

Additional Reports

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

Reporting period 1 April to 30 June 2000

The AGSP laboratories examined a total of 970 isolates in this quarter, little different from the 950 available in this period in 1999. About 34 per cent of this total was from New South Wales, 22 per cent from Victoria, 16 per cent from Queensland, 14 per cent from the Northern Territory, 11 per cent from Western Australia and 2.7 per cent from South Australia. Isolates from other centres were few.

Penicillins

Figure 10 shows the proportions of gonococci fully sensitive (MIC 0.03 mg/L), less sensitive (MIC 0.06 to 0.5 mg/L), relatively resistant to penicillins (MIC 1 mg/L) or else penicillinase-producing *Neisseria gonorrhoeae* (PPNG) aggregated for Australia and by State or Territory. A high proportion of PPNG and relatively resistant strains fail to respond to treatment with penicillins (penicillin, amoxicillin, ampicillin) and early generation cephalosporins.

About 17 per cent of all isolates were penicillin-resistant by one or more mechanisms – 7.6 per cent by penicillinase production and 9.3 per cent by chromosomal mechanisms (CMRNG). The penicillin-resistant isolates comprised about 28 per cent of all isolates in Queensland and about 20 per cent of all gonococci in New South Wales and South Australia, while 16 per cent of gonococci in Victoria and 13 per cent in Western Australia were penicillin-resistant. In the

Northern Territory only a single isolate out of 137 examined was penicillin-resistant.

The number of PPNG isolated in Australia (74) increased slightly in this quarter compared with the corresponding period in 1999 (65). The highest proportion of PPNG was found in isolates from Queensland (18%), Western Australia (11%), Victoria (8%) and South Australia (8%), whereas the number (15) and proportion (4.5%) of PPNG in New South Wales continued to decrease. No PPNG were present in the Northern Territory. Acquisition data on PPNG indicated local infection with these strains was occurring throughout Australia. South-East Asian countries remained the main source of external acquisition.

More isolates were resistant to the penicillins by separate chromosomal mechanisms (91). These CMRNG were especially prominent in New South Wales where 54 such isolates were detected. Queensland (15) and Victoria (16) were also prominent sources of CMRNG. Only one strain of this type was isolated in the Northern Territory.

Ceftriaxone and spectinomycin

Most isolates in Australia were again susceptible to these injectable agents. A small number of strains exhibited decreased ceftriaxone susceptibility.

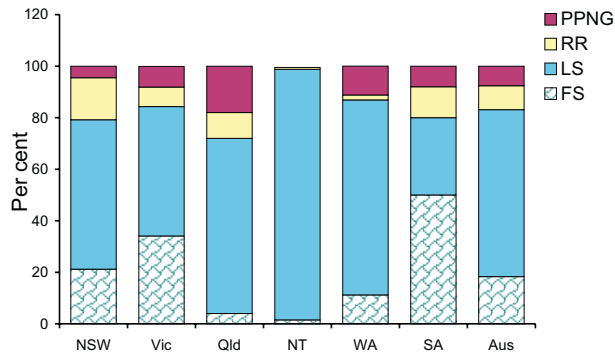
Quinolone antibiotics

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 to 0.5 mg/L) or resistant (MIC 1 mg/L) groups. The distribution of QRNG in Australia in this quarter is shown in Figure 11.

For Australia as a whole the total number (183) and proportion (18.8%) of all *N. gonorrhoeae* isolates that were QRNG were again high and very similar to numbers and proportions seen in the corresponding quarter of 1999 (194 isolates, 20%). It was in the June quarter of 1999 that the numbers of QRNG increased substantially. In the current quarter the QRNG were widely dispersed and were present in all centres except the Northern Territory. High rates were maintained in New South Wales (27%) and Victoria (25%) and together these regions accounted for three-quarters of the QRNG isolated. QRNG were prominent also in South Australia (23% of isolates there), Queensland (14%) and Western Australian (13%). A single QRNG was detected in Tasmania.

