

PERTUSSIS REPORT

January - October 2009 (Weeks 42 - 43)

This report includes cases of pertussis reported in EpiSurv up to midnight 23 October 2009. Data was extracted from EpiSurv at 10 am 27 October 2009.

There have been a total of 1092 pertussis notifications reported in EpiSurv since 3 January 2009, including 457 confirmed cases, 528 probable cases, 49 suspect cases, and 58 cases under investigation. Among the total notifications, there have been 70 cumulative hospitalisations of which 68.6% (48) were children aged less than one year. In the past two weeks, 55 (27 and 28 consecutively) new cases of pertussis were notified, including three hospitalisations. There have been no deaths reported since 3 January 2009.

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 notifications since January in 2007, 2008 and 2009. A substantial increase, with weekly fluctuations, of pertussis notifications is clearly seen this year compared to the previous two years, though this increase started around week 38 in 2008. Weekly notifications have slightly decrease in the past two weeks compared to the previous two weeks (i.e. weeks 40 and 41) this year.

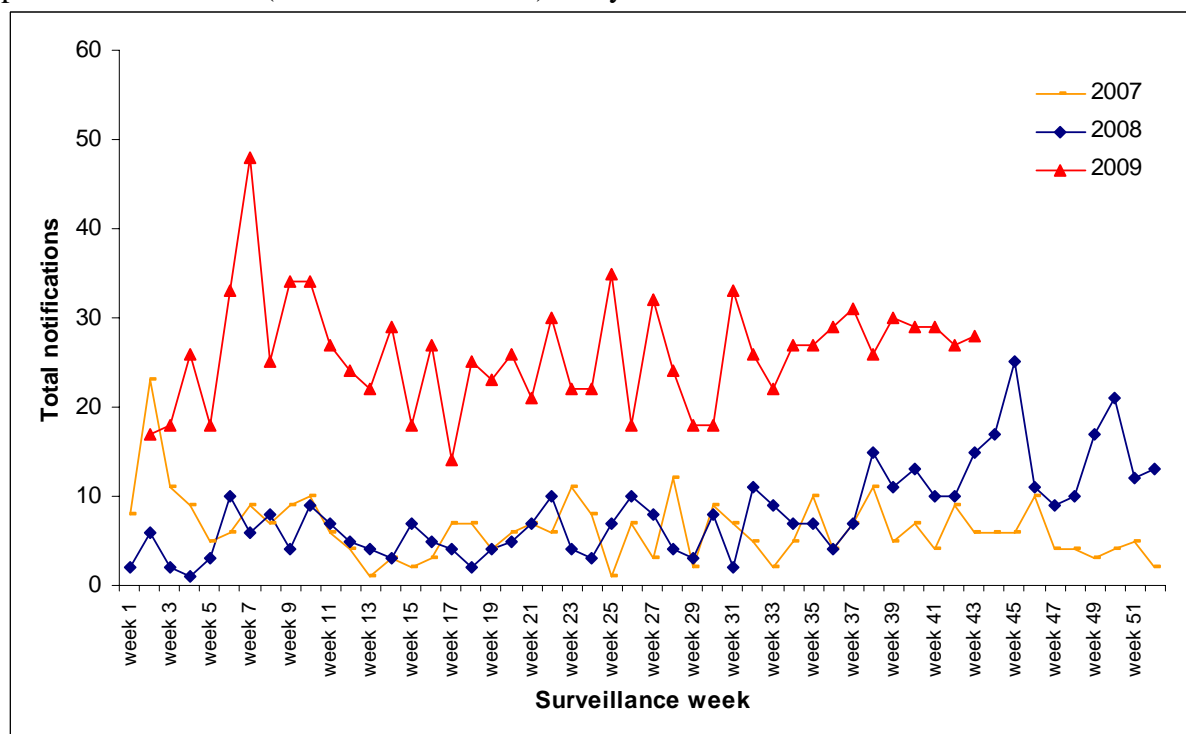


Figure 1 Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

The age specific rates of pertussis and count of cases between 3 January and 23 October 2009, including new cases for the past two weeks, can be seen in Table 1. The cumulative rate was substantially higher in under one-year-olds with 142.0 (n = 91) cases per 100,000 population. However, higher pertussis cumulative notifications were seen in age groups covering those aged from 1 to 9 and 30 to 59 years.

