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## MONTHLY SURVEILLANCE REPORT

Data contained within this monthly report is based on information recorded on EpiSurv by public health service staff up until 7 November 2005. As this information may be updated over time, the results should be regarded as provisional only.

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### 1. Key notifiable disease trends

- *Campylobacter*: 1373 campylobacter cases were notified in October 2005 compared to 928 cases notified in the same month last year. Canterbury DHB recorded the highest number of cases (220). South Canterbury DHB recorded the highest current incidence rate of 740.8 per 100 000 population compared to the national rate of 353.9 per 100 000 population. Thirty-seven cases were hospitalised. Among the cases for whom this information was recorded 54.0% (101/187) had consumed food from a food premise, 15.5% (31/200) had faecal contact, 11.1% (21/190) had consumed untreated water, 10.3% (21/203) had recreational water contact, 10.2% (19/186) had contact with sick animals, 2.9% (10/342) had had contact with another case during the incubation period.
- *Legionellosis*: eight cases of legionellosis were notified in October 2005 compared to four cases notified in the same month last year. Five cases were reported from Canterbury, and one each from Northland, Bay of Plenty, and Southland DHBs. The cases range in age from 37 to 85 years. The species involved was identified for seven of the eight cases as *Legionella longbeachae* sg 1 (4), *L. longbeachae* sg 2 (1), *L. bozemanii* sg 1 (1), and *L. pneumophila* sg 1/12 (1). Two of the confirmed cases had been overseas during the incubation period and two had been exposed to potting mix/compost. Four cases were hospitalised.
- *Leptospirosis*: 14 leptospirosis cases were notified in October 2005 compared to six cases notified in the same month last year. The cases were notified from MidCentral (4 cases), South Canterbury (3), Northland (2), and one each from Counties Manukau, Bay of Plenty, West Coast, Canterbury, and Otago DHBs. Among the 13 cases for whom occupation was recorded, six were farmers, five worked in the meat processing industry, one was a possum hunter, and

one was a furniture manufacturer. The serovar was identified for eight cases as *Leptospira* Hardjo (7 cases), and *L. Ballum* (1 case).

- *Meningococcal disease*: based on earliest date available<sup>1</sup>, 16 cases of meningococcal disease were notified during October 2005, of which 14 (87.5%) were laboratory-confirmed. In comparison, 15 cases were notified the previous month, and 35 cases were notified during October 2004. For the previous 12 months, Hawke's Bay DHB recorded the highest current rate of 11.1 per 100 000 population (16 cases). Counties Manukau DHB recorded the highest number of cases (31) with a current rate of 8.3 per 100 000 population. The national rate of disease was highest amongst infants aged less than one year (58.6 per 100 000 population, 32 cases), followed by those in the 1-4 years age group (21.7 per 100 000 population, 47 cases).
- *Mumps*: 11 cases of mumps were notified in October 2005 compared to three cases notified in the same month last year. Six cases were aged between 5 to 9 years, three were in the 1 to 4 years, and two were in the 20 to 29 years age group. Vaccination status was recorded for five cases, of whom four were immunised. Two cases were laboratory confirmed.
- *Pertussis*: 243 pertussis cases were notified in October 2005, of whom 40 (16.5%) were laboratory confirmed. Pertussis numbers have decreased from the peak in November 2004 with 613 cases (Figure 1). Canterbury DHB had the highest number of cases (114). For the previous 12 months, Southland DHB had the highest incidence rate of 391.9 per 100 000 population (405 cases), compared to a national rate of 93.0 per 100 000 population. Hospitalisation data was recorded for 169 cases of whom 7 (4.1%) were hospitalised. The rate by age group for the previous 12 months was highest amongst infants aged less than one year (274.5 per 100 000 population). This was followed by children in the 5-9 years age group (177.1) and the 10-14 years age group (170.3).
- *Salmonellosis*: 130 salmonellosis cases were notified in October 2005 compared to 92 cases notified in the same month last year. Waikato and Canterbury DHBs had the highest number of cases (14 cases each). For the previous 12 months, Nelson-Marlborough DHB had the highest incidence rate of 67.8 per 100 000 population, compared to a national rate of 35.3 per 100 000 population. Hospitalisation data was recorded for 79 cases of whom 4 (5.1%) were hospitalised. The ESR Enteric Reference Laboratory received 128 isolates in October. The predominant types identified were *Salmonella* Typhimurium phage type 160 (28 isolates) and *S. Brandenburg* (16 isolates). Three uncommon *Salmonella* serotypes were isolated, *S. Ruiru* from a baby, *S. Oslo* (2 isolates) associated with travel to Cook Islands, and *S. Albany* (2 isolates).
- *Shigellosis*: 25 shigellosis cases were notified in October 2005 compared to six cases notified in the same month last year (Figure 2). The cases were from

