

Additional reports

Australian childhood immunisation coverage

Tables 1, 2 and 3 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

The data show the percentage of children fully immunised at 12 months of age for the cohort born between 1 April and 30 June 2008, at 24 months of age for the cohort born between 1 April and 30 June 2007, and at 5 years of age for the cohort born between 1 April and 30 June 2004 according to the National Immunisation Program Schedule. However from March 2002 to December 2007, coverage for vaccines due at 4 years of age was assessed at the 6-year milestone age.

For information about the Australian Childhood Immunisation Register see *Surveillance systems reported in CDI*, published in *Commun Dis Intell* 2008;32:134–135 and for a full description of the methodology used by the Register see *Commun Dis Intell* 1998;22:36–37.

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

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

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia increased slightly by 0.7 of a percentage point to 92.0% (Table 1). There were no important changes in coverage for any individual vaccines due at 12 months of age or by jurisdiction.

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

Immunisation coverage for 'fully immunised' at 5 years of age for Australia is currently at 82.1% (Table 3). In the Northern Territory, South Australia and Western Australia it is below 80% at 79.3%, 78.4% and 79.2% respectively. The only important changes in coverage for individual vaccines due at 5 years of age were seen in the Northern Territory (a decrease in all vaccines by around 5 percentage points) and in Tasmania (an increase in all vaccines by around 5–6 percentage points).

Figure 1 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 (5 years from March 2008), although coverage for vaccines due at 4 years decreases significantly due to the change in assessment age from 6 to 5 years. It should also be noted that, currently, coverage for the vaccines added to the NIP since 2003 (varicella at 18 months, meningococcal C conjugate at 12 months and pneumococcal conjugate at 2, 4, and 6 months) are not included in the 12 or 24 months coverage data, respectively.

Figure 1: Trends in vaccination coverage, Australia, 1997 to 30 June 2009, by age cohorts

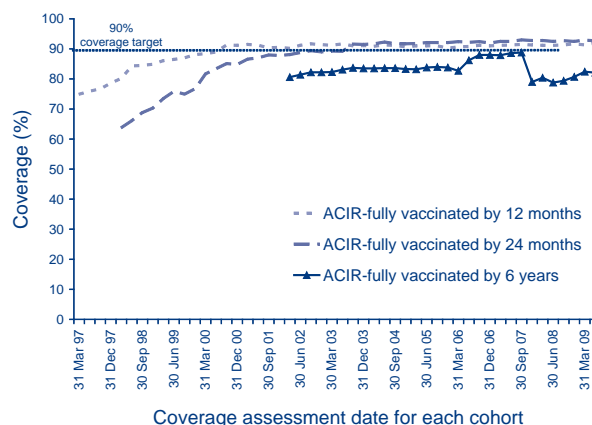


Table 1: Percentage of children immunised at 1 year of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2008; assessment date 30 September 2009

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,140	23,639	980	15,482	4,758	1,554	17,001	7,646	72,200
Diphtheria, tetanus, pertussis (%)	94.8	92.5	93.0	92.2	91.9	92.9	93.0	90.9	92.4
Poliomyelitis (%)	94.8	92.5	93.0	92.2	91.9	92.9	93.0	90.8	92.4
<i>Haemophilus influenzae</i> type b (%)	95.9	95.1	95.1	94.7	94.5	95.6	95.3	93.9	94.9
Hepatitis B (%)	95.6	95.0	96.5	94.5	94.3	95.6	95.2	93.7	94.8
Fully immunised (%)	94.4	92.2	91.8	91.9	91.7	92.9	92.6	90.4	92.0
Change in fully immunised since last quarter (%)	+0.8	+0.2	+1.6	+1.0	+0.2	+2.6	+0.7	+1.4	+0.7

Table 2: Percentage of children immunised at 2 years of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2007; assessment date 30 September 2009*

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,144	24,466	978	15,512	4,772	1,547	17,291	7,556	73,266
Diphtheria, tetanus, pertussis (%)	96.6	94.8	95.7	94.2	94.9	96.3	95.9	94.4	95.0
Poliomyelitis (%)	96.5	94.8	95.7	94.2	94.8	96.2	95.8	94.4	94.9
<i>Haemophilus influenzae</i> type b (%)	96.2	95.2	94.4	93.6	93.9	96.1	95.0	94.5	94.7
Measles, mumps, rubella (%)	95.4	93.6	95.8	93.4	94.2	95.5	94.9	93.3	94.0
Hepatitis B (%)	96.9	95.7	96.8	95.1	95.4	96.8	96.4	95.1	95.7
Fully immunised (%)	94.3	92.4	93.9	92.1	92.7	94.7	93.8	91.8	92.7
Change in fully immunised since last quarter (%)	+0.7	-0.3	-0.8	-0.1	-0.5	+1.7	-0.1	+0.0	-0.1

* The 12 months age data for this cohort were published in *Commun Dis Intell* 2008;32:489.

