Communicable diseases surveillance

Tables

National Notifiable Diseases Surveillance System

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 53,422 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification received date between 1 April and 30 June 2011 (Table 2). The notification rate of diseases per 100,000 population for each state or territory is presented in Table 3.

Table 1: Reporting of notifiable diseases by jurisdiction

Disease	Data received from:
Bloodborne diseases	
Hepatitis (NEC)	All jurisdictions
Hepatitis B (newly acquired)	All jurisdictions
Hepatitis B (unspecified)	All jurisdictions
Hepatitis C (newly acquired)	All jurisdictions except Queensland
Hepatitis C (unspecified)	All jurisdictions
Hepatitis D	All jurisdictions
Gastrointestinal diseases	
Botulism	All jurisdictions
Campylobacteriosis	All jurisdictions except New South Wales
Cryptosporidiosis	All jurisdictions
Haemolytic uraemic syndrome	All jurisdictions
Hepatitis A	All jurisdictions
Hepatitis E	All jurisdictions
Listeriosis	All jurisdictions
STEC, VTEC*	All jurisdictions
Salmonellosis	All jurisdictions
Shigellosis	All jurisdictions
Typhoid	All jurisdictions
Quarantinable diseases	
Cholera	All jurisdictions
Highly pathogenic avian influenza in humans	All jurisdictions
Plague	All jurisdictions
Rabies	All jurisdictions
Severe acute respiratory syndrome	All jurisdictions
Smallpox	All jurisdictions
Viral haemorrhagic fever	All jurisdictions
Yellow fever	All jurisdictions
Sexually transmissible infections	
Chlamydial infection	All jurisdictions
Donovanosis	All jurisdictions
Gonococcal infection	All jurisdictions
Syphilis <2 years duration	All jurisdictions
Syphilis >2 years or unspecified duration	All jurisdictions except South Australia
Syphilis - congenital	All jurisdictions

Table 1: Reporting of notifiable diseases by jurisdiction, *continued*

Disease	Data received from:
Vaccine preventable diseases	
Diphtheria	All jurisdictions
Haemophilus influenzae type b	All jurisdictions
Influenza (laboratory confirmed)	All jurisdictions
Measles	All jurisdictions
Mumps	All jurisdictions
Pertussis	All jurisdictions
Pneumococcal disease (invasive)	All jurisdictions
Poliomyelitis	All jurisdictions
Rubella	All jurisdictions
Rubella - congenital	All jurisdictions
Tetanus	All jurisdictions
Varicella zoster (chickenpox)	All jurisdictions except New South Wales
Varicella zoster (shingles)	All jurisdictions except New South Wales
Varicella zoster (unspecified)	All jurisdictions except New South Wales
Vectorborne diseases	
Arbovirus infection (NEC)	All jurisdictions
Barmah Forest virus infection	All jurisdictions
Dengue virus infection	All jurisdictions
Japanese encephalitis virus infection	All jurisdictions
Kunjin virus infection	All jurisdictions
Malaria	All jurisdictions
Murray Valley encephalitis virus infection	All jurisdictions
Ross River virus infection	All jurisdictions
Zoonoses	
Anthrax	All jurisdictions
Australian bat lyssavirus	All jurisdictions
Brucellosis	All jurisdictions
Leptospirosis	All jurisdictions
Lyssavirus (NEC)	All jurisdictions
Ornithosis	All jurisdictions
Q fever	All jurisdictions
Tularaemia	All jurisdictions
Other bacterial infections	
Legionellosis	All jurisdictions
Leprosy	All jurisdictions
Meningococcal infection	All jurisdictions
Tuberculosis	All jurisdictions

* Infections with Shiga-like toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

NEC Not elsewhere classified.

Table 2: Notifications of diseases received by state and territory health authorities, 1 April to 30 June 2011, by date of diagnosis