Table 1 Pertussis cases and rates by age group since January 2009, including new cases in the past two weeks

Age group (Years)	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
<1	91	142.0	48	5	7.8	3
1 to 4	119	50.4	5	5	2.1	0
5 to 9	113	39.3	2	3	1.0	0
10 to 14	79	26.2	1	3	1.0	0
15 to 19	98	30.4	1	5	1.6	0
20 to 29	88	15.4	3	4	0.7	0
30 to 39	133	22.8	2	7	1.2	0
40 to 49	147	23.2	0	9	1.4	0
50 to 59	113	21.7	3	7	1.3	0
60 to 69	66	17.5	1	2	0.5	0
70+	45	12.1	4	5	1.3	0
Overall	1092	25.6	70	55	1.3	3

¹Age specific rate per 100,000 population, calculated using 2008 mid-year population estimates

²Cumulative notifications between 3 January and 23 October

Hosp: hospitalisations

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

Ethnicity distribution of cases

Table 2 depicts count of cases and rates of pertussis by ethnicity between 3 January and 23 October 2009, including new cases for the past two weeks. Among cases with a known ethnicity, Europeans had the highest cumulative rate and number of pertussis cases with 29.5 (n = 794) cases per 100,000 population. In the past two weeks, the case count was highest among Europeans but Pacific Peoples had the highest rate, 1.8 (n = 4) cases per 100,000 population.

Table 2 Pertussis cases and rates by ethnicity (prioritised) since January 2009, including new cases in the past two

Ethnicity	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
Maori	116	20.5	19	4	0.7	1
Pacific Peoples	44	19.4	13	4	1.8	1
Other	32	8.5	4	2	0.5	0
European	794	29.5	26	33	1.2	1
Unknown	106	63.2	8	12	7.2	0
Overall	1092	27.1	70	55	1.4	3

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

²Cumulative notifications between 3 January and 23 October

Hosp: hospitalisations

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

Hospitalisations

There have been 70 hospitalisations reported in EpiSurv since January 2009 including three in the past two weeks. Most of the total cumulative hospitalisations, 68.6% (n = 48 cases), occurred among children aged less than one year. All the three hospitalisations in the past two weeks occurred in this age group and were located in the Auckland region (including Waitemata, Auckland and Counties Manukau DHBs). Of the three hospitalised cases with known ethnicity in the past two weeks, one was Maori, one of the Pacific Peoples ethnicity, and one European. 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 which shows the actual case counts. Higher rates per 100,000 population were seen in West Coast, 83.4 (n = 27), Nelson Marlborough, 59.0 (n = 80), Canterbury, 53.2 (n = 264), Waikato 45.5 (n = 162), South Canterbury, 45.2 (n = 25) DHBs. Canterbury and Waikato DHBs reported the highest number of notifications, 264 and 162, respectively. The number of cases in the past two weeks were higher in Canterbury (n = 11) and Waikato (n = 10) DHBs.