Table 3: Percentage of children immunised at 5 years of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2004; assessment date 30 September 2009

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,041	21,386	864	13,865	4,376	1,359	15,634	6,996	65,521
Diphtheria, tetanus, pertussis (%)	87.7	82.1	80.0	84.1	78.9	85.1	85.0	80.3	82.9
Poliomyelitis (%)	87.7	82.0	79.9	83.9	78.9	85.3	85.0	80.2	82.9
Measles, mumps, rubella (%)	87.3	81.8	80.0	83.7	78.8	85.4	84.6	80.1	82.6
Fully immunised (%)	87.0	81.3	79.3	83.2	78.4	84.4	84.3	79.2	82.1
Change in fully immunised since last quarter (%)	+2.6	-0.6	-5.5	+0.7	+2.7	+5.8	-1.5	-1.1	-0.3

Australian gonococcal surveillance

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The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various states and

territories report data on sensitivity to an agreed 'core' group of antimicrobial agents quarterly. The antibiotics currently routinely surveyed are penicillin, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens and currently used in Australia to treat gonorrhoea. When *in vitro* resistance to a recommended agent is demonstrated in 5% or more of isolates from a general population, it is usual

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

Reporting period 1 April to 30 June 2009

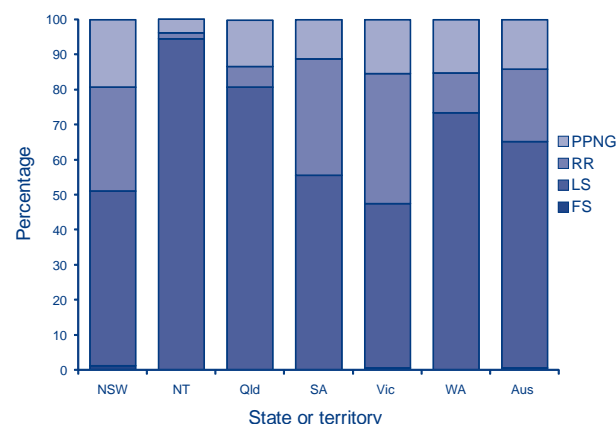
The AGSP laboratories received a total of 796 isolates in this quarter, a decrease from the 854 seen in the corresponding period in 2008. Of these, 782 remained viable for susceptibility testing. About 28% of this total was from New South Wales, 23% from Victoria, 17% from Queensland, 16% from the Northern Territory, 11% from Western Australia and 3.4% from South Australia. There were 7 isolates from the Australian Capital Territory and a single isolate from Tasmania. The number of isolates examined in Victoria, Queensland and the Northern Territory increased, while those from New South Wales were similar. There was a decline in numbers examined in Western and South Australia, with a marked decrease in South Australia.

Penicillins

In this quarter, 272 (34.8%) of all isolates examined were penicillin resistant by one or more mechanisms, a 33% decline from the 402 reported in the same quarter in 2008. One hundred and ten (14.1%) isolates were penicillinase-producing *Neisseria gonorrhoeae* (PPNG) and 162 (20.7%) were resistant by chromosomal mechanisms, (CMRP). The decrease in numbers in CMRP from the 304 recorded in this quarter in 2008 was especially marked, whereas PPNG increased slightly from the 98 (11%) seen in 2008. The proportion of all strains resistant to the penicillins by any mechanism ranged from 5.4% in the Northern Territory to 52.5% in Victoria. High rates of penicillin resistance were also found in New South Wales (49%), South Australia (44%), Western Australia (26%) and Queensland (19%).

Figure 2 shows the proportions of gonococci fully sensitive (MIC \leq 0.03 mg/L), less sensitive (MIC 0.06–0.5 mg/L), relatively resistant (MIC \leq 1 mg/L) or else PPNG, aggregated for Australia and by state or territory. A high proportion of those strains classified as PPNG or CMRP fail to respond to treatment with penicillins (penicillin, amoxicillin, ampicillin) and early generation cephalosporins.

