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 2007;31:158.

Reporting period 1 July to 30 September 2007

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory and Tasmania. A total of 98 general practitioners contributed data to ASPREN in the third quarter of 2007. Each week an average of 74 general practitioners provided information to ASPREN at an average of 8,389 (range 7,354 to 9,356) consultations per week.

From July to the end of August 2007, influenza-like illness (ILI) rates were high (30 to 47 cases per 1,000 consultations) compared with the same reporting period in 2006 (16 to 32 cases per 1,000 consultations) (Figure 1). ILI rates peaked to 47 cases per 1,000 consultations at the end of July and began to decrease from mid-September (14 to 19 cases per 1,000 consultations) compared with 20 to 28 cases per 1,000 consultations for the same period in 2006.

Reports of gastroenteritis from 1 July to 30 September 2007 were lower compared to the same period in 2006 (Figure 2). During this reporting period, consultation rates for gastroenteritis remained constant (between 5 to 9 cases per 1,000 consultations).

Reports of varicella infections were reported at a lower rate for the third quarter of 2007 compared with the same period in 2006, but there was no recognisable seasonal pattern. From 1 July to 30 September 2007, rates for chickenpox fluctuated between 0.4 to 1 case per 1,000 consultations (Figure 3).

In the third quarter of 2007, rates for shingles fluctuated between less than 1 to 1.3 cases per 1,000 consultations (Figure 4).

Figure 1. Consultation rates for influenza like illness, ASPREN, 2006 to 30 September 2007, by week of report

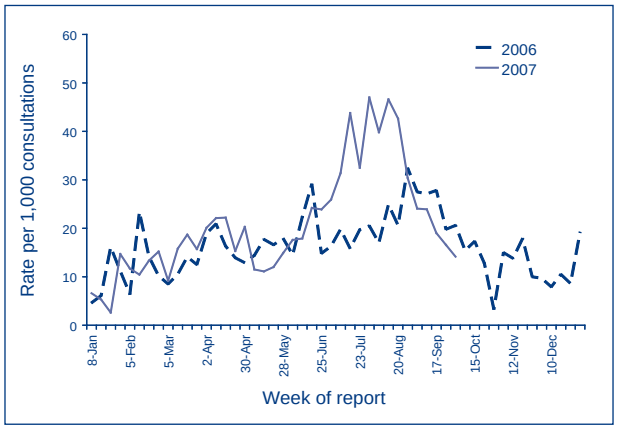


Figure 2. Consultation rates for gastroenteritis, ASPREN, 2006 to 30 September 2007, by week of report

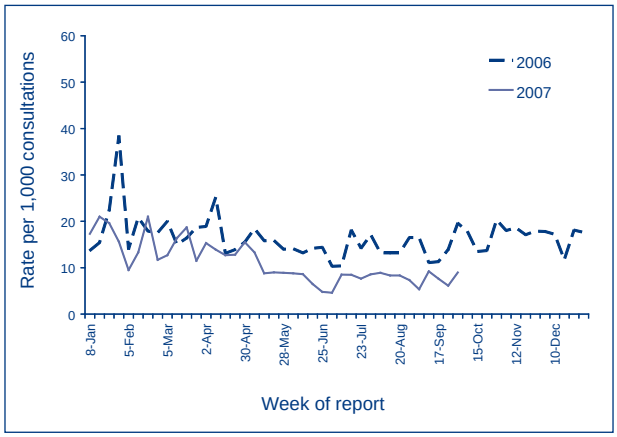


Figure 3. Consultation rates for chickenpox, ASPREN, 2006 to 30 September 2007, by week of report