Disease	State or territory								Total 2nd quarter 2011	Total 1st quarter 2011	Total 2nd quarter 2010	Last 5 years mean 2nd quarter	Ratio	Year to date 2011	Last 5 years YTD mean
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Bloodborne diseases															
Hepatitis (NEC)	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.2
Hepatitis B (newly acquired)*	1	7	0	11	1	6	10	6	42	48	56	69.8	0.6	90	135.8
Hepatitis B (unspecified)†	16	597	51	239	80	18	484	172	1,657	1,742	1,842	1,662.2	1.0	3,388	3,379.8
Hepatitis C (newly acquired)*‡	2	9	0	NN	9	10	5	34	69	108	101	97.4	0.7	177	196.0
Hepatitis C (unspecified)†	49	772	52	607	102	47	600	249	2,478	2,597	2,995	2,818.2	0.9	5,056	5,816.8
Hepatitis D	0	0	0	0	0	0	7	2	9	11	7	9.6	0.9	20	18.8
Gastrointestinal diseases															
Botulism	0	1	0	0	0	0	0	0	1	0	0	0.0	0.0	1	0.4
Campylobacteriosis§	94	NN	47	1,253	451	180	1,514	485	4,024	4,939	3,347	3,586.0	1.1	8,895	7,898.8
Cryptosporidiosis	0	106	9	120	48	8	74	106	471	638	399	717.6	0.7	1,104	2,073.4
Haemolytic uraemic syndrome	0	1	0	0	0	0	0	0	1	4	1	3.4	0.3	5	8.6
Hepatitis A	0	13	0	8	1	0	6	3	31	45	49	81.4	0.4	75	162.8
Hepatitis E	0	7	0	1	0	0	0	0	8	16	11	8.4	1.0	24	19.4
Listeriosis	0	6	0	2	2	0	8	1	19	19	13	12.2	1.6	38	38.6
STEC, VTEC‖	0	3	1	2	6	1	1	2	16	19	12	17.0	0.9	35	50.8
Salmonellosis	13	688	90	686	211	33	574	264	2,559	4,807	2,893	2,262.0	1.1	7,329	5,647.2
Shigellosis	2	27	12	15	7	0	18	19	100	164	125	149.6	0.7	262	340.0
Typhoid	0	6	1	2	1	1	11	2	24	57	29	22.8	1.1	81	55.0
Quarantinable diseases															
Cholera	0	0	0	4	0	0	0	0	4	1	0	0.4	10.0	5	1.2
Highly pathogenic avian influenza in humans	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Plague	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Severe acute respiratory syndrome	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Viral haemorrhagic fever	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Yellow fever	0	0	0	2	0	0	0	0	2	0	0	0.0	0.0	2	0.0

Table 2 *continued*: Notifications of diseases received by state and territory health authorities, 1 April to 30 June 2011, by date of diagnosis

Disease	State or territory								Total 2nd quarter 2011	Total 1st quarter 2011	Total 2nd quarter 2010	Last 5 years mean 2nd quarter	Ratio	Year to date 2011	Last 5 years YTD mean
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection¶,**	318	5,091	652	4,684	1,276	412	4,714	3,063	20,210	20,824	18,844	15,094.2	1.3	40,927	30,071.6
Donovanosis	0	0	0	0	0	0	0	0	0	0	0	1.2	0.0	0	1.8
Gonococcal infection**	34	663	513	757	122	6	554	443	3,092	2,966	2,570	2,288.2	1.4	6,037	4,474.4
Syphilis < 2 years duration**	2	97	8	66	17	0	61	41	292	368	291	321.4	0.9	657	628.8
Syphilis > 2 years or unspecified duration**	5	58	20	43	NDP	3	152	14	295	325	316	333.4	0.9	619	666.8
Syphilis – congenital**	0	0	0	0	0	0	0	0	0	4	1	2.2	0.0	4	3.6
Vaccine preventable diseases															
Diphtheria	0	0	1	3	0	0	0	0	4	0	0	0.0	0.0	4	0.0
Haemophilus influenzae type b	0	2	1	1	0	0	1	0	5	3	6	6.2	0.8	8	10.2
Influenza (laboratory confirmed)	38	900	34	1,674	931	77	332	122	4,108	2,674	786	3,537.6	1.2	6,756	3,918.6
Measles	0	11	2	5	0	0	8	4	30	80	15	29.8	1.0	109	59.0
Mumps	0	16	0	8	3	1	5	5	38	39	26	62.2	0.6	77	123.4
Pertussis	203	2,893	84	1,971	564	31	1,868	399	8,013	10,740	5,400	3,707.0	2.2	18,652	7,449.0
Pneumococcal disease (invasive)	7	145	33	105	45	5	138	70	548	224	422	408.8	1.3	769	612.2
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Rubella	0	5	0	2	1	0	1	6	15	22	11	12.0	1.3	37	20.8
Rubella – congenital	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	0	0.4
Tetanus	0	0	0	1	0	0	0	1	2	1	0	0.2	10.0	3	1.8
Varicella zoster (chickenpox)††	2	NN	20	51	84	9	151	83	400	376	351	318.0	1.3	773	612.6
Varicella zoster (shingles)††	4	NN	46	9	404	44	199	190	896	1,013	696	500.2	1.8	1,903	1,037.4
Varicella zoster (unspecified)††	22	NN	0	926	12	21	551	254	1,786	1,794	1,660	1,216.6	1.5	3,564	2,497.6
Vectorborne diseases															
Arbovirus infection (NEC)	0	0	0	4	0	0	2	0	6	4	0	3.6	1.7	10	10.2
Barmah Forest virus infection	0	95	24	174	23	1	34	39	390	841	382	488.2	0.8	1,228	1,092.4
Dengue virus infection	5	18	3	21	2	1	17	53	120	361	264	138.6	0.9	479	434.2
Japanese encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Kunjin virus infection‡‡	0	0	1	0	0	0	0	0	1	0	1	0.6	1.7	1	1.4
Malaria	2	17	3	30	1	2	19	14	88	120	94	143.4	0.6	207	285.6
Murray Valley encephalitis virus infection‡‡	0	1	0	0	0	0	0	6	7	8	0	0.8	8.8	15	1.4
Ross River virus infection	2	164	42	331	85	1	187	172	984	3,071	1,873	1,394.2	0.7	4,033	3,516.4

