

Communicable diseases surveillance

Highlights for 4th quarter, 2007

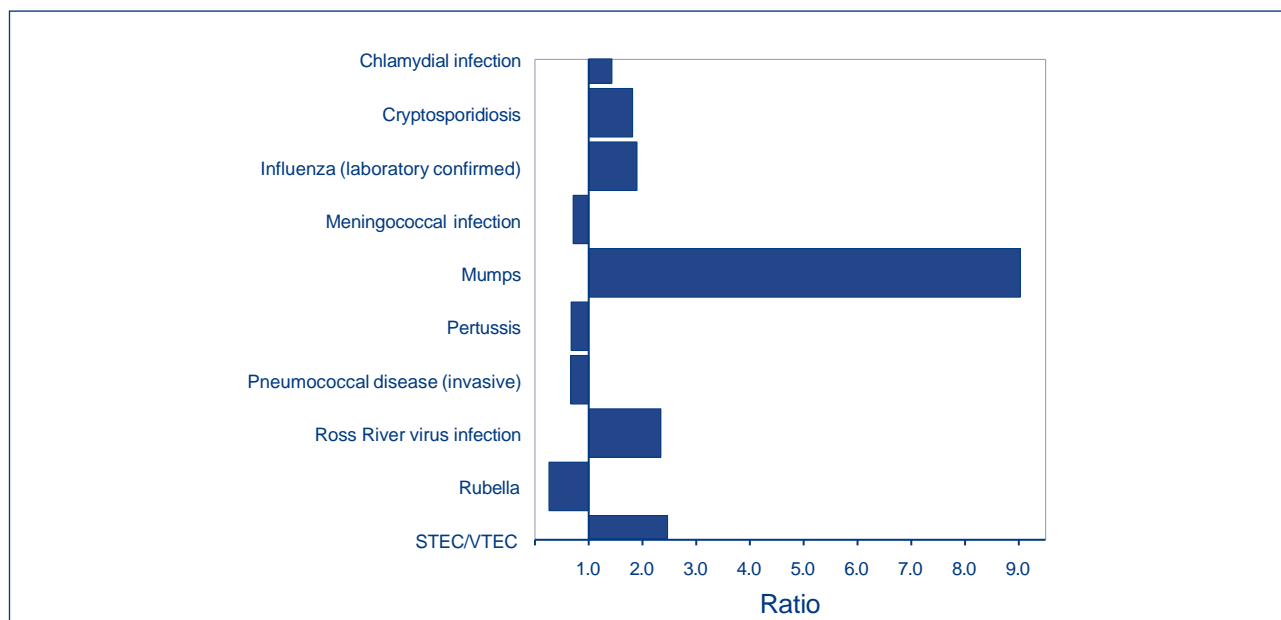
Communicable diseases surveillance highlights report on data from various sources, including the National Notifiable Diseases Surveillance System (NNDSS) and several disease specific surveillance systems that provide regular reports to Communicable Diseases Intelligence. These national data collections are complemented by intelligence provided by state and territory communicable disease epidemiologists and/or data managers. This additional information has enabled the reporting of more informative highlights each quarter.

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia. NNDSS collates data on notifiable communicable diseases from state and territory health departments. The Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme which collates information on laboratory diagnosis of communicable diseases. In this report, data from the NNDSS are referred to as 'notifications' or 'cases' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in selected disease notifications to the National Notifiable Diseases Surveillance System (NNDSS) with an onset in the fourth quarter (October to December) 2007, in comparison with the five-year mean for the same period. Notifications were above the five-year mean for chlamydial infections, cryptosporidiosis, influenza

(laboratory confirmed), mumps, Ross River virus and Shiga toxin-producing/verotoxin-producing *Escherichia coli* (STEC/VTEC). Notifications were below the five-year mean for meningococcal infection, pertussis, invasive pneumococcal disease and rubella.

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 October to 31 December 2007 with historical data*



* Selected diseases are chosen each quarter according to current activity. Five year averages and the ratios of notifications in the reporting period in the five year mean should be interpreted with caution. Changes in surveillance practice, diagnostic techniques and reporting, may contribute to increases or decreases in the total notifications received over a five year period. Ratios are to be taken as a crude measure of current disease activity and may reflect changes in reporting rather than changes in disease activity. See Table 1 for all diseases.

† Ratio of current quarter total to mean of corresponding quarter for the previous five years.

Gastrointestinal diseases

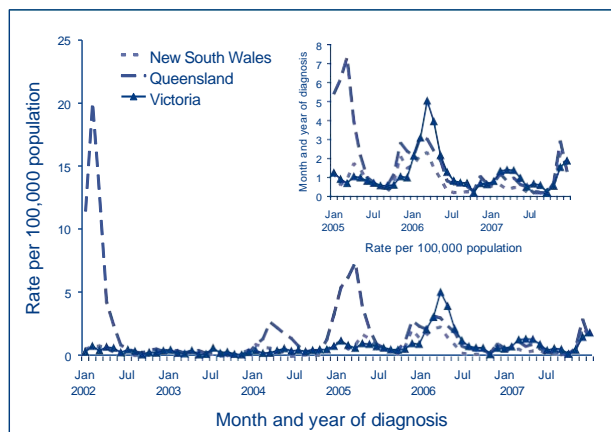
Cryptosporidiosis

There were 805 notifications of cryptosporidiosis between 1 October and 31 December 2007, which was 80% higher than the five-year mean for previous corresponding quarters. All jurisdictions reported cases during the fourth quarter, with the majority from New South Wales (300), Queensland (207) and Victoria (207) (Figure 2).

The total for the quarter represented a substantive increase from the previous quarter and the same quarter for 2006. Notifications of cryptosporidiosis peak in the summer months, with increases in notifications commencing in the fourth quarter and peaking in the first quarter of the following year.

New South Wales reported 37% (300) of the total number of cases reported nationally. Over a third of the New South Wales cases notified were in the age range of 1 to 4 years. A range of possible risk factors reported in a New South Wales media release included: contact with farm animals, consumption of untreated water and swimming; however there were no significant common source outbreaks identified.¹

Figure 2. Notification rates of cryptosporidiosis, New South Wales, Queensland and Victoria, 2002 to 2007



Haemolytic uraemic syndrome

Haemolytic uraemic syndrome (HUS) is a rare condition characterised by progressive renal failure associated with microangiopathic haemolytic anaemia (red blood cell destruction), and

thrombocytopenia (platelet reduction and bleeding into the skin). HUS can occur following a variety of associated diseases, diarrhoeal and non-diarrhoeal. Diarrhoeal associated disease is the most common cause of HUS, specifically, infections associated with *Shigella dysenteriae* type 1 and, most commonly, STEC/VTEC.²

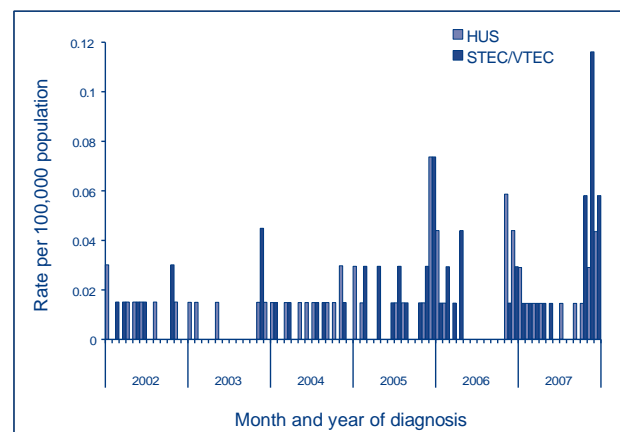
Reporting of a confirmed case of HUS on the NNDSS requires clinical evidence based on acute microangiopathic anaemia on a peripheral blood smear and either acute renal impairment or thrombocytopenia.³

Approximately 10% of persons with an infection of STEC/VTEC will go on to develop this condition.^{4,5} Where STEC/VTEC is isolated in the context of HUS, they are notified as both STEC/VTEC and HUS in NNDSS.

There were seven cases of HUS notified in the fourth quarter of 2007. This was 16% higher than the five-year mean for the corresponding period. Six of the cases notified were in New South Wales, however no common associations or exposures were identified between the cases.

Of these six HUS cases notified in New South Wales, one case was co-notified with a STEC infection. The number of STEC/VTEC cases notified during this period was 41, New South Wales notified 39% (16) of these cases, and nationally this was 2.5 times the five-year mean for the corresponding period. Figure 3 shows the notification rates of HUS and STEC/VTEC in New South Wales between 2002 and 2007.