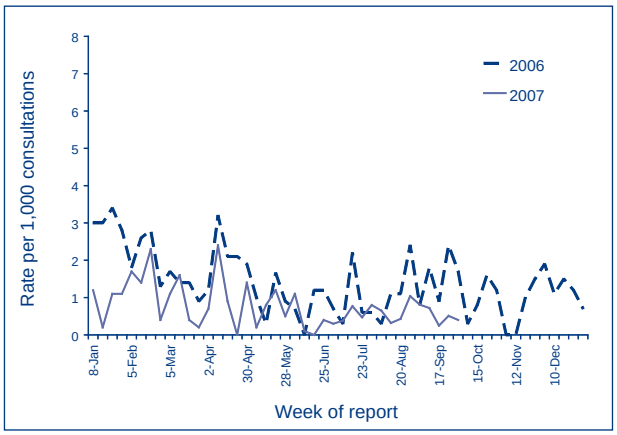
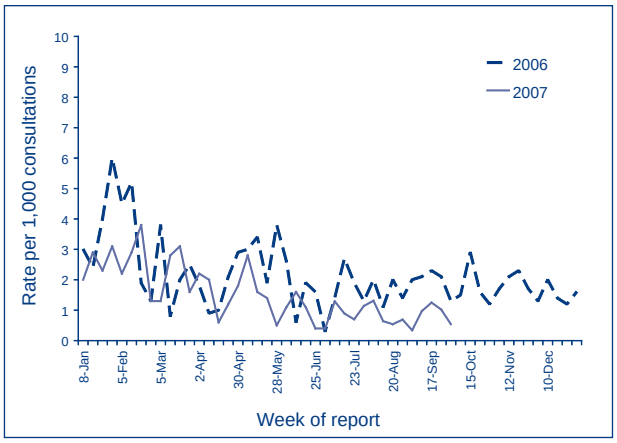


Figure 4. Consultation rates for shingles, ASPREN, 2006 to 30 September 2007, by week of report



Childhood immunisation coverage

Tables 1, 2 and 3 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 April and 30 June 2006, at 24 months of age for the cohort born between 1 April and 30 June 2005, and at 6 years of age for the cohort born between 1 April and 30 June 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 *2007;31:163–164 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: brynleyh@chw.edu.au

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia increased marginally by 0.1 percentage points to 91.3% (Table 1). 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 remained at 92.5%, identical to the previous quarter (Table 2). There were no significant changes in any jurisdiction or in coverage for individual vaccines. However, it is important to note that, for the two vaccines where no further doses are due between 6 months and 24 months (diphtheria-tetanus-pertussis and polio), coverage at the national level was 95.0% and 94.9%, respectively at 24 months versus 91.9% at 12 months. This suggests that delayed notification or delayed vaccination is substantially decreasing coverage estimates at 12 months of age.

Immunisation coverage for children 'fully immunised' at 6 years of age for Australia increased from the last quarter by 0.7 percentage points to 88.6% to reach its highest recorded level (Table 3). Coverage for all three individual vaccines measured at 6 years of age increased by 0.5–0.6 percentage points and for each of them is now greater than 89% for the first time. Significant increases in coverage in the Northern Territory and South Australia appear to be the main driver of the increases nationally.

Figure 5 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 6 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 National Immunisation Program 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.

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

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,115	22,747	951	14,371	4,518	1,380	16,428	6,996	68,506
Diphtheria, tetanus, pertussis (%)	94.5	92.0	90.8	91.8	91.8	92.0	92.6	90.2	91.9
Poliomyelitis (%)	94.6	92.0	90.8	91.7	91.8	92.0	92.5	90.1	91.9
Haemophilus influenzae type b (%)	96.0	95.0	94.6	93.8	94.4	94.9	94.6	93.8	94.5
Hepatitis B (%)	95.9	94.9	95.3	93.6	94.3	94.6	94.6	93.7	94.4
Fully immunised (%)	94.4	91.7	90.6	90.9	91.2	91.7	91.5	89.6	91.3
Change in fully immunised since last quarter (%)	+0.1	+0.2	-0.5	-0.0	+0.7	+0.3	-0.3	+0.7	+0.1

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

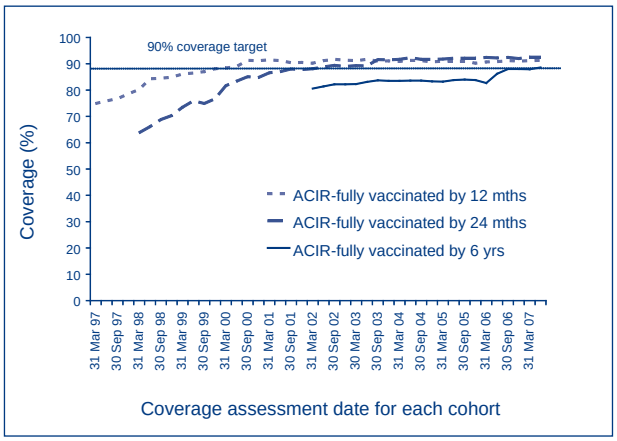
Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,034	22,762	934	14,745	4,498	1,501	16,369	6,893	68,736
Diphtheria, tetanus, pertussis (%)	95.8	95.1	96.0	94.5	94.9	96.5	95.7	93.7	95.0
Poliomyelitis (%)	95.7	95.0	96.2	94.4	94.9	96.4	95.6	93.7	94.9
Haemophilus influenzae type b (%)	95.8	94.9	95.0	93.6	93.7	96.2	94.5	93.2	94.3
Measles, mumps, rubella (%)	95.5	93.7	95.9	93.5	94.1	95.8	94.6	92.5	93.9
Hepatitis B (%)	96.1	95.8	97.1	95.6	95.7	97.0	96.2	94.6	95.8
Fully immunised (%)	93.9	92.3	93.8	91.9	92.6	94.9	93.5	90.5	92.5
Change in fully immunised since last quarter (%)	+2.0	+0.0	+1.3	-0.3	+1.1	-0.2	-0.3	-0.1	-0.1