Table 2 *continued*: Notifications of diseases received by state and territory health authorities, 1 April to 30 June 2011, by date of diagnosis

Disease	State or territory								Total 2nd quarter 2011	Total 1st quarter 2011	Total 2nd quarter 2010	Last 5 years mean 2nd quarter	Ratio	Year to date 2011	Last 5 years YTD mean
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Zoonoses															
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.6
Australian bat lyssavirus	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Brucellosis	0	1	0	8	0	0	1	1	11	12	4	7.8	1.4	23	17.4
Leptospirosis	0	13	0	32	1	0	4	1	51	124	44	41.2	1.2	175	87.2
Lyssavirus (NEC)	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0.0
Ornithosis	0	4	0	0	0	0	12	1	17	24	9	24.8	0.7	40	48.6
Q fever	1	26	1	37	2	0	4	1	72	82	98	90.4	0.8	154	189.6
Tularaemia	0	0	0	0	0	0	0	0	0	1	0	0.0	0.0	1	0.0
Other bacterial infections															
Legionellosis	1	32	0	11	10	1	20	25	100	81	83	83.6	1.2	180	156.8
Leprosy	0	1	0	0	0	0	2	0	3	0	2	2.2	1.4	3	4.8
Meningococcal infection§§	1	13	0	15	4	3	16	5	57	57	56	61.6	0.9	114	112.6
Tuberculosis	4	89	7	63	17	3	58	25	266	292	286	264.8	1.0	555	552.4
Total	828	12,598	1,758	13,984	4,523	925	12,423	6,383	53,422	61,746	46,471			114,704	

* Newly acquired hepatitis includes cases where the infection was determined to be acquired within 24 months prior to diagnosis.

† Unspecified hepatitis and syphilis includes cases where the duration of infection could not be determined.

‡ In Queensland, includes incident hepatitis cases.

§ Not reported for New South Wales where it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.

|| Infections with Shiga-like toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

¶ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia, which reports only genital tract specimens. The Northern Territory and Western Australia, exclude ocular infections.

** In the national case definitions for chlamydial, gonococcal and syphilis infections the mode of transmission cannot be inferred from the site of infection. Transmission (especially in children) may be by a non-sexual mode (e.g. perinatal infections, epidemic gonococcal conjunctivitis).

†† Ratio of current quarter total to the mean of last 5 years for the same quarter. Ratios for varicella zoster (chickenpox), varicella zoster (shingles) and varicella zoster (unspecified) are based on 4 years of data.

‡‡ In the Australian Capital Territory, Murray Valley encephalitis virus infection and Kunjin virus infection are combined under Murray Valley encephalitis virus infection.

§§ Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NN Not notifiable.

NEC Not elsewhere classified.

NDP No data provided.

Table 3: Notification rates of diseases, 1 April to 30 June 2011, by state or territory. (Annualised rate per 100,000 population)