Figure 3. Notification rates of haemolytic uraemic syndrome and Shiga toxin-producing/verotoxin-producing *Escherichia coli*, New South Wales, 2002 to 2007



Quarantinable diseases

Cholera

Cholera is one of eight human diseases that are currently subject to quarantine controls in Australia. The notifiable serogroups for cholera are toxigenic *Vibrio cholerae* O1 and O139.³ Although there are over 200 *V. cholerae* serogroups, non-O1 and non-O139 groups rarely elaborate cholera enterotoxin.⁴

One case of cholera was notified in Queensland during the fourth quarter of 2007. The case was a 46-year-old female who acquired the infection whilst travelling through India as part of a tour group. The infecting organism was identified as toxigenic *Vibrio cholerae* O1 Ogawa. Investigations undertaken by Queensland Health noted that other members of the tour group also became ill during the tour, however no additional cases were discovered in Australia.

This case represented one of three cholera notifications that were reported in Australia in 2007. The average number of cases over the last five years was 3.4 cases per year.

Vaccine preventable diseases

Mumps

During the fourth quarter of 2007, 290 cases of mumps were reported. Over half of the cases notified to NNDSS (155) were from New South Wales. Western Australia reported 86 cases (30%) and the Northern Territory reported 32 cases (11%). In comparison to the five-year mean for the corresponding period (32.2), the fourth quarter of 2007 was nine times higher and exceeded the 95th percentile of the five-year mean by 233 cases.

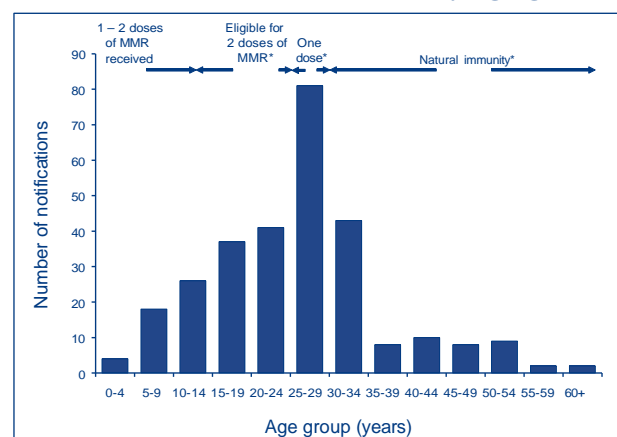
In Western Australia, 86 cases of mumps were notified during the quarter. The majority of these cases (76, 88%) were from the Kimberley region, and almost all were Indigenous persons (71, 93%); and aged between 10 and 29 years (54, 71%). Some of the Indigenous cases had epidemiological links to cases in a Northern Territory outbreak. Of all cases notified in the Kimberley region of Western Australia, 38 (50%) were fully vaccinated, 10 (13%) were partially vaccinated, 9 (12%) were not vaccinated and information was unknown, not applicable or missing for 22% of cases.

Ten of the cases reported in the Northern Territory occurred in students at a boarding school. Following public health investigation, it was noted that these cases were likely to have received early immunisation with the measles-mumps-rubella (MMR)

vaccine at 9–10 months of age. This was consistent with historical recommendations in the Northern Territory, which no longer apply.

The current National Immunisation Program Schedule recommends two doses of MMR at 12 months and at four years, unless there is a contraindication. The efficacy following immunisation at less than 12 months may be reduced when compared to those who are immunised at 12 months, due to the natural persistence of maternal antibodies in the child. *The Australian Immunisation Handbook* recommends that when MMR is given under 12 months of age, that the dose be repeated at or after 12 months.^{6,7} Figure 4 highlights the number of notifications associated with each age group, highlighting mumps vaccine eligibility based on historical vaccination policies.⁷

Figure 4. Notifications of mumps and mumps vaccine eligibility, Australia, 1 October to 31 December 2007, by age group



* Mumps monovalent vaccine introduced in 1980 for children over 12 months. Mumps monovalent vaccine replaced by measles-mumps-rubella (MMR) in 1988. MMR second dose recommendation for the 10–16 year age group from 1993 and at four years from 1998.⁷

Other bacterial infections

Meningococcal infections

There were 79 notifications of meningococcal infection reported in the fourth quarter of 2007, 22% more than the corresponding period in 2006. Serogroup data were available on 72 (92%) of the notified cases in the quarter. Sixty-two (79%) were serogroup B, 3 (4%) were serogroup C, 2 (3%) were serogroup W135, 3 (4%) were serogroup Y, and in 8 (10%) the serogroup was either not typed or no data were provided.

Those notified were aged from one month to 79 years; nine cases (11%) were aged less than 12 months, 18 cases (23%) were aged 1–years, and there were 19 (24%) cases aged 15–20 years.

There were three deaths associated with meningococcal infection reported from New South Wales (2) and Queensland (1). One case was in a 15-year-old female with serogroup Y infection, another case in a 6-month-old male with serogroup B infection and one case in an 8-month-old male with serogroup C infection. The case with serogroup C infection was too young to be vaccinated under the current immunisation schedule.

The current National Immunisation Program Schedule recommends one dose of the meningococcal C vaccine at 12 months of age.⁶

Acknowledgements

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Tables

National Notifiable Diseases Surveillance System

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 35,690 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification date between 1 October and 31 December 2007 (Table 2). The notification rate of diseases per 100,000 population for each state or territory is presented in Table 3.

Table 1. Reporting of notifiable diseases by jurisdiction

Disease	Data received from:	Disease	Data received from:
Bloodborne diseases		Vaccine preventable diseases	
Hepatitis (NEC)		Diphtheria	All jurisdictions
Hepatitis B (incident)	All jurisdictions	<i>Haemophilus influenzae</i> type b	All jurisdictions
Hepatitis B (unspecified)	All jurisdictions	Influenza - laboratory confirmed*	All jurisdictions
Hepatitis C (incident)	All jurisdictions except Qld	Measles	All jurisdictions
Hepatitis C (unspecified)	All jurisdictions	Mumps	All jurisdictions
Hepatitis D	All jurisdictions	Pertussis	All jurisdictions
Gastrointestinal diseases		Pneumococcal disease (invasive)	All jurisdictions
Botulism	All jurisdictions	Poliomyelitis	All jurisdictions
Campylobacteriosis	All jurisdictions except NSW	Rubella	All jurisdictions
Cryptosporidiosis	All jurisdictions	Rubella - congenital	All jurisdictions
Haemolytic uraemic syndrome	All jurisdictions	Tetanus	All jurisdictions
Hepatitis A	All jurisdictions	Varicella zoster (chickenpox)	All jurisdictions except NSW
Hepatitis E	All jurisdictions	Varicella zoster (shingles)	All jurisdictions except NSW
Listeriosis	All jurisdictions	Varicella zoster (unspecified)	All jurisdictions except NSW
Salmonellosis	All jurisdictions	Vectorborne diseases	
Shigellosis	All jurisdictions	Arbovirus infection (NEC)	All jurisdictions
STEC, VTEC	All jurisdictions	Barmah Forest virus infection	All jurisdictions
Typhoid	All jurisdictions	Dengue virus infection	All jurisdictions
Quarantinable diseases		Japanese encephalitis virus infection	All jurisdictions
Cholera	All jurisdictions	Kunjin virus infection	All jurisdictions
Highly pathogenic avian influenza	All jurisdictions	Malaria	All jurisdictions
Plague	All jurisdictions	Murray Valley encephalitis virus infection	All jurisdictions
Rabies	All jurisdictions	Ross River virus infection	All jurisdictions
Severe acute respiratory syndrome	All jurisdictions	Zoonoses	
Smallpox	All jurisdictions	Anthrax	All jurisdictions
Viral haemorrhagic fever	All jurisdictions	Australian bat lyssavirus	All jurisdictions
Yellow fever	All jurisdictions	Brucellosis	All jurisdictions
Sexually transmissible infections		Leptospirosis	All jurisdictions
Chlamydial infection	All jurisdictions	Lyssaviruses (unspecified)	All jurisdictions
Donovanosis	All jurisdictions	Ornithosis	All jurisdictions
Gonococcal infection	All jurisdictions	Q fever	All jurisdictions
Syphilis (all)	All jurisdictions	Tularaemia	All jurisdictions
Syphilis <2 years duration	All jurisdictions	Other bacterial infections	
Syphilis >2 years or unspecified duration	All jurisdictions	Legionellosis	All jurisdictions
Syphilis - congenital	All jurisdictions	Leprosy	All jurisdictions
		Meningococcal infection - invasive	All jurisdictions
		Tuberculosis	All jurisdictions

* Laboratory confirmed influenza is not notifiable in South Australia but reports are forwarded to NNDSS.

