Communicable diseases surveillance

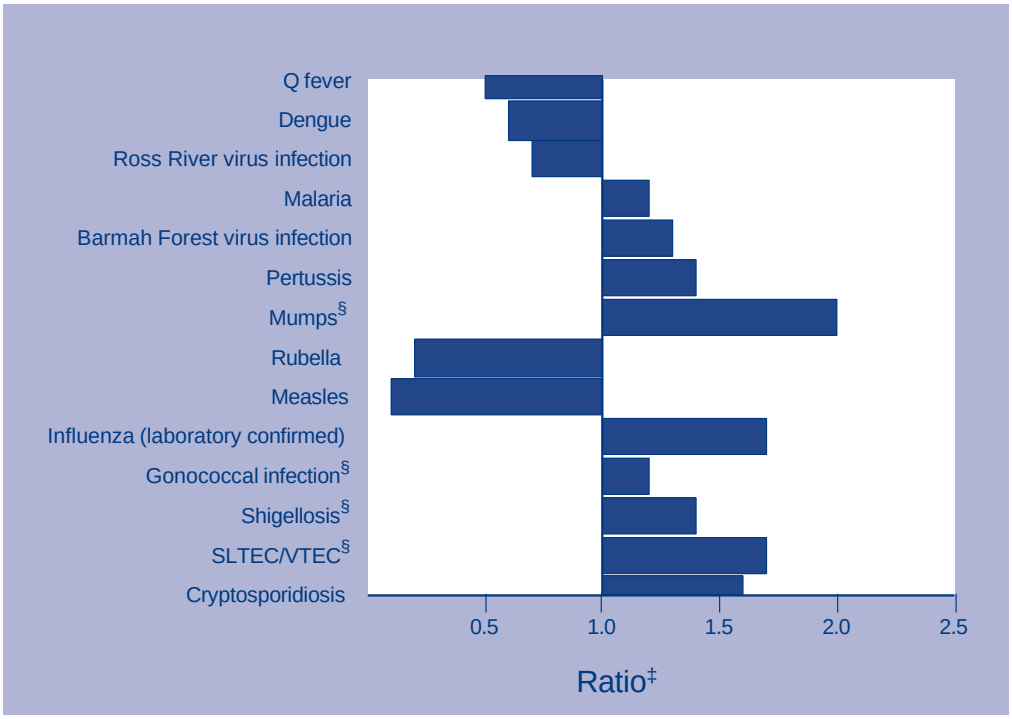
Highlights for 4th quarter, 2005

Communicable disease 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 or 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', and those from ASPREN are referred to as 'consultations' or 'encounters' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in select disease notifications with an onset in the fourth quarter of 2005 compared with a five year mean for the same period. These diseases were above the five year mean for the same period and exceeded two standard deviations from the five year mean: hepatitis E, Shiga-like toxin-producing *Esherichia coli*/verotoxin-producing *E. coli* (SLTEC\VTEC), shigellosis, gonococcal infections, syphilis and mumps. Diseases for which the number of notifications were below the five year

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System,† comparison of provisional totals for the period 1 October to 31 December 2005 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.

† Some Victorian data for the period may be incomplete.

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

§ Notifications above or below the 5-year mean plus two standard deviations for the same period.

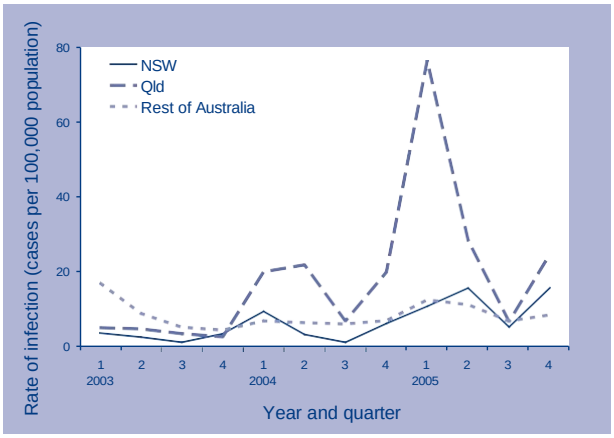
mean for the same period include measles, rubella, dengue, Q fever and Ross River virus infection. The number of notifications reported from Victoria this quarter was less than usual due to data processing difficulties.

Gastrointestinal illnesses

Cryptosporidiosis

There were 727 notifications of cryptosporidiosis during the quarter which was 1.6 times the five year mean for the same period. All jurisdictions reported cases but the majority were from New South Wales and Queensland, with 270 and 247 cases respectively. Four hundred and fifty-eight (63%) notifications were identified as *Cryptosporidium parvum* infection; there was no species information provided for the remaining 37 per cent of cases. Figure 2 shows that the rate of infection in Queensland is often higher that the rest of Australia and that the infection rate was also higher in New South Wales this year.

Figure 2. Notification rates of cryptosporidiosis, New South Wales and Queensland compared to the rest of Australia, 1 January 2003 to 31 December 2005



In the fourth quarter, the rise in cases in New South Wales has been most notable in regional and rural areas where there have been reports of increases and outbreaks of cryptosporidiosis in calves, and 'massive' numbers of oocysts in the faeces of sick calves (NSW Health, personal communication). Cryptosporidiosis has been recognised worldwide primarily in neonatal calves as well as in other neonatal farm animals.[1]

A state-wide outbreak investigation resulted in a hypothesis that the rise in the number of cryptosporidiosis cases in New South Wales was due to infection after contact with sick cattle, or after drinking or swimming in contaminated water. Water may have been contaminated by sick cattle, heavy rain or inadequate chlorination and filtration. It is thought that those who initially contract cryptosporidiosis from calves may then spread the disease via person-to-person transmission, and may possibly also contaminate swimming pools. There have been three small clusters of cases linked to three swimming pools (n=1, n=3 and n=7) which have since been subject to an environmental assessment. Another cluster (n=6) was identified in recruits from a military training facility. Appropriate public health action was undertaken in all cases (NSW Health, personal communication).

Shiga-like toxin producing *Escherichia coli* verotoxin producing *E. coli*

Twenty-one notifications of SLTEC/VTEC were received during the quarter, which was 1.7 times the five year mean for the same period. South Australia notified 12 cases, New South Wales reported seven cases and Queensland and Tasmania reported one case each. Of the two cases with serotype information, one was *E. Coli* serotype O111 and one was O157:H–.

Shigellosis

There were 156 notifications of shigellosis during the quarter which was 1.4 times the five year mean for the same period. This was 126 cases above the five year average plus two standard deviations. Notifications were from all jurisdictions except Tasmania with 40 cases from the Northern Territory, 34 from Western Australia, 21 each from New South Wales and South Australia, 20 from Queensland, 19 from Victoria and 1 from the Australian Capital Territory.

There was one death attributed to shigellosis infection in the quarter. Seventy (45%) of the 156 infections were notified in Indigenous Australians. Twenty per cent of infections were in non-Indigenous people, and Indigenous status was unknown for 35 per cent of cases. Of the 156 notifications, there were 68 (44%) notifications of *Shigella sonnei,* and 74 (47%) of *Shigella flexneri.* There was a single case of *Shigella dysenteriae* 2c. Fourteen cases (9%) did not have subtyping information.