Disease	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Bloodborne diseases									
Hepatitis (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hepatitis B (newly acquired)*	1.1	0.4	0.0	1.0	0.2	4.7	0.7	1.0	0.8
Hepatitis B (unspecified)†	17.8	33.0	88.8	21.2	19.5	14.2	34.9	30.0	29.7
Hepatitis C (newly acquired)*	2.2	0.5	0.0	NN	2.2	7.9	0.4	5.9	1.5
Hepatitis C (unspecified)†,‡	54.6	42.7	90.6	53.8	24.8	37.0	43.3	43.4	44.4
Hepatitis D	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.2
Gastrointestinal diseases									
Botulism	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis§	104.8	NN	81.9	111.0	109.7	141.8	109.2	84.5	106.6
Cryptosporidiosis	0.0	5.9	15.7	10.6	11.7	6.3	5.3	18.5	8.4
Haemolytic uraemic syndrome	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hepatitis A	0.0	0.7	0.0	0.7	0.2	0.0	0.4	0.5	0.6
Hepatitis E	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Listeriosis	0.0	0.3	0.0	0.2	0.5	0.0	0.6	0.2	0.3
STEC,VTEC‖	0.0	0.2	1.7	0.2	1.5	0.8	0.1	0.3	0.3
Salmonellosis	14.5	38.0	156.7	60.8	51.3	26.0	41.4	46.0	45.8
Shigellosis	2.2	1.5	20.9	1.3	1.7	0.0	1.3	3.3	1.8
Typhoid fever	0.0	0.3	1.7	0.2	0.2	0.8	0.8	0.3	0.4
Quarantinable diseases									
Cholera	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1
Human pathogenic avian influenza in humans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plague	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rabies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Severe acute respiratory syndrome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smallpox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viral haemorrhagic fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow fever	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Sexually transmitted infections									
Chlamydial infection¶,**	354.4	281.3	1,135.5	414.8	310.3	324.6	339.9	533.5	361.8
Donovanosis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gonococcal infection**	37.9	36.6	893.4	67.0	29.7	4.7	39.9	77.2	55.4
Syphilis < 2 years duration**	2.2	5.4	13.9	5.8	4.1	0.0	4.4	7.1	5.2
Syphilis > 2 years or unspecified duration†,**	5.6	3.2	34.8	3.8	NDP	2.4	11.0	2.4	5.7
Syphilis – congenital**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vaccine preventable diseases									
Diphtheria	0.0	0.0	1.7	0.3	0.0	0.0	0.0	0.0	0.1
Haemophilus influenzae type b	0.0	0.1	1.7	0.1	0.0	0.0	0.1	0.0	0.1
Influenza (laboratory confirmed)	42.4	49.7	59.2	148.3	226.4	60.7	23.9	21.3	73.5
Measles	0.0	0.6	3.5	0.4	0.0	0.0	0.6	0.7	0.5
Mumps	0.0	0.9	0.0	0.7	0.7	0.8	0.4	0.9	0.7
Pertussis	226.3	159.9	146.3	174.6	137.2	24.4	134.7	69.5	143.5
Pneumococcal disease (invasive)	7.8	8.0	57.5	9.3	10.9	3.9	10.0	12.2	9.8
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella	0.0	0.3	0.0	0.2	0.2	0.0	0.1	1.0	0.3
Rubella – congenital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetanus	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0

Table 3 *continued*: Notification rates of diseases, 1 April to 30 June 2011, by state or territory. (Annualised rate per 100,000 population)

Disease	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Varicella zoster (chickenpox)	2.2	NN	34.8	4.5	20.4	7.1	10.9	14.5	10.6
Varicella zoster (shingles)	4.5	NN	80.1	0.8	98.3	34.7	14.3	33.1	23.7
Varicella zoster (unspecified)	24.5	NN	0.0	82.0	2.9	16.5	39.7	44.2	47.3
Vectorborne diseases									
Arbovirus infection (NEC)	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.1
Barmah Forest virus infection	0.0	5.2	41.8	15.4	5.6	0.8	2.5	6.8	7.0
Dengue virus infection	5.6	1.0	5.2	1.9	0.5	0.8	1.2	9.2	2.1
Japanese encephalitis virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kunjin virus infection††	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Malaria	2.2	0.9	5.2	2.7	0.2	1.6	1.4	2.4	1.6
Murray Valley encephalitis virus infection††	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	0.1
Ross River virus infection	2.2	9.1	73.1	29.3	20.7	0.8	13.5	30.0	17.6
Zoonoses									
Anthrax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australia bat lyssavirus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brucellosis	0.0	0.1	0.0	0.7	0.0	0.0	0.1	0.2	0.2
Leptospirosis	0.0	0.7	0.0	2.8	0.2	0.0	0.3	0.2	0.9
Lyssavirus (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	0.0	0.2	0.0	0.0	0.0	0.0	0.9	0.2	0.3
Q fever	1.1	1.4	1.7	3.3	0.5	0.0	0.3	0.2	1.3
Tularaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other bacterial diseases									
Legionellosis	1.1	1.8	0.0	1.0	2.4	0.8	1.4	4.4	1.8
Leprosy	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Meningococcal infection‡‡	1.1	0.7	0.0	1.3	1.0	2.4	1.2	0.9	1.0
Tuberculosis	4.5	4.9	12.2	5.6	4.1	2.4	4.2	4.4	4.8

* Newly acquired hepatitis includes cases where the infection was determined to be acquired within 24 months prior to diagnosis.

† Unspecified hepatitis and syphilis includes cases where the duration of infection could not be determined.

‡ In Queensland, includes incident hepatitis C cases.

§ Notified as 'foodborne disease' or 'gastroenteritis in an institution' in New South Wales.

|| Infection with Shiga toxin/verotoxin-producing *Escherichia coli* (STEC/VTEC).

¶ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia, which reports only genital tract specimens; the Northern Territory and Western Australia exclude ocular infections.

** In the national case definitions for chlamydial, gonococcal and syphilis infections the mode of transmission cannot be inferred from the site of infection. Transmission (especially in children) may be by a non-sexual mode (e.g. perinatal infections, epidemic gonococcal conjunctivitis).