NEC Not elsewhere classified

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 October to 31 December 2007, by date of onset*

Disease	State or territory								Total 4th quarter 2007 [†]	Total 3rd quarter 2007	Total 4th quarter 2006	Last 5 years mean 4th quarter	Year to date 2007	Last 5 years YTD mean	Ratio [‡]
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Bloodborne diseases															
Hepatitis (NEC)	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Hepatitis B (incident)	2	15	1	9	4	4	25	11	71	62	79	68.2	290	313.8	1.0
Hepatitis B (unspecified)	13	691	57	227	110	19	465	147	1,729	2,221	1,629	1,515.8	7,550	6,173.0	1.1
Hepatitis C (incident)	4	4	0	NN	6	4	33	19	70	109	95	105.4	353	447.0	0.7
Hepatitis C (unspecified)	32	1,369	45	659	129	73	680	350	3,337	3,596	3,039	3,207.2	13,132	13,217.0	1.0
Hepatitis D	0	1	0	3	0	0	3	0	7	10	5	4.8	34	27.8	1.5
Gastrointestinal diseases															
Botulism	0	0	0	0	0	0	0	0	0	0	1	0.2	1	1.3	0.0
Campylobacteriosis [§]	133	NN	45	1,447	554	151	1,796	569	4,695	3,840	4,453	4,471.2	17,671	15,526.4	1.1
Cryptosporidiosis	7	300	18	207	5	11	207	50	805	275	444	443.2	2,877	2,521.2	1.8
Haemolytic uraemic syndrome	0	6	0	0	0	0	1	0	7	2	8	6.0	20	15.4	1.2
Hepatitis A	0	14	0	6	1	1	8	4	34	43	54	76.0	164	349.6	0.4
Hepatitis E	0	2	0	1	0	0	0	0	3	2	6	3.4	18	21.2	0.9
Listeriosis	0	6	0	2	4	0	3	1	16	10	14	15.8	50	62.6	1.0
Salmonellosis	22	531	131	511	194	39	517	211	2,156	1,554	2,108	1,999.6	9,685	7,885.4	1.1
Shigellosis	0	14	50	26	31	1	14	22	158	172	117	124.4	615	548.8	1.3
STEC, VTEC	0	16	1	12	10	0	2	0	41	13	20	16.6	112	63.4	2.5
Typhoid	0	3	1	3	0	0	6	2	15	20	21	14.8	92	65.0	1.0
Quarantinable diseases															
Cholera	0	0	0	1	0	0	0	0	1	0	3	0.8	3	3.4	1.3
Highly pathogenic avian influenza	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Plague	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Severe acute respiratory syndrome	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Viral haemorrhagic fever	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Yellow fever	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 October to 31 December 2007, by date of onset,* continued

Disease	State or territory								Total 4th quarter 2007†	Total 3rd quarter 2007	Total 4th quarter 2006	Last 5 years mean 4th quarter	Year to date 2007	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection¶	196	3,063	483	3,293	787	304	2,777	1,906	12,809	12,376	11,615	8,922.0	51,458	35,946.4	1.4
Donovanosis	0	0	0	0	0	0	0	0	0	1	1	3.0	3	12.4	0.0
Gonococcal infection	17	333	329	345	95	8	228	430	1,785	1,708	1,870	1,772.2	7,619	7,418.2	1.0
Syphilis (all)	9	344	58	97	10	7	191	46	762	843	730	570.2	3,127	2,257.6	1.3
Syphilis <2 years duration	6	88	17	53	0	0	77	23	264	339	267	196.0	1,274	696.3	1.3
Syphilis >2 years or unspecified duration	3	256	41	44	10	7	114	23	498	504	463	452.6	1,853	1,839.8	1.1
Syphilis - congenital	0	2	0	0	0	0	0	0	2	1	1	2.4	9	14.4	0.8
Vaccine preventable diseases															
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
<i>Haemophilus influenzae</i> type b	0	3	2	0	0	0	1	0	6	5	7	4.0	17	20.8	1.5
Influenza - laboratory confirmed	17	128	8	366	NDP	12	130	94	755	9,070	421	407.4	10,745	3,421.6	1.9
Measles	0	0	0	0	0	0	0	0	0	4	10	9.8	11	61.0	0.0
Mumps	3	155	32	6	3	0	5	86	290	151	44	32.0	584	152.6	9.0
Pertussis	19	708	5	387	88	3	227	33	1,470	1,610	1,305	2,145.4	5,472	8,326.8	0.7
Pneumococcal disease - invasive	7	99	13	50	22	9	69	20	289	612	277	435.0	1,494	2,051.8	0.7
Poliomyelitis	0	0	0	0	0	0	0	0	0	1	0	0.0	1	0.0	0.0
Rubella	0	1	0	2	0	0	1	1	5	6	12	19.2	35	85.8	0.3
Rubella - congenital	0	0	0	0	0	0	0	0	0	0	0	0.2	1	1.4	0.0
Tetanus	0	1	0	0	0	0	0	0	1	2	2	1.0	3	3.6	1.0
Varicella zoster (chickenpox)	NDP	NN	67	110	189	3	NN	117	486	595	719	NA	1,837	NA	NA
Varicella zoster (shingles)	NDP	NN	21	99	99	32	NN	106	357	385	415	NA	1,671	NA	NA
Varicella zoster (unspecified)	NDP	NN	0	839	163	12	NN	164	1,178	1,134	918	NA	4,309	NA	NA
Vectorborne diseases															
Arbovirus infection (NEC)	0	0	0	3	0	0	0	0	3	3	4	8.0	23	50.6	0.4
Barmah Forest virus infection	1	107	12	213	11	0	7	24	375	315	367	249.8	1,699	1,365.8	1.5
Dengue virus infection	2	16	4	18	6	2	7	19	74	71	37	70.6	324	358.4	1.0
Japanese encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.4	0.0
Kunjin virus infection	0	0	0	0	0	0	0	0	0	0	0	0.6	0	6.8	0.0
Malaria	3	23	12	52	6	4	20	23	143	118	149	137.0	580	641.2	1.0
Murray Valley encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0.0	0	1.2	0.0
Ross River virus infection	3	238	62	505	59	2	29	220	1,118	647	544	475.8	4,177	3,512.4	2.3

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 October to 31 December 2007, by date of onset,* continued

Disease	State or territory								Total 4th quarter 2007†	Total 3rd quarter 2007	Total 4th quarter 2006	Last 5 years mean 4th quarter	Year to date 2007	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Zoonoses															
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0.0	1	0.2	0.0
Australian bat lyssavirus	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Brucellosis	0	0	0	7	0	0	0	0	7	11	13	12.6	40	37.8	0.6
Leptospirosis	0	0	0	7	0	0	7	2	16	10	20	24.0	106	148.0	0.7
Lyssavirus (unspecified)	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Ornithosis	0	9	0	1	0	0	18	2	30	14	42	43.2	100	197.4	0.7
Q fever	0	58	0	35	3	0	6	2	104	115	100	124.8	458	514.6	0.8
Tularaemia	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Other bacterial infections															
Legionellosis	0	28	1	13	5	1	11	36	95	50	96	88.0	311	328.6	1.1
Leprosy	0	1	0	0	0	0	1	0	2	0	1	0.6	12	6.8	3.3
Meningococcal infection - invasive**	1	31	0	23	3	1	13	7	79	126	65	111.2	311	472.2	0.7
Tuberculosis	5	78	19	52	21	3	103	23	304	282	331	318.4	1,096	1,120.8	1.0
Total	496	8,398	1,477	9,637	2,618	706	7,611	4,747	35,690	42,195	32,212	28,061.8	150,301	115,780.1	1.3

* Date of onset = the true onset. If this is not available, the 'date of onset' is equivalent to the earliest of two dates: (i) specimen date of collection, or (ii) the date of notification to the public health unit. Hepatitis B and C unspecified and tuberculosis were analysed by the date of notification.

† Totals comprise data from all states and territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

‡ Ratio = ratio of current quarter total to the mean of last five years for the same quarter. Note: Ratios for syphilis <2 years; syphilis >2 years or unspecified duration based on four years data

§ Not reported for New South Wales where it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.

|| Infections with Shiga toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

¶ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia which reports only genital tract specimens, Northern Territory which excludes ocular specimens, and Western Australia which excludes ocular and perinatal infections.

** Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NN Not notifiable.

NEC Not elsewhere classified.

NDP No data provided.

Table 3. Notification rates of diseases, 1 October to 31 December 2007, by state or territory. (Annualised rate per 100,000 population)

Disease*	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Bloodborne diseases									
Hepatitis (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hepatitis B (incident)	2.4	0.9	1.9	0.9	1.0	3.2	1.9	2.1	1.4
Hepatitis B (unspecified)	15.3	40.1	106.1	21.9	27.8	15.4	35.7	27.9	32.9
Hepatitis C (incident)	4.7	0.2	0.0	NN	1.3	3.2	2.5	3.6	1.3
Hepatitis C (unspecified)	37.7	79.5	83.7	63.0	34.8	59.2	52.3	66.5	63.5
Hepatitis D	0.0	0.1	0.0	0.3	0.0	0.0	0.2	0.0	0.1
Gastrointestinal diseases									
Botulism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis [†]	156.5	NN	83.7	138.4	139.9	122.4	138.0	108.1	89.4
Cryptosporidiosis	8.2	17.4	33.5	19.8	1.3	8.9	15.9	9.5	15.3
Haemolytic uraemic syndrome	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Hepatitis A	0.0	0.8	0.0	0.6	0.3	0.8	0.6	0.8	0.6
Hepatitis E	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Listeriosis	0.0	0.3	0.0	0.2	1.0	0.0	0.2	0.2	0.3
Salmonellosis	25.9	30.9	243.7	48.9	49.0	31.6	39.7	40.1	41.0
Shigellosis	0.0	0.8	93.0	2.5	7.8	0.8	1.1	4.2	3.0
STEC, VTEC [‡]	0.0	0.9	1.9	1.1	2.5	0.0	0.2	0.0	0.8
Typhoid	0.0	0.2	1.9	0.3	0.0	0.0	0.5	0.4	0.3
Quarantinable diseases									
Cholera	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Highly pathogenic avian influenza	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plague	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rabies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Severe acute respiratory syndrome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smallpox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viral haemorrhagic fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sexually transmissible infections									
Chlamydial infection [§]	230.7	177.8	898.7	315.2	198.7	246.5	213.2	362.1	243.7
Donovanosis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gonococcal infection	20.0	19.3	612.2	33.0	24.2	6.5	17.5	82.2	34.0
Syphilis (all)	10.5	20.0	107.9	9.3	2.5	5.7	14.7	8.7	14.5
Syphilis <2 years duration	7.1	5.1	31.6	5.1	0.0	0.0	5.9	4.4	5.0
Syphilis >2 years or unspecified duration	3.5	14.9	76.3	4.2	2.5	5.7	8.8	4.4	9.5
Syphilis - congenital	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vaccine preventable diseases									
Diphtheria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Haemophilus influenzae</i> type b	0.0	0.2	3.7	0.0	0.0	0.0	0.1	0.0	0.1
Influenza - laboratory confirmed	20.0	7.4	14.9	35.0	NDP	9.7	10.0	17.9	14.4
Measles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mumps	3.5	9.0	59.5	0.6	0.8	0.0	0.4	16.1	5.5
Pertussis	22.4	41.2	9.3	37.0	22.2	2.4	17.4	6.6	28.0

Table 3. Notification rates of diseases, 1 October to 31 December 2007, by state or territory. (Annualised rate per 100,000 population), continued

Disease*	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Vaccine preventable diseases, continued									
Pneumococcal disease (invasive)	8.2	5.7	24.2	4.8	5.6	7.3	5.3	3.8	5.5
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.2	0.1
Rubella - congenital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetanus	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Varicella zoster (chickenpox)	NDP	NN	124.7	10.5	47.7	2.4	NN	22.2	9.3
Varicella zoster (shingles)	NDP	NN	39.1	9.5	25.0	25.9	NN	20.1	6.8
Varicella zoster (unspecified)	NDP	NN	0.0	80.2	41.1	9.7	NN	31.2	22.4
Vectorborne diseases									
Arbovirus infection (NEC)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1
Barmah Forest virus infection	1.2	6.2	22.3	20.5	2.8	0.0	0.5	4.6	7.1
Dengue virus infection	2.4	0.9	7.4	1.7	1.5	1.6	0.5	3.6	1.4
Japanese encephalitis virus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kunjin virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Malaria	3.5	1.3	22.3	5.0	1.5	3.2	1.5	4.4	2.7
Murray Valley encephalitis virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ross River virus infection	3.5	13.8	115.4	48.3	14.9	1.6	2.2	41.8	21.3
Zoonoses									
Anthrax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australian bat lyssavirus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brucellosis	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.1
Leptospirosis	0.0	0.0	0.0	0.7	0.0	0.0	0.5	0.4	0.3
Lyssavirus (unspecified)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	0.0	0.5	0.0	0.1	0.0	0.0	1.4	0.4	0.6
Q fever	0.0	3.5	0.0	3.3	0.8	0.0	0.5	0.4	2.0
Tularaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other bacterial infections									
Legionellosis	0.0	1.6	1.9	1.2	1.3	0.8	0.8	6.8	1.8
Leprosy	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Meningococcal infection - invasive	1.2	1.8	0.0	2.2	0.8	0.8	1.0	1.3	1.5
Tuberculosis	5.9	4.5	37.2	5.0	5.3	2.4	7.9	4.4	5.8

* Rates are subject to retrospective revision.

† Not reported for New South Wales where it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.

‡ Infections with Shiga toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

§ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia which reports only genital tract specimens, Northern Territory which excludes ocular specimens, and Western Australia which excludes ocular and perinatal infections.

|| Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NN Not notifiable.

NEC Not elsewhere classified.

NDP No data provided.

Laboratory Serology and Virology Reporting Scheme

There were 6,058 reports received by the Virology and Serology Laboratory Reporting Scheme (LabVISE) in the reporting period, 1 October to 31 December 2007 (Tables 4 and 5).

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2007, and total reports for the year†

	State or territory								This period 2007	This period 2006	Year to date 2007	Year to date 2006
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Measles, mumps, rubella												
Measles virus	–	–	–	–	1	–	–	–	1	3	19	57
Mumps virus	–	3	1	2	3	–	2	–	12	2	53	27
Hepatitis viruses												
Hepatitis A virus	–	2	–	6	1	–	–	–	10	7	41	31
Hepatitis D virus	–	–	–	–	2	–	–	–	2	2	22	7
Arboviruses												
Barmah Forest virus	–	8	–	79	10	–	–	–	97	23	506	288
Flavivirus (unspecified)	–	–	–	15	–	–	–	1	16	4	97	47
Ross River virus	1	5	7	156	27	–	1	6	203	41	1,090	1,062
Adenoviruses												
Adenovirus not typed/ pending	–	77	–	44	156	1	25	–	309	144	1,199	636
Herpes viruses												
Cytomegalovirus	–	22	1	111	100	3	14	–	251	137	1,196	872
Epstein–Barr virus	–	9	18	268	109	3	11	75	493	261	2,458	1,445
Varicella–zoster virus	1	108	4	413	121	4	33	–	684	142	2,809	1,039
Other DNA viruses												
Parvovirus	–	2	–	91	6	–	22	–	121	37	410	186
Poxvirus group not typed	–	–	–	–	–	–	1	–	1	1	3	3
Picornavirus family												
Enterovirus not typed/ pending	–	21	–	11	17	1	1	–	51	9	173	103
Picornavirus not typed	–	–	–	–	–	2	–	–	2	–	9	2
Rhinovirus (all types)	–	68	–	–	10	–	–	–	78	65	323	207
Ortho/paramyxoviruses												
Influenza A virus	–	2	1	25	22	–	16	–	66	39	2,293	340
Influenza B virus	–	3	–	3	12	–	16	–	34	6	165	176
Parainfluenza virus type 1	–	6	–	1	3	–	1	–	11	–	50	74
Parainfluenza virus type 2	–	–	–	2	–	–	–	–	2	3	61	15
Parainfluenza virus type 3	–	28	–	46	45	–	9	–	134	118	507	233
Respiratory syncytial virus	2	35	1	82	26	11	10	–	176	62	2,239	1,816
Other RNA viruses												
HTLV–1	–	–	–	–	2	–	–	–	2	2	14	6
Norwalk agent	–	23	–	1	–	1	346	–	371	440	1,138	1,550
Rotavirus	–	57	–	–	150	3	25	–	253	428	617	1,318

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2007, and total reports for the year,† continued

