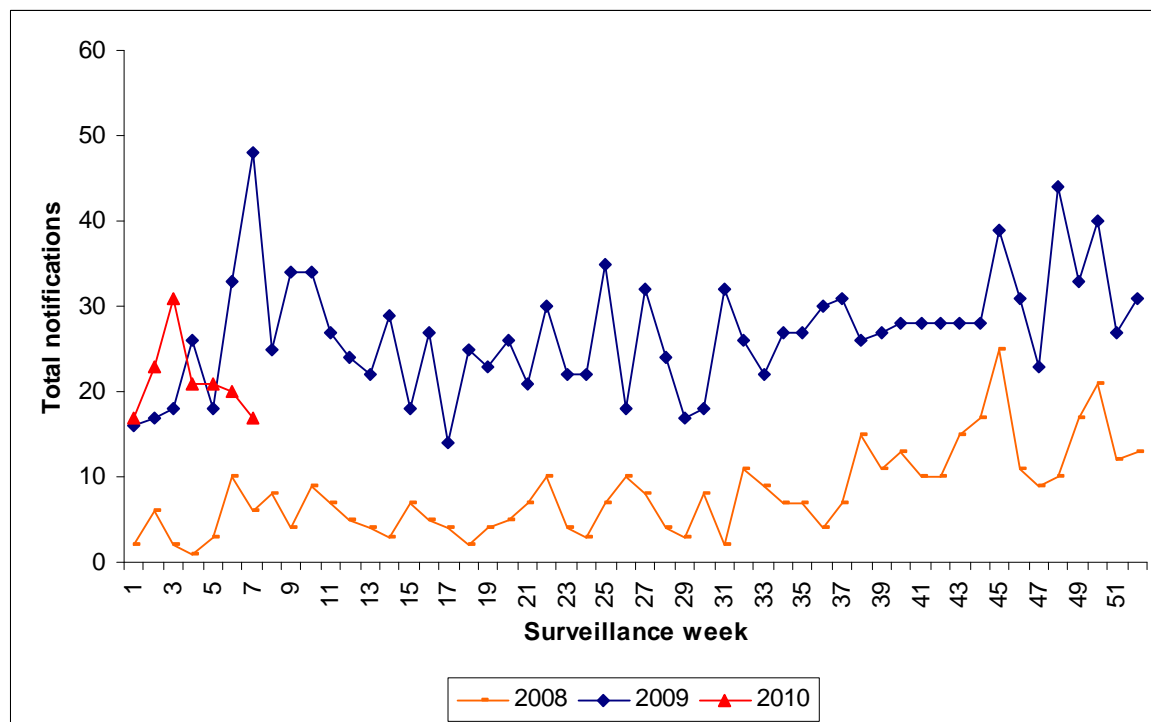


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2008, 2009 and 2010 (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

Pertussis notifications and associated age-specific rates, including new cases for the past two weeks, are shown in Table 1. Of the total cases since 26 December 2009, the age-specific rate was highest in the less than one year age group (22.2 per 100 000 population, 14 cases), followed by the 1 to 4 (7.4 per 100 000 population, 18 cases) and 10 to 14 (5.4 per 100 000 population, 16 cases) year age groups. For the last two weeks, children aged less than one year had the highest age-specific rate (4.8 per 100 000 population, 3 cases).

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	Cases	Rates ¹	Hosp
<1	14	22.2	10	3	4.8	2
1 to 4	18	7.4	2	8	3.3	2
5 to 9	14	4.9	0	0	0.0	0
10 to 14	16	5.4	1	4	1.3	0
15 to 19	4	1.2	0	1	0.3	0
20 to 29	10	1.7	1	0	0.0	0
30 to 39	18	3.1	0	5	0.9	0
40 to 49	27	4.3	0	5	0.8	0
50 to 59	11	2.1	0	5	0.9	0
60 to 69	14	3.6	1	5	1.3	0
70+	4	1.1	0	1	0.3	0
Unknown	0	-	0	0	-	0
Overall	150	3.5	15	37	0.9	4

