# Additional reports

## Australian Sentinel Practice Research Network

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

*The network consists of general practitioners who report presentations on a number of defined medical conditions each week. ASPREN was established in 1991 to provide a rapid monitoring scheme for infectious diseases that can alert public health officials of epidemics in their early stages as well as play a role in the evaluation of public health campaigns and research of conditions commonly seen in general practice. Electronic 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 *2010;34(1):82–83.*

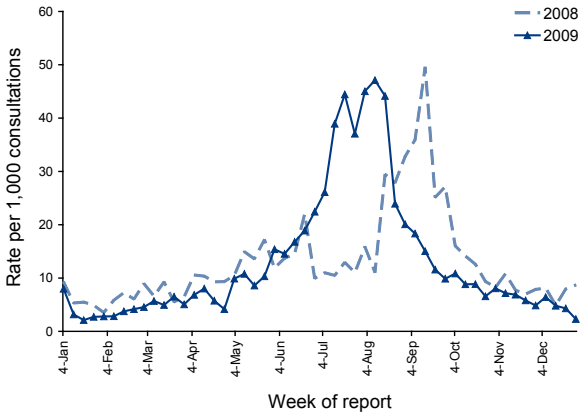
*Data on influenza-like illness, gastroenteritis, chickenpox and shingles from 1 October to 31 December 2009 compared with 2008, are shown as the rate per 1,000 consultations in Figures 1, 2, 3 and 4, respectively.*

### Reporting period 1 October to 31 December 2009

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 84 general practitioners contributed data to ASPREN in the 4th quarter of 2009. Each week an average of 71 general practitioners provided information to ASPREN at an average of 7,207 (range 5,182–7,789) consultations per week and an average of 118 (range 57–138) notifications per week.

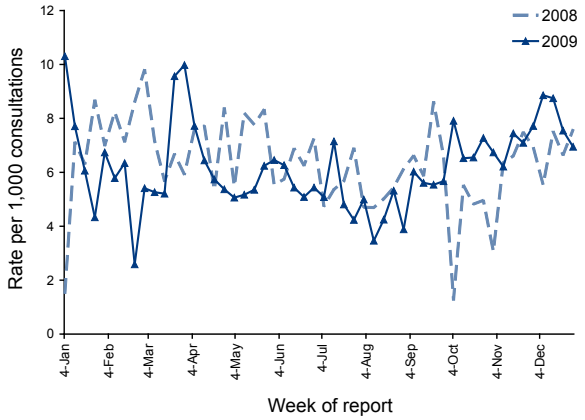
ILI rates reported from 1 October to 31 December 2009 were 2–9 cases per 1,000 consultations. The reported rates in October, November and December 2009 were lower (7–11 cases per 1,000 consultations, 5–8 cases per 1,000 consultations and 2–6 cases per 1,000 consultations respectively) compared with the same reporting period in 2008 (9–14 cases per 1,000 consultations, 7–11 cases per 1,000 consultations and 5–9 cases per 1,000 consultations respectively) (Figure 1).

**Figure 1: Consultation rates for influenza-like illness, ASPREN, 1 January 2008 to 31 December 2009, by week of report**




During this reporting period, consultation rates for gastroenteritis ranged from 6 to 9 cases per 1,000 (Figure 2). This was slightly higher compared with the same reporting period in 2008 (3 to 8 cases per 1,000 consultations).

**Figure 2: Consultation rates for gastroenteritis, ASPREN, 1 January 2008 to 31 December 2009, by week of report**




Varicella infections were reported at a similar rate for the 4th quarter of 2009 compared with the same

period in 2008. From 1 October to 31 December 2009, recorded rates for chickenpox were between 0.1 and 0.8 cases per 1,000 consultations (Figure 3).

In the 4th quarter of 2009, reported rates for shingles were between 0.4 and 1.8 cases per 1,000 consultations (Figure 4), similar to the same reporting period in 2008.