Sexually transmissible infections

Gonococcal infection

During the quarter there were 1,726 notifications of gonococcal infection received from all jurisdictions, which was 1.2 times the five year mean for the same period and 240 cases above the five year average plus two standard deviations. The majority of these

notifications were reported by Queensland (369), New South Wales (337), Western Australia (355) and Victoria (308).

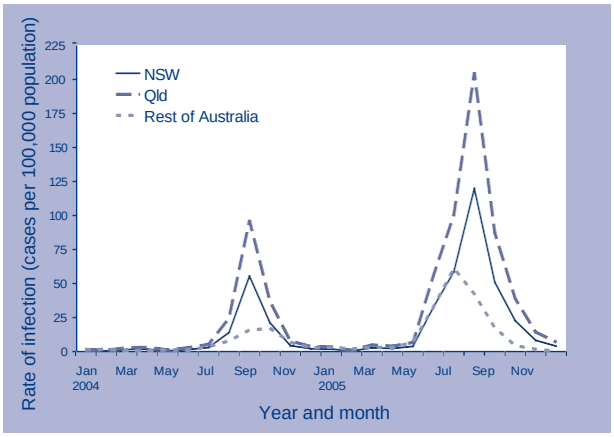
Forty per cent (697/1726) of the notifications were in the 15–24 year age group. The highest rate of gonococcal infection in females (92.7 cases per 100,000 population), was in the 15–19 year age group. In males, the 20–24 year age group had the highest gonococcal infection rate (139.1 cases per 100,000 population).

Vaccine preventable diseases

Influenza (laboratory confirmed)

There were 411 cases of laboratory-confirmed influenza in the fourth quarter of 2005 compared to the five year average of 345 cases for this quarter. Queensland reported 201 cases, and 152 reports were received from New South Wales. Sixty-five per cent of cases (267/411) were type A, 29 per cent (267/411) type B, and 1.5 per cent (6/411) were of unknown type. The number of notifications has remained higher in the fourth quarter in New South Wales and Queensland compared to the rest of Australia after the seasonal peak in the third quarter 2005 (Figure 3).

Figure 3. Notification rates of laboratory confirmed influenza, New South Wales and Queensland compared to the rest of Australia, 1 January 2004 to 31 December 2005

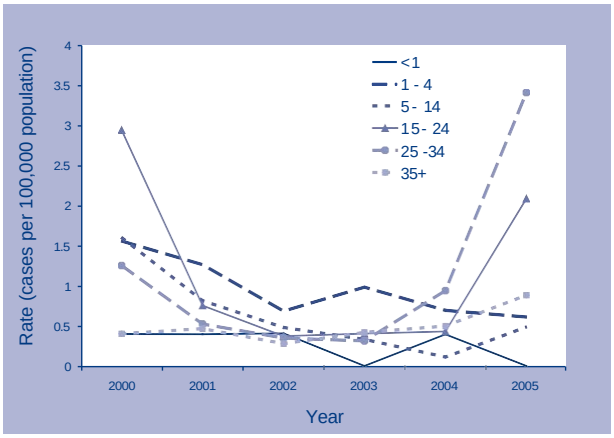


Mumps

There were 34 notifications of mumps in the quarter, which was double the five year mean for the same period. Nineteen cases (56%) were reported from New South Wales; there were also five notifications received from Victoria, three from Queensland and South Australia, and two from Western Australia. Of the 34 cases, 13 (38%) cases were reported from the 20–34 year age range, with a male to female ratio of 0.3:1.

Vaccination status data were available for 102 of 208 (49%) mumps notifications analysed from 2005. In cases where data were available, 34 of 37 (92%) cases in the 25–34 year age range were unvaccinated, and 86 per cent in the 15–24 year age range cases. The high rate of mumps was in the 25–34 year age range and to a lesser extent in the 15–24 year age range, which probably represents a susceptible cohort of individuals who have not been immunised (Figure 4).

Figure 4. Notification rates of mumps, Australia, 1 January 2000 to 31 December 2005, by age group



Mumps vaccine was made available in Australia in 1980 for use at 12–15 months and was combined with the measles vaccine in 1982. Therefore, no childhood doses of mumps vaccine were available to individuals currently in the 25–34 year age range and the uptake of vaccine in older individuals from the 15–24 year age range group was likely to be moderate. A similar situation has recently been reported in England and Wales, with high mumps notification rates in young adults born just before the introduction of routine vaccination, who were probably not infected as children because of reduced virus circulation following the introduction of vaccination in younger cohorts.[2]

Pertussis

For the fourth quarter, 2,559 pertussis notifications were received, which was 1.6 times the five year mean for the same period. Of the total number of notifications, 1,207 (47%) were reported by New South Wales and 518 (20%) were from Queensland. Three per cent (86 cases) of the 2,559 notifications

were reported in infants aged less than one year. The only pertussis death for 2005 was reported this quarter from Queensland in an unvaccinated one-month-old male. The highest rate of infection in females, 100 cases per 100,000 population occurred in the 50–54 year age range. The highest rate in males was 73 cases per 100,000 population in the 65–69 year age group.

Vectorborne diseases

Barmah Forest virus infection

There were 264 cases of Barmah Forest virus infection in the fourth quarter which was 1.3 times the five year mean for the same period. The majority of cases were from Queensland with 119 cases, New South Wales with 91 cases and Western Australia with 34 cases. This represents an early peak in infection rates compared to previous years.

Nationally, the infection rate was 5.2 cases per 100,000 population, but it was higher in the Northern Territory at 16 cases per 100,000 population (8 cases) and Queensland with 12 cases per 100,000 population.

Malaria

There were 129 cases of malaria in the fourth quarter, which was 1.2 times the five year mean for this quarter. There were 46 cases reported in Queensland and 24 in New South Wales. The highest rate of infection, 10 cases per 100,000 population was in the Northern Territory (5 cases). The national infection rate was 2.5 cases per 100,000 population.

Sixty-one per cent (79/129) of malaria cases were imported from overseas (19 cases notified from Queensland were imported from Papua New Guinea), while 18 per cent (23/129) were not. The import status of 28/129 (22%) cases was unknown. Thirty per cent (39/129) of notifications were *Plasmodium falciparum* and 22 per cent (29/129) were *Plasmodium vivax.* There were three *Plasmodium ovale* notifications, one *Plasmodium malariae* notification and four mixed infections. Forty-six (41%) cases did not have typing information.

There was a cluster of six malaria cases notified from Queensland in a group of 24 high school students who visited the Solomon Islands during September. All cases were on chemoprophylaxis.

Ross River virus infection

This quarter, 578 notifications of Ross River virus infection were reported compared to 239 in the same period last year. While this is indicative of an early seasonal increase, the number of cases was less than the five year mean for the same period. The majority of cases were from Western Australia (161), New South Wales (148) and Queensland (143).

Ninety-eight of Western Australia's notifications (61%) were from the Peel area south of Perth and almost all were notified in the months of November and December. The rate of infection was 24 cases per 100,000 population. Twenty-nine cases occurred in the Northern Territory, which was a rate of 58 cases per 100,000 population. South Australia and Queensland both had rate of 15 cases per 100,000 population with 59 and 143 cases respectively, which was higher than the national rate of 10.7 cases per 100,000 population.