†† In the Australian Capital Territory, Murray Valley encephalitis virus infection and Kunjin virus infection are combined under Murray Valley encephalitis virus infection.

‡‡ Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NEC Not elsewhere classified.

NN Not notifiable.

NDP No data provided.

Additional reports

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 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 *2011;35(1):56–57.*

Reporting period 1 January to 31 March 2011

The AGSP laboratories received a total of 1,059 isolates in the 1st quarter of 2011, of which 1,034 underwent susceptibility testing. This number was similar to the 1,056 isolates referred in this period in 2010. Approximately 30% of this total was from New South Wales; 21% from Victoria; 19% from Queensland; 11% from the Northern Territory; 10% from Western Australia; 7% from South Australia and 2% from the Australian Capital Territory. A small number of isolates were also received from Tasmania.

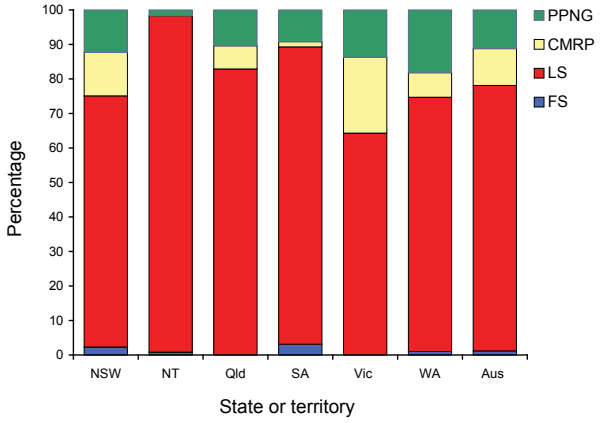
Penicillin

In this quarter, 227 (22%) of all isolates examined were penicillin-resistant by one or more mechanisms. One hundred and sixteen (11%) were penicillinase producing *Neisseria gonorrhoea* (PPNG); and 111 (11%) had chromosomally mediated resistance to penicillin (CMRP). There has been a continuing decrease in the proportion of penicillin-resistant gonococci by any mechanism over the past few years (2010: 32%; 2009: 39%; 2008: 45%; and 2007: 39%). Whilst nationally the proportion of PPNG has remained stable at 11%–13% over the period 2007–2010, the proportion of gonococci with CMRP has decreased in the corresponding quarter from 28% in 2007 to 32% in 2008; 26% in 2009 to 20% in 2010 and to 11% in this quarter of 2011.

The proportion of all strains resistant to the penicillins by any mechanism ranged from 3.3% in the Northern Territory to 36% in Victoria. In Victoria there were 50 CMRP (22%) and 31 PPNG (14%); in New South Wales there were 39 CMRP (13%) and 38 PPNG (13%); in Queensland there were 13 CMRP (7%) and 20 PPNG (10%), and in Western Australia there were 7 CMRP (7%) and 18 PPNG (18%). No CMRP, but 2 PPNG strains were found in the Northern Territory: one acquired in South East Asia (Thailand); and the geographic acquisition of the other was unknown. There was 1 CMRP and no PPNG in the Australian Capital Territory and no CMRP and 1 PPNG reported from Tasmania.

The proportions of gonococci fully sensitive (MIC ≤ 0.03 mg/L); less sensitive (MIC 0.06–0.5 mg/L); CMRP (MIC ≥ 1 mg/L) and PPNG aggregated for Australia and by state and territory are shown in Figure 1. 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 1: Categorisation of gonococci isolated in Australia, 1 January to 31 March 2011, by penicillin susceptibility and state or territory



FS	Fully sensitive to penicillin, MIC ≤0.03 mg/L.
LS	Less sensitive to penicillin, MIC 0.06–0.5 mg/L.
CMRP	Chromosomally mediated resistant to penicillin, MIC ≥1 mg/L.
PPNG	Penicillinase producing *Neisseria gonorrhoeae*.

Of note, was the marked decrease in penicillin-resistant strains in South Australia in this quarter, to 7 (11%) from 25 (46%) reported in this same quarter in 2010. This decrease comprising 1 CMRP (1.5%) and 6 PPNG (9%), was coupled by an increase in the number and proportion, 56 (86%) of gonococci in the penicillin less sensitive category (MIC range 0.06–0.5 mg/L).

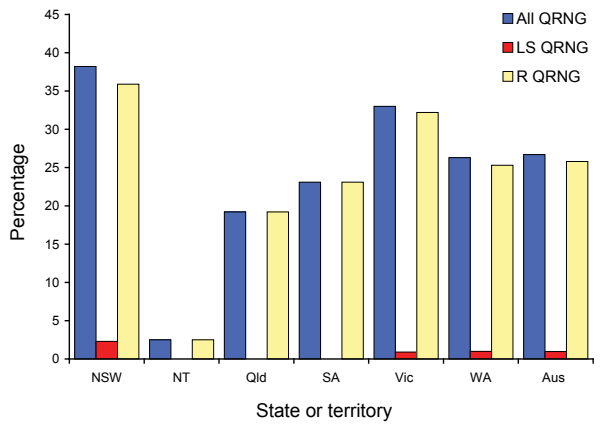
Quinolones

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 ≥ 1 mg/L) groups.