**Figure 3: Consultation rates for chickenpox, ASPREN, 1 January 2008 to 31 December 2009, by week of report**

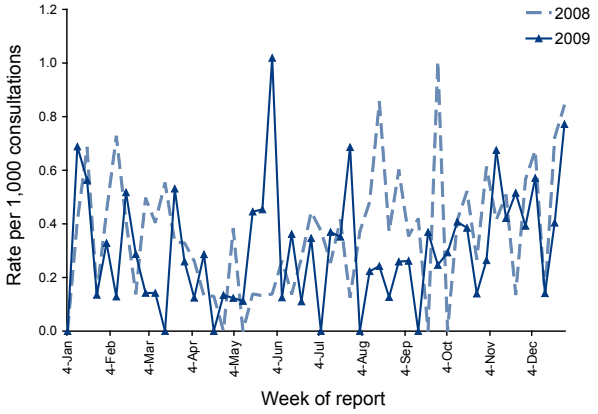
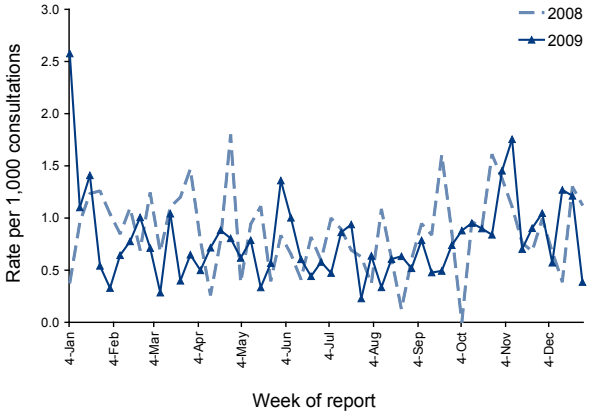



**Figure 4: Consultation rates for shingles, ASPREN, 1 January 2008 to 31 December 2009, by week of report**




## Australian childhood immunisation coverage

*The Australian Childhood Immunisation Register (ACIR) commenced operation on 1 January 1996 and is now an important component of the* Immunise Australia Program. *It is administered and operated by Medicare Australia (formerly the Health Insurance Commission). The Register was established by transferring data on all children under the age of 7 years enrolled with Medicare to the ACIR.*

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

*The data show the percentage of children fully immunised at 12 months of age for the cohort born between 1 July and 30 September 2008, at 24 months of age for the cohort born between 1 July and 30 September 2007, and at 5 years of age for the cohort born between 1 July and 30 September 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 PRP-OMP containing *Haemophilus influenzae* type b (Hib) vaccine or 3 doses of any other *Haemophilus influenzae* type b (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 *Haemophilus influenzae* type b (Hib) vaccine or 4 doses of any other *Haemophilus influenzae* type b (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.

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia decreased slightly by 0.4 of a percentage point to 91.6% (Table 1). However, there were important changes in coverage in all jurisdictions for both *Haemophilus influenzae* type b and hepatitis B vaccines. Coverage for *Haemophilus influenzae* type b vaccine fell 2.3 to 3.9 percentage points across all jurisdictions, whilst coverage for hepatitis B vaccine fell 2.4 to 6.8 percentage points across all jurisdictions. The biggest decrease in hepatitis B coverage was experienced in the Northern Territory (6.8 percentage points). These decreases are likely to be entirely due to the changes in the coverage calculation algorithms introduced as at 31 December 2009. The changes tightened the rules, outlined above, regarding *Haemophilus influenzae* type b and hepatitis B vaccines for 12-month-olds to lead to more accurate measures of *Haemophilus influenzae* type b and hepatitis B vaccine coverage in Australia.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia decreased importantly by 1.7 percentage points to 91.0 (Table 2). As with coverage at 12 months of age, there were also important changes in coverage in all jurisdictions for both *Haemophilus influenzae* type b and hepatitis B vaccines, but the decreases were smaller in magnitude. Coverage for *Haemophilus influenzae* type b vaccine fell 0.6 to 2.5 percentage points across all jurisdictions, whilst coverage for hepatitis B vaccine fell 1.5 to 3.2 percentage points across all jurisdictions. As with coverage at 12 months of age, the biggest decrease in hepatitis B coverage was experienced in the Northern Territory (3.2 percentage points). These decreases are also likely to be entirely due to the changes in the coverage calculation algorithms introduced as at 31 December 2009. The changes tightened the rules, outlined above, regarding *Haemophilus influenzae* type b and hepatitis B vaccines for 24-month-olds

