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. Electronic, web-based data collection was established in 2006.

The list of conditions is reviewed annually by the ASPREN management committee. In 2009, 4 conditions are being monitored. 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 *2009;33:83–84.*

Reporting period 1 October to 31 December 2008

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 104 general practitioners contributed data to ASPREN in the 4th quarter of 2008. Each week an average of 75 general practitioners provided information to ASPREN at an average of 6,955 (range 3,560 to 7,870) consultations per week.

ILI rates reported from 1 October to 31 December 2008 were lower (4–11 cases per 1,000 consultations) compared with the same reporting period in 2007 (4–14 cases per 1000 consultations. The ILI rates reported to ASPREN decreased more rapidly from the season's peak in 2008 than the decline in rates from the 2007 peak (Figure 1).

Reports of gastroenteritis from 1 October to 31 December 2008 were lower compared with the same period in 2007 (Figure 2). During this reporting period, consultation rates for gastroenteritis ranged from 1 to 8 cases per 1,000 consultations.

Figure 1. Consultation rates for influenza-like illness, ASPREN, 1 January 2007 to 31 December 2008, by week of report

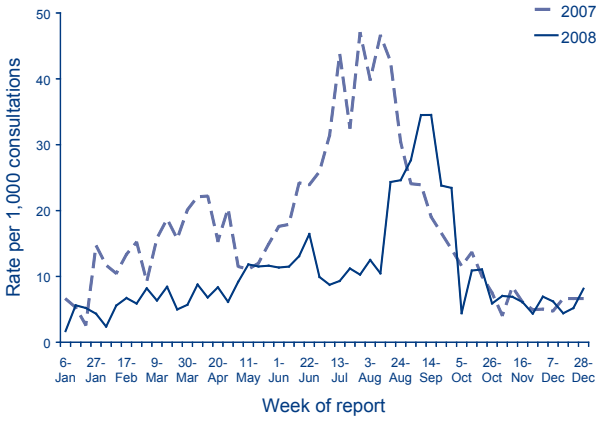
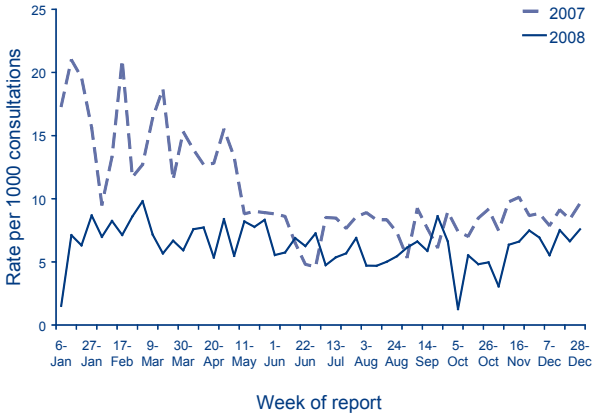


Figure 2. Consultation rates for gastroenteritis, ASPREN, 1 January 2007 to 31 December 2008, by week of report



Reports of varicella infections were reported at a similar rate for the 4th quarter of 2008 compared with the same period in 2007. From 1 October to 31 December 2008, recorded rates for chickenpox were between zero and 1 cases per 1,000 consultations (Figure 3).

In the 4th quarter of 2008, reported rates for shingles were between less than one to 1 case per 1,000 consultations (Figure 4).

Figure 3. Consultation rates for chickenpox, ASPREN, 1 January 2007 to 31 December 2008, by week of report