Other bacterial infections

Brucellosis

There were 18 cases of brucellosis notified in the fourth quarter which was 1.4 times the five year mean for the same period. Seventeen cases were from Queensland, and one was from New South Wales. Fifteen of the 18 cases occurred in males. There were five *Brucellosis suis* cases and one *Brucellosis melitensis* case reported. Of the 17 cases from Queensland, six reported contact with a feral animal prior to illness.

References

1. Radostits OM, Blood DC, Gay CC. *Veterinary Medicine. A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses.* 1994. Eighth edition. Balliere Tindall.

2. Savage E, Ramsey M, White J, Beard S, Lawson H, Hurijan R, Brown D. Mumps outbreaks in England and Wales in 2004: observational study. *BMJ* 2005;330;1119–1120.

Acknowledgements

Thanks to Amy Sweeny (Queensland Department of Health), Carolien Giele (Western Australian Department of Health) Mark Bartlett (NSW Health) and Rob Menzies (National Centre for Immunisation Research and Surveillance) for their contributions to this report.

Tables

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 28,499 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification date between 1 October and 31 December 2005 (Table 2). The notification rate of diseases per 100,000 population for each State or Territory is presented in Table 3.

There were 5,223 reports received by the Virology and Serology Laboratory Reporting Scheme (LabVISE) in the reporting period, 1 October to 31 December 2005 (Tables 4 and 5).

Table 1. Reporting of notifiable diseases by jurisdiction

Disease	Data received from:
Bloodborne diseases	
Hepatitis B (incident)	All jurisdictions
Hepatitis B (unspecified)	All jurisdictions
Hepatitis C (incident)	All jurisdictions except Qld
Hepatitis C (unspecified)	All jurisdictions
Hepatitis D	All jurisdictions
Gastrointestinal diseases	
Botulism	All jurisdictions
Campylobacteriosis	All jurisdictions except NSW
Cryptosporidiosis	All jurisdictions
Haemolytic uraemic syndrome	All jurisdictions
Hepatitis A	All jurisdictions
Hepatitis E	All jurisdictions
Listeriosis	All jurisdictions
Salmonellosis	All jurisdictions
Shigellosis	All jurisdictions
SLTEC, VTEC	All jurisdictions
Typhoid	All jurisdictions
Quarantinable diseases	
Cholera	All jurisdictions
Plague	All jurisdictions
Rabies	All jurisdictions
Smallpox	All jurisdictions
Tularemia	All jurisdictions
Viral haemorrhagic fever	All jurisdictions
Yellow fever	All jurisdictions
Sexually transmissible infections	
Chlamydial infection	All jurisdictions
Donovanosis	All jurisdictions
Gonococcal infection	All jurisdictions
Syphilis (all)	All jurisdictions
Syphilis < 2 years duration	All jurisdictions
Syphilis > 2 years or unspecified duration	All jurisdictions
Syphilis - congenital	All jurisdictions

Disease	Data received from:
Vaccine preventable diseases	
Diphtheria	All jurisdictions
Haemophilus influenzae type b	All jurisdictions
Influenza (laboratory confirmed)*	All jurisdictions
Measles	All jurisdictions
Mumps	All jurisdictions
Pertussis	All jurisdictions
Pneumococcal disease (invasive)	All jurisdictions
Poliomyelitis	All jurisdictions
Rubella	All jurisdictions
Rubella - congenital	All jurisdictions
Tetanus	All jurisdictions
Vectorborne diseases	
Barmah Forest virus infection	All jurisdictions
Flavivirus infection (NEC)†	All jurisdictions
Dengue	All jurisdictions
Japanese encephalitis virus	All jurisdictions
Kunjin virus	All jurisdictions
Malaria	All jurisdictions
Murray Valley encephalitis virus	All jurisdictions
Ross River virus infection	All jurisdictions
Zoonoses	
Anthrax	All jurisdictions
Australian bat lyssavirus	All jurisdictions
Brucellosis	All jurisdictions
Leptospirosis	All jurisdictions
Lyssaviruses unspecified	All jurisdictions
Ornithosis	All jurisdictions
Q fever	All jurisdictions
Other bacterial infections	
Legionellosis	All jurisdictions
Leprosy	All jurisdictions
Meningococcal infection	All jurisdictions
Tuberculosis	All jurisdictions

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

† Flavivirus (NEC) replaced Arbovirus (NEC) from 1 January 2004.

Table 2. Notifications of diseases received by State and Territory health authorities in the period 1 Octeober to 31 December 2005, by date of onset*

Disease	State or territory								Total 4th quarter 2005†	Total 3rd quarter 2005	Total 4th quarter 2004	Last 5 years mean 4th quarter	Year to date 2005	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Bloodborne diseases															
Hepatitis B (incident)	1	12	0	10	1	0	13	5	42	58	61	77.8	238	368.6	0.6
Hepatitis B (unspecified)	29	655	58	236	54	13	332	78	1,455	1,923	1,472	1,641.0	6,979	6,769.2	1.0
Hepatitis C (incident)	0	9	0	NN	9	0	12	21	51	86	107	123.0	318	522.0	0.6
Hepatitis C (unspecified)	43	1,395	51	737	109	33	511	242	3,121	3,859	3,023	3,752.6	14,123	16,078.4	0.9
Hepatitis D	0	1	0	2	0	0	1	2	6	16	5	3.8	30	24.6	1.2
Gastrointestinal diseases															
Botulism	0	0	0	0	0	0	0	0	0	1	0	0.0	3	0.5	0.0
Campylobacteriosis§	107	NN	64	1,253	801	217	1,382	734	4,558	3,792	4,559	4,328.8	16,044	15,104.4	1.1
Cryptosporidiosis‖	7	270	16	247	35	13	113	26	727	334	476	359.0	3,137	1,950.3	1.6
Haemolytic uraemic syndrome	0	1	0	0	0	0	0	0	1	3	6	5.0	12	12.6	1.0
Hepatitis A	2	19	9	9	3	0	9	2	53	85	61	109.6	305	499.4	0.6
Hepatitis E	0	1	0	0	0	0	0	0	1	5	6	3.0	30	16.0	1.9
Listeriosis	1	6	0	4	4	0	3	0	18	9	14	16.0	54	66.0	0.8
Salmonellosis (NEC)	15	527	79	689	149	171	384	231	2,245	1,322	1,955	1,743.0	8,229	7,157.2	1.1
Shigellosis	1	21	40	20	21	0	19	34	156	156	136	117.0	721	505.4	1.4
SLTEC, VTEC¶	0	7	0	1	12	1	0	0	21	17	14	11.8	84	49.0	1.7
Typhoid	0	2	0	3	0	0	1	1	7	11	16	14.0	50	65.8	0.8
Quarantinable diseases															
Cholera	0	0	0	0	0	0	0	0	0	0	0	0.4	3	3.4	0.8
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
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Tularemia	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 2005, by date of onset,* *continued*

