

## 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, 24 months and 5 years of age, for 3-month birth cohorts of children at the stated ages between 1 July and 30 September 2010. 'Fully immunised' refers to vaccines on the National Immunisation Program Schedule, but excludes rotavirus, pneumococcal conjugate, varicella, or meningococcal C conjugate vaccines, and is outlined in more detail below.

'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 PRP-OMP containing *Haemophilus influenzae* type b (Hib) vaccine or 3 doses of any other Hib vaccine, and 2 or 3 doses of Comvax hepatitis B vaccine or 3 doses of all other hepatitis B vaccines. '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 PRP-OMP containing Hib vaccine or 4 doses of any other Hib vaccine, 3 or 4 doses of Comvax hepatitis B vaccine or 4 doses of all other hepatitis B vaccines, and 1 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.

A full description of the basic methodology used can be found in *Commun Dis Intell* 1998;22:36–37.

The National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS) provides commentary on the trends in ACIR data. For further information please contact NCIRS at: telephone +61 2 9845 1435, E-mail: [brynleyh@chw.edu.au](mailto:brynleyh@chw.edu.au)

The percentage of children 'fully immunised' at 12 months of age for Australia decreased slightly by 0.3 percentage points to 91.4% (Table 1). There were no important changes in coverage for any individual vaccines due at 12 months of age or by jurisdiction except for a 2.1 percentage point reduction in coverage for *Haemophilus influenzae* type b (Hib) vaccine in the Northern Territory.

The percentage of children 'fully immunised' at 24 months of age for Australia decreased by 0.1 percentage points to 92.5 (Table 2). There were no important changes in coverage for any individual vaccines due at 24 months of age or by jurisdiction except for a surprising 8.7 percentage point reduction in coverage for Hib vaccine in the Northern Territory. This is possibly due to the change in the Northern Territory immunisation schedule that occurred in late 2009. This 24-months age cohort is the first cohort to be assessed under the new schedule, which changed from using Infanrix Penta vaccine at 2, 4 and 6 months of age plus Pedvax Hib vaccine at 2, 4 and 12 months of age, to Infanrix Hexa vaccine at 2, 4 and 6 months of age plus 1 dose of Hiberix at 12 months of age. Possible confusion over the new schedule amongst some immunisation providers and technical errors with data transfer are possible explanations for the reduction in Hib coverage. The Centre For Disease Control in Darwin is currently investigating this matter.

The percentage of children 'fully immunised' at 5 years of age for Australia increased slightly by 0.3 percentage points, to sit currently at 89.4%

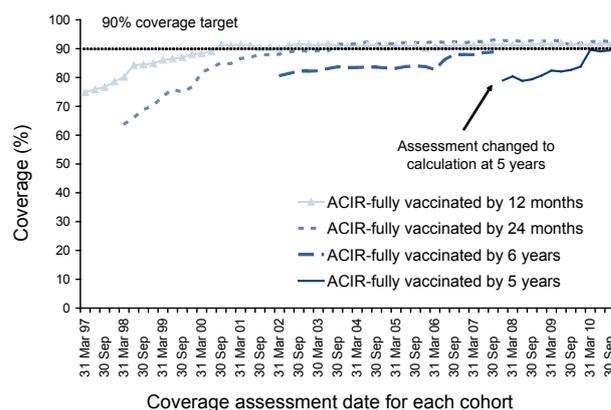
**Table 1. Percentage of children immunised at 1 year of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2009; assessment date 31 December 2010**

Vaccine	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,292	25,086	928	15,608	4,929	1,627	18,246	7,817	75,533
Diphtheria, tetanus, pertussis (%)	94.4	91.8	90.0	91.8	91.8	91.5	92.3	90.4	91.8
Poliomyelitis (%)	94.4	91.8	89.9	91.8	91.9	91.5	92.3	90.3	91.8
<i>Haemophilus influenzae</i> type b (%)	94.3	91.7	89.7	91.7	91.7	91.5	92.2	90.2	91.7
Hepatitis B (%)	93.9	91.6	89.8	91.5	91.6	91.3	91.9	89.9	91.5
Fully immunised (%)	93.9	91.4	89.7	91.4	91.5	91.3	91.8	89.8	91.4
Change in fully immunised since last quarter (%)	-0.3	+0.0	-0.8	-0.6	-0.2	-1.5	-0.4	-0.5	-0.3

(Table 3). There were no important changes in coverage for any individual vaccines due at 5 years of age or by jurisdiction.