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2006;30:488.

Table 3. Percentage of children immunised at 6 years of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2001; assessment date 30 September 2007

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	992	21,705	928	14,180	4,484	1,441	15,461	6,613	65,804
Diphtheria, tetanus, pertussis (%)	90.2	89.0	88.0	89.1	88.3	90.7	91.7	85.5	89.3
Poliomyelitis (%)	90.2	88.8	87.6	89.2	88.4	90.8	91.9	85.6	89.3
Measles, mumps, rubella (%)	90.0	88.9	87.9	89.2	88.1	90.8	91.7	85.6	89.3
Fully immunised (%)	89.1	88.2	87.3	88.5	87.7	90.3	91.1	84.7	88.6
Change in fully immunised since last quarter (%)	-0.3	+0.5	+2.5	+0.7	+2.0	+0.6	+0.5	+0.5	+0.7

Figure 5. Trends in vaccination coverage, Australia, 1997 to 30 June 2007, by age cohorts



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 per cent 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 *2007;31:162.*

Reporting period 1 April to 30 June 2007

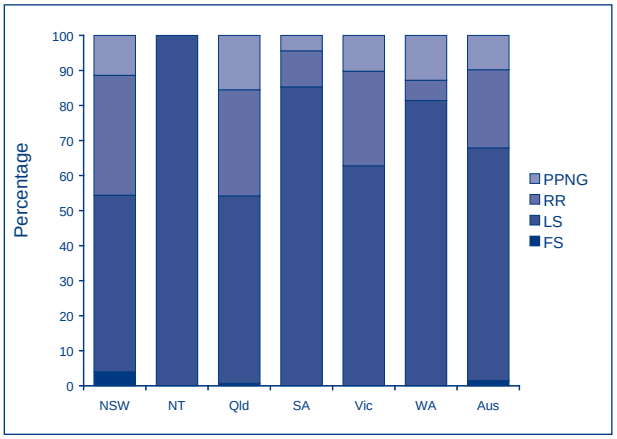
The AGSP laboratories received a total of 823 isolates in this quarter of which 806 underwent susceptibility testing. About 30% of this total was from New South Wales, 18% each from Victoria and Queensland, 14% from the Northern Territory, 11% from Western Australia and 8% from South Australia. Small numbers of isolates were also received from Tasmania and the Australian Capital Territory.

Penicillins

In this quarter, 259 (32.1%) of all isolates examined were penicillin resistant by one or more mechanisms. Seventy-nine (9.8%) were penicillinase-producing *Neisseria gonorrhoeae* (PPNG) and 180 (22.3%) resistant by chromosomal mechanisms, (CMRP). These proportions are little different from those recorded in this quarter in 2006. The proportion of all strains resistant to the penicillins by any mechanism ranged from nil in the Northern Territory to 45% in New South Wales and Queensland. High rates of penicillin resistance were also found in Victoria (37%), Western Australia (18.6%) and South Australia 14.7%).

Figure 6 shows the proportions of gonococci fully sensitive (MIC ≤ 0.03 mg/L), less sensitive (MIC 0.06–0.5 mg/L), relatively resistant (MIC ≥ 1 mg/L) or else PPNG aggregated for Australia and by state and territory. A high proportion of those strains classified as PPNG or CMRP fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

Figure 6. Categorisation of gonococci isolated in Australia, 1 April to 30 June 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.*

In New South Wales and Victoria most of the penicillin resistance was due to CMRP. In New South Wales 84 (34%) were CMRP with 28 PPNG (11.4%) and in Victoria 40 (27%) were CMRP and 15 (10%) PPNG. In Queensland 43 CMRP comprised 30.3% of isolates and 22 PPNG comprised 15.5% of isolates. In Western Australia PPNG were more prominent (12.8%, 11 isolates) with 5.8% CMRP. Of 10 resistant strains in South Australia, seven were CMRP and

three were PPNG. One CMRP was reported from Tasmania but there were no PPNG. There were no penicillin resistant gonococci in the Northern Territory or the Australian Capital Territory.