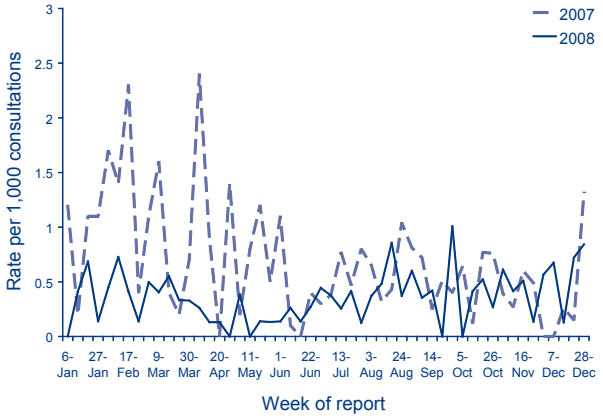
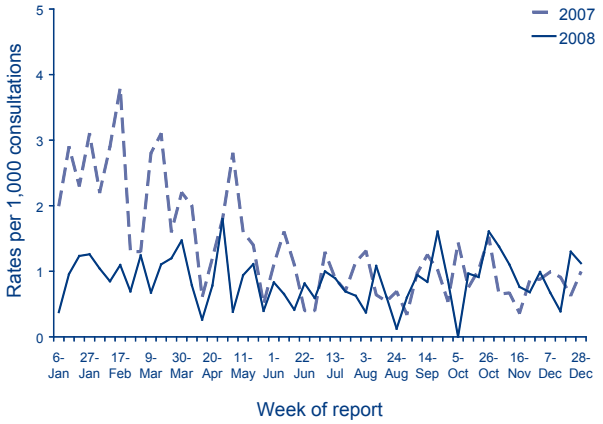


Figure 4. Consultation rates for shingles, ASPREN, 1 January 2007 to 31 December 2008, by week of report



Australian 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 July and 30 September 2007, at 24 months of age for the cohort born between 1 July and 30 September 2006, and at 5 years of age for the cohort born between 1 July and 30 September 2002 according to the National Immunisation Program Schedule. However from March 2002 to December 2007, coverage for vaccines due at 4 years of age was assessed at the 6-year milestone age.

For information about the Australian Childhood Immunisation Register see Surveillance systems reported in CDI, *published in* Commun Dis Intell *2008;32:134–135 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

'Fully immunised' at 12 months of age is defined as a child having a record on the ACIR of 3 doses of a diphtheria (D), tetanus (T) and pertussis-containing (P) vaccine, 3 doses of polio vaccine, 2 or 3 doses of *Haemophilus influenzae* type b (Hib) vaccine, and 2 or 3 doses of hepatitis B vaccine. 'Fully immunised' at 24 months of age is defined as a child having a record on the ACIR of 3 or 4 doses of a DTP-containing vaccine, 3 doses of polio vaccine, 3 or 4 doses of Hib vaccine, 2 or 3 doses of hepatitis B vaccine and 1 dose of a measles, mumps and rubella (MMR)-containing vaccine. 'Fully immunised' at 5 years of age is defined as a child having a record on the ACIR of 4 or 5 doses of a DTP-containing vaccine, 4 doses of polio vaccine, and 2 doses of an MMR-containing vaccine.

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia increased slightly by 0.1 of a percentage point 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 increased by 0.2 of a percentage point to 92.7 (Table 2). There were no important changes in coverage for any individual vaccines due at 24 months of age or by jurisdiction.

Immunisation coverage for 'fully immunised' at 5 years of age for Australia increased for the first time in 3 quarters, by 1.5 percentage points, to 88.3% (Table 3). This increase nationally was driven by significant increases in coverage for all individual vaccines due at 4 years of age in the Northern Territory (5.4 percentage points), Western Australia (3 percentage points) and Queensland (2.2 percentage points). There are a couple of possible explanations for the significant increases in these jurisdictions. The Health Kids Check initiative, implemented nationally in July 2008, may have had a disproportionately greater effect in these 3 jurisdictions. Further, various jurisdictional-specific strategies and local efforts including data quality improvements through data cleaning may also have had an effect.

Table 1. 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 2007; assessment date 31 December 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,202	24,663	924	15,794	4,965	1,691	18,144	7,589	74,972
Diphtheria, tetanus, pertussis (%)	93.9	91.7	90.5	91.3	92.4	92.3	92.6	90.6	91.8
Poliomyelitis (%)	93.8	91.6	90.6	91.2	92.4	92.3	92.6	90.6	91.7
Haemophilus influenzae type b (%)	95.9	94.6	93.3	93.7	94.9	94.6	94.9	93.9	94.4
Hepatitis B (%)	95.8	94.6	93.8	93.7	94.8	94.6	94.8	93.8	94.4
Fully immunised (%)	93.7	91.4	90.3	90.8	91.8	92.0	91.8	89.9	91.3
Change in fully immunised since last quarter (%)	+0.2	-0.1	+0.5	+0.1	+0.5	+0.4	+0.2	-0.1	+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 July to 30 September 2006; assessment date 31 December 2008*