**Table 1: Percentage of children immunised at 1 year of age, results by disease and state or territory for the birth cohort 1 July to 30 September 2008; assessment date 31 December 2009**

| Vaccine | State or territory | | | | | | | | Aust |
|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | |
| Total number of children | 1,258 | 25,091 | 974 | 15,896 | 5,083 | 1,678 | 18,341 | 7,767 | 76,088 |
| Diphtheria, tetanus, pertussis (%) | 94.0 | 92.7 | 89.8 | 92.2 | 92.0 | 92.8 | 92.8 | 90.1 | 92.3 |
| Poliomyelitis (%) | 93.9 | 92.6 | 89.7 | 92.2 | 92.0 | 92.7 | 92.8 | 90.1 | 92.3 |
| *Haemophilus influenzae* type b (%) | 93.6 | 92.5 | 92.8 | 92.1 | 91.6 | 92.7 | 92.3 | 90.0 | 92.1 |
| Hepatitis B (%) | 93.2 | 92.3 | 89.7 | 91.9 | 91.5 | 92.5 | 92.0 | 89.7 | 91.8 |
| Fully immunised (%) | 93.2 | 92.1 | 88.0 | 91.8 | 91.3 | 92.5 | 91.9 | 89.3 | 91.6 |
| Change in fully immunised since last quarter (%) | -1.2 | -0.0 | -3.9 | -0.1 | -0.3 | -0.4 | -0.7 | -1.1 | -0.4 |

**Table 2. Percentage of children immunised at 2 years of age, results by disease and state or territory for the birth cohort 1 July to 30 September 2007; assessment date 31 December 2009***

| Vaccine | State or territory | | | | | | | | Aust |
|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | |
| Total number of children | 1,226 | 25,067 | 911 | 16,062 | 5,066 | 1,701 | 18,408 | 7,755 | 76,196 |
| Diphtheria, tetanus, pertussis (%) | 95.4 | 94.4 | 94.3 | 94.3 | 95.3 | 94.8 | 95.5 | 94.3 | 94.7 |
| Poliomyelitis (%) | 95.3 | 94.4 | 94.3 | 94.3 | 95.3 | 94.8 | 95.4 | 94.3 | 94.7 |
| *Haemophilus influenzae* type b (%) | 95.6 | 94.6 | 92.2 | 91.8 | 91.4 | 95.1 | 93.9 | 92.8 | 93.4 |
| Measles, mumps, rubella (%) | 94.5 | 93.3 | 94.2 | 93.3 | 94.3 | 94.4 | 94.4 | 93.6 | 93.7 |
| Hepatitis B (%) | 95.1 | 93.9 | 93.6 | 92.8 | 93.8 | 94.4 | 93.9 | 93.8 | 93.7 |
| Fully immunised (%) | 93.2 | 91.7 | 90.7 | 89.6 | 89.5 | 92.8 | 91.7 | 90.0 | 91.0 |
| Change in fully immunised since last quarter (%) | -1.2 | -0.7 | -3.2 | -2.5 | -3.2 | -1.9 | -2.0 | -1.8 | -1.7 |

* The 12 months age data for this cohort were published in *Commun Dis Intell* 2009;33(1):75.

**Table 3: Percentage of children immunised at 5 years of age, results by disease and state or territory for the birth cohort 1 July to 30 September 2004; assessment date 31 December 2009**

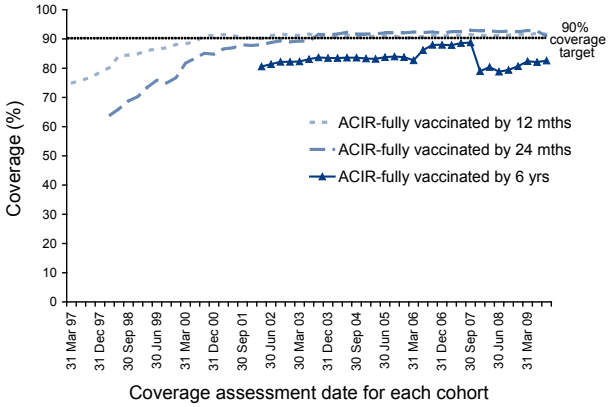
| Vaccine | State or territory | | | | | | | | Aust |
|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | |
| Total number of children | 1,117 | 23,003 | 817 | 14,487 | 4,524 | 1,571 | 16,857 | 7,029 | 69,405 |
| Diphtheria, tetanus, pertussis (%) | 86.2 | 81.4 | 82.3 | 83.1 | 81.2 | 87.4 | 86.8 | 82.1 | 83.3 |
| Poliomyelitis (%) | 85.9 | 81.3 | 82.1 | 83.0 | 81.2 | 87.3 | 86.8 | 82.0 | 83.3 |
| Measles, mumps, rubella (%) | 85.9 | 81.2 | 82.0 | 83.0 | 80.9 | 87.1 | 86.5 | 81.5 | 83.1 |
| Fully immunised (%) | 85.5 | 80.8 | 81.2 | 82.3 | 80.6 | 86.2 | 86.2 | 80.9 | 82.6 |
| Change in fully immunised since last quarter (%) | -1.5 | -0.6 | +1.9 | -1.0 | +2.2 | +1.8 | +1.9 | +1.7 | +0.5 |