Disease	State or territory								Total 4th quarter 2005†	Total 3rd quarter 2005	Total 4th quarter 2004	Last 5 years mean 4th quarter	Year to date 2005	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection**	160	2,450	312	1,920	586	198	1,769	1,237	8,632	10,117	9,139	6,458.0	39,978	25,596.6	1.6
Donovanosis	0	0	0	2	0	0	0	1	3	3	4	4.2	13	19.2	0.7
Gonococcal infection	10	337	282	369	56	9	308	355	1,726	1,919	1,759	1,526.0	7,742	6,491.2	1.2
Syphilis (all)	2	177	24	75	2	3	109	33	425	565	560	499.2	2,108	1,610.8	1.3
Syphilis < two years duration	0	19	6	29	0	0	32	6	92	150	164	NA	551	123.2	NA
Syphilis > two years or unspecified duration	2	157	17	46	2	3	76	27	330	411	392	NA	1,541	315.2	NA
Syphilis - congenital	0	1	1	0	0	0	1	0	3	4	4	3.6	16	14.0	1.1
Vaccine preventable disease															
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.2	0.0
Haemophilus influenzae type b	0	3	0	1	0	0	1	0	5	5	2	3.4	18	22.6	0.8
Influenza (laboratory confirmed)‖	4	152	2	201	2	3	14	33	411	2,960	763	345.0	4,550	2,642.0	1.7
Measles	0	0	0	1	0	0	1	0	2	1	17	19.6	10	84.2	0.1
Mumps	1	19	1	3	3	0	5	2	34	76	36	24.8	234	115.0	2.0
Pertussis	131	1,207	13	518	318	5	302	65	2,559	3,596	3,355	2,345.0	10,954	6,945.0	1.6
Pneumococcal disease (invasive)‖	7	122	15	56	32	7	49	25	313	633	465	497.3	1,670	2,195.3	0.8
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Rubella	0	0	0	2	0	0	0	0	2	7	10	60.8	29	185.4	0.2
Rubella - congenital	0	0	0	0	0	0	0	0	0	1	0	0.2	1	1.0	1.0
Tetanus	0	0	0	0	0	2	0	0	2	0	1	1.4	2	4.8	0.4
Vectorborne diseases															
Barmah Forest virus infection	0	91	8	119	9	1	2	34	264	226	274	183.2	1,288	1,025.8	1.3
Dengue	0	19	0	11	3	0	0	5	38	33	19	58.2	208	340.8	0.6
Flavivirus infection (NEC)	0	1	0	2	0	0	1	0	4	8	5	10.0	29	69.6	0.4
Japanese encephalitis virus‖	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.4	0.0
Kunjin virus‖	0	0	1	0	0	0	0	0	1	0	2	0.8	2	9.0	0.2
Malaria	4	24	5	46	8	1	18	23	129	162	149	145.6	807	660.0	1.2
Murray Valley encephalitis virus‖	0	0	0	0	0	0	0	0	0	0	0	0.0	2	2.3	0.0
Ross River virus infection	1	148	29	143	59	1	36	161	578	283	239	354.8	2,334	3,392.2	0.7

Table 2. Notifications of diseases received by State and Territory health authorities in the period 1 October to 31 December 2005, by date of onset,* *continued*

Disease	State or territory								Total 4th quarter 2005†	Total 3rd quarter 2005	Total 4th quarter 2004	Last 5 years mean 4th quarter	Year to date 2005	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	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	1	0	17	0	0	0	0	18	8	16	9.0	41	29.4	1.4
Leptospirosis	0	8	0	6	6	0	4	1	25	25	25	38.6	125	194.6	0.6
Lyssavirus unspecified‖	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Ornithosis	0	16	0	0	0	0	8	1	25	40	53	42.4	156	174.0	0.9
Q fever	0	27	1	26	1	0	4	3	62	73	117	147.0	331	609.2	0.5
Other bacterial infections															
Legionellosis	0	18	0	11	21	0	14	23	87	91	75	87.2	339	347.8	1.0
Leprosy	0	0	0	0	0	0	0	1	1	1	1	1.0	7	6.2	1.1
Meningococcal infection††	1	29	3	14	9	4	28	12	100	141	81	141.6	391	593.4	0.7
Tuberculosis	0	69	7	36	9	2	102	9	234	183	306	285.6	893	1,006.2	0.9
Total	529	8,021	1,044	6,865	2,324	687	5,665	3,433	28,568	32,889	29,386	25,619.5	126,731	104,021	1.1

* 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 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 5 years for the same quarter.

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

‖ Notifiable from January 2001 only. Ratio and mean calculations are based on the last four years.

¶ Infections with Shiga-like toxin (verotoxin) producing *Escherichia coli* (SLTEC/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.

Table 3. Notification rates of diseases, 1 October to 31 December 2005, by state or territory. (Rate per 100,000 population)

Disease*	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Bloodborne diseases									
Hepatitis B (incident)	1.2	0.7	0.0	1.0	0.3	0.0	1.0	1.0	0.8
Hepatitis B (unspecified)	35.8	38.9	116.1	24.3	14.1	10.8	26.7	15.7	28.9
Hepatitis C (incident)	0.0	0.5	0.0	NN	2.3	0.0	1.0	4.2	1.3
Hepatitis C (unspecified)	53.1	82.9	102.0	75.9	28.4	27.4	41.1	48.8	62.1
Hepatitis D	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.4	0.1
Gastrointestinal diseases									
Botulism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis†	121.0	NN	128.1	129.1	208.8	180.0	111.2	148.1	136.0
Cryptosporidiosis	7.4	15.9	32.0	22.5	9.1	10.8	9.1	5.2	13.8
Haemolytic uraemic syndrome	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hepatitis A	2.5	1.1	18.0	0.9	0.8	0.0	0.7	0.4	1.1
Hepatitis E	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Listeriosis	1.2	0.4	0.0	0.4	1.0	0.0	0.2	0.0	0.4
Salmonellosis (NEC)	18.5	31.3	158.1	71.0	38.8	141.9	30.9	46.6	44.7
Shigellosis	1.2	1.2	80.0	2.1	5.5	0.0	1.5	6.9	3.1
SLTEC, VTEC‡	0.0	0.4	0.0	0.1	3.1	0.8	0.0	0.0	0.4
Typhoid	0.0	0.1	0.0	0.3	0.0	0.0	0.1	0.2	0.1
Quarantinable diseases									
Cholera	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
Smallpox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tularemia	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§	186.4	145.6	624.3	197.8	152.8	164.3	142.3	249.6	171.5
Donovanosis	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.1
Gonococcal infection	12.3	19.9	564.2	37.9	14.6	7.5	24.8	70.8	34.2
Syphilis (all)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Syphilis < 2 years duration	0.0	1.1	12.0	3.0	0.0	0.0	2.6	1.2	1.8
Syphilis > 2 years or unspecified duration	1.2	9.3	34.0	4.7	0.5	2.5	6.1	5.4	6.5
Syphilis - congenital	0.0	0.1	2.0	0.0	0.0	0.0	0.1	0.0	0.1

Table 3. Notification rates of diseases, 1 October to 31 December 2005, by state or territory. (Rate per 100,000 population), *continued*

