Communicable diseases surveillance

Highlights for 4th quarter, 2006

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

Figure 1 shows the changes in selected disease notifications with an onset in the fourth quarter of 2006, compared with the five-year mean for the same period. The following diseases were above the five-year mean: cholera,* *Haemophilus influenzae* type b infection, hepatitis E, haemolytic uraemic syndrome, Barmah Forest virus infection and chlamydial infection. Diseases for which the number of notifications was below the five-year mean for the same period include flavivirus infection (NEC), rubella and donovanosis.

Gastrointestinal diseases

Haemolytic uraemic syndrome

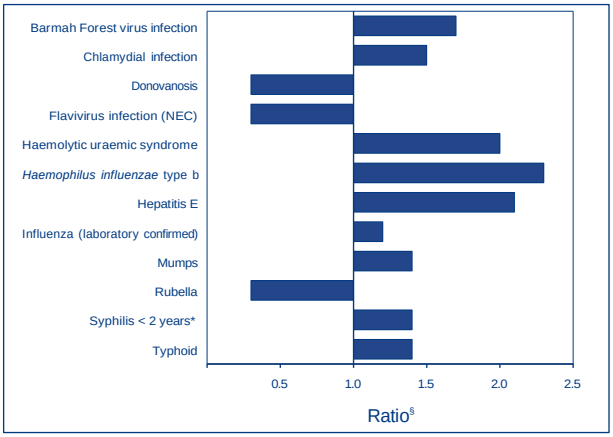
There were 9 notifications of haemolytic uraemic syndrome between 1 October and 31 December 2006, which is twice the five-year mean for the fourth quarter. Eight of the reported cases were from New South Wales. The cases were investigated but no links were found.

Four cases were reported as infected with Shiga-like toxin-producing *Escherichia coli*/verotoxin-producing *E. coli*, one of which was identified as serotype O157:H7.

Hepatitis E

There were 5 cases of hepatitis E notified in the fourth quarter of 2006, which was 2.1 times the five-year mean for the period. Six cases were also notified in the previous period, compared to only 2 cases in the fourth quarter of 2005.

Figure 1. Selected diseases*,† from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 October to 31 December 2006 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.

† Cholera is not shown due to scale issues.

‡ Some Victorian data for this period may be incomplete.

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

Four of the cases were notified in New South Wales. The cases were reported for 3 men and 2 women, ranging in age from 20 to 34 years. Two cases were imported from overseas: one from Bangladesh and the other was a student from India.

* There were 3 cases of cholera for the quarter, which is 15 times the five-year mean. Cholera is not shown in Figure 1 due to scale issues.

Typhoid

There were 21 cases of typhoid in this reporting period, which was 1.4 times the five-year mean. Half of the cases (11) were reported in New South Wales. Twenty cases had information on place of acquisition; 16 cases were acquired overseas and 4 were acquired locally (3 in New South Wales and 1 in Victoria).

Quarantinable diseases

Cholera

Three cases of cholera were notified in the fourth quarter of 2006. The cases were 3 elderly women (aged 71, 71 and 84) in Sydney, New South Wales, who suffered from diarrhoea in November 2006. The infecting organism was identified as toxin-producing *Vibrio cholerae* 01 Ogawa El Tor. The only common exposure among the 3 women was the consumption of raw whitebait. Investigations by the NSW Food Authority found that the whitebait implicated as the vehicle for infection was imported from Indonesia, and a media release advising people to avoid eating raw whitebait was issued. No additional cases of cholera were discovered, and the 3 women all recovered.[1]

These 3 cases represent all cholera notifications reported in Australia in 2006. The average number of cases over the last 5 years is 0.2 cases for the fourth quarter and 3.6 cases per calendar year (ranging from 1 case in 2003 to 5 cases in both 2001 and 2004).

Cholera is one of 7 human diseases subject to quarantine controls in Australia and it is one of the diseases reportable to the World Health Organization. Apart from 1 case of laboratory acquired cholera in 1996, all cases reported since the commencement of the NNDSS in 1991 have been imported.[2]

Sexually transmissible infections

Donovanosis

There was only one notification of donovanosis infection between 1 October and 31 December 2006, which was 0.3 times the five-year mean. There were only 3 cases notified in 2006, compared to an average of 18 cases per year over the previous 5 years. This decline follows the implementation of *The National Donovanosis (Elimination) Eradication Project 2001–2004*. This project led to enhanced surveillance and improved diagnosis and treatment, resulting in declining notifications of donovanosis.[3]

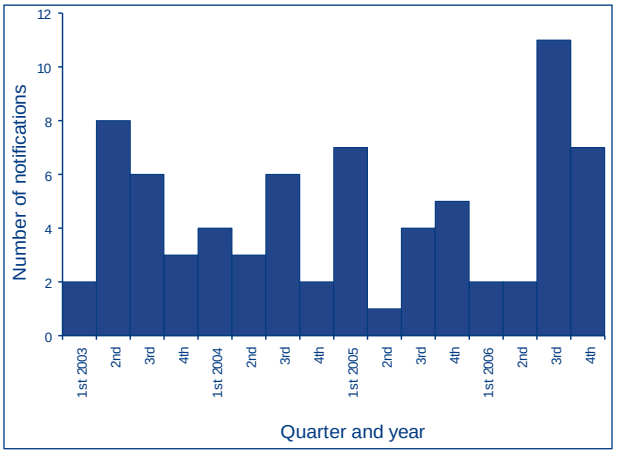
All 3 cases notified in 2006 were Indigenous persons aged between 30 and 60 years; 2 males from the Northern Territory and 1 female from Queensland.

Vaccine preventable diseases

Haemophilus influenzae type b infection

There were 7 notifications of *Haemophilus influenzae* type b (Hib) infection between 1 October and 31 December 2006, which was 2.3 times the five-year mean. This was less than the number notified in the previous period, 1 June to 30 September 2006 (11 cases) (Figure 2).

Figure 2. Notifications of Haemophilus influenzae type b infection, 2003 to 2006



Cases came from Queensland (3), New South Wales (2) and the Northern Territory (1). Four of the cases were in females. One of the cases was in an infant aged less than 1 year, with an additional 3 cases in children aged 1 to 5 years.

Indigenous status was recorded for 6 of the 7 cases; 3 notifications were in Indigenous people, including 2 children aged less than 2 years.