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,213	24,494	856	15,064	4,865	1,721	18,171	7,691	74,075
Diphtheria, tetanus, pertussis (%)	96.1	94.9	95.6	94.3	94.8	96.2	95.7	92.9	94.8
Poliomyelitis (%)	96.2	94.8	95.4	94.3	94.8	96.2	95.7	92.9	94.8
Haemophilus influenzae type b (%)	96.1	95.2	93.6	93.4	93.7	95.9	94.7	92.9	94.4
Measles, mumps, rubella (%)	95.3	93.9	95.2	93.4	93.9	95.6	94.9	92.0	93.9
Hepatitis B (%)	96.5	95.7	96.6	95.0	95.5	96.9	96.4	94.0	95.6
Fully immunised (%)	94.5	92.7	93.0	92.2	92.7	94.7	93.8	89.9	92.7
Change in fully immunised since last quarter (%)	-0.4	+0.3	-0.6	+0.3	+0.3	+1.2	+0.5	-1.3	+0.2

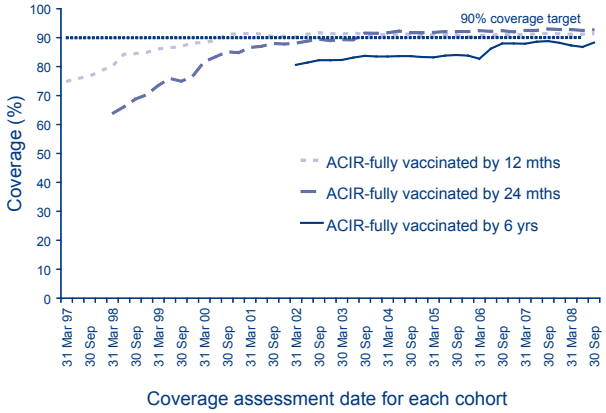
* The 12 months age data for this cohort was published in *Commun Dis Intell* 2008;32:122.

Table 3. Percentage of children immunised at 5 years of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2003; assessment date 31 December 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,106	23,056	815	14,277	4,807	1,494	16,903	6,706	69,164
Diphtheria, tetanus, pertussis (%)	90.4	88.0	92.5	89.4	85.9	88.0	91.7	87.3	89.0
Poliomyelitis (%)	90.6	87.9	92.4	89.3	85.9	87.9	91.6	87.2	89.0
Measles, mumps, rubella (%)	90.6	87.7	91.9	89.1	85.8	87.7	91.3	87.0	88.8
Fully immunised (%)	90.0	87.2	91.8	88.7	85.5	87.2	90.9	86.4	88.3
Change in fully immunised since last quarter (%)	-0.6	+1.5	+5.3	+2.2	-0.2	-2.0	+1.0	+3.0	+1.5

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 5 years, although the rate of increase has slowed over the past few years for all age groups. It should also 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 rotavirus and pneumococcal conjugate at 2, 4, and 6 months) are not included in the 12 or 24 months coverage data, respectively.

Figure 5. Trends in vaccination coverage, Australia, 1997 to 30 September 2008, 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 *2008;32:134.*

Reporting period 1 July to 30 September 2008

The AGSP laboratories received a total of 746 gonococcal isolates of which 727 remained viable for susceptibility testing. This was about 10% more than the 651 gonococci reported for the same period in 2007. About 29% of this total was from New South Wales, 18% from Queensland, 16% from each of Victoria and the Northern Territory, 13% from Western Australia and 8% from South Australia. There was 1 isolate from the Australian Capital Territory and no isolates from Tasmania.

