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Quarterly report

Australian Gonococcal Surveillance Program, 1 October to 31 December 2025

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The National Neisseria Network (NNN), Australia, established in 1979, comprises reference laboratories in each state and territory. Since 1981, the NNN has reported data for the Australian Gonococcal Surveillance Programme (AGSP), on antimicrobial susceptibility profiles for *Neisseria gonorrhoeae* isolated from each jurisdiction for an agreed group of agents. The antibiotics reported represent current or potential agents used for the treatment of gonorrhoea, and include ceftriaxone, azithromycin, ciprofloxacin and penicillin. More recently, gentamicin and tetracycline are included in the AGSP Annual Report.

Ceftriaxone, combined with azithromycin, is the recommended treatment regimen for gonorrhoea in Australia. Historically, there were substantial geographic differences in susceptibility patterns across the country, with certain remote regions of the Northern Territory and Western Australia having low gonococcal antimicrobial resistance rates. In these regions, an oral treatment regimen comprising amoxycillin, probenecid, and azithromycin was recommended. Since January 2023, increasing reports of penicillin resistant *N. gonorrhoeae* in the Northern Territory have led to treatment recommendations being aligned with those used in the majority of Australia.[1] Additional data on other antibiotics are reported in the AGSP Annual Report. The AGSP is supported by a programme-specific quality assurance process.

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Results

Table 1 provides a summary of the proportion of *Neisseria gonorrhoeae* isolates resistant to azithromycin, ciprofloxacin and penicillin for Quarter 4, 2025.

Table 1: Gonococcal isolates resistant to azithromycin, ciprofloxacin, and penicillin, Australia, 1 October to 31 December 2025, by state or territory

	Resistance[a]								
	Number of isolates tested	Azithromycin		Number of isolates tested[b]	Ciprofloxacin		Number of isolates tested[b]	Penicillin	
Jurisdiction	Q4 2025	n	%	Q4 2025	n	%	Q4 2025	n	%
Australian Capital Territory	46	3	6.5	42	27	64.3	42	11	26.2
New South Wales	794	102	12.8	134	73	54.5	16	2	12.5
Queensland	393	64	16.3	362	252	69.6	362	87	24.0
South Australia	161	3	1.9	161	101	62.7	161	20	12.4
Tasmania	14	1	7.1	14	10	71.4	14	6	42.9
Victoria[c]	715	37	5.2	0	NT	NT	0	NT	NT
Northern Territory non-remote	14	1	7.1	14	1	7.1	14	1	7.1
Northern Territory remote	12	0	0	12	0	0	12	4	33.3
Western Australia non-remote	294	40	13.6	292	183	62.7	292	61	20.9
Western Australia remote	21	0	0	21	6	28.6	21	4	19.0
Australia	**2,464**	**251**	**10.2**	**1,052**	**653**	**62.1**	**934**	**196**	**21.0**

a Resistance as defined by jurisdictional reporting criteria.

b A subset of *N. gonorrhoeae* underwent antimicrobial susceptibility testing to ciprofloxacin (42.7%; 1,052/2,464) and penicillin (37.9%; 934/2,464).

c NT: not tested.

Ceftriaxone

The AGSP has historically reported the category of ceftriaxone decreased susceptibility (DS) at minimum inhibitory concentration (MIC) values ≥ 0.064 mg/L; these are reported for observation of trends. The focus of the AGSP is on isolates with MIC ≥ 0.125 mg/L, in line with the 2012 World Health Organization criteria.[2] The proportion of *N. gonorrhoeae* in Australia with ceftriaxone MIC values ≥ 0.125 mg/L was more than two-fold higher in 2024 (0.51%) than in 2023 (0.22%) and has continued to increase in 2025 (year-to-date, ytd) to 0.73% (74/10,185), the highest proportion ever reported by the AGSP (Table 2).