The Figure 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 (till December 2007). This trend continued when the age of coverage calculation was changed from 6 to 5 years in March 2008, and then increased further in the previous quarter as outlined in the previous report.

**Figure: Trends in vaccination coverage, Australia, 1997 to 30 September 2010, by age cohorts**



**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 2008; assessment date 31 December 2010\***

Vaccine	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,280	25,311	954	15,985	5,141	1,665	18,581	7,922	76,839
Diphtheria, tetanus, pertussis (%)	95.6	94.9	96.2	94.6	94.7	95.9	95.7	93.7	94.9
Poliomyelitis (%)	95.6	94.8	96.2	94.6	94.7	95.9	95.7	93.6	94.9
<i>Haemophilus influenzae</i> type b (%)	95.6	95.0	84.0	94.5	94.5	95.9	95.5	93.2	94.7
Measles, mumps, rubella (%)	94.3	93.7	95.1	94.1	93.9	94.8	94.8	92.7	94.0
Hepatitis B (%)	95.2	94.4	95.8	94.2	94.3	95.7	95.1	92.9	94.4
Fully immunised (%)	93.4	92.4	82.7	92.8	92.5	94.3	93.5	90.1	92.5
Change in fully immunised since last quarter (%)	-1.6	-0.0	-9.3	+0.0	+0.0	+0.5	+0.1	-0.1	-0.1

\* The 12 months age data for this cohort were published in *Commun Dis Intell* 2009;34(1):77.

**Table 3. Percentage of children immunised at 5 years of age, preliminary results by disease and state or territory for the birth cohort 1 July to 30 September 2005; assessment date 31 December 2010**

Vaccine	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,173	24,156	932	15,561	4,819	1,614	17,288	7,495	73,038
Diphtheria, tetanus, pertussis (%)	92.2	89.2	87.9	90.3	87.8	92.6	91.8	87.5	89.9
Poliomyelitis (%)	92.0	89.1	87.8	90.3	87.8	92.4	91.8	87.5	89.8
Measles, mumps, rubella (%)	92.1	89.0	87.7	90.4	87.6	92.9	91.6	87.3	89.8
Fully immunised (%)	91.7	88.7	86.8	89.8	87.3	92.2	91.4	86.9	89.4
Change in fully immunised since last quarter (%)	+1.0	-0.3	+1.4	-0.3	+0.5	-0.5	+0.9	+1.5	+0.3

## Gonococcal surveillance

(Dr Monica M Lahra, 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 that are currently surveyed routinely 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 treatments.<sup>1</sup> 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 programme-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 2011;35(1):53–54.*

### Reporting period 1 July to 30 September 2010

The AGSP laboratories received a total of 1,014 gonococcal isolates of which 995 remained viable for susceptibility testing. This was a 30% increase from the 713 gonococci reported in the same quarter of 2009. About 32% of this total was from New South Wales, 23% from Victoria, 22% from Queensland, 11% from the Northern Territory; 9% from Western Australia; 2% from South Australia; 0.8% from the Australian Capital Territory; and 0.2% from Tasmania.

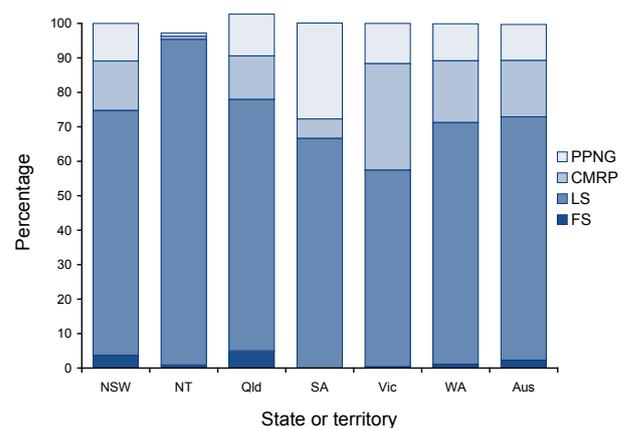
### Penicillins

Two hundred and sixty-seven (27%) of the 995 isolates examined were penicillin resistant by one or more mechanisms, 104 (10%) were penicillinase producing *Neisseria gonorrhoeae* (PPNG) and 163 (16%) were chromosomally mediated resistant to penicillin (CMRP). This represents a decrease in proportion from the same quarter of 2009, of both PPNG isolates and CMRP, which were 14.5% and 22% respectively. The proportion of all strains resistant to penicillins by any mechanism ranged from 1.9% in the Northern Territory to 43% in Victoria. The penicillin resistance rate in South Australia was 33%; in Western Australia 29% and 25% in New South Wales and Queensland. There were no penicillin resistant gonococci reported from the Australian Capital Territory or from Tasmania.