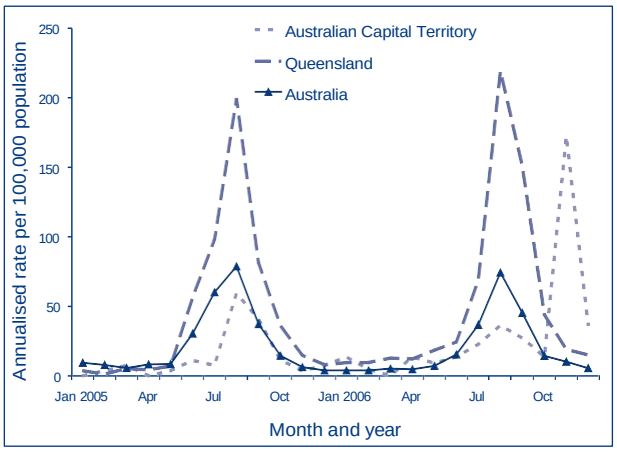
Routine vaccination against Hib became available in Australia in 1993. Vaccination status was available for all 4 of the cases who were eligible for Hib immunisation; 3 cases were fully vaccinated for age, and the other partially vaccinated for age.

Influenza

There were 420 notifications of laboratory-confirmed influenza in the fourth quarter of 2006, which was 1.2 times the five-year mean for the period. Half of the cases (212) were from Queensland. Figure 3 shows the notification rate of influenza in Queensland for 2005 and 2006. The mean age of onset was 43 years and the median age of onset was 46 years (40 years for males and 48 years for females). The highest proportion of cases was reported in children aged less than 5 years (12.9% or 54 cases).

Of particular note was an outbreak of influenza in an aged care facillity in the Australian Capital Territory (Figure 3). Between 11 October and 6 December, 77 people (55 of 132 residents and 22 of 173 staff) in an aged care facility reported symptoms of influenza-like illness. Of these, 19 people (18 residents and 1 staff) were found to have laboratory-confirmed influenza A infection.[4]

Figure 3. Notification rates of laboratory-confirmed influenza, Australian Capital Territory, Queensland and Australia, 2005 to 2006



Of those with laboratory-confirmed influenza A, 6 residents and 2 staff were immunised with the 2006–07 influenza vaccine prior to the outbreak.[4]

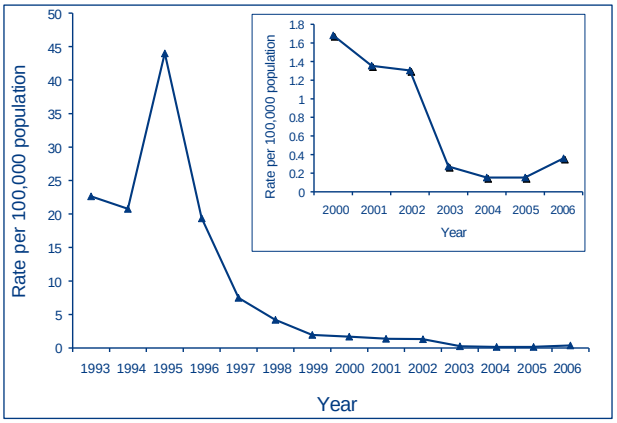
Ten resident deaths were associated with the outbreak. The mean age at death was 88 years and the median 91 years (range of 75 to 100 years). Two of the residents who died were fully vaccinated with the 2006–07 influenza vaccine.[4]

The outbreak control strategy included vaccination clinics, enhanced infection control and isolation of cases. Prophylactic treatment through administration of Oseltamivir was recommended to residents through their medical practitioners and provided to asymptomatic staff. The public health response also included laboratory investigation of suspect cases, social distancing and other measures to assist containment.[4]

Rubella

There were 9 cases of rubella reported for the period 1 October to 31 December 2006, which was 0.3 times the five-year mean. Six cases were reported for males and 3 for females. Rubella is more common in males than females; in 1971, vaccination against rubella was introduced for adolescent girls, but not boys. In 1989 however, with the introduction of the measles-mumps-rubella (MMR) vaccine (infant dose in 1989 and adolescent dose in 1994), both boys and girls are vaccinated against the disease.[5] Following epidemics of rubella in the early 1990s, notification rates have continued to decline (Figure 4). This is partly attributable to the Measles Control Campaign in late 1998.[6] The Measles Control Campaign had three main components: moving the second dose of the MMR vaccine from 10–16 years to 4–5 years; providingcatch-updosestochildrenaged 5–12 years; and sending reminder letters to parents of preschool-aged children.[7]

Figure 4. Rubella notification rates, Australia, 1993 to 2006



Rubella notifications increased from 31 in 2005 to 60 in 2006. This was due to notifications from New South Wales increasing from 10 cases in 2005 to 37 in 2006. The New South Wales cases were mainly from South Eastern and Central Sydney and concentrated in those aged 15 to 44 years, however there was no single identifiable source for the increase in notifications (Mark Bartlett, personal communication).

The 3 female cases were aged 18, 22 and 23 years. Vaccination status was only available for the 18-year-old, who was not vaccinated.

Vectorborne diseases

Barmah Forest virus and Ross River virus infections

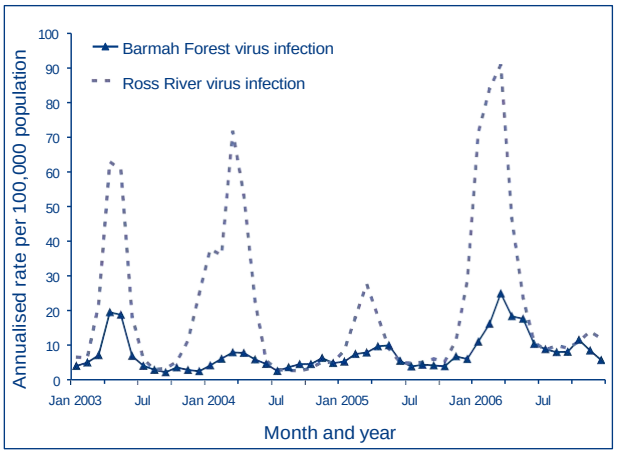
There were 364 notifications of Barmah Forest virus (BFV) infection and 520 notifications of Ross River virus (RRV) infection in the fourth quarter of 2006, which were 1.7 and 1.3 times the five-year mean, respectively. The majority of notifications came from Queensland (60% BFV and 34% RRV), New South Wales (26% BFV and 25% RRV) and Western Australia (22% RRV). While only 16 notifications of BFV and 43 notifications of RRV came

from the Northern Territory, the annualised rates were substantially higher than in other jurisdictions at 31.1 cases per 100,000 population for BFV (compared to 21.6 in Queensland and 5.5 in New South Wales) and 83.5 cases per 100,000 population (compared to 21.9 in Western Australia, 17.4 in Queensland and 7.6 in New South Wales).

Barmah Forest virus infection was reported more often for females than males (224 notifications versus 140). BFV notification rates were highest for males aged 50–59 years and females aged 30–39 years (9.5 and 13.0 cases per 100,000 population, respectively). Similarly, more notifications of Ross River virus infection were reported for females than males (285 and 235 notifications respectively). RRV notification rates were highest in women aged 30–39 years and in men aged 70–79 years (20.2 and 15.8 cases per 100,000 population, respectively).

