

# PERTUSSIS REPORT

## January 2010 (Weeks 4-5)

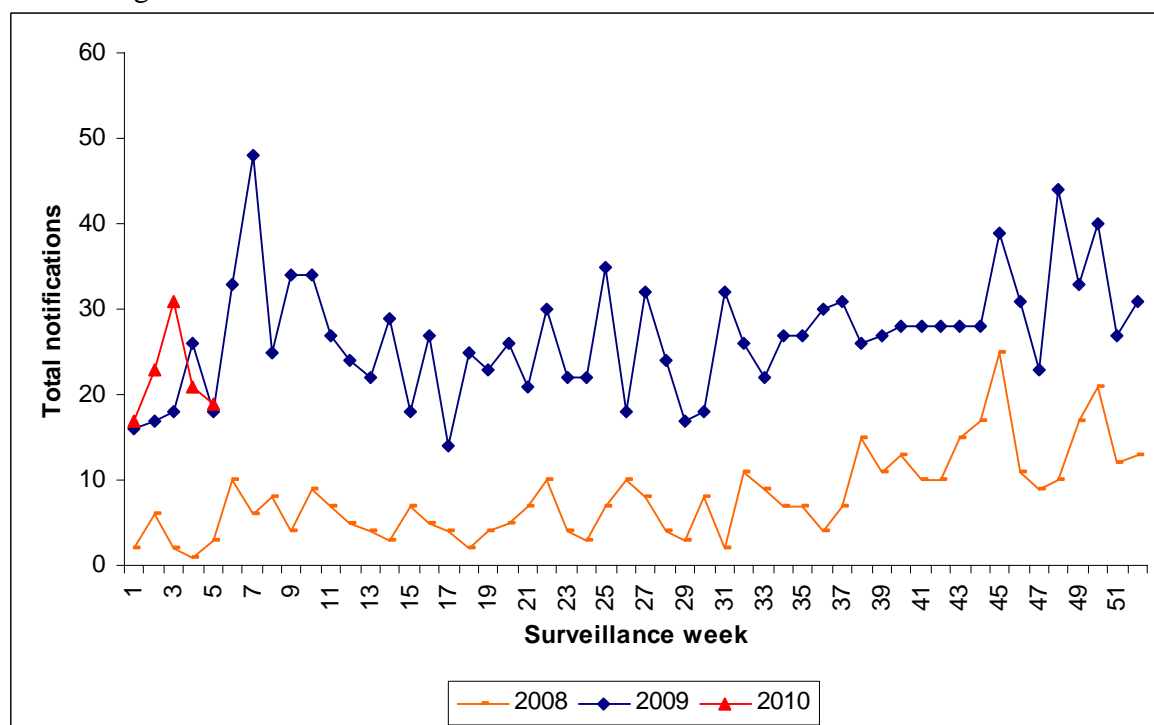
This report includes cases of pertussis reported in EpiSurv up to midnight 29 January 2010. Data was extracted from EpiSurv at 10.00am 2 February 2010.

There have been a total of 111 pertussis notifications reported in EpiSurv since 26 December 2009 (the beginning of surveillance week 1 for 2010), including 68 confirmed cases, 29 probable cases, three suspect case, and 11 cases under investigation. Eleven cases were hospitalised. There have been no deaths reported. In the past two weeks, 40 (21 and 19 consecutively) new cases of pertussis were notified, including 24 confirmed cases, seven probable cases, three suspect case, and six cases under investigation. Four hospitalisations were reported in week 4 and none in week 5.

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 and notifications for weeks 4 and 5 are at similar levels for 2009. However, 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 (17.4 per 100 000 population, 11 cases), followed by the 5 to 9 (4.9 per 100 000 population, 14 cases) and 1 to 4 (4.1 per 100 000 population, 10 cases) year age groups. For the last two weeks, children aged less than one year had the highest age-specific rate (7.9 per 100 000 population, 5 cases).