Figure 1 shows the proportion of gonococci fully sensitive (FS) (MIC  $\leq$  0.03 mg/L); less sensitive (LS) (MIC 0.06–0.5 mg/L); CMRP (MIC  $\geq$  1 mg/L) and PPNG by state and territory and as aggregated for Australia. A high proportion of strains classified as PPNG or CMRP fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

Penicillin resistance by CMRP predominated over PPNG in Victoria (31% CMRP and 12% PPNG); New South Wales (14% CMRP and 11% PPNG); Western Australia (18% CMRP and 11% PPNG); and Queensland (13% CMRP and 12% PPNG). There were 5 PPNG and 1 CMRP in South Australia. The Northern Territory had 1 PPNG and 1 CMRP.

**Figure 1: Categorisation of gonococci isolated in Australia, 1 July to 30 September 2010, 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.

CMRP Chromosomally mediated resistant to penicillin, MIC  $\geq$  1 mg/L.

PPNG Penicillinase producing *Neisseria gonorrhoeae*.

### Ceftriaxone

In previous reports the criteria for 'decreased susceptibility' to ceftriaxone was defined as the MIC range 0.06–0.12 mg/L. New criteria for 'decreased susceptibility' to ceftriaxone (MIC range 0.03–0.12 mg/L) was introduced and reported in the second quarter of 2010. The rationale for this change in MIC range was to improve the detection of gonococci with decreased susceptibility to ceftriaxone.

In this quarter, data for ceftriaxone MIC  $\geq$  0.03 mg/L were contributed by all jurisdictions with 995 isolates examined. Using this new criteria (MIC range 0.03–0.12 mg/L), 152 isolates (15% of 995 gonococci)

were reported in Australia as having 'decreased susceptibility' to ceftriaxone. There were 52/233 (22%) reported from Victoria; 59/322 (18%) in New South Wales; 14/84 (17%) in Western Australia; 24/222 (11%) in Queensland and 2/18 (11%) in Queensland. There was 1 isolate in the Australian Capital Territory and none in the Northern Territory or Tasmania.

### Spectinomycin

All isolates were susceptible to this injectable agent.

### Quinolone antibiotics

Nationally, the 324 quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter represented 33% of all isolates tested. This represents a continuing decrease in proportion of QRNG from the 291 (41.3%) in the same quarter of 2009; 368 (50.6%) QRNG recorded in the 3rd quarter of 2008 and the 321 QRNG (50.5%) seen in 2007. 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  $\geq$  1 mg/L) groups.

The majority of QRNG (313/324, 97%) had higher-level resistance to ciprofloxacin: MIC 1 mg/L or more.

QRNG were detected in high proportions in South Australia 9/18 (50% of isolates); Victoria 94/233 (40%); Western Australia 34/84 (40%); New South Wales 124/322 (39%); and Queensland 57/222 (26%) (Figure 2). There were 4 QRNG detected in the Australian Capital Territory, two in the Northern Territory, and none in Tasmania.

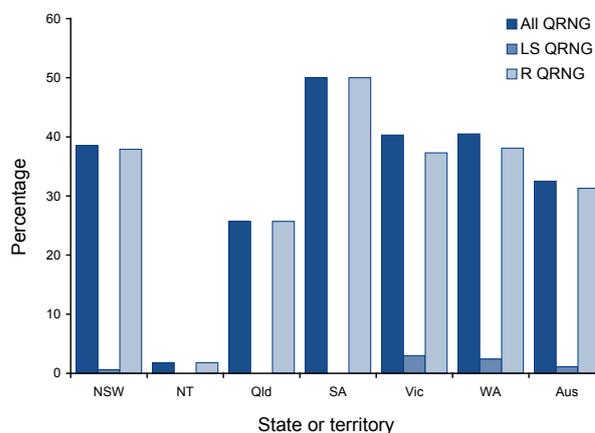
### High level tetracycline resistance

The proportion (204/998, 20.4%) of high level tetracycline resistance (TRNG) detected was unchanged from that recorded in the same quarter of 2009 (20.6%). TRNG were found in all states and territories except for Tasmania and the Australian Capital Territory and represented between 16% (Victoria) and 45% (South Australia) of all isolates tested.