Disease*	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Vaccine preventable diseases									
Diphtheria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haemophilus influenzae type b	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.1
Influenza (laboratory confirmed)	4.9	9.0	4.0	20.5	0.5	2.5	1.1	6.7	8.1
Measles	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1
Mumps	1.2	1.1	2.0	0.3	0.8	0.0	0.4	0.4	0.7
Pertussis	140.7	71.0	26.0	53.5	82.4	4.1	24.3	13.1	50.3
Pneumococcal disease (invasive)	8.6	7.2	30.0	5.8	8.3	5.8	3.9	5.0	6.2
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.1
Vectorborne diseases									
Barmah Forest virus infection	0.0	5.4	16.0	12.3	2.3	0.8	0.2	6.1	5.2
Dengue	0.0	1.1	0.0	1.1	0.8	0.0	0.0	1.0	0.8
Flavivirus infection (NEC)	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.0	0.1
Japanese encephalitis virus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kunjin virus	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.1
Malaria	4.9	1.4	10.0	4.6	2.1	0.8	1.4	4.6	2.5
Murray Valley encephalitis virus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ross River virus infection	2.5	8.8	58.0	14.7	15.4	0.8	2.9	24.0	10.7
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	0.1	0.0	1.4	0.0	0.0	0.0	0.0	0.3
Leptospirosis	0.0	0.5	0.0	0.6	1.6	0.0	0.3	0.2	0.5
Lyssavirus unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	1.2	1.0	0.0	0.0	0.0	0.0	0.6	0.2	0.5
Q fever	0.0	1.6	2.0	2.7	0.3	0.0	0.3	0.6	1.2
Other bacterial infections									
Legionellosis	0.0	1.1	0.0	1.1	5.5	0.0	1.1	3.0	1.6
Leprosy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1
Meningococcal infection‖	1.2	1.7	6.0	1.4	2.3	3.3	2.3	2.4	2.0
Tuberculosis	0.0	4.1	14.0	3.7	2.3	1.7	8.2	3.8	4.6

* 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-like toxin (verotoxin) producing *Escherichia coli* (SLTEC/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.

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2005, and total reports for the year†

	State or territory								This period 2005	This period 2004	Year to date 2005	Year to date 2004
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Measles, mumps, rubella												
Measles virus	–	–	–	2	1	–	1	–	4	14	8	35
Mumps virus	–	–	–	2	5	–	6	–	13	1	38	6
Rubella virus	–	–	–	1	–	–	–	–	1	9	12	20
Hepatitis viruses												
Hepatitis A virus	–	–	1	5	9	–	–	–	15	15	53	51
Hepatitis D virus	–	–	–	–	1	–	1	–	2	1	14	8
Hepatitis E virus	–	–	–	–	–	–	1	–	1	1	12	14
Arboviruses												
Ross River virus	–	–	10	32	55	–	7	15	119	36	452	743
Barmah Forest virus	–	3	1	14	9	–	–	–	27	27	185	195
Flavivirus (unspecified)	–	1	–	6	–	–	1	–	8	8	37	102
Adenoviruses												
Adenovirus type 1	–	1	–	–	–	–	–	–	1	–	7	–
Adenovirus not typed/pending	–	40	1	25	81	–	28	–	175	258	673	1,052
Herpesviruses												
Herpes virus type 6	–	–	–	–	–	–	1	–	1	2	2	6
Cytomegalovirus	1	55	1	23	194	4	31	–	309	220	1,038	834
Varicella-zoster virus	1	38	–	271	54	4	17	1	386	544	1,497	2,061
Epstein-Barr virus	–	15	26	229	194	3	25	113	605	512	2,148	2,367
Other DNA viruses												
Parvovirus	–	5	–	33	32	–	9	–	79	129	202	413
Picornavirus family												
Coxsackievirus A9	–	1	–	–	–	–	–	–	1	–	3	1
Coxsackievirus A16	–	1	–	–	–	–	–	–	1	–	6	5
Echovirus type 5	–	2	–	–	–	–	–	–	2	–	2	–
Echovirus type 7	–	1	–	–	–	–	–	–	1	11	8	12
Echovirus type 9	–	1	–	–	–	–	–	–	1	6	2	10
Echovirus type 18	–	1	–	–	–	–	–	–	1	14	14	19
Echovirus type 30	–	4	–	–	–	–	–	–	4	1	35	7
Poliovirus type 1 (uncharacterised)	–	2	–	–	–	–	–	–	2	3	21	18
Poliovirus type 2 (uncharacterised)	–	1	–	–	–	–	–	–	1	8	19	21
Rhinovirus (all types)	1	62	–	–	17	–	–	–	80	188	326	617
Enterovirus not typed/ pending	–	26	–	9	3	–	6	–	44	72	185	205
Ortho/paramyxoviruses												
Influenza A virus	–	4	–	8	40	–	8	–	60	137	696	492
Influenza B virus	–	7	–	–	17	–	3	–	27	89	253	219
Parainfluenza virus type 1	–	5	–	–	6	–	3	–	14	12	59	143
Parainfluenza virus type 2	–	2	–	–	1	–	–	–	3	4	49	15
Parainfluenza virus type 3	–	33	–	7	56	–	16	–	112	228	386	655
Respiratory syncytial virus	–	33	–	54	24	1	17	–	129	114	1,677	2,599

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2005, and total reports for the year,† *continued*

	State or territory								This period 2005	This period 2004	Year to date 2005	Year to date 2004
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Other RNA viruses												
HTLV-1	–	–	–	–	3	–	–	–	3	2	9	15
Rotavirus	1	99	–	1	119	3	42	–	265	626	1,263	1,247
Astrovirus	–	–	–	–	–	–	4	–	4	–	4	–
Norwalk agent	–	–	–	–	–	–	67	–	67	168	230	659
Other												
Chlamydia trachomatis - not typed	–	113	–	626	474	14	39	1	1,267	1,242	5,045	5,257
Chlamydia pneumoniae	–	–	–	–	–	–	2	–	2	2	8	9
Chlamydia psittaci	–	–	–	–	–	–	14	–	14	35	52	173
Chlamydia species	–	–	–	–	–	–	1	–	1	–	1	3
Mycoplasma pneumoniae	–	11	8	114	108	19	65	46	371	331	1,298	1,374
Mycoplasma hominis	–	1	–	–	–	–	–	–	1	1	5	5
Coxiella burnetii (Q fever)	–	2	–	13	21	–	5	–	41	51	162	173
Rickettsia prowazeki	–	–	–	–	–	–	–	–	–	–	–	–
Rickettsia tsutsugamushi	–	–	–	–	–	–	–	–	–	–	–	–
Rickettsia - spotted fever group	–	–	–	–	58	–	–	–	58	89	236	139
Streptococcus group A	–	6	–	129	–	–	43	–	178	107	609	467
Brucella species	–	1	–	4	–	–	–	–	5	4	14	9
Bordetella pertussis	–	11	1	63	278	1	52	–	406	599	1,573	1,358
Legionella pneumophila	–	1	–	–	3	–	2	–	6	12	23	77
Legionella longbeachae	–	1	–	–	13	–	–	–	14	17	51	76
Legionella species	–	–	–	1	–	–	–	–	1	1	1	15
Cryptococcus species	–	2	–	–	10	–	–	–	12	6	41	38
Leptospira species	–	–	–	2	8	–	–	–	10	4	33	23
Treponema pallidum	–	25	–	133	92	–	1	–	251	244	1,086	1,154
Entamoeba histolytica	–	–	–	–	–	–	2	–	2	5	14	14
Toxoplasma gondii	–	2	–	6	3	–	2	–	13	14	44	41
Echinococcus granulosus	–	–	–	–	2	–	–	–	2	3	10	15
Total	4	619	49	1,813	1,991	49	522	176	5,223	6,227	21,931	25,286