Figure 5 shows national notification rates for Barmah Forest virus and Ross River virus from 2003 to 2006. Both diseases are seasonal, with notification rates peaking nationally in early autumn. Ross River virus infection rates are consistently higher than those for Barmah Forest virus in the peak season. The rates for both diseases were increased above historical levels in 2006.

Figure 5. Barmah Forest virus and Ross River virus infection notification rates, Australia, January 2003 to December 2006



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Acknowledgments

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Tables

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 32,497 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification date between 1 October and 31 December 2006 (Table 2). The notification rate of diseases per 100,000 population for each state or territory is presented in Table 3.

Table 1. Reporting of notifiable diseases by jurisdiction

Disease	Data received from:
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
Varicella infections (chickenpox)	All jurisdictions except NSW
Varicella infections (unspecified)	All jurisdictions except NSW
Varicella zoster infections	All jurisdictions except NSW
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 October to 31 December 2006, by date of onset*

Disease	State or territory								Total 4th quarter 2006†	Total 3rd quarter 2006	Total 4th quarter 2005	Last 5 years mean 4th quarter	Year to date 2006	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Bloodborne diseases															
Hepatitis B (incident)	5	14	4	12	2	3	28	12	80	66	53	338.6	297	71.0	1.1
Hepatitis B (unspecified)	20	757	56	234	73	12	402	199	1,753	1,905	1,468	6,551.0	6,663	1,575.4	1.1
Hepatitis C (incident)	13	2	1	0	10	2	43	24	95	92	90	499.0	428	117.8	0.8
Hepatitis C (unspecified)	38	1,577	58	756	130	68	609	265	3,501	3,681	2,916	14,746.0	13,189	3,494.2	1.0
Hepatitis D	0	2	0	2	0	0	1	0	5	10	6	25.6	31	4.2	1.2
Gastrointestinal diseases															
Botulism	0	0	0	1	0	0	0	0	1	0	0	1.3	1	0.0	NA
Campylobacteriosis§	117	NN	59	1,021	882	204	1,549	540	4,372	3,898	4,987	15,733.2	15,365	4,569.2	1.0
Cryptosporidiosis‖	0	123	25	81	36	6	76	76	423	305	792	2,211.2	3,181	447.6	0.9
Haemolytic uraemic syndrome	0	8	0	0	0	0	1	0	9	0	8	13.4	14	4.6	2.0
Hepatitis A	0	10	1	3	0	3	11	23	51	56	71	402.2	277	97.8	0.5
Hepatitis E	0	4	0	0	0	0	1	0	5	6	2	19.4	22	2.4	2.1
Listeriosis	1	4	0	2	1	0	2	3	13	14	18	63.2	59	16.2	0.8
Salmonellosis (NEC)	48	569	122	580	137	40	381	206	2,083	1,242	2,446	7,660.8	8,250	1,954.0	1.1
Shigellosis	0	20	30	15	10	0	23	16	114	103	168	553.4	542	125.4	0.9
SLTEC, VTEC¶	0	2	0	4	10	0	4	0	20	16	24	58.4	69	15.4	1.3
Typhoid	0	10	0	1	1	1	5	2	20	15	9	65.4	75	14.0	1.4
Quarantinable diseases															
Cholera	0	3	0	0	0	0	0	0	3	0	0	3.6	3	0.2	15.0
Plague	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Rabies	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Tularemia	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Viral haemorrhagic fever	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Yellow fever	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA

Table 2. Notifications of diseases received by State and Territory health authorities in the period 1 October to 31 December 2006, by date of onset,* *continued*

Disease	State or territory								Total 4th quarter 2006†	Total 3rd quarter 2006	Total 4th quarter 2005	Last 5 years mean 4th quarter	Year to date 2006	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection**	212	2,881	496	2,955	750	264	2,462	1,436	11,456	11,413	9,964	30,656.8	46,424	7,619.2	1.5
Donovanosis	0	0	1	0	0	0	0	0	1	0	3	17.6	3	3.8	0.3
Gonococcal infection	9	379	370	320	73	0	299	395	1,845	1,899	2,070	6,960.2	8,517	1,707.2	1.1
Syphilis (all)	7	288	50	78	6	2	190	48	669	653	532	2,087.8	2,592	522.4	1.3
Syphilis < two years duration	0	42	35	41	0	0	76	21	215	175	146	622.5	747	154.0	1.4
Syphilis >two years or unspecified duration	7	246	15	37	6	2	114	27	454	478	386	1,838.8	1,845	460.8	1.0
Syphilis - congenital	0	0	1	0	0	0	0	0	1	1	3	16.0	12	4.0	0.3
Vaccine preventable diseases															
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.0	NA
Haemophilus influenzae type b	0	2	1	3	0	0	1	0	7	11	5	20.4	22	3.0	2.3
Influenza (laboratory confirmed)‖	49	90	12	212	12	3	18	24	420	2,166	416	3,032.8	3,145	361.4	1.2
Measles	0	3	0	1	0	0	3	3	10	2	2	64.2	125	15.0	0.7
Mumps	0	18	0	7	5	0	2	5	37	90	38	121.0	260	25.8	1.4
Pertussis	13	372	6	492	142	9	150	30	1,214	4,563	2,805	8,035.8	10,921	2,568.8	0.5
Pneumococcal disease (invasive)‖	6	101	4	41	19	9	70	34	284	536	342	2,117.4	1,432	472.4	0.6
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Rubella	1	5	0	1	1	0	0	1	9	26	3	127.2	58	33.0	0.3
Rubella - congenital	0	0	0	0	0	0	0	0	0	0	0	1.4	0	0.2	0.0
Tetanus	0	0	0	0	0	0	0	0	0	0	1	3.6	1	1.0	0.0
Varicella infections (chickenpox)	0	NN	73	178	297	4	0	178	730	416	13	NA	1,482	NA	NA
Varicella infections (unspecified)	0	NN	2	771	120	4	0	151	1,048	939	141	NA	3,705	NA	NA
Varicella zoster infections	0	NN	29	141	157	15	0	156	498	314	7	NA	1,147	NA	NA
Vectorborne diseases															
Barmah Forest virus infection	0	93	16	218	15	0	0	22	364	357	296	1,169.4	2,108	209.0	1.7
Dengue	0	9	4	13	4	0	2	1	33	38	48	347.4	184	66.6	0.5
Flavivirus infection (NEC)	0	0	0	3	0	0	0	0	3	4	4	62.0	32	10.2	0.3
Japanese encephalitis virus‖	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.0	NA
Kunjin virus‖	0	0	0	0	0	0	0	0	0	0	0	7.2	3	0.6	0.0
Malaria	1	30	14	44	4	5	20	29	147	209	143	634.0	780	138.2	1.1
Murray Valley encephalitis virus‖	0	0	0	0	0	0	0	0	0	0	0	2.2	1	0.0	NA
Ross River virus infection	0	129	43	176	47	1	12	112	520	395	777	3,057.4	5,472	405.2	1.3