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

Age group (Years)	Cumulative <sup>2</sup> notifications			Last two weeks		
	Cases	Rates <sup>1</sup>	Hosp	Cases	Rates <sup>1</sup>	Hosp
<1	11	17.4	8	5	7.9	3
1 to 4	10	4.1	0	3	1.2	0
5 to 9	14	4.9	0	3	1.0	0
10 to 14	11	3.7	1	3	1.0	0
15 to 19	3	0.9	0	1	0.3	0
20 to 29	10	1.7	1	3	0.5	1
30 to 39	13	2.3	0	5	0.9	0
40 to 49	22	3.5	0	8	1.3	0
50 to 59	6	1.1	0	3	0.6	0
60 to 69	8	2.0	1	5	1.3	0
70+	3	0.8	0	1	0.3	0
Unknown	0	-	0	0	-	0
<b>Overall</b>	111	2.6	11	40	0.9	4

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

<sup>2</sup>Cumulative notifications between 26 December 2009 and 29 January 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 103 cases with a known ethnicity, Pacific Peoples had the highest rate (4.4 per 100 000 population, 10 cases), followed by European ethnicity (3.0 per 100 000 population, 80 cases). In the last two weeks, Pacific Peoples had the highest rate (1.8 per 100 000 population, 4 cases).

**Table 2: Pertussis cases and rates by ethnicity (prioritised) since 26 December 2010, including new cases in the last two weeks**

Ethnicity	Cumulative <sup>2</sup> notifications			Last two weeks		
	Cases	Rates <sup>1</sup>	Hosp	Cases	Rates <sup>1</sup>	Hosp
Maori	13	2.3	3	3	0.5	0
Pacific Peoples	10	4.4	4	4	1.8	2
Other	0	0.0	0	0	0.0	0
European	80	3.0	3	29	1.1	1
Unknown	8	-	1	4	-	1
<b>Overall</b>	111	2.8	11	40	1.0	4

<sup>1</sup>Ethnic specific rates computed using the 2006 usually resident census population

<sup>2</sup>Cumulative notifications between 26 December 2009 and 29 January 2010

**Hosp:** hospitalisation counts

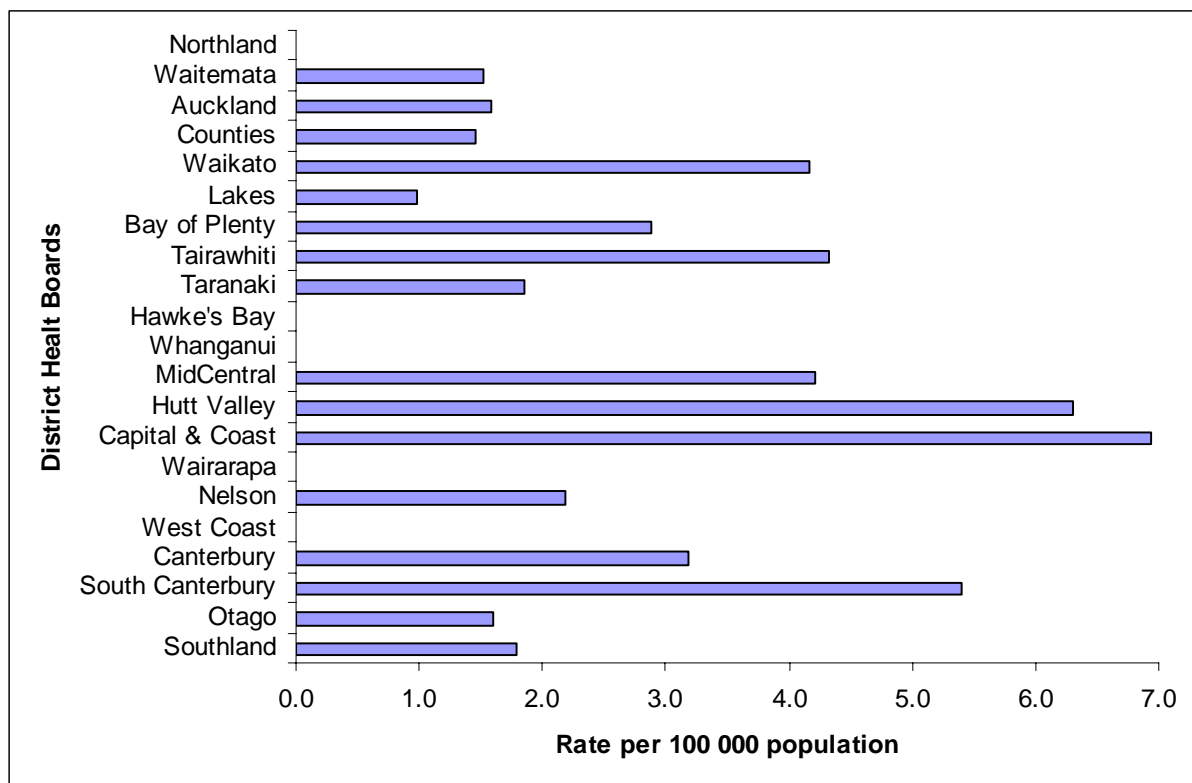
Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