Ceftriaxone

Eleven isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected: six in New South Wales, three in Victoria and one each in Queensland and South Australia.

Spectinomycin

All isolates were susceptible to this injectable agent.

Quinolone antibiotics

A total of 359 quinolone resistant *N. gonorrhoeae* (QRNG) was present in this quarter and represented 44.5% of all gonococci tested, compared with 33.7% in this quarter in 2006. In 2005, 30% of all gonococci were QRNG. The majority of QRNG in the current period (348, 97%) exhibited higher-level resistance (ciprofloxacin MICs 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 jurisdictions except Tasmania, the Northern Territory and the Australian Capital Territory (Figure 7). The highest number (152) and proportion (62%) of QRNG were found in New South Wales. QRNG were also prominent in Victoria where 80 QRNG represented 54% of isolates, Queensland 74 QRNG (52%), South Australia 30 QRNG (44%) and Western Australia 22 QRNG (25.6%).

High level tetracycline resistance

The number (121) of high level tetracycline resistance (TRNG) detected approximated that found in this quarter in 2006 (117) and represented 15% of all isolates. The highest proportion of TRNG in any jurisdiction (38%) was in Western Australia and the highest number (42) was in New South Wales. TRNG were present in all states except Tasmania. No TRNG were found in the Northern Territory or the Australian Capital Territory.

Reference

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

Figure 7. The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae*, Australia, 1 April to 30 June 2007, by state or territory

LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs ≥1 mg/L.

Meningococcal surveillance

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

The reference laboratories of the Australian Meningococcal Surveillance Programme report data on the number of laboratory confirmed cases confirmed either by culture or by non-culture based techniques. Culture positive cases, where a Neisseria meningitidis is grown from a normally sterile site or skin, and non-culture based diagnoses, derived from results of nucleic acid amplification assays and serological techniques, are defined as invasive meningococcal disease (IMD) according to Public Health Laboratory Network definitions. Data contained in the quarterly reports are restricted to a description of the number of cases per jurisdiction, and serogroup, where known. A full analysis of laboratory confirmed cases of IMD is contained in the annual reports of the Programme, published in Communicable Diseases Intelligence. For more information see Commun Dis Intell *2007;31:162.*

Laboratory confirmed cases of invasive meningococcal disease for the period 1 July to 30 September 2007, are included in this issue of Communicable Diseases Intelligence *(Table 6).*

Table 6. Number of laboratory confirmed cases of invasive meningococcal disease, Australia, 1 July to 30 September 2007, by serogroup and state or territory

State or territory	Year	Serogroup													
		A		B		C		Y		W135		ND		All	
		Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD
Australian Capital Territory	07			1	3						1			1	4
	06			1	1	0	1	0		0		0		1	2
New South Wales	07			35	52	1	7	2	4	0	1	3	7	41	70
	06			24	46	9	13	0	1	1	3	2	5	36	68
Northern Territory	07			0	1	0	1							0	2
	06			1	3									1	3
Queensland	07			24	43	4	5	1	1	2	2		1	31	52
	06			20	45	0	4			1	1			21	52
South Australia	07			5	9	1	1					1	1	7	11
	06			3	9			0	1	1	1			4	11
Tasmania	07			2	2			1	1		1			3	5
	06			0	3	0	1							0	4
Victoria	07			14	35	0	2	1	4	1	2	3	4	19	47
	06			18	47	1	3	0	1	3	5	1	1	23	57
Western Australia	07			8	15									8	15
	06			6	15					1	1			7	16
Total	07			89	160	6	16	5	10	3	6	7	13	110	205
	06			73	169	10	22	0	3	7	10	3	6	93	210

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 six* Salmonella *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 6 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.