	State or territory								This period 2007	This period 2006	Year to date 2007	Year to date 2006
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Other												
<i>Chlamydia pneumoniae</i>	1	–	–	–	–	–	2	–	3	–	4	1
<i>Chlamydia psittaci</i>	–	–	–	1	–	1	25	–	27	21	66	64
<i>Chlamydia trachomatis</i> – not typed	3	133	–	1,025	328	14	6	1	1,512	471	7,837	3,875
<i>Chlamydia</i> species	–	1	–	–	–	–	–	–	1	–	3	2
<i>Coxiella burnetii</i> (Q fever)	1	33	–	28	9	–	19	3	93	11	276	106
<i>Mycoplasma pneumoniae</i>	–	5	2	70	25	6	47	11	166	134	1,155	1,035
<i>Rickettsia</i> – spotted fever group	–	3	–	1	2	1	7	–	14	2	112	87
<i>Streptococcus</i> group A	–	7	35	197	–	1	21	–	261	48	1,087	377
<i>Bordetella pertussis</i>	–	7	–	97	32	2	13	–	152	90	818	1,313
<i>Brucella</i> species	–	–	–	3	–	–	–	–	3	–	10	5
<i>Legionella longbeachae</i>	–	–	–	–	–	–	2	–	2	6	8	21
<i>Legionella pneumophila</i>	–	1	–	–	–	–	1	–	2	3	30	28
<i>Cryptococcus</i> species	–	1	–	1	1	–	–	–	3	2	45	19
<i>Leptospira</i> species	–	–	–	8	1	–	–	–	9	2	61	18
<i>Treponema pallidum</i>	–	25	9	211	143	–	1	1	412	99	2,196	785
<i>Entamoeba histolytica</i>	–	–	–	1	–	–	1	–	2	–	8	1
<i>Toxoplasma gondii</i>	–	1	–	2	1	1	3	–	8	3	29	39
<i>Echinococcus granulosus</i>	–	–	–	–	4	1	3	–	8	–	24	3
Total	9	696	79	3,001	1,369	56	684	98	6,058	2,868	31,261	19,319

* State or territory of postcode, if reported, otherwise state or territory of reporting laboratory.

† Data presented are for reports with reports dates in the current period.

– No data received this period.

Table 5. Virology and serology reports by laboratories for the reporting period 1 October to 31 December 2007*

State or territory	Laboratory	October 2007	November 2007	December 2007	Total this period
Australian Capital Territory	The Canberra Hospital	–	–	–	–
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	49	3	90	142
	New Children's Hospital, Westmead	118	73	50	241
	Repatriation General Hospital, Concord	–	–	–	–
	Royal Prince Alfred Hospital, Camperdown	15	22	11	48
	South West Area Pathology Service, Liverpool	57	9	31	97
Queensland	Queensland Medical Laboratory, West End	1,594	1,341	351	3,286
	Townsville General Hospital	–	–	–	–
South Australia	Institute of Medical and Veterinary Science, Adelaide	746	73	574	1,363
Tasmania	Northern Tasmanian Pathology Service, Launceston	25	15	14	54
	Royal Hobart Hospital, Hobart	–	–	–	–
Victoria	Australian Rickettsial Reference Laboratory	38	38	14	90
	Monash Medical Centre, Melbourne	17	28	25	70
	Royal Children's Hospital, Melbourne	20	13	12	45
	Victorian Infectious Diseases Reference Laboratory, Fairfield	398	60	49	507
Western Australia	PathWest Virology, Perth	–	–	–	–
	Princess Margaret Hospital, Perth	–	–	–	–
	Western Diagnostic Pathology	85	–	30	115
Total		3,162	1,675	1,251	6,058

* The complete list of laboratories reporting for the 12 months, January to December 2007, will appear in every report regardless of whether reports were received in this reporting period. Reports are not always received from all laboratories.

– No data received this period.

Additional reports

Australian Sentinel Practice Research Network

The Australian Sentinel Practices Research Network (ASPREN) is a national surveillance system that is owned and operated by the Royal Australian College of General Practitioners and directed through the Discipline of General Practice at the University of Adelaide.

The network consists of general practitioners who report presentations on a number of defined medical conditions each week. ASPREN was established in 1991 to provide a rapid monitoring scheme for infectious diseases that can alert public health officials of epidemics in their early stages as well as play a role in the evaluation of public health campaigns and research of conditions commonly seen in general practice. The aim of ASPREN is to also provide an indicator of the burden of disease in the primary health care setting and to detect trends in consultation rates.

The list of conditions is reviewed annually by the ASPREN management committee and an annual report is published. In 2007, four conditions are being monitored all of which are related to communicable diseases. They include influenza like illness (ILI), gastroenteritis and varicella infections (chickenpox and shingles). Definitions of these conditions are described in Surveillance systems reported in CDI, published in *Commun Dis Intell* 2008;32:134–135.

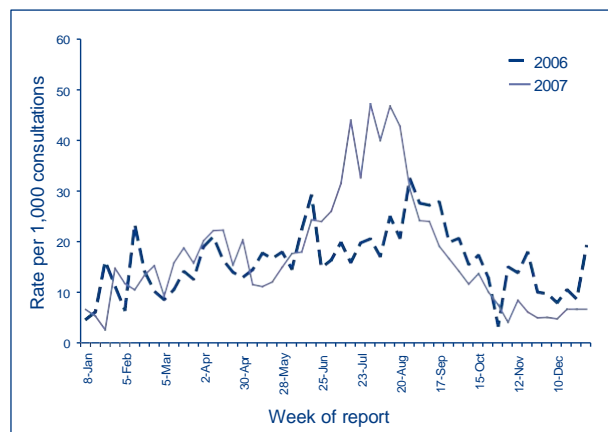
Data on influenza-like illness, gastroenteritis, chickenpox and shingles from 1 January to 31 December 2007 compared with 2006, are shown as the rate per 1,000 consultations in Figures 1, 2, 3 and 4, respectively.

Reporting period 1 October to 31 December 2007

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 92 general practitioners contributed data to ASPREN in the fourth quarter of 2007. Each week an average of 72 general practitioners provided information to ASPREN at an average of 7,231 (range 3,008 to 8,197) consultations per week.

In the fourth quarter of 2007, influenza-like illness (ILI) rates began to decrease from early November. From November to end of December, ILI rates were lower (4 to 8 cases per 1,000 consultations) compared with 8 to 18 cases per 1,000 consultations for the same period in 2006 (Figure 1).

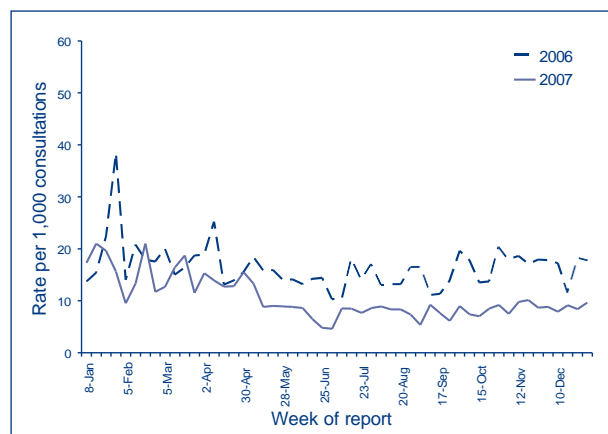
Figure 1. Consultation rates for influenza-like illness, ASPREN, 2006 to 31 December 2007, by week of report



Reports of gastroenteritis from 1 October to 31 December 2007 were lower compared with the same period in 2006 (Figure 2). During this reporting period, consultation rates for gastroenteritis remained constant (between 7 to 10 cases per 1,000 consultations).

Reports of varicella infections were reported at a lower rate for the fourth quarter of 2007 compared with the same period in 2006, but there was no recognisable seasonal pattern. From 1 October to 31 December 2007, rates for chickenpox fluctuated between 0 to 1.3 case per 1,000 consultations (Figure 3).

Figure 2. Consultation rates for gastroenteritis, ASPREN, 2006 to 31 December 2007, by week of report



In the fourth quarter of 2007, rates for shingles fluctuated between less than 1 to 1.4 cases per 1,000 consultations (Figure 4).