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<sup>1</sup> The 'earliest' date refers to the earliest recorded date for the case (onset or hospitalisation date rather than report date, if available). 'Earliest' date, as opposed to 'report date' alone, is used throughout the analysis of meningococcal disease notification data.

Northland (12), Counties Manukau (4), Waitemata (2), Auckland (2), Capital and Coast (2), Waikato (1), Bay of Plenty (1), and Hutt (1) DHBs. One case was hospitalised. The ESR Enteric Reference Laboratory received isolates from 22 the 23 cases. The species involved were: *Shigella sonnei* Biotype a (15), *S. sonnei* Biotype g (4), *S. flexneri* 4a (2), and *S. flexneri* 6 (1). Twelve of the *S. sonnei* Biotype a cases were part of a Northland outbreak linked to the consumption of recreationally collected raw oysters.

- *Yersiniosis*: 43 cases of yersiniosis were notified in October 2005 compared to 25 cases notified in the same month last year. Canterbury DHB recorded the highest number of cases (8). West Coast DHB recorded the highest current incidence rate of 59.5 per 100 000 population compared to the national rate of 10.4 per 100 000 population. Among the cases for whom this information was recorded 50.0% (3/6) had consumed food from a food premise, 50.0% (3/6) had consumed untreated water, 33.3% (3/9) had recreational water contact, and 25.0% (2/8) had faecal contact during the incubation period. Three cases were hospitalised.

## 2. Outbreaks

ESR received three completed reports via EpiSurv for outbreaks during October 2005. These are summarised in the table below.

*Summary of outbreaks reported to ESR during October 2005:*

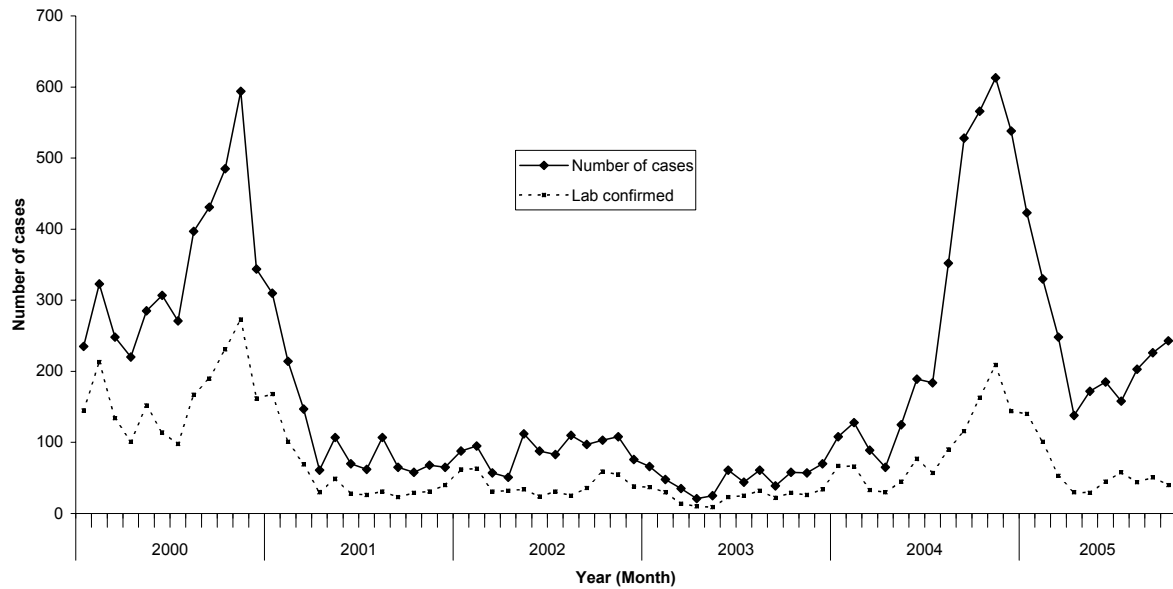
Organism/Toxin/Illness (PHU)	Number of outbreaks	Total number of cases
<i>Cryptosporidium parvum</i> (AK)	1	2
Gastroenteritis (OT)	1	2
Norovirus (OT)	1	3
<b>Total</b>	<b>3</b>	<b>7</b>