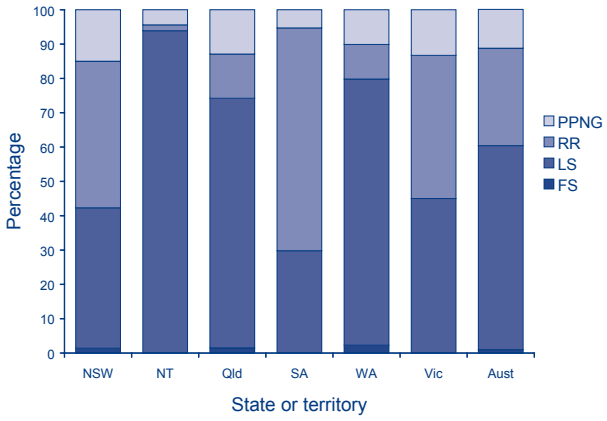
Penicillins

Two hundred and eighty-eight (39.6%) of the 727 isolates examined were penicillin resistant by one or more mechanisms. Eighty-two (11.3%) were penicillinase producing *Neisseria gonorrhoeae* (PPNG) and 206 (28%) resistant by chromosomal mechanisms, (CMRP). The proportion of all strains resistant to the penicillins by any mechanism ranged from 11.7% in the Northern Territory to 70.2% in South Australia. High rates of penicillin resistance were also found in New South Wales (58%), Victoria (55%), Queensland (25.8%) and in Western Australia (20.2%). The 1 gonococcus isolated in the Australian Capital Territory, was not penicillin resistant.

Figure 6 shows the proportions of gonococci fully sensitive (MIC $\geq$ 0.03 mg/L), less sensitive (MIC 0.06–0.5 mg/L), relatively resistant (MIC $\geq$ 1 mg/L) or else penicillinase producing, aggregated for Australia and by state and 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.

New South Wales had the highest number of the penicillin resistance with 91 CMRP (42.7%) and 32 PPNG (15%). Victoria followed with 16 PPNG (13.3%) and 50 CMRP (42%). In Queensland CMRP and PPNG were 12.9% each. In South Australia PPNG were 5.3% and CMRP a record high at 64.9%. In Western Australia PPNG and CMRP were 10.1% each. CMRP and PPNG were also present in the Northern Territory (2 and 5 isolates, respectively), but there were no CMRP or PPNG in the Australian Capital Territory or Tasmania. All the penicillin resistant strains in the Northern Territory were from Darwin.

Figure 6. Categorisation of gonococci isolated in Australia, 1 January to 30 September 2008, 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

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

Spectinomycin

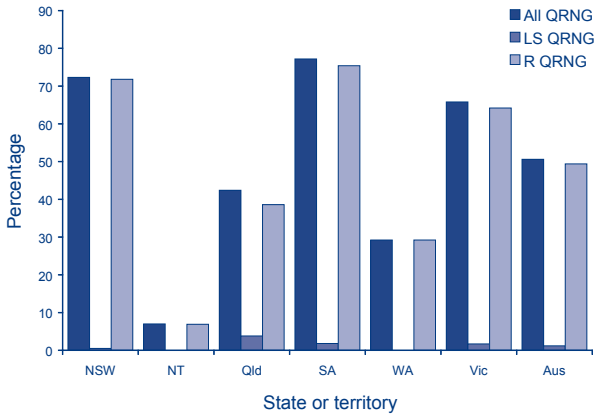
All isolates were susceptible to this injectable agent.

Quinolone antibiotics

Nationally, the 368 quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter represented 50.6% of all isolates tested. In the 3rd quarter of 2007, the 321 QRNG also represented 50.5% of all isolates, in 2006 there were 38.0% QRNG and in the 3rd quarter of 2005 QRNG were 35.5% of all gonococci tested. The majority of QRNG (319 of 368, 86.7%) 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 Tasmania where no gonococci were isolated. The highest proportion of QRNG was found in South Australia where 44 QRNG represented 77.2% of isolates tested, while in New South Wales there were 154 QRNG (72.3%) (Figure 7). In Victoria there were 79 QRNG (65.8% of isolates). In the other states and territories, Queensland had 56 (42.4%) QRNG; Western Australia had 26 (29.2%) and the Northern Territory had 8 (7%) QRNG. The single isolate tested in the Australian Capital Territory was QRNG.

Figure 7. The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 January to 30 September 2008, 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 (128) and proportion (17.6%) of high level tetracycline resistance (TRNG) detected was slightly lower than that recorded in this quarter in 2007 (129, 20.3%). TRNG were found in all states and territories except for Tasmania and the Australian Capital Territory and represented between 12.9% (Queensland); 13.9% (Northern Territory) and 30.3% (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.

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 5* 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 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 October to 31 December 2008 are included in Tables 4 and 5. Data include cases reported and entered by 4 February 2009. 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;32:137.*

1 October to 31 December 2008

There were 1,682 reports to NEPSS of human *Salmonella* infection in the 4th quarter of 2008, approximately 65% more than in the preceding quarter. Limited data from Western Australia were available at the time of preparing this report. Taking this into account and some incompleteness of data from late 2008, the overall count of cases for the remainder of Australia was similar to the recent historical mean number of reports to NEPSS for this time of each year. The incidence of human salmonellosis in Australia typically begins to increase late each year, before peaking around March.