### Reference

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

**Figure 2: The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 July to 30 September 2010, by state or territory**



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs  $\geq$  1 mg/L.

## Australian Sentinel Practices Research Network

*The Australian Sentinel Practices Research Network (ASPREN) is a national surveillance system that is funded by the Commonwealth's Department of Health and Ageing, owned and operated by the Royal Australian College of General Practitioners and directed through the Discipline of General Practice at the University of Adelaide.*

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

*In June 2010, ASPREN's laboratory ILI testing was implemented, allowing for viral testing of 25% of ILI patients for a range of respiratory viruses including influenza A, influenza B and H1N1(2009).*

*The list of conditions is reviewed annually by the ASPREN management committee. In 2010, 4 conditions are being monitored. They include influenza-like illness (ILI), gastroenteritis and varicella infections (chickenpox and shingles). Definitions of these conditions are described in Surveillance systems reported in CDI, published in Commun Dis Intell 2011;35(1):54–55.*

**Reporting period 1 October to 31 December 2010**

Sentinel practices contributing to ASPREN were located in all 8 jurisdictions in Australia. A total of 107 general practitioners contributed data to ASPREN in the 4th quarter of 2010. Each week an average of 94 general practitioners provided information to ASPREN at an average of 9,350 (range 7,681 to 9,946) consultations per week and an average of 143 (range 117 to 199) notifications per week.

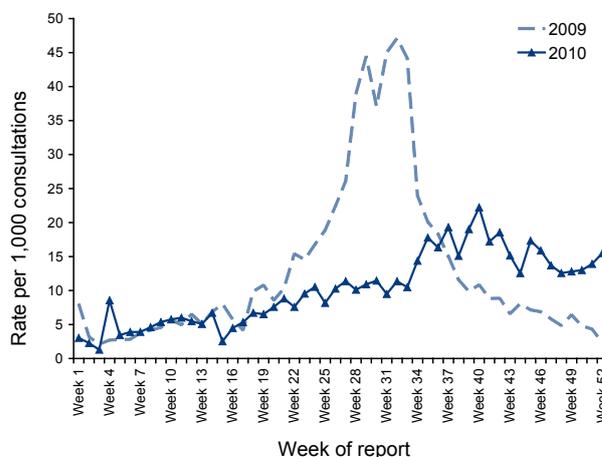
ILI rates reported from 1 October to 31 December 2010 averaged 15 cases per 1,000 consultations (range 12–22 cases per 1,000 consultations) (Figure 1). The reported rates in October, November and December 2010 (15–22 cases per 1,000 consultations, 12–17 cases per 1,000 consultations and 12–15 cases per 1,000 consultations respectively) were significantly higher compared with rates in the same reporting period in 2009 (7–11 cases per 1,000 consultations, 5–8 cases per 1,000 consultations and 2–6 cases per 1,000 consultations, respectively).

ILI swab testing commenced at the beginning of June 2010. The most commonly reported virus during this reporting period was rhinovirus (16% of all swabs performed), the second most common virus was influenza A H1N1(2009) (13% of all swabs performed) (Figure 2).