In addition, there were 23 preliminary reports of outbreaks currently under investigation in Auckland (*Campylobacter*, *Cryptosporidium parvum*, gastroenteritis, *Giardia*, *Legionella*, and *Salmonella*), Tauranga, (gastroenteritis), Otago (gastroenteritis), and Northland (*Shigella*).

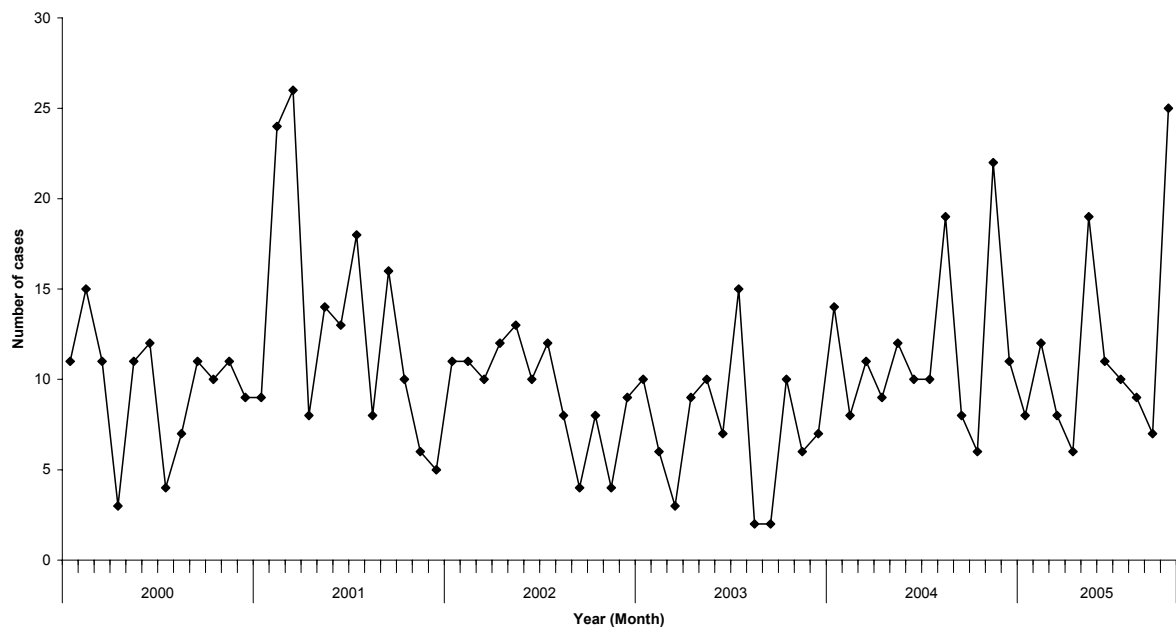
## 3. Deaths from notifiable diseases

No deaths were reported this month.