* 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 2005*

State or territory	Laboratory	October 2005	November 2005	December 2005	Total this period
Australian Capital Territory	The Canberra Hospital	–	–	–	–
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	61	84	108	253
	New Children's Hospital, Westmead	81	65	33	179
	Repatriation General Hospital, Concord	–	–	–	–
	Royal Prince Alfred Hospital, Camperdown	–	–	–	–
	South West Area Pathology Service, Liverpool	124	15	–	139
Queensland	Queensland Medical Laboratory, West End	667	611	606	1,884
	Townsville General Hospital	–	–	–	–
South Australia	Institute of Medical and Veterinary Science, Adelaide	757	731	501	1,989
Tasmania	Northern Tasmanian Pathology Service, Launceston	19	15	10	44
	Royal Hobart Hospital, Hobart	–	–	–	–
Victoria	CSL, Melbourne	20	9	16	45
	Monash Medical Centre, Melbourne	27	12	2	41
	Royal Children's Hospital, Melbourne	99	83	43	225
	Victorian Infectious Diseases Reference Laboratory, Fairfield	102	69	43	214
Western Australia	PathCentre Virology, Perth	–	–	–	–
	Princess Margaret Hospital, Perth	–	–	–	–
	Western Diagnostic Pathology	45	103	62	210
Total		2,002	1,797	1,424	5,223

* The complete list of laboratories reporting for the 12 months, January to December 2005, 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 Research and Health Promotion Unit of the Royal Australian College of General Practitioners operates the Australian Sentinel Practice Research Network (ASPREN). ASPREN is a network of general practitioners who report presentations of defined medical conditions each week. The aim of ASPREN is to provide an indicator of the burden of disease in the primary health setting and to detect trends in consultation rates.

There are currently about 50 general practitioners participating in the network from all states and territories. Seventy-five per cent of these are in metropolitan areas and the remainder are rural based. Between 4,000 and 6,000 consultations are recorded each week.

The list of conditions is reviewed annually by the ASPREN management committee and an annual report is published.

In 2005, eight conditions are being monitored, four of which are related to communicable diseases. These include influenza, gastroenteritis, varicella and shingles. There are two definitions for influenza for 2005. A patient may be coded once or twice depending on their symptoms. The definition for influenza 1 will include more individuals. Definitions of these conditions were published in Commun Dis Intell *2006;30:158.*

Data from 1 January to 31 December 2005 compared with 2004 are shown as the rate per 1,000 consultations in Figures 5 and 6.

Figure 5. Consultation rates for influenza-like illness, ASPREN, 1 January to 31 December 2005, by week of report

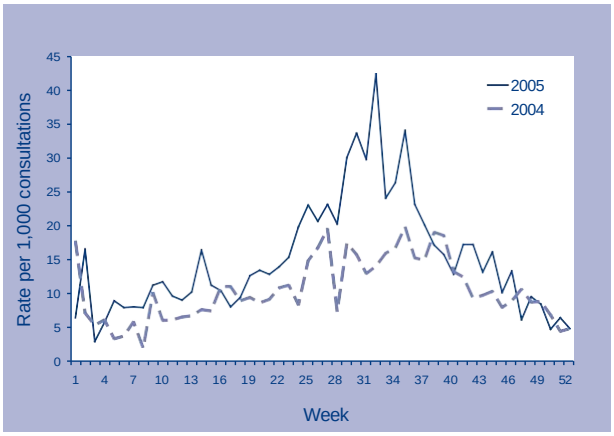
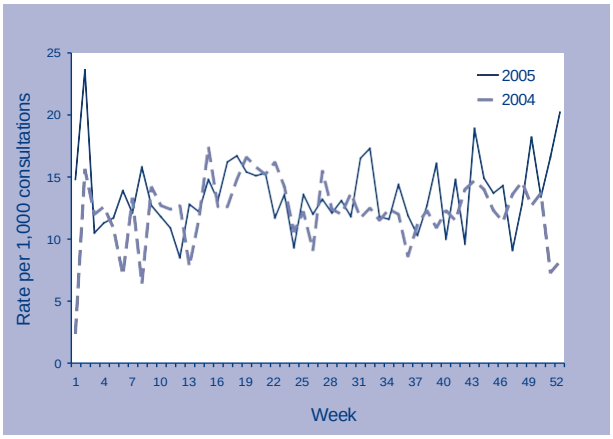


Figure 6. Consultation rates for gastroenteritis, ASPREN, 1 January to 31 December 2005, by week of report



Childhood immunisation coverage

Tables 6, 7 and 8 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 2004, at 24 months of age for the cohort born between 1 July and 30 September 2003, and at 6 years of age for the cohort born between 1 July and 30 September 1999 according to the Australian Standard Vaccination Schedule.

For information about the Australian Childhood Immunisation Register see Surveillance systems reported in CDI, *published in* Commun Dis Intell *2006;30:157 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 did not change from the last quarter, remaining at 91.0 per cent (Table 6). It has now remained at 91 per cent for three consecutive quarters. There were no significant changes in coverage in any jurisdiction for 'fully immunised' coverage or for coverage for individual vaccines.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia also did not change from the last quarter, remaining at 92.1 per cent. Similarly, there were no significant changes in coverage in any jurisdiction for 'fully immunised' coverage or for coverage for individual vaccines (Table 7).

Table 6. 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 2004; assessment date 31 December 2005

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Number of children	1,068	22,285	837	13,328	4,309	1,507	15,994	6,381	65,709
Diphtheria, tetanus, pertussis (%)	94.2	92.2	91.0	92.3	92.0	94.4	93.5	90.4	92.4
Poliomyelitis (%)	94.1	92.0	90.8	92.2	91.9	94.4	93.4	90.3	92.3
Haemophilus influenzae type b (%)	96.0	94.2	94.4	94.2	94.5	95.5	95.1	93.3	94.4
Hepatitis B (%)	96.3	95.2	94.9	94.8	94.8	95.6	94.9	93.0	94.8
Fully immunised (%)	93.7	90.7	90.1	91.1	91.2	93.4	92.0	88.8	91.0
Change in fully immunised since last quarter (%)	+0.1	+0.1	-1.6	+0.3	+0.1	+1.4	-0.1	-0.4	+0.0

Table 7. 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 2003; assessment date 31 December 2005*