In 2025, *N. gonorrhoeae* isolates with ceftriaxone MIC values ≥ 0.125 mg/L varied across the quarters, with 25/74 such isolates reported in quarter four and having ceftriaxone MIC values in the range 0.125–0.50 mg/L; most of these isolates (17/25) were from New South Wales. The other jurisdictions reporting isolates with ceftriaxone MIC values ≥ 0.125 mg/L in quarter four were Victoria (n = 5); the Australian Capital Territory (n = 1); Queensland (n = 1); and non-remote Western Australia (n = 1). The mosaic *penA* 60.001 allele, the key target associated with ceftriaxone resistance, was detected in 80% of these isolates (20/25).[3]

In this quarter, three *N. gonorrhoeae* isolates had an extensively drug resistant (XDR) phenotype (defined phenotypically as ceftriaxone MIC ≥ 0.125 mg/L and azithromycin MIC ≥ 256 mg/L) from New South Wales (n = 2) and Victoria (n = 1). A total of ten XDR *N. gonorrhoeae* were detected in 2025, similar to the number reported in 2024 (n = 9).[4] In 2022–2024, a spike in detection of XDR *N. gonorrhoeae* was reported both in Australia and globally, many associated with travel to the Asia Pacific. Genomic analysis has shown limited diversity amongst the XDR isolates reported in 2024 in Australia.[5] Genomic examination of the 2025 XDR isolates is ongoing.

Azithromycin

Dual therapy using ceftriaxone plus azithromycin has been the recommended treatment for gonorrhoea in Australia since 2014, as a strategy to temper development of more widespread ceftriaxone resistance. Azithromycin resistance in Australia was stable, in the range 3.9–4.7% in the period 2019 to 2024 (Table 2). However, in 2025, the proportion of azithromycin-resistant *N. gonorrhoeae* varied over the quarters to give an overall resistance of 7.7% ytd (784/10,185), higher than reported in 2024 (4.6%; Table 2).[4] The AGSP trend data for azithromycin resistance since 2010 are shown in Table 2.

Since 2022, *N. gonorrhoeae* isolates with high-level azithromycin resistance (MIC value ≥ 256 mg/L) increased in Australia. In 2025, high-level azithromycin resistance was reported in 20 isolates ytd (0.20%; 20/10,185), including the ten *N. gonorrhoeae* with an XDR phenotype. These were reported in five jurisdictions: New South Wales (n = 7); Victoria (n = 5); non-remote Western Australia (n = 5); Queensland (n = 2); and the non-remote Northern Territory (n = 1). *N. gonorrhoeae* with high-level resistance to azithromycin was markedly reduced in 2025 from 2024 (n = 46), the highest ever reported annually by the AGSP.[4]

Patients with extragenital gonococcal infections, and those with infections with *N. gonorrhoeae* with raised MIC values to ceftriaxone, should have test of cure cultures collected following treatment.[5] Continued surveillance to monitor *N. gonorrhoeae* with elevated MIC values, coupled with sentinel site surveillance in high-risk populations, remain essential to inform therapeutic strategies, to identify incursion of resistant strains, and to detect instances of treatment failure.

Table 2: The national number of gonococcal isolates and proportion of *N. gonorrhoeae* with ceftriaxone MIC values 0.064 and ≥ 0.125 mg/L and resistance to azithromycin, Australia, 2010 to 2024, 1 January to 31 March 2025, 1 April to 30 June 2025, 1 July to 30 September, 1 October to 31 December 2025 and 2025 ytd[a]

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2025 ytd
Number of isolates tested nationally	4,100	4,230	4,718	4,897	4,804	5,411	6,378	7,835	9,006	9,668	7,222	6,254	8,199	10,105	10,702	2,651	2,553	2,517	2,464	10,185
Ceftriaxone MIC 0.064 mg/L	4.80%	3.20%	4.10%	8.20%	4.80%	1.70%	1.65%	1.02%	1.67%	1.19%	0.87%	0.83%	5.05%	3.29%	2.29%	2.53%	3.02%	2.38%	3.25%	2.79%
Ceftriaxone MIC ≥ 0.125 mg/L	0.10%	0.10%	0.30%	0.60%	0.60%	0.10%	0.05%	0.04%	0.06%	0.11%	0.07%	0.03%	0.51%	0.22%	0.51%	0.60%	0.86%	0.44%	1.01%	0.73%
Total proportion of isolates with ceftriaxone MIC values ≥ 0.064 mg/L	4.90%	3.30%	4.40%	8.80%	5.40%	1.80%	1.70%	1.06%	1.73%	1.30%	0.94%	0.86%	5.56%	3.51%	2.80%	3.13%	3.88%	2.82%	4.26%	3.52%
Azithromycin resistance	n/a	1.1%	1.3%	2.1%	2.5%	2.6%	5.0%	9.3%	6.2%	4.6%	3.9%	4.7%	3.9%	4.5%	4.6%	5.8%	8.6%	6.4%	10.2%	7.7%

a ytd: year-to-date, includes AGSP data collated from 1 January to 31 December 2025.

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