to lead to more accurate measures of *Haemophilus influenzae* type b and hepatitis B vaccine coverage in Australia.

Immunisation coverage for children 'fully immunised' at 5 years of age for Australia increased marginally by 0.5 of a percentage point to sit currently at 82.6% (Table 3). However, 'fully immunised' coverage increased 1.2 to 1.7 percentage points in 5 jurisdictions (the Northern Territory, South Australia, Tasmania, Victoria and Western Australia) and is now above 80% in all jurisdictions. These same 5 jurisdictions also experienced similar increases in coverage for all individual vaccines due at 5 years of age.

Figure 5 shows the trends in vaccination coverage from the first ACIR-derived published coverage estimates in 1997 to the current estimates. There is a clear trend of increasing vaccination coverage over time for children aged 12 months, 24 months and 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 5: Trends in vaccination coverage, Australia, 1997 to 30 September 2009, by age cohorts**




## Gonococcal surveillance

*John Tapsall, The Prince of Wales Hospital, Randwick NSW 2031 for the Australian Gonococcal Surveillance Programme*

*The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various states and territories report data on sensitivity to an agreed 'core' group of antimicrobial agents quarterly. The antibiotics currently routinely surveyed are penicillin, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens and currently used in Australia to treat gonorrhoea. When in vitro resistance to a recommended agent is demonstrated in 5 per cent or more of isolates from a general population, it is usual to remove that agent from the list of recommended treatment.*[1] *Additional data are also provided on other antibiotics from time to time. At present all laboratories also test isolates for the presence of high level (plasmid-mediated) resistance to the tetracyclines, known as TRNG. Tetracyclines are however, not a recommended therapy for gonorrhoea in Australia. Comparability of data is achieved by means of a standardised system of testing and a program-specific quality assurance process. Because of the substantial geographic differences in susceptibility patterns in Australia, regional as well as aggregated data are presented. For more information see* Commun Dis Intell *2010;34(1):81–82.*

### Reporting period 1 July to 30 September 2009

The AGSP laboratories received a total of 713 gonococcal isolates of which 705 remained viable for susceptibility testing. This was about 4.5% less than the 746 gonococci reported for the same period in

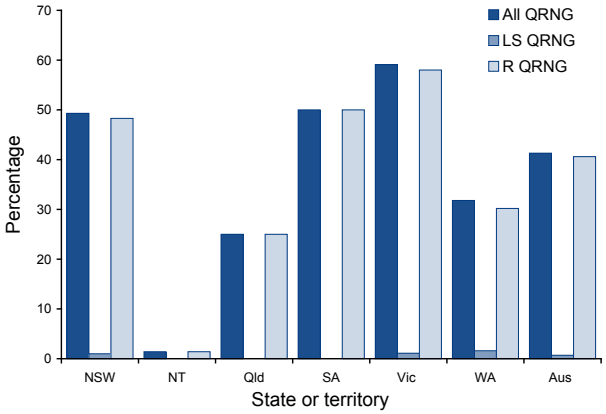
2008. About 29% of this total was from New South Wales, 27% from Victoria, 16% from Queensland, 10% each from Western Australia and the Northern Territory, 5% from South Australia, 2% from the Australian Capital Territory and 1% from Tasmania.