There were 276 (27%) QRNG detected in the 1st quarter of 2011. All but 10 had ciprofloxacin MICs of 1 mg/L or more and 189 (68% of QRNG) had ciprofloxacin MICs of 4 mg/L or more. The total number (276) and proportion (27%) of QRNG in this quarter nationally was lower than recent quarters. In the equivalent period in 2010 there were 385 QRNG (38%), 2009 (397 QRNG: 46%) and 2008 (415 QRNG: 35%).

The distribution of quinolone resistant isolates of *N. gonorrhoeae* in Australia by jurisdiction is shown in Figure 2. The highest proportion of QRNG was found in New South Wales where there were 118 QRNG representing 38% of all isolates. There were 75 QRNG isolates (33%) in Victoria; 26 (26%) in Western Australia; 15 (23%) in South Australia and 37 (19%) in Queensland.

Figure 2: The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 January to 31 March 2011, by state or territory



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.
R QRNG Ciprofloxacin MICs ≥ 1 mg/L.

This parallels the decrease in penicillin resistance also noted in all jurisdiction in this quarter, with the exception of Victoria where penicillin resistance remained similar. Three QRNG were detected in the Northern Territory, and one each in the Australian Capital Territory and Tasmania.

Ceftriaxone

Twenty-eight gonococcal isolates (2.7%) with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected nationally, which was less than half of the proportion (6.1%) detected in the same quarter in 2010. There were 14 isolates with decreased susceptibility to ceftriaxone in New South Wales, eight in Victoria, four in Queensland, and one in each of South Australia and the Northern Territory. There were no isolates with decreased susceptibility to ceftriaxone detected in Western Australia, the Australian Capital Territory or Tasmania. The decrease in the proportion of isolates with decreased susceptibility to ceftriaxone (MIC ≥ 0.06 mg/L) corresponds with the decrease in CMRP-resistant gonococci and QRNG also reported in the 1st quarter of 2011. It is possible that the decreased number of isolates with decreased susceptibility to ceftriaxone together with a decrease in CMRP and QRNG reflects a clonal shift from that which was evident in 2010.

Spectinomycin

All isolates were susceptible to this injectable agent. This antibiotic is no longer available in Australia.

Tetracycline

The following data relate to a form of high-level plasmid mediated resistance to the tetracyclines, and gonococcal isolates possessing this plasmid are known as tetracycline resistant N*eisseria* gonorrhoea (TRNG). Nationally, the number (217) and proportion (21%) of TRNG detected in the 1st quarter of 2011 was unchanged from that reported in the same quarter of 2010 (203 TRNG, 20%). TRNG were found in all states and territories, and proportions ranged from 12% in Victoria to 30% of isolates in Western Australia. In the Northern Territory, the number of TRNG approximately doubled in this quarter of 2011 (33 TRNG: 28%) compared with the same quarter in 2010 (16 TRNG: 18%).

Reference

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

Reporting period 1 April to 30 June 2011

The AGSP laboratories received a total of 1,109 isolates in the 2nd quarter of 2011, an increase from the 1,027 isolates seen in the corresponding period in 2010. Of these, 1,078 (97%) remained viable for susceptibility testing. There were 310 (29%) from New South Wales, 287 (27%) from Victoria, 186 (17%) from Queensland, 136 (13%) from the Northern Territory, 102 (9%) from Western Australia and 36 (3%) from South Australia. There were 20 isolates from the Australian Capital Territory (1.9%) and 1 isolate from Tasmania. The number of isolates examined in the 2nd quarter in Victoria, the Northern Territory, Western Australia and the Australian Capital Territory had increased, and there was a decline in numbers examined in New South Wales, Queensland, and South Australia.

Penicillin

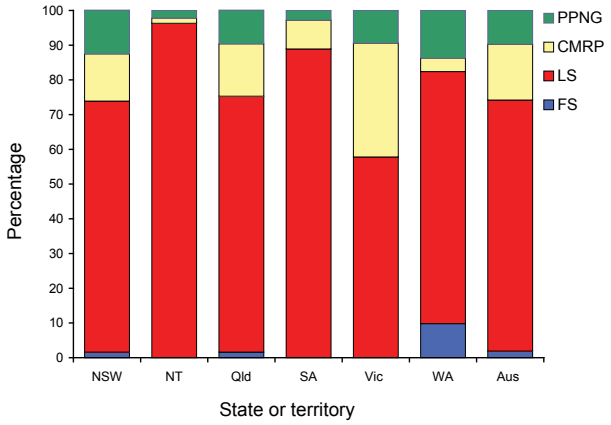
In the 2nd quarter of 2011, 279 isolates (26%) examined were penicillin-resistant by one or more mechanisms, which was proportionally lower than the 30% reported in the same quarter in 2010. One hundred and seventy-four (16%) were chromosomally resistant to penicillin (CMRP), and 105 (10%) were penicillinase-producing *N. gonorrhoeae* (PPNG). In the same quarter in 2010, the proportion of both CMRP and PPNG was higher (19% and 11% respectively).