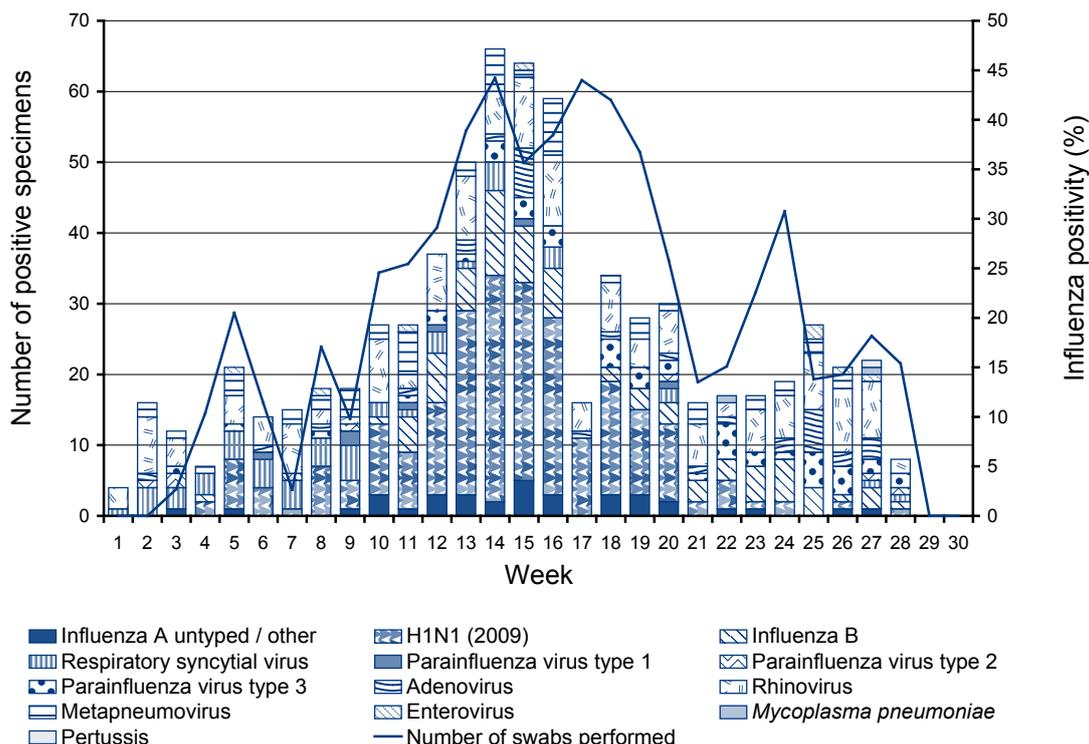
For the whole of 2010 to the end of week 52, 344 cases of influenza have been detected, the majority of these being H1N1(2009) (17% of all swabs performed) and the remainder were influenza B (6% of all swabs performed) and influenza A untyped or other (2% of all swabs performed).

During this reporting period, consultation rates for gastroenteritis averaged 5.5 cases per 1,000 consultations (range 4–7 cases per 1,000, Figure 3). This was

**Figure 1: Consultation rates for influenza-like illness, ASPREN, 1 January 2009 to 31 December 2010, by week of report**

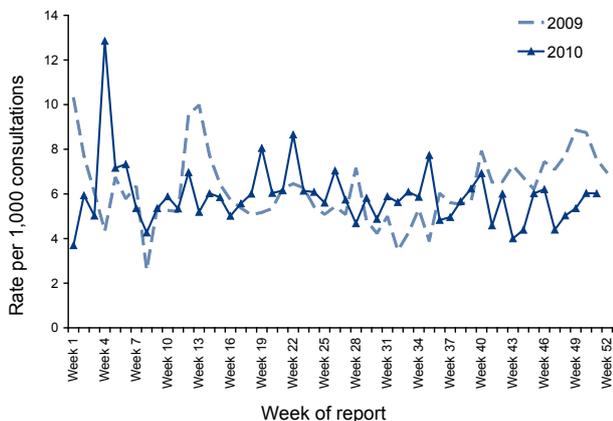


**Figure 2: Influenza-like illness swab testing results, ASPREN, 1 January 2009 to 31 December 2010, by week of report**



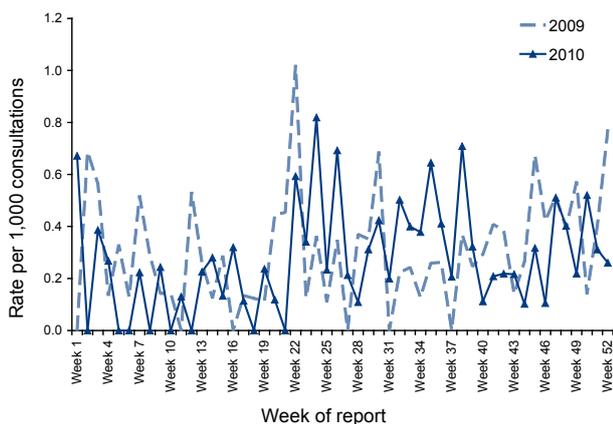
slightly lower compared with the same reporting period in 2009 where the average was 7.3 cases per 1,000 consultations (range 6–9 cases per 1,000).