Table 2. Notifications of diseases received by State and Territory health authorities in the period 1 October to 31 December 2006, by date of onset,* *continued*

Disease	State or territory								Total 4th quarter 2006†	Total 3rd quarter 2006	Total 4th quarter 2005	Last 5 years mean 4th quarter	Year to date 2006	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Zoonoses															
Anthrax‖	0	0	0	0	0	0	0	0	0	0	0	0.0	1	0.0	NA
Australian bat lyssavirus‖	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Brucellosis	0	4	0	7	0	0	0	0	11	14	18	31.8	44	10.8	1.0
Leptospirosis	0	1	0	13	0	1	2	1	18	19	28	169.0	145	29.8	0.6
Lyssavirus unspecified‖	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	NA
Ornithosis	0	19	0	0	0	0	13	2	34	43	31	190.6	160	42.6	0.8
Q fever	0	45	1	42	1	0	4	2	95	114	83	574.4	393	141.4	0.7
Other bacterial infections															
Legionellosis	0	10	0	10	19	1	16	34	90	81	87	321.8	344	87.4	1.0
Leprosy	0	0	0	0	0	0	0	0	0	2	1	7.4	5	1.2	0.0
Meningococcal infection††	1	21	1	12	6	1	19	5	66	111	105	547.6	319	129.4	0.5
Tuberculosis	6	125	7	45	24	1	96	33	337	331	318	1,143.0	1,232	325.6	1.0
Total	547	7,730	1,487	8,495	2,995	659	6,515	4,068	32,497	36,156	31,342	110,507.9	139,539	27,477.6	1.2

* 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. Note: Ratios for syphilis <2 years; syphilis >2years or unspecified duration based on 2 years data.

§ 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 five 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 2006, by state or territory, (annualised rate per 100,000 population)

Disease*	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Bloodborne diseases									
Hepatitis B (incident)	6.1	0.8	7.8	1.2	0.5	2.5	2.2	2.3	1.6
Hepatitis B (unspecified)	24.4	44.4	108.8	23.2	18.8	9.8	31.7	39.0	34.1
Hepatitis C (incident)	15.8	0.1	1.9	0.0	2.6	1.6	3.4	4.7	1.8
Hepatitis C (unspecified)	46.3	92.5	112.7	74.9	33.5	55.7	48.0	51.9	68.1
Hepatitis D	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.0	0.1
Gastrointestinal diseases									
Botulism	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis[†]	142.6	NN	114.6	101.2	227.3	167.0	122.0	105.7	127.3
Cryptosporidiosis	0.0	7.2	48.6	8.0	9.3	4.9	6.0	14.9	8.2
Haemolytic uraemic syndrome	0.0	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Hepatitis A	0.0	0.6	1.9	0.3	0.0	2.5	0.9	4.5	1.0
Hepatitis E	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Listeriosis	1.2	0.2	0.0	0.2	0.3	0.0	0.2	0.6	0.3
Salmonellosis (NEC)	58.5	33.4	237.0	57.5	35.3	32.7	30.0	40.3	40.5
Shigellosis	0.0	1.2	58.3	1.5	2.6	0.0	1.8	3.1	2.2
SLTEC, VTEC[‡]	0.0	0.1	0.0	0.4	2.6	0.0	0.3	0.0	0.4
Typhoid	0.0	0.6	0.0	0.1	0.3	0.8	0.4	0.4	0.4
Quarantinable diseases									
Cholera	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
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[§]	258.4	169.0	963.5	292.9	193.3	216.1	193.9	281.2	223.0
Donovanosis	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Gonococcal infection	11.0	22.2	718.7	31.7	18.8	0.0	23.6	77.3	35.9
Syphilis (all)	8.5	16.9	97.1	7.7	1.5	1.6	15.0	9.4	13.0
Syphilis <2 years duration	0.0	2.5	68.0	4.1	0.0	0.0	6.0	4.1	4.2
Syphilis >2 years or unspecified duration	8.5	14.4	29.1	3.7	1.5	1.6	9.0	5.3	8.8
Syphilis - congenital	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Vaccine preventable diseases									
Diphtheria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haemophilus influenzae type b	0.0	0.1	1.9	0.3	0.0	0.0	0.1	0.0	0.1
Influenza (laboratory confirmed)	59.7	5.3	23.3	21.0	3.1	2.5	1.4	4.7	8.2
Measles	0.0	0.2	0.0	0.1	0.0	0.0	0.2	0.6	0.2
Mumps	0.0	1.1	0.0	0.7	1.3	0.0	0.2	1.0	0.7
Pertussis	15.8	21.8	11.7	48.8	36.6	7.4	11.8	5.9	23.6
Pneumococcal disease (invasive)	7.3	5.9	7.8	4.1	4.9	7.4	5.5	6.7	5.5
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella	1.2	0.3	0.0	0.1	0.3	0.0	0.0	0.2	0.2
Rubella - congenital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 3. Notification rates of diseases, 1 October to 31 December 2006, by state or territory, (annualised rate per 100,000 population), *continued*

Disease*	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Vaccine preventable diseases, continued									
Tetanus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Varicella infections (chickenpox)	0.0	NN	141.8	17.6	76.5	3.3	0.0	34.9	21.3
Varicella infections (unspecified)	0.0	NN	3.9	76.4	30.9	3.3	0.0	29.6	30.5
Varicella zoster infections	0.0	NN	56.3	14.0	40.5	12.3	0.0	30.5	14.5
Vectorborne diseases									
Barmah Forest virus infection	0.0	5.5	31.1	21.6	3.9	0.0	0.0	4.3	7.1
Dengue	0.0	0.5	7.8	1.3	1.0	0.0	0.2	0.2	0.6
Flavivirus infection (NEC)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Malaria	1.2	1.8	27.2	4.4	1.0	4.1	1.6	5.7	2.9
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	0.0	7.6	83.5	17.4	12.1	0.8	0.9	21.9	10.1
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	0.2	0.0	0.7	0.0	0.0	0.0	0.0	0.2
Leptospirosis	0.0	0.1	0.0	1.3	0.0	0.8	0.2	0.2	0.4
Lyssavirus unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	0.0	1.1	0.0	0.0	0.0	0.0	1.0	0.4	0.7
Q fever	0.0	2.6	1.9	4.2	0.3	0.0	0.3	0.4	1.8
Other bacterial infections									
Legionellosis	0.0	0.6	0.0	1.0	4.9	0.8	1.3	6.7	1.8
Leprosy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meningococcal infection‖	1.2	1.2	1.9	1.2	1.5	0.8	1.5	1.0	1.3
Tuberculosis	7.3	7.3	13.6	4.5	6.2	0.8	7.6	6.5	6.6

* 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.