Figure 2: Categorisation of gonococci isolated in Australia, 1 April to 30 June 2009, by penicillin susceptibility and state or territory



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

In Victoria, New South Wales and South Australia most of the penicillin resistance was due to CMRP. In Victoria, 67 (37%) were CMRP and 28 (15%) PPNG. In New South Wales 66, (30%) isolates were CMRP with 43 (19%) PPNG and in South Australia 9 (33%) isolates were CMRP and 3 (11%) were PPNG. In Queensland, PPNG were more prominent (13%, 18 isolates) with 6% CMRP. Similarly in Western Australia PPNG were more prominent (15%, 12 isolates) with 11% CMRP. Five PPNG and 2 CMRP were detected in the Northern Territory. One isolate from the Australian Capital Territory was chromosomally resistant and the single isolate from Tasmania was PPNG.

Ceftriaxone

Thirteen isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected: five in New South Wales, four in Western Australia, two in South Australia and one each in Queensland and Victoria.

Spectinomycin

All isolates were susceptible to this injectable agent.

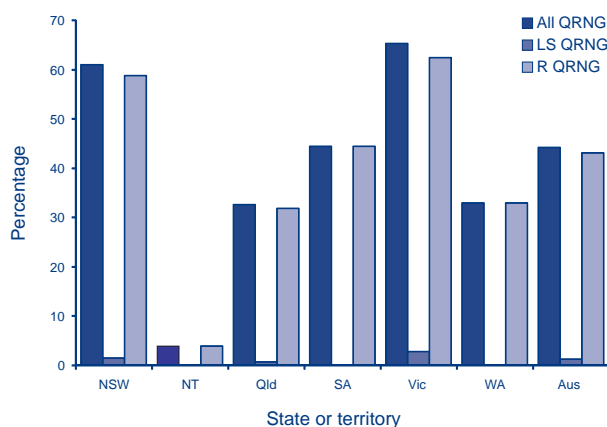
Quinolone antibiotics

Quinolone resistant *N. gonorrhoeae* (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 \leq 1 mg/L) groups.

A total of 346 QRNG was present in this quarter and represented 44.3% of all gonococci tested nationally. This was a decrease in the proportion of QRNG when compared with the 58.5% in this quarter in 2008, and the 44.5% in 2007. The majority of QRNG in the current period continued to exhibit higher-level resistance (ciprofloxacin MICs 1 mg/L or more).

QRNG were detected in all states and territories. The highest proportion of QRNG was present in Victoria where 118 QRNG were 65.2% of all isolates. A high number (134) and proportion (60%) of QRNG were found in New South Wales, Queensland (44 QRNG, 33%), Western Australia (26 QRNG, 33%) and South Australia (12 QRNG 45%) (Figure 3). Six isolates from the Australian Capital Territory, five from the Northern Territory and a single strain from Tasmania were QRNG.

Figure 3: The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 April to 30 June 2009, by state or territory



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs \geq 1 mg/L.

High level tetracycline resistance

There were 165 isolates with high level tetracycline resistance (TRNG) detected, which was more than the 146 found in this quarter in 2008 and represented 21.1% of all isolates. The highest proportion of TRNG in any jurisdiction was in Western Australia with 34% and the highest number was in New South Wales with 68 isolates. TRNG were present in all states and territories except the Australian Capital Territory

Reference

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

Australian Sentinel Practice Research Network

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

The network consists of general practitioners who report presentations on a number of defined medical conditions each week. ASPREN was established in 1991 to provide a rapid monitoring scheme for infectious diseases that can alert public health officials of epidemics in their early stages as well as play a role in the evaluation of public health campaigns and research of conditions commonly seen in general practice. Electronic data collection was established in 2006 and currently, further development of ASPREN is in progress to create an automatic reporting system.

The list of conditions is reviewed annually by the ASPREN management committee and an annual report is published. In 2009, four conditions are being monitored. They include influenza-like (ILI) illness, gastroenteritis and varicella infections (chickenpox and shingles). Definitions of these conditions are described in Surveillance systems reported in CDI, published in Commun Dis Intell 2008;32:135.

Data on influenza-like illness, gastroenteritis, chickenpox and shingles from 1 July to 30 September 2009 compared with 2008, are shown as the rate per 1,000 consultations in Figures 4, 5, 6 and 7, respectively.

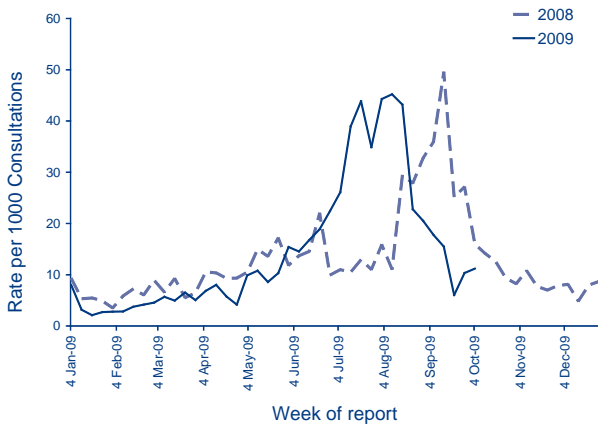
Reporting period 1 July to 30 September 2009

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 91 general practitioners contributed data to ASPREN in the 3rd quarter of 2009. Each week an average of 56 general practitioners provided information to ASPREN at an average of 8,016 (range 5,899–9,417) consultations per week and an average of 294 (range 144–475) notifications per week.