## Hospitalisations

There have been 11 hospitalisations reported in EpiSurv since 26 December 2009, including four in the last two weeks. Eight (72.7%) of the 11 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 of age (3 cases) and 20-29 years (1 case). Where ethnicity was known, the cases hospitalised in the last two weeks were of Pacific Peoples (2 cases) and European (1 case) ethnicity. Counties Manukau, Waikato, Bay of Plenty and MidCentral 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 (6.9 per 100 000 population, 20 cases), followed by Hutt Valley (6.3 per 100 000 population, 9 cases), and South Canterbury (5.4 per 100 000 population, 3 cases) DHBs. Capital and Coast DHB reported the highest number of notifications (20 cases) followed by Canterbury DHB (16 cases). In the last two weeks, the highest number of notifications was reported in Canterbury DHB (8 cases), followed by Counties Manukau and Waikato DHBs (5 cases each).



**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 <sup>1</sup>	Hosp	Cases	Rates <sup>1</sup>	Hosp
Northland	0	0.0	0	0	0.0	0
Waitemata	8	1.5	1	3	0.6	0
Auckland	7	1.6	1	3	0.7	0
Counties Manukau	7	1.5	2	5	1.0	2
Waikato	15	4.2	2	5	1.4	1
Lakes	1	1.0	0	0	0.0	0
Bay of Plenty	6	2.9	2	3	1.4	1
Tairāwhiti	2	4.3	0	1	2.2	0
Taranaki	2	1.8	0	2	1.8	0
Hawke's Bay	0	0.0	0	0	0.0	0
Whanganui	0	0.0	0	0	0.0	0
MidCentral	7	4.2	2	0	0.0	0
Hutt Valley	9	6.3	0	3	2.1	0
Capital and Coast	20	6.9	1	4	1.4	0
Wairarapa	0	0.0	0	0	0.0	0
Nelson Marlborough	3	2.2	0	2	1.5	0
West Coast	0	0.0	0	0	0.0	0
Canterbury	16	3.2	0	8	1.6	0
South Canterbury	3	5.4	0	0	0.0	0
Otago	3	1.6	0	0	0.0	0
Southland	2	1.8	0	1	0.9	0
<b>Total</b>	<b>111</b>	<b>2.6</b>	<b>11</b>	<b>40</b>	<b>0.9</b>	<b>4</b>

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

<sup>2</sup>Cumulative notifications between 26 December 2009 and 29 January 2010

**Hosp:** hospitalisation counts

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**

<b>Confirmed</b>	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.
<b>Probable</b>	Cough lasting longer than two weeks and one or more of the following: <ul style="list-style-type: none"> <li>• Paroxysmal cough</li> <li>• Cough ending in vomiting or apnoea</li> <li>• Inspiratory whoop for which there is no other known cause.</li> </ul>
<b>Suspect</b>	In children under five years of age any paroxysmal cough with whoop, vomiting or apnoea for which there is no other known cause.
<b>Other</b>	Status recorded as <i>under investigation</i> or suspect case.
<b>Notifications</b>	Include confirmed cases, probable, and other as specified above.

This report is available on the internet from [www.surv.esr.cri.nz](http://www.surv.esr.cri.nz)