#### 4. Trends in selected diseases to October 2005



**Figure 1: Pertussis notifications and laboratory confirmed cases by month, January 2000 to October 2005**



**Figure 2: Shigellosis notifications by month, January 2000 to October 2005**

## 4. Data Tables

### *Disease incidence and rates*

Disease <sup>1</sup>	Current year - 2005 <sup>2</sup>			Previous year - 2004		
	Oct 2005 cases	Cumulative total since 1 January	Current rate <sup>3</sup>	Oct 2004 cases	Cumulative total since 1 January	Previous rate <sup>3</sup>
AIDS <sup>4</sup>	4	48	1.5	5	30	1.0
Campylobacteriosis	1373	10560	353.9	928	9547	255.5
Cryptosporidiosis	228	755	23.1	185	505	13.5
Dengue fever	0	11	0.3	0	8	0.2
Gastroenteritis <sup>5</sup>	41	496	18.9	134	1151	30.8
Giardiasis	80	1028	34.2	104	1262	33.8
<i>H. influenzae</i> type b disease	1	7	0.2	0	3	0.1
Hepatitis A	3	37	1.1	2	45	1.2
Hepatitis B (acute) <sup>6</sup>	9	49	1.4	1	34	0.9
Hepatitis C (acute) <sup>6</sup>	2	25	0.7	2	22	0.6
Hydatid disease	0	1	0.1	0	0	0
Influenza <sup>6</sup>	3	835	22.9	153	866	23.3
Lead absorption	4	60	2.0	7	79	2.1
Legionellosis	8	73	2.2	4	53	1.4
Leprosy	0	1	0	1	3	0.1
Leptospirosis	14	81	2.4	6	92	2.5
Listeriosis	0	14	0.5	2	22	0.6
Malaria	0	29	0.9	1	28	0.7
Measles	6	17	0.7	3	23	0.6
Meningococcal disease <sup>8</sup>	17	200	6.6	36	298	8.0
Mumps	11	56	1.8	3	35	0.9
Paratyphoid fever	0	19	0.6	2	26	0.7
Pertussis	243	2326	93.0	566	2334	62.5
Rheumatic fever	14	67	2.0	9	66	1.8
Rickettsial disease	0	1	0	0	2	0.1
Rubella	1	12	0.5	1	19	0.5
Salmonellosis	130	1147	35.3	92	907	24.3
SARS	0	0	0	0	0	0
Shigellosis	25	115	4.0	6	107	2.9
Tetanus	0	1	0	0	1	0
Tuberculosis	30	303	10.1	38	298	8.0
Typhoid fever	0	26	0.7	3	30	0.8
VTEC / STEC infection	9	82	2.5	6	76	2.0
Yersiniosis	43	334	10.4	25	367	9.8

**Notes:** <sup>1</sup> Other notifiable infectious diseases reported in October : Nil

<sup>2</sup> These data are provisional.

<sup>3</sup> Rate is based on the cumulative total for the current year (12 months up to and including October 2005) or the previous year (12 months up to and including October 2004), expressed as cases per 100 000

<sup>4</sup> All Aids data is provisional. Further information is available from the Aids Epidemiology Unit, University of Otago.

<sup>5</sup> Cases of gastroenteritis from a common source or foodborne intoxication. Eg: staphylococcal intoxication

<sup>6</sup> Only acute cases of this disease are currently notifiable

<sup>7</sup> Surveillance data based on laboratory-reported cases only (as reported in ESR's Virology Weekly Reports)

<sup>8</sup> These totals and rates are based on the EpiSurv report date as opposed to the earliest available date used in the meningococcal disease section