There were 2,699 reports received by the Virology and Serology Laboratory Reporting Scheme (LabVISE) in the reporting period, 1 October to 31 December 2006 (Tables 4 and 5).

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2006, and total reports for the year†

	State or territory								This period 2006	This period 2005	Year to date 2006	Year to date 2005
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Measles, mumps, rubella												
Mealses virus	0	0	0	0	0	0	3	0	3	4	57	8
Mumps virus	0	0	0	0	0	0	1	0	1	13	26	38
Hepatitis viruses												
Hepatitis A virus	0	2	0	0	0	0	0	5	7	15	31	53
Hepatitis D virus	0	0	0	0	2	0	0	0	2	2	7	14
Hepatitis E virus	0	0	0	0	0	0	1	0	1	1	6	12
Arboviruses												
Ross River virus	0	1	10	8	11	0	3	7	40	119	1,061	452
Barmah Forest virus	0	1	0	12	8	0	0	0	21	27	287	185
Flavivirus (unspecified)	0	0	0	4	0	0	0	0	4	8	47	37
Adenoviruses												
Adenovirus not typed/ pending	2	69	0	0	26	0	28	0	125	182	615	680
Herpes viruses												
Herpes virus type 6	0	0	0	0	0	0	2	0	2	1	4	2
Cytomegalovirus	4	40	0	6	50	1	20	0	121	313	859	1,042
Varicella-zoster virus	0	24	0	48	54	1	10	0	137	388	1,034	1,499
Epstein-Barr virus	0	2	22	36	76	0	6	115	257	605	1,440	2,148
Other DNA viruses												
Poxvirus group not typed	0	0	0	0	0	0	1	0	1	0	3	2
Parvovirus	0	0	0	16	14	1	2	0	33	79	182	202
Picornavirus family												
Coxsackievirus A9	0	5	0	0	0	0	0	0	5	1	16	3
Echovirus type 34	0	1	0	0	0	0	0	0	1	0	1	0
Echovirus type 3	0	1	0	0	0	0	0	0	1	0	3	0
Rhinovirus (all types)	0	48	0	0	2	0	0	0	50	83	192	329
Enterovirus not typed/ pending	0	6	0	0	0	1	0	0	7	46	101	187
Ortho/paramyxoviruses												
Influenza A virus	0	17	0	3	9	0	7	0	36	61	336	708
Influenza B virus	0	4	0	0	2	0	0	0	6	27	172	257
Parainfluenza virus type 2	0	1	0	0	1	0	0	0	2	3	14	49
Parainfluenza virus type 3	0	50	0	4	25	0	24	0	103	116	217	390
Respiratory syncytial virus	0	32	0	6	5	2	11	0	56	129	1,803	1,679
Other RNA viruses												
HTLV-1	0	0	0	0	2	0	0	0	2	3	6	9
Rotavirus	0	157	0	0	95	13	132	1	398	271	1,267	1,270
Norwalk agent	0	5	0	0	0	0	423	0	428	104	1,538	267

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 October to 31 December 2006, and total reports for the year,† *continued*

	State or territory								This period 2006	This period 2005	Year to date 2006	Year to date 2005
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Other pathogens												
Chlamydia trachomatis not typed	3	112	0	119	197	13	11	0	455	1,271	3,867	5,049
Chlamydia psittaci	0	0	0	0	0	0	17	0	17	15	60	53
Chlamydia spp typing pending	0	1	0	0	0	0	0	0	1	0	1	0
Mycoplasma pneumoniae	0	4	3	20	24	5	40	29	125	382	1,026	1,309
Mycoplasma hominis	0	3	0	0	0	0	0	0	3	3	23	7
Coxiella burnetii (Q fever)	0	0	1	0	5	0	4	0	10	41	103	162
Rickettsia tsutsugamushi	0	0	0	0	1	0	1	0	2	25	25	71
Rickettsia - spotted fever group	0	0	0	0	1	0	0	0	1	58	86	236
Streptococcus group A	0	0	0	24	0	0	16	0	40	178	369	609
Bordetella pertussis	0	5	0	14	56	0	10	0	85	406	1,309	1,573
Legionella pneumophila	0	0	0	0	0	0	3	0	3	6	28	23
Legionella longbeachae	0	0	0	0	0	0	6	0	6	14	21	51
Legionella species	0	0	0	0	0	0	1	0	1	1	1	1
Cryptococcus species	0	0	0	1	1	0	0	0	2	12	21	41
Leptospira species	0	0	0	1	1	0	0	0	2	10	18	33
Treponema pallidum	0	40	0	28	25	0	0	0	93	251	781	1,086
Toxoplasma gondii	0	0	0	0	2	0	1	0	3	14	39	45
Total	9	631	36	350	695	37	784	157	2,699	5,288	19,103	21,871

* 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 2006*

State or territory	Laboratory	October 2006	November 2006	December 2006	Total this period
Australian Capital Territory	The Canberra Hospital	–	–	–	–
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	116	55		171
	New Children's Hospital, Westmead	116	79	36	231
	Repatriation General Hospital, Concord	–	–	–	–
	Royal Prince Alfred Hospital, Camperdown	27	18	5	50
	South West Area Pathology Service, Liverpool	103	46	24	173
Queensland	Queensland Medical Laboratory, West End	1	368	1	370
	Townsville General Hospital	–	–	–	–
South Australia	Institute of Medical and Veterinary Science, Adelaide	38	655	2	695
Tasmania	Northern Tasmanian Pathology Service, Launceston	14	15	6	35
	Royal Hobart Hospital, Hobart	–	–	–	–
Victoria	Monash Medical Centre, Melbourne	5	10	11	26
	Royal Children's Hospital, Melbourne	153	52	15	220
	Victorian Infectious Diseases Reference Laboratory, Fairfield	151	314	73	538
Western Australia	PathCentre Virology, Perth	–	–	–	–
	Princess Margaret Hospital, Perth	–	–	–	–
	Western Diagnostic Pathology	67	80	43	190
Total		791	1,692	216	2,699

* The complete list of laboratories reporting for the 12 months, January to December 2006, 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 40 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 3,000 and 4,000 consultations are recorded each week.

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

In 2006, six conditions are being monitored, four of which are related to communicable diseases. These include influenza, gastroenteritis, varicella and shingles. Definitions of these conditions were published in Commun Dis Intell *2007;31:162.*

Data on influenza-like illness and gastroenteritis from 1 October to 31 December 2006 compared with 2005 are shown as the rate per 1,000 consultations in Figures 1 and 2, respectively.