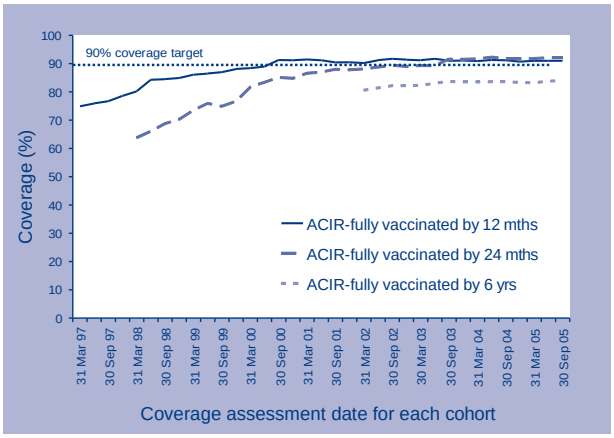
Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,060	22,667	827	13,412	4,681	1,456	16,361	6,236	66,700
Diphtheria, tetanus, pertussis (%)	97.3	95.0	96.4	94.9	95.5	96.2	95.4	95.2	95.2
Poliomyelitis (%)	97.1	94.9	96.0	94.8	95.4	96.4	95.4	95.2	95.2
Haemophilus influenzae type b (%)	95.4	93.2	94.6	93.6	94.0	95.0	93.8	93.2	93.6
Measles, mumps, rubella (%)	95.9	93.3	95.0	93.7	94.3	95.3	94.2	93.8	93.8
Hepatitis B(%)	97.2	95.8	97.5	95.4	96.1	96.9	96.1	96.2	95.9
Fully immunised (%)	94.8	91.7	93.1	91.9	92.6	94.4	92.5	91.4	92.1
Change in fully immunised since last quarter (%)	+0.6	+0.1	-1.9	-0.1	+1.3	+1.2	-0.5	+0.7	-0.0

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2005;29:115.

Table 8 shows immunisation coverage estimates for children 'fully immunised' at 6 years of age and for individual vaccines for Australia by state or territory. This was largely unchanged in all jurisdictions. Coverage for vaccines assessed at 6 years is at or near 85 per cent in most jurisdictions, but Western Australia, South Australia and Queensland still remain below this. The sharp decline in coverage for this age group that occurred in Queensland in 2004–05 appears to have halted with 'fully immunised' coverage increasing for the second consecutive quarter.

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 6 years, although the rate of increase has slowed over the past 2 years for all age groups. The Figure shows that there have now been nine consecutive quarters where 'fully immunised' coverage at 24 months has been greater than 'fully immunised' coverage at 12 months, following the removal of the requirement for 18 month DTPa vaccine. However, both measures have been above 90 per cent for this 27-month period and show levels of high coverage for the vaccines included maintained over a significant period of time. Currently, coverage for the more recent vaccines, 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.

Figure 7. Trends in vaccination coverage, Australia, 1997 to 2005, 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 *2006;30:157.*

Table 8. 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 1999; assessment date 31 December 2005

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,129	22,965	792	14,065	4,802	1,579	16,642	6,769	68,743
Diphtheria, tetanus, pertussis (%)	89.1	85.7	84.3	82.7	82.8	87.7	88.0	80.9	85.1
Poliomyelitis (%)	89.5	85.8	85.9	82.8	82.9	87.7	88.2	81.2	85.2
Measles, mumps, rubella (%)	89.1	85.7	85.3	82.9	83.0	87.7	88.3	81.1	85.2
Fully immunised (%)[1]	88.2	84.7	83.1	81.4	81.8	86.6	87.3	79.5	84.0
Change in fully immunised since last quarter (%)	-2.3	+0.3	+0.3	+0.9	-1.5	+1.4	+0.4	-1.0	+0.2

Reporting period 1 July to 30 September 2005

The AGSP laboratories received a total of 968 gonococcal isolates of which 939 remained viable for susceptibility testing. This was about 15 per cent more than the 829 gonococci reported for the same period in 2004. About one third of this total was from New South Wales, a quarter from Victoria, 13.5 per cent each from the Northern Territory and Queensland, 10 per cent from Western Australia, and 5 per cent from South Australia. There were five isolates each from Tasmania and the Australian Capital Territory.

Penicillins

In this quarter, 338 (36%) of the 939 isolates examined were penicillin resistant by one or more mechanisms. One hundred and twenty-four (13.2%) were penicillinase producing *Neisseria gonorrhoeae* (PPNG) and 214 (22.8%) were resistant by chromosomal mechanisms, (CMRNG). The proportion of all strains resistant to the penicillins by any mechanism ranged from 1.7 per cent in the Northern Territory to 51 per cent in New South Wales. High rates of penicillin resistance were also found in Victoria (50%), South Australia (32%) and Western Australia (21%) with a lower rate, (18.5%), in Queensland.

Figure 8 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 penicillinase producing (PPNG) aggregated for Australia and by state and territory. A high proportion of 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.

Figure 8. Categorisation of gonococci isolated in Australia, 1 July to 30 September 2005, 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, most of the penicillin resistance was due to CMRNG (121, 37.8%) with 42 PPNG (13.1%). The proportion of CMRNG in Victoria (35%) was slightly less than in New South Wales and that of PPNG slightly higher (14.8%). In other centres, PPNG formed a higher proportion of penicillin resistant gonococci. The proportion of PPNG in Queensland and Western Australia was 17 per cent and in South Australia 18 per cent. PPNG were also present in the Australian Capital Territory and the Northern Territory (1 and 2 isolates respectively), but there were no PPNG in Tasmania. CMRNG were present in Queensland (1.5% of isolates there), South Australia (13%) and Western Australia (4.5%). There were no CMRNG reported from Tasmania or the Northern Territory and a single CMRNG from the Australian Capital Territory.

Ceftriaxone

Seven isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected. Four were found in New South Wales, two in Victoria and one in Queensland. All seven isolates were penicillin resistant by chromosomal mechanisms (CMRNG) and five were also quinolone resistant (ciprofloxacin MICs 1 mg/L or more). It is emphasised that no treatment failures have been documented locally when a 250 mg IM dose of ceftriaxone has been used.

Spectinomycin

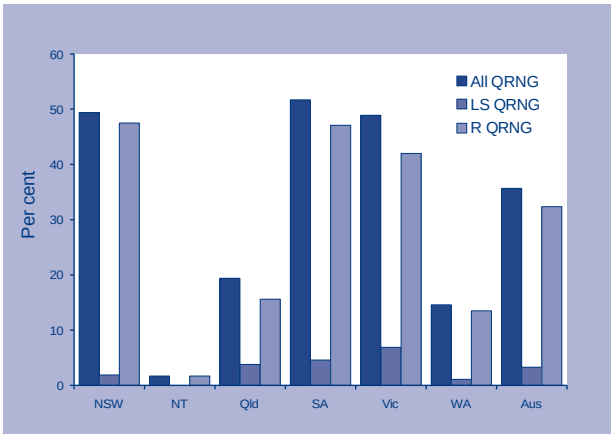
All isolates were susceptible to this injectable agent.

Quinolone antibiotics

The number (335) and proportion (35.7%) of quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter represent the highest rates of QRNG found in this program to date. In the third quarter of 2004 there were 200 QRNG, 24 per cent of all gonococci tested. The majority of QRNG (304 of 335, 91%) exhibited higher-level resistance to ciprofloxacin of 1 mg/L or more (Figure 9). 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 again widely distributed and were detected in all states and territories with the exception of Tasmania. The highest proportion of QRNG was found in South Australia where 23 QRNG were 52 per cent of all gonococci tested. In Victoria there were 112 QRNG (49%), in New South Wales 158 QRNG (also 49% of isolates), in Queensland 25 (19%), in Western Australia 13 (14%) with two QRNG detected in both the Northern Territory and the Australian Capital Territory.