*Monthly totals for October 2005 and preceding 12 months*

Disease	Oct 2005	Sep 2005	Aug 2005	Jul 2005	Jun 2005	May 2005	Apr 2005	Mar 2005	Feb 2005	Jan 2005	Dec 2004	Nov 2004	Oct 2004
AIDS <sup>2</sup>	4	3	4	1	3	12	7	3	6	5	6	3	5
Campylobacteriosis	1373	1387	1260	914	741	748	729	768	1288	1352	1389	1278	928
Cryptosporidiosis	228	176	72	26	33	45	52	66	44	13	20	87	185
Dengue fever	0	1	1	4	2	0	0	0	2	1	0	0	0
Gastroenteritis <sup>3</sup>	41	43	43	34	56	54	36	70	42	77	83	129	134
Giardiasis	80	92	124	98	90	117	100	132	116	79	111	141	104
Haemophilus influenzae type b	1	1	2	0	0	1	1	1	0	0	1	0	0
Hepatitis A	3	5	5	4	2	0	2	5	7	4	3	1	2
Hepatitis B (acute) <sup>4</sup>	9	6	3	6	5	4	8	1	2	5	2	2	1
Hepatitis C (acute) <sup>4</sup>	2	2	3	1	7	3	0	2	2	3	1	1	2
Hydatid disease	0	1	0	0	0	0	0	0	0	0	0	1	0
Influenza <sup>5</sup>	3	40	51	393	278	45	15	5	4	1	0	21	153
Lead absorption	4	5	4	6	10	5	7	11	5	3	7	9	7
Legionellosis	8	4	10	12	2	11	6	5	7	8	2	7	4
Leprosy	0	0	0	0	0	0	0	0	0	1	0	0	1
Leptospirosis	14	8	10	7	7	4	9	8	7	7	5	5	6
Listeriosis	0	2	2	2	0	0	0	2	3	3	2	2	2
Malaria	0	1	0	3	2	6	5	3	5	4	2	3	1
Measles	6	0	3	1	1	3	0	1	2	0	8	2	3
Meningococcal disease <sup>6</sup>	17	14	17	36	29	16	20	16	15	20	18	27	36
Mumps	11	7	12	5	3	4	3	5	3	3	3	7	3
Paratyphoid fever	0	1	3	1	2	2	2	3	2	3	0	2	2
Pertussis	243	226	203	158	185	172	138	248	330	423	538	613	566
Rheumatic Fever	14	4	10	6	3	5	3	9	11	2	3	6	9
Rickettsial disease	0	0	0	1	0	0	0	0	0	0	0	0	0
Rubella	1	1	2	2	1	3	0	1	1	0	3	2	1
Salmonellosis	130	134	108	65	94	100	149	143	140	84	79	94	92
SARS	0	0	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	25	7	9	10	11	19	6	8	12	8	11	22	6
Tetanus	0	0	0	0	0	0	0	0	1	0	0	0	0
Tuberculosis	30	27	38	22	33	33	36	35	25	24	43	32	38
Typhoid fever	0	0	2	3	7	2	1	4	2	5	0	1	3
VTEC/STEC infection	9	6	10	2	4	5	24	11	8	3	6	7	6
Yersiniosis	43	29	40	32	24	34	30	25	37	40	27	26	25

**Notes:** <sup>1</sup> Later data are provisional

<sup>2</sup> All Aids data is provisional. Further information is available from the Aids Epidemiology Unit, University of Otago.

<sup>3</sup> Cases of gastroenteritis from a common source or foodborne intoxication eg, staphylococcal intoxication or toxic shellfish poisoning

<sup>4</sup> Only acute cases of this disease are currently notifiable

<sup>5</sup> Surveillance data based on laboratory-reported cases only (as reported in ESR's Virology Weekly Reports)

<sup>6</sup> These totals are based on the EpiSurv report date as opposed to the earliest available date used in the meningococcal disease section