The proportion of all strains resistant to the penicillins by any mechanism ranged widely across all jurisdictions: Northern Territory 3.7%; South Australia 11%; Western Australia 18%; Queensland 25%; New South Wales 26%; and Victoria 42%. There were 20 isolates from the Australian Capital Territory for this quarter and three were penicillin-resistant. Of note, there was a decline in the proportion of penicillin resistance in all jurisdictions from the same quarter in 2010, with the exception of Queensland and the Northern Territory. Penicillin resistance increased in Queensland from 20% to 25% in 2011 and in the Northern Territory from 2.3% to 3.7% in 2011.

Figure 1 shows the proportion of gonococci fully sensitive (MIC ≤ 0.03 mg/L); less sensitive (MIC 0.06–0.5 mg/L); CMRP (MIC ≥ 1 mg/L), as well as the PPNG data aggregated for Australia, and by state and territory. 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 due to CMRP predominated in Victoria (CMRP 33%: PPNG 9%); Queensland (CMRP 15%: PPNG 10%); New South Wales (CMRP 14%: PPNG 13%) and South Australia (CMRP 8%: PPNG 3%). However, in Western Australia PPNG were more prominent (PPNG 14%: CMRP 4%). There were 2 CMRP and 3 PPNG detected in the Northern Territory, and in the Australian Capital Territory there was 1 CMRP and 2 PPNG. One PPNG isolate was detected in Tasmania.

Figure 1: Categorisation of gonococci isolated in Australia, 1 April to 30 June 2011, by penicillin susceptibility and state or territory



FS	Fully sensitive to penicillin, MIC ≤0.03 mg/L.
LS	Less sensitive to penicillin, MIC 0.06–0.5 mg/L.
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PPNG	Penicillinase producing *Neisseria gonorrhoeae*.

Quinolones

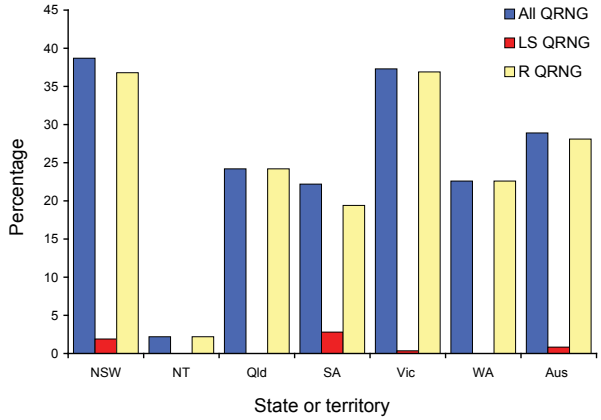
Quinolone-resistant *N. gonorrhoeae* (QRNG) are defined as those isolates with an MIC to ciprofloxacin equal to or greater than 0.06 mg/L. QRNG are further subdivided into less sensitive (ciprofloxacin MICs 0.06–0.5 mg/L) or resistant (MIC ≥ 1 mg/L) groups.

There were a total of 311 (QRNG) in this quarter for 2011, representing 29% of all gonococci tested nationally. The proportion of QRNG continues to decline when compared with the corresponding quarter in 2010: 38%; 2009: 44%; and 2008: 59%. The majority of QRNG in the current period exhibit higher-level resistance (ciprofloxacin MICs ≥ 1 mg/L).

As shown in Figure 2, QRNG were detected in all states and territories with the highest proportions in New South Wales, where there were 120 QRNG (39% of all isolates) and Victoria: 107 QRNG (37% of all isolates) In Queensland there were 45 QRNG (24%); 23 (23%) in Western Australia; and 8 (22% of all isolates) in South Australia. There were 5 QRNG

isolates from the Australian Capital Territory; 3 (2.2%) from the Northern Territory and none reported from Tasmania.

Figure 2: The distribution of quinolone resistant isolates of *Neisseria gonorrhoeae* in Australia, 1 April to 30 June 2011, by state or territory



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.
R QRNG Ciprofloxacin MICs ≥ 1 mg/L.