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

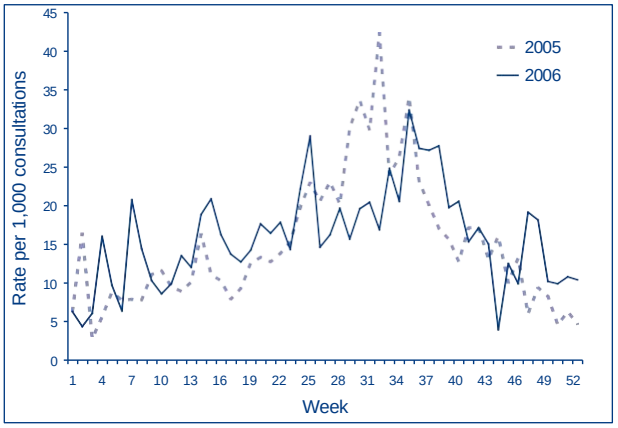
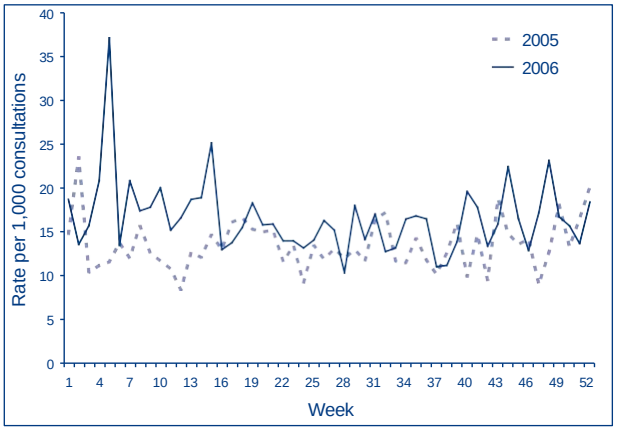


Figure 2. Consultation rates for gastroenteritis, ASPREN, 1 January to 31 December 2006, by week of report



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 July to 30 September 2005, at 24 months of age for the cohort born between 1 July to 30 September 2004, and at 6 years of age for the cohort born between 1 July to 30 September 2000 according to the National Immunisation Program Schedule.

For information about the Australian Childhood Immunisation Register see Surveillance systems reported in CDI, *published in* Commun Dis Intell *2007;31:165 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.

Reporting period 1 July to 30 September 2006

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia increased marginally by 0.4 percentage points to 91.2% (Table 1), whilst there were no important changes in coverage for all individual vaccines due at 12 months of age. There were no significant movements in coverage for individual vaccines by state or territory.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia increased marginally from the last quarter by 0.2 percentage points to 92.4% (Table 2). There were no significant changes in coverage in any jurisdiction for 'fully

immunised' coverage or for coverage for individual vaccines. It is notable that the estimate for 'fully immunised' at 24 months of age has been higher than the 12 months coverage estimate since the 18 month DTPa booster was removed from the immunisation schedule in September 2003.

It is also notable that, for the 2 vaccines where no further doses are due between 6 months and 24 months of age (DTP and polio), coverage at the national level was 95.2% and 95.1% respectively at 24 months versus 92.2% and 92.0% at 12 months. This suggests that delayed notification or delayed vaccination is making an important contribution to the coverage estimates at 12 months of age and that the 'fully immunised' estimate is likely to be a minimum estimate.

Table 3 shows immunisation coverage estimates for children at 6 years of age for Australia and by state or territory. For the second consecutive quarter, 'fully immunised' coverage for Australia increased significantly by 1.8 percentage points (a total increase of 5.3 percentage points in 2 quarters) and is now at the highest level ever recorded since coverage at 6 years of age was first reported in early 2003. Coverage increased in all jurisdictions and for all individual vaccines with the greatest increase in the Northern Territory and Western Australia, by 5.9 and 4 percentage points, respectively. A possible factor in this increase in coverage at 6 years of age is the introduction of the multi-valent combination vaccine DTP-IPV onto the schedule in November 2005, reducing the number of vaccines to be recorded from three to two. Other factors which may have had an impact at the local level include promotional campaigns centred around child care or school entry, or data cleaning activities.

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 2005; assessment date 31 December 2006

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,071	23,311	909	14,333	4,550	1,564	16,508	6,745	68,991
Diphtheria, tetanus, pertussis (%)	92.2	92.0	92.8	91.4	92.1	94.3	92.9	90.8	92.0
Poliomyelitis (%)	92.2	91.8	92.8	91.4	92.0	94.0	92.8	90.8	92.0
Haemophilus influenzae type b (%)	96.1	95.3	96.4	93.7	94.8	96.4	95.1	94.5	94.8
Hepatitis B (%)	96.1	95.3	96.6	93.5	94.5	96.4	95.0	94.3	94.7
Fully immunised (%)	91.9	91.5	92.3	90.1	91.1	94.0	91.7	90.2	91.2
Change in fully immunised since last quarter (%)	+1.2	+0.6	+1.7	-0.3	+0.6	+0.2	+0.3	+0.9	+0.4

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 2004; assessment date 31 December 2006*

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,077	22,296	844	13,513	4,330	1,509	16,194	6,505	66,268
Diphtheria, tetanus, pertussis (%)	95.5	95.0	96.7	94.7	94.9	97.0	96.1	94.0	95.2
Poliomyelitis (%)	95.5	94.9	96.5	94.6	94.9	97.0	96.0	94.0	95.1
Haemophilus influenzae type b (%)	94.9	93.7	95.1	93.5	93.7	96.0	94.8	92.7	93.9
Measles, mumps, rubella (%)	94.5	93.7	96.2	93.5	93.9	95.0	95.0	92.7	94.0
Hepatitis B(%)	95.9	95.8	97.5	95.5	95.9	97.2	96.4	94.7	95.8
Fully immunised (%)	93.5	92.1	94.4	91.8	92.4	94.5	93.6	90.8	92.4
Change in fully immunised since last quarter (%)	-0.3	+0.7	-0.1	+0.2	+1.2	+0.7	-0.0	-0.5	+0.2

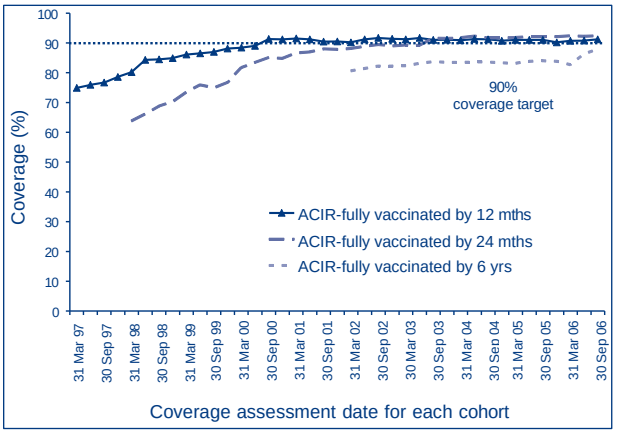
* The 12 months age data for this cohort was published in *Commun Dis Intell* 2006;30:157.