# Surveillance data by District Health Board - October 2005

Cases this month

Current rate<sup>1</sup>

	Cases for October 2005, <sup>2</sup> and current rate <sup>1,2</sup> by District Health Board <sup>3,4</sup>																					
Disease	Northland	Waitemata	Auckland	Counties Manukau	Waikato	Lakes	Bay of Plenty	Tairāwhiti	Taranaki	Hawke's Bay	Whanganui	MidCentral	Hutt	Capital and Coast	Wairarapa	Nelson Marlborough	West Coast	Canterbury	South Canterbury	Otago	Southland	
AIDS <sup>5</sup>	0	2			0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	
	1.4	3.2			1.3	1.0	1.1	0	0	0.7	0	0	1.3	0	0.8	1.3	4.4	0	0	0	0	
Campylobacteriosis	44	168	121	108	130	39	50	7	49	42	11	26	42	101	10	38	6	220	29	84	48	
	216.2	385.8	363.0	285.4	351.3	275.1	254.3	227.5	353.3	318.3	210.6	189.1	344.3	423.0	212.0	313.5	254.4	443.9	740.8	476.2	524.5	
Cryptosporidiosis	9	9	8	8	24	7	5	2	9	9	6	14	3	19	3	6	7	34	13	21	12	
	16.4	7.2	9.5	8.3	44.7	66.7	14.6	15.9	17.5	30.6	20.4	28.4	10.6	33.8	36.6	21.2	39.7	25.8	75.8	29.9	32.9	
Dengue fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0.7	0.2	0.5	0.5	0.3	0	0	0	0	0	0	0.6	0	0.8	0	0	0	0.2	0	0	0	
Gastroenteritis	1	4	10	3	2	1	2	0	0	0	0	0	1	5	1	0	0	5	0	0	6	
	3.6	19.5	22.8	15.2	32.7	7.3	3.9	0	4.9	2.8	25.2	13.5	15.9	28.1	23.6	13.1	13.2	32.5	15.2	16.4	19.4	
Giardiasis	4	10	15	8	7	2	5	1	0	0	1	5	1	3	0	1	0	9	2	3	3	
	31.4	34.4	50.6	30.9	44.7	37.5	35.4	61.4	9.7	32.7	25.2	29.7	20.5	43.1	39.3	34.3	16.5	31.6	17.1	20.5	24.2	
H. influenzae type b disease	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0.3	1.1	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	
Hepatitis A	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0.7	1.4	1.6	2.1	1.9	0	0.6	2.3	1.9	0	0	0.6	0	0	0	0	3.3	0.9	0	1.8	1.0	
Hepatitis B	0	1	3	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	
	0.7	2.6	2.7	2.4	0.6	0	1.1	6.8	0	0	0	0	0	1.2	0	0.8	0	1.2	0	2.9	1.0	
Hepatitis C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	
	2.1	0	0.5	0	0	0	0.6	2.3	0	0	0	0	1.5	0	2.6	0.8	3.3	3.5	0	0	0	
Hydatids disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0.6	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	
Lead absorption	0	0	0	0	1	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	
	0.7	1.4	1.6	0.3	3.1	0	0	6.8	3.9	1.4	11.0	3.9	2.3	2.8	2.6	0.8	0	1.6	3.8	5.3	0	
Legionellosis	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	1	
	2.1	3.7	0.8	1.1	0.9	0	2.2	0	1.0	1.4	0	1.9	6.8	0.4	2.6	0.8	3.3	6.3	1.9	0.6	1.0	
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	
Leptospirosis	2	0	0	1	0	0	1	0	0	0	0	4	0	0	0	0	1	1	3	1	0	
	4.3	0	0	0.5	2.8	1.0	5.1	6.8	2.9	9.1	1.6	6.5	0	0.8	10.5	4.1	13.2	0.7	9.5	2.3	6.8	
Listeriosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0.2	1.1	0.8	0.6	1.0	1.1	0	0	0.7	0	0	0	0.8	0	1.6	0	0	0	0	0	
Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0.9	0.3	2.9	1.9	0	0	0	0	0.7	0	0	0.8	2.0	0	0.8	0	0.7	0	0	1.0	
Measles	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	
	0	1.2	0.3	0.5	0.3	1.0	2.2	0	1.0	0	0	0.6	0	0	2.6	0	13.2	1.2	1.9	0	0	
Meningococcal disease <sup>5</sup>	0	5	1	2	3	0	0	0	0	0	0	1	0	0	1	1	0	1	0	1	1	
	3.6	6.7	4.1	8.8	8.8	10.4	6.2	9.1	3.9	11.1	1.6	9.0	0	4.9	10.5	4.1	9.9	5.6	5.7	10.0	6.8	
Mumps	1	1	1	4	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	
	4.3	1.4	1.6	2.1	0.6	2.1	1.7	2.3	1.0	2.1	1.6	0	0	2.8	2.6	1.6	3.3	2.6	1.9	2.3	0	
Paratyphoid fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0.7	0.5	1.1	0.3	0	0.6	0	0	0.7	0	0	3.0	0.4	2.6	0	0	0.7	0	0	0	
Pertussis	1	3	1	2	26	3	16	0	0	12	0	4	12	5	0	10	1	114	16	12	5	
	20.7	20.5	15.5	20.2	150.1	94.8	90.4	15.9	15.5	18.8	4.7	21.9	47.8	38.6	13.1	235.1	102.4	271.1	270.9	130.6	391.9	
Rheumatic fever	0	0	1	9	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	
	5.7	0.7	0.3	4.0	3.1	2.1	2.8	4.6	0	5.6	0	1.9	3.8	5.3	0	0.8	0	0	0	0	0	
Rickettsial disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rubella	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0.7	1.1	0.5	0	0	0.6	0	1.0	1.4	0	0	0	0.4	0	1.6	0	0.2	0	0	0	
Salmonellosis	6	10	7	11	14	3	4	0	4	8	7	3	5	7	3	2	0	14	4	8	10	
	31.4	28.6	28.6	27.4	34.9	22.9	33.7	38.7	28.1	39.7	45.6	17.4	30.3	29.3	65.4	67.8	19.8	42.1	58.7	51.0	66.8	
SARS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Shigellosis	12	2	2	4	1	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	
	10.0	4.2	7.6	5.1	1.9	1.0	2.2	0	0	0	1.6	0	1.5	4.1	0	1.6	0	8.4	3.8	2.3	1.0	
Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tuberculosis	1	8	6	4	1	0	0	0	0	1	1	2	0	2	0	0	0	4	0	0	0	
	13.6	13.3	20.1	17.3	6.6	5.2	3.4	2.3	2.9	7.0	9.4	7.1	7.6	19.1	5.2	4.9	6.6	5.6	3.8	2.3	2.9	
Typhoid fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	1.1	4.5	0	1.0	0	0	0	0	0	0	0.8	0.4	0	0	0	0.5	1.9	0	0	
VTEC / STEC	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	
	2.9	0.9	1.9	0.5	6.0	3.1	6.2	2.3	1.0	4.2	1.6	0	0.8	1.6	0	1.6	3.3	2.1	7.6	7.0	2.9	
Yersiniosis	0	5	3	2	2	2	2	0	0	1	1	1	1	2	0	4	0	8	1	7	1	
	4.3	10.5	13.9	8.3	9.4	6.3	6.2	4.6	3.9	8.4	17.3	3.9	5.3	15.0	2.6	8.2	59.5	13.8	17.1	14.1	6.8	

1 Current rate is based on the cumulative total for the 12 months up to and including October 2005 expressed as cases per 100 000

2 These data are provisional

3 - AIDS data is reported for the greater Auckland and Wellington areas, rather than by District Health Board

- All Aids data is provisional. Further information is available from the Aids Epidemiology Unit, University of Otago.

4 Further data are available from the local medical officer of health

5 These totals and rates are derived from the EpiSurv report date as opposed to the earliest available date used in the meningococcal disease section.