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

²Cumulative notifications between 26 December 2009 and 12 February 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 141 cases with a known ethnicity, Pacific Peoples had the highest rate (4.9 per 100 000 population, 11 cases), followed by European ethnicity (4.2 per 100 000 population, 112 cases). In the last two weeks, Europeans had the highest rate (1.0 per 100 000 population, 27 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	Cases	Rates ¹	Hosp
Maori	18	3.2	4	5	0.9	1
Pacific Peoples	11	4.9	5	1	0.4	1
Other	0	0.0	0	0	0.0	0
European	112	4.2	5	27	1.0	2
Unknown	9	-	1	4	-	0
Overall	150	3.7	15	37	0.9	4

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

²Cumulative notifications between 26 December 2009 and 12 February 2010

Hosp: hospitalisation counts

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

Hospitalisations

There have been 15 hospitalisations reported in EpiSurv since 26 December 2009, including four in the last two weeks. Two-thirds (66.7%, 10 cases) of the 15 hospitalisations were children aged less than one year of age. The four cases that were hospitalised in the last two weeks were aged less than one year (2 cases), and 1 to 4 years (2 cases). The cases hospitalised in the last two weeks were of European (2 cases), Maori (1 case), and Pacific Peoples (1 case) ethnicity. Waitemata, Counties Manukau, Waikato, Bay of Plenty, MidCentral and Capital and Coast DHBs had the highest number of cumulative hospitalisations (2 cases each). 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. The highest rates were recorded in Capital and Coast DHB (10.1 per 100 000 population, 29 cases), followed by South Canterbury (9.0 per 100 000 population, 5 cases), and Hutt Valley (7.7 per 100 000 population, 11 cases) DHBs. Capital and Coast DHB reported the highest number of notifications (29 cases) followed by Canterbury DHB (23 cases). In the last two weeks, the highest number of notifications was reported in Capital and Coast DHB (8 cases), followed by Canterbury DHB (7 cases).