Figure 9. The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 July to 30 September 2005, 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 (156) and proportion (16.6%) of high level tetracycline resistance (TRNG) detected was higher than that recorded in the 2004 (121, 14.6%) figures. TRNG were found in all states and territories except for Tasmania and the Australian Capital Territory and represented between 2.5 per cent (Northern Territory) and 26 per cent of isolates (Victoria).

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/nchecr. Telephone: +61 2 9332 4648. Facsimile: +61 2 9332 1837. For more information see Commun Dis Intell *2006;30:159.*

HIV and AIDS diagnoses and deaths following AIDS reported for 1 July to 30 September 2005, as reported to 31 December 2005, are included in this issue of Communicable Diseases Intelligence *(Tables 9 and 10).*

Table 9. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 July to 30 September 2005, 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 2005	This period 2004	YTD 2005	YTD 2004
HIV diagnoses	Female	0	12	0	1	0	0	7	4	24	16	71	86
	Male	3	61	1	37	6	0	67	12	187	187	629	578
	Not reported	0	0	0	0	0	0	0	0	0	0	0	1
	Total*	3	73	1	38	6	0	74	16	211	203	700	666
AIDS diagnoses	Female	0	2	0	2	0	0	3	1	8	2	20	13
	Male	0	13	0	3	1	0	17	0	34	30	102	113
	Total*	0	15	0	5	1	0	20	1	42	32	122	127
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	2	2	6
	Male	0	4	0	1	0	0	4	0	9	16	34	54
	Total*	0	4	0	1	0	0	4	0	9	18	36	60

* Totals include people whose sex was reported as transgender.

Table 10. Cumulative diagnoses of HIV infection, AIDS, and deaths following AIDS since the introduction of HIV antibody testing to 30 September 2005 and reported by 31 December 2005, by sex and state or territory

	Sex	State or territory								
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	30	812	18	241	87	8	333	179	1,708
	Male	252	12,983	124	2,553	870	90	4,926	1,140	22,938
	Not reported	0	233	0	0	0	0	22	0	255
	Total*	282	14,056	142	2,803	958	98	5,300	1,326	24,965
AIDS diagnoses	Female	9	236	2	68	31	4	105	36	491
	Male	92	5,230	41	994	391	48	1,913	415	9,124
	Total*	101	5,482	43	1,064	423	52	2,028	453	9,646
AIDS deaths	Female	6	132	1	41	20	2	59	24	285
	Male	71	3,536	26	646	272	32	1,380	291	6,254
	Total*	77	3,678	27	689	292	34	1,447	316	6,560

* Totals include people whose sex was reported as transgender.

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 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*.*

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 2005 are included in Tables 11 and 12. Data include cases reported and entered by 20 January 2006. 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 *2006;30:159–160.*

Fourth quarter 2005

The total number of reports to NEPSS of human *Salmonella* infection rose to 2,198 in the fourth quarter of 2005, 82 per cent more than in the third quarter of 2005. This increase significantly exceeds the usual seasonal surge in reports in the latter months of each year. The fourth quarter count was 25 per cent more than the comparable fourth quarter of 2004 and approximately 30 per cent greater than the 10-year historical mean for this period. Much of this increase is accounted for by two phage types of *S*. Typhimurium, PT 135 and PT 44.

Reports of *S*. Typhimurium PT 135 increased markedly this quarter; some cases associated with defined outbreaks, others occurring as apparently sporadic infections. This increase was most apparent in the south-eastern States and Western Australia. The phage typing laboratories noted that the majority (approximately 85%) of isolates of *S*. Typhimurium PT 135 during this period manifested a consistent pattern of phage reactions. In the present summary report, these are all included within the *S*. Typhimurium PT 135 category.

Reports of *S*. Typhimurium PT 44 also increased this quarter, with most cases in the eastern mainland States.

Other common salmonellae with counts above their historical averages during the fourth quarter included *S*. Oranienburg (in Western Australia), *S*. Typhimurium PT 197 (in Queensland and New South Wales) and *S*. Saintpaul (in Queensland).

During the fourth quarter of 2005, the 25 most common *Salmonella* types in Australia accounted for 1,491 cases, 68 per cent of all reported human *Salmonella* infections. Nineteen of the 25 most common *Salmonella* infections in the fourth quarter of 2005 were also among the 25 most commonly reported in preceding quarter.

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 11. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 October to 31 December 2005, as reported to 20 January 2006

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total all *Salmonella* for quarter	19	550	77	608	133	197	414	200	2,198
Total contributing *Salmonella* types	11	117	33	117	50	16	97	67	236

Table 12. Top 25 *Salmonella* types identified in Australia, 1 October to 31 December 2005, by state or territory

National rank	*Salmonella* type	State or territory								Total 4th quarter 2005	Last 10 years mean 4th quarter	Year to date 2005	Year to date 2004
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
1	*S.* Typhimurium PT 135	2	71	0	46	5	149	125	27	425	137	802	564
2	*S.* Typhimurium PT 44	6	62	0	48	28	6	50	8	208	17	220	34
3	*S.* Saintpaul	0	21	7	66	3	0	9	5	111	73	433	397
4	*S.* Typhimurium PT 9	3	20	0	16	8	7	31	2	87	122	430	364
5	*S.* Typhimurium PT 170	0	35	0	8	0	2	20	0	65	56	469	579
6	*S.* Birkenhead	0	28	0	32	0	0	3	1	64	60	218	264
7	*S.* Typhimurium PT 197	0	23	0	28	1	0	3	2	57	18	547	268
8	*S.* Virchow PT 8	0	9	2	30	0	0	2	11	54	43	243	334
9	*S.* Oranienburg	0	3	0	0	5	1	2	43	54	11	87	43
10	*S.* Chester	0	9	3	20	0	1	4	2	39	36	185	190
11	*S.* Infantis	0	15	1	1	9	0	8	2	36	30	170	158
12	*S.* Muenchen	0	7	3	15	4	0	0	2	31	26	142	116
13	*S.* Aberdeen	0	4	0	24	0	0	0	0	28	21	152	134
14	*S.* Hvittingfoss	0	5	0	20	0	0	1	1	27	18	184	149
15	*S.* Potsdam	0	3	0	17	1	0	2	0	23	18	49	62
16	*S.* Waycross	0	4	0	19	0	0	0	0	23	17	113	121
17	*S.* Typhimurium RDNC	0	9	0	5	1	0	6	1	22	18	108	104
18	*S.* Typhimurium PT 12	1	5	0	0	2	0	5	8	21	14	118	233
19	*S.* Anatum	0	1	1	11	3	0	2	2	20	19	75	89
20	*S.* Mississippi	0	0	0	0	0	20	0	0	20	14	75	75
21	*S.* Stanley	1	6	0	4	1	0	4	0	16	13	67	77
22	*S.* Enteritidis PT 6a	1	6	0	1	0	0	2	6	16	6	90	72
23	*S.* Havana	0	8	0	0	1	0	1	5	15	11	38	49
24	*S.* Weltevreden	0	3	5	4	2	0	0	1	15	9	58	69
25	*S.* Agona	0	7	0	3	2	0	1	1	14	16	66	80