ILI rates reported from 1 July to 30 September 2009 were 9–61 cases per 1,000 consultations. The reported rates in July and August 2009 were significantly higher (22–44 cases per 1,000 consultations and 21–45 cases per 1,000 consultations, respectively) compared with the same reporting period in 2008 (10–13 cases per 1,000 consultations and 11–33 cases per 1,000 consultations, respectively). ILI rates reported in September 2009 (6–18 cases

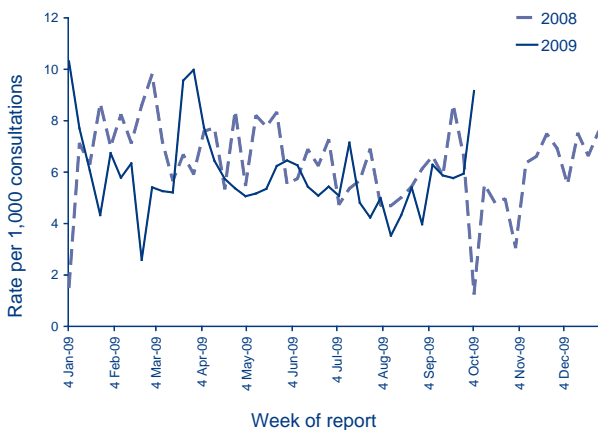
per 1,000 consultations) were significantly lower than rates recorded in September 2008 (16–50 cases per 1,000 consultations) (Figure 4).

Figure 4: Consultation rates for influenza-like illness, ASPREN, 1 January 2008 to 30 September 2009, by week of report



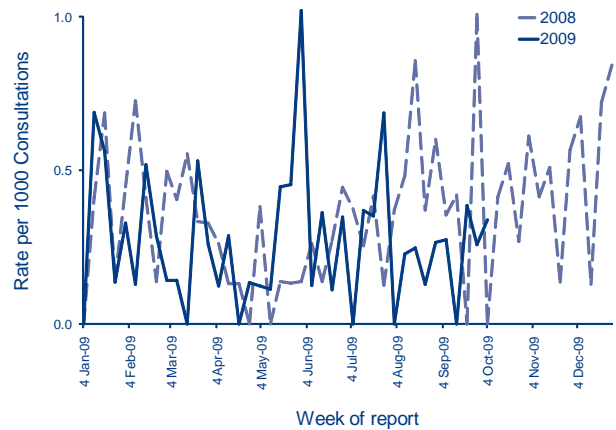
During this reporting period, consultation rates for gastroenteritis ranged from 4 to 9 cases per 1000 (Figure 5).

Figure 5: Consultation rates for gastroenteritis, ASPREN, 1 January 2008 to 30 September 2009, by week of report



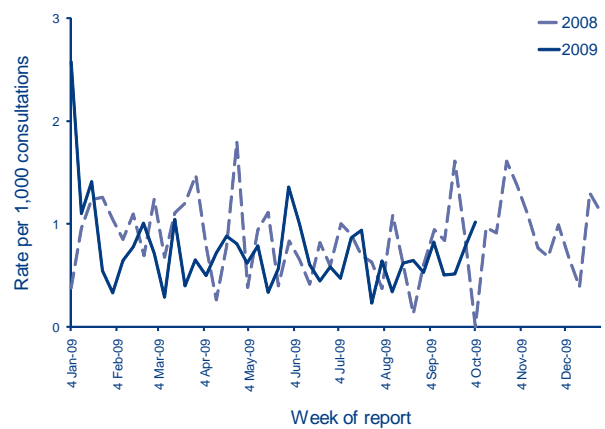
Varicella infections were reported at a slightly lower rate for the 3rd quarter of 2009 compared with the same period in 2008. From 1 July to 30 September 2009 recorded rates for chickenpox were between 0 and 0.7 cases per 1,000 consultations (Figure 6).

Figure 6: Consultation rates for chickenpox, ASPREN, 1 January 2008 to 30 September 2009, by week of report



In the 3rd quarter of 2009, reported rates for shingles were between 0.2 to 1 case per 1,000 consultations (Figure 7).