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 July to 30 September 2007 are included in Tables 7 and 8. Data include cases reported and entered by 19 October 2007. 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 *2007;31:163–164.*

Reporting period 1 July to 30 September 2007

There were 1,284 reports to NEPSS of human *Salmonella* infection in the third quarter of 2007. The annual cycle of *Salmonella* incidence typically reaches a nadir in the third quarter. Although this count represents a marked decline in the incidence of salmonellosis from the first and second quarters this year (when a total of 5,749 reports were received) it still represents the highest count in the

third quarter for more than 15 years, and is approximately 20% greater than the 10-year historical mean for this quarter.

During the third quarter of 2007, the 25 most common *Salmonella* types in Australia accounted for 721 cases, 56% of all reported human *Salmonella* infections. Fifteen of the 25 most common *Salmonella* infections in the third quarter of 2007 were also amongst those most commonly reported in the preceding quarter.

The most notable feature of the current data is a large outbreak of *S.* Typhimurium in Western Australia. Some isolates from this outbreak have been characterised as phage type 12, the remainder have not been phage typed.

Other increases above the historical average for the period include *S.* Infantis (South Australia and New South Wales), *S.* Typhimurium phage type U290 (New South Wales), *S.* Virchow phage type 45 (Western Australia) and *S.* Typhimurium phage type 44 (Victoria and Queensland). More modest increases include *S.* Typhimurium phage type 22 and *S.* Anatum (both mostly in Queensland), *S.* Typhimurium phage type 193 (South Australia, New South Wales and Victoria), and *S.* Newport and *S.* Typhimurium phage type U302 (both mostly in Victoria).

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 7. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 July to 30 September 2007, as reported to 19 October 2007

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total all *Salmonella* for quarter	20	289	63	254	117	20	288	233	1,284
Total contributing *Salmonella* types	16	105	39	97	57	13	103	39	218

Table 8. Top 25 *Salmonella* types identified in Australia, 1 July to 30 September 2007, by state or territory

National rank	*Salmonella* type	State or territory								Total 3rd quarter 2007	Last 10 years mean 3rd quarter	Year to date 2007	Year to date 2006
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
1	*S.* Typhimurium (not phage typed)	0	0	0	0	0	0	0	128	128	0.5	131	0
2	*S.* Typhimurium PT 135	1	21	1	19	2	3	29	0	76	95	520	546
3	*S.* Typhimurium PT 9	0	15	1	4	6	1	24	0	51	69	610	273
4	*S.* Infantis	1	15	4	4	12	0	5	3	44	24	141	146
5	*S.* Saintpaul	0	10	3	20	0	0	6	4	43	48	270	324
6	*S.* Typhimurium PT 44	0	6	0	9	1	0	17	2	35	9	326	125
7	*S.* Stanley	1	8	0	5	1	0	13	4	32	19	99	73
8	*S.* Typhimurium PT 170	0	10	0	4	0	2	10	0	26	26	222	274
9	*S.* Virchow PT 8	1	3	1	16	1	0	0	0	22	27	178	217
10	*S.* Typhimurium PT 197	0	6	0	9	1	1	5	0	22	17	159	84
11	*S.* Enteritidis (not phage typed)	0	0	0	0	0	0	2	20	22	0	23	0
12	*S.* Typhimurium PT 193	0	5	1	2	8	0	5	0	21	1.8	38	10
13	*S.* Typhimurium PT U290	1	15	0	1	0	0	3	0	20	9	46	25
14	*S.* Typhimurium RDNC	1	12	0	3	1	0	2	0	19	18	94	85
15	*S.* Birkenhead	0	10	0	5	0	0	3	0	18	23	162	219
16	*S.* Anatum	0	3	2	7	0	0	2	3	17	12	58	89
17	*S.* Muenchen	2	2	2	3	1	0	2	4	16	17	104	122
18	*S.* Chester	0	0	2	6	0	0	5	2	15	22	126	119
19	*S.* Enteritidis PT 6a	0	3	0	4	0	0	7	0	14	10	54	37
20	*S.* Singapore	0	9	0	1	0	0	3	1	14	8	54	38
21	*S.* Virchow PT 45	0	1	0	1	0	0	0	12	14	0.1	16	4
22	*S.* Aberdeen	0	1	0	12	0	0	0	0	13	11	104	124
23	*S.* Typhimurium untypable	2	6	0	1	1	0	3	0	13	10	70	55
24	*S.* Newport	0	0	0	1	2	2	8	0	13	9	48	39
25	*S.* Montevideo	0	7	1	3	0	0	1	1	13	3.7	96	30