**Figure 3: Consultation rates for gastroenteritis, ASPREN, 1 January 2009 to 31 December 2010, by week of report**



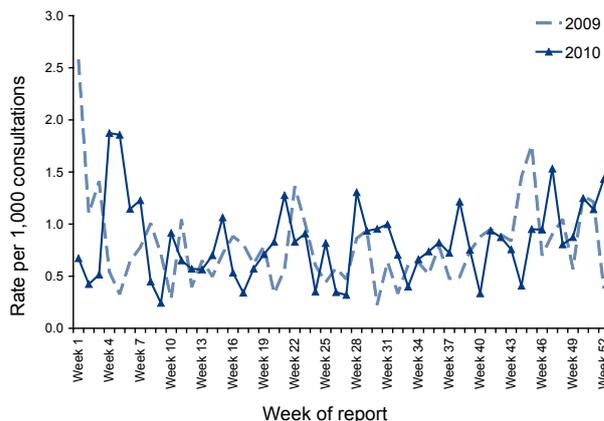
Varicella infections were reported at a slightly lower rate for the 4th quarter of 2010 compared with the same period in 2009. From 1 October to 31 December 2010, recorded rates for chickenpox averaged 0.3 cases per 1,000 consultations (range 0.1–0.5 cases per 1,000 consultations, Figure 4).

**Figure 4: Consultation rates for chickenpox, ASPREN, 1 January 2009 to 31 December 2010, by week of report**



In the 4th quarter of 2010, reported rates for shingles averaged 0.9 cases per 1,000 consultations (range 0.3–1.4 cases per 1,000 consultations, Figure 5), remaining the same as the reporting period in 2009 where the average shingles rate was 0.9 cases per 1,000 consultations (0.3–1.7 cases per 1,000 consultations).

**Figure 5: Consultation rates for shingles, ASPREN, 1 January 2009 to 31 December 2010, by week of report**



## 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 Registry 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, CFI Building, Cnr Boundary and West Streets, Darlinghurst NSW 2010. Internet: [www.nchechr.unsw.edu.au](http://www.nchechr.unsw.edu.au) Telephone: +61 2 9385 0900. Facsimile: +61 2 9385 0920. For more information see Commun Dis Intell 2011;35(1):55.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 January to 31 March 2010, are included in this issue of Communicable Diseases Intelligence (Tables 1 and 2).

**Table 1: New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 January to 31 March 2010, 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 2010	This period 2009	YTD 2010	YTD 2009
HIV diagnoses	Female	0	8	0	19	2	0	7	0	36	41	36	41
	Male	0	87	4	48	12	0	55	5	211	211	211	211
	Not reported	0	1	0	0	0	0	2	0	3	0	3	0
	Total*	0	97	4	67	14	0	64	5	251	252	251	252
AIDS diagnoses <sup>†</sup>	Female	0	--	0	1	0	0	1	0	2	6	2	6
	Male	0	--	2	3	1	0	8	0	14	21	14	21
	Total*	0	--	2	4	1	0	9	0	16	27	16	27
AIDS deaths <sup>†</sup>	Female	0	--	0	0	0	0	0	0	0	0	0	0
	Male	0	--	0	1	1	0	3	0	5	3	5	3
	Total*	0	--	0	1	1	0	3	0	5	3	5	3

\* Totals include people whose sex was reported as transgender.

† AIDS cases and deaths following AIDS occurring in New South Wales from January 2008 are not included.

**Table 2: Number of new diagnoses of HIV infection since the introduction of HIV antibody testing 1985, and number of new diagnoses of AIDS and deaths following AIDS since 1981, cumulative to 31 March 2010, by sex and state or territory**

	Sex	State or territory								Aust
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	37	1,018	30	374	127	17	472	266	2,341
	Male	283	14,573	162	3,299	1,078	127	6,067	1,405	26,994
	Not reported	0	229	0	0	0	0	22	0	251
	Total*	320	15,853	192	3,682	1,206	144	6,585	1,678	29,660
AIDS diagnoses <sup>†</sup>	Female	10	265	6	78	32	4	127	48	570
	Male	95	5,513	50	1,101	427	55	2,162	458	9,861
	Total*	105	5,796	56	1,181	460	59	2,302	508	10,467
AIDS deaths <sup>†</sup>	Female	7	138	1	43	20	2	66	30	307
	Male	73	3,597	33	682	281	34	1,452	301	6,453
	Total*	80	3,746	34	727	301	36	1,527	332	6,783

\* Totals include people whose sex was reported as transgender.

† AIDS cases and deaths following AIDS occurring in New South Wales from January 2008 are not included.