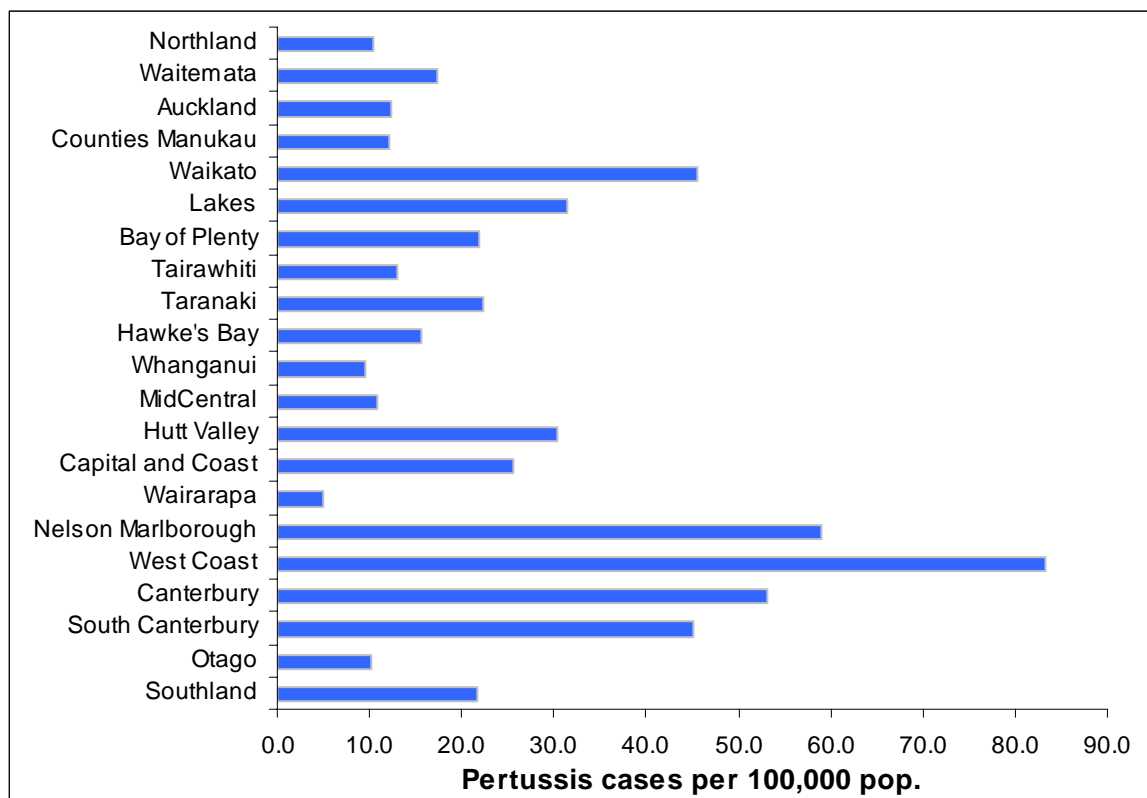


Figure 2 Geographical distribution of pertussis crude rates (cases per 100,000 population) since 3 January 2009. Rates were calculated using 2008 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

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

DHB	Cumulative ² notifications			Last two weeks	
	Cases	Rates ¹	Hosp	Cases	Hosp
Northland	16	10.3	3	1	0
Waitemata	90	17.3	7	4	1
Auckland	54	12.3	9	7	1
Counties Manukau	58	12.3	11	6	1
Waikato	162	45.5	7	10	0
Lakes	32	31.5	5	3	0
Bay of Plenty	45	21.9	5	1	0
Tairāwhiti	6	13.1	0	0	0
Taranaki	24	22.3	1	4	0
Hawke's Bay	24	15.7	6	0	0
Whanganui	6	9.5	1	0	0
MidCentral	18	10.9	0	1	0
Hutt Valley	43	30.3	1	0	0
Capital and Coast	73	25.7	3	3	0
Wairarapa	2	5.0	0	0	0
Nelson Marlborough	80	59.0	2	1	0
West Coast	27	83.4	1	1	0
Canterbury	264	53.2	7	11	0
South Canterbury	25	45.2	0	1	0
Otago	19	10.1	1	0	0
Southland	24	21.7	0	1	0
Total	1092	25.6	70	55	3

¹Rate of confirmed and probable pertussis cases per 100,000 population calculated using 2008 mid-year population estimates.

²Cumulative notifications between 3 January and 23 October

Hosp: hospitalisations

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

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, vomit 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.