Table 3. 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 2000; assessment date 31 December 2006

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,064	22,649	815	13,963	4,599	1,569	16,277	6,861	67,797
Diphtheria, tetanus, pertussis (%)	89.7	88.8	88.8	88.4	87.6	89.9	90.8	85.6	88.8
Poliomyelitis (%)	90.1	88.7	88.8	88.6	87.5	89.9	90.8	85.6	88.8
Measles, mumps, rubella (%)	90.2	88.8	88.8	88.6	87.2	89.7	90.8	85.6	88.8
Fully immunised (%)[1]	89.4	87.9	88.1	87.6	86.6	89.3	90.1	84.7	88.0
Change in fully immunised since last quarter (%)	+1.8	+1.7	+5.9	+1.4	+2.0	+0.7	+1.1	+4.0	+1.8

Figure 3 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 recent increase in coverage at 6 years of age, described in the previous paragraph, is apparent in the Figure. It should be noted that, currently, coverage for the vaccines added to the National Immunisation Program since 2003 (pneumococcal conjugate at 2, 4 and 6 months; meningococcal C conjugate at 12 months; and varicella at 18 months) are not included in the coverage estimates at 12 or 24 months of age.

Figure 3. Trends in vaccination coverage, Australia, 1997 to 2006, 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% 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;31:163.*

Reporting period 1 July to 30 September 2006

The AGSP laboratories received a total of 869 gonococcal isolates of which 854 remained viable for susceptibility testing. This was about 10% less than the 968 gonococci reported for the same period in 2005. About one third of this total was from New South Wales, 21% from Victoria, 16% each from the Northern Territory and Queensland, 11% from Western Australia and 5% from South Australia. There were 2 isolates each from Tasmania and the Australian Capital Territory.

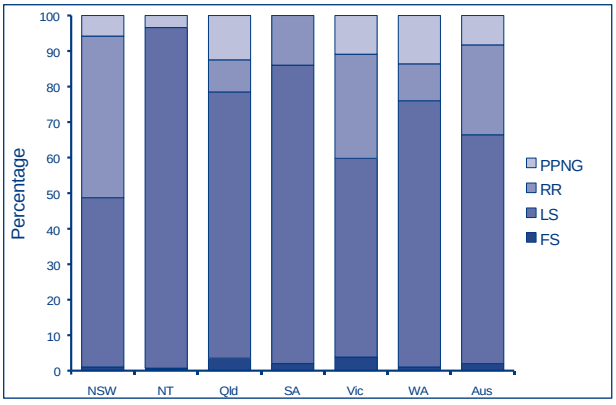
Penicillins

In this quarter, 303 (35.5%) of the 854 isolates examined were penicillin resistant by one or more mechanisms. Seventy-six (8.9%) were penicillinase producing *N. gonorrhoeae* (PPNG) and 227 (26.6%) resistant by chromosomal mechanisms, (CMRNG). The proportion of all strains resistant to the penicillins by any mechanism ranged from 4.3% in the Northern Territory to 50% in New South Wales and Victoria. High rates of penicillin resistance were also found in South Australia (37.8%) and Queensland (31%), with a lower rate (13.4%) in Western Australia.

Figure 4 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 or territory. A high proportion those strains classified as PPNG or else resistant by chromosomal mechanisms fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

In New South Wales, most of the penicillin resistance was due to CMRNG (117, 42.4%) with 21 PPNG (7.6%). A similar distribution was present in Victoria with 20 PPNG (11%) and 70 CMRNG (38.7%). This disparity was not quite as pronounced in other centres. The proportion of CMRNG in Queensland increased to 17% while 14% were PPNG. In South Australia, 16% were PPNG and 21% were CMRNG. In Western Australia, PPNG and CMRNG each accounted for 6.7% of all 89 isolates. PPNG were also present in Tasmania and the Northern Territory (1 and 4 isolates respectively). No PPNG were detected in the Australian Capital Territory. CMRNG were present in Tasmania (1 isolate), the Northern Territory (2) and there was a single CMRNG from the Australian Capital Territory.

Figure 4. Categorisation of gonococci isolated in Australia, 1 July to 30 September 2006, by penicillin susceptibility and region



FS Fully sensitive to penicillin, MIC ≤0.03 mg/L.

LS Less sensitive to penicillin, MIC 0.06–0.5 mg/L.

RR Relatively resistant to penicillin, MIC ≥1 mg/L.

PPNG Penicillinase producing *Neisseria gonorrhoeae.*

Ceftriaxone

Four isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected. Three were found in Queensland and 1 in New South Wales. All 4 isolates were penicillin resistant by chromosomal mechanisms and were also quinolone resistant (ciprofloxacin MICs 4–16 mg/L). It is emphasised that no treatment failures have been documented locally when a 250 mg IM dose of ceftriaxone has been used.

Spectinomycin

All isolates susceptible to this injectable agent.

Quinolone antibiotics

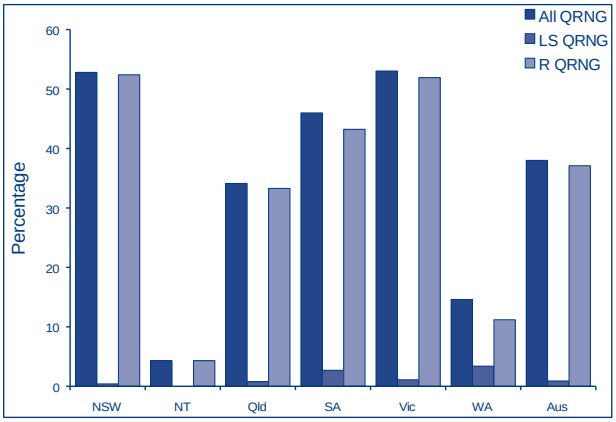
The number (325) and percentage (38%) of quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter was the highest proportion of QRNG found in this program to date. In the third quarter of 2004 there were 200 QRNG; 24% of all gonococci tested, and in this quarter in 2005, the number (335) was higher but the proportion (35.5%) slightly lower. The majority of QRNG (317 of 325, 97.5%) exhibited 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 (Figure 5). The highest proportion of QRNG was found in Victoria where 96 QRNG accounted for 53% of all gonococci tested. In South Australia, there were 17 QRNG (46% of isolates), in New South Wales 146 QRNG (52.8%), Queensland 44 (34%), Western Australia 13 (14.6%), with 6 QRNG detected in the Northern Territory, 2 in Tasmania and 1 in the Australian Capital Territory.

High level tetracycline resistance

The number (102) and proportion (11.9%) of high level tetracycline resistant *N. gonorrhoeae* (TRNG) detected was lower than that recorded in this quarter in 2005 (156, 16.6%). TRNG were found in all states and territories except for Tasmania and the Australian Capital Territory and represented between 5% (Northern Territory) and 26% of isolates (Western Australia).