Figure 3. Consultation rates for chickenpox, ASPREN, 2006 to 31 December 2007, by week of report

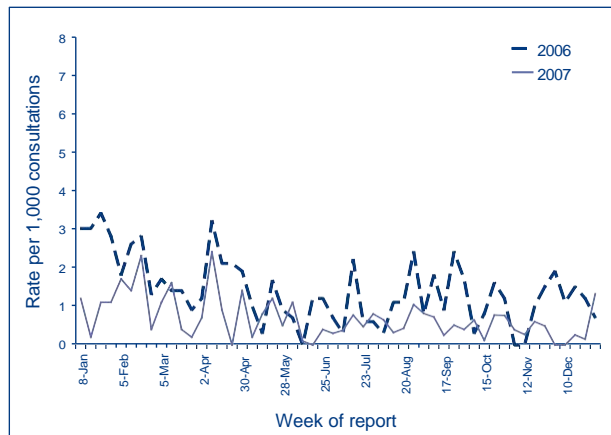
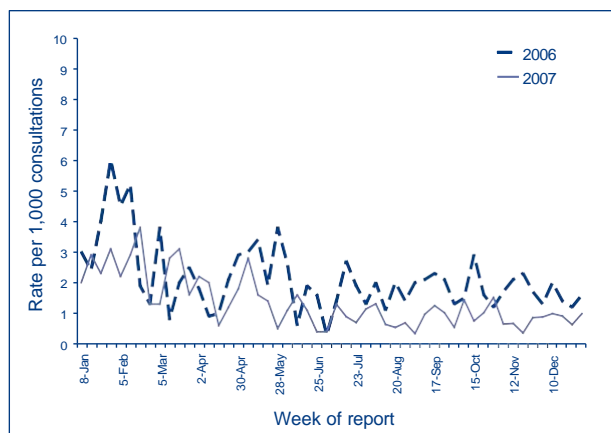


Figure 4. Consultation rates for shingles, ASPREN, 2006 to 31 December 2007, by week of report



Gonococcal surveillance

John Tapsall, The Prince of Wales Hospital, Randwick NSW 2031 for the Australian Gonococcal Surveillance Programme.

The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various States and Territories report data on sensitivity to an agreed 'core' group of antimicrobial agents quarterly. The antibiotics currently routinely surveyed are penicillin, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens

and currently used in Australia to treat gonorrhoea. When in vitro resistance to a recommended agent is demonstrated in 5% or more of isolates from a general population, it is usual to remove that agent from the list of recommended treatment.¹ Additional data are also provided on other antibiotics from time to time. At present all laboratories also test isolates for the presence of high level (plasmid-mediated) resistance to the tetracyclines, known as TRNG. Tetracyclines are however, not a recommended therapy for gonorrhoea in Australia. Comparability of data is achieved by means of a standardised system of testing and a program-specific quality assurance process. Because of the substantial geographic differences in susceptibility patterns in Australia, regional as well as aggregated data are presented. For more information see Commun Dis Intell 2008;32:134.

Reporting period 1 July to 30 September 2007

The AGSP laboratories received a total of 651 gonococcal isolates of which 636 remained viable for susceptibility testing. This was about 25% less than the 869 gonococci reported for the same period in 2006. About 30% of this total was from New South Wales, 20% from Victoria, 17% from Queensland, 13% from each of Western Australia and the Northern Territory and 5% from South Australia. There were nine isolates from Tasmania and three from the Australian Capital Territory.

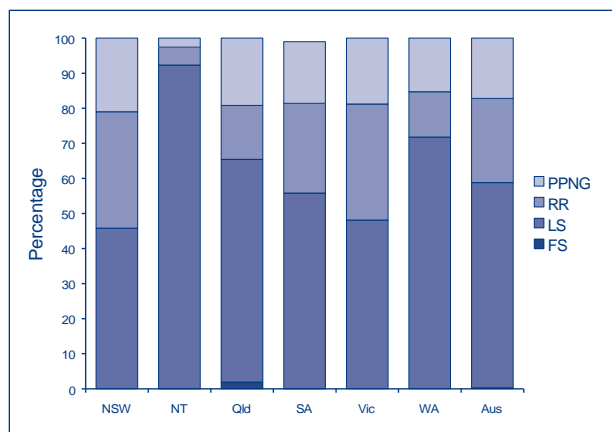
Penicillins

Two hundred and sixty-two (41.1%) of the 636 isolates examined were penicillin resistant by one or more mechanisms. One hundred and nine (17.1%) were penicillinase producing *Neisseria gonorrhoeae* (PPNG) and 153 (24%) resistant by chromosomal mechanisms, (CMRP). The proportion of all strains resistant to the penicillins by any mechanism ranged from 7.5% in the Northern Territory to 54% in New South Wales and 52% in Victoria. High rates of penicillin resistance were also found in South Australia (44%), Queensland (34.6%) and in Western Australia (28.2%). All nine gonococci tested in Tasmania, but none of the three in the Australian Capital Territory, were penicillin resistant.

Figure 5 shows the proportions of gonococci fully sensitive (MIC \leq 0.03 mg/L), less sensitive (MIC 0.06–0.5 mg/L), relatively resistant (MIC \geq 1 mg/L) or else penicillinase producing (PPNG) aggregated for Australia and by state or territory. A high proportion those strains classified as PPNG or else resistant by chromosomal mechanisms fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

In New South Wales most of the penicillin resistance was with CMRP (63, 33.2%) with 40 PPNG (21%) and a similar distribution was also present in Victoria where 25 PPNG represented 18.8% of isolates tested, but 44 CMRP was 33% of isolates tested. In Queensland CMRP represented 15.4% of isolates tested, while PPNG were 19.2%, in South Australia PPNG were 17.6% and CMRP 26.5% and in Western Australia PPNG 15.3% and CMRP 12.9%. PPNG were also present in Tasmania and Northern Territory (3 and 2 isolates respectively), but there were no PPNG in the Australian Capital Territory. CMRP were present in Tasmania (6 isolates) and the Northern Territory (4). All the penicillin resistant strains in the Northern Territory were from Darwin.

Figure 5. Categorisation of gonococci isolated in Australia, 1 July to 30 September 2007, by penicillin susceptibility and region



FS Fully sensitive to penicillin, MIC ≤ 0.03 mg/L.
 LS Less sensitive to penicillin, MIC 0.06–0.5 mg/L.
 RR Relatively resistant to penicillin, MIC ≥ 1 mg/L.
 PPNG Penicillinase producing *Neisseria gonorrhoeae*.

Ceftriaxone

Four isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected, one each in New South Wales and South Australia and two in Queensland. It is emphasised that no treatment failures have been documented locally when a 250 mg IM dose of ceftriaxone has been used.

Spectinomycin

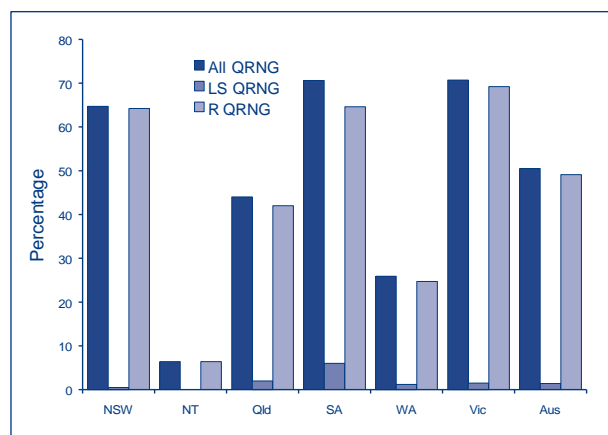
All isolates susceptible to this injectable agent.

Quinolone antibiotics

Nationally, the 321 quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter represented 50.5% of all isolates tested. In the third quarter of 2006, the 325 QRNG represented 38% of all isolates while in 2005 there were 35.5% QRNG and in 2004 QRNG were 24% of all gonococci tested. The majority of QRNG (272 of 321, 98.6%) had higher-level resistance to ciprofloxacin of 1 mg/L or more. QRNG are defined as those isolates with an MIC to ciprofloxacin equal to or greater than 0.06 mg/L. QRNG are further subdivided into less sensitive (ciprofloxacin MICs 0.06–0.5 mg/L) or resistant (MIC ≥ 1 mg/L) groups.

QRNG were detected in all states and territories with the exception of the Australian Capital Territory (Figure 6). The highest proportion of QRNG was found in Victoria where 94 QRNG represented 70.7% of isolates tested and South Australia where there were 24 QRNG (70.6% of isolates). In New South Wales there were 123 QRNG (64.7%), in Queensland 44 (42.3%) and in Western Australia 22 (25.9%) with five QRNG detected the Northern Territory and nine (of 9 tested) in Tasmania.

Figure 6. The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 July to 30 September 2007, by jurisdiction



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.
 R QRNG Ciprofloxacin MICs ≥ 1 mg/L.