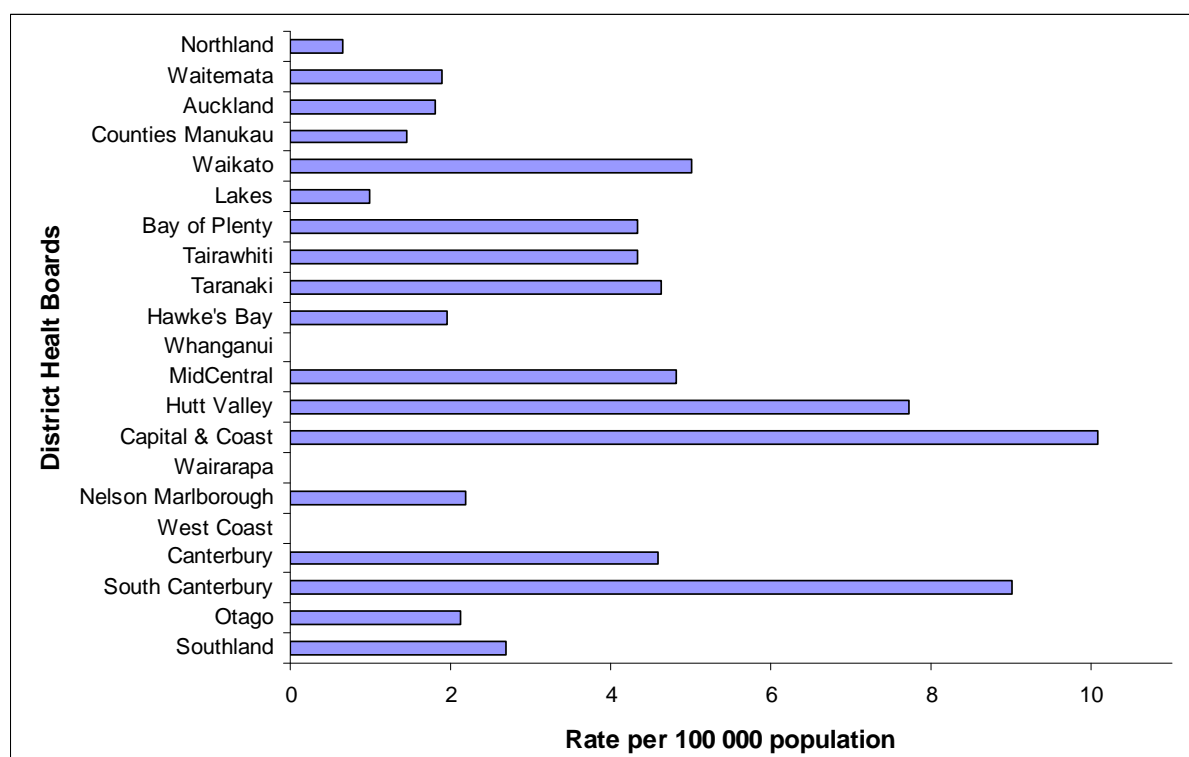


Figure 2: Geographical distribution of pertussis crude rates (cases per 100,000 population) since 26 December 2009.

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	1	0.6	0
Waitemata	10	1.9	2	2	0.4	1
Auckland	8	1.8	1	1	0.2	0
Counties Manukau	7	1.5	2	0	0.0	0
Waikato	18	5.0	2	3	0.8	0
Lakes	1	1.0	0	0	0.0	0
Bay of Plenty	9	4.3	2	2	1.0	0
Tairāwhiti	2	4.3	0	0	0.0	0
Taranaki	5	4.6	1	3	2.8	1
Hawke's Bay	3	1.9	0	3	1.9	0
Whanganui	0	0.0	0	0	0.0	0
MidCentral	8	4.8	2	1	0.6	0
Hutt Valley	11	7.7	1	2	1.4	1
Capital and Coast	29	10.1	2	8	2.8	1
Wairarapa	0	0.0	0	0	0.0	0
Nelson Marlborough	3	2.2	0	0	0.0	0
West Coast	0	0.0	0	0	0.0	0
Canterbury	23	4.6	0	7	1.4	0
South Canterbury	5	9.0	0	2	3.6	0
Otago	4	2.1	0	1	0.5	0
Southland	3	2.7	0	1	0.9	0
Total	150	3.5	15	37	0.9	4

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

²Cumulative notifications between 26 December 2009 and 12 February 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 17 confirmed cases reported in the last two weeks, nine (52.9%) had a known vaccination status. Of these nine cases, seven were not vaccinated including two cases aged less than six weeks and therefore not eligible for vaccination. One case 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 (no dose info)	Not vaccinated	Unknown
<6wks	2	0	0	0	0	0	0	2	0
6wks - 2mths	0	0	0	0	0	0	0	0	0
3-4 mths	0	0	0	0	0	0	0	0	0
5mths - 3yrs	6	1	0	0	0	0	0	4	1
4 - 10yrs	1	0	0	0	0	0	0	0	1
11+ yrs	8	0	0	0	0	1	0	1	6
Total	17	1	0	0	0	1	0	7	8

Of the 89 confirmed cases reported since 26 December 2009, 49 (55.1%) had a known vaccination status. Of these 49 cases, 24 were not vaccinated including five cases aged less than six weeks and therefore not eligible for vaccination. Eight cases had received one dose of vaccine, two cases had received two doses of vaccine, four cases had received three doses of vaccine, and two cases reported having completed pertussis vaccination.

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	5	0	0	0	0	0	0	5	0
6wks - 2mths	0	0	0	0	0	0	0	0	0
3-4 mths	4	1	1	0	0	0	1	0	1
5mths - 3yrs	15	1	1	3	0	0	1	7	2
4 - 10yrs	15	3	0	1	0	1	1	5	4
11+ yrs	50	3	0	0	0	1	6	7	33
Total	89	8	2	4	0	2	9	24	40

Appendix

Table 4 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