Figure 5. The distribution of quinolone resistant isolates of *Neiserria gonorrhoeae* in Australia by jurisdiction, 1 July to 30 September 2006



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs ≥1 mg/L

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 2006 are included in Tables 6 and 7. Data include cases reported and entered by 19 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 *2007;31:164–165.*

Reporting period 1 October to 30 September 2006

There were 1,873 reports to NEPSS of human *Salmonella* infection in the fourth quarter of 2006; 64% more than in third quarter of 2006, and around 10% more than the 10-year historical mean for this period. An increase in reports of both sporadic and outbreak-associated human salmonellosis from late spring through summer is typical of seasonal trends in the incidence of salmonellosis in Australia.

During the fourth quarter of 2006, the 25 most common *Salmonella* types in Australia accounted for 1,243 cases; 66% of all reported human *Salmonella* infections. Nineteen of the 25 most common *Salmonella* infections in the fourth quarter of 2006 were also among those most commonly reported in preceding quarter.

S. Saintpaul was by far the most common *Salmonella* in Australia, with the recent excess of cases largely due to widespread outbreaks associated with fresh produce. *S*. Typhimurium phage types 170, 135 and 44 were next most common, particularly in New South Wales and Victoria. *S*. Typhimurium phage type 170 emerged in late 2001, and despite declining markedly each winter, reappears regularly as a prominent cause of human disease during the warmer months. The increase in *S*. Typhimurium phage type 44 cases is more recent.

Other salmonellae manifesting increases over the recent historical average include *S*. Typhimurium phage type 197 (in Queensland), *S*. Montevideo and *S*. Wangata (New South Wales), *S*. Litchfield (Western Australia) and *S*. Havana (New South Wales).

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 6. Top 25 *Salmonella* types identified in Australia, 1 October to 31 December 2006, by state or territory

National rank	*Salmonella* type	State or territory								Total 4th quarter 2006	Last 10 years mean 4th quarter	Year to date 2006	Year to date 2005
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
1	*S.* Saintpaul	10	81	9	79	1	7	44	7	238	78	561	437
2	*S.* Typhimurium PT 170	13	57	0	15	0	0	47	2	134	61	409	472
3	*S.* Typhimurium PT 135	5	43	5	21	2	4	30	9	119	168	667	805
4	*S.* Typhimurium PT 44	5	23	0	14	3	0	67	0	112	37	237	230
5	*S.* Typhimurium PT 9	1	25	0	17	21	0	12	5	81	121	353	434
6	*S.* Typhimurium PT 197	0	10	0	46	0	2	2	1	61	24	146	546
7	*S.* Virchow PT 8	1	8	5	29	0	0	4	1	48	49	266	249
8	*S.* Birkenhead	0	23	0	20	0	0	1	0	44	63	263	219
9	*S.* Chester	0	10	2	12	1	0	6	6	37	37	158	185
10	*S.* Montevideo	0	22	0	1	0	0	9	2	34	10	64	21
11	*S.* Muenchen	0	4	1	15	0	0	0	11	31	27	153	147
12	*S.* Oranienburg	1	5	3	8	6	1	2	3	29	16	161	101
13	*S.* Stanley	0	9	0	7	0	0	9	4	29	15	102	69
14	*S.* Infantis	0	10	0	1	6	0	6	5	28	29	173	170
15	*S.* Litchfield	0	1	5	6	0	0	0	16	28	9	51	35
16	*S.* Typhimurium PT 12	1	8	0	0	0	0	9	7	25	16	118	117
17	*S.* Aberdeen	0	1	0	20	0	0	2	0	23	22	146	151
18	*S.* Typhimurium PT 135a	0	0	4	0	18	1	0	0	23	6	66	27
19	*S.* Hvittingfoss	0	3	0	12	0	0	3	1	19	20	133	185
20	*S.* Anatum	0	0	5	7	1	0	0	5	18	20	107	79
21	*S.* Potsdam	0	1	3	8	1	0	1	3	17	19	83	49
22	*S.* Waycross	0	7	0	9	0	0	1	0	17	18	140	115
23	*S.* Havana	0	8	2	2	0	0	3	2	17	11	42	39
24	*S.* Singapore	0	11	1	1	1	0	0	2	16	13	54	37
25	*S.* Enteritidis PT 6a	0	3	0	0	0	2	5	5	15	8	52	90

Table 6. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 October to 31 December 2006, as reported to 19 January 2007

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total all *Salmonella* for quarter	49	523	93	495	116	38	386	173	1,873
Total contributing *Salmonella* types	20	110	46	96	41	15	101	70	235

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 *2007;31:162–163.*

HIV and AIDS diagnoses and deaths following AIDS reported for 1 July to 30 September 2006, as reported to 30 December 2006, are included in this issue of Communicable Diseases Intelligence *(Tables 4 and 5).*

Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 July to 30 September 2006, 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 2006	This period 2005	YTD 2006	YTD 2005
HIV diagnoses	Female	0	1	0	7	0	0	5	11	24	26	85	73
	Male	0	41	0	31	1	0	59	13	145	199	548	649
	Not reported	0	0	0	0	0	0	0	0	0	0	0	0
	Total*	0	42	0	38	1	0	66	24	171	226	636	723
AIDS diagnoses	Female	0	0	0	1	0	0	3	1	5	11	15	26
	Male	0	17	0	3	2	0	19	2	43	43	119	137
	Total*	0	17	0	4	2	0	23	3	49	54	136	163
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	1	3	3
	Male	0	6	0	2	2	0	10	0	20	17	49	45
	Total*	0	6	0	2	2	0	10	0	20	18	54	48

* Totals include people whose sex was reported as transgender.

Table 5. Cumulative diagnoses of HIV infection, AIDS, and deaths following AIDS since the introduction of HIV antibody testing to 30 September 2006, and reported by 31 December 2006, by sex and state or territory

	Sex	State or territory								
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	32	844	18	261	94	8	356	203	1,816
	Male	259	13,301	128	2,685	899	95	5,187	1,202	23,756
	Not reported	0	231	0	0	0	0	22	0	253
	Total*	291	14,405	146	2,955	994	103	5,587	1,412	25,893
AIDS diagnoses	Female	10	250	3	70	32	4	110	38	517
	Male	93	5,375	43	1,022	399	50	1,984	423	9,389
	Total*	103	5,642	46	1,094	432	54	2,106	463	9,940
AIDS deaths	Female	7	136	1	42	20	2	60	24	292
	Male	74	3,572	26	661	276	32	1,410	292	6,343
	Total*	81	3,719	27	705	296	34	1,479	317	6,658

* Totals include people whose sex was reported as transgender.