Thirty-two of the New South Wales, 13 of the Victorian and all of the 21 Queensland QRNG isolates exhibited high level resistance (MIC ciprofloxacin 1 mg/L) and higher level QRNG were also seen in South Australia, Tasmania and Western Australia. Local acquisition became increasingly prominent and MICs ranged up to 16 mg/L. However, about 60 per cent of the QRNG were in the 'less sensitive' MIC range 0.06 to 0.5 mg/L and were found almost exclusively in males. Again the bulk of this group of isolates (96 of 110)

Figure 10. Gonococci isolated in Australia, 1 April to 30 June 2000, by penicillin-susceptibility and by region



FS fully sensitive to penicillin, MIC 0.03 mg/L
 LS less sensitive to penicillin, MIC 0.06 to 0.5 mg/L
 RR relatively resistant to penicillin, MIC = 1 mg/L
 PPNG penicillinase-producing *Neisseria gonorrhoeae*
 * includes Tasmania and the Australian Capital Territory

was found in New South Wales and Victoria and infections with them were mostly locally acquired. Gonococci acquired overseas were from such diverse sources as the United Kingdom, Denmark, Ireland, Indonesia, the Philippines, Papua New Guinea, Taiwan, China, Thailand and Vietnam.

High level tetracycline resistance (TRNG)

The number (79) and proportion (8.1%) of TRNG detected were higher than for the second quarter of 1999 (58; 6%). TRNG represented 22 per cent of isolates from Queensland, 13 per cent from Western Australia, and 5.5 per cent from New South Wales and Victoria. No TRNG were detected in South Australia, Tasmania or the Northern Territory.

Australian encephalitis: Sentinel Chicken Surveillance Programme

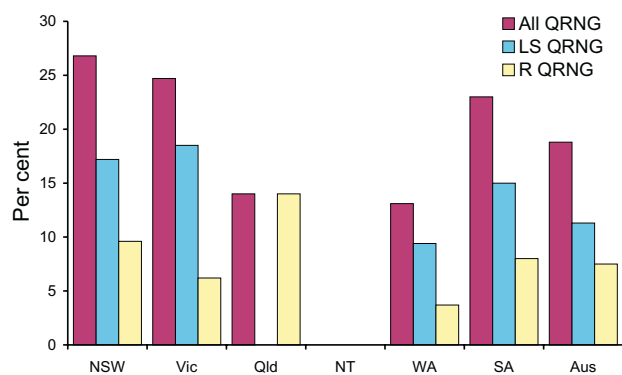
Sentinel chicken flocks are used to monitor flavivirus activity in Australia. The main viruses of concern are Murray Valley encephalitis (MVE) and Kunjin which cause the potentially fatal disease Australian encephalitis in humans. Currently 29 flocks are maintained in the north of Western Australia, seven in the Northern Territory, nine in New South Wales and ten in Victoria. The flocks in Western Australia and the Northern Territory are tested year round but those in New South Wales and Victoria are tested only from November to March, during the main risk season.

Results are coordinated by the Arbovirus Laboratory in Perth and reported bimonthly. For more information see Commun Dis Intell 2000;24:8-9.

A K Broom,¹ J S Mackenzie,² L Melville,³ D W Smith,⁴ PI Whelan⁵

1. Department of Microbiology, The University of Western Australia
2. Department of Microbiology, The University of Queensland
3. Berrimah Agricultural Research Centre, Northern Territory
4. PathCentre, Western Australia

Figure 11. Quinolone-resistance of *N. Gonorrhoeae*, Australia, 1 April to 30 June 2000, by region



LS QRNG = less sensitive quinolone-resistant *N. gonorrhoeae* (Ciprofloxacin MICs 0.06 to 0.5 mg/L)
 R QRNG = fully resistant quinolone-resistant *N. Gonorrhoeae* (Ciprofloxacin MICs \geq 1 mg/L)

* includes Tasmania and the Australian Capital Territory

5. Department of Health and Community Services, Northern Territory

July/August 2000

Sentinel chicken serology was carried out for 27 of the 29 flocks in Western Australia in July and August 2000. Murray Valley encephalitis (MVE) activity was still detected in the Kimberley, Pilbara, Gascoyne and Midwest in these months, although the numbers of seroconversions have decreased. The extension of MVE virus activity this far into the dry season has not been observed in previous years. The number of chickens positive for flavivirus antibodies by ELISA at each site and the identity of the infecting virus(es) are shown in Table 7. A number of the later seroconversions have not yet been confirmed.