### Penicillins

Of the 705 isolates examined 225 (36.2%) were penicillin resistant by one or more mechanisms, 102 (14.5%) were penicillinase producing *N. gonorrhoeae* (PPNG). This was a substantial increase from the 82 (11%) PPNG in the same quarter in 2008. One hundred and fifty-three (21.7%) isolates were resistant by chromosomal mechanisms (CMRP), which was a large decrease from the 206 (28%) seen in the same quarter in 2008. The proportion of all strains resistant to the penicillins by any mechanism ranged from 4.3 % in the Northern Territory to 57.9% in South Australia. High rates of penicillin resistance were also found in Victoria (55%), New South Wales (41%), Western Australia (22.2%) and Queensland (16.3%). Five of 12 gonococci isolated in the Australian Capital Territory and two of the 8 strains from Tasmania were penicillin resistant.

Figure 6 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 of those strains classified as PPNG or else resistant by chromosomal mechanisms fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

**Figure 6: Categorisation of gonococci isolated in Australia, 1 January to 30 September 2009, by penicillin susceptibility and region**




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

In Victoria, most of the penicillin resistance was with CMRP (67, 34.7%) with 39 PPNG (20.2%) while in New South Wales there were 32 PPNG (15.6%) but 52 CMRP (25.4%). In South Australia PPNG represented 15.8% and CMRP 42.1% of all isolates tested. In Western Australia PPNG were 12.7% and CMRP 9.5%; in Queensland PPNG were 11.2% and CMRP 5.1% of isolates tested. PPNG were present in Northern Territory (3 isolates), but there were no CMRP. Five CMRP isolates, but no PPNG, were present in the Australian Capital Territory. There was 1 CMRP and 1 PPNG from Tasmania. All the penicillin resistant strains in the Northern Territory were from Darwin.

### Ceftriaxone

Seventeen isolates with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected, eight from Victoria, two from Queensland and one each from New South Wales, South Australia and the Northern Territory. It is emphasised that no treatment failures have been documented locally when a 250 mg, or currently a 500 mg, IM dose of ceftriaxone has been used.

### Spectinomycin

All isolates susceptible to this injectable agent.

### Quinolone antibiotics

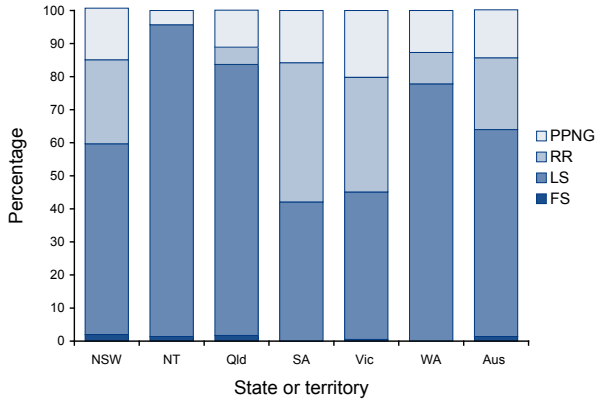
Nationally, the 291 quinolone resistant *N. gonorrhoeae* (QRNG) detected in this quarter represented 41.3% of all isolates tested. This was a decrease from the 368 (50.6%) QRNG recorded in the 3rd quarter of 2008 and the 321 QRNG (50.5) seen in 2007. The majority of QRNG (286 of 291, 98.2%) had higher-level resistance to ciprofloxacin of 1 mg/L or more. QRNG are defined as those isolates with a 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 and the highest proportion of QRNG was found in Victoria where there were 114 QRNG (59.1% of isolates) (Figure 7). New South Wales had 101 QRNG (49.3%) with 19 QRNG (50%) present in South Australia, 20 QRNG (31.8%) in Western Australia and 29 (25%) in Queensland. There were 5 QRNG detected in the Australian Capital Territory, two in Tasmania and one in the Northern Territory.

### High level tetracycline resistance

The number (145) and proportion (20.6%) of high level tetracycline resistance (TRNG) detected was slightly higher than that recorded in this quarter in 2008 (128, 17.6%). TRNG were found in all states and territories except for Tasmania and

**Figure 7: The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 January to 30 September 2009, by jurisdiction**




LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs ≥1 mg/L.

the Australian Capital Territory and represented between 13.8% (Queensland) and 36.5% (Western Australia) of all isolates tested.

## Reference

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