High level tetracycline resistance

The number (129) and proportion (20.3%) of high level tetracycline resistance (TRNG) detected was higher than that recorded in this quarter in 2006 (102, 11.9%). TRNG were found in all states and territories except for Tasmania and the Australian Capital Territory and represented between 3.8% (Northern Territory) and 36.5% (Western Australia) of all isolates tested.

Reference

1. Management of sexually transmitted diseases. World Health Organization 1997; Document WHO/GPA/TEM94.1 Rev.1 p 37.

HIV and AIDS surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (Australian Capital Territory, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland,

South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly *Australian HIV Surveillance Report*, and annually in 'HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia, annual surveillance report'. The reports are available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Internet: <http://www.med.unsw.edu.au/nchechr>. Telephone: +61 2 9332 4648. Facsimile: +61 2 9332 1837. For more information see *Commun Dis Intell* 2005;29:91–92.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 April to 30 June 2007, as reported to 30 September 2007, and reported for 1 July to 30 September 2007, as reported to 31 December 2007 are included in this issue of *Communicable Diseases Intelligence* (Tables 1, 2, 3 and 4).

Table 1. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 April to 30 June 2007, by sex and state or territory of diagnosis

	Sex	State or territory								Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2007	This period 2006	YTD 2007	YTD 2006
HIV diagnoses	Female	0	13	0	6	2	0	5	2	28	30	64	69
	Male	0	101	2	40	9	1	68	8	229	195	488	416
	Not reported	0	0	0	0	0	0	0	0	0	0	0	0
	Total*	0	116	2	46	11	1	73	10	259	225	554	485
AIDS diagnoses	Female	0	0	0	0	0	0	0	0	0	6	1	10
	Male	0	5	0	5	0	0	9	1	20	39	44	85
	Total*	0	5	0	5	0	0	10	1	21	45	46	96
AIDS deaths	Female	0	0	0	0	0	0	1	1	2	1	2	4
	Male	0	0	0	3	0	0	1	0	4	17	15	33
	Total*	0	0	0	3	0	0	2	1	6	19	17	39

* Totals include people whose sex was reported as transgender.

Table 2. Cumulative diagnoses of HIV infection, AIDS, and deaths following AIDS since the introduction of HIV antibody testing to 30 June 2007, and reported by 30 September 2007, by sex and state or territory

	Sex	State or territory								Australia
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	32	898	23	285	104	12	379	212	1,945
	Male	260	13,661	135	2,814	964	110	5,380	1,239	24,563
	Not reported	0	230	0	0	0	0	22	0	252
	Total*	292	14,818	158	3,108	1,069	122	5,803	1,458	26,828
AIDS diagnoses	Female	10	251	4	72	32	4	111	41	525
	Male	92	5,432	45	1,043	409	53	2,015	428	9,517
	Total*	102	5,701	49	1,117	442	57	2,139	471	10,078
AIDS deaths	Female	7	136	1	42	20	2	62	27	297
	Male	73	3,586	28	672	280	33	1,416	295	6,383
	Total*	80	3,733	29	716	300	35	1,487	323	6,703

* Totals include people whose sex was reported as transgender.

Table 3. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 July to 30 September 2007, by sex and state or territory of diagnosis

	Sex	State or territory								Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2007	This period 2006	YTD 2007	YTD 2006
HIV diagnoses	Female	0	17	0	5	4	0	10	3	39	31	105	100
	Male	2	80	0	36	7	1	69	18	213	203	707	619
	Not reported	0	2	0	0	0	0	0	0	2	0	4	0
	Total*	2	101	0	41	11	1	79	21	256	236	818	721
AIDS diagnoses	Female	0	1	0	0	0	0	1	0	2	6	4	16
	Male	0	3	0	3	0	2	10	2	20	49	71	134
	Total*	0	4	0	3	0	2	11	2	22	57	76	153
AIDS deaths	Female	0	0	0	0	0	0	0	1	1	0	5	4
	Male	0	3	0	0	0	0	1	1	5	24	23	57
	Total*	0	3	0	0	0	0	1	2	6	24	28	63

* Totals include people whose sex was reported as transgender.

Table 4. Cumulative diagnoses of HIV infection, AIDS, and deaths following AIDS since the introduction of HIV antibody testing to 30 September 2007, and reported by 31 December 2007, by sex and state or territory

	Sex	State or territory								Australia
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	32	914	23	291	108	12	389	217	1,986
	Male	262	13,740	135	2,851	972	111	5,449	1,262	24,782
	Not reported	0	232	0	0	0	0	22	0	254
	Total*	294	14,917	158	3,151	1,081	123	5,882	1,486	27,092
AIDS diagnoses	Female	10	252	4	73	32	4	113	41	529
	Male	92	5,438	45	1,046	409	55	2,035	434	9,554
	Total*	102	5,708	49	1,121	442	59	2,161	477	10,119
AIDS deaths	Female	7	136	1	42	20	2	64	28	300
	Male	73	3,589	29	673	280	33	1,418	297	6,392
	Total*	80	3,736	30	717	300	35	1,491	326	6,715

* Totals include people whose sex was reported as transgender.

Childhood immunisation coverage

Tables 5, 6 and 7 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

The data show the percentage of children fully immunised at 12 months of age for the cohort born between 1 July and 30 September 2006, at 24 months of age for the cohort born between 1 July and 30 September 2005, and at 6 years of age for the cohort born between 1 July and 30 September 2001 according to the National Immunisation Program.

For information about the Australian Childhood Immunisation Register see *Surveillance systems reported in CDI*, published in *Commun Dis Intell* 2008;32:133–134 and for a full description of the methodology used by the Register see *Commun Dis Intell* 1998;22:36–37.

Commentary on the trends in ACIR data is provided by the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS). For further information please contact the NCIRS at telephone: +61 2 9845 1435, Email: brynleyb@chw.edu.au.

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia increased marginally by 0.2 percentage points to 91.5% (Table 5). There were no important changes in coverage for any individual vaccines due at 12 months of age or by jurisdiction.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia increased by 0.5 percentage points to 93.0% and is now at its highest recorded level (Table 6). The greatest increase occurred in Western Australia where 'fully immunised' coverage increased by a significant 0.9 percentage points and coverage for individual

Table 5. Percentage of children immunised at 1 year of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2006; assessment date 31 December 2007

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,206	24,414	866	14,845	4,848	1,687	18,023	7,581	73,470
Diphtheria, tetanus, pertussis (%)	93.0	92.0	90.9	92.3	92.3	93.8	93.1	89.4	92.1
Poliomyelitis (%)	93.0	92.0	90.9	92.2	92.3	93.7	93.1	89.4	92.1
<i>Haemophilus influenzae</i> type b (%)	95.4	94.8	95.3	93.9	94.6	96.1	94.8	92.7	94.4
Hepatitis B (%)	95.4	94.8	95.4	93.8	94.5	96.0	94.8	92.9	94.4
Fully immunised (%)	92.8	91.7	90.7	91.4	91.6	93.5	92.2	88.8	91.5
Change in fully immunised since last quarter (%)	-1.6	+0.0	+0.0	+0.5	+0.4	+1.9	+0.7	-0.8	+0.2

Table 6. Percentage of children immunised at 2 years of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2005; assessment date 31 December 2007

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,106	23,440	945	14,679	4,610	1,571	16,716	6,982	70,049
Diphtheria, tetanus, pertussis (%)	95.5	95.3	95.8	94.6	95.2	96.9	95.9	94.5	95.3
Poliomyelitis (%)	95.4	95.2	95.8	94.5	95.1	96.9	95.9	94.5	95.2
<i>Haemophilus influenzae</i> type b (%)	95.7	95.4	94.8	93.6	94.2	96.8	95.1	94.4	94.8
Measles, mumps, rubella (%)	94.7	94.0	95.6	93.6	94.2	96.1	95.3	93.2	94.3
Hepatitis B (%)	96.2	96.0	97.1	95.5	95.7	97.3	96.6	95.3	96.0
Fully immunised (%)	93.9	92.9	94.1	92.1	92.9	95.7	94.1	91.4	93.0
Change in fully immunised since last quarter (%)	-0.1	+0.6	+0.3	+0.3	+0.3	+0.8	+0.6	+0.9	+0.5

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2007;32:148.

vaccines also increased in similar amounts, up to 1.2 percentage points for *Haemophilus influenzae* type b vaccine.