MVE virus antibodies were detected in chickens in the Murchison and Midwest regions of Western Australia for the first time this year. This is the furthest south the virus has ever been detected. A serological survey of domestic chickens located in these regions and areas further south and east, was carried out in August to determine the limit of MVE virus activity in Western Australia in 2000. The results will be published in a later edition of *Commun Dis Intell*. To date 11 cases of Australian encephalitis caused by MVE virus have been confirmed from Western Australia. In addition there have been several cases of non-encephalitic disease caused by Kunjin virus reported from Western Australia.

Serum samples from six of the seven Northern Territory sentinel chicken flocks were tested in our laboratory in July and August 2000. One new seroconversion to MVE virus was detected in July east of Darwin at Beatrice Hill Farm. Several media warnings have been issued by the Northern Territory Health Department and to date there have been four cases of Australian encephalitis caused by MVE virus and one case of Kunjin encephalitis confirmed from central Australia (Northern Territory and South Australia).

Table 7. Flavivirus seroconversions in Western Australian sentinel chicken flocks in July and August 2000

Region	Location*	July 2000				August 2000		
		MVE	MVE/ KUN	KUN	FLAVI	MVE	KUN	FLAVI
Kimberley	Kalumburu	1			1			
	Wyndham					1 [#]		
	Kununurra	1						
	Fitzroy Crossing	1				1		
	Derby**	1				1	1	2
	Lombadina	1			1			
	Bidjadjanga				1	2		
Pilbara	South Hedland	1						
	Harding Dam**	2				1	1	
	Pannawonica	5						
	Tom Price	1						
	Paraburdoo	1	1					
	Onslow	1		3				
Gascoyne	Carnarvon	3				2		
Midwest	Dongara	4					1	

* The location of most chicken flocks are illustrated in *Commun Dis Intell* 2000;24:8-9.

** Two flocks of 12 chickens at these sites,

This result has not yet been confirmed,

MVE Antibodies to Murray Valley encephalitis virus detected by ELISA.

KUN Antibodies to Kunjin virus detected by ELISA.

FLAVI Antibodies to flavivirus detected by ELISA.

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 and related diseases 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: (02) 9332 4648. Facsimile: (02) 9332 1837.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 to 30 April 2000, as reported to 31 July 2000, are included in this issue of *Commun Dis Intell* (Tables 8 and 9).

Table 8. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 April 2000, by sex and State or Territory of diagnosis

										Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2000	This period 1999	Year to date 2000	Year to date 1999
HIV diagnoses	Female	1	2	0	1	0	0	3	0	7	5	27	23
	Male	0	17	0	6	1	0	12	1	37	56	217	218
	Sex not reported	0	0	0	0	0	0	0	0	0	0	0	0
	Total ¹	1	19	0	7	1	0	15	1	44	61	245	241
AIDS diagnoses	Female	0	0	0	0	0	0	0	0	0	0	7	5
	Male	0	1	0	1	0	0	1	0	3	17	52	51
	Total ¹	0	1	0	1	0	0	1	0	3	17	59	56
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	1	3	1
	Male	0	2	0	2	0	0	1	0	5	4	25	40
	Total ¹	0	2	0	2	0	0	1	0	5	5	28	42

1. Persons whose sex was reported as transgender are included in the totals.

Table 9. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 July 2000, by sex and State or Territory

		State or Territory								Australia
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	27	609	11	156	61	5	217	118	1,204
	Male	223	11,025	110	2,009	680	78	3,919	922	18,966
	Sex not reported	0	247	0	0	0	0	24	0	271
	Total ¹	250	11,901	121	2,172	741	83	4,174	1,044	20,486
AIDS diagnoses	Female	9	188	1	48	25	3	70	26	370
	Male	86	4,651	35	828	347	44	1,630	354	7,975
	Total ¹	95	4,851	36	878	372	47	1,708	382	8,369
AIDS deaths	Female	4	113	0	32	15	2	49	16	231
	Male	66	3,175	24	569	231	29	1,275	248	5,617
	Total ¹	70	3,296	24	603	246	31	1,330	265	5,865

1. Persons whose sex was reported as transgender are included in the totals.