Figure 7: Consultation rates for shingles, ASPREN, 1 January 2008 to 30 September 2009, by week of report



Australian meningococcal surveillance

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The reference laboratories of the Australian Meningococcal Surveillance Programme report data on the number of laboratory confirmed cases confirmed either by culture or by non-culture based techniques. Culture positive cases, where a *Neisseria meningitidis* is grown from a normally sterile site or skin, and non-culture based diagnoses, derived from results of nucleic

acid amplification assays and serological techniques, are defined as invasive meningococcal disease (IMD) according to Public Health Laboratory Network definitions. Data contained in the quarterly reports are restricted to a description of the number of cases per jurisdiction, and serogroup, where known. A full analysis of laboratory confirmed cases of IMD is contained in the annual reports of the Programme, published in *Communicable Diseases Intelligence*. For more information see *Commun Dis Intell* 2009;33:82.

Laboratory confirmed cases of invasive meningococcal disease for the period 1 July to 30 September 2009, are included in this issue of *Communicable Diseases Intelligence* (Table 4).

Table 4: Number of laboratory confirmed cases of invasive meningococcal disease, Australia, 1 July to 30 September 2009, by serogroup and state or territory

State or territory	Year	Serogroup													
		A		B		C		Y		W135		ND		All	
		Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD
Australian Capital Territory	09			0	3									0	3
	08			0	2	1	1							1	3
New South Wales	09			24	49	3	7	2	3	2	4	0	3	31	66
	08			14	27	1	4	1	3	1	2			17	36
Northern Territory	09			0	3	0	1							0	4
	08			3	3	0	2							3	5
Queensland	09			19	36	0	0	1	1			2	2	22	39
	08			11	52	2	4			0	0	11	11	24	67
South Australia	09			4	15			1	2					5	17
	08			5	12					1	1			6	13
Tasmania	09			0	1									0	1
	08			0	0									0	0
Victoria	09			13	23	0	1					1	3	14	27
	08			20	44	1	1	0	1			3	6	24	52
Western Australia	09			6	16	0	2	1	1					7	19
	08			8	16							0	1	8	17
Total	09			66	146	3	11	5	7	2	4	3	8	79	176
	08			61	156	5	12	1	4	2	3	14	18	83	193

HIV and AIDS surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the

diagnosing laboratory (Australian Capital Territory, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, and annually in 'HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia, annual surveillance report'. The reports are available from the National Centre

in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Internet: <http://www.med.unsw.edu.au/nchechr>. Telephone: +61 2 9385 0900. Facsimile: +61 2 9385 0920. For more information see Commun Dis Intell 2009;33:83.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 January to 31 March 2009, as reported to 30 June 2009, are included in this issue of Communicable Diseases Intelligence (Tables 5 and 6).

Table 5: New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 January to 31 March 2009, 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 2009	This period 2008	YTD 2009	YTD 2008
HIV diagnoses	Female	0	2	2	10	3	0	10	0	27	28	27	28
	Male	3	45	2	35	11	0	50	1	147	237	147	237
	Not reported	0	1	0	0	0	0	0	0	1	0	1	0
	Total*	3	48	4	45	14	0	60	1	175	265	175	265
AIDS diagnoses	Female	0	0	1	1	0	0	2	0	4	1	4	1
	Male	0	0	0	2	0	0	12	0	14	29	14	29
	Total*	0	0	1	3	0	0	14	0	18	30	18	30
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	2	0	2	4	2	4
	Total*	0	0	0	0	0	0	2	0	2	4	2	4

* Totals include people whose sex was reported as transgender.

Table 6: Number of new diagnoses of HIV infection since the introduction of HIV antibody testing in 1985, and number of new diagnoses of AIDS and deaths following AIDS since 1981, cumulative to 31 March 2009, as reported to 30 June 2009, by sex and state or territory

	Sex	State or territory								Australia
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	35	967	27	339	119	13	445	240	2,185
	Male	276	14,191	148	3,104	1,033	115	5,800	1,332	25,999
	Not reported	0	229	0	0	0	0	22	0	251
	Total*	311	15,417	175	3,452	1,153	128	6,289	1,579	28,504
AIDS diagnoses	Female	10	265	5	74	32	4	123	45	558
	Male	94	5,513	47	1,082	418	55	2,114	448	9,771
	Total*	104	5,796	52	1,158	451	59	2,250	495	10,365
AIDS deaths	Female	7	138	1	43	20	2	64	29	304
	Male	73	3,597	32	679	280	34	1,444	299	6,438
	Total*	80	3,746	33	724	300	36	1,517	329	6,765

* Totals include people whose sex was reported as transgender.