Immunisation coverage for children ‘fully immunised’ at six years of age for Australia increased a further 0.2 percentage points from the last quarter’s 0.7 percentage points increase to reach 88.8%, its highest recorded level (Table 7). There were no important changes in coverage for any individual vaccines due at six years of age or by jurisdiction.

Figure 7 shows the trends in vaccination coverage from the first ACIR-derived published coverage estimates in 1997 to the current estimates. There is a clear trend of increasing vaccination coverage over time for children aged 12 months, 24 months and six years, although the rate of increase has slowed over the past few years for all age groups. It should be noted that currently, coverage for the vaccines added to the NIP since 2003 (varicella at 18 months,

meningococcal C conjugate at 12 months and pneumococcal conjugate at 2, 4, and 6 months) are not included in the 12 or 24 months coverage data respectively.

National Enteric Pathogens Surveillance System

The National Enteric Pathogens Surveillance System (NEPSS) collects, analyses and disseminates data on human enteric bacterial infections diagnosed in Australia. Communicable Diseases Intelligence NEPSS quarterly reports include only Salmonella. NEPSS receives reports of Salmonella isolates that have been serotyped and phage typed by the five Salmonella typing laboratories in Australia. Salmonella isolates are submitted to these laboratories for typing by primary diagnostic laboratories throughout Australia.

A case is defined as the isolation of a Salmonella from an Australian resident, either acquired locally or as a result of overseas travel, including isolates detected during immigrant and refugee screening. Second and subsequent identical isolates from an individual within six months are excluded, as are isolates from overseas visitors to Australia. The date of the case is the date the primary diagnostic laboratory isolated Salmonella from the clinical sample.

Quarterly reports include historical quarterly mean counts. These should be interpreted cautiously as they may be affected by outbreaks and by surveillance artefacts such as newly recognised and incompletely typed Salmonella.

Figure 7. Trends in vaccination coverage, Australia, 1997 to 30 September 2007, by age cohorts

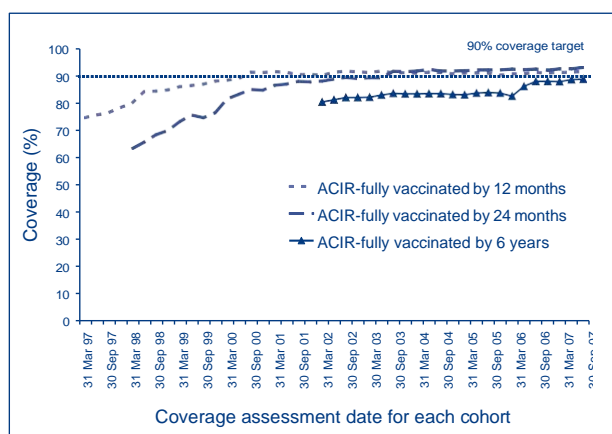


Table 7. Percentage of children immunised at 6 years of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2001; assessment date 31 December 2007

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,061	22,548	877	14,350	4,721	1,511	16,472	6,878	68,418
Diphtheria, tetanus, pertussis (%)	89.6	89.8	88.8	88.2	88.0	89.0	91.7	86.0	89.4
Poliomyelitis (%)	90.1	89.8	88.9	88.3	88.2	88.9	91.9	86.3	89.5
Measles, mumps, rubella (%)	89.3	89.8	88.7	88.3	88.1	89.7	91.9	86.2	89.5
Fully immunised (%)	88.8	89.1	88.4	87.6	87.6	88.2	91.4	85.2	88.8
Change in fully immunised since last quarter (%)	-0.3	+0.9	+1.1	-0.9	-0.2	-2.1	+0.3	+0.5	+0.2

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2002;26:88

NEPSS may be contacted at the Microbiological Diagnostic Unit, Public Health Laboratory, Department of Microbiology and Immunology, The University of Melbourne; by telephone: +61 3 8344 5701, facsimile: +61 3 8344 7833 or email joanp@unimelb.edu.au

Scientists, diagnostic and reference laboratories contribute data to NEPSS, which is supported by state and territory health departments and the Australian Government Department of Health and Ageing.

Reports to the National Enteric Pathogens Surveillance System of *Salmonella* infection for the period 1 October to 31 December 2007 are included in Tables 8 and 9. Data include cases reported and entered by 23 January 2008. Counts are preliminary, and subject to adjustment after completion of typing and reporting of further cases to NEPSS. For more information see *Commun Dis Intell* 2008;32:136.

Reporting period 1 October to 31 December 2007

There were 1,815 reports to NEPSS of human *Salmonella* infection in the fourth quarter of 2007, approximately 40% more than in the third quarter of 2007. Although this count is fairly typical of the incidence of salmonellosis at this time of year, final inclusion of all data will probably see a count around 10% more than the recent historical average.

During the fourth quarter of 2007, the 25 most common *Salmonella* types in Australia accounted for 1,121 cases, 62% of all reported human *Salmonella* infections. Twenty-one of the 25 most common *Salmonella* infections in the fourth quarter of 2007 were also among those most commonly reported in the preceding quarter.

The most notable feature of the current data is a large outbreak of *S. Typhimurium* phage type 44, with cases reported predominantly from Victoria and New South Wales, but also South Australia, Queensland, the Northern Territory and Tasmania. Cases of *S. Typhimurium* (not phage typed), apparently reflecting one or more outbreaks in Western Australia during the third quarter of 2007, have declined considerably.

Other increases above the historical average for the period include *S. Aberdeen* (in the eastern states), *S. Stanley* (widespread, but typically acquired overseas), *S. Typhimurium* phage type 12 (widespread), *S. Newport* (particularly Victoria), and *S. Singapore* (Victoria, with cases in several other states).

Acknowledgement: We thank scientists, contributing laboratories, state and territory health departments, and the Australian Government Department of Health and Ageing for their contributions to NEPSS.

Table 8. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 October to 31 December 2007, as reported to 23 January 2008

	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total all <i>Salmonella</i> for quarter	25	455	97	458	88	38	478	176	1,815
Total contributing <i>Salmonella</i> types	17	117	43	95	39	13	115	46	218

Table 9. Top 25 Salmonella types identified in Australia, 1 October to 31 December 2007, by state or territory

National rank	Salmonella type	State or territory								Total 4th quarter 2007	Last 10 years mean 4th quarter	Year to date 2007	Year to date 2006
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
1	S. Typhimurium PT 135	0	34	0	21	3	7	79	0	144	169	669	668
2	S. Typhimurium PT 44	0	30	3	7	14	1	82	0	137	47	470	241
3	S. Saintpaul	0	10	9	61	1	0	3	7	91	95	371	569
4	S. Birkenhead	1	35	1	31	0	0	1	0	69	62	232	271
5	S. Typhimurium PT 9	4	22	0	4	5	1	30	0	66	114	677	355
6	S. Typhimurium (not phage typed)	0	0	0	0	0	0	0	58	58	0	190	0
7	S. Virchow PT 8	1	8	3	32	3	0	4	0	51	54	235	272
8	S. Typhimurium PT 170	0	19	0	7	0	1	22	0	49	73	275	412
9	S. Infantis	1	23	5	0	2	1	11	5	48	30	193	176
10	S. Aberdeen	0	5	3	26	0	2	1	0	37	22	145	152
11	S. Typhimurium PT 197	2	18	0	8	0	0	5	0	33	30	194	147
12	S. Stanley	0	11	0	5	2	2	7	6	33	17	134	104
13	S. Chester	1	10	3	12	0	0	2	3	31	38	158	158
14	S. Muenchen	1	8	4	14	0	1	1	1	30	29	137	156
15	S. Typhimurium PT 12	2	9	0	5	3	0	7	3	29	18	108	117
16	S. Enteritidis (not phage typed)	0	0	0	0	0	0	0	28	28	0	48	0
17	S. Waycross	0	12	0	11	0	0	0	1	24	19	101	142
18	S. Newport	0	5	1	5	1	1	9	2	24	10	74	51
19	S. Hvittingfoss	0	1	0	20	0	0	1	1	23	20	115	137
20	S. Typhimurium PT RDNC	0	5	1	3	1	0	11	0	21	18	117	103
21	S. Mississippi	0	0	0	1	0	18	1	0	20	17	135	91
22	S. Singapore	0	4	0	3	3	0	10	0	20	13	75	54
23	S. Typhimurium (PT pending)	0	0	0	0	0	0	20	0	20	0	23	0
24	S. Typhimurium untypable	1	7	1	3	1	0	6	0	19	15	90	69
25	S. Montevideo	0	6	1	4	1	0	2	2	16	13	113	65