During the 4th quarter of 2008, the 25 most common *Salmonella* types in Australia accounted for 1,095 cases, 65% of all reported human *Salmonella* infections. Eighteen of the 25 most common *Salmonella* infections in the 4th quarter of 2008 were also among those most commonly reported in the preceding quarter.

S. Typhimurium phage type 170 was the most commonly reported *Salmonella* for the quarter, with counts in New South Wales and Victoria significantly greater than the recent historical mean. Increases in the following salmonellae were also evident: *S.* Typhimurium phage type 44 (Australian Capital Territory), *S.* Typhimurium phage type 126 (in New South Wales and Victoria), *S.* Newport (mostly eastern states) and *S.* Typhimurium phage type 29 (New South Wales and South Australia). The number of reports of *S.* Enteritidis phage type 6a was markedly elevated this quarter. This particular *Salmonella* infection is typically associated with travel to Bali or Thailand.

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 4. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 October to 31 December 2008, as reported to 4 February 2009

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA*	Australia
Total all *Salmonella* for quarter	45	513	107	480	136	28	350	23	1,682
Total contributing *Salmonella* types	18	116	37	107	56	14	85	15	224

* Limited data from Western Australia were available at the time of preparing this report.

Table 5. Top 25 *Salmonella* types identified in Australia, 1 October to 31 December 2008, by state or territory

National rank	*Salmonella* type	State or territory								Total 4th quarter 2008	Last 10 years mean 4th quarter	Year to date 2008	Year to date 2007
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA*				
1	*S.* Typhimurium PT 170	2	126	0	18	0	0	53	0	199	79	430	290
2	*S.* Typhimurium PT 135	2	27	0	49	0	2	48	2	130	165	858	682
3	*S.* Typhimurium PT 9	4	42	0	15	20	1	29	0	111	101	479	688
4	*S.* Saintpaul	0	14	13	42	3	0	8	0	80	98	271	375
5	*S.* Typhimurium PT 44	20	18	0	9	8	0	19	0	74	61	360	481
6	*S.* Birkenhead	0	22	0	37	0	0	0	0	59	63	204	232
7	*S.* Typhimurium PT 126	1	31	0	0	1	0	9	0	42	25	134	40
8	*S.* Chester	0	5	5	18	5	0	3	2	38	38	151	161
9	*S.* Enteritidis PT 6a	0	12	0	8	2	0	15	1	38	10	89	69
10	*S.* Virchow PT 8	0	3	8	23	1	0	0	0	35	60	183	258
11	*S.* Newport	1	9	0	8	2	1	9	0	30	12	71	75
12	*S.* Infantis	1	4	4	1	6	0	7	0	23	33	167	200
13	*S.* Typhimurium PT 197	1	6	1	9	2	0	3	0	22	34	107	199
14	*S.* Stanley	1	6	0	4	1	2	8	0	22	20	112	136
15	*S.* Muenchen	0	7	2	11	0	0	1	0	21	30	97	144
16	*S.* Montevideo	0	7	0	5	1	0	7	0	20	14	88	113
17	*S.* Aberdeen	0	0	1	17	0	0	0	0	18	23	85	145
18	*S.* Weltevreden	0	6	0	5	1	0	6	0	18	13	90	67
19	*S.* Waycross	0	7	0	9	1	0	0	0	17	20	89	101
20	*S.* Typhimurium untypable	0	4	0	2	4	0	4	3	17	15	86	94
21	*S.* subsp I ser 16:l,v:-	0	1	10	3	2	0	1	0	17	13	54	56
22	*S.* Typhimurium PT 135a	0	0	4	0	13	0	0	0	17	10	60	70
23	*S.* Hvittingfoss	0	1	0	15	0	0	0	0	16	20	74	115
24	*S.* Typhimurium PT 29	0	8	1	0	7	0	0	0	16	4	80	156
25	*S.* Anatum	1	3	0	5	0	0	5	1	15	20	78	77

* Limited data from Western Australia were available at the time of preparing this report.