Ceftriaxone

Thirty-nine gonococcal isolates (3.6%) with decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) were detected nationally, a decrease when compared with the same quarter in 2010 (55 isolates: 5.4%). There were 17 (5.5%) isolates with decreased susceptibility to ceftriaxone in New South Wales, 14 (4.9%) in Victoria, 5 (2.7%) in Queensland and 1 isolate (1%) reported from Western Australia. There were 2 isolates in the Australian Capital Territory and no gonococci with decreased susceptibility to ceftriaxone reported from South Australia, the Northern Territory or Tasmania.

Although a decrease in the number and proportion of these gonococci showing decreased susceptibility to ceftriaxone when compared to the same quarter in 2010, there was an increase when compared with the previous quarter in 2011, where 28 (2.7%) had MICs in the range 0.06–0.12 mg/L.

Decreased susceptibility to ceftriaxone (MIC range 0.06–0.12 mg/L) is of increasing concern globally. To better monitor this, the number and proportion of isolates with a raised MIC = 0.03 mg/L are also reported.

In this quarter, data for ceftriaxone MIC = 0.03 mg/L was contributed by all jurisdictions. There were 60 (5.6%) in Victoria; 37 (3.4%) in New South Wales; 13 (1.2%) in Queensland; 3 (0.3%) in South Australia; and 2 (0.2%) in Western Australia. One was reported from the Australian Capital Territory, and none from the Northern Territory or Tasmania.

Spectinomycin

All isolates were susceptible to this injectable agent.

Tetracycline

There were 199 tetracycline resistant *N. gonorrhoeae* (TRNG) detected nationally (19%), which was lower than the number and proportion reported in same quarter in 2010 (218 TRNG: 22%). The highest proportions of TRNG in any jurisdiction were reported from New South Wales: (68 TRNG: 6.3%); the Northern Territory: (40 TRNG: 3.7%); Western Australia: (33 TRNG: 3.1%); Queensland: (28 TRNG: 2.6%) and Victoria (24 TRNG: 2.2%). The number and proportion in the other jurisdictions were South Australia (4 TRNG: 0.4%); the Australian Capital Territory (2 TRNG), and none from Tasmania.

Reference

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

Meningococcal surveillance

(Dr Monica M Lahra, The Prince of Wales Hospital, Randwick, NSW, 2031 for the Australian Gonococcal Surveillance Programme)

The reference laboratories of the Australian Meningococcal Surveillance Programme report data on the number of cases confirmed by laboratory testing using culture and by non-culture based techniques. Culture positive cases, where Neisseria meningitidis *is grown from a normally sterile site or skin lesions, and non-culture based diagnoses, derived from results of nucleic acid amplification assays (NAA) and serological techniques, are defined as invasive meningococcal disease (IMD) according to Public Health Laboratory Network definitions. Data contained in quarterly reports are restricted to a description of the numbers of cases by jurisdiction and serogroup, where known. Some minor corrections to data in the Table may be made in subsequent reports if additional data are received. A full analysis of laboratory confirmed cases of IMD in each calendar year is contained in the annual reports of the Programme is published in Communicable Diseases Intelligence. For more information see* Commun Dis Intell *2011;35(1):57.*

Laboratory confirmed cases of invasive meningococcal disease for the period 1 April to 30 June 2011 are included in this issue of Communicable Diseases Intelligence *(Table).*

Table: Number of laboratory confirmed cases of invasive meningococcal disease, Australia, 1 April to 30 June 2011, by serogroup and state or territory

State or territory	Year	Serogroup													
		A		B		C		Y		W135		ND		All	
		Q2	YTD	Q2	YTD	Q2	YTD	Q2	YTD	Q2	YTD	Q2	YTD	Q2	YTD
Australian Capital Territory	11	0	0	3	6	0	0	0	0	0	0	0	0	3	6
	10	0	0	1	1	0	0	0	0	0	0	0	0	1	1
New South Wales	11	0	0	5	15	0	0	2	5	0	1	0	3	7	24
	10	0	0	8	21	2	2	0	0	1	2	1	2	12	27
Northern Territory	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Queensland	11	0	0	12	20	2	3	1	2	0	0	0	0	15	25
	10	0	0	17	23	1	1	0	0	1	1	0	0	19	25
South Australia	11	0	0	1	4	1	1	0	0	1	2	0	0	3	7
	10	0	0	6	10	0	0	0	1	0	0	0	0	6	11
Tasmania	11	0	0	2	2	0	1	0	0	1	2	0	0	3	5
	10	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Victoria	11	0	0	14	24	0	0	0	0	0	0	0	0	14	24
	10	0	0	7	10	0	0	1	2	2	3	0	0	10	15
Western Australia	11	0	0	4	8	0	0	1	1	0	0	0	0	5	9
	10	0	0	2	5	0	1	1	1	0	0	0	0	3	7
Total	11			41	79	3	5	4	8	2	5	0	3	50	100
	10	0	0	41	71	3	4	2	4	4	6	1	3	51	88